Sierra Forest Legacy
Protecting Sierra Nevada Forests and Communities

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Re: Comments on the KREW draft environmental impact statement (DEIS)

Dear Ms. Tapia:

These comments on the KREW draft environmental impact statement (DEIS) are submitted on behalf of Sierra Forest Legacy and the Sierra Club. We have commented on aspects of this project beginning in the late 1990s. During this time, we have consistently expressed our concern over the design of this project and the level of impact anticipated to sensitive species and old forest and meadow habitats that support these species. The issues and concerns we expressed on earlier iterations of this project remain unresolved in the present design. We incorporate by reference all previous comments submitted on the Kings River Project, including but not limited to scoping comments, comments on draft environmental documents, and appeal comments for analyses presented by the Forest Service in 2005 to present.

I. Summary

The KREW project is defined by two management units, Providence and Bull, covering in total approximately 3,057 acres. Proposed activities include commercial tree harvest, prescribed burning, other fuels reduction, tree planting, application of herbicides, and other vegetation management practices. Thinning treatments are proposed for 1,715 acres of the total project area. Approximately 680 acres of the thinning treatments are included in the Kings River Experimental Watershed Study (DEIS, p. 2-57).

The Providence unit occurs within an area that is critical to the persistence of fisher in the Sierra Nevada. Ongoing research indicates that several den sites have been detected within a mile of the project boundary and home ranges of male and female fisher include the project area. Fisher habitat is characterized by dense conifer forest with structures suitable for denning and resting (Zielinski et al. 2004a and 2004b, Purcell et al. 2009). Providing for fisher habitat in the short and long term is critical to its persistence in the project area as well as the persistence of the larger population. The lack of fire resiliency of the forested areas is also a concern in the project area. We recognize that the reduction of surface and ladder fuels is important to improve the fire resiliency of the habitat. As noted in our scoping comments, the challenge for this project is to strike an appropriate balance between habitat benefits for fisher in the short term while improving the resiliency of the stands. The proposed action in the DEIS falls short of the

appropriate balance and unnecessarily degrades fisher habitat placing this population at greater risk of extirpation. Further, the DEIS fails to evaluate the application of the protection required by the forest plan for den site protection and requested in our scoping comments.

The Bull unit occurs within occupied habitat for Yosemite toad (Sanders 2006). Seven meadows supporting Yosemite toad are located within or adjacent to the Bull unit. As a group, these meadows are more than 2.5 miles from the nearest occupied meadows. Movement to and from breeding sites is estimated to be approximately 0.6 miles including moving over extensive snowfields from over-winter hibernation sites in forested areas (California Department of Fish and Game 2002). If as a result of habitat alteration or disturbance Yosemite toads are extirpated from these meadows, the ability for the species to repopulate this suitable area may be prevented because the distance to the next occurrence exceeds the dispersal distance (Sanders 2006). Further, recent monitoring results from the Bull Creek watershed indicate that Yosemite toad has moved up to 1,250 meters (about 0.77 miles) from breeding sites with average movements of 275 meters (0.17 miles). As noted in the DEIS (p. 3.7-46) this range of movement is far greater than the approximately 30 meter no disturbance buffer provided under any alternative in the DEIS. Due to the importance of these occupied meadows to the overall distribution and persistence of Yosemite toad we asked in our scoping comments for conservation measures to be designed to limit the potential to crush any life stage of this species and to limit damage to burrows. Design measures or an alternative was not developed to address this issue. The DEIS clearly identified that this population of Yosemite toad may be extirpated. Federal listing of this species is already warranted. Extirpation of this significant population is not consistent with Forest Service direction to not contribute to a trend toward federal listing.

As a general matter, we object to the KREW Project to the extent that it deviates from the standards and guidelines contained in the 2001 Record of Decision for the Sierra Nevada Forest Plan Amendment ("2001 ROD") and implements the 2004 Record of Decision for the Sierra Nevada Forest Plan Amendment ("2004 ROD"). In Sierra Forest Legacy v. Rey, 577 F.3d 1015 (9th Cir. 200 9), the Ninth Circuit held that the Forest Service violated the National Environmental Policy Act (NEPA) in adopting the 2004 Framework by failing to consider any reasonable alternatives. Because the Forest Service violated NEPA in adopting the 2004 Framework, logging projects that implement and rely upon the 2004 Framework are also contrary to law [see e.g., *Klamath Siskiyou Wildlands Ctr. v. Boody*, 468 F.3d 549, 562 (9th Cir. 2006), *Northwest Ecosystem Alliance v. Rey*, 2006 WL 44361, at *8 (W.D. Wash. 2006), *Citizens for Better Forestry v. USDA*, 2009 WL 1883728, at *13 (N.D. Cal. 2009)]. Thus, to the extent that the KREW Project implements any of the changes to the 2001 Sierra Nevada Forest Plan Amendment made by the 2004 ROD, the project is contrary to law.

