Data Submited (UTC 11): 4/11/2022 7:00:00 AM
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Title:
Comments: Please see attached objection on the SERAL project. Copies of references cited will be submitted in separate comment submissions due to file size limitations.
Dear Ms. Eberlien,We, the undersigned individuals and organizations, submit this objection on the SERAL project. The SERAL project intends to permit actions by using three separate decisions. This objection is filed with respect to the draft record of decision issued on February 25, 2022. We submitted timely comments during scoping in August, 2020 and on the draft environmental impact statement in January, 2022.We support land management actions that reduce wildfire risk for people and nature while maintaining and protecting sensitive species and ecosystems. We are especially supportive of actions that restore the function of beneficial fire to landscapes like those encountered in the SERAL project. To this end, we appreciate that the draft decision enables implementation of over 70,000 acres of prescribed fire in this 118,795-acre project area. We do not believe that the draft decision strikes the right balance between protecting sensitive resources like California spotted owl and other species dependent on old forests and the logging treatments that are proposed on over 41,000 acres. The following objection provides a detailed explanation of our concerns and offers suggestions on how to resolve our concerns.I. The Project Degrades Important Nesting and Roosting Habitat and Fails to Protect California Spotted Owls A. Spotted Owl PAC Management 1. SERAL Treatments Do Not Minimize or Avoid Impacts to Productive PACsThe SERAL project does not use owl occupancy or reproductive status to inform PAC treatments, as required. The 2019 spotted owl strategy guides forests to minimize or avoid potential impacts to spotted owl PACs according to a hierarchy of five possible occupancy and reproductive categories. This language is adopted in the SERAL forest plan amendment SPEC-CSO-GDL-02:To minimize potential impacts to California spotted owl reproductive success, vegetation treatments that may reduce habitat quality in the near term should be minimized or
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.(FEIS, p.158). Despite this amendment, it does not appear that reproductive status was used in designing treatments to minimize or avoid impacts to PACs. The Forest Service describes in the response to comments (RTC) how mechanical treatments were similarly applied to all 53 spotted owl PACs, concluding "These intense constraints and treatment requirements were applied to every PACs [sic] equally." (FEIS volume 2, p.10, RTC 50). The project proposes a uniform approach to PAC treatments despite historic survey data indicating 36 were occupied by reproductive pairs, 13 by pairs, and 4 by territorial singles (revised BE p.29).The Forest Service discusses how owl survey data information won't be used to modify treatments in SERAL because most PACs are expected to show reproductive status. Instead, it refers to direction on PAC retirement, but these are actually separate issues with separate direction in the strategy.[hellip]we note that this prioritization approach will not be of much value in the SERAL landscape because the majority of CSO territories have reproductive status or will likely show reproductive status with continued survey effort now in place as owls do not typically breed every year and historical survey effort has been sporadic. Only a few PACs (ie. < 3) are anticipated to have "single" status after surveys are updated and completed. Thus while non-reproductive sites will be targeted for resiliency treatment priority, these prioritizations may not be immediately obvious because those conditions will likely be rare on the landscape. Instead Alternative 1 is intended to increase habitat resiliency for all CSO PACs across the landscape within the context of the Sierra Nevada bioregion BEFORE the next high-severity fire precludes that opportunity.(FEIS volume 2, RTC 47, p.40). Here, the agency discusses the possibility of targeting single occupancy PACs for retirement and intensive treatment, but not how treatments in the most productive PACs are minimized or avoided in order to ensure that these sites maintain their productivity.The owl strategy clearly directs forests to meet near-term spotted owl habitat needs within PACs and balance longer-term forest resilience goals with owl habitat needs outside of PACs. The minimization and reduction of project treatment

intensity within historically occupied and productive PACs is a key component missing from the SERAL project design.To conform with plan amendment SPEC-CSO-GDL-02, we recommended: "Treatment intensity should be highest in PACs where habitat is ranked high on the departure index and where productivity and occupancy are low." (FEIS volume 2, comment 47, p.39-40; also see full quote from SFL et al. 2022, p.15) This recommendation was never addressed.According to survey history reported in the BE, one would expect vegetation treatments with minimal impact on habitat quality in the 36 historically reproductive PACs compared to those occupied by non-reproductive owls. Instead, the SERAL project proposes the maximum and often excessive habitat degradation not even allowed in the owl strategy with caveats in Appendix F to review treatments later, but occupancy and productivity history are never mentioned in Appendix F.The Forest Service describes various PAC-specific treatment sideboards to demonstrate that treatments were developed for PACs in the response to comments. These sideboards include upper diameter limits and a 100-acre treatment threshold, as well as a habitat departure index (FEIS volume 2, p.10, RTC 50). Yet these treatments are still applied to all 49 PACs equally even though the PACs present a variety of occupancy and reproductive histories. These sideboards do not address our comment 50 or SERAL amendment SPEC-CSO-GDL-02 because they are entirely based on habitat conditions, not the reproductive or occupancy status of resident owls. These approaches may be PAC-specific, but still do not avoid or minimize treatments based on occupancy and productivity, contrary to the spotted owl strategy.Spotted owl populations are declining severely across the Sierra Nevada by 30 to 50 percent in the past 30 years (Conner et al. 2013; Tempel and Guti[eacute]rrez 2013; Tempel et al. 2014b). A resilient PAC treatment design must allow productive owls to continue to contribute to the local population even while fuel reduction treatments occur. This requirement is part of the spotted owl strategy for good reason. Flexibility is allowed in the strategy so there are many possible approaches, but here are a few suggestions:1) Focus treatment intensity in PACs where habitat is ranked high on the departure index and where productivity and occupancy are low.2) Conduct little to no treatments (ie. handwork on surface and ladder fuels and/or prescribed burning) in historically and currently reproductive PACs to ensure nesting and roosting habitat is retained especially while the remainder of the landscape is being treated for forest stand resilience because these more intense treatments make spotted owl nesting habitat unavailable to owls in the short-term outside of PACs.3) Reduce treatment intensity in spotted owl habitat according to aspect and position on slope. For example, reduce project impacts to mid-elevation sites, north-facing sites and mesic sites located near the lower 2/3 of the slope.4) Do not treat adjacent historically productive PACs simultaneously. For example, treat neighboring PACs in the same sub-watershed on a rotating schedule that separates treatments by at least 3-5 years.We ask that the proposed action incorporate site-specific measures to avoid project impacts to the 36 most productive PACs in the project and to minimize or reduce impacts in the 13 pair-occupied PACs.2. Plan Amendments Do Not Protect Highest Quality Habitat in PACs, Contrary to the StrategyOur concerns with SPEC-CSO-STD-04 remain (see comment letter from Jan. 24, 2022) and have been exacerbated by unexplained changes made to the forest plan amendment between the DEIS and FEIS.The spotted owl strategy asserts that nesting habitat must be maintained throughout PACs:4. Manage PACs for resiliency and sustainability while minimizing near-term effects of resiliency treatments.C. 