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Title:
Comments: Attached please find comments the SERAL project DEIS from Sierra Forest Legacy et al.

Dear Interdisciplinary Team:
These comments are submitted on behalf of the undersigned organizations on the draft environmental impact statement ("DEIS") for the Social and Ecological Resilience Across the Landscape (SERAL) project.

This project proposes logging and other vegetation management on over 100,000 acres with portions located on the Calaveras, Mi-Wok, and Summit Ranger Districts. The project also proposes project specific forest plan amendments and the use of condition-based management for the salvage logging of trees killed by drought, insects/disease and wildfire. Road maintenance and temporary road construction is also proposed.

As noted in our scoping comments, our greatest concerns about this project are focused on impacts to California spotted owl (including the proposed amendments) and the use of condition- based management. Having now reviewed the DEIS, we are now also concerned that the hard look that NEPA requires to evaluate site-specific impacts has not been satisfied. We describe these concerns and others in the comments below.

I. Impacts to California Spotted Owls (CSO) Including Forest Plan Amendments

The SERAL project proposes to amend direction in the current Stanislaus Land and Resource Management Plan for the SERAL project area to "incorporate" the strategy for CSO issued by the Forest Service in 2019 (USDA Forest Service 2019). The wording of the amendment is provided in Appendix B of the DEIS. The project specific plan amendment also relates to Appendix A and Map 1 since these items include estimates for the natural range of variation (NRV) and the locations of targeted forest types. Below we first discuss Appendix A and Map 1 as the foundation for the project specific plan amendment and then Appendix B to address the CSO specific issues. In this section, we also address concerns about negative impacts from the
SERAL project on CSO and the failure to disclose these in the DEIS.

A. Forest Plan Amendments Affecting CSO

1. Conservation of CSO Throughout the Bioregion

We raised this issue in our scoping comments and restate it here for emphasis.[sup1] The CSO strategy was developed to inform forest planning on national forests in the range of CSO in the Sierra Nevada. The Sierra and Sequoia National Forests are the first plans to attempt to incorporate the CSO strategy in their plan revision process. The revised plans are not yet settled or adopted and the process of their revision is still in development, including the development of plan components to conserve CSO. The plan revision process for these plans incudes an objection process which could result in additional substantive changes to the final forest plans and the plan components related to CSO.

We expect that the amended and revised forest plans throughout the bioregion to all have the same plan components to address CSO conservation. The importance of consistent management of this

species throughout the bioregion was recognized in the development of the first forest plans, i.e., the "Rainbow Book" and the Spotted Owl Habitat Area (SOHA) strategy (USDA Forest Service 1984), and then in subsequent amendments to make changes related to managing for CSO in the bioregion (USDA Forest Service 1992, USDA Forest Service 2001, USDA Forest Service 2004). We note that guidance for conservation of northern spotted owl and Mexican spotted owl is uniform across their respective bioregions. In contrast, the forest plan amendment being proposed in the SERAL project is occurring prior to completing the forest plan revisions on the Sierra and Sequoia National Forests.

We ask that the plan amendment being proposed in the SERAL project be set aside until the forest planning process has been completed on the Sierra and Sequoia National Forests and the final plans adopted.

2. The Application of NRV in Response to the CSO Amendment

We raised this as a concern in our scoping comments, and it was not addressed in the DEIS. This proposal and the CSO amendments are driven by managing to achieve the "natural range of variation" (NRV). This is stated repeatedly throughout the DEIS. Because of this emphasis on NRV defining the actions to be taken, it is critical that any adopted NRV information be clearly presented with the supporting scientific information. This is what is required to ensure that the development and adoption of methods to set thresholds or desired conditions is not arbitrary and is based on the best available science.

As described below, the Forest Service used an atypical and not fully described method to assign and define forest types in the project area. This approach leads to the conclusion, presented in Tables A.2 and A.3, that management should convert a certain acreage of a specific seral stage to another seral stage. For instance, Table A.2 claims that 4,300 acres of CWHR 5M/5D (high d roosting habitat for CSO) should be converted to CWHR 5S/5P (habitat that

is not suitable for nesting or foraging). In turn, these NRV values and restoration targets drive the
modeling and selection of areas for logging and other proposed actions.
a) Geographic Assignment of Forest Type

The geographic location of forest types is foundational information needed to drive project planning and prioritization. LANDFIRE and EVEG are resource mapping products produced by the Forest Service in collaboration with other agencies. These data are used by the Forest Service for project and forest planning. The SERAL project, as described in Appendix E, developed a map layer called "Forest_Typ" that is substantially different from the typing use in LANDFIRE and EVEG. Refer to our scoping comments for a comparison of a LANDFIRE map and the forest type map created for the SERAL project. Most notably, the amount of moist mixed conifer is substantially reduced in the SERAL map compared to the LANDFIRE map. We raised this concern in scoping comments, but the DEIS provides no information explaining why the classifications in LANDFIRE or EVEG are not appropriate for the SERAL project. Furthermore, the explanation of modeling in Appendix E does not fully describe how this novel forest type layer was developed for the conifer types and the assumptions and processes used cannot be evaluated. Because the map information provided for the SERAL project is so vastly different from commonly used mapping data, e.g., LANDFIRE, full information on the criteria, assumptions, and analytical process used to create the SERAL forest type map must be provided to assess the scientific integrity of the information.[sup2]

We are also concerned that the forest type data was inconsistently used within different SERAL analyses. For instance, the forest type map created for SERAL also differs from the mapped

information that was used to complete the wildfire risk assessment for the SERAL project. As described in Appendix E, the risk assessment for SERAL was based on the assessment completed for the southern Sierra in 2018. This assessment used the mapped information for biophysical settings from LANDFIRE to characterize forest type or the vegetation. Vegetation or forest type information also forms the basis of the modeling of four other fire conditions: 1) conditional flame length probabilities, expected fire type, annual burn probability, and predicted vegetation burn severity. Estimates of these conditions were included in the risk assessment for the southern Sierra and on which the SERAL risk assessment is based. However, we cannot determine from our review of Appendix E if the existing condition for these four attributes was derived from the risk assessment or independently developed.

b) NRV Values Assigned to Forest Type

The NRV values described for each forest type in the SERAL project are summarized in Table A.1 of the DEIS. Elsewhere in the DEIS (DEIS, p. 90), it is stated that these values were developed from Safford and Stevens (2017). As summarized below and discussed in more detail in our scoping comments, the data from Stafford and Stevens (2017) was misinterpreted in the creation of Table A.1.

The NRV values from Safford and Stevens (2017) are based on seral stage definitions that are not equivalent to CHWR. For instance, open canopy cover in Safford and Stevens (2017) is based on LANDFIRE biophysical descriptions that set open canopy cover to < 50% cover, but the SERAL project sets closed canopy cover at 40-100%. This misinterpretation of the crosswalk likely results in an overestimate of the amount of "closed canopy" forests in the SERAL project because it is counting forest with 40-50% cover as closed canopy when they should be considered open canopy by the NRV definitions used by Safford and Stevens (2017). The values in Table A.1 should be revised to account for the different classification of canopy cover utilized by Safford and Stevens (2017).

We are also concerned that the metrics used to evaluate departure were not comparable across the analyses completed for SERAL. The resilience index and CSO departure index are metrics developed for the SERAL project that are not fully described in Appendix E. They both rely on the use of thresholds to establish departure, but those thresholds are not fully described or reported in Appendix E. We have slightly more information for the CSO departure index after talking to Pete Stine. He provided additional information supporting the basis of the thresholds selected for ridge, mid and lower slopes that was derived from Ng et al. (2020). The assumption in the CSO departure index is that an LMU or unit is departed or outside of NRV in a PAC when CHWR types 5M/5D/6 exceed a certain percentage of the LMU. These thresholds are set by LMU: valley bottom = 47%; mid-slope = 41%; ridge = 32%. These percentages were derived from reference conditions in contemporary forest with a relatively intact fire-regime (Ng et al. 2020) and reflect the NRV from these sites. These threshold values far exceed the NRV values for CWHR 5M/5D/6 in Table A.1.

We have no way to comprehensively assess what threshold values were used to characterize departure for all analyses used in the DEIS. Furthermore, we cannot determine if they are the same as the thresholds reported in Table A.1 or are comparable to the basal area thresholds set for the prescriptions described in Appendix E. We need to be able to review the complete details of modeling, including specific thresholds used in resiliency analyses, in order to evaluate the consistency and integrity of the analysis applied in the DEIS.

c)

Restoration Need is Based On An Incorrect Characterization of Forest Types Across the Project Area

We raised this as a concern in our scoping comments and it was not addressed in the DEIS. As noted

above, the forest type map (Map 1) used in the SERAL project allocates the type "yellow pine/dry mixed conifer to most of the project area above about 4,000 feet elevation, yet a significant portion of this part of the SERAL project area is identified as "mesic mixed conifer" in the LANDFIRE classification. The maps included as Figures 1 and 2 in our scoping comments clearly show this.

The misclassification of forest type in the project areas leads to incorrect "restoration estimates" in Tables A.2 and A.3 (DEIS, Appendix A) and over estimates the amount of CWHR 5M/5D (large tree, moderate to dense canopy) that the agency states should be converted to CWHR 5S/5P (large tree, sparse to poor canopy). That the restoration estimates are incorrect is reinforced by the analysis provided in the wildlife biological evaluation (BE) regarding

extremely low amounts of high-quality habitat, i.e., CWHR 5M/5D/, available across PACs and territories in the project area (Wildlife BE, Table CSO8, p. 42).

Management to achieve more open, large treed stands (CWHR 5S/5P), when less than desired, should focus on reducing density and promoting the growth of smaller sized stands (e.g., CWHR 4M/4D types with QMDs ranging from 12" to 18" DBH) in areas where this habitat type is not required to support species associated with mature forests. Management to enhance growth of the smallest trees (CWHR 2 and 3) is another area to focus management to increase the amount of open, large treed stands over time.

3. Abandoning Protected Activity Centers After Three Consecutive Years of Surveys and Limiting PAC Designation to Territorial Pairs

The amendment in Appendix B proposes a standard that states:

Existing protected activity centers may not be retired unless loss of suitable habitat or long-term lack of occupancy criteria are met as defined in the 2019 Conservation Strategy for the California Spotted Owl in the Sierra Nevada, or more current guidance for the Pacific Southwest Region.

(DEIS, Appendix B, p. 3) One of the criteria stated in the referenced conservation strategy is:

When a PAC has been surveyed repeatedly over time (at least two years of surveys within the last 12 years) with no observed breeding activity nor territorial behavior by an owl pair, monitor or survey the PAC for an additional three consecutive years. If no owl is detected, the PAC and associated territory may be retired. If an owl is detected but no breeding activity nor territorial behavior by an owl pair has been documented, the PAC and associated territory may be retired.

(CSO Strategy, p. 27) The CSO strategy does not provide a science-based rationale for limiting the final survey period to three consecutive years. The criteria above also allow the abandonment of a PAC if territorial singles or a non-territorial pair are detected. Both conditions are currently protected by PACs. Below we discuss these two issues in greater detail.

With respect to the three-year vacancy threshold, Wood et al. (2018) examined re-occupancy rates and found that CSO did reoccupy PACs after three years of absence. These rates of re- occupation were also noted to be important to conservation with a "liberal vacancy threshold of 3 years on

spotted owl occupancy rates" having a negative impact on future occupancy (Wood et al. 2018, p. 254). Concern about the three-year threshold for vacancy being too low was also identified as a concern in the peer review for the CSO strategy document:

In particular, I am concerned by the plan to remove PACs from protection if they have not been occupied for 3+ consecutive years. The idea that these sites will not be reoccupied, is not in fact well supported by the literature (i.e., unoccupied sites with suitable habitat can/will become occupied at non-zero rates - even when BO are at high densities).

(Peer Review 4, https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd934200.pdf) The basis for this criterion of three years is not clearly supported by a science-based rationale. It also reduces the conservation benefit to CSO relative to current practices or an alternative that would require, for example, 5 consecutive years of surveys.

The proposed plan amendment would also allow PACs to be abandoned if they are occupied by owl pairs that are not territorial and single birds that are territorial. Spotted owls are long lived and tend to stay in a central location. Pairs that are not territorial and birds that are single and territorial are more likely to become territorial pairs and successfully nest compared to the floater population because they are currently occupying habitat (Guti[eacute]rrez et al. 2017). For similar reasons, conservation measures for northern spotted owl include: 1) identifying activity centers for territorial singles and any detected pair; and 2) habitat guidelines in the territory around these activity centers (USDI Fish and Wildlife Service 2009 and 2012). Neither the CSO strategy document nor the proposed amendment provide any discussion or science information to indicate the basis for the change or if the recommended change in criteria will improve owl conservation.

We asked in our scoping comments that the science-basis for the 3-year vacancy threshold and abandonment of PACs with non-territorial pairs and territorial single birds be provided in the DEIS, yet this information has not been disclosed. Adoption of these amendments without presenting the science-basis would be arbitrary.

4. Protection for CWHR 5M/5D/6 Provided in CSO strategy Has Not Been Included in the Proposed Amendment

The proposed amendment now clearly states, in part, that the desired condition in a territory is: At least 40 to 60 percent (depending on the terrestrial vegetation type and site conditions) of each California spotted owl territory consists of the highest quality nesting and roosting habitat in large enough patches to provide interior stand conditions, generally 1- 2 tree heights from an edge.

(DEIS, Appendix B, p. 132) Highest quality nesting and roosting habitat is also defined as CWHR 5M, 5D, and 6. However, the project-specific forest plan amendment now leaves out a critical recommendation from the CSO strategy intended to protect the highest quality habitat from degradation when desired conditions have not been met:

When occupied territories do not meet the desired conditions described above, retain the existing large tree moderate/high canopy cover habitat (for example, CWHR 6, 5D, 5M) wherever it exists throughout the territory.

(USDA Forest Service 2019, p. 29) This means that if the desired condition has not been met with CWHR 5M, 5D, and 6, these types shall be conserved wherever they exist in the territory. There are many instances in the SERAL project area where territories do not currently meet desired conditions for CWHR 5M, 5D, and 6 habitat, yet logging that degrades and changes these habitat types is proposed in Alternative 1 (see following sections for additional discussion of this this recommendation without explanation is arbitrary. And to be consistent with

the CSO strategy and to protect high value habitat when in low amounts within a territory, this plan component should be included as a standard in any adopted forest plan amendment.

B. Best Available Science Information (BASI)

1. Allowing Degradation of Habitat in PACs

Related to ISSUE 1.A. in the DEIS, the proposed SPEC-CS0-STD-04 amendment allows up to 100 acres of habitat in a PAC to be degraded by logging, and the entire PAC (up to 300 acres) can be mechanically treated if it is loosely considered habitat improvement:

In California spotted owl protected activity centers, all management activities must maintain or improve habitat quality in the highest quality nesting and roosting habitat. Where necessary to increase long-term resilience, vegetation treatments that may reduce near-term habitat quality may be authorized in up to 100 acres outside of the highest quality nesting and roosting habitat. Throughout protected activity centers all vegetation treatments must:
Retain the largest/oldest trees, known nest trees, and other large trees and snags with cavities, deformities, broken tops, or other habitat features of value to old forest species; [CSO Strategy, p. 31; Approach 2, 3.A]
Retain connected areas of moderate (at least 40 percent) and high (at least 60 percent) canopy cover between the known nest site (if nest site is not known, use the most recent known roost site) and areas in the rest of the protected activity center;
Avoid mechanical treatments within a 10-acre area surrounding the most recent known nest;
Avoid creating new landings, new temporary roads, or canopy gaps larger than 0.25 acres comprising no more than 5% of a stand;
Increase the quadratic mean diameter of trees at the protected activity center scale; and Maintain the average canopy cover of the protected activity center above 50 percent.

This provision for mechanical treatment that degrades habitat quality comes directly from the CSO strategy document (USDA Forest Service 2019, p. 28). The strategy document does not provide science information or a discussion of why this scale of habitat alteration and degradation is acceptable in a PAC, nor does it discuss the potential for abandonment given this level of habitat alteration and disturbance.

The DEIS should provide the science-based rationale and supporting research for this plan component. The potential effects on PAC abandonment by the proposed action should be compared to Alternative 3.

The scale of treatments proposed in the SERAL Alternative 1 is unprecedented and it is unknown from the literature how CSO will respond to up to 300 acres of habitat alteration in PACs. Only three studies have investigated experimental logging impacts to California spotted owls. They consistently show negative impacts to occupancy and other demographic parameters (Keane et al. 2017). These studies never treated in PACs, as proposed here, still mechanical treatments in CSO territories (outside of PACs) including thinning and small group selection pose long-term negative impacts to CSO (Seamans and Gutierrez 2007; Tempel et al. 2016;

Tempel et al. 2014; Stephens et al. 2014). These studies are dismissed in the CSO strategy for having a small sample size, however they represent the best available, peer-reviewed and published research to date. The SERAL project far exceeds the scale and intensity of any experimental treatments on this species. Thus, the project introduces significant uncertainty regarding the persistence of CSO across a large swath of habitat occupied by at least 49 owl pairs. The project threatens the sustainability of CSO on this landscape at a time when declines in CSO are documented across the Sierra Nevada (see Attachment A research summary). A more cautious approach to CSO management is needed to ensure old forest species resilience to climate extremes.

An additional concern with regard to treatments in PACs is that the scientific evidence presented in the BE does not support its own conclusions. The SERAL BE (p.51-56) relies on the CSO strategy as well as fire and climate research to assert that 5,987 acres of logging in 53 PACs (p.61), sometimes covering 100% of the PAC, poses an acceptable risk to CSO, despite evidence to the contrary published by US Forest Service spotted owl researchers discussed above. The project even breaks with the CSO strategy guidance to further treat in PACs. While we agree with the DEIS that recent megafires and research such as Jones et al. (2020) present convincing examples of unwanted consequences of severe fires for spotted owls, we disagree that this research is evidence for wide-scale habitat disturbance across 50+ PACs because that would also come with unwanted consequences for spotted owls (Jones et al. 2021b; Keane 2017).

