Sierra Forest Legacy
Protecting Sierra Nevada Forests and Communities

October 21, 2013

Bald Mountain Interdisciplinary Team
High Sierra Range District
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Sent via email to: comments-pacificsouthwest-sierra@fs.fed.us

Re: Comments on the draft environmental assessment for the Bald Mountain Project

To the IDT:

These comments are submitted on behalf of Sierra Forest Legacy. We have reviewed the draft environmental assessment (EA) and various specialist reports. We found that the document suffers from a number of violations to the National Environmental Policy Act (NEPA) and National Forest Management Act (NFMA). We provide details of our review below, but more generally we find:

- The analysis lacks the clarity and information necessary to adequately evaluate the impacts of Alternative 2 on the environment;
- The analysis fails adequately to evaluate impacts on sensitive resources;
- The likely significant impact on sensitive resources, e.g., impacts to listed species, proposed species and species that are at risk and declining, requires the preparation of an environmental impact statement (EIS) for the project; and
- Alternative 2, as proposed, violates the forest plan and NFMA.

We find it a huge disappointment to be in the position of objecting to this project through the NEPA process. We participated in good faith to make proposals and resolve resource issues during the project development phase of this project. As we will describe below, there were numerous instances where your team chose to disregard our feedback or proposals. As we have clearly stated throughout this process, the high degree of sensitivity of resources demands that projects be designed to limit short term losses and undertake actions for long-term improvement that avoid sacrificing resources in the short term. Alternative 2, as best we can determine, falls short of this mark. We foresee that future projects in the Dinkey CFLRP will pose even greater challenges since the effects of past and recent actions on sensitive resources are accumulating on the landscape, especially with the annual planning cycle that drives your agency.

I. Overview of the Project

The Bald Mountain project proposes to treat approximately 5,728 acres within a boundary area of 17,360 acres. Commercial logging is proposed on approximately 4,686 acres. The project area and treatment units occur in areas occupied by a high number of species at risk, i.e., listed species, species with small populations, or species with declining population trends that are known to be adversely impacted by logging (USDA Forest Service 2013b) including California

spotted owl, fisher, great gray owl, Yosemite toad, and Sierra yellow-legged frog. Stated treatment objectives include, restoration, increasing fire resilience, reducing risk to life and property, and protection of sensitive species and habitat types.

II. Issues related to Compliance with National Environmental Quality Act (NEPA)

A. Insufficient Information Provided in the Document

We raised a similar concern with regard to the contents of the scoping notice. Unfortunately, the draft EA suffers from the same problem. The document does not provide enough detail about the existing habitat conditions and potential changes to habitat as a result of the alternative. In particular, the draft EA does not provided the following essential information:

- Stand tables that indicate the current condition of the unit and the condition estimated after treatment, e.g., basal area, CWHR type, QMD, canopy cover, TPA by size class (0-12", 12-20", 20-30", >30" dbh), snags per acre, down wood levels,
- Maps that show the relationship between habitat areas, land allocations (such as the wildland urban interface with defense and threat zones), and treatment units

This information is necessary to evaluate the effects of the alternative on sensitive resources such as spotted owl, fisher, and great gray owl since logging can result in habitat degradation for each of these species and the degree of habitat alteration is a determining factor in assessment of significant of impacts. For several of the sensitive species, their nest, den, rest locations and locations of more intensive use in the project area are known, i.e., they are not potential species. Finer scale information is needed to evaluate the effects of the proposal on these known areas of occupation. Some of the information on stand characteristics is provided in an aggregate form in the biological evaluation (BE)(see for example, p. 115, Table 34), yet this does not provide the level of detail necessary to evaluate site specific impacts. Furthermore, the estimates of tree removal in this example suggest that treatment impacts to larger size trees may in fact be less than might otherwise be inferred from the narrative about each prescription in Chapter 2 of the EA, e.g., Table 34 indicates that in the goshawk and fisher restoration prescriptions, no trees >20" dbh are to be removed. It is not possible to interpret Alternative 2 without stand level details.

We ask that you provide stand tables with habitat characteristics and the estimated change in habitat resulting from the alternative.[1] We also ask that you provide project area maps that show the relationship between habitat areas, the wildland urban interface, and treatment units. Maps of the land allocations and treatment areas are also necessary to evaluate whether the proposal follows the forest plan. This information is especially important in evaluating the activities that are permitted by the forest plan in allocations such as protected activity centers and den buffers and that vary depending on location within the WUI or outside the WUI.

Please provide complete legends for the maps included in the environmental analysis. In some cases, the legends associated with the maps provided in the EA and BE did not fully explain the symbology in the map or they were not legible. For instance, features on the map were not noted

[1] We are aware that this information exists for the Bald Mountain project and are confused about why it was not included in the EA. The information could have been easily incorporated into a table and included in Appendix B.

in the legend (see for example the BE, p. 209, Appendix A), the legend contained acronyms or abbreviations (Ibid.) or the labels for some maps were not legible (even when a zoom function was used on an electronic document).

B. Lack of Clarity in the Description of the Alternative

Nine prescriptions are described under Alternative 2. We are unable to detect differences among several of these alternatives and ask that descriptions be revised to emphasize their differences, if in fact they are different. For instance, the "owl restoration," "goshawk restoration," and "fisher restoration" all appear to be identical. Also, the narrative, with the exception of the Table 2 referring to stand basal area, appears to be the same for "restoration" and the previously mentioned owl, goshawk and fisher restoration.

The description of the alternative and the rest of the EA imply that the prescriptions were designed collaboratively and evolved from the implementation of prior projects. We have been involved during the development of this project and the prior projects, but at no time have we ever discussed with the IDT the information in Table 2. This table establishes the "residual basal areas within restoration thinning areas" and reports significantly lower basal area ranges than utilized in prior projects. The narrative indicates that the ranges in the table will be applied to the landscape and implies that topographic and other site variability will fall within these ranges. This outcome would be a significant departure from the approach in Dinkey South Project (USDA Forest Service 2009, Appendix G, p. G-21) where post treatment basal area ranged from 125 ft^2/acre to 235 ft^2/acre with the are weighted post treatment averaging 192 ft^2/acre. As a general matter, far more basal area was retained in Dinkey South as compared to Table 2. Even if one distinguishes the owl, goshawk and fisher restoration prescriptions as retaining higher basal area than reported in the table, that leaves the majority of the project area (2,712 acres) subject to these lower basal area ranges. Please explain how the ranges in Table 2 are consistent with previous work in the Dinkey CFLRP.[2]

We also find that the legend for Map A-2 (EA, Appendix A, p. 3) includes treatments not described under Alternative 2 in Chapter 2 of the EA.

Figure 1. Legend from Map A-2 from the Bald Mountain EA (Appendix A, p. 3).

Notably, descriptions of the "nestbuffer" and "Restoration LCT" are missing from Chapter 2.

[2] We note that Table 22 (EA, p. 107) displays post treatment basal areas that reflect much high values. This further confuses our understanding of the likely outcomes expected from Alternative 2.

C. 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. The draft EA, however, considers only the proposed action and no action alternatives. The reasons offered in the EA for eliminating alternatives from detailed review are neither persuasive nor legally sufficient.

