Sierra Forest Legacy

Protecting Sierra Nevada Forests and Communities

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Re: Comments on the Draft Supplemental Environmental Impact Statement for the Kings River Project

These comments on the Draft Supplemental Environmental Impact Statement (DSEIS) for the Kings River Project ("KRP" or "Project") are submitted on behalf of the Sierra Forest Legacy and the Sierra Club (collectively, the "Legacy"). The Legacy, acting in its former capacity as the Sierra Nevada Forest Protection Campaign, previously provided scoping, DEIS and FEIS comments on this Project and filed an appeal of the approval of this project on February 5, 2007.

The original KRP considered only one action alternative, to conduct group selection and fuel reduction logging as part of adaptive management research on an area comprising 131,500 acres in two different watersheds. The current proposal proposes logging on 13,757 acres within the KRP area and considers several action alternatives, which are, however, not clearly presented in the DSEIS or additional background documents. In addition, several background documents were not made available during the review period for the DSEIS.

Set forth below are the Legacy's comments on the DSEIS. We believe that many of the issues raised in our prior EIS comments and appeal remain a cause for concern and thus incorporate those comments by reference into these comments. The Legacy continues to oppose Alternatives 1 and 3. As a general matter, we have attempted in these comments to focus on Alternative 4, which we do not believe is adequately presented to enable meaningful public comment and review.

GENERAL SUMMARY COMMENTS

The Legacy appreciates the effort to reduce impacts on fisher by developing Alternative 4. The actions incorporated that increase canopy density and basal area in clumps of larger trees and the retention of understory structure in 10-15 percent of a treatment unit are positive steps toward providing habitat attributes important to fisher. However, at this point, we have inadequate information to understand how this alternative will protect fisher. Further

complicating matters is the conflicting information presented in the DSEIS regarding what Alternative 4 actually entails. Without clarity regarding the alternative, it is impossible for the public to review and provide meaningful comment, as required under the National Environmental Policy Act ("NEPA"). In general, the DSEIS's presentation of Alternative 4 fails 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 Legacy still does not believe the KRP presents an effective experiment to test the effects of the Forest Service's proposed logging. As discussed in our prior comments, the habitat quality in the Kings River Project area is already low due to past logging. Thus, it does not appear that this is a good location to test the effects of intensive logging on sensitive species such as the fisher.

As also previously stated, the Legacy would support experimental adaptive management implementing the standards of the 2001 Sierra Nevada Framework ROD (USDA Forest Service 2001a) or accompanying FSEIS (USDA Forest Service 2001b). The DSEIS does consider a less intensive Alternative 5 using a thin from below treatment. The Legacy would generally support implementation of Alternative 5. However, as discussed below, there is no support for the DSEIS' statement that "dbh and fuels treatment limitations for the Southern Sierra Fisher Conservation Area that were part of the original 2001 decision were determined to be obsolete." Thus, there is no basis for not considering the full range of 2001 Framework standards as part of Alternative 5.

The lack of information in the DSEIS also means that the document still fails to consider the overall effect of the KRP on the Kings River fisher sub-population, which is a key link to the Yosemite sub-population to the north and more robust populations to the south. The KRP occurs in the middle of this drainage, which occupies a critical link in the Southern Sierra Fisher Conservation Area. ("SSFCA"). As discussed below and in prior comments, the fisher is in a critical state and to comply with NFMA's viability and diversity protection requirements, the Forest Service must avoid any possibility of fragmenting existing fisher populations in the SSFCA.

In our prior comments, we noted that there is no evidence that the logging of trees between 20" to 35" dbh provides any fire reduction benefit. The DSEIS appears to accept this point, but now still proposes logging of such dominant and co-dominant trees in order to restore forest "health," based on the Forest's belief that it must implement a silvicultural model – the "Inverse J Curve" – that requires logging of larger trees in order to restore the old-forest resembling pre-1850 conditions in the Project area. However, as the Legacy has previously demonstrated, and the DSEIS now acknowledges, 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.

The "Ecosystem Management Strategy" paper (North et al. 2008; also referred to as the "White Paper"), which is currently still in "draft" form, agrees with this assessment, noting that the Inverse J Curve "is not supported by research findings [] and it produces a stand structure with fewer large trees than desired by current land management priorities in western forests." The White Paper suggests that the most important component of "forest health" based activities is to maintain and/or restore heterogeneous vegetative structures across the landscape, which include clumps of large trees in areas that would otherwise exceed the Inverse J Curve's calculation of allowable large trees in any particular area.

Finally, we again reiterate our prior comments that the KRP documents do not adequately explain the criteria for how monitoring and research will translate into changes in proposed treatments. As discussed below, the Legacy does not believe that the Forest Service has presented a coherent plan for adaptive management to address the effects of treatments on sensitive wildlife such as fisher or owl the effectiveness of fuel treatments in achieving a resilient forest. More specifically, the KRP does not 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 and set forth the criteria by which future treatments will be altered or eliminated.

SPECIFIC COMMENTS REGARDING ADEQUACY AND ACCURACY OF INFORMATION PROVIDED IN THE DSEIS

I. ALTERNATIVE 5 DOES NOT REFLECT THE 2001 ROD.

We continue to believe that a 20 inch diameter limit for logging based on the standards of the 2001 Framework and ROD can achieve the necessary fire protection as well as providing the most benefit to fisher and other species needing larger trees and old forest habitat. The DSEIS purports to consider this option in Alternative 5. However, the DSEIS (p. 2-44) dismisses the evaluation of this alternative based on the 2001 ROD based on the view that "new science that suggests that fuels reduction is necessary in close proximity to habitat for fire protection to be effective." The DSEIS further states that "As a result, dbh and fuels treatment limitations for the Southern Sierra Fisher Conservation Area that were part of the original 2001 decision were determined to be obsolete, and were not carried forward into this alternative." We disagree with this assessment that the direction in the 2001 ROD is obsolete for the following reasons.

There is nothing in the 2001 ROD that prevents the treatment of fuels to reduce the risk of fire. Treatments in the Defense Zone of the WUI are relatively unconstrained (e.g., 30" dbh limit and no canopy cover requirement). (USDA Forest Service 2001, p. A-46). Treatments in the Threat Zone are allowed for trees up to 20" DBH to treat fuels. (Ibid, p. A-47). Old Forest Emphasis Areas and SSFCA both allow for the removal of trees up to 20" DBH in CWHR 4M and 4D to reduce fuels. The 2001 decision directs the creation of a 700-acre buffer around den sites. The treatment of surface and ladder fuels to reduce fire risk is allowed for den buffers within the wildland urban interface (WUI). Further, the direction for the SSFCA is superceded by the direction for activities in the WUI when the zones are overlapping. Finally, the 2001

ROD also includes fire behavior objectives that vary with habitat condition and land allocation to use in guiding the development of the treatments. The 2001 direction specifically calls for the treatment of fuels to meet established fire behavior goals in areas defined as habitat for fisher. Such areas are by definition in close proximity to fisher.

In addition, the CBI study evaluated a management approach with a 12" DBH limit for treatments. (Spencer et al. 2008, p. 90). The paper concluded that this approach (which is less intensive than allowed by the 2001 ROD), along with others that were modeled, positively affected fire behavior and fire effects. (Ibid., p. vii).

In sum, there is no evidence presented in the DSEIS to suggest that the 2001 direction is "obsolete." We ask that you address the above issues, revise Alternative 5 to reflect the original 2001 decision and consider this Alternative in a revised EIS.

II. THE DSEIS DOES NOT PROVIDE ADEQUATE AND CONSISTENT INFORMATION TO ANALYZE THE IMPACTS OF THE PREFERRED ALTERNATIVE 4

We are interested in understanding and evaluating Alternative 4. We have found in our review a number of instances where Alternative 4 appears to have been inconsistently defined. We also are unable to determine the practices associated with some of the land management activities proposed in the alternative. We ask that you correct these inconsistencies and clarify the intended management practices in a revised EIS.

A. Overview of Alternative 4 as Presented in the DSEIS

The DSEIS states that Alternative 4 is designed to minimize short-term impacts to Pacific fisher to protect their long term survival. Alternative 4 implements a Limited Operating Period (LOP) in the SSCA.[1] The DSEIS states that Alternative 4 emphasizes retention of key habitat groups and the maintenance of habitat functionality by implementing the PSW/Cedar Valley silvicultural strategy, which is attached as Appendix H. Alternative 4 permits a 30-inch diameter limit and also proposes to amend the Southern Sierra Fisher Conservation Area boundary to an

[1] According to the DSEIS, a limited operating period would occur from March 15 through June 15 within the SSFCA. No mechanical treatments would occur during this period within the SSFCA. Mechanical treatments planned for North_Soaproot_2, Krew_bul_1 and Krew_prv_1 Management Units would be unaffected by this limited operating period. The DSEIS states that prescribed fire could occur during the limited operating period and that "known and currently occupied den sites would be protected with a 700 acre buffer regardless of whether they are inside or outside of the SSFCA boundaries" and be subject to the LOP. "Implementation monitoring of activities that occur between March 15 and June 15 would be coordinated with the Pacific Southwest Research Station and used to assess the effects of these activities on fishers and fisher habitat structure. Modifications in effective dates for the fisher limited operating period; types of permitted activities; and/or the extent of permitted activities could be made if undesired or unexpected impacts are observed."

area that represents an area described by the region of probability of fisher detection of 0.15 or greater based on the CBI model.

The DSEIS states that Alternative 4 was created to respond to new emerging information regarding how to protect Pacific fisher and to create "a resilient forest capable of adapting to an uncertain future caused by changing climate." The DSEIS states that Alternative 4 is designed to utilize the Region's recommendations for creating resilient forest conditions by emphasizing ecological process as set forth in the White Paper and incorporating relevant aspects of work on Cedar Valley's silvicultural strategy. The Alternative 4 prescription applies to areas in the WUI Threat zones and to areas outside of WUIs, but not to WUI Defense zones,[2] and not to two KREW management areas that contain the PSW watershed study. In these areas, retention of key habitat groups and the maintenance of habitat functionality "would not be emphasized."

The DSEIS states that Alternative 4 "provides heterogeneity across the landscape by retaining shrub/understory patches and higher densities of 20-30 inches dbh trees when they are associated with clumps of larger trees (greater than 30 inches dbh). Average canopy cover of a stand should not drop below 50 percent (overall) in stands where it currently exists. Portions of the treated stands would be maintained at 60 percent or greater canopy cover (primarily in high quality Pacific fisher habitat)." The DSEIS lists the attributes of Alternative 4 as follows:

• Canopy cover greater than 60 percent would be retained in habitat classified as CWHR 5D
• Canopy cover would be maximized in areas with high existing canopy cover and large trees that are favorable for fisher resting/denning
• A higher basal area would be retained compared to the balance of the stand in areas where large trees (greater than 30 inches dbh) are clumped with 20 to 29 inches trees
• Basal area would be approximately 80 percent of full stocking
• In these clumps of large trees, the basal area target would be increased to approximately 80 percent of full stocking which would be 240 ft2/acre for mixed conifer and 210 ft2/acre for ponderosa pine stands.

The DSEIS also states that "[f]or 50 percent of the forested landscape, canopy cover would be maintained at a minimum of 60 percent where it currently exists, primarily in key habitat clumps." The DSEIS states that overall "canopy cover would average 48 percent outside of WUIs, 49 percent in WUI Defense zones, 54 percent in WUI Threat zones and 54 percent in the DFPZs." The DSEIS states that Alternative 4 uses the targets for tree retention from the Interim Pacific Fisher Habitat Maintenance and Improvement Approach, which "emphasizes what is left in a treated stand, rather than what is removed."

[2] A Wildland Urban Interface (WUI) is comprised of two zones: the defense zone and the threat zone. The WUI Defense Zone is a buffer in closest proximity to communities and human infrastructure. WUI defense zones generally extend from the structures in a community out roughly 0.25 miles. Fire control is the primary objective in this zone. The WUI Threat Zone extends from the outer edge of the Defense Zone approximately an additional 1.25 miles. The DSEIS states that the objective for the WUI Threat zone is to reduce wildfire spread and intensity and to maintain habitat functionality.