The BE also presents anecdotal unpublished case studies to support its conclusion. In one exercise, biologists looked at CSO occupancy in a single PAC in the Stanislaus Tuolumne Experimental Forest (STEF). Here, it is not possible to determine if the same birds are occupying the area and what impacts are to demography parameters such as survival and occupancy; and, long-term impacts are unknown. Of further concern is that the BE equates the treatments in the STEF, where 21% of the PAC area was thinned (BE p.56), with the scope and intensity of proposed treatments in Alternative 1. No formal monitoring studies have examined treatment of up to 220 acres in CSO PACs and the BE must acknowledge that the project poses significant uncertainty to spotted owl.

The BE also maintains that the STEF treatments had no negative impact on the spotted owl PAC in the area, however, they may not have accounted for the lag in response time to disturbance that spotted owls are known to exhibit. Territorial owls can take 2-3 years to respond to even extreme disturbances (Stephens et al. 2014; Lee and Bond 2015a; Jones et al. 2020). In Stephens et al. (2014), spotted owl occupancy was maintained for several years following logging while owls used larger areas to forage. Eventually the study saw a 43% reduction in spotted owl occupancy from experimental logging after year three.

Further, the BE overlooked important research from the STEF study about logging impacts on spotted owl prey species. Sollman et al. (2016) showed that treatments in the STEF significantly reduced flying squirrel density in the study area. Owls in this study were presumed to rely on flying squirrels from outside of the treatment units where denser forests were not logged:

Whereas thinning had negative effects on squirrel density on the scale of a thinning treatment unit, our results suggest that these effects were largely absorbed by the heterogeneous landscape, as squirrels shifted their distribution into un-thinned areas

without a decline in overall density. This highlights the need to incorporate the landscape context when evaluating the effects of forest management on wildlife.

(Sollman et al. 2016) Spotted owl PACs in SERAL represent 30% of PACs on the Stanislaus and 5% of

owl sites in Sierra Nevada and most of these are lacking high quality nesting and roosting habitat (DEIS p.55; BE p.32). This is a significant portion of PACs in bioregion. The BE frames the bioregional importance of the area:

California spotted owl sites in the SERAL project area location are of particular importance to the distribution of California spotted owl in the Sierra Nevada and potentially key to this subspecies[rsquo] continued persistence, especially considering current projections for climate change.

(BE p. 27). Due to bioregional importance of the project area as well as the scale and intensity of PAC treatments, the project should avoid focus on reducing fuels and applying prescribed fire in PACs. Treatment intensity should be highest in PACs where habitat is ranked high on the departure index and where productivity and occupancy are low.

2. Habitat loss in Spotted Owl Territories

Related to DEIS Issue 1.A., the table below shows examples from SERAL Alternative 1 of high quality spotted owl habitat degradation in occupied territories. This is not a complete list, the GIS data was incomplete so it was not possible to look at all territories. We found 20 spotted owl territories with between 25 to over 300 acres of 5D and 5M targeted for degradation to 5P, despite the paucity of this forest type on the landscape. Alternative 1 would result in the total loss of 2,166 acres of 5D/5M from territories. Habitat loss as proposed in the SERAL project has been shown to lead to a loss of spotted owl occupancy in multiple studies as discussed below.

Table 1. Habitat changes for selected territories compared existing conditions.
(See letter for table)

[sup3] from BE Table CSO 5.
4 We completed this analysis and others presented in these comments using SERAL GIS data provided at the project website. We refer to this as [ldquo]SFL GIS analysis[rdquo] in these comments.

Recent spotted owl research shows that alteration of CWHR 5D represents a significant habitat alteration that reduces the probability of territory occupancy (Jones et al. 2019; Jones et al. 2021b). Authors reviewed data from 275 territories in four Sierra Nevada demography studies and found uniform benefits to mid-century occupancy when treatments were designed to avoid modifying CWHR 5D and 6 in occupied territories (Jones et al. 2019; Jones et al. 2021b). These results from Jones et al. 2021b were misunderstood in the BE:

The effects of specific forest management activities on spotted owls have a level of uncertainty but overall would have a long term benefit with minimal or at least equivocal short term impacts (Gutierrez 2017; Jones et al. 2021; Jones et al. 2021 in press)[rdquo].

(BE p.50) Jones et al. 2021 [lsquo]in-press[rsquo] aka Jones et al. 2021b does not support this statement. Instead, the authors showed that removal of 5D in spotted owl territories poses a strong risk of territory abandonment, making the proposed SERAL habitat treatments untenable. The DEIS does not consider viability of the spotted owl in the context of known impacts to territories from treatments proposed by the SERAL project.

Alternative 1 would convert 10,986 acres of high quality and best available habitat in territories to non-habitat categories. This would involve conversion of 5M to 5P, 5D to 5P, 4D to 4P or 5P, and 4M to 4P, 4M or 4S (see table above). Research shows that degradation of spotted owl habitat in

breeding territories is not conducive to owl conservation even under extreme climate model scenarios. Tempel et al. (2014b and 2016) demonstrate that medium-intensity logging leads to a reduction in spotted owl occupancy, reproduction and survival. As mentioned earlier, Jones et al. (2021b) shows mechanical treatments that retain 5D in owl territories (called [lsquo]no habitat alteration[rsquo] in this study5) offer the highest likelihood of maintaining spotted owl resilience over the next 40 years. This research also suggests that benefits from intensive forest treatments as proposed in Alternative 1 do not pay off even during severe fire scenarios because they lead to spotted owl territory abandonment before the benefits of fuels reduction catch-up (see Figure 1 below).

Figure 1 (From Jones et al. 2021b). [ldquo]Sierra Nevada-wide site occupancy trajectories for each treatment scenario relative to the baseline no-treatment scenario (dark blue line). (a) Occupancy when treatments are excluded from owl territories; (b[ndash]d) occupancy when treatment occurs within owl territories but assumptions about the extent to which treatments alter owl habitat vary (no habitat alteration, weak habitat alteration, strong habitat alteration). Trajectories represent means across 50,000 simulations. For full uncertainty across stochastic replicates.[rdquo]

We agree with the SERAL BE that Jones et al. (2021b) demonstrates fuel reduction and spotted owl conservation are not mutually exclusive. Notably, this research also shows that in order to truly achieve climate resilience and maintain species diversity, forest treatments must temper reductions in stand density for long-term benefit in order to achieve adequate old forest protection in the short-term. In the case of SERAL, the project must maintain CWHR 5M, 5D and 6 habitat where it exists in spotted owl territories and throughout the project.

C. Designation of California Spotted Owl Territories

As mentioned in our scoping comments and DEIS issue 6.A., the spotted owl strategy approach to territory delineation based on circular territory results in reduced quantity and quality of habitat conserved and protected for owls. In some cases the PACs themselves are not even included in the new SERAL territories (see figure below). This concern is also illustrated by Table 32 of the DEIS, where proposed treatments in owl territories result in a loss of 186 acres of 6, 5D and 5M (p.78).

The Sierra Nevada Forest Plan Amendment (SNFPA) directs that suitable habitat be provided within 1.5 miles of the activity center in as compact arrangement as possible and identifies the target habitat in descending order of priority (USDA Forest Service 2004, p. 39). Habitat suitability in these areas, called Home Range Core Areas (HRCAs), is to be maintained following certain guidelines to protect large trees structures, snags, down wood, and higher cover preferred by spotted owls while increasing resilience to wildfire and other threats (USDA Forest Service 2004, p. 46). This is similar to the approach adopted to conserve northern spotted owl (USDI Fish and Wildlife Service 2009). Without establishing a science basis that relates to conservation biology, the SERAL plan amendment and the spotted owl strategy establish conservation on delineating a circular territory of a size based on the nearest neighbor distance that in the case of SERAL does not include as much high quality habitat as the HRCA and
instead includes far greater foraging habitat; however this habitat overlaps significantly with

private land. This is a less protective approach to managing for spotted owls and may not reflect how owls use habitat.

There is extensive evidence that spotted owls do not confine their habitat use to circular territories (see for example Jones et al. 2016 and Blakey et al. 2019). These simple 1,000a circles around activity centers often do not protect best foraging and nesting habitat when it occurs outside the circle.

The SERAL territories also include significant portions of non-habitat and overlap with clear cuts, plantations and lava cap, none of which will be spotted owl habitat for over 100 years if ever. This new approach to territory delineation adopted in SERAL results in 33% of HRCA acres dropped from protective status along with suitable habitat (Alternative 1, DEIS p.77-78). Indeed, there are 1,834 acres of 6, 5D, 5M in the SERAL project outside PACs and territories that are apparently protected in HRCAs because Alternative 3 only proposes 30 acres of this habitat to be removed (Table 24 p.52). The contrast between protections for best available spotted owl habitat in HRCAs under the current forest plan and its proposed removal under the SERAL project illustrates how implementation of the strategy without a regional planning process fails to protect important owl habitat and connectivity.

As shown below, the difference between territory and HRCA designations also makes clear that HRCAs are preferable in managing for old forest species because HRCAs include the entire spotted owl PAC, goshawk PACs, as well as north facing, riparian areas, hardwoods and lower- canyon bottoms where old forests are often found. The figure below compares territories and HRCAs in the SERAL project. Spotted owl territories are orange circles, HRCAs are outlined in blue and PACs are red (darker red is overlap with goshawk PACs). From upper right to lower left: TUO0102, TUO0220, TUO0038, TUO0160.

Figure 2. Sample of proposed 1,000-acre territories (orange) and existing Home range core areas (blue) and PACs (red) with an aerial image in the background. Data from SERAL project website and Google Earth.

The image above is an example of an issue that occurs throughout the project. The SERAL spotted owl territories overlap with private land instead of including the best available spotted owl habitat delineated in HRCAs under the current forest plan. These circles often don[rsquo]t include best habitat on federal land and overlap significantly with private land. The agency cannot guarantee a circular territory in private ownership will be managed for old forest species. Despite this, the spotted owl strategy recommends conservation based on a circular home range that was adopted by scientists as an analysis convention to evaluate habitat conditions around activity centers (see discussion in Seamans and Guti[eacute]rrez 2007). The forest has not adjusted the new territories to include this lost habitat as provided in LAND-SERAL-WILDLIFE-02. It is unclear if or when territories will be adjusted to include nearby highest quality habitat but this should be incorporated into the FEIS. Further, this loss of protection for the highest quality habitat included in HRCAs is not disclosed in the DEIS, contrary to NEPA.

D. Adopting Desired Conditions for High-Quality California Spotted Owl Habitat in the 2019 California Spotted Owl Strategy.

1. Alternative 1 Does Not Minimize Treatments in PACs with Highest Contribution to Reproductive Success.

The 2019 spotted owl strategy recommends treating PACs focusing on historically unoccupied PACs and avoiding intensive treatments in PACs occupied by productive pairs (emphasis added):

B. In addition to prioritization by risk level, prioritize treatments in PACs based on the history

of active nesting and pair territorial behavior where information is available. Treatments that may have negative near term effects should be minimized or avoided in PACs with the highest likely contribution to reproductive success.

Prioritization for PAC treatment (listed from highest to lowest priority for treatment): PACs presently unoccupied and historically occupied by territorial singles only PACs presently unoccupied and historically occupied by pairs
PACs presently occupied by territorial singles PACs presently occupied by pairs
PACs presently occupied by pairs and currently or historically reproductive

C. When treating within PACs, design treatments to minimize impacts to reproductive owls and key owl habitat elements. Generally retain the highest quality habitat (CWHR 6, 5D, 5M), especially in areas with higher canopy cover (more than 55 percent) in large/tall trees.

(USDA Forest Service 2019, p. 28, Sections 1.4.B and 1.4.C). The SERAL DEIS developed a project-specific guideline to implement the recommendations above (emphasis added):

To minimize potential impacts to CSO reproductive success, vegetation treatments that may reduce habitat quality in the near term should be avoided in PACs with the highest likely contribution to reproductive success, and otherwise prioritized as follows (from highest to lowest priority for treatment):

1. Currently unoccupied and historically occupied by territorial singles only.
2. Currently unoccupied and historically occupied by pairs.
3. Currently occupied by territorial singles.
4. Currently occupied by pairs.
5. Currently occupied by pairs and currently or recently reproductive.

[hellip]When designing treatment unit intersections with PACs, limit treatment acres to those necessary to achieve strategic placement objectives and avoid treatments adjacent to nest stands whenever possible.

If nesting or foraging habitat in PACs is mechanically treated, mitigate by adding acreage to the PAC equivalent to the treated acres using adjacent acres of comparable quality wherever possible.

(DEIS p.134, SPEC-CSO-GDL-02) There are 36 reproductive pairs, 13 non-reproductive pairs, and 4 territorial singles out of 53 PACs in the project area (BE p.29). Alternative 1 proposes intensive treatments in nearly all of these PACs (see figure below for example). Here, proposed tractor, skyline and helicopter logging will remove 1,762 acres of 4D and 318 acres of 5D in PACs (SFL GIS analysis). It is not clear that reproductive PACs had special consideration to reduce treatment impacts because all the PACs have same 20[rdquo] upper diameter limit and they all have similar prescriptions based on stand density, fuel loading and habitat quality. According to

the BE, treatments in PACs were prioritized based on a model developed for the SERAL project termed [ldquo]owl departure[rdquo] that rates spotted owl habitat for treatment. However, the DEIS does not demonstrate how proposed PAC treatments in Alternative 1 considered occupancy and reproductive history to reduce impacts to owl pairs consistent with SPEC-CSO-GDL-02.

We recognize lower elevation PACs contain dense stands and extreme fuel loading (near Deer Creek or Grant Ridge, for example), and we support treatments in these areas that rank high in the owl departure index and are at high fire risk. In such cases, SPEC-CSO-GDL-02 can be used to

effectively reduce risk and protect existing important habitat, whereas areas occupied by productive pairs should retain best available habitat or be avoided in some cases at higher elevation.

2.

Alternative 1 Proposed PAC Treatments Exceed 30% Area Treatment Threshold in Strategy.

Related to DEIS Issue 1.A., there are 5,987 acres of mechanical thinning proposed in 53 PACs in the SERAL project (BE p.61). In the case of these multi-PAC entries, the 100-acre treatment threshold in the spotted owl strategy is often exceeded. We are not sure why this appears so consistently in the GIS layers since the DEIS establishes a 100-acre limit: [ldquo]In Alternative 1, mechanical treatments may only occur in up to one third (100 acres) of California Spotted Owl PACs.[rdquo] (DEIS p.45). There is a contradiction in the GIS data that needs to be corrected, or an explanation provided. We wonder if the Stanislaus is exceeding the 100-acres threshold under the strategy if treatments are passed off as habitat improvement.

We support habitat improvements in the project area such as prescribed fire, meadow and aspen restoration, and fuel reduction in old forest habitat discussed elsewhere in this document. However, the DEIS boldly claims spotted owl habitat improvement when converting CWHR 4D to 5M, yet it takes over 100 years to grow old forest conditions found in 4D (Jones et al. 2021). Habitat conversion that results in the loss of 4D would pose a negative impact to spotted owls for 100 years, even when 5M is gained, and even when it leads to increased fire resilience in the long-term. The DEIS does not acknowledge negative impacts to spotted owls from reductions in canopy cover (such as habitat loss and disturbance), contrary to NEPA and the spotted owl strategy.

Canopy cover is an important component of spotted owl habitat. It is well established that spotted owl occupancy and survival are strongly associated with high canopy cover (over 70%) and large trees (Verner et al. 1992; Blakesley et al. 2005; Seamans 2005; Seamans and Gutierrez 2007; North 2012; Tempel et al. 2014b; Tempel et al. 2016). Reducing canopy cover below 70% in dense stands can lead to long-term negative occupancy by spotted owls (Tempel et al. 2014b). If the long-term impacts of canopy cover reductions in spotted owl habitat [ldquo]improvement[rdquo] are misinterpreted, then the DEIS could erroneously apply component SPEC-CS0-STD-04 to mechanical treatments in PACs that exceed the 100-acre treatment threshold. We hope this is a modeling error and not the intention in Alternative 1. Nevertheless, the DEIS must more accurately represent the loss of canopy cover in 4D when it represents important prey or foraging habitat for each PAC. We would like to see more detail on the quality of 4D in each PAC to
better understand habitat conditions because not all 4D is the same.

In the figure below, two spotted owl PACs are outlined in blue. Alternative 1 treatments are pink, red, purple and green. Areas without treatment show the aerial photograph. These two PACs are typical of the 53 PACs in the project area because they are 1) proposed for well over the 30% habitat treatment threshold, 2) proposed for treatments regardless of their productivity and occupancy status, and 3) often bisected by fuel breaks, contrary to SERAL plan components. Our concern again is that the proposed action strays well beyond what is allowable in the spotted owl strategy, and that forest thinning and removal of trees will eliminate quality spotted owl habitat. Alternative 1 must correct these discrepancies because PAC treatments exceed what is allowable under the spotted owl strategy in a number of ways, thus violating diversity
requirements in 36 CFR 219.9 and viability requirements in NFMA.

Figure 3. Alternative 1 treatment types for two PACs (outlined in blue) TUO0153 (pictured top) TUO0152 (pictured at bottom). Alternative 1 treatments are depicted in pink, red, purple and green shading. Areas without treatment show the aerial photograph. Data is from SERAL project website and Google Earth.

3. Alternative 1 Does Not Maintain High Quality Spotted Owl Habitat in Retired PACs as Provided in the Strategy.

Related to DEIS Issue 6.B., the 2019 California spotted owl strategy sets desired conditions for retired PACs. They include to [ldquo][hellip]design treatments in retired PACs to retain available large, tall tree, high canopy cover habitat that is resilient to disturbance.[rdquo] (1.3.D. p.27), yet treatments in retired PACs do not maintain available large tree high canopy cover habitat.

The intention of SERAL is to treat retired PACs [ldquo]to undergo restoration to make habitat more resilient and available for future owl use.[rdquo] (BE p.29). Although it is not possible to determine if this goal is being met given the data provided, it appears that desired condition may not be met if high quality and best available nesting habitat in retired PACs are removed. For example, the PAC is proposed for retirement and also contains 21% of CWHR 5/6 habitat

(Table CSO3, BE p.34) We wonder what the site-specific impacts are to all PACs, and how much and what kind of habitat is being affected, so further explanation is needed.