1. Alternatives Eliminated from Detailed Study

The EA identified three alternatives and rejected each. We believe that the reasons provided for rejecting the proposals to use mixed severity fire without pre-treatment and to create habitat conditions with high densities of snags are not consistent with managing a fire-dependent system in the Sierra Nevada that supports a variety of fire effects. The narrative implies that management using fire without pre-treatment would result in variety of fire effects (i.e., fire of mixed severity) that are inconsistent with the following objectives:

- Conduct ecological restoration in mixed-conifer stands consistent with PSW-GTR-220 (North et al. 2009).
- Create stand structures more consistent with frequent fire reference conditions of species composition, structure, and age/size classes while retaining key fisher rest site habitat.
- Reduce potential for uncharacteristically severe wildfire by reducing continuity of fuels.
- Reduce effects of insects and disease to increase longevity of mature and old forest stands.

There is no scientific or factual support for this assertion. To the contrary, the fire management program in the Yosemite National Park has demonstrated that managed fire without pre-thinning can achieve these objectives and create resilient forests (Collins and Stephens 2010; van Wagtendonk et al. 2012). Please re-evaluate your rationale for rejecting this alternative in light of these studies.

As to the reasons stated for rejecting the proposal to create habitat (two 200-acre areas) with a high density of snags, we are deeply disturbed by the response provided in the EA. During the development of this alternative, we discussed at length and in detail that the purpose of the management action was to provide the snag density in burned forests that support reproductive black-backed woodpeckers. The size of the patches and density of snags was based on habitat characteristics from home ranges in the Sierra Nevada and elsewhere that were reproductively successful (Tarbill 2010, Seavy et al 2012, Siegel et al. 2012, Rota 2013; Siegel et al. 2013). Furthermore, collaborative members submitted a detailed statement explaining the basis for the proposal (Attachment A). Clearly, the IDT did not bother to review this information before it formulated the opinion in the EA (p. 61) that:

> The recommendation was not supported by factual information related to the forest type or wildlife species thought to be benefited. In context, 100 square feet of snag basal area across 400 acres does not allow managers to understand what the prescriptive goal (outcome) is intended.

The proposal unequivocally identified the benefiting species – black backed woodpecker – and established the purpose as undertaking actions to create nesting habitat that is non-existent in the project area. The statement is also extremely disturbing because it suggests that the IDT did not understand the proposal. The purpose of the Dinkey CFLRP is to undertake planning collaboratively with the Forest Service. If the IDT did not understand the purpose of the alternative and how it would provide for habitat conditions that are under-represented and episodic, why didn't they discuss this with those who were supporting the proposal?[3] What is the purpose of "collaboration" if the IDT ultimately shuts themselves in a room and dismisses proposals without understanding them and without factual basis?

We are also very concerned by the perspective implied in the response that snags created by mixed severity fire and occurring in patch sizes (200 acres) that were not uncommon historically would "would lead to even greater fuel loads, making the Project area and nearby human communities susceptible to impacts from an uncharacteristically severe wildfire. Snags decay further over time and would eventually fall to the forest floor, where they would contribute negatively to the fuel loading." The units proposed (Units 7, 976, 980, 1155, and 1156) for snag creation were at a significant distance from areas with infrastructure or people. How would the falling of snags over the course of 20 or more years in remote red fir stands cause nearby human communities to be more susceptible to wildfire?

Lastly, the recent Aspen Fire resulted in a mix of fire effects that are well distributed, within historic range, and within the range seen in recent wildland fires managed by the Yosemite National Park (see for example Collins and Stephens 2010). We expect that fires ignited by lightning that would now be allowed to burn as managed fires under the non-significant forest plan amendment proposed in Alternative 2 would also result in mixed fire effects. We view this as desirable. A variety of fire effects defines the disturbance process that shaped vegetation in the Sierra Nevada. If your reaction to mixed severity (including high severity) effects is to eliminate it, we will lose the biological diversity that depends on these episodic events.

2. Alternatives that should be Evaluated in Detail in the Environmental Analysis

We raised concerns in our scoping comments about degradation of habitat resulting from proposed activities for California spotted owl (CSO), fisher, and great gray owl (GGO). These should have been identified as issues and an alternative(s) developed to address them. We ask that alternatives be developed to address the following issues:

- Limit treatment in PACs (CSO and northern goshawk) to treating surface and ladder fuels, thereby reducing habitat degradation while improving fuel conditions
- Reduce the impacts to fisher by following direction in the forest plan on den buffers and applying a "fisher restoration" prescription to habitat in any treatment unit that contains habitat suitable for fishers

[3] We did not receive any communication from the IDT that they did not understand the proposal.

- Retain as down wood or created snags the largest green trees marked for removal in stands where the numbers of large (>20" dbh) snags are less than 4 snags per acre in mixed conifer types and 6 snags per acre in red fire type.
- Retain in aspen treatment units the harvested large trees as snags or down wood or move the large logs to areas nearby
- Avoid actions that could result in short term loss in habitat quality of meadow-forest areas recently and historically utilized by great gray owl (GGO), e.g., avoid the removal of trees in the 200-foot buffer around meadows with recent and historic detections of GGO and enhance down wood and snags in these areas to provide for perching, foraging and cover for adults and young not yet fledged (Loffland and Siegel 2012).[4]
- Implementation for mixed severity fire on two 200 acre areas to provide for high densities of burned snags to serve as breeding habitat for black-backed woodpeckers

Each of the proposals above allows activities that reduce the fire risk, reduce stand density and can enhance structural heterogeneity – all objectives that meet the purpose and need.