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.G. Reduction in habitat quality is acceptable in up to a third of a PAC where necessary to increase long-term resilience, provided[hellip]habitat quality is maintained in the highest quality nesting and roosting habitat (for example, CWHR 6, 5D, 5M). (Emphasis added)(USDA Forest Service 2019, p. 28). In contrast, the SERAL plan amendments in the FEIS allow degradation of the highest quality nesting habitat in PACs contrary to the spotted owl strategy.The DEIS provided definitions for "highest quality nesting and roosting habitat" and "best available nesting and roosting habitat" that established what it meant to "maintain or improve" these habitat types. Specifically, the DEIS stated that:Management activities that maintain or improve habitat quality in the highest quality and best available nesting and roosting habitat would:a. Retain existing CWHR canopy cover class (e.g., do not reduce 5D to 5M);b. Retain clumps of the largest available trees greater than 24 inches DBH; andc. Retain at least two canopy layers at the stand/patch scale in areas where large trees occur.These definitions meant that the CWHR canopy class was to be retained in locations where the direction was to "maintain or improve habitat quality." The FEIS replaces without discussion or justification this concise definition of "maintain or improve habitat quality" included in the DEIS with a rambling statement that attempts to justify not maintaining and not

improving habitat quality in PACs. The more permissive definition of "maintain or improve habitat" provided in the FEIS allows the reduction in habitat quality of highest quality nesting and roosting habitat in PACs. This is inconsistent with the spotted owl strategy. This is also inconsistent with the plan component in the FEIS for PACs (SPEC-CSO-STD-04) directing that: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. (Emphasis added)(FEIS, p. 157). The draft ROD is also incorrect when it states that canopy cover retention minimums for CWHR 5D "are not specifically required to be compliant with the CSO strategy" (draft ROD, p. 6), since the spotted owl strategy directs that CWHR type be retained.Plan component SPEC-CSO-STD-04 also contains two exemptions that are of concern especially since the revised amendment in the FEIS no longer provides protection for CWHR 5M/5D/6 in PACs. The first is an allowance for reducing habitat quality in PACs when treating for resiliency without the provisions for maintaining CWHR 6, 5D, or 5M habitat quality as called for in the spotted owl strategy. The second is an exception for fuel breaks that lifts habitat provisions in defense zone PACs. These exemptions are concerning because we know from the FEIS is that there are 2,000 acres of fuelbreaks in PACs and that CWHR 5D and 5M are proposed for degradation in PACs.(Footnote-1) The FEIS does not specify what impact these exemptions would have on spotted owls. How often are desired conditions for owl habitat and fuelbreaks in defense zone in conflict?Simply put, the SERAL plan components such as SPEC-CSO-STD-04 should be corrected to align with the spotted owl strategy. Solutions to these conflicts should be resolved before the FEIS is completed so that exemptions to plan amendments are not necessary.Footnote-1 We note that there is some discussion in the ROD and revised BE that indicates that canopy cover for 5D habitat would not be reduced to less than 60%, but we note here and in a subsequent section of this objection that the inconsistencies between the draft ROD, FEIS and revised BE make it impossible to clearly track the action that will be implemented.3. SERAL Does Not Maintain Owl Habitat in Abandoned PACs, Contrary to the Strategy, Impact to PAC Network is UnderestimatedForest biologists identified up to four PACs that are likely for 'retirement' based on survey records (revised BE p.29; named in DEIS footnote p.79). The SERAL plan amendment for retiring PACs based on lack of occupancy omits language from the strategy to "design treatments in retired PACs to retain available large/tall tree, high canopy cover habitat that is resilient to disturbance." (USDA Forest Service 2019, p.27). The Forest Service reasons in the FEIS that "we believe the 'for example' to be misleading and contradictory to Approach 2." (FEIS p. 157; plan amendment STD-02 and STD-03). We are concerned this indicates important owl habitat will not be maintained in these four PACs. For example, TOU0117 is proposed for retirement and contains 18 percent of CWHR 5M habitat. Yet the plan amendment CSO-STD-03 allows for this habitat to be degraded if it's no longer considered a PAC once surveys are completed. If this habitat is no longer maintained it would have significant negative impacts on PAC network throughout the project area. Additionally, desired conditions in the spotted owl strategy would not be met.This issue is related to our 'hard look' comment in the DEIS and was not addressed in the RTC:The DEIS does not identify negative impacts from retiring four spotted owl PACs that contain of 1,167 acres of suitable habitat[hellip]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).(SFL et al. 2022, p. 21). The SERAL plan amendments and prescriptions for retired PACs should be revised to maintain canopy cover and other important spotted owl habitat attributes.B. Spotted Owl Territory ManagementJones et al. (2021b) offers recent evidence that fuel reduction and spotted owl conservation are not mutually exclusive. Notably, this research shows that in order to truly achieve climate resilience, forest managers must temper vegetation treatments for long-term climate resiliency in order to support declining owl populations with adequate old forest habitat to survive in the short-term. The Figure 1b, below, shows the ideal treatment intensity that maintains spotted owl territory occupancy through 2050 under extreme climate and fire scenarios. In the case of SERAL, the project should not 'alter habitat' (authors here mean retain dense canopy >70 percent while also reducing fuels in owl territories and PACs. Most importantly, this research corroborates many other studies that retaining CWHR 5M, 5D and 6 does not pose an existential threat to forests during extreme fire scenarios.1. Highest Quality Spotted Owl Habitat is Degraded in Territories and the 40-60 Percent Habitat Threshold is Met

with Lesser Quality Habitat, Contrary to the Strategy.The spotted owl strategy states that the desired condition for territories is for 40 to 60 percent of the territory to be in the highest quality nesting and roosting habitat (USDA Forest Service 2019, p. 29). There are 57 territories affected by the SERAL project (Revised BE, p. 69). Only five of these territories have 40 to 60 percent of their areas in highest quality nesting and roosting habitat. In Table 1 below, we identify 9 territories that do not meet or barely meet the desired condition with highest quality habitat, yet highest quality and best available habitat will be degraded by the proposed action.Table 1. SERAL Proposed Degradation of CSO Habitat in Selected Territories (in acres).(Footnote-2)See letter for inserted except from Table 1.Footnote-2From Revised SERAL Terrestrial Wildlife BE, Table CSO 10B, p.69. February 2022.In order to meet the desired conditions, the Forest Service should maintain all highest quality spotted owl habitat where it occurs in territories unless the territory is comprised primarily of CWHR 5M, 5D or 6. The strategy states:1.2.A Desired conservation outcomes for an occupied territory are to maintain and promote 40 to 60 percent of a territory in mature tree size classes with moderate and high canopy cover for nesting, roosting and foraging. This corresponds to roughly the following CWHR site/density classes in descending order of priority: 6, 5D, 5M, 4D and 4M.(USDA Forest Service 2019, p.29). It is the "in descending order of priority" that commits the Forest Service to maintaining these habitat types where they exist in owl territories, especially if there is little CWHR 6, 5D or 5M to begin with, rather than replacing them with a lower quality CWHR type. This guidance from the spotted owl strategy is reinforced by plan component SPEC-CSO-DC-07 in the forest plan amendment:Maintain and promote 40 to 60 percent of each territory in mature tree size classes with moderate and high canopy cover for nesting, roosting, and foraging. Priority should be given to maintaining and promoting the highest quality before best available in descending order: 6, 5D, 5M, 4D, and 4M. The remainder of the territory consists of a diversity of many different structure and canopy classes.