We did not find any SERAL project-specific plan amendments to retain highest quality 6, 5D and 5M habitat in retired PACs to make the project compliant with desired conditions in the spotted owl strategy.

4. Alternative 1 Does Not Retain Highest Priority Breeding Habitat in Owl Territories as Provided in the Strategy.

The 2019 California spotted owl conservation strategy recommends conservation measures at several different spatial scales. At the territory scale,

Desired conservation outcomes are for an occupied territory to maintain and promote 40 to 60 percent of a territory in mature tree size classes[hellip] in descending order of priority: 6, 5D, 5M, 4D and 4M[hellip]

(p. 29). As noted in our previous comments and related to Issue 6.A. in the DEIS, the SERAL project analysis combines all spotted owl habitat together including CWHR types 4M, 4D, 5M and 5D and 6 (again in Table CSO5, BE p. 37). The DEIS states:

Currently only 8 territories meet the desired compositional range of 40-60% in mature trees size classes with moderate and high canopy cover. The remaining territories either contain low-quality habitat or contain greater than 60% of high quality or best available habitat combined.

(DEIS p.16) Since most owl territories in the project area preserve at least 40 percent of all CWHR types suitable for spotted owl combined, the implication is that removing highest priority habitat (6, 5D, 5M) meets desired conditions in the spotted owl strategy because lower quality habitat (4D, 4M) is left behind in at least 40% of the territory; however this is a misinterpretation of the desired conditions set forth in the strategy.

As our scoping comments point out, ongoing discussions with the Regional Office indicate that the desired condition is for 40 to 60% of the territory to be in CWHR types 5M, 5D, and 6. This is consistent with the overall desire to increase the amount and distribution of stands with large trees over the territory to better reflect NRV and support productive spotted owls. This was also the desired condition and management intent in the SNFPA.6 The desired condition with a threshold

attached to preference for CWHR 5M, 5D and 6 then makes meaningful the desired condition to conserve CWHR 5M, 5D, and 6:

6 The treatment patterns and design treatment prescriptions to avoid the highest quality habitat (CWHR types 5M, 5D, and 6) wherever possible[rdquo] and the desired conditions generally reflect CWHR 5M, 5D, and 6 habitat types (USDA Forest Service 2004, p. 46)

When occupied territories do not meet the desired conditions described above, retain the existing large tree moderate/high canopy cover habitat (for example, CWHR 6, 5D, 5M) wherever it exists throughout the territory.

(USDA Forest Service, p. 29 and SERAL scoping package, p.27). The DEIS removed the above plan component from the scooping package and instead targets the last remaining highest quality spotted owl habitat in the project for removal. The proposed plan amendment LAND-SERAL- WILDLIFE-02 (DEIS p.130) weakens any direction from the scoping package that sought to retain the highest priority forest conditions in territories.

Very few owl territories in the SERAL project have appropriate amounts of 5D and 5M (Table CSO5, BE p.37). Only five out of 53 territories contain over 40 percent of CWHR 6, 5D and 5M. The remaining 90 percent of SERAL territories (48 of 53) do not meet desired conditions in CWHR 6, 5D and 5M (DEIS Table 4, p.15). Both the 2004 forest plan and the 2019 strategy strive to protect this high quality habitat because it is essential for spotted owl conservation. The SERAL project must save this essential habitat, as well.

Given the deficit of 6, 5D and 5M in the project, there is an urgent conservation need to retain all highest quality owl habitat especially in spotted owl territories. In response to this deficit, the DEIS states [ldquo]Active management is needed in those territories to maintain the existing and promote future high-quality habitat to meet the desired NRV-based conservation outcomes.[rdquo] (id.). Yet instead of maintaining this important habitat, Alternative 1 proposes its removal.

A total of 1,027 acres of WHR 6, 5D, 5M would be removed from owl territories in Alternative 1 (Table 24 p.52). In no circumstance does it make conservation sense to remove what little exists of this highest quality habitat given the scarcity of it in the project area. Even the majority of PACs [ldquo]are lacking high quality nesting and roosting habitat[rdquo] (DEIS p. 55). Alternative 1 does not meet current forest plan nor the 2019 spotted owl strategy desired conditions for spotted owl territories (p.29 2.A.1.). It doesn[rsquo]t even meet its own management objectives (DEIS p.15) and puts regional spotted owl populations in jeopardy of accelerated decline (see Attachment A research summary).

The SERAL project illustrates how an ad-hoc implementation of the spotted owl strategy at the project-level rather than during the forest planning process leaves the most important habitat vulnerable at multiple scales, threatening the sustainability of wildlife species such as the spotted owl and the suite of old forest species it represents on the Stanislaus National Forest.

5.

Maintaining Spotted Owl Habitat Connectivity at the Watershed Scale.

Verner et al. (1992) identified spotted owl habitat connectivity priorities on the Stanislaus National Forest that must be addressed in the SERAL project because the spotted owl strategy recommends managers [ldquo]promote habitat connectivity at the watershed scale by retaining connected areas of moderate and high canopy cover in large/tall trees within territories.[rdquo] (p.29 USDA Forest

Service 2019). The DEIS did not develop these important landscape-level design measures from the spotted owl strategy into DEIS plan components.

F. DEIS Does Not Take Hard Look at Project Impacts to Spotted Owl, Contrary to NEPA.

The National Environmental Policy Act (NEPA), 42 U.S.C. [sect] 4321 et seq., is designed to facilitate informed decision-making and public transparency by requiring federal agencies to take a [ldquo]hard look[rdquo] at the direct, indirect, and cumulative impacts of their proposed actions and reasonable alternatives. The analysis in this DEIS fails to adequately analyze certain impacts, including disclosing site-specific baseline information, impacts to wildlife and habitat connectivity corridors, impacts of altering and disturbing occupied and potential spotted owl habitat.

1. DEIS and BE Lack Site-Specific Effects Analysis.

Thank you for sharing spatial data on CWHR types for PACs, HRCAs, and territories, however unit-level data and analysis are still missing for project activities in the DEIS. As raised in our previous comments, and as related to both Issues 1.A. and 6.A. in the DEIS, the Forest Service should disclose and analyze:

detailed maps that identify timber harvest unit locations and the types of treatment in relation to ecologically important features including important to connectivity for spotted owl and other old forest associated species such as marten.
where logging proposed for purposes other than fuels reduction (e.g. reducing stand density, salvage, insect and disease), including acreage and specific units in which such logging will occur and the rationale for any such treatments.

In the SERAL project analysis, the expected habitat changes are combined across the 118,000- acre landscape into a single table for activities like forest thinning and fuel breaks (Table 24 DEIS p.52). Here, PACs, HRCAs and territories are also analyzed together as a composite sum of all habitat conditions, however, the impacts to individual PACs and territories may be different depending on local habitat conditions and intensity of treatments.

As can be seen from our comments in preceding sections, more detailed examinations of project impacts at the individual PAC, HRCA, territory and unit scale are needed to truly understand what the project consequences would be for species like spotted owl, as required by NEPA. Otherwise, measurement or assessment of degree to which goals and objectives are met is almost impossible.

The following effects analysis from the Trestle Project on the Eldorado National Forest is an ject impacts analysis at the HRCA/ territory scale for spotted owls:

Table 2. Example of habitat analysis taken from the Trestle Project, Tables V.2.5 and V.2.6. (From Eldorado National Forest 2017, p. 43-44).

Table V.2.5. Comparison of Mechanical Thinning Treatment within HRCAs: Number of Acres Thinned, Number and Percentage of Acres Not Thinned for Alternative 2, 4 & 5,
CWHR Size 4+ and >50% Canopy Closure.

(See letter for table)

Table V.2.6. Comparison of Mechanical Thinning Treatments Proposed Within High-Quality Habitat within HRCAs. High Quality Habitat is defined as CWHR Size Class 4+ and > or

=70% Canopy Closure. The number of acres of high-quality habitat currently available, proposed for treatment, and not commercial mechanically thinned was estimated for each California spotted owl HRCA within the Trestle project area.

(see letter for table)

We ask that you include an analysis of habitat changes similar to those shown above for territories, HRCAs and PACs in the FEIS for each alternative. We also ask that you discuss the impacts to these owl sites for each alternative in terms of short and long term impacts and risks.

2. PAC Retirement Not Analyzed in DEIS.

In another issue related to the [lsquo]hard look[rsquo] standard and DEIS issue 6.B, the DEIS does not identify negative impacts from retiring four spotted owl PACs that contain of 1,167 acres of suitable habitat. Although data were not available for all these PACs in the GIS layers provided, there are 3,609 acres of spotted owl habitat proposed for mechanical thinning across all PACs combined (SFL GIS analysis). Furthermore, high quality habitat is already lacking in these four PACs (DEIS p.79). The SERAL project analysis must identify consequences of the proposed action for retiring and mechanically thinning PACs including displacement of owls from territories and a disruption in habitat connectivity that both diminish spotted owl conservation efforts (Peer Review Summary https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd934194.pdf; attached research summary)

3. Mechanical Treatments in Spotted Owl PACs Not Adequately Analyzed in DEIS.

In a third issue related to the [lsquo]hard look[rsquo] standard and DEIS issue 1.A., are statements in the DEIS that [ldquo]proposed forest thinning treatments do not eliminate or even reduce high-quality CSO habitat in CSO PACs.[rdquo] (DEIS p.54). The effects analysis is made without considering how much foraging and nesting habitat is available to each owl pair, especially the productive ones. There are 5,987 acres of mechanical thinning proposed in the PACs (BE p.61) including the proposed alteration of 2,718 acres of 4D and 4M in PACs (SFL GIS analysis). The configuration of these acres as well as how much breeding habitat is being treated or how much is left after treatments on individual territory basis must be disclosed in the FEIS.

Fuel breaks often intersect PACs and are not analyzed in the effects section. It is not possible to tell how the fuel breaks were considered in the effects analysis, or how they were reconciled with the 100-acre PAC treatment threshold or the standard to avoid fuel breaks in PACs. The effects section should reflect and analyze the proposed action according to NEPA.

We offer the following example to illustrate why an analysis of effects by PAC (and territory) is necessary. In the figure below, PAC TOU0221 is outlined in blue, proposed treatments are pink, red, purple and green; areas without treatment show the aerial photograph. Contrary to the DEIS which states: [ldquo]In Alternative 1, mechanical treatments may only occur in up to one-third (100 acres) of California spotted owl PACs.[rdquo] (p.45) this PAC is proposed for well over 160 acres of proposed treatments including forest thinning and fuel breaks. This PAC is also located at the bottom of a moist north-facing slope and we wonder why it is intersected by three different fuel breaks. This PAC specific information leads us to conclude that the guideline to limit mechanical treatment in PACs to 100-acre or less is not being followed. We also question why topographic position (i.e., low on the slope) was not taken into consideration in selecting this area for treatment.

(see letter for figure)

Figure 4. Treatment locations and type within spotted owl PAC TOU0221. Treatments are pink, red, purple and green; areas without treatment show the aerial photograph. Data from SERAL project website and Google Earth.

Another concern we have regarding the treatment and removal of habitat in owl PACs is that the DEIS claims removing medium sized trees from CWHR 4D converting it to 5M creates new high-quality habitat within owl PACs (DEIS p.52). This is an artifact of mechanical thinning treatments and the removal of canopy cover, and not the full picture of project impacts on spotted owls. The assumption that removal of all vegetation under 20[rdquo] diameter in PACs in Alternative 1 is positive impact to spotted owls isn[rsquo]t correct. Substantial removal of surface and ladder fuels in occupied owl habitat as proposed in SERAL would almost certainly amount to negative short-term impacts for spotted owls (see Attachment A research summary). Spotted owls are associated with multi-storied, closed-canopy forests (Verner et al. 1992) and reductions in these forest characteristics would reasonably be expected to have a negative effect on habitat quality in the short-term as concluded by the Eldorado National Forest (2017).

While SFL supports some fuel reduction in spotted owl habitat including PACs, especially when it leads to the reintroduction of fire back to the landscape, we also expect to see an effects analysis of these actions that is accurate, considers both short and longer-term as well as cumulative impacts, and are consistent with best available science. We support the 20[rdquo] dbh limit in PACs and 24[rdquo] dbh limit for pines outside PACs as an important step toward old forest conservation, but these measures do not conclude the agency[rsquo]s responsibility regarding spotted owl management. In considering alterations of mature forest structure, the agency must weigh short and long-term impacts to spotted owls for each PAC and territory. This starts with examining site-specific habitat conditions as they contribute to connectivity to adjacent habitat, support for owl survival (ex. foraging and breeding habitat), as well as each PAC[rsquo]s occupancy and productivity history.

There are 1,762 acres of 4D proposed for removal from thinning in PACs in Alternative 1 (SFL GIS analysis; does not include fuel breaks). Contrary to the DEIS analysis we know that the removal of canopy cover from CWHR 4D forests is not without consequences and must be balanced with other considerations such as the intensity of treatments at multiple spatial scales as well as PAC productivity. An important consideration in the conversion of 4D to 5M is that flying squirrels are associated with multi-story forest structure and spotted owl might lose access to prey with reductions in canopy cover (Sollman et al. 2016). The DEIS must quantify and analyze potential for negative impacts from the conversion of 4D to 5M in each PAC. Only then will the public and decision makers have an accurate assessment of the true costs and benefits of the proposed actions.

4. Proposed Plan Components Not Implemented or Analyzed in DEIS.

Related to concerns about the delineation of circular territories in DEIS issue 6.A, the DEIS does not clearly state if or when some proposed plan components will be implemented. For example, it is difficult to determine from the DEIS if the spotted owl territories will remain an unmodified circle of 1,000 acres or if or even when they will have a [lsquo]modified shift[rsquo] of boundaries that would include more suitable spotted owl habitat in the HRCAs (DEIS p.77 and 78):

We speculate with the ability to adjust the territory boundaries to include the most
s of high quality habitat as encouraged by LAND_SERAL-WILDLIFE-02, that the discrepancy between the quantity of high-quality habitat within HRCAs and territories would be easily overcome.

(DEIS p.78) It appears this project component was never analyzed because the biological evaluation shows the unmodified circles for spotted owl territories (Figure CSO4, BE p.30). If the LAND_SERAL-WILDLIFE-02 is to be implemented, baseline conditions must be characterized and project impacts then analyzed and described. As it stands, uncertainty clouds the analysis because it[rsquo]s unclear when or if the territory adjustment will happen. The project must make a choice clear so that the decision maker and public can review it.

Also related to the [lsquo]hard look[rsquo] standard and DEIS Issue 1.A, the DEIS does not provide adequate information on an individual territory level to determine if requirements from SPEC-CSO-STD- 04 are being met, such as [ldquo][hellip]maintain average canopy cover in PAC above 50%[rdquo], and [ldquo][hellip]retain areas of
moderate and high canopy cover between the known nest site and areas in the rest of the PAC.[rdquo] (DEIS p.133). This is another example of the data that is missing for each PAC in the DEIS. This information is needed to adequately review a proposed action for forest plan amendments in spotted owl habitat.

5. New Circular Territories Overlap Significantly with Private Land; DEIS Cannot Assume Private Landowners Will Manage for Spotted Owls.

Related to Issue 6.A. in the DEIS, the Figure CSO4 (below) is from the SERAL BE shows where proposed circular spotted owl territories in black overlap significantly with private lands in gray (p.30).

(see letter for figure)

Figure 5. Distribution of CSO PACs (red) and territories (black circles) in the SERAL project areas in relation to private land (gray). Taken from SERAL BE, Figure CSO 4.

The DEIS analysis claims that these circular territories would result in a gain of 4,911 acres of 4M and 4D habitat compared to the HRCAs, yet HRCAs explicitly exclude private land to ensure habitat is managed for spotted owl desired conditions (Table 32 DEIS p.78). It is unclear if the overlap with private land has been accounted for in this calculation. The USFS cannot guarantee that habitat in the circular territories on private lands are managed for old forest species, and private land should be excluded from any assessment of available habitat. This issue needs to be clarified to improve the accuracy of the project analysis.

G. Purpose and Need

We find it difficult to understand why the project wouldn[rsquo]t identify spotted owl conservation as a purpose and need of the project. The DEIS developed 25 project-specific plan amendments from the 2019 spotted owl conservation strategy, and five out of twelve issues are spotted owl related (DEIS p.9). Further, the DEIS states the purpose and need was developed for the spotted owl:
The primary purpose and need of the project is to retain large old and structurally diverse trees and snags across the project area. The SERAL project was developed to specifically maintain and promote these important habitat characteristics for the spotted owl.

(DEIS, p. 120) This concern is related to Issue 1.A. of the DEIS.

H. Alternative 1 Does Not Provide for Viable Spotted Owl Populations in Project Area

The 2012 planning rule requires forest plans to maintain viable populations of each species of conservation concern (CFR 219.9). This is of utmost importance given that spotted owl populations

have declined 30% to 50% in the Sierra Nevada over the last 30 years within all demography study areas on national forest lands (Connor et al. 2013; Tempel and Guti[eacute]rrez 2013; Tempel et al. 2014b).
As mentioned in our previous comment letter and DEIS issue 1.A., proposed changes in management direction that are more risky or less certain for spotted owl must be evaluated in terms of viability to the species. We remain concerned that the BE hardly mentions providing for viable spotted owl populations, nor does it offer consistent definitions for important concepts such as [lsquo]essential habitat for survival and reproduction[rsquo] and [lsquo]reduction in habitat quality.[rsquo] This makes
viability difficult to determine and leaves questions unanswered such as: How much high quality habitat is needed to maintain viability? The SERAL project proposes to retain less spotted owl habitat than that which is recommended by the 2019 strategy and strays significantly from the document[rsquo]s core intent. The 2019 spotted owl strategy strives for:
[hellip]maintaining well-distributed territories across the CSO range [hellip][in order to] increase population resilience to the effects of climate change and other environmental stressors[hellip].Conservation measures aimed at maintaining the CSO and their suitable habitat where they exist today provide some immediate stability for individual owls while we work
to align the landscape with NRV.