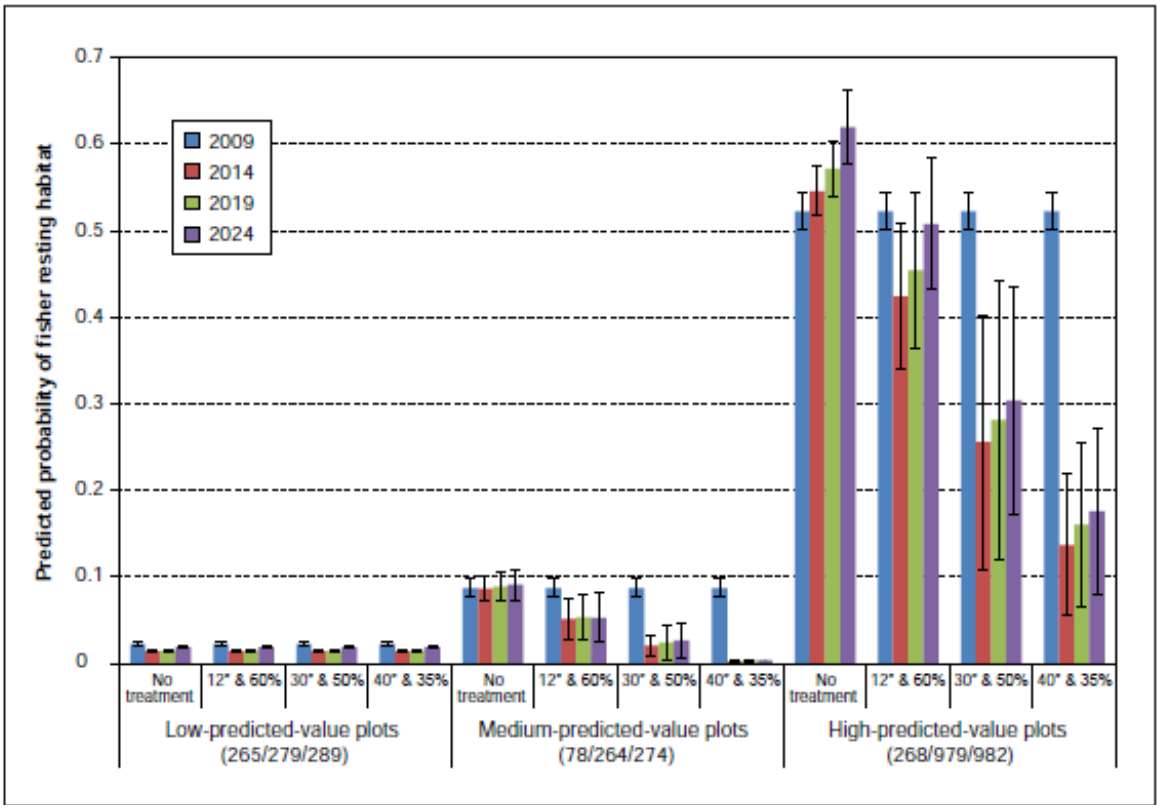
D. Inadequate Analysis of Effects

1. Underestimating Habitat Recovery

The BE (p. 89) states that habitat is expected to recover to pre-treatment conditions within 15 years. There is no analysis or evidence used to support this claim. To the contrary, recent assessments of habitat conditions for fisher following treatments suggest that habitat conditions may not recover for more than 15 years following treatment. Zielinski et al. (2010) examined the effects of treatment on rest sites. This study found that depending on treatment, it could take more than 15 years for a rest site to recover to its pre-treatment condition. Figure 2 illustrates these results and indicates that when treatments remove threes up to 30" dbh and reduce canopy cover to 50% (treatments with similarities to those proposed in Bald Mountain), the probability of the habitat supporting resting remains reduced for over 15 years post-treatment.

[4] From Loffland and Siegel 2012, p. 20: "One limiting factor however is a scarcity of downed trees and snags that extend into the meadow. This species forages by sitting and waiting on low perches over meadow vegetation. It frequently perches on the large branches that extend up from fallen trees that along the meadow edge. These conditions can be created by falling or pushing a few trees over with heavy equipment into the meadow."

Figure 2. Estimates of predicted fisher resting habitat value on the Sierra National Forest as a function of a control and three treatments simulated in the Forest Vegetation Simulator: (1) thinning to a 12-in (30.5-cm) dbh maximum and down to 60 percent canopy cover (12-in & 60%), (2) thinning to a 30-in (76.2-cm) dbh maximum and down to 50 percent canopy cover (30-in & 50%), and (3) thinning to a 40-in (101.6-cm) dbh maximum and down to 35 percent canopy cover (40-in & 35%). FVS assessed the predicted resting habitat value in 2009 and at 5-year intervals until 2024. N = 3 replicate plots for each combination of treatment and class of initial predicted value (low, medium, and high); bars are standard errors. Taken from Zielinski et al. (2010, p. 13).



Results from a second study also conflict with the claims of "recovery" made in the BE. Thompson et al. (2011) examined modeled changes in home range conditions following simulated treatments and a period of growth. This study found that for an attribute like canopy cover that pre-treatment conditions were not achieved for at least 30 years. Both of these assessments suggest that the claims in the BE that habitat will recover within 15 years cannot be supported. These studies indicate that assumptions in the BE would lead to an under estimate of treatment effects. The BE should be revised to reflect these studies and the conclusions about effects adjusted accordingly.

This idea of recovery is embedded in the effects analysis presented in the EA for both CSO and fisher and used to characterize the effects of the project as minimal. Please revise the effects analysis to reflect a longer recovery period and reassess the conclusion about significance of the short term habitat changes.

2. California Spotted Owl (CSO)

a. Population Status

Assumptions about the stability of the California owl populations in the Sierra Nevada have been pivotal to the claim that the nature and intensity of treatments in the current forest plan would not lead to a trend toward federal listing for California spotted owl (USDA Forest Service 2004) or jeopardize the persistence of this species (USDI Fish and Wildlife Service 2006). This same rationale is used in the BE to conclude that project level impacts would maintain the viability of owl:

> Based on the above analysis, the activities of the proposed action are within the scope of effects considered and described by the USFWS in its 12-month finding to not list the California Spotted Owl. Therefore, the proposed action, including the temporary loss of some spotted owl habitat, would not result in any cumulative effects that are greater than those already analyzed by the USFWS when it determined that listing of the California Spotted Owl as Threatened or Endangered is not warranted at this time. For all of these reasons, viability of the owl in the Bald Mountain Restoration project area is not a concern.

However, the assumption of population stability is not supported by recent results from the three demographic studies on national forest lands in the Sierra Nevada and the conclusions provided by the USFWS in 2006 are no longer up to date.

Keane (2013) in a science synthesis for the Sierra Nevada bioregion found that:

> Ongoing research of recent population trends indicates increasing evidence for population declines on the three studies on National Forest Service lands and a stable/increasing population on the National Park Service study area…

These findings are consistent with Conner et al. (2013) who examined the spotted owl population data for three study sites in the Sierra Nevada and found that the probability of a >15% decline in population size was high for the two population studies on national forest lands, i.e., Lassen and Sierra studies. Specifically, they found that:

> …the probabilities of a >15% decline over 18 years were 0.69, 0.40, and 0.04 for the 3 study areas, whereas the probabilities the populations were stationary or increasing were 0.07, 0.22, and 0.82.

This means that for the Sierra Study, which is within the Bald Mountain project area, the probability that the population declined by >15% over the last 18 years is 0.4 compared to the probability of 0.2 that it was stable or increasing over that period of time. As described in Conner et al. (2013) realized population change (and not annual population change as was reported in the BE) is a more informative metric since it allows one to evaluate changes over time:

> Although [annual rate of population change] is an important metric of population performance, we conclude that [realized population change] is generally more interpretable, particularly for depicting population changes over longer time periods.

Thus, the results indicate that for the Sierra Study the population likely declined by 11% over the 18-year monitoring period (Conner et al. 2013, Table 3, p. 7).

The declines noted above have occurred during the time that the forest plan, as amended in 2004 and reviewed by the USDI Fish and Wildlife Service, has been implemented. Treatments on national forest lands have been completed within these study areas during the period of decline. Due to the failure of the Forest Service to fund an examination of the chronic effects of treatments on owl fitness, there is limited information available to evaluate how various treatments contribute to this decline. Nonetheless, the conclusions in the USDI Fish and Wildlife Service's decision not to list the California spotted owl are no longer accurate. For instance, they found that:

> …the best available data indicate that survival of spotted owl populations in the balance of the State of California (the Sierras) has been improving at the population level…We expect this trend to continue as the Forest Service in the Sierras implements its fuels reduction strategy that includes protections for the spotted owl and its habitat.