Lastly, we wish to address the research aspects of this project. As a general matter, we support research to increase our understanding of the environment and the effects that humans have on natural resources. Evidence of our support is demonstrated by our participation or support of a variety of studies, including the Sierra Nevada Adaptive Management Project (SNAMP), fisher study submitted to Joint fire Sciences Program, fisher assessment undertaken by Conservation Biology Institute, and meta-analyses conducted for California spotted owl. Key to our participation or support in scientific study is the principle that the experimental design does not compromise at-risk species. From early in the planning of the KREW project, we have indicated

that the issues related to fisher and Yosemite toad conservation are acute and need to be addressed. The Proposed Action and alternatives as presently designed still fail to address the conservation needs of these species.

The resiliency and sustainability of an ecosystem is defined by a variety of attributes, including the health and persistence of rare species. The actions proposed in the DEIS fail adequately to minimize impacts to fisher and Yosemite toad. This failure jeopardizes their persistence in the project area. This outcome is contrary to the stated purpose and need to create a more sustainable landscape and Forest Service direction to conserve species at risk.

Due to the deficiencies summarized above and detailed in the comments below, we ask that the DEIS be revised to include an analysis of additional alternatives and analysis that address the issues we have presented in previous comments on the Kings River Project, raised in scoping comments for this DEIS, and describe in detail below.

II. Purpose and Need for Action

The DEIS (p. 1-10) generally identifies two purposes of the proposed action:

- Ecological restoration to improve forest resilience and reduce risk of "uncharacteristically severe fire"
- Public health and safety
- Research to examine the response of headwaters systems to management practices that address ecological restoration

In several ways, the DEIS overstates the urgency or need for action related to the purposes stated above.

The DEIS (p. 1-10) states:

> Currently these conifer stands are well above normal stocking levels (stand densities) resulting in a decline in growth, vigor and resiliency thus increasing a stand's potential for higher rates of mortality.

The data presented in Appendix D does not support this claim. Current stocking levels for about 21% of the area to be treated are less than 60% SDImax (DEIS, Appendix D). This data does not support the claim that stocking is "well above normal stocking levels." Furthermore, the concern expressed about "higher rates of mortality" fails to recognize the benefits of tree mortality and density related defects that could lead to the development of living and dying trees with attributes that are important to the creation of denning and resting sites for fishers.

The purpose and need also calls attention to public health and safety. However, the Bull unit where about half of the thinning treatments are proposed does not occur near to communities and is outside of the wildland urban interface. Current conditions in the Bull unit are predicted to be dominated by surface and passive fires under severe (97^{th} percentile) fire weather conditions (DEIS, p. 3.2-20; Fuels Report, p. 10). The remoteness from human communities and the current condition of the landscape do not reflect an urgent need to log the Bull unit.

The need to conduct research is also identified as a purpose. The need is defined in terms of understanding the effect of management practices on headwater streams. Fundamentally, there is nothing in the study design that requires activities of a specific level of disturbance be examined. Activities that result in less disturbance, yet still meet project objectives are legitimate treatments to study. Information from such a study would be of direct benefit in areas like the Providence unit where there are apparent conflicts among fisher management and meeting other objectives. Lastly, the DEIS (p. 1-10) appears to imply that the other studies ongoing in the KREW watersheds and larger area (e.g., NEON, Critical Zone Observation Program) are somehow dependent on the KREW project being implemented. This is not the case. These other studies will continue whether or not the KREW treatments are implemented.

For the reasons stated above, the urgency for the need to act is overstated in Chapter 1 and should be revised.