To achieve heterogeneity across the landscape, Alternative 4 would require the Forest to:

• Identify groups or patches of five or more large trees
• Determine if trees present in the group or patch were greater than 30 inches dbh
• Determine whether or not trees being retained in groups or patches had touching or nearly touching crowns, or could have by retaining additional trees
• Retain additional trees to create groups or patches of large trees that had touching or nearly touching crowns if necessary
• Use the basal area target to determine whether or not to harvest trees with marginal value for increasing crown closure and/or forest health, or trees on the edge of a group or patch.

In addition, "[s]ome patches of understory shrub, hardwoods and small trees would be retained across the landscape with a rough target of 10 to 15 percent of the area to be treated. " According to the DSEIS, this prescription is intended to provide understory cover and habitat for fisher and its prey in small discontinuous patches (to maintain the desired reduction in wildfire risk)." The DSEIS also states that "[r]iparian areas and steep slopes within the area to be harvested may already contribute sufficient amounts of this type of habitat" and that a "balance is necessary because retention of too much shrub habitat can pose an increased fire risk." Despite this objective of shrub retention, Alternative 4 proposes applying release treatments for conifer growth on 2,392 acres, including herbicide applications on 856 acres, which is intended to eliminate shrub competition to planted conifers.

B. Alternative 4 Is Not Clearly and Consistently Defined.

1. It is not clear how the recommendations in North et al. (2008) were used to develop Alternative 4.

One fundamental aspect of Alternative 4 is the application of the principles and recommendations in the PSW silvicultural strategy (North et al. 2008). It is unclear from the description of Alternative 4 (DSEIS, p. 2-39 to 2-43) how specifically the strategy was applied to the development of Alternative 4. Please describe, in detail, how the location of treatments and their prescriptions implement the direction in North et al. (2008). In such a description, it is important to indicate how the locations of the sale units, as opposed to the larger "planning units" or management units, address the topographical and micro site concepts introduced in North et al. (2008).

Finally, the North et al. (2008) paper that was included in the DSEIS has now been finalized. Any application of the paper and future discussions of its recommendations should be based on the final version.

2. It is difficult to determine the activities that will be undertaken in the Defense Zone and KREW watersheds.

The DSEIS (p. 2-39) indicates that Alternative 4 follows Alternative 1 with some exceptions. Item 5 of the exceptions indicates that a 30" DBH limit would be applied. The description of Alternative 4 also indicates that "This prescription does not apply to WUI Defense zones (areas immediately adjacent to houses) or to two KREW management areas that contain the PSW watershed study. In these areas, retention of key habitat groups and the maintenance of habitat functionality by implementing the PSW/Cedar Valley silvicultural Kings River Project strategy would not be emphasized." (Ibid.) It is, however, unclear what the intended upper diameter limit would be in the Defense Zone and the KREW management areas.

Our recent communication with the IDT indicated that their intent was to apply the diameter limits and other direction in Alternative 1 for the Defense Zone and KREW watersheds. However, Alternative 4 does not clearly state that. Further, we note that the previous FEIS (USDA Forest Service 2006c, p. 1) adopted a 30" diameter throughout the project area, including the Defense Zone and KREW watersheds. We are not able to locate any discussion indicating why a change from the previous decision is appropriate in Alternative 4.

We also are not clear on the activities that would occur within Old Forest Linkages (OFL) when they overlap with the Defense Zone. The FEIS and the technical assistance letter from the US Fish and Wildlife Service (2006) did not make a distinction between management in the OFL in the Defense Zone versus outside the Defense Zone. In both cases, the direction indicated that canopy cover of 60 percent or greater would or should be retained. Alternative 4 is not explicit about activities within the OFLs that fall within the Defense Zone, but the recent response from the IDT suggests that the prescription from Alternative 1 would be applied to those areas in the OFL that fall within the Defense Zone. We do not view this to be an appropriate application for several reasons. The OFLs are intended to be important linkages or connectors across the landscape. Further, OFL are located in drainage bottoms which are locations that North et al. (2008, p. 24) specifically identify as capable of supporting higher basal area and canopy cover. North et al. (2008, p. 25) also recommend that:

> In most cases thinning 20-30" dbh trees will not affect fire severity and therefore other objectives for their removal should be clearly identified. Where those objectives are identified, silvicultural prescriptions would only remove intermediate-sized trees when they are shade-tolerants on mid or upper slope sites.

This information indicates that retaining higher basal area and canopy cover within OFLs regardless of their location in the Defense Zone is important to addressing the recommendations in the US Fish and Wildlife technical assistance letter, North et al. (2008) and meeting the intent of the OFL designation. This is especially important in two management units – Glen Meadow and El-O-Win – where a significant portion of the OFL is in the Defense Zone.

We also note that the area actually within the KREW study is considerably less than the total sum of the area to be treated in the KREW Provident management unit.[3] (USDA Forest Service 2006b, Appendix F). It is not clear why the management prescriptions designed for Alternative 4 are not applied to the areas outside of the KREW study boundary that are still within the KREW Providence management unit. For instance, half or more of the acres proposed for thinning in the KREW Providence management unit are not in the KREW study boundary.

3. Alternative 4, as evaluated in the fisher BE and elsewhere in the DSEIS, is different from that described in Chapter 2 of the DSEIS.

DSEIS (p. 2-40) states that retention of 60 percent canopy is limited to CWHR 5D habitat.[4] However, the BE (p. 43) indicates that "Where existing, at either the plant aggregate or stand scale, forested areas with canopy cover in excess of 60 percent must have canopy cover retained at or above the 60 percent level." Further, the BE (p. 43) states that "Within areas of core fisher habitat, canopy cover is maintained at a minimum of 50 percent." These statements from the BE indicate an intention to retain canopy cover at or above 60 percent where it exists and to not reduce canopy cover below 50 percent. The description of Alternative 4 in Chapter 2 should be revised to reflect these outcomes.

Several elements in the table comparing the alternatives also appear to have not considered the additional direction regarding canopy cover retention and retention of additional basal area in clumps of larger trees. For instance, the difference in commercial timber volume between Alternative 3 and Alternative 4 is only 0.5 MMBF and the number of trees per acre estimated for removal that are greater than 20" DBH is the same for both alternatives. This lack of difference after retaining 50 percent or 60 percent canopy cover (depending on habitat type) and retaining additional trees in the 20"-30" DBH size class in clumps does not make sense. In comparison, the re-mark of the stands for Cedar Valley (slightly less than 1,000 acres) resulted in removing about 0.4 MMBF from the commercial timber volume and retaining these trees in the stand to address the new clumping and canopy cover requirements. Given that about 6,000 acres of commercial harvest is proposed in Kings River, we would expect a greater reduction in volume for Alternative 4, if the Cedar Valley prescriptions are followed. We would also expect a change in Alternative 4 compared to Alternative 3 in the number of trees per acre > 20" removed and the canopy cover retained.

[3] We do recognize that all of the treated area within the KREW Bull management unit is within the KREW study area.

[4] As a practical matter, the BE for the DEIS (USDA Forest Service 2006a, p. 60) indicated that there was no habitat typed as CHWR 5D in the Kings River project area. Thus, the standard in Chapter 2 appears to provide no added benefit to fisher.

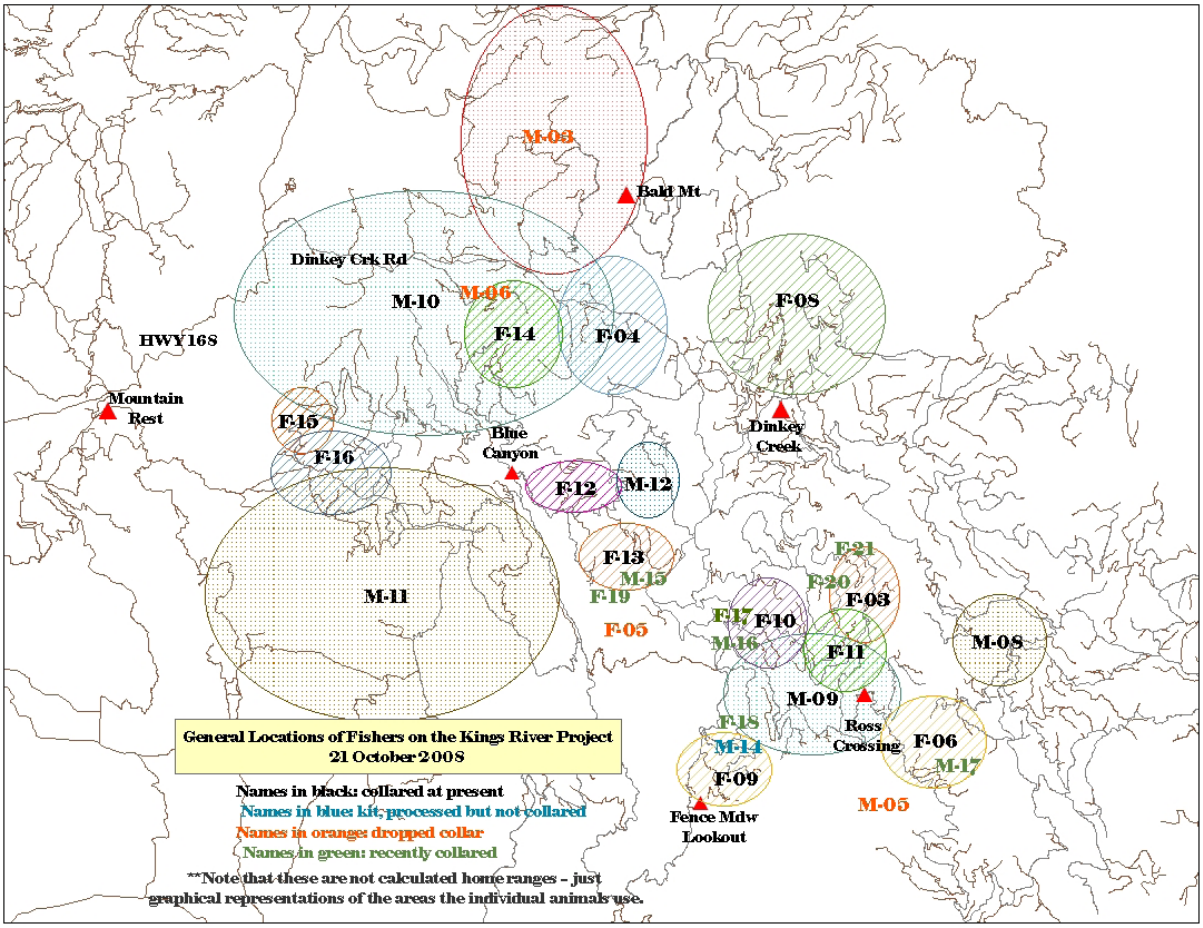
C. The Rationale for Alternative 4 Is Not Clear.

1. Changing the SSFCA boundary

A change in the boundary of the Southern Sierra Fisher Conservation Area (SSFCA) is proposed under Alternative 4. (DSEIS, p. 2-39). The new boundary is to be defined by the area identified by the CBI model as reflecting a probability of occurrence of 15 percent or greater. There is little discussion in the DSEIS about the rationale for changing the boundary. Changing the boundary as proposed in Alternative 4 does not make sense for the following reason.