(Federal Register, Vol. 71, No. 100, p. 29901). Results from several scientific studies now indicate that this finding is no longer supportable since populations have declined in three study areas within the Sierra Nevada during the time that the Forest Service has been implementing its fuels reduction strategy; there has not been an improvement at the population level. Further, the only study area where there is a stable or increasing trend is on the national park and largely unaffected by logging. The BE (p. 91) relies the assumptions of future improvement in owl status and these have not been realized.

Please revise the BE and EA to address this information and provide evidence to support the claim that the Bald Mountain will not contribute the already existing decline in population status.

b. Impacts to PACs from Logging are not Evaluated

We note that there may be some confusion in the EA and BE about terminology related to land allocations for CSO. We believe that the term "PAC" in the EA and BE may be used interchangeably with "HRCA". We noted the first suggestion of this in the description of the prescriptions in the EA (p. 21) in which the "owl restoration" prescription was to be applied to "PACs", yet the maps applied this prescription to the HRCAs as well. Home range core areas (HRCAs) are defined by the forest plan (USDA Forest Service 2004, p. 39:" The acreage in the 300-acre PAC counts toward the total home range core area") as including the protected activity center. For the Sierra National Forest, PACs are to be 300 acres and the HRCA is to total 600 acres. These areas and their desired conditions and standards were defined as part of the strategy intended to provide for owl conservation. We ask that the documents be revised to use these terms in a consistent manner and as defined in the forest plan.

Alternative 2 proposes to remove vegetation in the most sensitive owl habitat – the protected activity centers (PACs). Furthermore, the owl sites that are proposed include some of the most reproductive sites in the project area (BE, p. 70). The forest plan establishes these areas for the protection of CSO (USDA Forest Service 2004). Outside of the Defense Zone of the wildland urban interface (WUI), treatment in PACs is to be avoided unless doing so would significantly compromise the fuels strategy (Ibid., p. 60). The EA and BE do not provide an analysis to demonstrate why avoiding these areas would compromise the fuels strategy. In addition, the intensity of treatment included in the Alternative 2 exceeds the direction in the forest plan for PACs:

> Within California spotted owl PACs, where treatment is necessary, **remove only material needed to meet project fuels objectives**. Focus on removal of surface and ladder fuels.

(Emphasis added)(Ibid., p. 51)

Alternative 2 also proposes replacement habitat for the PACs that are affected by certain treatments. The replacement habitat is described[5] in the BE, but there is little analysis of how the replacement areas are likely to affect the owl's status.

Simultaneous with the impacts to PACs significant portions of the HRCAs for these PACs are being logged. There is no discussion in the BE about these combined impacts and the likely effect on owl persistence in these areas following treatment.

We ask that you revise the BE to include an analysis of the effects of the project on the owls affected, including a discussion of the historic reproductive status of the affected nest stands/birds and estimates of the effect that habitat alteration may have on site occupancy and reproduction. We also ask that you provide an analysis to demonstrate the need to treat the PACs to achieve the fuel objectives.

c. Impacts to Suitable Habitat are Underestimated

The habitat characteristics for CSO territories have been examined in recent studies (Blakesley et al. 2005; Seamans and Gutierrez 2007). These studies identified the importance to CSO of habitats with large trees and high canopy cover at nest stand to home range scales. In particular, research in the central Sierra Nevada found survival and territory colonization were positively associated with the amount of medium and large tree conifer forest (trees $\geq$ 12" dbh) with canopy cover $\geq$70% (Seamans and Gutierrez 2007). This study identified that the likelihood of a territory being abandoned increased substantially when a core area around the nest stand when less than 40% of area contained dense-canopied habitat. In contrast, territory abandonment was unlikely when >60% of the core area contained dense canopied stands. Blakesley et al. (2005) also found that territory occupancy is positively related to the amounts of mature forest at core area scales and that higher colonization rates and lower extinction rates were associated with territories with more mature forest. Thus, the quality of the habitat around the nest stand is a key factor in estimating owl persistence and health.

[5] As noted in our comments on NFMA below, we are still unclear about the location and nature of the replacement habitat.

Currently, about 40% (6,844 acres) of the project area contains suitable habitat for CSO (BE, Table 17, p. 80). Logging is proposed on about 50% (3,376 acres) of the suitable habitat in the project area. Based on the importance of dense canopied habitat to territory persistence noted above, we examined the amount of dense canopied habitat available in the project area and the impacts that the proposal would have on this type of habitat. This information was extracted from Table 17 (BE, p. 80).

Table 1. Change in suitable owl habitat with dense canopy in the Bald Mountain Project area. Data summarized from Table 17 (BE, p. 80).

Habitat	Current CWHR type/acres	Current acres that have treatment assigned	Immediately after treatment	2024	2034	2044
CWHR 4D/5D/6	2,736	1,514	669	758	901	1,073
Change from current condition of treated area			-56%	-50%	-40%	-29%

Even after 30 years, the amount of dense canopied forest important to owl persistence remains significantly less than current conditions. From the analysis above, we can only conclude that the Bald Mountain project will have significant and persistent adverse effects on dense canopied stands utilized by CSO.

This is an example of an analysis that should be completed to evaluate the effects of the Bald Mountain Project on suitable habitat in the project area. Additional attributes to evaluate include proximity of logged owl habitat to nest stands, the status of the impacted owls, and the likelihood of territory persistence.

3. Fisher

The status of the extant fisher population on the High Sierra Ranger district is a concern due to a variety of factors including:

- High degree of risk inherent to the small population of fishers (Naney et al. 2012);
- Possible higher mortality than expected due to predation (Thompson 2013, personal communication)
- Uncertainty about project specific impacts to important habitat for fishers; and
- Cumulative impacts from near simultaneous implementation of thousands of acres of treatment of suitable habitat on the KREW, Dinkey North, Dinkey South, Soaproot, and South of Shaver that have all occurred (or will occurred) within a few miles of the Bald Mountain project boundary.

There are a number of fishers currently resting and foraging in the Bald Mountain project area and denning has occurred in the recent past.

a. Impacts to Suitable Habitat are Underestimated

Fishers are associated with late-successional conifer or mixed-conifer-hardwood forests characterized by an abundance of dead and downed wood, dense canopy, and large trees (Zielinski et al. 2013). As discussed elsewhere in these comments, dense canopied forests of any age class occupy less than 20% of the project area. Based on information evaluated in Table 1 above, about 13% (2,246 acres) of the project area supports stands with trees >12" dbh, canopy >60%, and in forest types utilized by fishers. Relatively speaking, the Bald Mountain project area provides a small amount of a key habitat condition preferred by fishers.