(USDA Forest Service 2019, p.2) Contrary to this goal, Alternative 1 proposes intensive forest management treatments across spotted owl habitat in the project area including nearly every owl PAC and territory, thereby increasing risk and uncertainty for viability of this declining species. In addition to the risk introduced by implementing the 2019 owl strategy, the project does not comply with the desired conditions in the strategy for maintaining high quality spotted owl habitat, as discussed earlier in this document. The proposed mechanical treatments exceed the risk and uncertainty posed by the regional strategy, threatening viability of the California spotted owl.

1. The Project Proposes to Degrade Spotted Owl Habitat Across the Project Area, Threatening the Viability of the California Spotted Owl.

Related to Issue 1.A in the DEIS, the intensity of treatments proposed in Alternative 1 would substantially reduce habitat availability for almost all spotted owl territories in the project.
The mechanical thinning proposed in SERAL removes and degrades high quality that only occurs intermittently in the project area. According to the DEIS, [ldquo]currently approximately 9% of SERAL project area contain high-quality CSO habitat while 58% contain best-available CSO habitat (Table 23).[rdquo] (p.51) Despite so little high quality habitat on the landscape, Alternative 1 would convert 10,986 acres of it to non-habitat categories in occupied spotted owl territories. This would involve conversion of 5M to 5P, 5D to 5P, 4D to 4P or 5P, and 4M to 4P, 4M or 4S (SFL GIS analysis). Alternative 1 would also remove 1,834 acres of 6, 5D, 5M outside territories, reduce canopy cover on 2,718 acres of 4D/4M in PACs (SFL GIS analysis). These treatments are proposed at an unprecedented scale, introducing uncertainty and risk to spotted owl persistence on the landscape. Research shows that this intensity of habitat degradation in the 5D/M and 6 categories in breeding territories leads to a reduction in owl survival, reproduction and occupancy over time (see Attachment A research summary and BASI discussion above).

2. California Spotted Owl Surveys Must Be Required With All Treatments in Owl Habitat.

Related to Issue 1.A. in the DIES, there are number instances where Alternative 1 would degrade spotted owl habitat and then characterizes this as an improvement in habitat conditions. For instance, when Alternative 1 converts 4D to 5M, then component SPEC-CSO-STD-01 is triggered lifting the survey requirement when owl habitat is [lsquo]improved[rsquo] (DEIS p.132). Our concern with the CSO-

STD-01
is that without surveys, undetected spotted owls could be overlooked, thereby risking harm to those owls, as well as loss of undetected spotted owl territories, and the elimination of important breeding structures in nest stands such as dense canopy cover, nests and roosts essential to spotted owl sustainability.

The potential lack of surveys in spotted owl habitat is especially fraught given that there is so much disturbance to PACs proposed in the project area that could displace owls to suitable habitat outside of existing PACs that could then be degraded as part of [lsquo]habitat improvement[rsquo]. For example, mechanical thinning in 53 PACs and territories (BE p.61) may cause some birds to relocate as a result of disturbance from intensive treatments. Another possibility is that a future fire in the project area could force owls to relocate. In these scenarios, owls that colonize habitat outside existing PACs that is also proposed for [lsquo]habitat improvement[rsquo] would not be detected Surveys prior to treatment in spotted owl habitat should always be required,

even if the treatment is considered [lsquo]improvement[rsquo] because as we have established this could still involve degradation of 4D or 5D spotted owl habitat and could otherwise impact undetected resident owls. The DEIS has not considered this in the evaluation of project impacts to spotted owl viability.

There are also large areas of the project area where no surveys have ever been conducted because of accessibility issues such as the South Fork Stanislaus River canyon West of Cedar Ridge (and more than 1.5 miles from nearest neighbors TUO0139 and TUO0221). We would like more information about what surveys are planned for those areas. They are proposed for helicopter and skyline logging, indicating both the removal of large merchantable trees and inaccessibility of the area.

II. Concerns About Other At-Risk Species

A. Northern Goshawk

Territory D52T04 appears bisected by fuel break [ndash]Territory D51T28 (Fraser Flat), D53T14, (Strawberry) and D52T15 (Smoothwire) all have significant mechanical treatments, although the BE assumes no treatment in NOGO outside Defense Zone:

Goshawk PACs within WUI may be mechanically thinned as per forest plan direction (USDA Forest Service 2017); goshawk PACs outside of WUI are avoided and not mechanically thinned. Prescribed burning is allowed in goshawk PACs and hand treatments, including handline construction, tree pruning, and cutting of small trees (less than 6 inches DBH) may be conducted prior to burning as needed to protect important elements of habitat.[rdquo] (p.78)

We are not sure what the intention of the proposed action for goshawk PAC treatments is and clarification is needed.

B. Great Gray Owl

The Regional Learning Center GGO PAC at the Sierra Outdoor School is proposed for mechanical thinning and fuel breaks across the entire 50-acre PAC, according to the GIS layer:

(see letter for figure)

Figure 6. Treatment units (orange line) for Alternative 1 overlayed on Regional Learning Center great gray owl protected activity center (yellow fill). Data from SERAL project website and Google Earth.

However, the BE (p.22) assumes no mechanical treatments in great gray owl PACs.

While GGO nest stand habitat is avoided and not mechanically thinned (i.e., generally the 50 acres of forested habitat near the nest along meadow margins), alternatives may vary with regards to hand treatments, including hand line construction, tree pruning, and cutting of small trees (less than 6 inches DBH) prior to burning as needed to protect important elements of owl habitat. This may apply to GGO PACs in the Wildland Urban Interface and/or GGO PACs where fire is prescribed. Additionally, under the action alternatives, encroaching conifers may be removed in meadow foraging habitat within PACs to maintain the meadows and enhance habitat needs of prey species.

This inconsistency between the information in the GIS data and the BE should be corrected in the FEIS.

III. Use of FORSYS Model to Select Treatment Locations and Assign Prescriptions

A resilience departure index was developed as part of the FORSYS modeling system. Appendix E described the departure index and states this about its use:

A departure value of > 1 (i.e., > 1 standard deviation from the mean) represent locations where forest structure is more dense than the reference conditions; the greater the departure the greater the density of the forest.

We examined the GIS data and found that significant areas within the treatment footprint for Alternative 1 were not considered departed, i.e., areas with departure values less than or equal to s that in dry mixed conifer, for example, that 7,222 acres outside of territories is

considered resilient, yet this area is proposed for logging. Similarly, 4,373 acres within territories
is considered resilient, yet this area is also proposed for logging.

Table 3. Distribution of Alternative 1 treatments in areas judged to be resilient versus not resilient according to Appendix E. Derived from SFL GIS analysis.

In many of these areas logging proposed under Alternative 1 would change suitable habitat to unsuitable for CSO. For example, suitable habitat would be reduced to unsuitable on over 2,900 acres within territories and over 6,200 acres outside of territories (SFL GIS analysis). Among these areas affected that were considered not to be departed from NRV, there were about 574 acres of highest quality nesting and roosting habitat (CWHR 5M or 5D) within territories and 473 acres outside of territories that would be reduced to unsuitable habitat, i.e., CWHR 5P. These areas are not considered departed by the analysis developed by the SERAL science team. The FEIS should explain how the treatments in these areas are consistent with the stated purpose and need to manage within NRV to benefit landscape scale restoration.

We also do not understand how the silvicultural prescriptions described in Appendix E (Table 1) meet the stated purpose and need to manage toward NRV. For mixed conifer types, there are only two criteria to distinguish between treatments: 1) forest type: dry mixed conifer or mesic mixed conifer: 2) diameter limit: territory versus general forest. The topographic position within these forest types is variable, yet we see no distinction made in prescriptions applied to lower, mid- and upper slopes. We do note that the CSO departure index (Appendix E and limited to use within PACs) distinguished between these topographical positions and based on NRV values set different

canopy cover criteria for valley, mid and upper slopes.

When we examined the distribution of prescriptions within Alternative 1, we found that just over 9,000 acres was proposed for commercial logging in territories and about 86% of the areas would be treated with a single prescription [ndash] [ldquo]Alt1_MC_TERRITORY_150.KCP[rdquo] [ndash] that would manage the stands for
[ldquo]a target stand density index (SDI) of 150[rdquo] (Appendix E) 7. Similarly, the

7 We note that although Appendix E refers to the "150" value for this prescription as SDI, we suspect that it actually refers to a target basal area per acre since that is the value reflected in Table 13 of the DEIS.

description of Alternative 1 mentions that prescriptions will create a variable stand structure with individual trees, clumps and openings (ICO) (DEIS, p. 25), but the prescriptions used in the modeling do not mention this variability or that it is likely to vary with topographic position. The FEIS should explain how the treatment prescriptions described in Appendix E will achieve the stand variability described in Alternative 1.

IV. Condition-Based Management for Salvage Logging of Drought, Insect/Disease and Wildfire Related Tree Mortality

We identified the use of condition-based management (CBM) as a concern in our scoping comments. We note here that the term [ldquo]condition-based management[rdquo] has been eliminated from the DEIS. Instead, the DEIS refers to the proposed salvage logging as [ldquo]NRV-based restoration.[rdquo] We think it important to be clear that what is being proposed as [ldquo]NRV-based restoration[rdquo] is condition-based management, a
practice that is highly controversial and has been the subject of recent litigation in which the Forest Service did not prevail. We also note that MOTORM2K, the proposal that preceded SERAL, included condition-based management that was opposed by many organizations. We think the effort to refer to this as [ldquo]NRV-based restoration[rdquo] is disingenuous. That is because the entire SERAL project is based on using NRV to assess the need for restoration and to set targets for restoration. This is called NRV-based restoration and is promoted by the CSO strategy across the landscape and not limited to the salvage of dead and dying trees.

The idea of CBM has been circulating in the Forest Service for several years. In 2019 a definition was proposed for inclusion in Forest Service regulations on implementing the National Environmental Policy Act (NEPA; 36 CFR Part 220), but was abandoned in the final rulemaking. The American Bar Association recently reviewed the status of CBM and offered the following as a description of CBM:

CBM projects use an overarching set of [ldquo]goal variables[rdquo][mdash]predetermined management criteria that
guide implementation[mdash]that Forest Service staff apply to on-the-ground natural resource [ldquo]conditions[rdquo]
encountered during the course of project implementation, a period that can span years or even decades: essentially, when the Forest Service finds X resource condition on the ground, it applies Y timber harvest prescription. However, basic information regarding the project[rsquo]s details[mdash]such as unit location, timing, road building, harvesting methods, and site-specific environmental effects[mdash]is not provided at the time the Forest Service conducts its NEPA environmental review (when the public can weigh in), nor when it gives its final approval to a project (when the public can seek administrative review). Instead, site-level disclosures are made after NEPA environmental and administrative review is complete, depriving the public of opportunities to comment and influence the decision based on localized conditions.

(Cliburn et al. 2021) Management frameworks that establish goals and approaches to achieving them can make project planning more efficient. This is what a well-designed forest plan can provide. This type of guidance also can be provided by [ldquo]left-side analysis[rdquo] that has formed the basis of landscape planning completed by the Forest Service for the past 25 years. The problem, however, comes with the Forest Service[rsquo]s attempt to marry CBM with the requirements of requires federal agencies to disclose to the public and in advance of

environmental decision making the likely site-specific impacts of project related activities. In a recent legal case, the courts held that the Forest Service[rsquo]s Prince of Wales Landscape Level Analysis Project[mdash]a 15-year logging project on Prince of Wales Island in the Tongass National Forest using CBM[mdash]violated NEPA because it failed to provide the site-specific analysis that was needed to satisfy NEPA[rsquo]s [ldquo]hard-look[rdquo] standard.

These are the same issues that confront us for the salvage logging proposed in the SERAL project. What are the specific locations where the salvage logging is proposed and what are the site-specific environmental impacts of those actions? These details are not provided in the DEIS or specialists reports. In the case of post-wildfire salvage, up to 3,000 acres across the project area could be salvaged. For insect-, disease-, or drought-killed trees, up to about 37,000 acres could be salvaged logged with this decision.

We specifically asked in our scoping comments that the DEIS disclose the site-specific impacts of any actions proposed, including salvage logging. In response to our concern, the DEIS simply added a few criteria to narrow the footprint of impact, but includes little to no evaluation of impacts of the proposed salvage logging on up to 37,000 acres. Impacts are not discussed or only generically discussed for aquatic resources, soils, and wildlife, yet significant impacts to such resources from salvage logging are widely documented (see for example Blakey et al. 2019; Burnett et al. 2010, Burnett et al. 2012; Georgiev et al. 2020; Leverkus et al. 2020; Loffland et al. 2017; Roberts et al. 2021; Seavey et al. 2012; Siegel et al. 2013; Thorn et al. 2018;). In the absence of the disclosure of site-specific impacts, the analysis in the DEIS does not meet the hard look standards required by NEPA.

Setting aside the failure to disclose and evaluate impacts of the proposed salvage logging, the proposal itself still lacks sufficient detail about the salvage logging to be completed. The proposal identifies some NRV conditions of severity and amount of tree mortality, but fails to establish what is to be created by clearing away all other dead trees. Clearing away areas of dead trees does not achieve NRV conditions in itself and must be coupled with a more complete description of the post-treatment landscape and include measures to conserve additional resources. The additional detail needed to more completely described the proposed action would include the site-specific locations for treatments as well as:

Additional clarity on the scale at which the NRV conditions would be applied Measures to address habitat requirements for black-backed woodpeckers and other species dependent on burned forests.
Desired conditions for post-treatment tree structure, including what tree structures will be retained.
Desired conditions for post-salvage fuels to ensure that fuel conditions following salvage are improved over pre-salvage conditions. This is important given that post-disturbance salvage logging can increase hazardous fuels following treatment (Donato et al. 2006).

We also note that there are many other environmental decision-making processes that can be used to expeditiously address the desire to salvage dead or dying trees including categorical exclusions and environmental assessments combined with shortened decision-making time lines that can be requested of CEQ.

Unless the DEIS provides a site-specific analysis of the impacts from salvage logging the resources noted above and others that would be affected by the proposal, 8 we ask that you drop this activity from the final decision.

V. Creation of Fuel Breaks

We support the creation of fuel breaks to assist in the implementation of prescribed and managed fire, as well as for defense of communities and infrastructure. We also expect that the fuel breaks that are created are permitted with environmental analysis that complies with NEPA[rsquo]s requirement to disclose the site-specific impacts of the project a take a hard look at potential impacts. We are

concerned that the proposed fuel break and environmental analysis do not meet the requirements for NEPA because the proposed action is insufficiently described and the impacts of the fuel break on some resources have not been disclosed.

The DEIS describes the activities to create the fuel breaks in the DEIS (p. 26-28). Table 16 describes the treatment specifications and is a helpful table, but it is not complete. There are several references to taking action to achieve [ldquo]fuels objectives[rdquo] or [ldquo]to achieve effective fuels treatments[rdquo], but how these activities will alter the resource is not described. For instance, would all the shrubs be cleared in chaparral habitats or some shrubs left? Table 16 also does not describe what to expect in chaparral types where shrubs are the overstory or if a different approach will be taken in riparian areas. This information is important to visualizing how the fuels break will alter these habitat types. We have seen photos used very effectively to depict the desired conditions in fuels breaks and suggest that they be used in the DEIS. ?

The DEIS and specialist reports also don[rsquo]t evaluate the impact that the fuel breaks may have on the affected resources. We looked at the MIS report to see how it addressed the effect of fuel break creation on shrub habitats. The MIS report indicates that shrub cover and size class are factors in the analysis that will be used to assess habitat condition, however the analysis of effects does not report any results for this factor.

We have a similar concern about the disclosure of impacts form fuel breaks on oak woodlands. The project area includes sensitive blue oak woodland (Botany BE p.6), but the proposed oak retention guidelines for fuel breaks do not protect blue or valley oaks: [ldquo]Retain all [oak and other hardwood trees] 12 in. DBH or greater[rdquo] (DEIS p.28). This proposed action does not comply with current forest plan direction and there are no project-specific plan amendments for hardwoods proposed in the DEIS.

We recommend that you improve the evaluation of fuel breaks in the DEIS by:

*Clarifying what the fuel objectives are for fuel breaks
*Define what an [ldquo]effective fuel treatment[rdquo] is and how that affects understory vegetation
*Providing photos of samples of fuel breaks in different habitat types, especially chaparral and oak woodland
*Evaluate potential changes to habitat condition for shrub and oak woodland types using the habitat condition metrics referenced in the MIS report, e.g., shrub canopy and size class.
*Follow the nine standards and guidelines for hardwood management in the 2004 Forest Plan including: retain all blue oak and valley oak (#21), encourage hardwoods in plantations (#26), manage hardwood ecosystems for a diversity of hardwood tree size classes with in a stand (#19), as well as minimize impacts to hardwood ecosystem structure and biodiversity (#22).

We note that the DEIS proposed the use of staged decision making to allow a partial decision on project activities to move forward quickly in the five priority PODs. This approach includes limiting activities to those that do not involve timber removal. We support this approach, but ask that you address our concerns about the adequacy of the treatment descriptions and effects analysis before proceeding with a decision.

8 We note here that we remain open to reviewing an analysis that adequately addresses site specific impacts in compliance with NEPA, but we are not convinced that it is possible to achieve.
? See for example the images of post-treatment desired condition for this project on the Los Padres National Forest:https://www.fs.usda.gov/nfs/11558/www/nepa/113939_FSPLT3_5616166.pdf

VI. Improving the Approach to Fire Management

The action-alternatives include roughly 70,000 acres of prescribed fire either as the first treatment or a follow up treatment. We strongly support these actions. We think the completion of prescribed or managed fire is critical to meet the purpose and need of the project to improve resilience for people and nature. Prescribed fire is essential and not incidental to achieving the purpose and need. And, the stated goal for the SERAL project (DEIS, p. 8 [ldquo]designed to restore forest resilience and the landscape[rsquo]s ability to persist with fire as a natural process on the Stanislaus National Forest") cannot be achieved without it.

