



August 15, 2022

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USDA Forest Service
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Submitted via: <https://cara.fs2c.usda.gov/Public/CommentInput?project=3375>

Re: Objections to the Final Plans, Final Environmental Impact Statement (FEIS) and Draft Records of Decision (ROD) for the Sequoia and Sierra National Forests

Dear Ms. Berger,

Pursuant to 36 CFR Part 219 Subpart B, Sierra Forest Legacy, CalWild, California Native Plant Society, Defenders of Wildlife, Sierra Foothills Audubon Society, Friends of Plumas Wilderness, WildEarth Guardians, Western Watersheds Project, Tulare Kings Audubon Society, Sierra Nevada Alliance, WildPlaces, and Sierra Club are objecting to portions of the Draft Records of Decision, Final Forest Plans, and Final Environmental Impact Statement for the Sequoia and Sierra National Forests. The responsible official for the Sequoia plan is Forest Supervisor Theresa Benson and for the Sierra plan is Forest Supervisor Dean Gould.

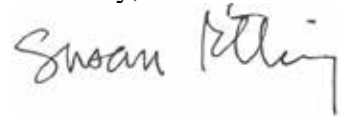
Collectively, the objecting organizations have provided substantive formal comments throughout the forest planning process for the Sequoia and Sierra National Forests on the objection issues

we raise below. We are deeply invested in securing forest plans for these national forests that protects important natural resources and provides for people.

This objection covers a variety of issues related to resources affected by the revised forest plan and offers recommendations on how objection issues could be resolved.

We appreciate the opportunity for review and possible resolution of issues contained in this objection prior to the approval of the final plan. We look forward to discussing our concerns with you.

Sincerely,



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Attaxchment A: Habitat conditions in territories pre- and post-treatment for the SERAL Project.
Adapted from the SERAL biological evaluation, Table CSO 10A.

I. Terrestrial Ecosystems

A. Dry Versus Moist Mixed Conifer

The desired conditions for mixed-conifer forest appropriately classify this vegetation type into “dry” and “moist” mixed-conifer. Establishing this distinction between mixed-conifer types is essential for interpreting the desired condition tables in the forest plans and for appropriately locating these types on the landscape. This distinction is also essential to applying the plan components for California spotted owl (CSO) and other old forest species as they rely on these distinctions to direct the development of desired habitat conditions to locations on the landscape that are more resilient, i.e., more mesic.

The process used to distinguish “dry” from “moist” types relies on six topographic and slope characteristics (USDA Forest Service 2022d) that were applied to the “Sierran Mixed Conifer” WHRTYPE in the Existing Vegetation (Eveg) data layer. “Dry mixed-conifer” was assigned to the following categories: Ridge, Midslope SW < 30% slope, Midslope SW > 30% slope. “Moist mixed-conifer” was assigned to the following categories: Canyon/Drainage Bottom, Midslope NE < 30%, Midslope NE > 30% slope. The results of this classification are reflected in Figure 3 in the biological assessment (USDA Forest Service 2022c).

We are deeply concerned that this important map (USDA Forest Service 2022c, Figure 3) and criteria for classification of dry versus moist mixed-conifer are not included in the body of the forest plan or as an appendix. Maps of major vegetation types and ecological zones are included in the FEIS (Appendix I) and biological assessment (USDA Forest Service 2022c), but not in the section of the forest plans that contains maps. It is essential that the map section of the forest plans include the maps on vegetation type and ecological zones to clearly establish where these conditions are located on the landscape. This will inform where the plan components related to these elevational zones and vegetation types are to be applied.

Recent efforts by the Stanislaus National Forest to complete a project-specific amendment to their forest plan to incorporate the CSO strategy illustrate why it is critical to include this vegetation type map and the process used for classification in the forest plans. Referred to as the SERAL project, the analytical framework created for this project invented a classification for “forest type” based solely on tree species abundance (USDA Forest Service 2022b, Appendix E). Slope and topographic position were not considered in assigning forest type. The forest types contained in this uniquely created classification included “dry mixed conifer” and “mesic mixed conifer.”

One result of this newly invented classification is the near absence of “moist mixed conifer” in the project area despite the fact that “Sierran Mixed Conifer” dominates the eastern portion of the project areas. This misstep in assigning forest type in the SERAL project has direct and adverse impact on the management of habitat for CSO and other old forest dependent species. This is because the project specific amendment uses forest type to assign desired conditions and guide logging treatments. For the SERAL project this results in most of the Sierran Mixed Conifer in the project area being treated as “dry mixed conifer” where tree densities and canopy cover are reduced to lower levels than “moist mixed conifer.” In the 118,000-acre SERAL

project area, they claim that 58,000 acres (about 61% of the project area) is “yellow/ pine/dry mixed conifer.” (USDA Forest Service 2022b, p. 15) Further, using the desired conditions they adopted for seral stage, only 5% of this 58,000-acre should be composed of forest with trees greater than 24” DBH and canopy cover greater than 40 percent (USDA Forest Service 2022b, Appendix A). These low amounts of late, closed canopied forests are far below those called for in the CSO strategy (USDA Forest Service 2019a). Given the analytical framework, assignment of treatments, and adopted desired conditions, the SERAL project intends to manage for substantially lower levels of habitat utilized by old forest species, like spotted owl, that are dependent on denser forest types, compared to the direction in the revised Sierra and Sequoia plans.