The BE does not evaluate the impacts of Alternative 2 on this preferred habitat type and does not evaluate the habitat types identified as suitable for fishers in the forest plan (USDA Forest Service 2004). Instead the analyses provided are based in large part on "habitat scores" derived from the California Wildlife Habitat Relationship system. This system identifies forest stands with canopy cover less than 40% and dominated by trees <12" dbh as providing habitat. Including this marginal habitat overestimates the existing amount of habitat. Based on the use of habitat scores, the BE (p. 141) concludes:

> Table 40 shows the weighted fisher score by vegetation type associated with each PlanID for the Bald Mountain project. There is minimal habitat change for the suitable fisher habitat under the action alternative. There are not enough treatments being conducted across the project area to show a significant impact to the habitat. There is approximately <1% change in fisher habitat under the action alternative.

We do not understand how the table mentioned in this quote (Table 40) supports the conclusion that <1% of the suitable habitat for fisher is being affected in the project area.

To evaluate this conclusion ourselves, we developed an estimate of current and future habitat conditions based on information provided in Table 17 (BE, p. 80). In this estimate, we excluded the red fir forest and lodge pole pine types from the estimates since they are not considered habitat (see notations supporting this in Table 40; BE, p. 135).

Table 2. Change in suitable fisher habitat in the Bald Mountain Project area. Data extracted from Table 17 (BE, p. 80).

Suitable Habitat	Current CWHR type/acres	Current acres that have treatment assigned	Immediately after treatment	2024	2034	2044
MHC4M	80	2	0	0	2	0
MHC5M	3	0	0	0	0	0
MHW4M	19	0	19	0	0	0
PPN4D	101	37	16	15	0	0
PPN4M	117	70	116	51	51	47
PPN5M	115	79	47	112	144	144
PPN6	64	46	0	1	31	41

Suitable Habitat	Current CWHR type/acres	Current acres that have treatment assigned	Immediately after treatment	2024	2034	2044
SMC4D	619	222	39	26	17	24
SMC4M	1,916	1,094	876	706	739	710
SMC5D	44	24	62	131	249	265
SMC5M	453	198	332	706	778	930
SMC6	1,099	703	326	288	229	288
WFR5M	125	122	66	81	81	81
WFR6	13	13	0	0	0	0
Total	**4,768**	**2,610**	**1,899**	**2,117**	**2,321**	**2,530**
Change from current condition of treated area			**-27%**	**-19%**	**-11%**	**-3%**

The analysis above indicates that about 55% of the suitable habitat in the project area will be logged under Alternative 2. Using the assumptions embedded in the BE, this analysis indicates that of the suitable habitat logged, 27% of it will not be suitable after harvest and the current levels of this habitat type be recovered until after 30 years have passed. This is a conservative estimate of habitat loss, since the analysis in the BE assumes that logged habitat remains suitable after treatment as long as the CWHR class does not change or that it changes to a class that is considered suitable. In contrast to the conclusions in the BE, this analysis indicates that a significant portion of the suitable habitat in the project area will be logged and that a substantial portion of that will be unsuitable after logging.

We also completed this analysis for suitable habitat with dense canopy.

Table 3. Dense canopied, suitable habitat for fishers in the Bald Mountain project.

Suitable Habitat	Current CWHR type/acres	Current acres that have treatment assigned	Immediately after treatment	2024	2034	2044
PPN4D	101	37	16	15	0	0
PPN5D	0		0	0	0	0
PPN6	64	46	0	1	31	41
SMC4D	619	222	39	26	17	24
SMC5D	44	24	62	131	249	265
SMC6	1,099	703	326	288	229	288
WFR6	13	13	0	0	0	0
Total	**1,940**	**1,045**	**443**	**461**	**526**	**618**
Change from current condition of treated area			**-58%**	**-56%**	**-50%**	**-41%**

This analysis indicates that 54% of the dense canopied, suitable habitat will be logged under Alternative 2. Using the assumptions embedded in the BE, this analysis indicates that of the

suitable habitat logged, 58% of it will not be suitable after harvest. Even after 30 years, the dense canopied stands that are important to fisher owl persistence do not recover to levels available prior to logging.

From the analyses above, we can only conclude that the Bald Mountain project will have significant and persistent adverse effects to the dense-canopied habitat preferred by. We also find that impacts to moderately dense habitat are significant and persist for 10-20 years. We disagree with the conclusion in the BE (p. 141) that "There are not enough treatments being conducted across the project area to show a significant impact to the habitat." We ask that the analysis supporting that conclusion be revised in light of the information we provided above.

b. Cumulative Impacts are Underestimated

The BE (p. 141) identifies the use of the Level 1 and Level 2 assessment areas to undertake a cumulative effects analysis for fishers. The analysis process used in the assessment appears to underestimate impacts to habitat since it relies, in large part, on assigning a change in habitat condition only if the CWHR label changes to an unsuitable type. Nonetheless, it is quite possible that habitat can be made unsuitable through logging even though it remains the same CWHR type (hence our recent discussions in the collaborative on retaining understory conditions that reflect selected habitat). The analysis also appears to focus on the entire assessment boundary to determine relative changes in habitat condition and not on the suitable habitat within the boundary. This presentation serves to minimize the area affected since relatively little area within the project boundary supports suitable habitat. The results of this analysis are reported in Table 43 (BE, p. 142). Based on this, the BE concludes:

> The results of this assessment (Table 43) show that the minor and temporary decrease of fisher habitat from the Bald Mountain Project are less than 1% of the total fisher habitat available at the Level 1 geographic assessment.

We believe this analysis is inaccurate due to a number of issues. First, the Level 1 assessment area (the project boundary buffered by 3.1 miles) is not an appropriate area to evaluate since a significant portion of it is not suitable habitat for fisher. Fishers are unlikely to occur at higher elevations and in lodgepole and red fir forest types. These areas should be excluded from the assessment boundary since they will not be occupied. Second, the relevant issue is the degree of habitat alteration relative to suitable habitat types in the assessment boundary and not relative to the entire assessment area. Changes to habitat condition should be compared to the suitable habitat available. Third, the assessment relies on assigning an impact to the habitat condition only when there is a change in CWHR type. As mentioned above, CWHR is a relatively insensitive index and is not capable of capturing the habitat qualities that are believed to be essential.

Zielinski et al. (2013) provides an approach that could be used to evaluate habitat disturbance and that overcomes several of the issues above. They examined fisher activity in an area where they quantified the amount of vegetation disturbance from management activities during the period 2000 to 2011. Their assessment concluded that fishers remained active in areas that had, on average, 47.1 acres/year/mi^2 disturbed by management activities. This translated into about 2.6% of a female fisher's home range per year.

In developing such an analysis process, it would be important to identify an assessment boundary that focuses on the area used by fishers and includes nearby projects. The buffer distance of 3.1 miles (as derived from female home range) size may be appropriate, but should not be extended into elevations and forest types outside the range of fishers. The assessment should also include the various projects completed, being implemented or planned in the near future, including the KREW, Dinkey North, Dinkey South, Soaproot, South of Shaver, and proposed Exchequer that have all occurred (or will occurred) within 3 miles of the Bald Mountain project boundary. We ask that you develop a disturbance analysis process based on Zielinski et al. (2013) and use this to assess cumulative effects in the Bald Mountain project.