We are concerned that the framing in the DEIS about implementation of prescribed fire is passive or soft with less commitment to implementation than conveyed about logging. We are also concerned about the discussion in the DEIS that appears to [ldquo]give up[rdquo] on accomplishing prescribed fire:

However, due to unsafe existing conditions, weather, personnel availability, and uncertain funding [mdash] opportunities to burn or manage fire are very limited.

(DEIS, p. 49) These limitations can be reduced and overcome, but it requires volition and dedication to do so. The DEIS and alternatives is one place to establish the need and importance in priority for action for prescribed fire. We ask that you make that case more prominently in the DEIS.

We have been working in recent years to reduce barriers to prescribed fire. With support from a variety of stakeholders and agencies, we have been making headway. This is an area that we are particularly interested in working in partnership with your staff to successfully implement the proposed prescribed fire treatments.

VII. Use of Designation by Prescription (DxP) and Designation by Description (DxD) to Implement Logging Treatments

We raised this concern in our scoping comments, but it is not mentioned in the description of the proposed action or elsewhere in the DEIS. We are concerned about the use of Designation by Prescription (DxP) and Designation by Description (DxD) applied to the marking of trees to be logged. This approach relies on a written description to be used by the logger to judge for themselves which trees in a stand should be removed. The Forest Service monitors the completion on these prescriptions, but functionally the prescriptions must be very simple with criteria that can be easily measured in the field. Our experience indicates that there are limited circumstances where these written approaches to [ldquo]marking[rdquo] trees to remove are acceptable. For example, we have seen DxP used successfully in timber stand improvement in plantations where the intended outcome is to create a fairly uniform stand.

The proposed actions depend on logging to create variable forest stand conditions:

To best mimic NRV conditions and achieve within-stand and multi-stand diversity, applied silviculture and prescribed fire treatments need to create a pattern of individual trees, clumps of trees, and openings containing various sizes of clumped trees and openings.

(DEIS, p. 13) Accomplishing such a pattern (referred to as ICO) requires judgment by Forest Service professionals on the ground. The same is true for the list of conditions that govern when the

removal of trees that exceed a certain limit. See DEIS, p. 24-26. We believe that these outcomes can only be achieved by the Forest Service marking the trees to be removed. If the use of DxD or DxP is intended in the SERAL project, we ask that it be described how the variable density and ICO objectives will be met using these approaches to tree selection and to provide examples of successful applications of these non-marking approaches to achieving similar habitat objectives.

VIII. Wild and Scenic Rivers (WSRs)

The DEIS notes that two eligible WSR segments are located in the SERAL Project area. [sup1]° While this is technically correct, the statement fails to accurately note that the two segments are not only eligible, they were also found to be suitable and recommended by the Forest Service for designation by Congress.[sup1][sup1] The distinction is important because eligible WSRs not determined suitable lose their interim protection. Interim protection applies only to eligible WSRs that were not subject to a suitability decision/recommendation and to eligible/suitable WSRs. Interim protection for both is identical but the description of this topic in the DEIS should be accurate.

The SERAL Project proposes up to 2,525 acres of treatments, the majority of which is Prescribed Fire Only.[sup1][sup2] Possible ground-disturbing treatments (Hand Pile and Burn, Forest Thinning-Helicopter, Forest Thinning-Skyline, Forest Thinning-Tractor, Understory and Surface Fuel

[sup1]° SERAL DEIS pg. 72.
[sup1][sup1] Stanislaus National Forest LRMP & ROD, pgs. IV-99 and 13 respectively.
[sup1][sup2] SERAL DEIS, Table 31, pg. 74.

Reduction) range from 44 acres to 191 acres. The SERAL FEIS/ROD should ensure that these activities within the suitable WSR corridors comply with the Forest Plan direction to maintain the Recreation Opportunity Spectrum (ROS) of Semi-Primitive Non-Motorized and Visual Quality Objective (VQO) of Retention for WSRs.

Forest Service guidelines for eligible/suitable WSRs include this specific direction for Vegetation Management in Wild River corridors:

Cutting of trees and other vegetation is not permitted except when needed in association with a primitive recreation experience, to protect users, or to protect identified outstandingly remarkable values. Examples of such exceptions include activities to maintain trails or suppress wildfires. Prescribed fire and wildfires managed to meet resource objectives may be used to restore or maintain habitat for threatened, endangered, or sensitive species or restore the natural range of variability.[sup1][sup3]

The discussion of possible impacts on suitable WSRs (Issue 5) should be based on and provide assurance that the project will comply with this direction. If any of the proposed ground-disturbing activities in the suitable Wild River corridors does not meet these standards and guidelines (ROS, VQO, Vegetation Management for Wild Rivers), the proposed treatments should be eliminated or adjusted accordingly.

IX. Near Natural and Scenic Corridor Allocations Surrounding Suitable Wild Rivers

The Stanislaus LRMP allocates land outside the lower Middle Fork WSR corridors to the Near Natural prescription and the lower North Fork WSR to Scenic Corridor and Near Natural Prescriptions.[sup1]4 These allocations are intended to protect the outstanding scenery and semi- primitive non-motorized recreation values of the WSR corridors. The SERAL Project Treatments comply with the Visual Quality

Objectives and Recreation Opportunity Spectrum of these prescriptions. If any of the proposed ground-disturbing activities in the Near Natural and Scenic Corridor areas outside of the suitable Wild River corridors do not meet these standards and guidelines, the proposed treatments should be eliminated or adjusted accordingly.

Thank you for considering our comments. We would like to meet with you to discuss our concerns, especially those related to the CSO amendments and impacts to CSO, the modeling approach applied, and condition-based management. Our purpose for meeting would be to find resolve our concerns about the project.

[sup1][sup3] FSH 1909.12 [ndash] Land Management Planning Handbook, Chapter 80 [ndash] Wild and Scenic Rivers, pg. 31.
[sup1]4 Stanislaus LRMP Map I-1.

(Peer Review 4, https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd934200.pdf) The basis for this criterion of three years is not clearly supported by a science-based rationale. It also reduces the conservation benefit to CSO relative to current practices or an alternative that would require, for example, 5 consecutive years of surveys.

The proposed plan amendment would also allow PACs to be abandoned if they are occupied by owl pairs that are not territorial and single birds that are territorial. Spotted owls are long lived and tend to stay in a central location. Pairs that are not territorial and birds that are single and territorial are more likely to become territorial pairs and successfully nest compared to the floater population because they are currently occupying habitat (Guti[eacute]rrez et al. 2017). For similar reasons, conservation measures for northern spotted owl include: 1) identifying activity centers for territorial singles and any detected pair; and 2) habitat guidelines in the territory around these activity centers (USDI Fish and Wildlife Service 2009 and 2012). Neither the CSO strategy document nor the proposed amendment provide any discussion or science information to indicate the basis for the change or if the recommended change in criteria will improve owl conservation.

We asked in our scoping comments that the science-basis for the 3-year vacancy threshold and abandonment of PACs with non-territorial pairs and territorial single birds be provided in the DEIS, yet this information has not been disclosed. Adoption of these amendments without presenting the science-basis would be arbitrary.

4. Protection for CWHR 5M/5D/6 Provided in CSO strategy Has Not Been Included in the Proposed Amendment

The proposed amendment now clearly states, in part, that the desired condition in a territory is: At least 40 to 60 percent (depending on the terrestrial vegetation type and site conditions) of each California spotted owl territory consists of the highest quality nesting and roosting habitat in large enough patches to provide interior stand conditions, generally 1- 2 tree heights from an edge.

(DEIS, Appendix B, p. 132) Highest quality nesting and roosting habitat is also defined as CWHR 5M, 5D, and 6. However, the project-specific forest plan amendment now leaves out a critical recommendation from the CSO strategy intended to protect the highest quality habitat from degradation when desired conditions have not been met:

When occupied territories do not meet the desired conditions described above, retain the existing

large tree moderate/high canopy cover habitat (for example, CWHR 6, 5D, 5M) wherever it exists throughout the territory.

(USDA Forest Service 2019, p. 29) This means that if the desired condition has not been met with CWHR 5M, 5D, and 6, these types shall be conserved wherever they exist in the territory. There are many instances in the SERAL project area where territories do not currently meet desired conditions for CWHR 5M, 5D, and 6 habitat, yet logging that degrades and changes these habitat types is proposed in Alternative 1 (see following sections for additional discussion of this this recommendation without explanation is arbitrary. And to be consistent with

the CSO strategy and to protect high value habitat when in low amounts within a territory, this plan component should be included as a standard in any adopted forest plan amendment.

B. Best Available Science Information (BASI)

1. Allowing Degradation of Habitat in PACs

Related to ISSUE 1.A. in the DEIS, the proposed SPEC-CS0-STD-04 amendment allows up to 100 acres of habitat in a PAC to be degraded by logging, and the entire PAC (up to 300 acres) can be mechanically treated if it is loosely considered habitat improvement:

In California spotted owl protected activity centers, all management activities must maintain or improve habitat quality in the highest quality nesting and roosting habitat. Where necessary to increase long-term resilience, vegetation treatments that may reduce near-term habitat quality may be authorized in up to 100 acres outside of the highest quality nesting and roosting habitat. Throughout protected activity centers all vegetation treatments must:
Retain the largest/oldest trees, known nest trees, and other large trees and snags with cavities, deformities, broken tops, or other habitat features of value to old forest species; [CSO Strategy, p. 31; Approach 2, 3.A]
Retain connected areas of moderate (at least 40 percent) and high (at least 60 percent) canopy cover between the known nest site (if nest site is not known, use the most recent known roost site) and areas in the rest of the protected activity center;
Avoid mechanical treatments within a 10-acre area surrounding the most recent known nest;
Avoid creating new landings, new temporary roads, or canopy gaps larger than 0.25 acres comprising no more than 5% of a stand;
Increase the quadratic mean diameter of trees at the protected activity center scale; and Maintain the average canopy cover of the protected activity center above 50 percent.

This provision for mechanical treatment that degrades habitat quality comes directly from the CSO strategy document (USDA Forest Service 2019, p. 28). The strategy document does not provide science information or a discussion of why this scale of habitat alteration and degradation is acceptable in a PAC, nor does it discuss the potential for abandonment given this level of habitat alteration and disturbance.

The DEIS should provide the science-based rationale and supporting research for this plan component. The potential effects on PAC abandonment by the proposed action should be compared to Alternative 3.

The scale of treatments proposed in the SERAL Alternative 1 is unprecedented and it is unknown from the literature how CSO will respond to up to 300 acres of habitat alteration in PACs. Only three studies have investigated experimental logging impacts to California spotted owls. They consistently show negative impacts to occupancy and other demographic parameters (Keane et al. 2017). These studies never treated in PACs, as proposed here, still mechanical treatments in CSO

territories (outside of PACs) including thinning and small group selection pose long-term negative impacts to CSO (Seamans and Gutierrez 2007; Tempel et al. 2016;

Tempel et al. 2014; Stephens et al. 2014). These studies are dismissed in the CSO strategy for having a small sample size, however they represent the best available, peer-reviewed and published research to date. The SERAL project far exceeds the scale and intensity of any experimental treatments on this species. Thus, the project introduces significant uncertainty regarding the persistence of CSO across a large swath of habitat occupied by at least 49 owl pairs. The project threatens the sustainability of CSO on this landscape at a time when declines in CSO are documented across the Sierra Nevada (see Attachment A research summary). A more cautious approach to CSO management is needed to ensure old forest species resilience to climate extremes.

An additional concern with regard to treatments in PACs is that the scientific evidence presented in the BE does not support its own conclusions. The SERAL BE (p.51-56) relies on the CSO strategy as well as fire and climate research to assert that 5,987 acres of logging in 53 PACs (p.61), sometimes covering 100% of the PAC, poses an acceptable risk to CSO, despite evidence to the contrary published by US Forest Service spotted owl researchers discussed above. The project even breaks with the CSO strategy guidance to further treat in PACs. While we agree with the DEIS that recent megafires and research such as Jones et al. (2020) present convincing examples of unwanted consequences of severe fires for spotted owls, we disagree that this research is evidence for wide-scale habitat disturbance across 50+ PACs because that would also come with unwanted consequences for spotted owls (Jones et al. 2021b; Keane 2017).

The BE also presents anecdotal unpublished case studies to support its conclusion. In one exercise, biologists looked at CSO occupancy in a single PAC in the Stanislaus Tuolumne Experimental Forest (STEF). Here, it is not possible to determine if the same birds are occupying the area and what impacts are to demography parameters such as survival and occupancy; and, long-term impacts are unknown. Of further concern is that the BE equates the treatments in the STEF, where 21% of the PAC area was thinned (BE p.56), with the scope and intensity of proposed treatments in Alternative 1. No formal monitoring studies have examined treatment of up to 220 acres in CSO PACs and the BE must acknowledge that the project poses significant uncertainty to spotted owl.

The BE also maintains that the STEF treatments had no negative impact on the spotted owl PAC in the area, however, they may not have accounted for the lag in response time to disturbance that spotted owls are known to exhibit. Territorial owls can take 2-3 years to respond to even extreme disturbances (Stephens et al. 2014; Lee and Bond 2015a; Jones et al. 2020). In Stephens et al. (2014), spotted owl occupancy was maintained for several years following logging while owls used larger areas to forage. Eventually the study saw a 43% reduction in spotted owl occupancy from experimental logging after year three.

Further, the BE overlooked important research from the STEF study about logging impacts on spotted owl prey species. Sollman et al. (2016) showed that treatments in the STEF significantly reduced flying squirrel density in the study area. Owls in this study were presumed to rely on flying squirrels from outside of the treatment units where denser forests were not logged:

Whereas thinning had negative effects on squirrel density on the scale of a thinning treatment unit, our results suggest that these effects were largely absorbed by the heterogeneous landscape, as squirrels shifted their distribution into un-thinned areas

without a decline in overall density. This highlights the need to incorporate the landscape context when evaluating the effects of forest management on wildlife.

(Sollman et al. 2016) Spotted owl PACs in SERAL represent 30% of PACs on the Stanislaus and 5% of owl sites in Sierra Nevada and most of these are lacking high quality nesting and roosting habitat (DEIS p.55; BE p.32). This is a significant portion of PACs in bioregion. The BE frames the bioregional importance of the area:

California spotted owl sites in the SERAL project area location are of particular importance to the distribution of California spotted owl in the Sierra Nevada and potentially key to this subspecies[rsquo] continued persistence, especially considering current projections for climate change.

(BE p. 27). Due to bioregional importance of the project area as well as the scale and intensity of PAC treatments, the project should avoid focus on reducing fuels and applying prescribed fire in PACs. Treatment intensity should be highest in PACs where habitat is ranked high on the departure index and where productivity and occupancy are low.

2. Habitat loss in Spotted Owl Territories

Related to DEIS Issue 1.A., the table below shows examples from SERAL Alternative 1 of high quality spotted owl habitat degradation in occupied territories. This is not a complete list, the GIS data was incomplete so it was not possible to look at all territories. We found 20 spotted owl territories with between 25 to over 300 acres of 5D and 5M targeted for degradation to 5P, despite the paucity of this forest type on the landscape. Alternative 1 would result in the total loss of 2,166 acres of 5D/5M from territories. Habitat loss as proposed in the SERAL project has been shown to lead to a loss of spotted owl occupancy in multiple studies as discussed below.

Table 1. Habitat changes for selected territories compared existing conditions.
(See letter for table)

[sup3] from BE Table CSO 5.
4 We completed this analysis and others presented in these comments using SERAL GIS data provided at the project website. We refer to this as [ldquo]SFL GIS analysis[rdquo] in these comments.

Recent spotted owl research shows that alteration of CWHR 5D represents a significant habitat alteration that reduces the probability of territory occupancy (Jones et al. 2019; Jones et al. 2021b). Authors reviewed data from 275 territories in four Sierra Nevada demography studies and found uniform benefits to mid-century occupancy when treatments were designed to avoid modifying CWHR 5D and 6 in occupied territories (Jones et al. 2019; Jones et al. 2021b). These results from Jones et al. 2021b were misunderstood in the BE:

The effects of specific forest management activities on spotted owls have a level of uncertainty but overall would have a long term benefit with minimal or at least equivocal short term impacts (Gutierrez 2017; Jones et al. 2021; Jones et al. 2021 in press)[rdquo].

(BE p.50) Jones et al. 2021 [lsquo]in-press[rsquo] aka Jones et al. 2021b does not support this statement. Instead, the authors showed that removal of 5D in spotted owl territories poses a strong risk of territory abandonment, making the proposed SERAL habitat treatments untenable. The DEIS does not consider viability of the spotted owl in the context of known impacts to territories from treatments proposed by the SERAL project.

Alternative 1 would convert 10,986 acres of high quality and best available habitat in territories

to non-habitat categories. This would involve conversion of 5M to 5P, 5D to 5P, 4D to 4P or 5P, and 4M to 4P, 4M or 4S (see table above). Research shows that degradation of spotted owl habitat in breeding territories is not conducive to owl conservation even under extreme climate model scenarios. Tempel et al. (2014b and 2016) demonstrate that medium-intensity logging leads to a reduction in spotted owl occupancy, reproduction and survival. As mentioned earlier, Jones et al. (2021b) shows mechanical treatments that retain 5D in owl territories (called [lsquo]no habitat alteration[rsquo] in this study5) offer the highest likelihood of maintaining spotted owl resilience over the next 40 years. This research also suggests that benefits from intensive forest treatments as proposed in Alternative 1 do not pay off even during severe fire scenarios because they lead to spotted owl territory abandonment before the benefits of fuels reduction catch-up (see Figure 1 below).