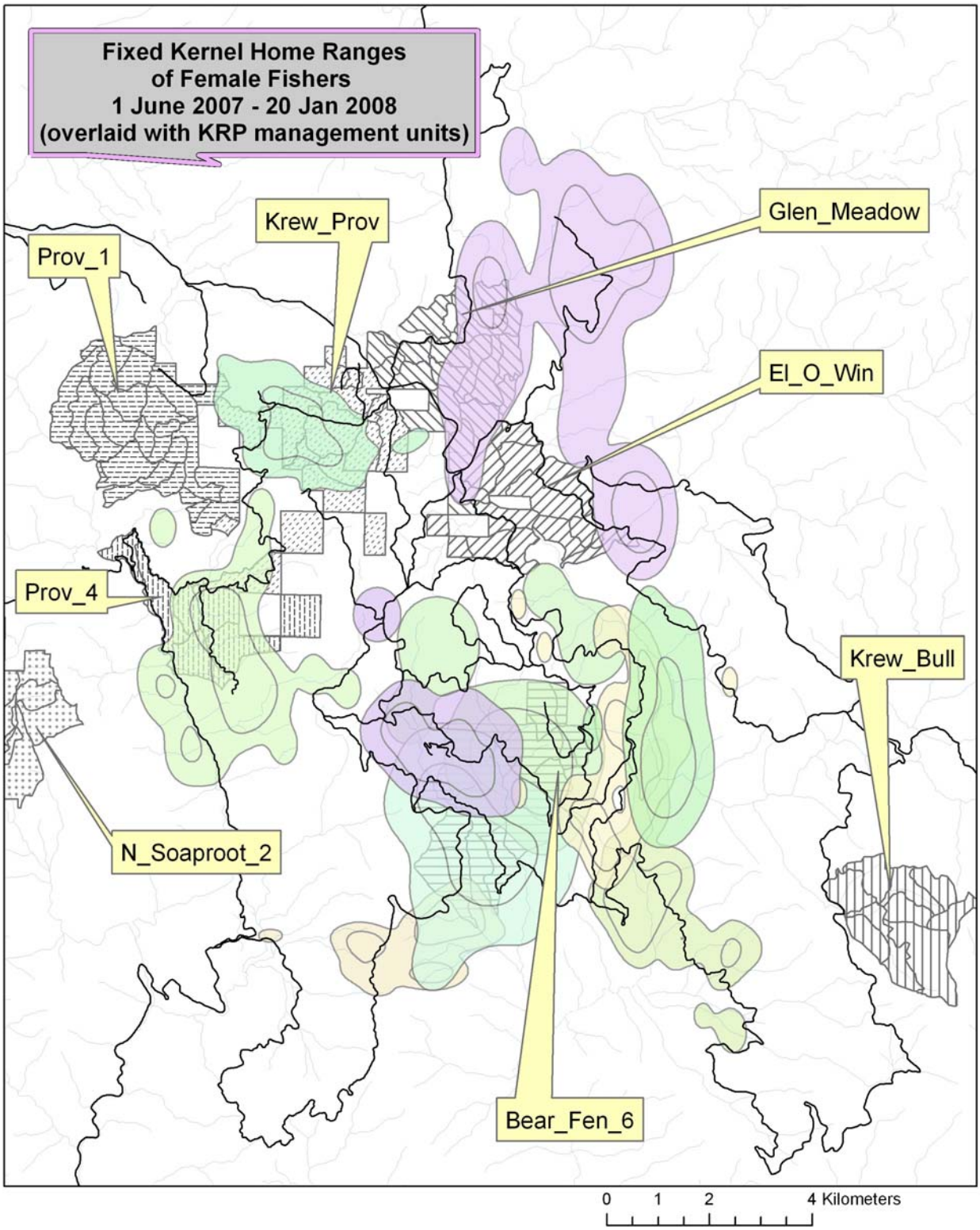
The CBI modeling effort was based on an evaluation of fisher detections from a set period of time gathered in a regional assessment. Those detections did not take into account the new information about where fishers exist today. Monitoring of fisher in the Kings River project area through October, 2008 indicates that fisher are using areas that occur outside of the new boundary proposed under Alternative 4. The map below, provided by Craig Thompson, Pacific Southwest Research Station, shows a male fisher (M-11) using the area in and around the North Soaproot management unit. This area used by M-11 is not within the new SSFCA boundary being proposed.

Figure 1. Map of fisher redetections and general locations of fishers in the Kings River Project. Information provided by Craig Thompson, Pacific Southwest Research Station.



Initial information on female home ranges for collared fisher in the Kings River project also indicates that use is occurring outside of the boundary that is being proposed. The following map of the home ranges for female fisher, provided by Kathryn Purcell, Pacific Southwest Research Station, indicates that females are using the areas well to the south of the Providence 4 and Bear Fen management units. Both areas are clearly outside of the boundary that is being proposed for the SSFCA. Thus, significant areas that are presently used by male and female fisher occur outside the new boundary proposed under Alternative 4.

Figure 2. Map of home ranges for female fishers in the Kings River Project. Information provided by Kathryn Purcell, Pacific Southwest Research Station.



The rationale for proposing a new boundary for the SSFCA should be more fully described in the revised EIS and should address the known fisher activity in the Kings River area.

2. Tree retention as per Smith and Sorini (2008) is the same as a reverse J-curve.

The DSEIS (p. 2-40) indicates that "Alternative 4 uses the targets for tree retention from the Interim Pacific Fisher Habitat Maintenance and Improvement Approach paper (Smith and Sorini, 2008) as appropriate." The tree retention targets from this paper (p. 13) are:

Table 1. Tree retention targets from Smith and Sorini (2008).

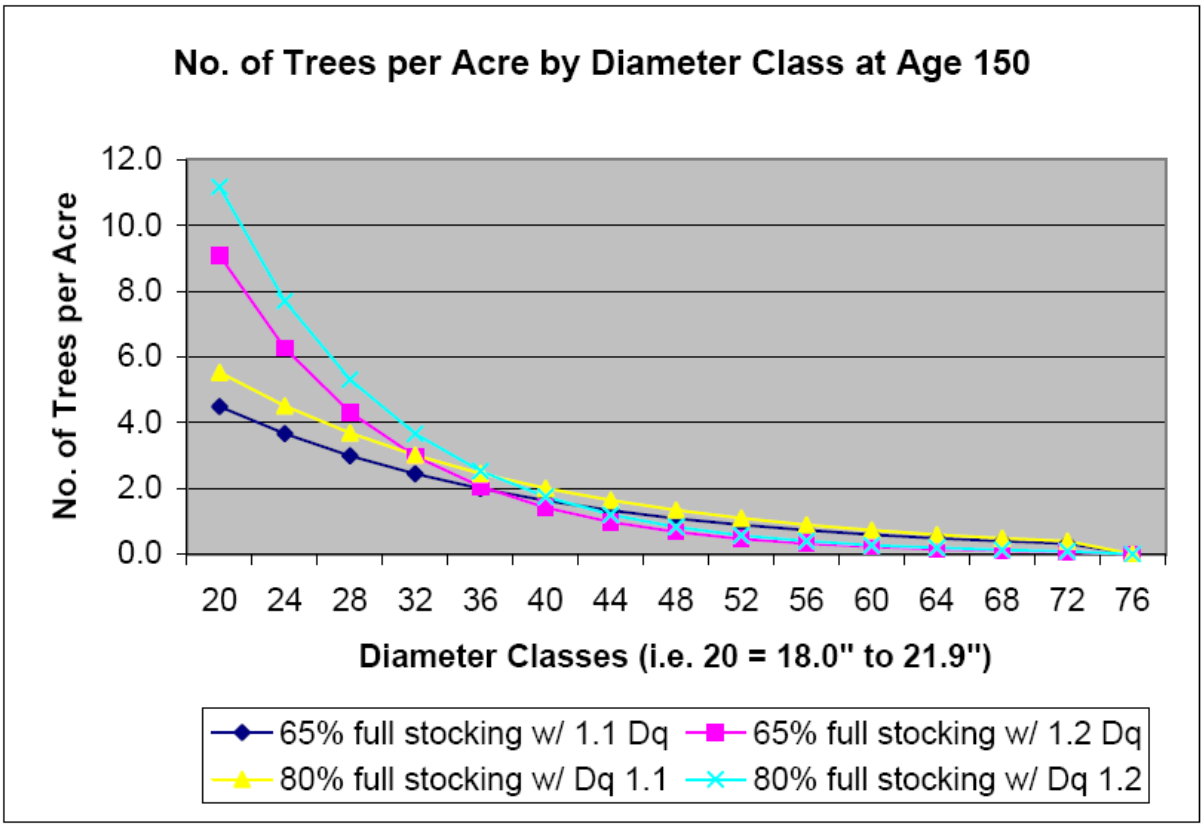
Site Quality	Average No. Trees per Acre by Diameter			
	18" – 21.9"	22" – 25.9"	26" – 29.9"	30" +
High	10	7	5	11
Moderate	8	6	4	9

These values closely reflect (for trees greater than or equal to the 18-20.9" DBH class) a reverse J-curve with a Dq of 1.2 and for stands that are at about 80% full stocking. We determined this was the case by comparing the stocking information above with the information below that was provided to us on a field trip to Kings River project in 2007.

Table 2. No. of Trees per Acre by Diameter Class from "Preliminary Yield Tables for Second-Growth Stands in the California Pine Region" at Age 150 Years (USDA Tech. Bulletin No. 354). Information provided by the Sierra National Forest.

Diameter Classes	65% full stocking w/ 1.1 Dq	65% full stocking w/ 1.2 Dq	80% full stocking w/ Dq 1.1	80% full stocking w/ Dq 1.2
20	4.5	9.1	5.5	11.2
24	3.7	6.3	4.5	7.7
28	3.0	4.3	3.7	5.3
32	2.4	3.0	3.0	3.7
36	2.0	2.1	2.5	2.5
40	1.6	1.4	2.0	1.7
44	1.3	1.0	1.6	1.2
48	1.1	0.7	1.3	0.8
52	0.9	0.5	1.1	0.6
56	0.7	0.3	0.9	0.4
60	0.6	0.2	0.7	0.3
64	0.5	0.2	0.6	0.2
68	0.4	0.1	0.5	0.1
72	0.3	0.1	0.4	0.1
76	0.0	0.0	0.0	0.0

Figure 3. Graph depicting information in Table 2. Information provided by the Sierra National Forest.



It is not clear how this stocking curve addresses both the concepts from Cedar Valley related to the retention of additional trees to create higher density around existing clumps of large trees, or the direction in the southern SN white paper not to apply an inverse J-curve to stand management. Please explain how the above stocking relationship addresses North et al. (2008) and the retention of variable density in clumps.

The scale of application for this stocking curve is also not clear. We reviewed the estimated trees per acre reported in the fisher BE for each unit. These values listed in the table below indicate that for the areas assessed, rarely did the existing total number of trees per acre greater than 20" DBH exceed the total number of trees per acre reported for all sizes in the class 18 to 21.9" DBH and greater, i.e., a total of 33 TPA for high site and 27 TPA for moderate site, in the stocking table above.

Table 3. Harvest information and stand condition reported in the fisher BE for the Kings River project.

Unit	Unit Area (acres)	CT[a] (acres)	Helicopter (acres)	Tractor (acres)	NC [b] (acres)	TPA 20-30"	TPA 30-35"	TPA >35"	TPA >20"
bear_fen_6	2,205	1,443	530	913	438	14	2	4	20
el_o_win_1	1,357	1,007	40	967	133	19	5	4	28
glen_mdw_1	1,618	826		826	315	17	4	3	24
krew_bul_1	1,195	534		534	203	7	4	5	16
krew_prv_1	1,991	801	127	674	285	20	4	3	27
n_soapro_2	2,419	381		381	268	6	1		7
providen_1	2,014	716	251	445	372	12	2	1	15
providen_4	1,049	355	300	55	31	12	2	1	15
TOTAL	**13,848**	**6,063**	**1,248**	**4,795**	**2,045**				

[a] CT = commercial thin
[b] NC = non-commercial thin

This comparison indicates to us that the average conditions in the assessed areas[5] are at or below the management targets identified in Smith and Sorini (2008). Please explain more fully how this information was used to determine the need to harvest 20" to 35" trees in the management unit.

3. Reforestation of "existing openings" in light of the intention to follow the southern SN white paper has not been addressed.