4. Great Gray Owl (GGO)

Recently determined to be a new subspecies (Hull et al. 2013), GGO is highly limited in distribution and total numbers. This subspecies occupies the southern-most portion of the range of this species group. Low numbers of this species and the elusive nature of the bird contribute to the rare sightings of this species. Birds were detected in 2013 in the project area and it is important to take undertake actions that avoid degrading habitat quality in areas known to support GGO.

The analysis in the BE assumes that all treatments will maintain habitat suitability. We ask that you provide citations to the literature or GGO experts to support this statement. Based on concerns expressed to us by a GGO expert, we believe that the treatments proposed within 200 feet and possibly up to 600 feet) of meadows frequented by GGO may adversely impact habitat quality and use by GGO. A reduction in habitat quality would occur because the current structure provided for foraging and cover would be reduced. Such changes are especially important to avoid in meadows that have a high potential for GGO use, as determined by recent use patterns; these include meadows 517M100, 517M15, and 517M20.

E. Alternative 2 Does Not Meet the Purpose and Need for Action

The EA (p. 13) states that one purpose and need of the project is to:

> … protect denning, resting, and nesting structures from future wildfire and **to enhance these structures, as well as foraging habitat for fisher and spotted owl**.

Based on the short and long term impacts to wildlife habitat described above, we conclude that Alternative 2 does not meet the purpose and need of the Proposed Action. In many locations, habitat quality will not be enhanced in the short or long term.

Lastly, based on the analysis we provide above, we find that Alternative 2 would result significant impacts on sensitive resources. We ask that an EIS be prepared to disclose these impacts.

III. Issues Related to Compliance with the National Forest Management Act (NFMA)

A. Alternative 2 Violates the Forest Plan

1. Management Actions Proposed in Protected Activity Centers (PACs) and Home Range Core Areas (HRCAs)

Alternative 2 proposes to treat PACs and HRCAs for CSO with the "owl restoration" prescription. [6] The management intent, objectives and standards in the forest plan are very specific for these land allocations. For instance, the standard in the forest plan for CSO PACs states:

> In PACs located in WUI threat zones, mechanical treatments are allowed where prescribed fire is not feasible and where avoiding PACs would significantly compromise the overall effectiveness of the landscape fire and fuels strategy.

(USDA Forest Service 2004, p. 60) This is affirmed in other places in the forest plan (Ibid, p. 45: "Avoid vegetation and fuels management activities within PACs to the greatest extent feasible.") Thus, PACs that fall within the Threat Zone of the Wildland Urban Interface (WUI) may only be treated when avoiding them would "significantly compromise the overall effectiveness of the landscape fire and fuels strategy." Alternative 2 proposes treatments in PACs that are located in the Threat Zone, but provides no site-specific analysis of the consequences of avoiding treatment in these areas. Failure to substantiate the need to treat PACs that occur outside of the Defense Zone is a violation of the forest plan.

The forest plan also directs that:

> Within California spotted owl PACs, where treatment is necessary, **remove only material needed to meet project fuels objectives**. Focus on removal of surface and ladder fuels.

(Emphasis added)(Ibid., p. 51) The fuel objectives for the "owl restoration" are not described in a way that is quantifiable or measureable, making it impossible to judge if "only the material to meet the fuel objective" would be removed. It is clear from the description that material other than "surface and ladder fuels" is being removed, but the purpose of these removals and an analysis that justifies their removal for fuels purposes has not been completed. This is an important point since all the fire modeling that we have reviewed indicates that the fire effects from the removal of material up to about 12" dbh (i.e., not the canopy fuels), meets the fuel objectives for fire safety and control (See for example USDA Forest Service 2012 reporting on fuels treatment in Sequoia-Kings Canyon National Park and USDA Forest Service 2013a for fire modeling related to the Whisky Ridge project). Other national forests generally avoid treatment in PACs outside of Defense Zone because doing so is compatible with an effective fuels strategy.

[6] The EA (p. 21) states that the "owl restoration" prescription is for PACs ("Owl restoration treatments would be applied within areas that are designated as California spotted owl PACs and are within the WUI.") However, we note that maps and analyses in the EA and BE indicate that the "owl restoration 50" appears to be applied universally to PACs and HRCAs for spotted owls. For the purposes of these comments, we will assume this is the case and expect that the description of Alternative 2 will be revised to state this clearly.

We ask that you provide a site-specific analysis to justify the need to treat PACs in order to avoid "significantly compromising" the landscape fire and fuel strategy.

Management of HRCAs also has unique direction in the forest plan. Specifically, the forest plan States:

> Arrange treatment patterns and design treatment prescriptions to avoid the highest quality habitat (CWHR types 5M, 5D, and 6) wherever possible.

(USDA Forest Service 2004, p. 46) We were not able to locate baseline/current habitat condition data for HRCAs provided in the BE. However, Table 17 of the BE (p. 80) indicates that approximately 55% of the suitable owl habitat typed as CWHR 5M/5D/6 will be treated in the project area. This suggests that there is a high likelihood that CWHR 5M/5D/6 HRCAs is being proposed for treatment and is not being avoided. Please evaluate the locations of CWHR 5M/5D/6 with respect to HRCAs and avoid treating those areas as directed by the forest plan.

Also, the forest plan establishes desired conditions for PACs and HRCAs that are basically identical, including "higher than average levels of snags and down woody material." We note that modeling of snag levels in the treated area indicates that Alternative 2 will maintain lower levels of snags and not the higher than average levels noted in the desired condition. Thus, the reduction of tree density in PACs and HRCAs is likely to result in lower than desirable levels of snags in the future. This outcome is inconsistent with the desired conditions in the forest plan.

We appreciate the effort to locate replacement habitat for PACs in which treatments have been proposed. We, however, are unable to determine from the maps exactly where the replacement areas are located and how they relate or contribute to the habitat in the remainder of the PAC and the proximity of the replacement habitat to the nest stand. To be effective the replacement habitat needs to be of equal or better quality. Quality should be determined by location (i.e., adjacency and compact arrangement), existing condition of the PAC and condition of the replacement habitat. We would like to talk further with the IDT to understand the proposal for replacement habitat.

2. Management Actions Proposed in Den Buffers

The forest plan directs the creation of a den buffer (700 acres) around known den sites of fishers. For den buffers occurring in the WUI, treatments are limited to the removal of surface and ladder fuels to achieve fuel objectives. The treatment of den buffers outside of the WUI is to be avoided until a regional conservation strategy is developed for fishers (USDA Forest Service 2004, p. 61). Thus, treatment actions within a den buffer are guided by coincidence with WUI and limited to the reduction of surface and ladder fuels.

The EA and BE present inconsistent information on treatment in den buffers. The EA (p. 32) in describing Alternative 2 indicates that the alternative proposes to treat in "an unoccupied Pacific fisher den for ecological objectives" (EA, p. 32). The alternative then identifies using a forest plan amendment to allow such activity (Ibid., p. 32). However, the BE identified that logging was proposed in two den buffers (BE, p. 132) and then in three den buffers (Ibid., p. 139). We also examined maps included in the EA and BE. It appears from these maps that treatments are

proposed in three den buffers. For two of the den buffers, the treatment areas are entirely within the WUI. For the third den buffer portions of the area proposed for treatment are outside the WUI. Treatments in the den buffers not associated with the "Reese Unit" appear to include the following prescriptions: owl ladder and restoration thin. "Owl ladder" may not meet the objective to treat only to reduce surface and ladder fuels and the "restoration thin" clearly does not meet this objective. Treatment in these other two den buffers violates the direction in the forest plan.