Figure 1 (From Jones et al. 2021b). [ldquo]Sierra Nevada-wide site occupancy trajectories for each treatment scenario relative to the baseline no-treatment scenario (dark blue line). (a) Occupancy when treatments are excluded from owl territories; (b[ndash]d) occupancy when treatment occurs within owl territories but assumptions about the extent to which treatments alter owl habitat vary (no habitat alteration, weak habitat alteration, strong habitat alteration). Trajectories represent means across 50,000 simulations. For full uncertainty across stochastic replicates.[rdquo]

We agree with the SERAL BE that Jones et al. (2021b) demonstrates fuel reduction and spotted owl conservation are not mutually exclusive. Notably, this research also shows that in order to truly achieve climate resilience and maintain species diversity, forest treatments must temper reductions in stand density for long-term benefit in order to achieve adequate old forest protection in the short-term. In the case of SERAL, the project must maintain CWHR 5M, 5D and 6 habitat where it exists in spotted owl territories and throughout the project.

C. Designation of California Spotted Owl Territories

As mentioned in our scoping comments and DEIS issue 6.A., the spotted owl strategy approach to territory delineation based on circular territory results in reduced quantity and quality of habitat conserved and protected for owls. In some cases the PACs themselves are not even included in the new SERAL territories (see figure below). This concern is also illustrated by Table 32 of the DEIS, where proposed treatments in owl territories result in a loss of 186 acres of 6, 5D and 5M (p.78).

The Sierra Nevada Forest Plan Amendment (SNFPA) directs that suitable habitat be provided within 1.5 miles of the activity center in as compact arrangement as possible and identifies the target habitat in descending order of priority (USDA Forest Service 2004, p. 39). Habitat suitability in these areas, called Home Range Core Areas (HRCAs), is to be maintained following certain guidelines to protect large trees structures, snags, down wood, and higher cover preferred by spotted owls while increasing resilience to wildfire and other threats (USDA Forest Service 2004, p. 46). This is similar to the approach adopted to conserve northern spotted owl (USDI Fish and Wildlife Service 2009). Without establishing a science basis that relates to conservation biology, the SERAL plan amendment and the spotted owl strategy establish conservation on delineating a circular territory of a size based on the nearest neighbor distance that in the case of SERAL does not include as much high quality habitat as the HRCA and
instead includes far greater foraging habitat; however this habitat overlaps significantly with

private land. This is a less protective approach to managing for spotted owls and may not reflect

how owls use habitat.

There is extensive evidence that spotted owls do not confine their habitat use to circular territories (see for example Jones et al. 2016 and Blakey et al. 2019). These simple 1,000a circles around activity centers often do not protect best foraging and nesting habitat when it occurs outside the circle.

The SERAL territories also include significant portions of non-habitat and overlap with clear cuts, plantations and lava cap, none of which will be spotted owl habitat for over 100 years if ever. This new approach to territory delineation adopted in SERAL results in 33% of HRCA acres dropped from protective status along with suitable habitat (Alternative 1, DEIS p.77-78). Indeed, there are 1,834 acres of 6, 5D, 5M in the SERAL project outside PACs and territories that are apparently protected in HRCAs because Alternative 3 only proposes 30 acres of this habitat to be removed (Table 24 p.52). The contrast between protections for best available spotted owl habitat in HRCAs under the current forest plan and its proposed removal under the SERAL project illustrates how implementation of the strategy without a regional planning process fails to protect important owl habitat and connectivity.

As shown below, the difference between territory and HRCA designations also makes clear that HRCAs are preferable in managing for old forest species because HRCAs include the entire spotted owl PAC, goshawk PACs, as well as north facing, riparian areas, hardwoods and lower- canyon bottoms where old forests are often found. The figure below compares territories and HRCAs in the SERAL project. Spotted owl territories are orange circles, HRCAs are outlined in blue and PACs are red (darker red is overlap with goshawk PACs). From upper right to lower
left: TUO0102, TUO0220, TUO0038, TUO0160.

Figure 2. Sample of proposed 1,000-acre territories (orange) and existing Home range core areas (blue) and PACs (red) with an aerial image in the background. Data from SERAL project website and Google Earth.

The image above is an example of an issue that occurs throughout the project. The SERAL spotted owl territories overlap with private land instead of including the best available spotted owl habitat delineated in HRCAs under the current forest plan. These circles often don[rsquo]t include best habitat on federal land and overlap significantly with private land. The agency cannot guarantee a circular territory in private ownership will be managed for old forest species. Despite this, the spotted owl strategy recommends conservation based on a circular home range that was adopted by scientists as an analysis convention to evaluate habitat conditions around activity centers (see discussion in Seamans and Guti[eacute]rrez 2007). The forest has not adjusted the new territories to include this lost habitat as provided in LAND-SERAL-WILDLIFE-02. It is unclear if or when territories will be adjusted to include nearby highest quality habitat but this should be incorporated into the FEIS. Further, this loss of protection for the highest quality habitat included in HRCAs is not disclosed in the DEIS, contrary to NEPA.

D. Adopting Desired Conditions for High-Quality California Spotted Owl Habitat in the 2019 California Spotted Owl Strategy.

1. Alternative 1 Does Not Minimize Treatments in PACs with Highest Contribution to Reproductive Success.

The 2019 spotted owl strategy recommends treating PACs focusing on historically unoccupied PACs and avoiding intensive treatments in PACs occupied by productive pairs (emphasis added):

B. In addition to prioritization by risk level, prioritize treatments in PACs based on the history of active nesting and pair territorial behavior where information is available. Treatments that may have negative near term effects should be minimized or avoided in PACs with the highest likely contribution to reproductive success.

Prioritization for PAC treatment (listed from highest to lowest priority for treatment): PACs presently unoccupied and historically occupied by territorial singles only PACs presently unoccupied and historically occupied by pairs
PACs presently occupied by territorial singles PACs presently occupied by pairs
PACs presently occupied by pairs and currently or historically reproductive

C. When treating within PACs, design treatments to minimize impacts to reproductive owls and key owl habitat elements. Generally retain the highest quality habitat (CWHR 6, 5D, 5M), especially in areas with higher canopy cover (more than 55 percent) in large/tall trees.

(USDA Forest Service 2019, p. 28, Sections 1.4.B and 1.4.C). The SERAL DEIS developed a project-specific guideline to implement the recommendations above (emphasis added):

To minimize potential impacts to CSO reproductive success, vegetation treatments that may reduce habitat quality in the near term should be avoided in PACs with the highest likely contribution to reproductive success, and otherwise prioritized as follows (from highest to lowest priority for treatment):

1. Currently unoccupied and historically occupied by territorial singles only.
2. Currently unoccupied and historically occupied by pairs.
3. Currently occupied by territorial singles.
4. Currently occupied by pairs.
5. Currently occupied by pairs and currently or recently reproductive.

[hellip]When designing treatment unit intersections with PACs, limit treatment acres to those necessary to achieve strategic placement objectives and avoid treatments adjacent to nest stands whenever possible.

If nesting or foraging habitat in PACs is mechanically treated, mitigate by adding acreage to the PAC equivalent to the treated acres using adjacent acres of comparable quality wherever possible.

(DEIS p.134, SPEC-CSO-GDL-02) There are 36 reproductive pairs, 13 non-reproductive pairs, and 4 territorial singles out of 53 PACs in the project area (BE p.29). Alternative 1 proposes intensive treatments in nearly all of these PACs (see figure below for example). Here, proposed tractor, skyline and helicopter logging will remove 1,762 acres of 4D and 318 acres of 5D in PACs (SFL GIS analysis). It is not clear that reproductive PACs had special consideration to reduce treatment impacts because all the PACs have same 20[rdquo] upper diameter limit and they all have similar prescriptions based on stand density, fuel loading and habitat quality. According to

the BE, treatments in PACs were prioritized based on a model developed for the SERAL project termed [ldquo]owl departure[rdquo] that rates spotted owl habitat for treatment. However, the DEIS does not demonstrate how proposed PAC treatments in Alternative 1 considered occupancy and reproductive history to reduce impacts to owl pairs consistent with SPEC-CSO-GDL-02.

We recognize lower elevation PACs contain dense stands and extreme fuel loading (near Deer Creek or

Grant Ridge, for example), and we support treatments in these areas that rank high in the owl departure index and are at high fire risk. In such cases, SPEC-CSO-GDL-02 can be used to effectively reduce risk and protect existing important habitat, whereas areas occupied by productive pairs should retain best available habitat or be avoided in some cases at higher elevation.

2.

Alternative 1 Proposed PAC Treatments Exceed 30% Area Treatment Threshold in Strategy.

Related to DEIS Issue 1.A., there are 5,987 acres of mechanical thinning proposed in 53 PACs in the SERAL project (BE p.61). In the case of these multi-PAC entries, the 100-acre treatment threshold in the spotted owl strategy is often exceeded. We are not sure why this appears so consistently in the GIS layers since the DEIS establishes a 100-acre limit: [ldquo]In Alternative 1, mechanical treatments may only occur in up to one third (100 acres) of California Spotted Owl PACs.[rdquo] (DEIS p.45). There is a contradiction in the GIS data that needs to be corrected, or an explanation provided. We wonder if the Stanislaus is exceeding the 100-acres threshold under the strategy if treatments are passed off as habitat improvement.

We support habitat improvements in the project area such as prescribed fire, meadow and aspen restoration, and fuel reduction in old forest habitat discussed elsewhere in this document. However, the DEIS boldly claims spotted owl habitat improvement when converting CWHR 4D to 5M, yet it takes over 100 years to grow old forest conditions found in 4D (Jones et al. 2021). Habitat conversion that results in the loss of 4D would pose a negative impact to spotted owls for 100 years, even when 5M is gained, and even when it leads to increased fire resilience in the long-term. The DEIS does not acknowledge negative impacts to spotted owls from reductions in canopy cover (such as habitat loss and disturbance), contrary to NEPA and the spotted owl strategy.

Canopy cover is an important component of spotted owl habitat. It is well established that spotted owl occupancy and survival are strongly associated with high canopy cover (over 70%) and large trees (Verner et al. 1992; Blakesley et al. 2005; Seamans 2005; Seamans and Gutierrez 2007; North 2012; Tempel et al. 2014b; Tempel et al. 2016). Reducing canopy cover below 70% in dense stands can lead to long-term negative occupancy by spotted owls (Tempel et al. 2014b). If the long-term impacts of canopy cover reductions in spotted owl habitat [ldquo]improvement[rdquo] are misinterpreted, then the DEIS could erroneously apply component SPEC-CS0-STD-04 to mechanical treatments in PACs that exceed the 100-acre treatment threshold. We hope this is a modeling error and not the intention in Alternative 1. Nevertheless, the DEIS must more accurately represent the loss of canopy cover in 4D when it represents important prey or foraging habitat for each PAC. We would like to see more detail on the quality of 4D in each PAC to
better understand habitat conditions because not all 4D is the same.

In the figure below, two spotted owl PACs are outlined in blue. Alternative 1 treatments are pink, red, purple and green. Areas without treatment show the aerial photograph. These two PACs are typical of the 53 PACs in the project area because they are 1) proposed for well over the 30% habitat treatment threshold, 2) proposed for treatments regardless of their productivity and occupancy status, and 3) often bisected by fuel breaks, contrary to SERAL plan components. Our concern again is that the proposed action strays well beyond what is allowable in the spotted owl strategy, and that forest thinning and removal of trees will eliminate quality spotted owl habitat. Alternative 1 must correct these discrepancies because PAC treatments exceed what is allowable under the spotted owl strategy in a number of ways, thus violating diversity
requirements in 36 CFR 219.9 and viability requirements in NFMA.

Figure 3. Alternative 1 treatment types for two PACs (outlined in blue) TUO0153 (pictured top) TUO0152 (pictured at bottom). Alternative 1 treatments are depicted in pink, red, purple and green

shading. Areas without treatment show the aerial photograph. Data is from SERAL project website and Google Earth.

3. Alternative 1 Does Not Maintain High Quality Spotted Owl Habitat in Retired PACs as Provided in the Strategy.

Related to DEIS Issue 6.B., the 2019 California spotted owl strategy sets desired conditions for retired PACs. They include to [ldquo][hellip]design treatments in retired PACs to retain available large, tall tree, high canopy cover habitat that is resilient to disturbance.[rdquo] (1.3.D. p.27), yet treatments in retired PACs do not maintain available large tree high canopy cover habitat.

The intention of SERAL is to treat retired PACs [ldquo]to undergo restoration to make habitat more resilient and available for future owl use.[rdquo] (BE p.29). Although it is not possible to determine if this goal is being met given the data provided, it appears that desired condition may not be met if high quality and best available nesting habitat in retired PACs are removed. For example, the PAC is proposed for retirement and also contains 21% of CWHR 5/6 habitat

(Table CSO3, BE p.34) We wonder what the site-specific impacts are to all PACs, and how much and what kind of habitat is being affected, so further explanation is needed.

We did not find any SERAL project-specific plan amendments to retain highest quality 6, 5D and 5M habitat in retired PACs to make the project compliant with desired conditions in the spotted owl strategy.

4. Alternative 1 Does Not Retain Highest Priority Breeding Habitat in Owl Territories as Provided in the Strategy.

The 2019 California spotted owl conservation strategy recommends conservation measures at several different spatial scales. At the territory scale,

Desired conservation outcomes are for an occupied territory to maintain and promote 40 to 60 percent of a territory in mature tree size classes[hellip] in descending order of priority: 6, 5D, 5M, 4D and 4M[hellip]

(p. 29). As noted in our previous comments and related to Issue 6.A. in the DEIS, the SERAL project analysis combines all spotted owl habitat together including CWHR types 4M, 4D, 5M and 5D and 6 (again in Table CSO5, BE p. 37). The DEIS states:

Currently only 8 territories meet the desired compositional range of 40-60% in mature trees size classes with moderate and high canopy cover. The remaining territories either contain low-quality habitat or contain greater than 60% of high quality or best available habitat combined.

(DEIS p.16) Since most owl territories in the project area preserve at least 40 percent of all CWHR types suitable for spotted owl combined, the implication is that removing highest priority habitat (6, 5D, 5M) meets desired conditions in the spotted owl strategy because lower quality habitat (4D, 4M) is left behind in at least 40% of the territory; however this is a misinterpretation of the desired conditions set forth in the strategy.

As our scoping comments point out, ongoing discussions with the Regional Office indicate that the desired condition is for 40 to 60% of the territory to be in CWHR types 5M, 5D, and 6. This is consistent with the overall desire to increase the amount and distribution of stands with large

trees over the territory to better reflect NRV and support productive spotted owls. This was also the desired condition and management intent in the SNFPA.6 The desired condition with a threshold attached to preference for CWHR 5M, 5D and 6 then makes meaningful the desired condition to conserve CWHR 5M, 5D, and 6:

6 The treatment patterns and design treatment prescriptions to avoid the highest quality habitat (CWHR types 5M, 5D, and 6) wherever possible[rdquo] and the desired conditions generally reflect CWHR 5M, 5D, and 6 habitat types (USDA Forest Service 2004, p. 46)

When occupied territories do not meet the desired conditions described above, retain the existing large tree moderate/high canopy cover habitat (for example, CWHR 6, 5D, 5M) wherever it exists throughout the territory.

(USDA Forest Service, p. 29 and SERAL scoping package, p.27). The DEIS removed the above plan component from the scooping package and instead targets the last remaining highest quality spotted owl habitat in the project for removal. The proposed plan amendment LAND-SERAL- WILDLIFE-02 (DEIS p.130) weakens any direction from the scoping package that sought to retain the highest priority forest conditions in territories.

Very few owl territories in the SERAL project have appropriate amounts of 5D and 5M (Table CSO5, BE p.37). Only five out of 53 territories contain over 40 percent of CWHR 6, 5D and 5M. The remaining 90 percent of SERAL territories (48 of 53) do not meet desired conditions in CWHR 6, 5D and 5M (DEIS Table 4, p.15). Both the 2004 forest plan and the 2019 strategy strive to protect this high quality habitat because it is essential for spotted owl conservation. The SERAL project must save this essential habitat, as well.

Given the deficit of 6, 5D and 5M in the project, there is an urgent conservation need to retain all highest quality owl habitat especially in spotted owl territories. In response to this deficit, the DEIS states [ldquo]Active management is needed in those territories to maintain the existing and promote future high-quality habitat to meet the desired NRV-based conservation outcomes.[rdquo] (id.). Yet instead of maintaining this important habitat, Alternative 1 proposes its removal.

A total of 1,027 acres of WHR 6, 5D, 5M would be removed from owl territories in Alternative 1 (Table 24 p.52). In no circumstance does it make conservation sense to remove what little exists of this highest quality habitat given the scarcity of it in the project area. Even the majority of PACs [ldquo]are lacking high quality nesting and roosting habitat[rdquo] (DEIS p. 55). Alternative 1 does not meet current forest plan nor the 2019 spotted owl strategy desired conditions for spotted owl territories (p.29 2.A.1.). It doesn[rsquo]t even meet its own management objectives (DEIS p.15) and puts regional spotted owl populations in jeopardy of accelerated decline (see Attachment A research summary).

The SERAL project illustrates how an ad-hoc implementation of the spotted owl strategy at the project-level rather than during the forest planning process leaves the most important habitat vulnerable at multiple scales, threatening the sustainability of wildlife species such as the spotted owl and the suite of old forest species it represents on the Stanislaus National Forest.

5.

Maintaining Spotted Owl Habitat Connectivity at the Watershed Scale.

Verner et al. (1992) identified spotted owl habitat connectivity priorities on the Stanislaus National Forest that must be addressed in the SERAL project because the spotted owl strategy

recommends managers [ldquo]promote habitat connectivity at the watershed scale by retaining connected areas of moderate and high canopy cover in large/tall trees within territories.[rdquo] (p.29 USDA Forest Service 2019). The DEIS did not develop these important landscape-level design measures from the spotted owl strategy into DEIS plan components.

F. DEIS Does Not Take Hard Look at Project Impacts to Spotted Owl, Contrary to NEPA.

The National Environmental Policy Act (NEPA), 42 U.S.C. [sect] 4321 et seq., is designed to facilitate informed decision-making and public transparency by requiring federal agencies to take a [ldquo]hard look[rdquo] at the direct, indirect, and cumulative impacts of their proposed actions and reasonable alternatives. The analysis in this DEIS fails to adequately analyze certain impacts, including disclosing site-specific baseline information, impacts to wildlife and habitat connectivity corridors, impacts of altering and disturbing occupied and potential spotted owl habitat.