(FEIS, p. 156). For example, degrading 5D, 5M or 4D and replacing it with 4M is not consistent with the spotted owl strategy or the plan amendment for territories that do not initially meet desired conditions as shown in nine territories in Table 1. Footnote-3.Footnote-3We note that the definition for "maintain and improve habitat quality" that was included in the DEIS is also important to implementing the plan amendment in a manner that is consistent with the spotted owl strategy.We raised concerns about the lack of protection for highest quality nesting and roosting habitat in our comments on the DEIS. In response, the FEIS was revised to include plan component SPEC-CSO-STD-08 to this end:In CSO territories that do not meet the territory desired condition (SPEC-CSO-DC-07) retain habitat quality in the highest quality nesting and roosting habitat where it exists throughout the territory. If the territory desired condition has been met, vegetation treatments to improve resilience and increase heterogeneity should be designed to ensure the desired condition in SPEC-CSO-DC-07 is maintained.(FEIS, p.158) This is an important addition, and we appreciate it was added to the plan amendments.Unfortunately, the FEIS now conflates the desired condition with the conditions that are available for delineating a territory. The desired condition for a territory is:Maintain and promote 40 to 60 percent of each territory in mature tree size classes with moderate and high canopy cover for nesting, roosting, and foraging. Priority should be given to maintaining and promoting the highest quality before best available in descending order: 6, 5D, 5M, 4D, and 4M. The remainder of the territory consists of a diversity of many different structure and canopy classes.(FEIS, p. 156) The desired condition is for the territory to be composed of 40 to 60 percent of the highest quality nesting and roosting habitat. Territories with lesser amounts of highest quality nesting and roosting habitat do not meet the desired conditions.Appendix F in the FEIS outlines a process to be used to adjust PACs and review impacts on spotted owl during implementation of the ROD. This appendix clearly states the incorrect belief that "best available habitat" (CWHR 4D and 4M) is considered a component of the desired condition:Step 5. CSO Territory Desired Condition Assessment: Determine if the desired condition of the territory will be met following treatment (i.e., 40-60 percent of the Territory in CWHR 6/5D/5M/4D/4M), by calculating the post-treatment CWHR size and canopy cover classes.(FEIS, Appendix F, p. 170) However, best available habitat was defined in the DEIS as:Best available nesting and roosting habitat may be important where highest quality nesting and roosting habitat is unavailable or scarce because the best available habitat may be providing conditions that support current spotted owl reproduction, in the absence of higher quality habitat. Footnote-4Footnote-4 We note that without explanation or rationale this definition of "best available" habitat was removed from the plan amendment and replaced with a generic statement that fails to establish the relationship between "highest quality" and "best available" habitats.This reinforces that "best available habitat" is of lessor quality and not the desired condition for a

territory.The SERAL project should be revised to avoid changing CWHR type in highest quality nesting and roosting habitat in territories where desired conditions for territories have not been met with highest quality nesting and roosting habitat. The FEIS and BE should be revised to reflect these changes in the Proposed Action.2. Maintaining Spotted Owl Habitat Connectivity Throughout the Landscape.The SERAL terrestrial wildlife analysis does not adequately consider spotted owl habitat connectivity. Instead, the BE tiers to the conservation strategy, assuming that if the proposed action follows the spotted owl strategy (Approach 1.2.2 p. 29), which it currently does not, then habitat connectivity issues are fully addressed:[hellip]Alternative 1 is expected to maintain habitat connectivity because Alternative 1 is consistent with the CSO Conservation Strategy which is inherently designed to maintain and improve CSO habitat and CSO on the landscape.(Revised BE, p.68) We raised habitat connectivity concerns in our comments on the DEIS (RTC, comment 122 and 125), however Alternative 1 is definitely not in compliance with the strategy as discussed in the sections above and therefore cannot claim that desired conditions for spotted owl habitat connectivity are met simply because the FEIS is compliant with the strategy. Further, tiering to the strategy is insufficient for the purposes of NEPA, because there the spotted owl strategy does not have an effects analysis to tier to.The strategy sets several goals for spotted owl habitat connectivity including:B. Desired conservation outcomes for multiple territories comprising more than 75 percent of a watershed is to maintain 30 to 50 percent of the watershed in mature tree habitat at moderate and high canopy cover (for example CWHR 6, 5D, 5M, 4D, and 4M).And 2.C. Manage territories to foster development of high-quality habitat and habitat connectivity(1) Within territories retain patches of large/tall trees with high canopy cover (more than 70 percent), both inside and outside of PACs, for developing future nesting sites.(2) Promote habitat connectivity at the watershed scale by retaining connected areas of moderate and high canopy cover in large/tall trees within territories.(USDA Forest Service 2019, p. 29). The SERAL project must show how spotted owl habitat is to be maintained outside of and between territories and PACs.3. Monitoring and Adaptive Management Should be Central to SERAL Project.We support peer-reviewed project monitoring and ask that the Forest Service commit to conducting this research by developing a research and monitoring proposal, highlighting it in the final ROD and revised FEIS, and making implementation of the ROD contingent upon implementation of the research and monitoring proposal.The Forest Service alludes to monitoring forest raptors in the SERAL project in RTC 62:Currently we have partnered with the Institute of Bird Populations (IBP) to conduct protocol-level surveys in the SERAL project area for CSO, goshawk, and great gray owl. Intent is to keep surveys current through the life of the project and to monitor the status of CSO, goshawk and great gray owl sites pre- and post-treatment. We also intend to partner with IBP and other researchers to share findings and public the results.(FEIS volume 2, p.30). Currently the only mention of this idea is in tiny font at the back of the FEIS, and we are unclear how committed the agency is to supporting and completing this important task.Adaptive management is a key component of the spotted owl strategy (USDA Forest Service 2019, p.35). In light of the immense uncertainty and risk to spotted owls that this project poses, research on the impacts of SERAL on spotted owls should be a central pillar of the SERAL project. We applaud a partnership with avian researchers to publish a peer-reviewed report of SERAL impacts to spotted owls.The SERAL research design should be informed by several facts. First, response variables should include spotted owl occupancy and reproduction. Second, research shows that owls respond to habitat conditions at multiple scales, so response variables should be matched with pre- and post-habitat conditions at multiple scales for each site (i.e., canopy cover and CWHR types at the nest stand, PAC, and territory scales). Third, monitoring should begin several years pre-treatment to encompass variability in spring weather patterns (known to influence raptor nesting success) and the first 5 years post-treatment. Current research that shows HRCAs and PACs experiencing severe wildfire and green forest logging show site fidelity for the first 3+ years. 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 this study saw a 43 perecnt reduction in spotted owl occupancy from experimental logging after year three.Further, the Stanislaus should set thresholds by which further PAC treatments should be called off if site abandonment or other depression in occupancy and productivity parameters are revealed early in the monitoring effort.We would be happy to review a research design and ask that Dr. John Keane also be involved in research design because of his involvement in spotted owl research for the Forest Service in the Sierra Nevada.II. Greater Protections for California Spotted Owls Should be AdoptedA.