3. Forest Canopy Standard for Southern Sierra Nevada Fisher Conservation Area

The forest plan established the Southern Sierra Nevada Fisher Conservation Area as one of the components to ensure fisher conservation. The desired condition established for this area is:

> Within known or estimated female fisher home ranges outside the WUI, a minimum of 50 percent of the forested area has greater than or equal to 60 percent canopy cover. Where home range information is lacking, use HUC 6 watershed as the analysis area for this desired condition.

The BE did not evaluate this desired condition and it does not appear to have been used to guide the design of treatments. We did examine the data in Table 3 (BE, p. 18-21) for the amount of cover class 2D, 3D, 4D, 5D, and 6 in the project area. This review indicated that less than 20% of the forested area[7] within the project boundary had canopy cover >60%. About 82% of the project boundary is within the SSNFCA. This suggests to us that the desired canopy closure may be far lower than desired for the SSNFCA in the Bald Mountain project area. If this is the case, treatments, other than those necessary to meet fuel objectives, would be inconsistent with the desired conditions and a violation of the forest plan.

We ask that you complete an analysis that evaluates canopy closure and the stated desired conditions, that you incorporate this into the design of an alternative that meets the direction in the forest plan.

4. Management Actions Proposed in Riparian Conservation Areas

The forest plan (USDA Forest Service 2004, p. 33) establishes a set of land allocations, specifically riparian conservation areas and critical aquatic refuges, that delineate aquatic, riparian, and meadow habitats, which are to be managed consistent with" the riparian conservation objectives (RCOs) and associated standards and guidelines in the forest plan. The following RCOs are of particular relevance to the meadow and aspen restoration treatments being proposed:

> **Riparian Conservation Objective #4:** Ensure that management activities, including fuels reduction actions, within RCAs and CARs enhance or maintain physical and biological characteristics associated with aquatic- and riparian-dependent species. (RCO #4 is linked to the following AMS Goals: #2: Species Viability, #7: Watershed Condition)

[7] We subtracted about 1,100 acres of barren area from the denominator in this calculation.

> **Riparian Conservation Objective #5:** Preserve, restore, or enhance special aquatic features, such as meadows, lakes, ponds, bogs, fens, and wetlands, to provide the ecological conditions and processes needed to recover or enhance the viability of species that rely on these areas. (RCO #5 is linked to the following AMS goals: #1: Water Quality, #2 Species Viability, #3 Plant and Animal Community Diversity, #4 Special Habitats; #7: Watershed Condition; #9: Stream Banks and Shorelines)

(Ibid., p. 33-34) These RCOs focus on a variety of issues including maintaining species viability.

The meadow restoration proposed in areas that overlap with the great gray owl PAC and other recent detections (e.g., 517M100, 517M15, and 517M20) are a concern. The treatments do not appear to have been designed to avoid degraded habitat used by GGO in the forest-meadow margin. These margins are critical foraging areas for GGO (Loffland and Siegel 2012) and GGOs spend most of their time in these areas (Winter 1986, Sears 2006, Stermer 2010). As noted by Loffland and Siegel (2012) "This species forages by sitting and waiting on low perches over meadow vegetation. It frequently perches on the large branches that extend up from fallen trees that along the meadow edge. These conditions can be created by falling or pushing a few trees over with heavy equipment into the meadow." Further, canopy cover has been found to be important for maturing owls in the meadow-forest margin since young birds do not immediately take flight and tend to spend an extended time on the ground. Cover is thought to protect young birds from predation. Since the proposed treatments cover a significant portion of the meadow-forest edge for these meadows, it is critical that recommendations from GGO experts (e.g., resource specialists with the California Department of Fish and Wildlife) be incorporated into the alternative as a means of addressing the RCOs above.

In addition, we estimate that treatments cover well over 25% of the RCA for several of the meadows. The forest plan requires that when this level of disturbance is proposed in the RCA, a peer review must be completed:

> 94. As part of project-level analysis, conduct peer reviews for projects that propose ground-disturbing activities in more than 25 percent of the RCA or more than 15 percent of a CAR.

(USDA Forest Service 2004, p. 61) We ask that you complete the peer review required by the forest plan and that Chris Stermer, California Department of Fish and Wildlife, be included in the review process. We also ask that you consult with Mr. Stermer on recommended conservation measures for this State listed species and incorporate his recommendations into the project design.

B. Alternative 2 Threatens the Viability of California spotted owl, fisher and great gray owl

Based on our review of the documents and the additional analysis provided above, we find that the impacts to CSO, fisher and GGO will be significant. We believe that these project impacts combined with the extensive cumulative impacts of recently approved or completed projects and

projects recently beginning the planning phase (i.e., Exchequer) threaten the viability of these species and are likely to lead to a trend toward federal listing for California spotted owl, great gray owl, and fisher. Such a trend is a violation of Forest Service direction.

IV. Conclusion

We ask that you address the deficiencies we identified above, prepare a draft EIS and circulate this draft for public comment. We also ask to meet with the IDT to discuss our comments on the draft EA.

Please direct questions about these comments to Sue Britting (britting@earthlink.net; 530-295-8210).

Thank you for considering our comments.

Sincerely,

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References

Conner, M. M., Keane, J. J., Gallagher, C. V., Jehle, G., Munton, T. E., Shaklee, P. A. and Gerrard, R. A. (2013), Realized population change for long-term monitoring: California spotted owl case study. The Journal of Wildlife Management, 77: 1449–1458. doi: 10.1002/jwmg.591

Hull1, J.M., Englis, Jr., A., Medley, J. R., Jepsen, E.P., Duncan, J.R., Ernest, H. B. and Keane, J.B. 2013. A new subspecies of Great Gray Owl (*Strix nebulosa*) in the Sierra Nevada of California, USA. Journal of Raptor Research (in press).

Loffland, H. and Siegel, R. 2012. Using bird monitoring to inform meadow restoration at Hope Valley. Institute for Bird Populations. Point Reyes Station, CA. http://birdpop.net/docs/Assessing%20effects%20of%20meadow%20restoration%20on%20birds_IBP_NFWF_2012.pdf

Rota, Christopher Thomas. Not all forests are disturbed equally: population dynamics and resource selection of black-backed woodpeckers in the Black Hills, South Dakota. Diss. University of Missouri, 2013. http://www.fs.fed.us/rm/pubs_other/rmrs_2013_rota_c002.pdf

Sears, C.L. 2006. Assessing distribution, habitat suitability, and site occupancy of great gray owls (*Strix nebulosa*) in California. Master's Thesis, University of California Davis, Davis, California, USA.

Seavy, N.E., R.D. Burnett, and P.J. Taille. 2012. Black-backed woodpecker nest-tree preference in burned forests of the Sierra Nevada, California. Wildlife Society Bulletin 36: 722-728.