III. Description of the Project

A. Data and Mapping Inconsistencies Within the DEIS

There are inconsistencies in the maps and table presented that make it difficult to understand the area being affected by the treatments. For instance, Table 1-2 (DEIS, p. 1-13) indicates the following information:

	Reported in Table 1-2 (acres)
Providence	
Thinned inside experiment	183
Thinned outside experiment	741
Total	**924**
Bull	
Thinned inside experiment	494
Thinned outside experiment	250
Total	**744**
Grand total	**1,668**

This summary does not appear to match the area affected reported in the tables in Chapter 2. For instance, Table 2-4 reports a total of 1,715 acres being thinned. The tables in Appendix D reflect a third characterization of the area affected; the total area in that appendix proposed for tree removal is 2,169 acres.

The map of "timber sale units" (Figure 2-1) also appears to be different from the tables or summaries mentioned above and other maps in the DEIS. For instance, Unit 299 is reported to have 103 acres in Figure 2-1, whereas Table 2-4 reports this as 129 acres of thinning and 28 acres with no thinning. Figure 2-1 also includes units that are not referenced elsewhere (e.g., Unit 6, 31 acres) and units appear in tables but are not indicated on this map (e.g., Unit 306 is in Table 2-4 and Appendix D, but does not appear on a map). The "timber sale unit" map is also

different from the other maps in Chapter 2. For example, the areas to be thinned shown in Figure 2.8 (DEIS, p. 2-42) are, in some cases, more extensive than the areas shown in Figure 2-1 and in other cases less extensive.

Given these types of discrepancies in the data being presented, it is difficult to assess the impacts of the project on the environment. It also calls into question the data that used in the biological evaluation to evaluate impacts on sensitive resources such as fisher and Yosemite toad. We ask that the DEIS be revised to present a consistent and clear description of the alternatives, including detailed maps and tables characterizing the area affected.

B. Data Inconsistencies Relative to Other Project Related Data

The Kings River Project FEIS (USDA Forest Service 2006, Appendices I-2 and I-4) included detailed stand level data for the KREW units. In our review of this project, we referred to that data since it provided additional detail about the proposed treatment units. We found that there were inconsistencies between that data and the information presented in the DEIS (Appendix D). As a specific example, we have compared similar attributes from the two datasets in the table below for the Providence unit.

Plan ID	From the Kings River FEIS (2006)		From the KREW DEIS (2011)		BA Change 2006 to 2011
	Area (acres)	Before Basal Area (ft^2/ac)	Area (acres)	Before Basal Area (ft^2/ac)	
208	36	157	35	132	-25
235	96	234	97	229	-5
236	59	237	58	160	-77
250	28	197	28	267	70
280	75	216	75	225	9
281	71	192	71	199	7
292	30	188	30	119	-69
295	124	232	124	221	-11
299	160	216	157	227	11
301	64	203	65	219	16
306	138	156	137	186	30
316	158	229	158	220	-9
331	124	181	123	146	-35
346	48	222	48	256	34
365	85	201	84	221	20
380	165	222	163	225	3
449	166	236	166	222	-14
450	84	207	84	131	-76

Plan ID	From the Kings River FEIS (2006)		From the KREW DEIS (2011)		BA Change 2006 to 2011
	Area (acres)	Before Basal Area (ft^2/ac)	Area (acres)	Before Basal Area (ft^2/ac)	
454	29	207			
499	71	233	72	227	-6
1043	88	215	88	241	26

We note that since 2006 basal area has increased or decreased more than 70 units for some stands and reflect up to a 37% change for a given unit from 2006 conditions.

We would like to follow up with your staff to understand the factors that caused these differences in the data sets and how this translates to stand conditions.

C. Activities Proposed in Riparian Areas

Table 2-12 (DEIS, p. 2-66) implies that there are differences in activities proposed in riparian area among the alternatives. We were not able to find a description of those differences in Chapter 2. The section on design measures (DEIS, p. 2-34) identify among other things two measures that apply to all alternatives:

- WldBMP 10- Conserve riparian ecosystems by implementing streamside management zone protection measures.
- WldBMP 11- Create a system of Old Forest Linkages (OFL) that are 300 ft buffers along perennial streams with an overstory forest canopy cover of at least 50-60% and greater tree basal area as compared with adjoining forests.

As presented in the DEIS, other aquatic standards, with the exception of igniting prescribed fire, appear to be the same among the alternatives. (See for example DEIS, p., 2-23 and 2-24). Please more clearly explain the basis for concluding that Alternative 4 "Meets research objectives in large part except for riparian areas" (DEIS, p. 2-66, Table 2-12).