North et al. (2008, p. 10) identifies the importance of shrubs and recommends that "managers should consider protecting what shrubs remain and increasing understory light conditions for shrub establishment and patch expansion." Further, they conclude that "Patch size and configuration of such habitat should vary (see discussion on habitat heterogeneity in section 5)." (Ibid.) Thus, shrubs as a component of the understory and as a patch of vegetation are desirable.

The FEIS (USDA Forest Service 2006b, p. 2-46) indicated that under Alternative 3 herbicides and replanting would be applied to "existing openings" and the planting of openings and gaps is noted (Ibid., Appendix I-5). Further, site preparation, planting and release are all proposed for Alternative 4 (DSEIS, p. 2-45). From this we conclude that brush clearing and replanting will occur in Alternative 4 in the same places proposed under Alternative 3.

Given that Alternative 4 intends to implement the recommendations in North et al. (2008), it is not clear how the removal of brush from plantations and "existing openings" meets the intent of the recommendations to manage for habitat heterogeneity, including a shrub component. Please clarify the nature of the plantations and "existing openings" that will be

[5] We assume that these assessed areas reported in the fisher BE are the focus of the harvest activities.

treated and discuss how these treatments are consistent with recommendations in North et al. (2008) to manage for heterogeneity. Further, as discussed in prior comments and below, shrub patches and understory may provide important habitat elements. the loss of which is not addressed in the DSEIS.

4. Ability of Helicopter Logging to Meet the Purpose and Need

Based on the information presented in the fisher BE, there is an estimated 1,248 acres of helicopter logging proposed in the project. (See Table 3, above) From our review of other projects, it is our understanding that helicopter logging is extremely costly and is only economical if large trees are being harvested. We note that the majority of the areas to be harvested using helicopter logging already have relatively low numbers of trees per acre greater than 20" DBH. Please explain how the proposed helicopter logging will protect the quality of fisher habitat in the short term while remaining economical.

A significant element of the purpose and need for the project is to reduce the risk of severe fire. One of the most effective ways to accomplish this is to reduce surface and ladder fuels. Helicopter logging, as we understand its application, leaves behind the smaller trees and the tops of the large trees that are removed. Please explain how this type of logging meets the intent of Alternative 4 to increase fire resiliency and protect fisher habitat in the short term.

III. THE DSEIS DOES NOT PROVIDE ADEQUATE AND CONSISTENT INFORMATION WITH REGARD TO THE ALTERNAIVES PRESENTED

In addition to the specific informational problems discussed above with regards to the preferred Alternative 4, the DSEIS contains inadequate and inconsistent information on a number of critical issues that relate to each of the considered alternatives, as set forth below.

A. The rationale for the fisher habitat goal is not described or evaluated.

The habitat goal stated in the 2004 ROD (USDA Forest Service 2004b, p. 41) is "Within known or estimated female fisher home ranges outside the WUI, a minimum of 50 percent of the forested area has at least 60 percent canopy cover." The DSEIS (p. 2-56) promotes a slightly different goal: "The long-term goal for developing and/or maintaining potential fisher habitat is to have 50 percent of the landscape in CWHR size Class 4 or higher with 50 percent canopy cover or greater." It is not clear how either of these goals relate to providing habitat conditions that support sustainable fisher populations in the Kings River area.

Zielinski et al. (2004a) characterized home ranges for 23 fishers in the Sierra Nevada (Sequoia National Forest). The results indicated that fisher home ranges were dominated by dense canopy cover (Ibid., p. 653, 60 percent cover or greater over 66 percent of the home range) with the proportion of dense cover tending to be higher and with less variation for females compared to males. Mazzoni (2002) described home ranges for six females in the Kings River area. Home ranges for 5 of the six females evaluated had approximately 60 percent or more of

the home range in dense canopy and one female home range contained about 40 percent of the home range in dense canopy. (Ibid., Figure 4). These studies indicate that canopy cover exceeding 60% over more than 60% of the home range appears to be important to fisher.

Please describe more fully the rationale that supports adopting either of the above as a goal for the management of fisher habitat in the Kings River area. Also, please discuss how characterizations of home range condition in Zielinski et al. (2004a) and Mazzoni (2002) are addressed in the management goal.

B. The adaptive management process as a protection measure for fisher is undefined.

The DSEIS (p. 2-57) refers to an adaptive management process as a "protection measure for fishers." From this statement, we infer the intent to use adaptive management as a measure to ensure the protection of fisher in the project area. It is not clear, however, what is meant by adaptive management. From the narrative in the table, the implication seems to be that some sort of review will be undertaken to assess timing and frequency of treatments and their effect on fisher. It is not clear who will be involved in such a review and how often the review will be undertaken. It is also not clear what response variables will be used to detect an effect on fisher or what degree of change to these variables would cause a change in management approach. Please address these elements in a more fully described approach to adaptive management.

The expectation implied in this protection measure is that the fisher study results will be used to evaluate the effects of the project as it is being implemented. We continue to be concerned that adequate funding is not being allocated to the fisher study. The fisher study plan relies primarily on ground support to collect fisher movement data. It is our understanding that ground support, as opposed to air support, produces fewer data points from which to evaluate fisher movement. We are concerned that this will lead to a significantly less robust analysis than could be completed if air support were used. We also understand that the rapid detection of mortalities is essential to evaluating the cause of death. Air support significantly increases the likelihood that mortalities will be recovered before the evidence is lost to predators.

We ask that funding of this study be increased to provide the same level of monitoring intensity using air support that has been dedicated to the SNAMP in the Fish Camp area to the north.

C. The rest structure guidelines are not linked to the desired levels of structures per acre.

The design measures identify that marking guidelines for rest structures will be applied to the harvest units. These guidelines were provided to us on a field trip to Kings River in 2007. The guidelines focus on identifying trees with structural elements found at fisher rest sites. The application of these guidelines throughout the project area resulted in the identification of one rest structure per 22 acres. The site map we have for KREW Providence indicates the locations

for specific rest structures using these guidelines. Thirteen structures were identified in KREW Providence. There are about 1,086 acres of commercial and non-commercial timber harvest proposed in KREW Providence. (Fisher BE, p. 20). This means that approximately 1 rest structure was identified for every 64 acres of harvest in the KREW Providence units. Given the estimate of rest structures needed per acre noted in the fisher BE (p. 5; 17 per acre), extremely low levels of rest structures were identified using the guidelines. This is not adequate and not consistent with fisher conservation.

Please describe more fully how these guidelines ensure that adequate numbers of rest structures with the necessary micro habitat features are provided in the project's design and address how the low numbers of rest structures resulting from the marking guidelines is consistent with North et al. (2008).

D. The LOPs and more intensive harvest activities appear unnecessarily to apply to lands that are not actually in the KREW project area.

As we noted above, portions of the KREW Providence management unit are not actually included in the KREW study. It appears that about two-thirds of the area to be treated in the KREW Providence management unit is not a part of the study. The LOPs and treatment intensity for these areas should be modified to reflect less intensive activities described elsewhere in Alternative 4 since more intensive actions in these areas are clearly not required for the KREW study.

IV. ISSUES RELATED TO THE ANALYSIS EFFECTS ON VEGETATION, FUELS, AND FIRE BEHAVIOR.

A. The narrative comparing effects among alternatives does not appear to be supported by the information presented in the figures.

Five different aspects of vegetation and fuels are compared among the alternatives. These include risk of insect attack over time (DSEIS, p. 3-43), basal area of large trees over time without fire and with severe fire overtime (Ibid., p. 3-45), proportion of canopy with greater than 50 percent canopy cover by management unit (Ibid., p. 3-55), and effects of severe fire on canopy cover (Ibid., p. 3-61). The difference among alternatives in all cases is either very small or non-existent. For example, the effects of density reduction on large tree basal area are shown in Figures 3-33 and 34. There are essentially no differences among the alternatives (action and no action) without a simulated wildfire. With a simulated wildfire, there are no differences among action alternatives; however, the no action alternative has less large tree basal area.

The results presented in the narrative in several instances describe a different perspective that illustrated in the figures. The discussion of stand density management in Alternative 5 states that there will be little benefit from limiting thinning to trees less than 20" DBH. This perspective is, however, not supported by prediction of the basal area of large trees over time.

These values are about the same for all action alternatives. Further, the basal area for each action alternatives increases to a similar extent over time.

B. The analysis of effects completed for Alternatives 4 and 5 is not equivalent to that presented for Alternatives 1, 2, and 3.

There are several elements of the fire and fuels analysis that are dissimilar among the alternatives. Estimates of fire severity (Ibid., p. 3-64 to 3-66), flame length (Ibid., p. 3-65), crown bulk density (Ibid., p. 3-72), post fire mortality (Ibid., p. 3-73 and 3-83), and crown index (Ibid., p. 3-73 and 3-83) are reported for the Alternatives 1, 2 and 3, but not reported for Alternatives 4 and 5. As a result, some of the conclusions about the effects of Alternative 4 and 5 are speculative and can not be compared directly to the other alternatives.

V. THE DSEIS' ANALYSIS OF IMPACTS ON THE FISHER IS INADEQUATE

A. The definition of suitable denning and resting habitat is not consistent with published criteria.

The fisher BE (p. 4) defines "suitable denning and resting fisher habitat" as CWHR structure classes 4M, 4D, 5M, 5D, and 6. The inclusion of CWHR types 4M and 5M as resting and denning habitat is not consistent with published values or other evaluations completed by the Forest Service and the US Fish and Wildlife Service.

Stands occupied by fisher for resting and denning have been characterized as having canopy cover exceeding 60 percent (Truex et al. 1998; Mazzoni 2002; Zielinski et al. 2004b). The Forest Service previously identified resting and denning habitat as dense stands with canopy cover exceeding 60 percent. (USDA Forest Service 2004a, p. 139). The US Fish and Wildlife Service also identified resting and denning habitat as being characterized by canopy cover that exceeded 60 percent finding that "Fishers select areas as rest sites where structural features are most variable but where canopy cover is least variable, suggesting that resting fishers place a premium on continuous overhead cover." (US Fish and Wildlife Service 2004, p. 18774). All information to date on fishers indicates that dense canopy cover is critical to denning and resting behavior.

Resting and denning habitat has been identified as likely to be more limiting than foraging habitat. (Zielinski et al. 2004b). The reclassification of suitable habitat undertaken in the fisher BE suggests that resting and denning habitat is not rare across the project area and that most of the project area is composed of resting and denning habitat. When classified using accepted definitions, there is, in fact, very little habitat classified as resting and denning habitat, i.e., CWHR 4D and 5D, in the Kings River project area.

Please explain why the fisher BE categorizes denning and resting habitat as structural types with canopy cover ranging from 40 to 59 percent, contrary to the findings of ongoing research.

B. The effects of timber harvested on habitat quality are underestimated.

A major component of the habitat evaluation in the fisher BE focuses on the effects of each alternative with respect to the trees per acre removed and remaining. Generally, the effects of tree removal appear to be averaged over all areas within a management unit, i.e., treated and untreated areas. The overall effect of averaging over the area beyond which the tree removal is occurring is to dampen or minimize the estimated changes to the habitat being affected. For instance, the fisher BE (p. 9) states that "the majority of the commercial timber harvest will remove an average of only one tree per acre."[6] There are a few places in the fisher BE that indicate the actual number of trees per acre being removed from the treated area. For example, the evaluation of the North Soaproot management unit first indicates that about 1 tree per acre would be removed. (Ibid., p. 22). The next paragraph, however, states:

> Given the estimated harvest of approximately 2,500 trees greater than 20 inches dbh and commercial harvest proposed on 381 acres this equates to a removal level of about 7 trees per acre within those harvested units and 0 trees per acre greater than 20 inches dbh removed throughout the remainder of the project area.

(Ibid.) At best, this is a confusing presentation of effects since the evaluation of each management unit since the narrative does not consistently report the average number of trees harvested over the management unit as well as the actual trees harvested per acre in the treated area.

We used the estimated numbers of trees presented in the fisher BE to develop estimates of the actual trees harvested for the areas of commercial timber harvest. The following table indicates that the actual trees per acre harvested range from 1 to 7 per acre.