PAC Abandonment1. Abandoning Protected Activity Centers After Three Consecutive Years of Surveys and Limiting PAC Designation to Territorial PairsThe FEIS 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. [CSO strategy p. 27; PAC retirement based on occupancy C.1 an C.2 and D (first sentence only, we believe the "for example" to be misleading and contradictory to Approach 2)](FEIS, p. 157) 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.(USDA Forest Service 2019, p. 27) The spotted owl 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. PACs currently protect both conditions. 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 [le]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 spotted owl strategy document.In particular, we are concerned by the plan to remove PACs from protection if they have not been occupied for three or more 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 spotted owls relative to current practices or an alternative that would require, for example, five 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 spotted owl strategy document nor the FEIS 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 DEIS comments that the science-basis for the 3-year vacancy threshold and abandonment of PACs with non-territorial pairs and single birds be provided in the FEIS. In response, the Forest Service cited the 1991 USFWS spotted owl survey protocol as the basis for long-term occupancy criteria in the strategy (FEIS volume 2, RTC 108, p. 36). This is problematic for two reasons. First, the USFWS defines occupancy differently than the spotted owl strategy or the SERAL plan amendments. Unoccupied habitat is where "A complete survey of the area has been conducted and there were no detections of any owls." (USFWS 1991, p. 13). In contrast, the owl strategy categorizes PACs "eligible for retirement based on lack of occupancy" when it is still occupied by owls in some circumstances (USDA Forest Service 2019, p. 27). Second, the USFWS survey protocol is a standardized procedure for surveys, and the scientific basis for the protocol is not provided in the protocol.The FEIS and project documents still have not provided the science basis or rationale to support abandoning PACs after three years of surveys. Adoption of these amendments without presenting the science-basis is arbitrary.B. Use of a Circle to Designate California Spotted Owl TerritoriesThe spotted owl strategy's delineation of circular territories results in less habitat being managed and available for owls. According to the SERAL FEIS, "The circular territories are composed of 186 less acres of highest-quality habitat than HRCAs and the lack of highest-quality habitat on private lands contributes to this reduction." (FEIS, p.93).Footnote-5 In some cases, the PACs themselves are not even included in the new SERAL territories (see Figure 2, below).Footnote-5 We note that this difference between

HRCAs and territories represents a cumulative difference and an individual territory may be more strongly impacted.The plan amendment allows for the adjustment of territories (LAND-SERAL-WILDLIFE-02):Territory boundaries may be adjusted to be non-circular, as needed, to include the entire protected activity center and the most sustainable areas of high-quality habitat and exclude areas less likely to support suitable habitat.(FEIS, p. 154) However, the Forest Service informed us at a meeting in January 2022 that these circular territories would not be adjusted to include more suitable habitat either, even if they encompass clear cuts, lava cap or other non-habitat. The FEIS alludes to adjusting territory boundaries if desired habitat conditions from the strategy are not met (FEIS, p.94), but it appears there is no intention of doing so. There was no evaluation provided in the FEIS or explanation offered at our meeting as to why adjustments to the circular territories where not needed.The notion that owls need additional habitat heterogeneity delineated in territories to "foster habitat diversity as well as high-quality habitat in sustainable locations, rather than being based solely on where habitat exists today" (FEIS, p.93) is misguided. Owls select for old forest and high canopy cover for foraging, and the more habitat heterogeneity in a territory, the larger the
territory must to be (Williams et al. 2014). In fact, lack of old forest outside of PACs is hypothesized to be part of the cause for decline of spotted owls in the region:Based on the relatively low overlap between PAC areas and roosting and foraging habitat use by the owls we studied, we hypothesize that insufficient habitat protection from stand-altering activities outside PAC areas could partially explain ongoing population declines. Most of the habitat used by owls for roosting and foraging in our study was outside of PACs and therefore available for stand-altering forestry activities. Even where PACs protect nesting stand conditions conducive to successful reproduction, stand-altering activities elsewhere in owl home ranges may reduce occupancy or reproductive success."(Blakey et al. 2019, p. 920)The SERAL owl territories 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 approach to territory delineation adopted in SERAL results in 33 percent of HRCA acres dropped from protective status (FEIS, p.93). We found 913 acres of 6, 5D, and 5M in HRCAs excluded from territories (Id. Table 25, p.66) . Further, the circular territories depend on 4,547 acres of spotted owl habitat provided on private land to meet the desired conditions (FEIS, Table 33, p.93). The Forest Service should not count on private land to meet desired conditions in territories because these lands do not share Forest Service's land management priorities and responsibilities.The image below compares territory and HRCA designations in the SERAL project area. It illustrates that HRCAs are preferable in managing for old forest species because they encompass more suitable habitat including 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 shows spotted owl territories as orange circles, HRCA outlined in blue and PACs are red (darker red is overlap with goshawk PACs). From upper right to lower left: TUO0102, TUO0220, TUO0038, TUO0160.(See letter for Figure 2 image)Figure 2. Contrasting 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.In the figure above, SERAL spotted owl territories in orange overlap with clear cuts and plantations on private land and lava cap on public, instead of including the best available spotted owl habitat delineated in HRCAs in blue under the current forest plan. RTC 49 and 59 seem to suggest that this is the habitat heterogeneity that the Forest Service seeks to provide for owls in the spotted owl strategy. We find this objectionable especially given the low amounts of highest quality habitat available in the circular territories with significant amounts of private land.Several recent studies demonstrate that although spotted owl territories may contain up to 36 percent forest openings, the patch size and configuration of these open areas are important in predicting California spotted owl habitat suitability. Spotted owls use small patches of forest openings relative to their territory and do not venture more than 100 m into forest openings (Kramer et al. 2021). Here, the strongest negative effect was at territory scale where odds of site colonization decreased 8.3 percent for every 10 ha severely burned (Id.). Similarly, Jones and Tingley (2021) report that spotted owls may seek small forest openings to forage, but avoid larger open areas and stay within 100 m of green forest openings. The scale of the forest openings included in the SERAL spotted owl territories, above, do not reflect the habitat heterogeneity owls have been shown to select in recent foraging studies.Proposing these clear cuts as an improved habitat network for spotted owls in SERAL frankly seems ironic since this is the type of forest management that likely led spotted owl decline to begin with (Jones et al. 2021a; Jones et al. 2018).The 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 project and the spotted owl strategy promote 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 non-habitat. Furthermore, in some cases this habitat overlaps significantly with private land. This is a less protective approach to managing for spotted owls than how HRCAs were delineated and does 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. We ask that territory boundaries be adjusted to avoid clear cuts and lava cap and instead include highest quality and best available spotted owl habitat within a likely travel distance as provided in the spotted owl strategy and forest plan amendment.C. The Forest Service Cannot Assume Private Landowners Will Manage Habitat for Spotted Owls.Related to Issue 6.A. in the FEIS, the Figure CSO4 (below) is from the revised SERAL BE shows where proposed circular spotted owl territories in black overlap significantly with private lands in gray (Revised BA, p.30).(See letter for Figure 3 image)