We also do not see a specific description of the activities that are proposed within the riparian conservation areas (RCAs). As defined in the DEIS, these zones are intended to be managed for the benefit of the aquatic and riparian habitats. See for example BMPs 1-18 and 1-19 (Aquatics BA/BE, p. 29) that indicate activities will be deigned and limited to activity that "maintains or improves riparian and aquatic values." The actions being proposed are not clear and it can not be evaluated how these will maintain or improve conditions within the RCA.

IV. Comparison of the Alternatives

Table 2-12 (DEIS, p. 2-61) characterizes the degree to which the alternatives meet various aspects of the purpose and need. We ask that Table 2-12 be revised to address the following issues.

The first purpose and need identified is "Restore historical pre-1850 forest conditions across a large landscape." The purpose and need in Chapter 1 does not identify pre-1850 forest conditions as a desired target condition. Including this as a purpose and need is a self-fulfilling prophesy since the DEIS appears to adopt, in part, the stance that pre-1850 forest stand conditions are characterized by an inverse-J shaped stocking curve (See for example Rojas 2004, complete document in previous Kings River project files). This perspective is in contrast to that provided by North et al. (2009, p. 23):

> The reverse-J diameter distribution prescribes a stand structure with a surplus of small trees and limited space for large trees. Such a distribution is inconsistent with historical Sierran mixed-conifer forests where fire reduced small-tree abundance while retaining fire-resistant, large-diameter trees (North et al. 2005a, 2007) (fig. 11). Research suggests that fire-prone forests rarely had reverse-J diameter distributions (Bouldin 1999; O'Hara 1996, 1998; Parker and Peet 1984).

Thus, Alternatives 4 and 5 are based on a different view of the pre-1850 forest conditions. Further, North et al. (2009, p. 8) cautions that "management may fail if focused on re-creating past stand conditions using strict structural targets."

Based on the change in focus of the purpose and need in the DEIS, the references to pre-1850 forest conditions should be removed from the Table 2-12. Elsewhere in Table 2-12 are attributes that appropriately evaluate the degree to which the alternatives address the purpose and need, stated in Chapter 1, to "Restore resilient forest structure: increase resilience, reduce tree densities to increase tree vigor."

The second purpose and need in Table 2-12 is "Gain knowledge of unevenaged silvicultural strategy & prescribed fire effects on watershed condition." The conclusion for Alternative 3 is "Limited research information would be gathered and the research design would not be fully implemented due to the more limited vegetation management." There is no information presented to support this conclusion. The same post-treatment information would be collected under Alternative 3 compared to the other alternatives. This would result in information provided about less intensive forest treatments that still meet the purpose and need, as summarized in Table 2-13, to increase fire resiliency, reduce tree mortality, provide for large diameter trees now and in the future, improve public health and safety, and introduce prescribed fire. Our review of the KREW study plan does not indicate a requirement for a treatment of a specific intensity. The study plan (p. 1) does identify the following activities in the project:

- Prescribed fire and uneven-aged, small-group tree harvesting
- Maintain older trees, large snags, and large woody debris throughout the landscape

- Maintain a mosaic of vegetation types and ages that mimic, to the extent possible, the historical distribution of vegetation resulting from frequent, low-intensity fires prevalent before European settlement of the western United States

The following goals are defined:

- Quantify the existing condition and variability in the characteristics of headwater stream ecosystems and their associated watersheds
- Evaluate the effects of forest management on the characteristics of stream ecosystems and their associated watersheds

These activities and goals are consistent with Alternative 3. We ask that Table 2-12 be revised to reflect the contribution that Alternative 3 could make to improve our understanding about the response of headwater systems to management.

We note that with the exception of the two items mentioned above, each alternative performed similarly with respect to fire resiliency, public health and safety, stand density related mortality, and reintroduction of fire. More intensive treatments (Alternatives 2, 4 and 5) were not necessary to meet project goals.

V. Pacific Fisher

A. Additional Information and Analysis Requested

We asked in our scoping comments on the DEIS that fisher den buffers and home ranges be delineated and that the relationship between the proposed treatments and existing vegetation be evaluated and displayed. We requested this information to allow us to compare the effects of the alternatives on fisher and known denning areas. This information is not presented in the DEIS or biological evaluation (BE). The BE does to a limited extent identify the location of den site buffers for a number of sites, but does not specifically state what areas within the buffer would be subject to treatment. We also asked that the DEIS identify the existing canopy cover and the canopy cover estimated to remain following treatment of each unit. This information is not presented in the DEIS or BE. The DEIS does summarize the post-treatment canopy cover for the entire area to be treated, but this is not the level of detail we requested for review.