1. DEIS and BE Lack Site-Specific Effects Analysis.

Thank you for sharing spatial data on CWHR types for PACs, HRCAs, and territories, however unit-level data and analysis are still missing for project activities in the DEIS. As raised in our previous comments, and as related to both Issues 1.A. and 6.A. in the DEIS, the Forest Service should disclose and analyze:

detailed maps that identify timber harvest unit locations and the types of treatment in relation to ecologically important features including important to connectivity for spotted owl and other old forest associated species such as marten.
where logging proposed for purposes other than fuels reduction (e.g. reducing stand density, salvage, insect and disease), including acreage and specific units in which such logging will occur and the rationale for any such treatments.

In the SERAL project analysis, the expected habitat changes are combined across the 118,000- acre landscape into a single table for activities like forest thinning and fuel breaks (Table 24 DEIS p.52). Here, PACs, HRCAs and territories are also analyzed together as a composite sum of all habitat conditions, however, the impacts to individual PACs and territories may be different depending on local habitat conditions and intensity of treatments.

As can be seen from our comments in preceding sections, more detailed examinations of project impacts at the individual PAC, HRCA, territory and unit scale are needed to truly understand what the project consequences would be for species like spotted owl, as required by NEPA. Otherwise, measurement or assessment of degree to which goals and objectives are met is almost impossible.

The following effects analysis from the Trestle Project on the Eldorado National Forest is an ject impacts analysis at the HRCA/ territory scale for spotted owls:

Table 2. Example of habitat analysis taken from the Trestle Project, Tables V.2.5 and V.2.6. (From Eldorado National Forest 2017, p. 43-44).

Table V.2.5. Comparison of Mechanical Thinning Treatment within HRCAs: Number of Acres Thinned, Number and Percentage of Acres Not Thinned for Alternative 2, 4 & 5, CWHR Size 4+ and >50% Canopy Closure.

(See letter for table)

Table V.2.6. Comparison of Mechanical Thinning Treatments Proposed Within High-Quality Habitat within HRCAs. High Quality Habitat is defined as CWHR Size Class 4+ and > or =70% Canopy Closure. The number of acres of high-quality habitat currently available, proposed for treatment, and not commercial mechanically thinned was estimated for each California spotted owl HRCA within the Trestle project area.

(see letter for table)

We ask that you include an analysis of habitat changes similar to those shown above for territories, HRCAs and PACs in the FEIS for each alternative. We also ask that you discuss the impacts to these owl sites for each alternative in terms of short and long term impacts and risks.

2. PAC Retirement Not Analyzed in DEIS.

In another issue related to the [lsquo]hard look[rsquo] standard and DEIS issue 6.B, the DEIS does not identify negative impacts from retiring four spotted owl PACs that contain of 1,167 acres of suitable habitat. Although data were not available for all these PACs in the GIS layers provided, there are 3,609 acres of spotted owl habitat proposed for mechanical thinning across all PACs combined (SFL GIS analysis). Furthermore, high quality habitat is already lacking in these four PACs (DEIS p.79). The SERAL project analysis must identify consequences of the proposed action for retiring and mechanically thinning PACs including displacement of owls from territories and a disruption in habitat connectivity that both diminish spotted owl conservation efforts (Peer Review Summary https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd934194.pdf; attached research summary)

3. Mechanical Treatments in Spotted Owl PACs Not Adequately Analyzed in DEIS.

In a third issue related to the [lsquo]hard look[rsquo] standard and DEIS issue 1.A., are statements in the DEIS that [ldquo]proposed forest thinning treatments do not eliminate or even reduce high-quality CSO habitat in CSO PACs.[rdquo] (DEIS p.54). The effects analysis is made without considering how much foraging and nesting habitat is available to each owl pair, especially the productive ones. There are 5,987 acres of mechanical thinning proposed in the PACs (BE p.61) including the proposed alteration of 2,718 acres of 4D and 4M in PACs (SFL GIS analysis). The configuration of these acres as well as how much breeding habitat is being treated or how much is left after treatments on individual territory basis must be disclosed in the FEIS.

Fuel breaks often intersect PACs and are not analyzed in the effects section. It is not possible to tell how the fuel breaks were considered in the effects analysis, or how they were reconciled with the 100-acre PAC treatment threshold or the standard to avoid fuel breaks in PACs. The effects section should reflect and analyze the proposed action according to NEPA.

We offer the following example to illustrate why an analysis of effects by PAC (and territory) is necessary. In the figure below, PAC TOU0221 is outlined in blue, proposed treatments are pink, red, purple and green; areas without treatment show the aerial photograph. Contrary to the DEIS which states: [ldquo]In Alternative 1, mechanical treatments may only occur in up to one-third (100 acres) of California spotted owl PACs.[rdquo] (p.45) this PAC is proposed for well over 160 acres of proposed treatments including forest thinning and fuel breaks. This PAC is also located at the bottom of a moist north-facing slope and we wonder why it is intersected by three different fuel breaks. This PAC specific information leads us to conclude that the guideline to limit mechanical treatment in PACs to 100-acre or less is not being followed. We also question why topographic position (i.e., low on the slope) was not taken into consideration in selecting this area for

treatment.

(see letter for figure)

Figure 4. Treatment locations and type within spotted owl PAC TOU0221. Treatments are pink, red, purple and green; areas without treatment show the aerial photograph. Data from SERAL project website and Google Earth.

Another concern we have regarding the treatment and removal of habitat in owl PACs is that the DEIS claims removing medium sized trees from CWHR 4D converting it to 5M creates new high-quality habitat within owl PACs (DEIS p.52). This is an artifact of mechanical thinning treatments and the removal of canopy cover, and not the full picture of project impacts on spotted owls. The assumption that removal of all vegetation under 20[rdquo] diameter in PACs in Alternative 1 is positive impact to spotted owls isn[rsquo]t correct. Substantial removal of surface and ladder fuels in occupied owl habitat as proposed in SERAL would almost certainly amount to negative short-term impacts for spotted owls (see Attachment A research summary). Spotted owls are associated with multi-storied, closed-canopy forests (Verner et al. 1992) and reductions in these forest characteristics would reasonably be expected to have a negative effect on habitat quality in the short-term as concluded by the Eldorado National Forest (2017).

While SFL supports some fuel reduction in spotted owl habitat including PACs, especially when it leads to the reintroduction of fire back to the landscape, we also expect to see an effects analysis of these actions that is accurate, considers both short and longer-term as well as cumulative impacts, and are consistent with best available science. We support the 20[rdquo] dbh limit in PACs and 24[rdquo] dbh limit for pines outside PACs as an important step toward old forest conservation, but these measures do not conclude the agency[rsquo]s responsibility regarding spotted owl management. In considering alterations of mature forest structure, the agency must weigh short and long-term impacts to spotted owls for each PAC and territory. This starts with examining site-specific habitat conditions as they contribute to connectivity to adjacent habitat, support for owl survival (ex. foraging and breeding habitat), as well as each PAC[rsquo]s occupancy and productivity history.

There are 1,762 acres of 4D proposed for removal from thinning in PACs in Alternative 1 (SFL GIS analysis; does not include fuel breaks). Contrary to the DEIS analysis we know that the removal of canopy cover from CWHR 4D forests is not without consequences and must be balanced with other considerations such as the intensity of treatments at multiple spatial scales as well as PAC productivity. An important consideration in the conversion of 4D to 5M is that flying squirrels are associated with multi-story forest structure and spotted owl might lose access to prey with reductions in canopy cover (Sollman et al. 2016). The DEIS must quantify and analyze potential for negative impacts from the conversion of 4D to 5M in each PAC. Only then will the public and decision makers have an accurate assessment of the true costs and benefits of the proposed actions.

4. Proposed Plan Components Not Implemented or Analyzed in DEIS.

Related to concerns about the delineation of circular territories in DEIS issue 6.A, the DEIS does not clearly state if or when some proposed plan components will be implemented. For example, it is difficult to determine from the DEIS if the spotted owl territories will remain an unmodified circle of 1,000 acres or if or even when they will have a [lsquo]modified shift[rsquo] of boundaries that would include more suitable spotted owl habitat in the HRCAs (DEIS p.77 and 78):

We speculate with the ability to adjust the territory boundaries to include the most
s of high quality habitat as encouraged by LAND_SERAL-WILDLIFE-02, that the discrepancy

between the quantity of high-quality habitat within HRCAs and territories would be easily overcome.

(DEIS p.78) It appears this project component was never analyzed because the biological evaluation shows the unmodified circles for spotted owl territories (Figure CSO4, BE p.30). If the LAND_SERAL-WILDLIFE-02 is to be implemented, baseline conditions must be characterized and project impacts then analyzed and described. As it stands, uncertainty clouds the analysis because it[rsquo]s unclear when or if the territory adjustment will happen. The project must make a choice clear so that the decision maker and public can review it.

Also related to the [lsquo]hard look[rsquo] standard and DEIS Issue 1.A, the DEIS does not provide adequate information on an individual territory level to determine if requirements from SPEC-CSO-STD- 04 are being met, such as [ldquo][hellip]maintain average canopy cover in PAC above 50%[rdquo], and [ldquo][hellip]retain areas of moderate and high canopy cover between the known nest site and areas in the rest of the PAC.[rdquo] (DEIS p.133). This is another example of the data that is missing for each PAC in the DEIS. This information is needed to adequately review a proposed action for forest plan amendments in spotted owl habitat.

5. New Circular Territories Overlap Significantly with Private Land; DEIS Cannot Assume Private Landowners Will Manage for Spotted Owls.

Related to Issue 6.A. in the DEIS, the Figure CSO4 (below) is from the SERAL BE shows where proposed circular spotted owl territories in black overlap significantly with private lands in gray (p.30).

(see letter for figure)

Figure 5. Distribution of CSO PACs (red) and territories (black circles) in the SERAL project areas in relation to private land (gray). Taken from SERAL BE, Figure CSO 4.

The DEIS analysis claims that these circular territories would result in a gain of 4,911 acres of 4M and 4D habitat compared to the HRCAs, yet HRCAs explicitly exclude private land to ensure habitat is managed for spotted owl desired conditions (Table 32 DEIS p.78). It is unclear if the overlap with private land has been accounted for in this calculation. The USFS cannot guarantee that habitat in the circular territories on private lands are managed for old forest species, and private land should be excluded from any assessment of available habitat. This issue needs to be clarified to improve the accuracy of the project analysis.

G. Purpose and Need

We find it difficult to understand why the project wouldn[rsquo]t identify spotted owl conservation as a purpose and need of the project. The DEIS developed 25 project-specific plan amendments from the 2019 spotted owl conservation strategy, and five out of twelve issues are spotted owl related (DEIS p.9). Further, the DEIS states the purpose and need was developed for the spotted owl:

The primary purpose and need of the project is to retain large old and structurally diverse trees and snags across the project area. The SERAL project was developed to specifically maintain and promote these important habitat characteristics for the spotted owl.

(DEIS, p. 120) This concern is related to Issue 1.A. of the DEIS.

H. Alternative 1 Does Not Provide for Viable Spotted Owl Populations in Project Area

The 2012 planning rule requires forest plans to maintain viable populations of each species of conservation concern (CFR 219.9). This is of utmost importance given that spotted owl populations have declined 30% to 50% in the Sierra Nevada over the last 30 years within all demography study areas on national forest lands (Connor et al. 2013; Tempel and Guti[eacute]rrez 2013; Tempel et al. 2014b).
As mentioned in our previous comment letter and DEIS issue 1.A., proposed changes in management direction that are more risky or less certain for spotted owl must be evaluated in terms of viability to the species. We remain concerned that the BE hardly mentions providing for viable spotted owl populations, nor does it offer consistent definitions for important concepts such as [lsquo]essential habitat for survival and reproduction[rsquo] and [lsquo]reduction in habitat quality.[rsquo] This makes
viability difficult to determine and leaves questions unanswered such as: How much high quality habitat is needed to maintain viability? The SERAL project proposes to retain less spotted owl habitat than that which is recommended by the 2019 strategy and strays significantly from the document[rsquo]s core intent. The 2019 spotted owl strategy strives for:
[hellip]maintaining well-distributed territories across the CSO range [hellip][in order to] increase population resilience to the effects of climate change and other environmental stressors[hellip].Conservation measures aimed at maintaining the CSO and their suitable habitat where they exist today provide some immediate stability for individual owls while we work
to align the landscape with NRV.

(USDA Forest Service 2019, p.2) Contrary to this goal, Alternative 1 proposes intensive forest management treatments across spotted owl habitat in the project area including nearly every owl PAC and territory, thereby increasing risk and uncertainty for viability of this declining species. In addition to the risk introduced by implementing the 2019 owl strategy, the project does not comply with the desired conditions in the strategy for maintaining high quality spotted owl habitat, as discussed earlier in this document. The proposed mechanical treatments exceed the risk and uncertainty posed by the regional strategy, threatening viability of the California spotted owl.

1. The Project Proposes to Degrade Spotted Owl Habitat Across the Project Area, Threatening the Viability of the California Spotted Owl.

Related to Issue 1.A in the DEIS, the intensity of treatments proposed in Alternative 1 would substantially reduce habitat availability for almost all spotted owl territories in the project.
The mechanical thinning proposed in SERAL removes and degrades high quality that only occurs intermittently in the project area. According to the DEIS, [ldquo]currently approximately 9% of SERAL project area contain high-quality CSO habitat while 58% contain best-available CSO habitat (Table 23).[rdquo] (p.51) Despite so little high quality habitat on the landscape, Alternative 1 would convert 10,986 acres of it to non-habitat categories in occupied spotted owl territories. This would involve conversion of 5M to 5P, 5D to 5P, 4D to 4P or 5P, and 4M to 4P, 4M or 4S (SFL GIS analysis). Alternative 1 would also remove 1,834 acres of 6, 5D, 5M outside territories, reduce canopy cover on 2,718 acres of 4D/4M in PACs (SFL GIS analysis). These treatments are proposed at an unprecedented scale, introducing uncertainty and risk to spotted owl persistence on the landscape. Research shows that this intensity of habitat degradation in the 5D/M and 6 categories in breeding territories leads to a reduction in owl survival, reproduction and occupancy over time (see Attachment A research summary and BASI discussion above).

2. California Spotted Owl Surveys Must Be Required With All Treatments in Owl Habitat.

Related to Issue 1.A. in the DIES, there are number instances where Alternative 1 would degrade spotted owl habitat and then characterizes this as an improvement in habitat conditions. For

instance, when Alternative 1 converts 4D to 5M, then component SPEC-CSO-STD-01 is triggered lifting the survey requirement when owl habitat is [lsquo]improved[rsquo] (DEIS p.132). Our concern with the CSO-STD-01
is that without surveys, undetected spotted owls could be overlooked, thereby risking harm to those owls, as well as loss of undetected spotted owl territories, and the elimination of important breeding structures in nest stands such as dense canopy cover, nests and roosts essential to spotted owl sustainability.

The potential lack of surveys in spotted owl habitat is especially fraught given that there is so much disturbance to PACs proposed in the project area that could displace owls to suitable habitat outside of existing PACs that could then be degraded as part of [lsquo]habitat improvement[rsquo]. For example, mechanical thinning in 53 PACs and territories (BE p.61) may cause some birds to relocate as a result of disturbance from intensive treatments. Another possibility is that a future fire in the project area could force owls to relocate. In these scenarios, owls that colonize habitat outside existing PACs that is also proposed for [lsquo]habitat improvement[rsquo] would not be detected Surveys prior to treatment in spotted owl habitat should always be required,

even if the treatment is considered [lsquo]improvement[rsquo] because as we have established this could still involve degradation of 4D or 5D spotted owl habitat and could otherwise impact undetected resident owls. The DEIS has not considered this in the evaluation of project impacts to spotted owl viability.

There are also large areas of the project area where no surveys have ever been conducted because of accessibility issues such as the South Fork Stanislaus River canyon West of Cedar Ridge (and more than 1.5 miles from nearest neighbors TUO0139 and TUO0221). We would like more information about what surveys are planned for those areas. They are proposed for helicopter and skyline logging, indicating both the removal of large merchantable trees and inaccessibility of the area.

II. Concerns About Other At-Risk Species

A. Northern Goshawk

Territory D52T04 appears bisected by fuel break [ndash]Territory D51T28 (Fraser Flat), D53T14, (Strawberry) and D52T15 (Smoothwire) all have significant mechanical treatments, although the BE assumes no treatment in NOGO outside Defense Zone:

Goshawk PACs within WUI may be mechanically thinned as per forest plan direction (USDA Forest Service 2017); goshawk PACs outside of WUI are avoided and not mechanically thinned. Prescribed burning is allowed in goshawk PACs and hand treatments, including handline construction, tree pruning, and cutting of small trees (less than 6 inches DBH) may be conducted prior to burning as needed to protect important elements of habitat.[rdquo] (p.78)

We are not sure what the intention of the proposed action for goshawk PAC treatments is and clarification is needed.

B. Great Gray Owl

The Regional Learning Center GGO PAC at the Sierra Outdoor School is proposed for mechanical thinning and fuel breaks across the entire 50-acre PAC, according to the GIS layer:

(see letter for figure)

Figure 6. Treatment units (orange line) for Alternative 1 overlayed on Regional Learning Center

great gray owl protected activity center (yellow fill). Data from SERAL project website and Google Earth.

However, the BE (p.22) assumes no mechanical treatments in great gray owl PACs.

While GGO nest stand habitat is avoided and not mechanically thinned (i.e., generally the 50 acres of forested habitat near the nest along meadow margins), alternatives may vary with regards to hand treatments, including hand line construction, tree pruning, and cutting of small trees (less than 6 inches DBH) prior to burning as needed to protect important elements of owl habitat. This may apply to GGO PACs in the Wildland Urban Interface and/or GGO PACs where fire is prescribed. Additionally, under the action alternatives, encroaching conifers may be removed in meadow foraging habitat within PACs to maintain the meadows and enhance habitat needs of prey species.

This inconsistency between the information in the GIS data and the BE should be corrected in the FEIS.