Figure 3. Distribution of CSO PACs (red) and territories (black circles) in the SERAL project areas in relation to private land (gray). Taken from revised SERAL BE, Figure CSO 4.The SERAL project adds private land into the spotted owl habitat network such that "Territories are drawn as a circle regardless of current vegetation conditions or administrative boundaries, and are managed for vegetative diversity, a portion of which is managed for nest/roost habitat (40-60% of the area)." (FEIS volume 2, RTC 49, p.28). The Forest Service cannot depend on private landowners to a maintain spotted owl habitat network that meets desired conditions. The 16 percent of the cumulative area of the territories that occurs on private land should not count toward the 40-60 percent nest/roost habitat threshold for DC-07 (FEIS, p.156). These territories should instead be redrawn to incorporate suitable habitat on public land where it exists. The strategy allows for mechanical treatment in territories, so adjusting territory boundaries should not hamper fuel reduction objectives. Currently many territories would not meet the minimum threshold for habitat conditions without counting nesting/roosting habitat on private lands. 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 territory delineation and assessments of available habitat.D. Spotted Owl Surveys Must Inform Project Planning Using the Owl Strategy.Spotted owl surveys must inform the project planning process when using the spotted owl strategy. Management actions central to the strategy, such as PAC treatments, territory delineation, PAC retirement, landscape-scale breeding habitat retention and management, rely on up-to-date survey information. Not only are surveys required prior to NEPA in order to inform the impact analysis and project planning (Region 5 white paper dated October 2002), but they are also needed to ensure the owl strategy is properly implemented. If surveys are left until after
NEPA as they are in SERAL, then too many details about the project design are unresolved until surveys are completed after the decision is made that could change the entire project.The spotted owl strategy should require 3 years of protocol owl surveys up front to inform the planning process because application of the strategy on the ground depends on current survey results. What we want to avoid is a scenario like SERAL where the entire project is likely to change after surveys are completed and the public wouldn't have any idea what the project actually entails until NEPA is already over. Here, PAC boundaries, prescriptions, and unit boundaries may all shift significantly after the decision is already signed and surveys are done, contrary to NEPA.E. CWHR 4D not Maintained in PACsA total of 25 out of 53 PACs are comprised of over 50 percent 4D (revised BE p.33), which provides essential breeding habitat for these birds. Forests are directed to prioritize this CWHR type in 40-60 percent of territories under the strategy (see 1.2.A), but not in PACs, despite the reliance on this habitat by nearly half the owls in the project area. The 2019 spotted owl strategy should maintain 4D in PACs (see section 1.4.C), especially if 5D and 5M are underrepresented. The desired condition in SPEC-CSO-STD-04 (FEIS, p.157) should also include 4D in preferred habitat along with 6, 5D and 5M.Spotted owl nesting habitat is not adequately maintained in PACs as shown in Table 3 (RTC 110) because the strategy only prioritizes CWHR 6, 5D and 5M in

PACs. CWHR 4D is important and should be prioritized for retention in PACs, especially when higher quality habitat is not available.Habitat dominated by CWHR 4D (defined as 12- 24" dbh trees and >70 percent canopy cover) isa critical component of spotted owl nest areas and PACs. Indeed, dense canopy and medium to large trees is the only habitat covariate consistent with California spotted owl habitat in all four Sierra Nevada study areas (Roberts et al. 2011; Tempel et al. 2016; North et al. 2017). CWHR 4D also shows a positive linear relationship with reproductive output (Tempel et al. 2022) and is associated with nest success (Blakesley et al. 2005).III. The Use of NRV to Guide Logging and Other ManagementWe raised this as a concern in our scoping comments and in comments on 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 FEIS. We are not arguing against the use of NRV to guide treatment activities. We are also not arguing against the use of Safford and Stevens (2017) to define general ranges for NRV. We are, however, objecting to the methods used to assign NRV ranges to specific geographical locations in the SERAL project. Specifically, we object to the use of a unique "forest type map" created by a subset of the science team that is used to drive restoration targets. As we will discuss below, this map does not take into account topographic position and other biophysical characteristics in the assignment of NRV and results in an over simplification of the landscape's character. Failure to account for topographic and
other biophysical variability leads to the assignment of a relatively uniform set of prescriptions that define the proposed action and are used to estimate impacts.The use of this greatly simplified forest type map and uniform prescriptions are not appropriate in the SERAL project because they conflict with the stated purpose to improve resilience by increasing stand and structural variability.A. Geographic Assignment of Forest or Vegetation TypeA subset of the science team created a unique forest type map based on a classification scheme that they invented. This map (FEIS, Map 1) does not incorporate topographic position and other biophysical attributes into its determination of forest type, but was simply created from a classification based on species composition using contemporary vegetation data. This map and general descriptions of seral stage distribution provided in Safford and Stevens (2017) were then used to establish restoration targets (FEIS, Appendix A, Tables A.2 and A.3). In turn, these restoration targets are used as a function in the modeling to drive logging in areas that are considered not departed in terms of resilience or wildfire risk (FEIS, Appendix E, Table; RTC, p. 30). This is an inappropriate delineation of "forest type" as the basis for evaluating divergence from NRV because it fails to incorporate topographic position and other biophysical attributes into its classification.We raised this concern in scoping comments and comments on the DEIS, but the FEIS still does not provide an explanation why the delineation of ecological systems in the existing vegetation type (EVT) or the biophysical settings (BPS) data sets of LANDFIRE are not appropriate to use to delineate "forest type." RTC 42 asserts that BPS is not an appropriate forest type delineation because is reflects "historic 'potential'" vegetation. This, however, is not an accurate picture of how the delineation was derived, since LANDFIRE defines BPS as "based on both the current biophysical environment and an approximation of the historical disturbance regime." The only aspect of "history" embodied in the BPS delineation of forest type is fire regime. The BPS map for the SERAL project areas, shown below in Figure 4, reflects far more mesic mixed conifer forest (dark green color) at lower elevations and north facing slopes compared to the "forest type" map used in the FEIS.(See letter for figure 4 image)Figure 4. Biophysical setting (BPS) types derived from LANDFIRE. Data taken from https://landfire.gov/bps-models.php.Furthermore, Safford and Stevens (2017) use the BPS data to evaluate existing conditions for seral stage at the landscape and compare them to desired conditions at the landscape level using BPS data. The analysis in the FEIS is not much different than that used in the FEIS except that it uses a homogeneous forest type layer that does not reflect the variety of conditions across the landscape. Based on the use of the BPS to evaluate existing versus desired conditions in Safford and Stevens (2017), it is incorrect for the FEIS to claim it is inadequate.RTC 42 also takes issue with the EVT delineation of forest type claiming that accuracy assessments had not been completed for these classifications. This is incorrect; agreement assessments that reference the ecological types within the SERAL project area have been completed for LANDFIRE. This criticism of EVT, however, is spurious since the unique classification invented by the science team does not itself include an accuracy assessment. RTC 42 does acknowledge, consistent with Figure 4, above, that "the commenter is correct that Landfire's Existing Vegetation Type (EVT) dataset does classify extensive areas as Mesic Mixed Conifer." Still there is not explanation about why this characterization of "extensive" areas of mesic mixed-conifer