The ability to evaluate the location of den buffers and the estimated changes in canopy cover is essential to our review of the alternatives and our ability to suggest design measures to further reduce impacts on reproducing fishers. This information is also important to evaluate the magnitude of impacts from the project on fisher.

B. Reductions in Canopy Cover Not Adequately Addressed

Fisher home ranges and rest sites are strongly associated with forests with high canopy cover (Mazzoni 2002, Zielinski et al. 2004a, Zielinski et al. 2004b, Purcell et al. 2009). Mazzoni (2002) and Zielinski et al. (2004a) each found that over two-thirds of a home range was composed of stands with canopy cover greater than 60% and that females were associated with

home ranges with, on average, 70% of the area in dense canopy cover (Zielinski et al. 2004a). Rest sites were found to have even higher canopy cover ranging from 70 to 90% (Zielinski et al. 2004b, Purcell et al. 2009).[1]

The analysis in the BE primarily relies on defining suitable habitat for fisher as moderate to larger tree stands with greater than 40% canopy cover. This focus overlooks the importance of high canopy cover and contiguous blocks of forest with high canopy for both den sites and throughout the home range (Zielinski et al. 2004a, Purcell et al. 2009, Lofroth et al. 2010). The environmental analysis should be revised to distinguish between areas with dense canopy cover and the importance of this type of habitat to fisher.

This analysis is important at both the home range and rest site scales. At the home range scale (e.g., across the planning area) the BE (p. 106) reports that the existing canopy cover in the KREW unit is approximately 57%. This is somewhat lower than the above research indicates is favorable for fishers. The proposed action and alternatives reduce this canopy cover to approximately 49%. Because this area is actively used by female fishers, the desired or favorable condition for fisher would be to maintain or increase canopy cover.

Recent efforts to apply rest site characterizations to the prediction of rest site suitability across the landscape indicate that thinning treatments can significantly reduce the quality of rest sites. Zielinski et al. (2010) used forest inventory and analysis (FIA) data from rest sites to create a model predicting rest site suitability. When thinning treatments were applied to actual landscapes on the Sierra National Forest suitability was reduced significantly for treatments that imposed 30" or greater diameter limits and reduced canopy close to 35-40%. Less intensive treatments (e.g., 12" dbh limit and retention of 60% canopy cover) resulted in only modest reductions in landscape level suitability for resting. This information and analytical tool should be used to evaluate the effects of the alternatives on fisher denning and resting sites. This tool could also be used to identify treatment units for which a less intensive treatment would benefit fishers while still meeting other project objectives.

C. The Effects of the Forest Plan Amendment to Den Site Buffer management was not Analyzed.

The proposed changes to the den site buffer management were not analyzed in the DEIS or BE. Two changes are proposed for all alternatives. First, the limited operating period is shortened while simultaneously being applied over the entire project area. This has the likely limited benefit of reducing disturbance to undetected den sites. The benefit is limited in this case because fishers are intensively surveyed, collared and tracked in the project area. The potential for undetected fishers to be denning in the project area is low.

The second change is to eliminate the restriction to treat only surface and ladder fuels within den buffers that occur in the wildland urban interface (WUI). There is no assessment of the specific location of the den buffer(s) and the management activities proposed within the buffers(s). The effects of reducing or degrading habitat quality on specific den sites are not evaluated. Further,

[1] Canopy cover estimates vary somewhat based on the methodology used to estimate this attribute.

there is no analysis demonstrating that treatment within den site buffers is necessary to "achieve fuels objectives for the urban wildland intermix zone" (USDA Forest Service 2004, p. 61).

The DEIS should analyze the effects of implementing the direction in the forest plan for den buffer management and determine if treatment within the buffer is necessary to meet fuel objectives.

D. Forest Plan Amendment for Den Buffer Management

The delineation of den site buffer is one of the significant elements identified in the forest plan to conserve fisher. In conversations with staff from the Regional Office and the Sierra National Forest, we have consistently expressed our objections to serial forest plan amendments that provide exceptions to den buffer management restrictions within the Southern Fisher Conservation Area.

The den buffers were explicitly intended to remain in effect "long as habitat remains suitable or until another Regionally-approved management strategy is implemented" (USDA Forest Service 2004, p. 61). A forest plan amendment for den buffer management was already been granted on the Sierra National Forest in 2010. We expect the forest to not make further exceptions to den buffer management.