[6] We note that in the DSEIS (p. 2-67) indicates that the removal of trees per acre >20" DBH will average about 2 per acre.

Table 4. Average trees per acre harvested from the commercially harvested areas for Alternative 1 within each management unit. Data taken from the fisher BE for the Kings River project.

Management Unit	Post Harvest Trees 20-35" DBH	Proportion of Trees 20-35" DBH Remaining Post Harvest	Alternative 1 TPA harvested
bear_fen_6	41,000	0.95	1.5
el_o_win_1	32,600	0.87	4.8
glen_mdw_1	34,000	0.97	1.3
krew_bul_1			1.5[a]
krew_prv_1	47,500	0.95	3.1
n_soapro_2	14,500	0.85	6.7
providen_1	26,000	0.93	2.7
providen_4	13,500	0.88	5.2

[a] This estimate of TPA was derived from the total numbers of trees per acre >20" pre (19,500) and post harvest (18,700) divided by the acres of commercial harvest (534 acre). (Fisher BE, p. 19).

Considering that the stands within each management unit are likely to be variable, there could be significant variation in the average estimates provided above within a management unit. Such variability is not captured by the data presented in the table above, but could well be important to evaluating the effects of the alternatives on fisher habitat.

Please estimate the localized effects of the alternatives on fisher habitat, in addition to addressing effects at other scales.

C. Effects to known dens and den buffers are not described.

The fisher BE (p. 5) reports that 12 dens (maternal or natal) have been located in the Kings River area. The 2004 ROD (USDA Forest Service 2004b, pp. 39 and 61) requires the delineation of a buffer around each fisher den site of 700 acres. Activities within the den buffer are limited to those that treat the surface and ladder fuels and a limited operating period (LOP) applies. The fisher BE recognizes that den sites occur within or adjacent to several management units. The BE, however, does not quantify the habitat quality in the den buffers nor does the BE quantify the effect of the alternatives on habitat within the den buffers.

Den buffers were adopted in the 2004 Framework to provide habitat protection and protection from disturbance for fishers during reproduction – one of their most vulnerable times in their life cycle. The designation of this reproductive area is analogous to the delineation of a protected activity center around a spotted owl nest site. Evaluating the change in habitat quality proposed within such buffers under different alternatives provides a basis for comparing the effects of the alternatives. This type of evaluation should be included in a revised EIS.

D. The effects of treatments on known home ranges for female fisher are not evaluated.

Information characterizing female fisher home ranges is available from the fisher study that is ongoing in the Kings River area. (See Figure 2, above) This information identifies areas in which female fisher move. Significant portions of these home ranges occur within the management units.

The 2004 ROD sets habitat goals for female home ranges, when known, or watershed areas of a certain scale. (Ibid., p. 46) The analysis of effects should assess the degree to which the alternatives contribute to or reduce the ability to meet this goal. Further, the existing condition and estimated post-harvest condition as a result of the alternative should be compared to known characterizations of home range condition (Mazzoni 2002; Zielinski et al. 2004a) to estimate the impact the alternatives on habitat conditions important to fisher persistence.

E. The analysis presented does not support the claim that desired conditions for the SSFCA are being met.

Two habitat objectives for fisher are have been identified by the Forest Service:

1) "The long-term goal for developing and/or maintaining potential fisher habitat is o have 50 percent of the landscape in CWHR size Class 4 or higher with 50 percent canopy cover or greater." (DSEIS, p. 2-56)

2) "Within known or estimated female fisher home ranges outside the WUI, a minimum of 50 percent of the forested area has at least 60 percent canopy cover. (USDA Forest Service 2004b, p. 41).

While we believe that these objectives as written are inadequate to protect fisher,[7] the alternatives proposed should be evaluated against them since they are what have been adopted to guide Forest Service management. The fisher BE undertakes such an analysis to a limited extent. The analysis in the BE, however, fails to disclose the existing condition and it is not possible to assess the degree to which existing condition meets or falls short of the desired condition.

We summarized the values reported in the fisher BE in the following table. We found that the area covered by canopy cover of 60 percent or greater following implementation of Alternative 1 was estimated to be extremely low in some management units and in no unit did levels exceed the desired level of 50 percent of an area with canopy cover greater than 60%.

[7] Sierra Forest Legacy has filed lawsuits in federal court challenging, among other things, the adequacy of these measures, established in the Kings River decision from 2006 and the Sierra Nevada Forest Plan Amendment in 2004, adequately to protect fisher.

Table 5. Proportion of area with canopy cover 60 percent or greater following harvest under Alternative 1. Data taken from the Kings River fisher BE.

Management Unit	Unit Area (acres)	Commercial Thinning (acres)	Post Harvest Area with >60% cc (%)
bear_fen_6	2,205	1,443	27
el_o_win_1	1,357	1,007	32
glen_mdw_1	1,618	826	3
Krew_bul_1	1,195	534	2
Krew_prv_1	1,991	801	18
n_soapro_2	2,419	381	26
providen_1	2,014	716	30
providen_4	1,049	355	44
TOTAL	**13,848**	**6,063**	

The low levels of dense canopy cover present in the project area post treatment suggest that existing conditions may also be far below desired. This information combined with the general understanding that habitat in fisher home ranges are generally dominated dense canopies suggests that habitat quality in the project area is quite low.

Given the information presented above, there appears to be no basis for the repeated conclusions in the fisher BE that the proposed treatments are consistent with the management intent of the SSFCA. (See for example fisher BE (p. 14: "Treatments proposed toward implementing alternative 1 within the Bear fen 6 project area are consistent with the management intent for the Southern Sierra Fisher Conservation Area (SSFCA).") What appears to be the case is that none of the management units presently meet the objectives and the alternatives will reduce the degree to which the objectives are met following harvest. This calls into question the validity of the KRP and prior commitments the Forest Service made to protect the fisher.

Please provide information on the existing condition for each management unit and assess its condition in relation to the objectives stated above. We ask that you also include an assessment of the degree to which the alternatives move conditions toward or away from the objectives.

F. The conclusion of no adverse impact to fisher from Alternative 1 is not supported by the evidence.

The fisher BE (p. 9) concludes for Alternative 1 that "No adverse impacts to fishers are anticipated as a result of commercial timber harvest." This statement is in direct conflict with the finding at the end of the BE (p. 50) that determines all alternatives "may affect individuals." The fisher BE (p. 9) further states that "Impacts, including displacement of fishers and modification of prey abundance and distribution are expected to be short term, insignificant, and minimized by adjacent availability of untreated habitats and habitat structure." These statements are unsupportable for several reasons.

The Forest Service in previous documents found that Alternative 1 was not adequate to provide needed protection for fisher and selected an alternative with a 30" DBH limit in order to reduce the potential for harm to fishers.[8] (USDA Forest Service 2006c). The technical assistance letter from US Fish and Wildlife Service also recognized that there could be harm to fisher and identified a concern regarding the "potential to adversely affect fisher habitat and harass or harm fishers by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering." (US Fish and Wildlife Service 2006, p. 19). Thus, the Forest Service and other agencies found that Alternative 1 resulted in adverse effects to fisher and found that modifications were necessary to reduce these effects. Further, these agencies found that adverse effects were still likely even with the adoption of a less intensive alternative.

Dr. Reginald H. Barrett, Goertz Distinguished Professor of Wildlife Management in the Department of Environmental Science, Policy and Management at the University of California, Berkeley, found in his review of Alternative 3 for the Kings River project that "Despite these changes, my review indicates that the Kings River Project is still likely to have significant adverse impacts to fisher in the project area, which in turn pose great risks to this fisher sub-population located between the San Joaquin and Kings River drainages." (Barrett 2007, p. 1). He found that "this level of intense logging and fuel reduction treatments can have significant impacts on fisher by reducing suitable habitat, eliminating pockets of high quality forest and cutting off connective corridors." (Ibid., p. 2) Thus, an expert in the field of forest carnivore research with over twenty years experience found that Alternative 3 (and Alternative 1) was likely to have significant adverse effects on fisher. Dr. Barrett also concluded that "the Forest Service's approach does not insure viability for the fisher in the planning area." (Ibid.)

The EIS should be revised to address the adverse impacts that are likely from the Kings River project.

G. The DSEIS' Reliance on the CBI Report to Support Site Specific Treatments is Unwarranted.

The CBI report, among other things, "predicted fisher probability of occurrence … at the landscape scale" based on a model that considered total tree biomass, elevation, and precipitation. (Spencer et al. 2008, p. ix). As indicated in the report, this model more correctly predicts the likelihood of occurrence as opposed to habitat value. They note that:

> Fishers are sometimes detected in areas of low habitat value, or may not be detected in areas of high value. However, in general, fishers are more likely to occur in areas of higher value.

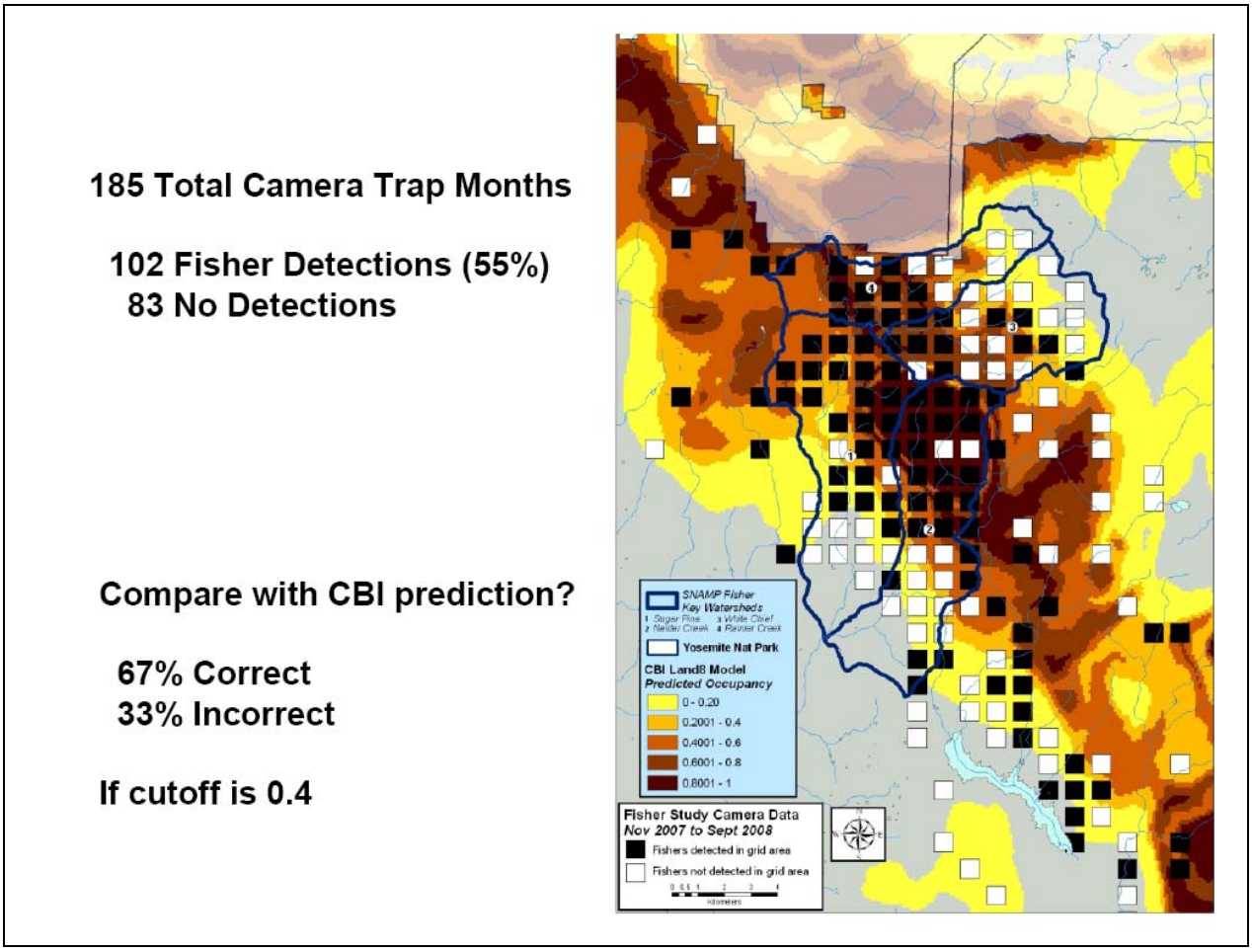
(Ibid.) Thus, the model does not actually represent "habitat suitability" as portrayed in the fisher BE (p. 3), since areas within and outside the boundary may contain suitable and unsuitable habitat. Further the repeated claims in the BE that the "The CBI phase I (Spencer et al. 2007) as

[8] Sierra Forest Legacy does not agree that the selection of Alternative 3 was adequate to protect fisher. We filed litigation in 2007 challenging this decision on grounds that include the adverse effects to fisher.

well as the SSFCA identify the KREW Bull project area as marginally within the belt of suitable fisher habitat" (Fisher BE, 32) are simply not correct. The CBI report makes no claim to habitat suitability in the area they assessed and places no value on an area bounded by 0.15 or greater probability of occurrence for fisher. The representation in the fisher BE of the "green area", i.e., the region bounded by a probability of occurrence of 0.15 or greater, suggests that habitat quality in this region has some equal or better value. Such an interpretation is inappropriate since as described in the CBI report the model is a landscape level assessment that averages the probability of occurrence over a 5 km^2 area. This averaging over an area about the size of a home range tends by design to minimize variability on smaller scales.