is incorrect.The classification of significant areas as mesic-mixed conifer, as established by LANDFIRE, is especially important for the management of spotted owl and other species dependent on denser, more mature forests. As can be seen by examining the desired conditions for seral stage in the FEIS (FEIS, Appendix A, Table A.1, shown below in Table 2), the amount of late-closed forest is only 5 percent for "yellow pine/ dry mixed conifer", whereas it is 20 percen for "fir/moist mixed conifer."Table 2. Historic NRV Range and Seral or CWHR Stage Proportions. Taken from FEIS, Appendix A, Table A.1.(see letter for Table 2 image).This low amount for late-closed is what drives the estimates in Table A.1.2 to promote degrading 4,300 acres of the highest quality spotted owl habitat (CWHR 5M and 5D) to types not considered owl habitat, i.e., CWHR 5S and 5P.We also note that LANDFIRE data, including vegetation type assignments to specific geographic locations, were used in the fire risk assessment and modeling of fire behavior. The biophysical setting and existing vegetation type, including topographic characteristics, provide the geographic foundation for the risk assessment and modeling. The RTC (p. 9) responds to this concern by essentially saying the scientists used what they used and it was good without actually explaining why the various analyses were not integrated and why they did not use the same geographical foundation, i.e., the same biophysical attributes like elevation, aspect, slope, precipitation, and temperature, to establish the ecological zones for F3, the climatic zones for the resilience index, or vegetation type for "forest type."RTC 42 also claims that the LANDFIRE EVT data are not sufficiently up-to-date making them inadequate for the SERAL project's purpose. We don't disagree with this point, but we are not suggesting that the SERAL project use the characteristics or attributes of vegetation, e.g., TPA, cover, found in even the most recent update for LANDFIRE. The EVT or BPS maps contain geographic assignments of forest type or ecological systems that are more relevant to the purpose and need for the SERAL project, because they include consideration of topographic position and other biophysical characteristics. This data characterizing the vegetation type by pixel could be aggregated and assigned to the land management units (LMU). Then F3 data could be imputed to the LMU (as was done for many of the attributes in the existing analysis). This approach would be improved over the approach applied in the FEIS by fully recognizing the influence of topographic position and other biophysical factors on landscape conditions. This approach would also be consistent with the spotted owl strategy.Another possible solution to the false representation of landscape homogeneity imposed by the science team's "forest type" classification would be to use the "ecological zones of soil, elevation, aspect, slope, precipitation, and temperature" that were employed to develop the F3 data set for the SERAL project, as described in Huang et al. (2018, p. 28). These ecological zones could be used in much the same way as the climate classes identified in the resilience departure index (and also Jeronimo et al. 2019) were used.B. Use of the Simplified Forest Type Developed By the Science Team Leads to Simplified and Homogenized PrescriptionsThe analysis used in the SERAL project area classified the area above about 4,500-feet elevation as mostly one forest type - yellow pine-dry mixed conifer. (FEIS, Map 1) There is a small amount of fir-moist mixed conifer identified at the highest elevations in the project area. Homogenization of this area is further emphasized by the development of treatment prescriptions with hardly any variation among prescription types. 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 and aspect within these forest types is variable, yet we see no distinction made in prescriptions applied to lower, mid- and upper slopes or their relationship to the sun (i.e., aspect). We do note that the CSO departure index (Appendix E and limited to use within PACs) and the resilience index utilize topographical positions to distinguish between existing and desired conditions. The foundation for the resilience departure index was based on climate classes first presented in Jeronimo et al. (2019). These classes were based on a variety of biophysical attributes including topographic position. Nonetheless, there is no coherent explanation in the FEIS addressing why it is acceptable to disregard topographic position and other biophysical attributes in the assignment of prescriptions in the FORSYS modeling. The result is a relatively homogenous approach to logging across the landscape. This is the antithesis of the guidance expressed in spotted owl strategy that recognizes that "NRV values are influenced by fine-scale local site characteristics (for example, topographic position, soil type, latitude, longitude, elevation, aspect, vegetation type) and dynamic natural disturbance regimes (for example, fire, insects, disease, drought, windthrow, landslides), and these same traits create the context for forest management actions." (USDA Forest Service 2019) Local site characteristics like these were not incorporated into the process used to set restoration targets for

the SERAL project (FEIS, Appendix A, Tables A.2 and A.3), to assign treatment prescriptions, or to evaluate the impacts of the prescriptions on spotted owl habitat.In our comments on the DEIS, we noted that that just over 9,000 acres were proposed for commercial logging in spotted owl territories and about 86 percent of these areas would be treated with a single prescription - "Alt1_MC_TERRITORY_150.KCP" - that would manage the stands for a target stand density index of 150. The description of Alternative 1 mentions that prescriptions will create a variable stand structure with individual trees, clumps and openings (ICO) (FEIS, p. 30), but the prescriptions used in the modeling do not address ICO variability or that logging intensity will vary with topographic position. In response to our concern, the FEIS (p. 30) now includes a table describing desired conditions for different topographic positions and refers to the prescriptions included in the FEIS as "general" implying that these are not the actual prescriptions that will be applied to each unit.The application of these new stand density targets that vary by LMU will have a different impact on stand condition compared to the modeling outputs. For instance, given these new desired conditions for the different LMUs, post-treatment stand densities for logging units on ridgelines in dry mixed conifer types could be as little as 67 percent of the value, i.e., 150, that was used in the effects analysis for the FEIS. This potential variance in the prescriptions applied on the ground to those used to analyze the effects on stand conditions and how this might affect habitat conditions for spotted owl were not disclosed in the FEIS.Based on statements in the RTC and FEIS, it now appears that the precisely stated effects reported in, for instance, Table 10B of the revised BE (Revised BE, p. 70) are not accurate and that the impacts to habitat conditions may be lesser or greater depending on decisions to be made after the record of decision is signed. This is not consistent with NEPA's requirement to disclose site specific impacts of the project.C. Lack of Integration Among Landscape Condition Metrics and ForSysIn response to our concerns about the divergent data and approaches used to create the landscape condition metrics applied to the ForSys model, the FEIS states that "Each metric has its own purpose within the proposed action and should be viewed independently." We strongly disagree with this statement that the metrics should be viewed independently. The purpose of each index or component is the same in all cases - characterize the desired condition, characterize the existing condition, and assess the degree of departure to determine where to take action. These assessments are being applied to the same landscape and should be evaluating the same desired and existing vegetative conditions. Each metric should apply similar analytical principles across metrics.Because the primary purpose of the SERAL project is to move landscape conditions towards NRV, it is critical that there be agreement among metrics about what NRV is and how it is defined. At this point the SERAL analysis includes assessments of NRV and departure from it that appropriately address the site variability noted in the spotted owl strategy (e.g., the resilience departure index) and other metrics (e.g., the forest type metric, landscape assessment of restoration targets, assignment of treatment prescriptions) that fail to incorporate this variability.We see nothing that should have prevented the team from addressing site variability in these other components; the FEIS simply failed to do so.The harm in this failure is that generic, "one-size-fits-all" prescriptions are proposed and evaluated in the FEIS, contrary to the stated purpose and need to manage toward NRV, and contrary to the stated intent of the forest plan amendment.D. Use of Analytical Approach in SERAL and BeyondThe development of landscape metrics and the ForSys modeling is summarized in Appendix E. This 16-page summary is not adequate to evaluate how the different metrics were developed and the judgments or decision used in their creation. The presentation of methods in this appendix falls far short of the detail expected in peer-reviewed science. It also falls short of what we know to exist. For instance, the RTC (p. 9) indicates that the fire risk assessment is based on the Southern Sierra Risk Assessment Version 3, yet documentation of this risk assessment is not provided in the project files. We have seen documentation of a prior version of this assessment and know it should exist. A significant amount of expert opinion related to quantifying threats to various resources is a component of these assessments and they should be made available for public review.Our review and evaluation of the analysis process required us to repeatedly request additional information from the interdisciplinary team and researchers. While we very much appreciate the effort by the team to address our questions, much of the information we requested should have been provided in the project documents supporting the modeling.We are especially concerned about this lack of detail given the growing expectation that the use of landscape condition metrics and ForSys will be a model for other vegetation management projects on the remainder of the Stanislaus National Forest and other national forests in California. Fundamentally, we object to the use of the modeling approach in SERAL because it does not take into account site variability in the assignment of prescriptions and use of "forest