E. Reduction in Fisher Habitat Suitability Not Adequately Disclosed

Spencer et al. (2010) found that the best predictors of fisher occurrence in the southern Sierra Nevada were above ground tree biomass, elevation, and precipitation. With respect to biomass, there was no plateau evident in the response, i.e., increases in biomass always indicated increased probability of occurrence of fishers. This suggests that as a general matter, reductions in tree biomass reduce fisher occupancy. This study also relates habitat quality to a demographic model in order to assess the status of fisher in the southern Sierra Nevada. Habitat that provides a source of fishers to the population is limited to a narrow elevational band in the region. This clearly is evident for the KREW project and surrounding area. Their demographic modeling for fisher found that equilibrium population size was highly sensitive to female survival (Ibid.). Further, they found based on modeling of habitat and home range, the population size was extremely small and at risk of extirpation.

The potential effects of habitat degradation and loss resulting from the KREW project are further exacerbated by activities being undertaken on private lands. In the area immediately adjacent to the KREW project, logging activities are proposed that would likely have a dramatic effect on fisher habitat quality (BE, p. 112).

The simple inference in the BE (p. 110) suggesting that perceived habitat stability on the Sierra National Forest combined with an "increasing spatial distribution"[2] indicates that management activities have not reduced suitability should be revised in light of the above information. Management activities are estimated to negatively influence habitat quality and such effects can

[2] It should be noted that this is not an increase in the numbers of fisher; rather it is a finding that fishers may be more broadly distributed across the landscape.

have subtle and long lasting impacts to individuals. Small populations, such as this fisher population, are especially at risk to disturbance. This risk to species persistence is not adequately disclosed or mitigated in the DEIS.

The above information should be considered in evaluating the potential effect of management on persistence of individual fishers and the population dynamic as a whole.

VI. Yosemite Toad

Yosemite toads exist in several isolated locations in the Kings River watershed including a meta-population in the Bull unit. The Yosemite toad over-winters in rodent burrows (Jennings and Hayes 1994). They emerge from hibernation as soon as snowmelt pools form near their over-wintering sites (Karlstrom 1962; Kagarise Sherman 1980; Jennings and Hayes 1994). Observed emergence times range from early May to the middle of June (Kagarise Sherman 1980). Martin (2009) found that Yosemite toads dispersed significantly farther than previously assumed and recommended a "core habitat protection zone that extends a minimum of 500m from the center of all actively used breeding pools." Monitoring of Yosemite toad in the Bull watershed indicates that toads range over 1250 meters and utilize upland forests.

A. Activities Proposed Violate the Forest Plan

Yosemite toad breeding activity and dispersal takes place at the same time as the proposed treatments adjacent to breeding meadows. A limited operating period (i.e., no project activities within 0.6 miles of the occupied meadows between May 1 and August 15) and significant buffers to limit ground disturbance (i.e., no mechanical treatments within 500 feet of the occupied meadows) were proposed by the Forest Service's aquatic biologist in 2006 (Sanders 2006) for the purposes of limiting direct effects on all life stages of this species and to limit the destruction of burrows. We asked during scoping comments that these measures be incorporated into the project design. The measures recommended by Sanders (2006) or other conservation measures were not incorporated into the project design. Instead, intensive activities are proposed within the 300-foot riparian conservation area (RCA) associated with meadows utilized by Yosemite toad. The proposed activities are not consistent with direction in the forest plan to enhance or maintain habitat for meadow dependent species within the RCA.

The 2004 Framework (USDA Forest Service 2004, p. 42) defines the RCA around a meadow as 300 feet. Within this area, the forest plan allows "mechanical ground disturbing fuels treatments, salvage harvest, or commercial fuelwood cutting within RCAs or CARs when the activity is consistent with RCOs" (Ibid., p. 64). Riparian Conservation Objective (RCO) 4 directs that activities in RCAs "enhance or maintain physical and biological characteristics associated with aquatic- and riparian-dependent species" (Ibid., p. 33). The activities proposed within 300 feet of meadows occupied by or providing suitable habitat for Yosemite toad were not designed to enhance or maintain habitat. As clearly described in the BE (p. 81) the proposed activities place this meta-population at serious risk of extirpation and the remoteness of this site to other Yosemite toad occurrences could prevent recolonization of the site. This outcome is in direct conflict with the direction in the forest plan and is likely to increase the trend toward Federal listing under the Endangered Species Act.