The actual variability of fisher occurrence is emphasized by recent research on fishers in the southern Sierra Nevada. A fisher study being conducted in the Fish Camp area has been detecting fisher through "camera traps." The figure below indicates the location of camera stations with respect to the probability of detection surface developed in the CBI report. This slide indicates that fisher were detected repeatedly in areas that had a low (<0.2) probability of occurrence according to the CBI model and often not in areas that had much higher values.

Figure 4. Camera stations and detection of fisher in the Fish Camp study area. Slide from Barrett (2008).



Results from Jordan (2007) also indicate that habitat suitability is not uniform within the "green areas." In a survey of fisher occupancy designed to measure the density of fisher in the region from Shaver Lake to Wishon Reservoir, a region that includes the Kings River project area, Jordan found:

> … the 10 fishers / 100 km2 estimate found in the Kings River population is lower than almost all of these published estimates. This suggests that the habitat in the Kings River region is not capable of supporting as dense a population of fishers as other areas that fisher density was quite low.

(Ibid., p. 29). Jordan also found that of the 350 camera stations across his study area, fishers were detected at only about 119, or 34%. (Jordan pers. com., Attachment 1). The absence of fishers indicates that habitat in that area may not be suitable. Thus, the suggestion in the BE that the area bounded by a probability of detection of 0.15 or greater is suitable habitat is not supported by results from the SNAMP or other recent studies.

Another problem is that in developing the model to assess the effects of fuels treatments on fisher persistence, the CBI report relied on the maximum estimate of fisher survival from a study in the Sequoia National Forest (Lamberson et al. 2000). The CBI model discounted the survival rate based on a rating of habitat quality assigned during the PATCH analysis. (Spencer et al. 2008, p. 38-39). The broad generalizations in the CBI report about efficacy of treating fisher habitat are derived from an analysis that uses survival rates that may in reality be lower for the Kings River area. Based on regional monitoring, Truex (pers. Comm., 2006) indicated that the population on the Sierra National Forest is less stable than on Sequoia National Forest. Thus, the survivorship values based on the Sequoia National Forest population may be overly optimistic if applied to the Sierra National Forest population. The CBI report also recognized that the model itself is highly sensitive to survival rate. (Ibid., p. 56) Thus, modest differences in survival rate that might be found in the Kings River project area relative to the population in the Sequoia National Forest could have profound effects on a model tailored to the Kings River area.

The CBI report correctly indicates that "Fuel treatments should use site-specific analyses that consider fisher habitat value in and near the treatment. Within fisher habitat, treatments should balance desired fuel conditions with maintaining sufficient overstory and habitat elements to sustain or encourage occupancy by fishers." (Spencer et al. 2008, p. xiv). The CBI report can not be used, as is done in the fisher BE, to justify the site specific activities proposed in the DSEIS. If the CBI report is used to justify the analysis of effects in the Kings River project, please provide the site specific information that supports its application.

H. Changes in habitat suitability over time have not been properly assessed.

The BE (p. 49) concludes that the "cumulative effects of vegetation management activities on the Forest have not reduced overall habitat suitability for fishers on the Forest." This finding is based on the information from regional fisher monitoring (Truex, pers. comm. 2006) that indicates the numbers of fisher are stable in the area. The BE links the stability of this population with the apparent shift in range to conclude that habitat suitability has not been reduced.

This conclusion is faulty for the following reason. The monitoring data from Truex indicate that the same number of animals are likely distributed on the Sierra NF, but they have moved somewhat in distribution (i.e., their locations are not consistent year to year). This mobility or shifting range could be the result of degraded habitat conditions with the animals seeking better quality sites. Such movements would be apparent as a shift in range, but without longer term data it would not be clear if the newly occupied sites sustained fisher. The low density of fisher in the Kings River area found by Jordan (2007) further supports the idea that habitat quality in the region may be low.

The fisher BE also relies on a characterization that combines habitat that is highly selected by fisher (dense canopied forest) with other less preferred and more common habitat.

The MIS report that was relied upon to characterize the changes in fisher habitat over time does not distinguish between habitat quality. The distinction in habitat quality combined with an evaluation of the regional movement of fisher would be critical to evaluating habitat suitability over time.

I. The DSEIS Does not Provide An Adequate Analysis of the Project's Impacts on Relevant Fisher Prey Species

The fisher BE offers limited analysis of the effect of the alternatives on fisher's prey and prey habitat. There is some recognition that "Many of the prey species found in the diet of fishers occur primarily in large tree and dense canopy coniferous forests and oak woodland habitats," but there is little analysis of the potential changes to prey habitat.

Sustaining the prey based throughout the winter is a particular concern for fisher. Fishers are active year round, yet many of the prey species utilized by fisher hibernate or otherwise retreat during the winter months. Douglas' and western gray squirrels are two notable exceptions – each of these species is preyed upon by fisher and they are active throughout the winter. These squirrels are associated with mature and dense canopied forests (Zeiner et al. 1990). Providing for habitat that sustains these prey in sufficient numbers throughout the winter season is likely very important to sustaining fisher. We ask that you evaluate the effects of the alternatives on habitat utilized by Douglas' and western gray squirrels.

VI. THE INFORMATION THAT IS PROVIDED IN THE DSEIS SUGGESTS THAT THIS PROJECT MAY HAVE SUBSTANTIAL IMPACTS AND THREATEN THE VIABILITY OF WILDLIFE SPECIES

As discussed exhaustively in our prior comments, the KRP has the potential for substantial impacts on wildlife species, thereby threatening their viability. However, these impacts have not been adequately disclosed, as required by the National Environmental Policy Act ("NEPA"). As discussed in our prior comments, the KRP fails to take a "hard look" at the impacts of implementing the level of logging proposed, and fails 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 DEIS does not provide accurate information regarding the current status of fisher in the Project area, nor any information whatsoever regarding fisher home ranges, connective corridors and/or important habitat elements that may be affected by the KRP.

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).

Further, 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 - which includes the California spotted owl, American marten, northern goshawk, and Pacific fisher -- 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).

Based on the information that is presented in the DSEIS, it appears that Alternative 4 has the potential to harm and threaten the viability and distribution of wildlife species, including the Pacific fisher and California spotted owl. Here, many of the same problems raised in our prior comments still exist with respect to the implementation of Alternative 4. Numerous studies show that the Sierra Nevada lacks old forest habitat with large trees and the KRP area is particularly lacking in these forest elements, with only 35 acres of 5M stands and no 5D or 6 stands whatsoever.

In the initial environmental review documents for the KRP, the Forest claimed that a high level of logging was necessary to protect wildlife species from stand-replacing fire. However, the DSEIS and supporting documents now acknowledge the point previously made in our comments, that a 20” dbh limit on logging can achieve fuel objectives for the landscape. Given this fact, and given that logging of large trees is likely to have harmful effects on Pacific fisher, spotted owl, and other species that require such mature forest for long-term viability in this region, the Legacy reiterates it prior request that the FS consider and implement fuel reduction logging that minimizes impacts on old forest species. As we have previously noted, the 2001 Framework found that if fuel reduction “treatments themselves compromise habitat and the habitat is considered lost or temporarily unusable, them the effects of the treatments that were designed to protect habitat from loss are similar to the effects of losing habitat to wildland fire." 2001 FEIS Volume 2, Chapter 3, part 3.5—page 281. Here, as discussed below, the Forest Service’s actions – purportedly undertaken in part to protect species – have the potential to have the opposite effect.

We believe that elements of Alternative 4 – particularly the commitment to retain the highest quality habitat and to provide heterogeneity across the landscape – have the potential to improve forest conditions, reduce wildfire risk and minimize impacts to species. However, as

discussed above, the DSEIS does not provide enough information about how this alternative will be implemented to ensure that wildlife will be protected. In addition, to the extent that information is presented, that information suggests that the viability of wildlife species in the area, particularly the fisher, may be jeopardized.

A. The KRP Has the Potential for Substantial Adverse Effects on the Fisher, Thereby Threatening its Viability in the Project Area

In our prior comments on the DEIS, FEIS and appeal of the prior Kings River Project, we provided substantial information, including expert commentary and analysis, that the KRP was likely to have a significant impact on fisher in this area, and could lead to their demise in the project area. Were that to occur, a new gap would arise within the already fragmented southern Sierra fisher population. Most critically, the "adaptive management" component of the KRP did not present an adequate plan for measuring the effects of implementing logging in the KRP on the fisher. Thus, we saw that a likely result of the KRP as initially proposed would be the potential loss of fisher in the area, without any underlying research results that would explain why or how this loss had occurred.

The new DSEIS reiterates the flawed conclusions of the prior KRP documents that the KRP will not have substantial impacts on, or threaten the viability of, the fisher. *See e.g.,* p. 3-220 ("Any impacts that do occur as a result of fuels treatment activities are expected to be indirect, short term and not contribute to any long term displacement or injury to fisher.") As discussed in our prior comments, this conclusion is unwarranted for Alternatives 1 & 3.

We believe that the implementation of a limited operating period (LOP) in the SSFCA is a step in the right direction. However, the LOP protects fisher only from actual disturbance due to noise and activities during the period of denning and kit rearing. The LOP provides no ultimate protection for the loss of habitat in the area. As discussed previously, the biggest threat from this project is the overall reduction in habitat quality in an area already functioning as marginal habitat for fisher. As discussed below, we are particularly concerned about the loss of canopy coverage throughout the project area, and the Forest Service's apparent belief that coverage down to 40% presents quality fisher habitat, an assumption that is not supported in science. It is precisely the high quality habitat that is already in short supply, yet the DSEIS appears to be avoiding a meaningful discussion of this issue.

We believe that Alternative 4 presents opportunities to minimize the impact from habitat loss to fisher, but, as discussed above, the DSEIS currently does not present adequate and consistent information that would permit the Forest Service to conclude that fisher will be protected under this alternative. This is particularly true as to the amount and spatial layout of the "key habitat clumps" that are proposed to be retained. Alternative 4 does not present information showing how much of this type of high quality habitat will be retained nor the resulting canopy coverage in female fisher home ranges.

We therefore reiterate and incorporate by reference our prior detailed comments on this issue. In particular we note the following additional concerns.