type" assignments to drive restoration targets. We also object to the application of this analysis process to other projects because of this failing and because the process overall is not sufficiently documented and should be subject to additional technical review.IV. The Impacts From Actions That Have Been Deferred to A Later Time Are Not DisclosedThe FEIS project description, plan amendments, effects analysis, GIS maps, and ROD are not consistent with each other, leading to an abstruse proposed action that requires additional steps and procedures to bring the project in alignment with the spotted owl strategy and plan amendments at some later time. This makes understanding the project difficult and is a barrier to engagement with the Forest Service regarding this important project. Management requirements are usually directly related to project implementation, such as washing equipment to prevent the spread of noxious weeds, but management requirements in SERAL involve project review and analysis that should happen during the planning phase of the project rather than the post-decision phase. We ask that the FEIS be revised to align with the owl conservation strategy prior to release of the final ROD. We also ask that all planning and surveys for this project be completed prior to finalizing the ROD.A. Highest Quality Nesting Habitat in PACs Is Proposed for Both Degradation and Preservation in Conflicting SERAL Statements, Risking Misinterpretation and Resource Damage.Upon reviewing the FEIS, we found 42 PACs with 6, 5D, 5M, 4D and 4M owl habitat proposed for degradation to a lesser quality CWHR type, many of these examples are contrary to the spotted owl strategy, which asserts that nesting habitat must be maintained throughout PACs:4. Manage PACs for resiliency and sustainability while minimizing near-term effects of resiliency treatments.C. 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.G Reduction in habitat quality is acceptable in up to one third of a PAC where necessary to increase long-term resilience, provided[hellip].habitat quality is maintained in the highest quality nesting and roosting habitat (for example, CWHR 6, 5D, 5M).(USDA Forest Service 2019, p. 28) The revised SERAL BE Table 10B (p. 70) shows hundreds of acres of nesting habitat targeted for degradation in PACs, contrary to the strategy. Indeed, the BE states "Within PACs, proposed forest thinning for resiliency includes 888 acres of highest quality habitat CWHR 6/5D/5M (Table CSO 10B)." (revised BE, p.67). Table 3 below reiterates a few of these examples:Table 3. SERAL Proposed Degradation of CSO Nesting Habitat in PACs not Compliant with the Spotted Owl Strategy (in acres). Footnote-6(for table 3 see letter).Footnote-6: From Revised SERAL Terrestrial Wildlife BE, Table CSO 10B, p.70-71. February 2022.The SERAL BE acknowledges a conflict between the proposed action and the spotted owl strategy desired conditions, suggesting several workarounds:The PAC-by-PAC evaluation of post-treatment habitat shows that under Alternative 1, the majority of PACs (41) would meet the desired condition for maintenance of highest-quality CWHR types and identifies 12 that would not without prescription adjustments. In both cases, this is a result of modeled resiliency prescriptions that will be adjusted prior to implementation.(Revised BE, p.68). The draft ROD also acknowledges this loss of 5D in PACs is not allowable and promises to fix it later. This creates an unnecessarily confusing proposed action requiring post-decision adjustments to comply with the forest plan amendment. This situation is problematic in several ways. First, the proposed action does not follow its own plan amendments or regional guidance. Second, the FEIS no longer discloses project impacts as required by NEPA because the impacts may change based on changes in prescriptions. Third, the proposed action is difficult to understand and implement, thus elevating the risk of resource harm during implementation. We ask that the proposed action and analysis be revised to align with the spotted owl conservation strategy and forest plan amendment prior to release of the final ROD.B. CWHR 6, 5D and 5M Protections in PACs in the Strategy and ROD are Missing from the FEIS.The FEIS does not retain the highest quality nesting habitat in PACs, as required in the strategy. The project plan amendment SPEC-CS0-STD-04 allows up to 100 acres of habitat in a PAC to be degraded by logging, but throughout PACs all vegetation treatments must:[bull] 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][bull] 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;[bull] Avoid mechanical treatments within a 10-acre area surrounding the most recent known nest;[bull] Avoid creating new landings, new temporary roads, or canopy gaps larger than 0.25 acres comprising no more than 5% of a stand;[bull] Increase the quadratic mean diameter of trees at the protected activity center scale; and[bull] Maintain the average canopy cover of the protected activity center above 50 percent.(FEIS, p. 157). The

language adopted in FEIS plan amendments SPEC-CSO-STD-04 above and STD-07 do not include or reflect Approach 1.4.C from the spotted owl strategy (p.28) which states: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.This discrepancy between the FEIS and the spotted owl strategy is partially addressed in RTC 78 and the ROD, but is contradicted in CSO Table 10B in the revised BE. According to the BE, this habitat is proposed for degradation in many PACs despite claims elsewhere in the FEIS that this may be a modeling error. And to compound the confusion and inconsistencies, the Stanislaus Forest Supervisor, Mr. Kukuien, commits to maintain CWHR 5D in the Draft ROD: "I have determined that the silviculture prescription will be modified slightly to apply to higher minimum canopy cover threshold (e.g. 60 percent). This modification applies to approximately 318 acres classified as 5D." (Draft ROD, p. 6). Nevertheless, our comments about maintaining CWHR 6, 5D and 5M where it exists in PACs is important and must be reflected throughout the proposed action and impact analyses. The FEIS and all accompanying GIS layers, prescriptions, etc. must be revised to align with the ROD and the owl strategy before a final decision is released.A second related issue is that the definition of "maintain or improve" in the DEIS was eliminated from the FEIS. From the DEIS, Appendix B:Management activities that maintain or improve habitat quality in the highest quality and best available nesting and roosting habitat would:Retain existing CWHR canopy cover class (e.g. do not reduce 5D to 5M);Retain clumps of the largest available trees greater than 24 inches DBH; andRetain at least two canopy layers at the stand/patch scale in areas where large trees occur.This language is important because it reflects desired conditions for PACs in the owl strategy and should be incorporated into the FEIS. The above language should be replaced in a revised FEIS before the final ROD is signed so that the FEIS can align with the spotted owl strategy and stated intentions in the draft ROD.C. Highest Quality Habitat Is Not Maintained in Spotted Owl Territories that Do Not Meet Desired ConditionsAccording to desired conditions in the spotted owl strategy, territories lacking 40-60 percent highest quality habitat must retain highest quality habitat where it exists (Approach 1.2.A, p.29). As noted above, the SERAL FEIS adopts SPEC-CSO-STD-08 to retain highest quality nesting and roosting habitat where is exists. On the implementation side of things, the FEIS identified only one territory that has less than desired conditions. The FEIS failed to identify all the territories that did not meet desired conditions, because it was using the wrong definition for desired condition. The desired condition is for a territory to have 40 to 60 percent of its area in highest quality nesting and roosting habitat. As noted above, the definition of desired condition applied in the FEIS's analysis includes "best available" habitat that is of lesser quality.Using the appropriate definition and data from Table 10B from the revised BE (p. 69), we identified at least 52 territories that do not currently meet desired conditions for 40 to 60 percent of the territory in highest quality nesting and roosting habitat. Table 1 on page 6 shows examples of territories lacking 40 percent mature tree size classes and for which logging is proposed in highest quality habitat. This condition of insufficient highest quality habitat triggers the standard above to retain all high quality habitat and yet this habitat is would be degraded in Alternative 1.Table 4 below shows spotted owl territories at moderate elevation (between 5,000 -7,000 feet) that do not maintain 60 percent mature tree size class and should, but do not maintain the highest quality habitat where it exists according to the spotted owl strategy Approach 1.2.A (p.29). Table 4. SERAL Proposed Degradation of CSO Habitat in Selected Mesic Territories (in acres). Footnote-7