III. Use of FORSYS Model to Select Treatment Locations and Assign Prescriptions

A resilience departure index was developed as part of the FORSYS modeling system. Appendix E described the departure index and states this about its use:

A departure value of > 1 (i.e., > 1 standard deviation from the mean) represent locations where forest structure is more dense than the reference conditions; the greater the departure the greater the density of the forest.

We examined the GIS data and found that significant areas within the treatment footprint for Alternative 1 were not considered departed, i.e., areas with departure values less than or equal to s that in dry mixed conifer, for example, that 7,222 acres outside of territories is

considered resilient, yet this area is proposed for logging. Similarly, 4,373 acres within territories
is considered resilient, yet this area is also proposed for logging.

Table 3. Distribution of Alternative 1 treatments in areas judged to be resilient versus not resilient according to Appendix E. Derived from SFL GIS analysis.

In many of these areas logging proposed under Alternative 1 would change suitable habitat to unsuitable for CSO. For example, suitable habitat would be reduced to unsuitable on over 2,900 acres within territories and over 6,200 acres outside of territories (SFL GIS analysis). Among these areas affected that were considered not to be departed from NRV, there were about 574 acres of highest quality nesting and roosting habitat (CWHR 5M or 5D) within territories and 473 acres outside of territories that would be reduced to unsuitable habitat, i.e., CWHR 5P. These areas are not considered departed by the analysis developed by the SERAL science team. The FEIS should explain how the treatments in these areas are consistent with the stated purpose and need to manage within NRV to benefit landscape scale restoration.

We also do not understand how the silvicultural prescriptions described in Appendix E (Table 1) meet the stated purpose and need to manage toward NRV. For mixed conifer types, there are only two criteria to distinguish between treatments: 1) forest type: dry mixed conifer or mesic mixed conifer: 2) diameter limit: territory versus general forest. The topographic position within these forest types is variable, yet we see no distinction made in prescriptions applied to lower, mid-

and upper slopes. We do note that the CSO departure index (Appendix E and limited to use within PACs) distinguished between these topographical positions and based on NRV values set different canopy cover criteria for valley, mid and upper slopes.

When we examined the distribution of prescriptions within Alternative 1, we found that just over 9,000 acres was proposed for commercial logging in territories and about 86% of the areas would be treated with a single prescription [ndash] [ldquo]Alt1_MC_TERRITORY_150.KCP[rdquo] [ndash] that would manage the stands for
[ldquo]a target stand density index (SDI) of 150[rdquo] (Appendix E) 7. Similarly, the

7 We note that although Appendix E refers to the "150" value for this prescription as SDI, we suspect that it actually refers to a target basal area per acre since that is the value reflected in Table 13 of the DEIS.

description of Alternative 1 mentions that prescriptions will create a variable stand structure with individual trees, clumps and openings (ICO) (DEIS, p. 25), but the prescriptions used in the modeling do not mention this variability or that it is likely to vary with topographic position. The FEIS should explain how the treatment prescriptions described in Appendix E will achieve the stand variability described in Alternative 1.

IV. Condition-Based Management for Salvage Logging of Drought, Insect/Disease and Wildfire Related Tree Mortality

We identified the use of condition-based management (CBM) as a concern in our scoping comments. We note here that the term [ldquo]condition-based management[rdquo] has been eliminated from the DEIS. Instead, the DEIS refers to the proposed salvage logging as [ldquo]NRV-based restoration.[rdquo] We think it important to be clear that what is being proposed as [ldquo]NRV-based restoration[rdquo] is condition-based management, a
practice that is highly controversial and has been the subject of recent litigation in which the Forest Service did not prevail. We also note that MOTORM2K, the proposal that preceded SERAL, included condition-based management that was opposed by many organizations. We think the effort to refer to this as [ldquo]NRV-based restoration[rdquo] is disingenuous. That is because the entire SERAL project is based on using NRV to assess the need for restoration and to set targets for restoration. This is called NRV-based restoration and is promoted by the CSO strategy across the landscape and not limited to the salvage of dead and dying trees.

The idea of CBM has been circulating in the Forest Service for several years. In 2019 a definition was proposed for inclusion in Forest Service regulations on implementing the National Environmental Policy Act (NEPA; 36 CFR Part 220), but was abandoned in the final rulemaking. The American Bar Association recently reviewed the status of CBM and offered the following as a description of CBM:

CBM projects use an overarching set of [ldquo]goal variables[rdquo][mdash]predetermined management criteria that
guide implementation[mdash]that Forest Service staff apply to on-the-ground natural resource [ldquo]conditions[rdquo]
encountered during the course of project implementation, a period that can span years or even decades: essentially, when the Forest Service finds X resource condition on the ground, it applies Y timber harvest prescription. However, basic information regarding the project[rsquo]s details[mdash]such as unit location, timing, road building, harvesting methods, and site-specific environmental effects[mdash]is not provided at the time the Forest Service conducts its NEPA environmental review (when the public can weigh in), nor when it gives its final approval to a project (when the public can seek administrative review). Instead, site-level disclosures are made after NEPA environmental and

administrative review is complete, depriving the public of opportunities to comment and influence the decision based on localized conditions.

(Cliburn et al. 2021) Management frameworks that establish goals and approaches to achieving them can make project planning more efficient. This is what a well-designed forest plan can provide. This type of guidance also can be provided by [ldquo]left-side analysis[rdquo] that has formed the basis of landscape planning completed by the Forest Service for the past 25 years. The problem, however, comes with the Forest Service[rsquo]s attempt to marry CBM with the requirements of requires federal agencies to disclose to the public and in advance of

environmental decision making the likely site-specific impacts of project related activities. In a recent legal case, the courts held that the Forest Service[rsquo]s Prince of Wales Landscape Level Analysis Project[mdash]a 15-year logging project on Prince of Wales Island in the Tongass National Forest using CBM[mdash]violated NEPA because it failed to provide the site-specific analysis that was needed to satisfy NEPA[rsquo]s [ldquo]hard-look[rdquo] standard.

These are the same issues that confront us for the salvage logging proposed in the SERAL project. What are the specific locations where the salvage logging is proposed and what are the site-specific environmental impacts of those actions? These details are not provided in the DEIS or specialists reports. In the case of post-wildfire salvage, up to 3,000 acres across the project area could be salvaged. For insect-, disease-, or drought-killed trees, up to about 37,000 acres could be salvaged logged with this decision.

We specifically asked in our scoping comments that the DEIS disclose the site-specific impacts of any actions proposed, including salvage logging. In response to our concern, the DEIS simply added a few criteria to narrow the footprint of impact, but includes little to no evaluation of impacts of the proposed salvage logging on up to 37,000 acres. Impacts are not discussed or only generically discussed for aquatic resources, soils, and wildlife, yet significant impacts to such resources from salvage logging are widely documented (see for example Blakey et al. 2019; Burnett et al. 2010, Burnett et al. 2012; Georgiev et al. 2020; Leverkus et al. 2020; Loffland et al. 2017; Roberts et al. 2021; Seavey et al. 2012; Siegel et al. 2013; Thorn et al. 2018;). In the absence of the disclosure of site-specific impacts, the analysis in the DEIS does not meet the hard look standards required by NEPA.

Setting aside the failure to disclose and evaluate impacts of the proposed salvage logging, the proposal itself still lacks sufficient detail about the salvage logging to be completed. The proposal identifies some NRV conditions of severity and amount of tree mortality, but fails to establish what is to be created by clearing away all other dead trees. Clearing away areas of dead trees does not achieve NRV conditions in itself and must be coupled with a more complete description of the post-treatment landscape and include measures to conserve additional resources. The additional detail needed to more completely described the proposed action would include the site-specific locations for treatments as well as:

Additional clarity on the scale at which the NRV conditions would be applied Measures to address habitat requirements for black-backed woodpeckers and other species dependent on burned forests.
Desired conditions for post-treatment tree structure, including what tree structures will be retained.
Desired conditions for post-salvage fuels to ensure that fuel conditions following salvage are improved over pre-salvage conditions. This is important given that post-disturbance salvage logging can increase hazardous fuels following treatment (Donato et al. 2006).

We also note that there are many other environmental decision-making processes that can be used to expeditiously address the desire to salvage dead or dying trees including categorical exclusions and environmental assessments combined with shortened decision-making time lines that can be requested of CEQ.

Unless the DEIS provides a site-specific analysis of the impacts from salvage logging the resources noted above and others that would be affected by the proposal, 8 we ask that you drop this activity from the final decision.

V. Creation of Fuel Breaks

We support the creation of fuel breaks to assist in the implementation of prescribed and managed fire, as well as for defense of communities and infrastructure. We also expect that the fuel breaks

that are created are permitted with environmental analysis that complies with NEPA[rsquo]s requirement to disclose the site-specific impacts of the project a take a hard look at potential impacts. We are concerned that the proposed fuel break and environmental analysis do not meet the requirements for NEPA because the proposed action is insufficiently described and the impacts of the fuel break on some resources have not been disclosed.

The DEIS describes the activities to create the fuel breaks in the DEIS (p. 26-28). Table 16 describes the treatment specifications and is a helpful table, but it is not complete. There are several references to taking action to achieve [ldquo]fuels objectives[rdquo] or [ldquo]to achieve effective fuels treatments[rdquo], but how these activities will alter the resource is not described. For instance, would all the shrubs be cleared in chaparral habitats or some shrubs left? Table 16 also does not describe what to expect in chaparral types where shrubs are the overstory or if a different approach will be taken in riparian areas. This information is important to visualizing how the fuels break will alter these habitat types. We have seen photos used very effectively to depict the desired conditions in fuels breaks and suggest that they be used in the DEIS. ?

The DEIS and specialist reports also don[rsquo]t evaluate the impact that the fuel breaks may have on the affected resources. We looked at the MIS report to see how it addressed the effect of fuel break creation on shrub habitats. The MIS report indicates that shrub cover and size class are factors in the analysis that will be used to assess habitat condition, however the analysis of effects does not report any results for this factor.

We have a similar concern about the disclosure of impacts form fuel breaks on oak woodlands. The project area includes sensitive blue oak woodland (Botany BE p.6), but the proposed oak retention guidelines for fuel breaks do not protect blue or valley oaks: [ldquo]Retain all [oak and other hardwood trees] 12 in. DBH or greater[rdquo] (DEIS p.28). This proposed action does not comply with current forest plan direction and there are no project-specific plan amendments for hardwoods proposed in the DEIS.

We recommend that you improve the evaluation of fuel breaks in the DEIS by:

*Clarifying what the fuel objectives are for fuel breaks
*Define what an [ldquo]effective fuel treatment[rdquo] is and how that affects understory vegetation
*Providing photos of samples of fuel breaks in different habitat types, especially chaparral and oak woodland
*Evaluate potential changes to habitat condition for shrub and oak woodland types using the habitat condition metrics referenced in the MIS report, e.g., shrub canopy and size class.
*Follow the nine standards and guidelines for hardwood management in the 2004 Forest Plan including: retain all blue oak and valley oak (#21), encourage hardwoods in plantations (#26), manage hardwood ecosystems for a diversity of hardwood tree size classes with in a stand (#19), as well as minimize impacts to hardwood ecosystem structure and biodiversity (#22).

We note that the DEIS proposed the use of staged decision making to allow a partial decision on project activities to move forward quickly in the five priority PODs. This approach includes limiting activities to those that do not involve timber removal. We support this approach, but ask that you address our concerns about the adequacy of the treatment descriptions and effects analysis before proceeding with a decision.

8 We note here that we remain open to reviewing an analysis that adequately addresses site specific impacts in compliance with NEPA, but we are not convinced that it is possible to achieve.
? See for example the images of post-treatment desired condition for this project on the Los Padres

National Forest:https://www.fs.usda.gov/nfs/11558/www/nepa/113939_FSPLT3_5616166.pdf

VI. Improving the Approach to Fire Management

The action-alternatives include roughly 70,000 acres of prescribed fire either as the first treatment or a follow up treatment. We strongly support these actions. We think the completion of prescribed or managed fire is critical to meet the purpose and need of the project to improve resilience for people and nature. Prescribed fire is essential and not incidental to achieving the purpose and need. And, the stated goal for the SERAL project (DEIS, p. 8 [ldquo]designed to restore forest resilience and the landscape[rsquo]s ability to persist with fire as a natural process on the Stanislaus National Forest") cannot be achieved without it.

We are concerned that the framing in the DEIS about implementation of prescribed fire is passive or soft with less commitment to implementation than conveyed about logging. We are also concerned about the discussion in the DEIS that appears to [ldquo]give up[rdquo] on accomplishing prescribed fire:

However, due to unsafe existing conditions, weather, personnel availability, and uncertain funding [mdash] opportunities to burn or manage fire are very limited.

(DEIS, p. 49) These limitations can be reduced and overcome, but it requires volition and dedication to do so. The DEIS and alternatives is one place to establish the need and importance in priority for action for prescribed fire. We ask that you make that case more prominently in the DEIS.

We have been working in recent years to reduce barriers to prescribed fire. With support from a variety of stakeholders and agencies, we have been making headway. This is an area that we are particularly interested in working in partnership with your staff to successfully implement the proposed prescribed fire treatments.

VII. Use of Designation by Prescription (DxP) and Designation by Description (DxD) to Implement Logging Treatments

We raised this concern in our scoping comments, but it is not mentioned in the description of the proposed action or elsewhere in the DEIS. We are concerned about the use of Designation by Prescription (DxP) and Designation by Description (DxD) applied to the marking of trees to be logged. This approach relies on a written description to be used by the logger to judge for themselves which trees in a stand should be removed. The Forest Service monitors the completion on these prescriptions, but functionally the prescriptions must be very simple with criteria that can be easily measured in the field. Our experience indicates that there are limited circumstances where these written approaches to [ldquo]marking[rdquo] trees to remove are acceptable. For example, we have seen DxP used successfully in timber stand improvement in plantations where the intended outcome is to create a fairly uniform stand.

The proposed actions depend on logging to create variable forest stand conditions:

To best mimic NRV conditions and achieve within-stand and multi-stand diversity, applied silviculture and prescribed fire treatments need to create a pattern of individual trees, clumps of trees, and openings containing various sizes of clumped trees and openings.

(DEIS, p. 13) Accomplishing such a pattern (referred to as ICO) requires judgment by Forest Service professionals on the ground. The same is true for the list of conditions that govern when the removal of trees that exceed a certain limit. See DEIS, p. 24-26. We believe that these outcomes can only be achieved by the Forest Service marking the trees to be removed. If the use of DxD or DxP is intended in the SERAL project, we ask that it be described how the variable density and ICO objectives will be met using these approaches to tree selection and to provide examples of successful applications of these non-marking approaches to achieving similar habitat objectives.

VIII. Wild and Scenic Rivers (WSRs)

The DEIS notes that two eligible WSR segments are located in the SERAL Project area. [sup1]° While this is technically correct, the statement fails to accurately note that the two segments are not only eligible, they were also found to be suitable and recommended by the Forest Service for designation by Congress.[sup1][sup1] The distinction is important because eligible WSRs not determined suitable lose their interim protection. Interim protection applies only to eligible WSRs that were not subject to a suitability decision/recommendation and to eligible/suitable WSRs. Interim protection for both is identical but the description of this topic in the DEIS should be accurate.

The SERAL Project proposes up to 2,525 acres of treatments, the majority of which is Prescribed Fire Only.[sup1][sup2] Possible ground-disturbing treatments (Hand Pile and Burn, Forest Thinning-Helicopter, Forest Thinning-Skyline, Forest Thinning-Tractor, Understory and Surface Fuel

[sup1]° SERAL DEIS pg. 72.
[sup1][sup1] Stanislaus National Forest LRMP & ROD, pgs. IV-99 and 13 respectively.
[sup1][sup2] SERAL DEIS, Table 31, pg. 74.

Reduction) range from 44 acres to 191 acres. The SERAL FEIS/ROD should ensure that these activities within the suitable WSR corridors comply with the Forest Plan direction to maintain the Recreation Opportunity Spectrum (ROS) of Semi-Primitive Non-Motorized and Visual Quality Objective (VQO) of Retention for WSRs.

Forest Service guidelines for eligible/suitable WSRs include this specific direction for Vegetation Management in Wild River corridors:

Cutting of trees and other vegetation is not permitted except when needed in association with a primitive recreation experience, to protect users, or to protect identified outstandingly remarkable values. Examples of such exceptions include activities to maintain trails or suppress wildfires. Prescribed fire and wildfires managed to meet resource objectives may be used to restore or maintain habitat for threatened, endangered, or sensitive species or restore the natural range of variability.[sup1][sup3]

The discussion of possible impacts on suitable WSRs (Issue 5) should be based on and provide assurance that the project will comply with this direction. If any of the proposed ground-disturbing activities in the suitable Wild River corridors does not meet these standards and guidelines (ROS, VQO, Vegetation Management for Wild Rivers), the proposed treatments should be eliminated or adjusted accordingly.

IX. Near Natural and Scenic Corridor Allocations Surrounding Suitable Wild Rivers

The Stanislaus LRMP allocates land outside the lower Middle Fork WSR corridors to the Near Natural prescription and the lower North Fork WSR to Scenic Corridor and Near Natural Prescriptions.[sup1]4

These allocations are intended to protect the outstanding scenery and semi- primitive non-motorized recreation values of the WSR corridors. The SERAL Project Treatments comply with the Visual Quality Objectives and Recreation Opportunity Spectrum of these prescriptions. If any of the proposed ground-disturbing activities in the Near Natural and Scenic Corridor areas outside of the suitable Wild River corridors do not meet these standards and guidelines, the proposed treatments should be eliminated or adjusted accordingly.

Thank you for considering our comments. We would like to meet with you to discuss our concerns, especially those related to the CSO amendments and impacts to CSO, the modeling approach applied, and condition-based management. Our purpose for meeting would be to find
resolve our concerns about the project.

[sup1][sup3] FSH 1909.12 [ndash] Land Management Planning Handbook, Chapter 80 [ndash] Wild and Scenic Rivers, pg. 31.
[sup1]4 Stanislaus LRMP Map I-1.