The alternatives should be revised to comply with the forest plan and to include the conservation measures recommended by Sanders (2006) or other such measures that enhance and maintain habitat utilized by Yosemite toad.

B. Treatments are not Necessary to Address the Purpose and Need

Setting aside the inconsistency of the proposed treatments with the forest plan, the completion of the proposed activities within 500 feet occupied meadows (Sanders 2006) is not necessary to increase forest resilience, reduce the risk of uncharacteristic fire, or address public health and safety.

The occupied meadows are located primarily in Units 811, 838, and 1057. Current stand densities range from 45 to 49% of SDImax. These densities are well below the lower limit of self thinning (i.e., 60% SDImax) and are not at high risk of density induced mortality. The predicted fire type for the current condition in the areas around occupied meadows (DEIS, p. 3.2-20) also indicates that fire risk is not extreme. A rough comparison of the occupied habitat map (DEIS, p. 3.7-47) and the fire type map indicate that surface and conditional fire is estimated to occur near these meadows under extreme weather conditions. This means that under more commonly encountered fire weather conditions fire type would be even less of a concern. Further, as indicated from an examination of the fire type maps for any alternative, there are collateral benefits to adjacent untreated areas from the treated areas. That is to say, the occupied meadow and its buffer will benefit from treatments adjacent to them and this will affect predicted fire types in the treated and untreated areas. Thus, the treatments within the 300-foot RCA around these meadows or a 500-foot buffer around a meadow occupied by Yosemite toad are not necessary to address forest health or fire risk concerns.

The proposed activities that adversely affect Yosemite toad also do not meet the research objectives stated in Chapter 1. Chapter 1 identified the KREW project as designed to achieve forest restoration goals with a research component "to characterize headwater ecosystems and assess the response of the ecosystem to these management practices. The forest ecological restoration management practices include treatments designed to reduce the effects of uncharacteristic wildfire, drought, invasive species and insect attack, while maintaining/restoring habitat for plants and wildlife species including sensitive species such as California spotted owl, Pacific fisher, and Yosemite toad." Chapter 1 specifically identifies that habitat for Yosemite toad will be maintained and restored. As described above, the Proposed Action or alternatives clearly does not meet this purpose and need for Yosemite toad.

VII. Range of Alternatives

The Forest Service is required to "rigorously explore and objectively evaluate all reasonable alternatives." 40 CFR 1502.14(a). The purpose of these requirements is to "provid[e] a clear basis for choice among options for the decisionmaker and the public." 40 CFR 1502.14. With respect to den buffers and habitat buffers for occupied Yosemite toad habitat, the DEIS does not provide alternatives to the proposed approach of over-riding these protections. Alternatives that address the issue could include:

- Creating den buffers for all areas within the project
- Creating den buffers for the non-experimental unit portion of the project
- Creating 500-foot buffers (no disturbance) around meadows occupied by Yosemite toad (Sanders 2006)
- Creating 500-meter buffer around pools occupied by Yosemite toad (Martin 2009)
- Establishing a limited operating period for Yosemite toad to minimize killing animals
- Identifying dispersal areas with high return rates for Yosemite toad and delineating buffers to those areas
- Establishing a limited operating period (LOP) during the breeding and dispersal season fro Yosemite toad (Sanders 2006)

The conservation measures above directly address reducing the adverse impact of the project on at-risk species and could potentially avoid jeopardizing the persistence of individuals and placing the populations at risk. These measures should be evaluated in the DEIS.

VIII. Conclusion

For the reasons noted above, we do not believe that the KREW DEIS adequately addresses the comments we submitted during scoping. Further, the DEIS does not meet the stated purpose and need, fails to develop a reasonable range of alternatives that address the issues, and fails adequately to disclose impacts. These failings are violations of the National Environmental Policy Act (NEPA). The alternatives as designed also jeopardize the persistence of fisher and Yosemite toad in the project area. The small population sizes and limited numbers of these two species place additional importance of individuals to the persistence of these species. For these reasons, the proposed project violates the National Forest Management Act (NFMA) and direction to maintain viable populations across the planning area. We ask that the DEIS and alternatives be revised to comply with NEPA and NFMA and that a revised DEIS be circulated for public comment.

We appreciate the opportunity to provide comments on the KREW DEIS. We are available to meet and discuss these comments. Please contact Susan Britting at the email address or phone listed below if you have questions or wish to arrange a meeting.

Sincerely,

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