Footnote-7 From Revised SERAL Terrestrial Wildlife BE, Table CSO 10B, p.69. February 2022The revised BE reflects a proposed action that clearly does not follow the spotted owl strategy (p.67) [ldquo]Table CSO 10A also shows that 925 acres of CWHR 5D and 2,364 acres of CWHR 5M were selected for treatment [in spotted owl territories].[rdquo] Here, 6, 5D and 5M are proposed for
degradation to lower CWHR types in territories. The BE acknowledges there is a conflict between the proposed action and the spotted owl strategy and suggests several workarounds:A territory-by-territory evaluation of post-treatment habitat shows that under Alternative 1 the majority of territories (50) would meet the desired condition in CWHR types and identifies 7 that would not without prescription adjustments prior to implementation (10 territories that partially overlap the SERAL project area meet desired condition for the whole territory). In both cases, this is a result of modeled resiliency prescriptions that will be adjusted prior to implementation.[rdquo](Revised BE, p.68). This statement from the revised BE also reflects a misinterpretation of

the desired condition and incorrectly presumes that the desired condition can be met with [ldquo]best quality habitat,[rdquo] i.e., CWHR 4M and 4D. As noted above, this is an incorrect assumption and not consistent with the spotted owl strategy or the forest plan amendment.The adjustment of prescriptions in spotted owl habitat represents a large and important part of the project that still hasn[rsquo]t been resolved. Here, Table 1 and Table 4 reveal where the project would harm the spotted owl and are contrary to direction in the strategy and the project[rsquo]s own forest plan amendments, and leaves resolution of these confusing and potentially harmful loose ends for later. For example, see RTC 48 and FEIS Appendix F:Results of the desired condition assessment are discussed in the FEIS and the process of adjusting the proposed treatments and/or prescriptions when the territory desired condition is not met is described in Appendix F.This lack of specificity with regard to the proposed action, along with the misinterpretations of habitat types that satisfy the desired condition, does not meet the requirements of NEPA to disclose impacts. Again, we ask that the proposed action, plan amendments, effects analysis, GIS maps, prescriptions are revised in another FEIS to align with the spotted owl conservation strategy prior to release of the final ROD.Appendix F and other parts of the FEIS and supporting documents should be revised to recognize that most of the territories in the SERAL project do not meet desired conditions with the highest quality habitat. The Proposed Action should be adjusted before signing the Record of Decision to affirm that when territories do not meet desired conditions with highest quality nesting and roosting habitat, the existing CWHR 5M, 5D, and 6 types will not be reduced in cover or size class. The FEIS and supporting documents should also be revised to reflect this change.D. Adjusting Fuelbreak and PAC BoundariesThe SERAL plan component SPEC-CSO-STD-04 (FEIS p.157), directs [ldquo]In California spotted owl PACS, all management activities must maintain or improve habitat quality in the highest-quality nesting and roosting habitat.[rdquo] then adds an exception for defense zone fuel breaks:This standard may be modified when constructing inner core fuelbreaks located within WUI defense zones where avoiding overlap with a PAC is not feasible and it was not possible to remap the PAC to maintain acreage equivalent to the quantity of the treated PAC acres (as described in SPEC-CSO-GDL-03).(FEIS, p.157) However, Appendix F promises toRemap PAC boundaries to avoid overlap with fuelbreak treatment units wherever possible or mitigate by adding acreage to the PAC equivalent to the treated acres using adjacent acres of comparable quality wherever possible.(FEIS p.170). The PAC and fuelbreak boundaries in the defense zone should be reviewed to determine if there are instances where PAC habitat lost to fuelbreaks can[rsquo]t be replaced and why the fuelbreak can[rsquo]t be rerouted around PAC habitat if it is irreplaceable in limited situations. The FEIS does not present a specific situation or need for this exemption, and it contradicts important parts of the strategy.According to the spotted owl strategy, the project must maintain nesting habitat in PACs and every effort must be made to locate fuelbreaks outside of PACs. If fuelbreaks must overlap with PACs in the defense zone and old forest habitat are not available outside the PAC, then the fuelbreak should be rerouted outside the PAC or continue with a modified prescription in the PAC. In most situations, fuelbreaks are effective when surface and ladder fuels are reduced, even when canopy cover, diameter limits and crown bulk density are retained at high levels (Fry et al. 2015; Collins et al. 2011; Thompson and Spies 2009; Agee and Skinner 2005). We discuss these important studies on the relationship between fuelbreak efficacy, fuels configuration and dense canopy habitat retention in detail in SFL et al. (2020).V. SERAL Threatens the Viability of Spotted OwlThe 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 percent in the Sierra Nevada over the last 30 years within all demography study areas on national forest lands (Conner et al. 2013; Tempel and Guti[eacute]rrez 2013; Tempel et al. 2014b).Spotted owl PACs in SERAL represent 30 percent of PACs on the Stanislaus and 5 percent of owl sites in Sierra Nevada (revised BE p.29). 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.(Revised BE, p. 27). The scale of treatments proposed in SERAL Alternative 1 is unprecedented and it is unknown how spotted owls will respond to habitat degradation in a third of every PAC along with intensive habitat alteration in territories.Only three studies have investigated experimental logging impacts to California spotted owls. These consistently show negative impacts to occupancy and other demographic parameters (Keane et al. 2017). These studies never altered habitat in PACs, as proposed in SERAL, still mechanical treatments in CSO

territories (outside of PACs) including small group selection posed long-term negative impacts to CSO (Seamans and Gutierrez 2007; Tempel et al. 2016; Tempel et al. 2014b; Stephens et al. 2014). These studies are dismissed in the spotted owl strategy (USDA Forest Service 2019) 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 spotted owls 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 attached research summary). A more cautious approach to spotted owl management is needed to ensure old forest species resilience to climate extremes.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. The 2019 spotted owl strategy strives for:population resilience to the effects of climate change and other environmental stressors...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 spotted 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.The FEIS and modeling also impose an atypical interpretation of NRV that portrays the desired conditions as relatively homogeneous across the landscape. This occurred because the classification failed to take into account the biophysical variability across the landscape. Classifications exist that appropriately take biophysical variability into account, but the FEIS rejects them out of hand despite having used these approaches, e.g., LANDFIRE, in other parts of the analysis. This homogenized view of the landscape also leads to the application of logging prescriptions that do not vary with topography, aspect and other biophysical characteristics. This approach is not consistent with the spotted owl strategy. It is also detrimental to spotted owl because the project fails to provide for the ecological conditions necessary to maintain the species.We appreciate the opportunity to provide additional comments on the SERAL project and draft ROD. Susan Britting is serving as the lead objector. We look forward to meeting with you to discuss our concerns and how they can be resolved.Sincerely,Susan Britting, Ph.D.Executive DirectorSierra Forest LegacyPO Box 377Coloma, CA 95613(530) 919-9844britting@earthlink.netDarca MorganConsulting biologistSierra Forest Legacydarcamorgan@gmail.comDon RivenesConservation ChairSierra Foothills Audubon Societyrivenes@sbcglobal.net