1. The DSEIS Does Not Acknowledge that Fisher in the KRP Area are already in a precarious state due to lack of quality habitat

We believe that the DSEIS and BE significantly understate the precarious situation for fisher in the project area. As previously noted, 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. (Macfarlane and Frolli 1999; Lamberson et al. 2000). Prior KRP documents acknowledged that "habitat in this region is not as capable of supporting large populations of fishers in other areas." Thus, even before implementation of the KRP, the Project Area lacks high or even moderate quality habitat for fisher.

Neither the DSEIS nor the BE acknowledge that many areas within the KRP that the Forest Service has modeled as "adequate habitat" do not in fact support fisher. Jordan's dissertation work – conducted over a four year period -- showed fisher occupancy in approximately 34% of the areas monitored. (*See* Jordan 2007 & pers. comm, Attachment 1.) This data raises the likely possibility that such low occupancy is caused by the current lack of suitable habitat for fisher in the area. In that case, the Forest Service cannot assume that further habitat reduction will not harm the fisher by reducing habitat quality below the threshold of occupancy, thereby potentially fragmenting the KRP fisher population.

The information showing that fisher are absent from many areas in the KRP demonstrates that the local fisher population is in a precarious state and that, at best, the Forest Service lacks adequate information to determine how fisher are using this area, and the survival, health and reproductive success of individual fisher. Despite the potential for significant impacts, the DSEIS and updated BE simply do not acknowledge these realities. As noted by Dr. Barrett in our prior comments:

> 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 of 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. Thus, even if the Forest Service had enough information regarding existing home ranges to make this kind of assessment, it should not rely on Mazzoni 2002 as the baseline that will ensure fisher viability. This conclusion is supported by Lamberson 2000, which finds that fishers in the Southern Sierra Nevada may disappear in 30-50 years given the status quo.

(Barrett 2006, p. 9). *See also* Britting 2006, p. 6 ("Absent any additional site specific demographic data, it can not be known if the habitat quality.... is good enough to maintain the population and evidence suggests that habitat conditions might well be inadequate.")

Of further concern is that the Forest Service appears to be relying on the CBI Report in assuming that fisher population in the KRP area is stable and able to withstand further habitat loss. However, as discussed above, the modeling of the CBI Report does not support such an assumption, both because the CBI Report itself did not come to such a conclusion and because the Report's modeling used fisher survival from the Sequoia National Forest as critical data inputs for fisher survival, even though the evidence shows that habitat quality in the Sequoia is higher than in Kings River and therefore likely leading to higher survival rates than would exist in the marginal fisher habitat of the KRP area.

2. The DSEIS Shows that the KRP Project is Relying on Low Quality Habitat to Provide Resting and Denning Habitat for Fisher, Contrary to the Best Available Science.

As discussed above, the DSEIS and BE err in assuming that quality fisher habitat includes areas with canopy coverage down to 40%. There is no support for this assumption in the scientific literature and the KRP's willingness to reduce canopy in prime fisher habitat threatens the species' viability. As noted by Dr. Barrett:

> The Project review documents do not provide adequate information regarding the existing environmental setting, particularly any description of the "suitable habitat." This is problematic since the Forest Service considers forests with canopy cover down to 40 % suitable, yet my research indicates that fisher greatly prefer habitat above 60% canopy cover, which made up over 70% of female home ranges in the Sequoia National Forest. Here, the Forest Service appears not to make a distinction between medium and dense canopy coverage, which research indicates may be critical to successful fisher reproduction....
>
> [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, pp. 7-8.) The Legacy notes that Barrett's findings are actually consistent with Mazzoni (2002), who found that female fisher home ranges typically included over 60% of high quality (>60%) canopy cover. (*See* Britting 2006, p. 4.)

By blurring the distinction between high quality habitat and the minimum levels observed for foraging habitat, the DSEIS appears to be avoiding a discussion of how much high quality habitat shall be retained in within female fisher home ranges within the project area. As stated above, the DSEIS' comparison of alternatives states that the difference in commercial timber volume between Alternative 3 and Alternative 4 is only 0.5 MMBF and the number of trees per acre estimated for removal that are greater than 20" DBH is the same for both alternatives. Further, as also discussed above, the percentage of habitat above 60% canopy in the project units is well below 60%. These facts raise a significant issue of whether and/or how the Forest Service is intending to provide high quality habitat for the fisher.

3. The KRP Will Lead to Further Fragmentation of Fisher Habitat

The prior KRP DEIS stated that fisher habitat will not be fragmented because habitat in 100 meter stream zones will be protected as "old forest linkages." Our prior comments noted that these stream zones may not provide adequate habitat, particularly if surrounded by open forest with low canopy coverage. Our comments also noted that the OFLs follow major streams but appear to be disconnected in several areas and that the 40% canopy cover levels for these areas did not meet the levels required for even moderately suitable habitat. The DSEIS does not remedy any of these defects.[9]

Beyond this issue, the DSEIS incorrectly portrays suitable fisher habitat as continuous throughout the KRP area. However, as also discussed above, Jordan's research shows that fisher occurrence is already fragmented in the project area. (Jordan pers. com., Attachment 1). The DSEIS contains no analysis of this information, suggesting that the Forest Service did not consider that the fisher may already be isolated, an impact to which further logging will likely contribute. As discussed in our prior comments, if riparian corridors are the only proposed linkage system, fisher may be required to travel great distances to move into different watersheds. However, the Forest Service lacks any information that fisher travel in this manner, nor information as to how fisher travel generally in the Project area. Further, an overlay of the riparian corridors over Jordan's fisher occurrence maps would suggest that fisher in the project area would be isolated from one another due to the long and arduous dispersal distance between occupied and suitable areas.

4. The Forest Service Cannot Support a Finding that further logging in Fisher Habitat will Not harm the Fisher

As discussed above and in prior comments, the Forest Service has not collected necessary information on habitat distribution of individual fishers as recommended by the leading

[9] An initial problem, discussed above, is that the DSEIS does not clarify which activities could occur within Old Forest Linkages (OFL) when they overlap with the Defense Zone. If the Alternative 1 prescription were applied to these areas, that could block potential corridor areas. In particular, the evidence shows that any designated corridors must maintain high quality habitat including canopy coverage not below 60%.

scientists. In particular, the Forest Service does not discuss the locations of current home ranges of fisher in the KRP area even though location information is available (see Figure 2, above). Thus, the DSEIS does not analyze the effects of the project – under any of the Alternatives – on known female fisher home ranges in the KRP area.

The DSEIS and BE also do not provide an adequate description of the post treatment landscape regarding habitat suitability for fisher. The record shows that habitat quality across the landscape lacks old forest habitat required by fishers, including habitat with high canopy and large trees (CWHR 5D). Meanwhile, as discussed above, the Forest Service's identification of suitable habitat does not distinguish between low, moderate and high quality habitat.

As discussed, the Forest Service has also not considered information shown by Jordan that fisher occurrence in the project area is not continuous but instead fragmented. This information is necessary to consider issues of habitat thresholds and fragmentation but has not been considered.

In addition, also as discussed, the Forest Service appears to be inappropriately relying on the CBI Report for findings that the Report did not in fact make, such as that the impacts of logging such as in this project will not be harmful to the fisher. Further, reliance on this Report for population and habitat suitability predictions is also not warranted since the Report's key input for fisher survival was derived from another forest with acknowledged higher quality habitat than in the KRP area.

5. Removal of Shrub Layers May Have Substantial Adverse Impacts on Fisher

The DSEIS still does not address the effects on fisher of eliminating understory vegetation through repeated mechanical, fire and herbicide treatments. The KRP adversely affects shrubs in two ways. First it removes shrubs from openings and in plantations to allow for faster conifer growth. Second, the KRP eliminates understory vegetation throughout the project area by thinning, prescribed fire, clearing and herbicide applications. In many areas of the Project area, however, this understory vegetation, including shrubs, may form the protective canopy for fisher resting and foraging. The DSEIS does not contain an adequate analysis of this issue.

As discussed above, the KRP project and purpose does not support the removal of native shrubs that may provide cover and prey for fisher in the project area. Instead, the White Paper on which the Forest Service is relying for vegetative management direction recommends maintenance of a heterogeneous environment consisting of multiple ecological stages and forest types. Thus, in addition to being a substantial impact with unknown impact on fisher viability, it appears to be in conflict with the underlying premise of Alternative 4.

6. The KRP May Have Substantial Cumulative Impacts on Fisher

As discussed in our prior comments, the KRP has the potential for substantial cumulative impacts on fisher that could threaten fisher viability in the planning area. As noted by Barrett in our prior comments, "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." We have noted in prior comments that the areas surrounding the KRP contain large blocks of previously logged, largely unsuitable habitat for fisher, thus further exacerbating the potential that fisher populations to the north and south could be separated due to the logging proposed in the KRP. As discussed below, the DSEIS and BE do not adequately address these as well as more recent projects approved since the KRP's prior analysis.

The DSEIS' conclusion that cumulative impacts to fisher will not be substantial is based on the Forest Service's assumption that the KRP treatments will not harm fisher. But as discussed above, this assumption both lacks adequate supporting information and is contrary to accepted science regarding fisher habitat needs.

7. The KRP Does Not Ensure that Adaptive Management Will be Implemented to Ensure Fisher Viability

Our prior comments noted that the KRP does not ensure that the impacts on fisher due to logging will be adequately monitored or how the information that is gathered will trigger management changes on the ground. As discussed above, we believe the fisher monitoring that will occur in the KRP is underfunded and is not likely to lead to meaningful information regarding the impacts of the project on fisher.

Further, the DSEIS still does not clarify how adaptive management will be triggered to ensure that the substantial impacts from this phase of the KRP are not repeated for the remaining sections of the project area, thereby likely eliminating fisher from the region. In particular, the DSEIS does not address our prior real concern that, if the KRP is intended to benefit fisher by creating high quality habitat in 30 years, how will the Forest Service interpret and respond to data showing that fishers are experiencing short term, immediate impacts from KRP logging?

B. The KRP Has the Potential for Substantial Adverse Effects on the California Spotted Owl, Thereby Threatening its Viability in the Project Area

In our prior comments on the DEIS, FEIS and appeal of the prior Kings River Project, we also provided substantial information, including expert commentary and analysis, that the KRP would have a potentially substantial impact on spotted owl in this area., thereby also threatening their viability.

We are concerned that the KRP still has the potential for substantial adverse effects on the California spotted owl. As set forth in the Legacy's Framework appeal, fuel reduction

treatments, particularly those allowing for harvest of trees above 20" dbh, have the potential for significant impacts on owl populations. (See SNFPC, 2004) Indeed, there is strong evidence that logging pursuant to the 2004 ROD, particularly logging of medium and large trees, reduction in canopy cover, removal of large snags and down wood, and logging within owl PACs, HRCAs and home ranges will degrade owl nesting and foraging habitat and threaten the owl's viability. (SNFPC et al. 2004, pp. 14-20).

The DSEIS builds upon the 2006 EIS proposing a 132,000-acre forest management study. Three alternatives, 1, 2, and 3 are identical between the FEIS in 2006 and the recently released DSEIS. Alternative 4 proposes to retain clumps of fisher habitat in the project area, and the 2008 Alternative 5 is similar to the 2006 Alternative 3 (DSEIS p.1-3). However, despite the development of a new alternative, the supporting specialist reports for spotted owl have not been updated since 2006.

The DSEIS states that there are 47,464 acres of suitable habitat within the planning area, which would increase to about 56,500 acres in 30 years. Within the 8 management units, there are 9,051 acres of suitable habitat. The DSEIS states that no owl home range (measured as 2,500 acres) would drop below 30% of suitable habitat. The DSEIS also presents Table 3-56 purporting to show changes in percent of suitable nesting and roosting habitat. The existence of such suitable habitat appears to be based solely on whether canopy coverage is above or below 40%. The DSEIS cites to Lee & Irwin for the proposition that owl activity centers are suitable so long as there is a nest anchor tree and the surrounding habitat within the home range core area of 1,000 acres contains at least 44% forested habitat with canopy coverage above 40%.