Siegel, R.B., M.W. Tingley, R.L. Wilkerson, and M.L. Bond. 2012b. Assessing home range size and habitat needs of Black-backed Woodpeckers in California: 2011 Interim Report. Institute for Bird Populations. A report in fulfillment of U.S. Forest Service Agreement No. 08-CS-11052005-201, Modification 3; U.S. Forest Service, Pacific Southwest Region, Vallejo, CA.

Stermer, Chris. 2010. Presentation on CDFG Research. May 24th USFS Sierra Nevada Research Center Davis, CA.

Tarbill, G.L. 2010. Nest site selection and influence of woodpeckers on recovery in a burned forest of the Sierra Nevada. Master's Thesis, California State University, Sacramento.
Siegel et al. 2013

USDA Forest Service 2004. Record of Decision for the Sierra Nevada Forest Plan Amendment. January 21, 2004.

USDA Forest Service 2009. Environmental Assessment for the Dinkey south Project. Sierra National Forest.

USDA Forest Service 2012. Giant Sequoia National Monument Plan. Pacific Southwest Research Station. August 2012.
http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5437182.pdf

USDA Forest Service 2013a. Final Environmental Impact Statement for the Whisky Ridge Project. Sierra National Forest.

USDA Forest Service 2013b. Draft Sierra National Forest Assessment. July 2013.
http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5431895.pdf

Winter, J. 1986. Status, distribution and ecology of the Great Gray Owl (Strix nebulosa) in California. M.S. Thesis, San Francisco State University, CA.

Zielinski, W.Z., Thompson, C. M., Purcell, K. L. and Garner, J. D. 2013. An assessment of fisher (*Pekania pennati*) tolerance to forest management intensity of the landscape. Forest Ecology and Management (in press).

Attachment A

Improving Habitat for Black-backed Woodpeckers and Other Species

Joint Proposal to the Dinkey Collaborative from Justin Augustine and Mark Smith January 24, 2013

"To generate habitat for black-backed woodpeckers as well as species such as the Hairy woodpecker, White-headed woodpecker, and Mountain Bluebird, create two 200 acre areas with 100 ft2/acre of snag basal area. The trees selected for snag creation should be of greater than 15 inches and in the fir and lodgepole pine forest types [outside of WUI and outside of PACs]. The acreage and snag density targets are based on Tarbill (2010), Seavy et al 2012, and Siegel et al. (2012). The snag creation activity would first recognize the existing density of class 1 (recent) snags and then create additional snags, primarily from live lodgepole pine and secondarily red fir, to bring the density to the target level. The snags could be scattered across the acreage among existing live trees or preferably be clumped with patches of existing snags and/or almost dead trees.

It is recognized that openings from clearcuts, greater than an acre or so, in the fir and lodgepole forest could potentially become dominated by a mono culture of extremely dense lodgepole pine or lupine or remain almost barren of shrubs and trees for decades. Although we do not expect such an outcome in this situation, there are examples of such outcomes in areas that were clear-cut for snow retention or for other reasons in the Sierra NF. Thus, the preference is for natural succession in these two areas, but with the possibility for human intercession if monitoring shows the development of a mono culture, or little or no natural regeneration of shrubs and trees or similar unnatural conditions. Guidance on opening size to prevent unnatural conditions can be found in publications such as Gordon (1970) and Agriculture Handbook No. 445 (1983)."

Thirty years after creating the snags, they would likely have fallen and been down logs for 10 to 20 years and the condition of live and dead vegetation would vary as follows:

- Where the snags are scattered among existing live trees, the remaining live trees would benefit from growing space made available from creating the snags. The extent of the benefit would depend on the species, age, condition and density of the remaining live trees. In the absence of fire, the natural production of new snags would depend on the same factors.
- Where the snags are clumped, the resulting openings would be occupied by a mix of small trees of various species and montaine shrubs.

References

Burns, Russell M. (Technical Compiler). 1983. Silvicultural Systems for the Major Forest Types of the United States. USDA, Forest Service, Agriculture Handbook No. 445.

Gordon, Donald T. 1970. Natural Regeneration of White and Red Fir, influence of several factors. USDA, Forest Service, Research Paper, PSW-58.

Seavy, N.E., R.D. Burnett, and P.J. Taille. 2012. Black-backed woodpecker nest-tree preference in burned forests of the Sierra Nevada, California. Wildlife Society Bulletin 36: 722-728.

Siegel, R.B., M.W. Tingley, R.L. Wilkerson, and M.L. Bond. 2012b. Assessing home range size and habitat needs of Black-backed Woodpeckers in California: 2011 Interim Report. Institute for Bird Populations. A report in fulfillment of U.S. Forest Service Agreement No. 08-CS-11052005-201, Modification 3; U.S. Forest Service, Pacific Southwest Region, Vallejo, CA.

Tarbill, G.L. 2010. Nest site selection and influence of woodpeckers on recovery in a burned forest of the Sierra Nevada. Master's Thesis, California State University, Sacramento.

JA & MS – 1/24/13

15 February 2013

Dinkey Bald Mountain Stand-scale Proposal

By Chad Hanson and Justin Augustine

1) For the Smith/Augustine two 200-acre patches of snag creation proposal, Hanson/Augustine offer the following Units as candidates for carrying out that proposal: a) Units 7, 976, and 977; and b) Units 980, 1155, and 1156.

2) For the Snag Recruitment section, add: Active snag creation to benefit cavity-nesting/denning species – this snag creation would be designed to obtain the standard of 4 or 6 snags per acre in the below identified units, with the option to go beyond the standard:

    a) Units outside of the Defense Zone that currently contain less than 4 large (over 15 inches dbh) snags per acre in Ponderosa Pine, Jeffrey Pine, and Sierra Mixed Conifer would be snag-creation (no thinning) units (Units 1130, 1129, 1107, 1108, 994, 9, 995, 996, 1204, 31, 1001, 37, 70, 117, 1032, 139, 140, 1133, 1134, 1135, 1090, 1096, 1195, 1145, 1117, 1118, 1098, 1112, 1123, 1122, 1121, 1109, and 75);

    b) Units outside of the Defense Zone that currently contain less than 4 large snags per acre in white fir, lodgepole pine, and other upper montane forest types, except red fir, would be snag-creation (no thinning) units (Units 982, 11, 993, and 975);

    c) Units outside of the Defense Zone with less than 6 large snags per acre in red fir (including red fir units with some white fir component) would be snag-creation (no thinning) units (Units 1085, 1087, 1089, 1080, 1143, 1088, 1084, 1125, 1116, and 984).

3) For the Prescribed Fire section, add: Outside of the Defense and Threat Zones, and outside of snag-creation units, prescribed-burn in units within 2 miles of the Threat Zone, with the caveat that pre-commercial thinning could be done if necessary to achieve desired burning conditions;

4) For the Prescribed Fire section, add: Outside of the Defense and Threat Zones, and outside of snag-creation units, units that are more than 2 miles from the Threat Zone would be designated for mixed-intensity managed wildland fire through a project-specific forest plan amendment.