We do not believe that the DSEIS's analysis of impacts to owls is consistent with the best available science. We remain concerned that the Kings River project would unnecessarily threaten the distribution and viability of spotted owls in the planning area, as stated by Bond (2007, p.2). We reiterate our previous comments that the Kings River EIS and spotted owl BE still fail to include important information and analyses necessary for a complete and accurate assessment of the projects impacts to the owl and its habitat.

We therefore incorporate by reference our prior comments on this issue. The Forest Service should prepare an environmental effects analysis for Alternatives 4 and 5 and revise the analysis for Alternatives 1 and 3 and circulate these as a draft SEIS for the public to review and comment on. In addition, we provide the following points, set forth below.

1. The DSEIS Does Not provide an Effects Analysis of Alternatives 4 and 5 on Owls

Alternatives 4 and 5 are described in the 2008 Kings River DSEIS but the effects of these alternatives on spotted owls and other resources have not been fully analyzed as required by NEPA. The 2008 DSEIS states that Alternatives 4 and 5 "…do not appear to differ considerably in overall effects on the California spotted owl." (p.3-204, also on p.3-207). It is not clear how the Forest Service came to that conclusion because the wildlife biological evaluation (BE) for the

KRP by Sorini-Wilson (2006) or the separate spotted owl BE for KRP by Wolcott (2006) do not analyze effects of Alternatives 4 and 5 on spotted owl. These two new alternatives were proposed in 2008, two years after the biological effects analysis was complete. Further, there is a difference between Alternatives 4 and 5of 6.5 MMbf commercial timber volume (DSEIS, p.2-66, Table 2-8), indicating substantially different amounts of trees proposed for removal between the two alternatives.

The only other vegetation data the DSEIS provides to compare the effects of the two Alternatives is amount of "suitable" spotted owl habitat. However, as discussed in our prior comments and below, this broad category of habitat does not account for the loss of high quality habitat and thus does not provide an effective comparison between the alternatives.

2. The SDEIS Does Not Present Adequate Information to Assess the Impacts to Spotted Owl Habitat

The DSEIS does not distinguish between low and high quality habitat for owls. This approach overlooks the importance of high quality habitat and the risks with rendering all high quality habitat in the project area marginal, as currently proposed. Our comments and concerns regarding this matter are described in detail in previous letter and are incorporated by reference to this letter (see SNFPC 2006a, p.27-37, and 2006b, p.16-19).

As set forth in these prior comments, the DSEIS errs in failing to distinguish between foraging and nesting habitat and instead assuming that each have the same value for spotted owl. For example, the BE states that the amount of suitable habitat in the planning area could increase in 30 years under all alternatives assuming no wildfires occurred during that time (Sorini-Wilson 2006, p.19). Impacts to different habitat such as breeding, roosting and nesting are never discussed. Thus, impacts to the <u>quality</u> of spotted owl habitat are never analyzed, only the quantity.

It is well established that the quality of spotted owl habitat has tremendous influence over owl survival and fecundity. *See* Seamans (2005); Chatfield (2005); Blakesley (2003, 2005). This is alluded to in the BE: "spotted owls preferentially use areas with at least 70% canopy cover" (Wolcott 2006, p.24). However, an exploration of the impacts of reducing the project treatment units to 40% canopy cover is missing from the analysis. Instead, the BE and EIS lump all habitat greater than 40% canopy cover together, call it all suitable, and never consider changes to habitat use based on the owls habitat preferences and changes in habitat quality expected after project implementation.

The DSEIS does not identify the amount of this habitat present, but instead generally assumes that all habitat with trees greater than 12" dbh and 40% canopy cover constitute "suitable habitat", and thus there will be no impacts to owls as long as habitat is retained at these levels. Numerous studies, however, illustrate such general habitat analysis does not insure owl viability under NFMA and in no way satisfies NEPA's standards to take a "hard look" at the impacts of the proposed project.

Further, the DSEIS still does not provide enough information or analysis regarding the impacts of action Alternatives to spotted owl habitat at each of the relevant scales for assessing owls: the core area around the nest, the area designated as the home range core, the home range area and a larger area analyzing how different owl home ranges interact across the landscape. For example, neither the FEIS nor the revised BE presents information regarding the availability of nesting habitat in the 500 acre nest core area or 1,000 acre home range core area[10] described in detail in our DEIS and FEIS comments (SNFPC, 2006a, p.25-37, and SNFPC, 2006b, p. 16-19). *See also* Bond (2007):

> Results from Blakesley (2005) and Seamans (2005) highlight the importance of differentiating between high-quality and low-quality suitable habitat, which the FEIS failed to do. 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, important habitat attributes such as canopy cover and basal area are not presented for the KRP in a useful or ecologically meaningful way. The Forest Service presents canopy cover averaged over the entire defense zone, threat zone and DFPZ areas. Measures of spotted owl habitat quality are not disclosed in the DSEIS or the BE, making effects analysis unquantifiable, subjective, and potentially inaccurate. Combining canopy cover for thousands of acres in the project area masks the meaning of these data and makes public review of the project again, near impossible. Canopy cover data should be presented on a unit basis, grouped for each owl territory at appropriate scales for the species as discussed in our previous comments (Ibid) before and after project implementation.

[10] As discussed in previous comments, HRCAs are designed to include "the best available California spotted owl habitat in the closest proximity to the owl activity center." (USDA Forest Service 2004a, p. 39). Extensive logging within HRCAs is likely to adversely affect owl reproduction and occupancy. *See e.g.,* Blakesley (2005); Bart (1995). Here, the KRP proposes to log significant acres of owl home range core areas (Britting 2006a, p 8, Table 5). Based upon the vegetation analysis conducted by Dr. Britting, canopy cover was also severely affected, most HRCAs had serious drops in canopy cover and seven of ten owl sites had *no dense canopy* (>60%) after the treatments. (*Id*.) These same issues have not been addressed in the FSEIS. Please refer to SNFPC (2006a, p.27-32 and 2006b, pg.17-19) for complete comments on this issue.

Finally, we are concerned that the DSEIS lacks any information regarding current spotted owl territory status, such as occupancy or reproductive condition. However, owl territory status history must be considered in order to apply Bart (1995) to the Kings River Project, as stated in Bond (2007.)

3. The SDEIS and BE Misinterpret Owl Science

a. Interpretation of the Lee & Irwin Study is Flawed

The DSEIS relies on the Lee & Irwin study to find that there will be no significant adverse effects to owls as long as there is greater than 44% overall percentage of forest area within the owl's home range core area in greater than 40% canopy coverage. The DSEIS does not address the numerous problems with relying on Lee and Irwin for this conclusion, as discussed in our appeal (SNFPC 2007, Bond 2007) including the following points.

- the study did not address survival but only reproduction. Numerous studies cited in our prior comments demonstrate that survival is the critical variable for owl viability. *See* Seamans (2005); Chatfield (2005); Blakesley (2003, 2005). These studies uniformly find that owl survival is positively correlated with high quality habitat within the HRCA area, including large trees and dense (>70%) canopy.

- the study did not examine whether reproductive success was increased where canopy coverage exceeded 40%; instead the study only measured the amount of area above 40% canopy. Lee and Irwin (2005) themselves acknowledged the need to assess the relative amounts of sparse, moderate, and dense canopy cover within the 1,000-acre area; the number of adults in the territory; and productivity throughout the population in a given year. In comparison, Blakesley 2003 found that the average nest core area composed of forest stands with >70% canopy cover was 52%.

- the study did not conclude that owls would not be harmed by reducing canopy coverage down to the minimum amounts observed by Lee & Irwin. In comparison, Blakesley found an <u>average</u> of 83% suitable habitat within the 500 acre nest area for owl sites in the Lassen National Forest (Blakesley 2003).

- Lee and Irwin characterize the selection of 40% cc as, "more convenient" and "a useful rule of thumb for distinguishing an upper bound on stands that do not readily carry canopy fires." However, the 2001 Framework ROD/FEIS selected 50% canopy as that threshold (USDA, Forest Service 2001), not as a matter of convenience but rather a balance between reaching fuels objectives and protecting suitable owl habitat preference for 50% canopy cover (2001 Framework FEIS Volume 3, Chapter 4.4, p-73).

b. Interpretation of Bart is Flawed

The DSEIS continues its flawed reliance on Bart (1995) to claim that owl home ranges may be reduced to 30% suitable habitat without adverse effects on owls. *See* DSEIS, p. 3-205 ("Based on Bart's (1995) findings, the capability for owls to replace themselves exists throughout the entire project area, and that condition would be maintained under both action alternatives." As note in Bond (2007), Bart (1995) found that an owl population is stable when the amount of habitat in the home range is at least 30—50% suitable when juvenile survivorship – one of the variables in the equation – was 0.50. Bart demonstrated that as juvenile survivorship decreases, the greater the proportion of a home range must contain suitable habitat in order for population growth rate to be stable. For example Bart (1995) also showed that when juvenile survivorship = 0.32, then the proportion of suitable habitat within each home range necessary to maintain a stable population was 50%. 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. In addition, Bart (1995) shows that adult survivorship and reproduction increases with increasing proportions of suitable habitat.

4. Impact of Fire on Owls is Overstated

The impact of wildfire in the DSEIS and BE (Sorini-Wilson 2006) on spotted owl is estimated to be quite severe but contradicts a discussion in the spotted owl BE (Wolcott 2006).[11] The DSEIS states that "if a wildfire occurs under the No Action Alternative, approximately 70% of the suitable habitat would be lost, compared to a 20% loss under the action alternatives with the same wildfire." (p. 3-207). However, the spotted owl BE indicates that the effect of wildfire on spotted owl has not been so severe. Further, Bond (2007) discusses how wildfire does not impact spotted owl territories this severely.

In addition, we note, in response to the Forest Service's claim that logging in spotted owl territories is necessary to protect these areas against wildfire, that Alternative 5 would achieve fire protection purpose without removal of the large trees that contribute to owl habitat quality throughout the planning area.

5. Cumulative effects analysis is inadequate.

The BE lists Forest Service projects planned up until 2005 for cumulative effects. Since the BE was written, there have been several projects planned and implemented on the Sierra NF including the High Sierra fuel break, the Jose Central, Sugar Pine and Fish Camp fuel reduction projects, as well as several more allotment renewals approved and proposed on the forest in the past 3 years (Sierra NF quarterly schedule of proposed actions, 2007-2008). As for activities on

[11] The BE discusses in some detail the lack of impacts of wildfire and smoke to spotted owls. Studies and anecdotal evidence are considered which show that spotted owls are not disturbed by smoke and nearby fire, and that reproductive rates in spotted owl territories that have burned are higher than overall annual rates of reproduction (Wolcott 2006, p.39-40). Another study noted in the BE states that there is little or no evidence that the presence or severity of fire played a significant role in owl response to fire (Wolcott 2006, p.40).

private land, the BE lists the board foot production of timber on private land in California and concludes "No other past or present activities…have affected the spotted owl, so together with the activities in the initial eight management units, *there is no cumulative effect to California spotted owl*." (Wolcott 2006, p.44). NEPA requirements for disclosure of cumulative effects are far greater than that attempted in 2006 for the KRP. As stated in our previous comments the Forest Service failed to adequately consider cumulative effects. *See* SNFPC (2006a).

6. The DSEIS Does Not Provide an Adequate Plan for Adaptive Management

The DSEIS also still fails to sufficiently describe the projects research methodology and present to the public how research and adaptive management goals will be met. We reiterate our comments on that issue set forth in SNFPC 2006a, 2006b and 2007.

VII. REQUESTED ACTION

For the foregoing reasons, the Legacy urges the Forest Service to revise the DSEIS to clarify the description of Alternative 4 and the address aspects of the analysis of effects that we mention above. We also would like to meet and discuss with you further refinement to Alternative 4 in the interst of developing an alternative that we can mutually agree benefits fisher in the short term and addresses other longer term improvements to habitat quality.

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Respectfully submitted,

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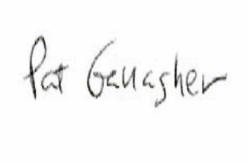

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ATTACHMENT 1