Suggested resolution: To ensure that the plan components for terrestrial vegetation are appropriately applied during project planning, include the following in the forest plans: 1) Figure 28 of elevational zones from the FEIS (p. 177); 2) Figures 29 and 30 of the vegetation types that include “dry” and “moist” mixed conifer (FEIS, p. 185 and 186); and 3) provide a footnote to Maps 29 and 30 that explains the method used to assign forest type, including the specific criteria applied the “Sierran mixed conifer” California Wildlife Habitat Relationships (CWHR) type to determine the locations for “dry” and “moist” mixed-conifer.

II. Aquatic Ecosystems

We raised concerns about proposed changes to the aquatic conservation measures in the existing forest plans in our comments on the draft environmental impact statement in 2016 and the revised draft environmental impact statement in 2019.

A. Livestock Facilities and Riparian Conservation Areas

Historically, livestock and pack stock facilities for gathering have been placed in meadows and other riparian conservation areas. In response to the impacts from such placements, the forest plans were revised in 2001 and 2004 to avoid placing new facilities in RCAs and consider relocating existing facilities outside of riparian conservation areas (RCAs) (USDA Forest Service 2004, p. 65, Standard 119).

The standard proposed in the draft plans from 2019 did not address new facilities, but did call for a review of existing facilities when reissuing permits and required action if impacts were found:

WTR-RCA-GDL 06

To improve water quality or habitat for aquatic and riparian-dependent species, evaluate the impacts of facilities on riparian conservation areas when reissuing permits for livestock. If impacts are found, existing livestock facilities should be located outside of meadows and riparian areas.

(See for example USDA Forest Service 2019c, p. 19). In the 2019 versions of the draft plans, there is no reference to prohibiting placement of new facilities in RCAs as is required in the current plans.

The guideline above from 2019 was revised in the 2022 version of the plans to limit consideration of the impacts of gathering facilities on RCAs to only those that are “significant adverse” impacts:

WTR-RCA-GDL 06

To improve water quality or habitat for aquatic and riparian-dependent species, evaluate the impacts of facilities on riparian conservation areas when reissuing permits for livestock. If **significant adverse** impacts are found, existing livestock facilities should be relocated outside of wetlands and riparian areas or mitigated. (Emphasis added).

(Sierra plan, p. 19, and Sequoia plan, p. 19). The guidelines offered in 2019 and 2022 are far less protective than the standard adopted in 2004. However, the FEIS makes no mention of this difference or the potential for impacts from trampling in RCAs as a result of livestock gathering or the repeated, year-after-year impacts from trampling, compaction, and the generation of waste. We also note that there are no criteria established in the guideline to determine what constitutes a “significant adverse impact” on the RCA. Without some established thresholds of significance, determinations of significance will be ad hoc and are unlikely to consistently protect RCAs.

Management action for this guideline is only triggered by “significant adverse impacts.” This limitation is inconsistent with several other standards. For instance, WTR-RCA-STD 01 directs that management activities not “adversely affect” water temperature and hydrologic processes, and does not limit mitigation only to impacts that are significant. WTR-RCA-STD 10 requires that management activities not retard rates of natural recovery. It is unclear if retarding rates of recovery would be considered significant, causing it to be unclear if the standard should be applied. These inconsistencies are compounded by the lack of definition or thresholds establishing significance.

Suggested resolution: To protect sensitive riparian resources and habitat from trampling and damage: 1) add a standard that states “Locate new facilities for gathering livestock and pack stock outside of meadows and riparian conservation areas”; and 2) adopt the revised standard below using the convention in other standards to apply to “adverse impacts”:

WTR-RCA-GDL 06

To improve water quality or habitat for aquatic and riparian-dependent species, evaluate the impacts of facilities on riparian conservation areas when reissuing permits for livestock. If **adverse** impacts are found, existing livestock facilities should be relocated outside of wetlands and riparian areas or mitigated.

B. Storage of Fuels and Other Toxic Materials in RCAs

The current forest plans direct that fuels and toxic materials are not to be stored in RCAs:

Standard 99

Prohibit storage of fuels and other toxic materials within RCAs and CARs except at designated administrative sites and sites covered by a Special Use Authorization. Prohibit

refueling within RCAs and CARs unless there are no other alternatives. Ensure that spill plans are reviewed and up-to-date.

(USDA Forest Service 2004, p. 63). The 2022 versions of the forest plans reduce protection from fuels and toxic materials in ways that should be corrected.

There are two important differences between the current standard and the one proposed in the 2022 forest plans. First, the 2022 standard introduces the term “long-term” without defining it:

WTR-RCA-STD 03

Prohibit long-term storage of fuels and other toxic materials except at designated administrative sites and sites covered by special use authorization. (Emphasis added).

(Sierra plan, p. 18; Sequoia plan, p. 18). There is no convention in the forest plans about what is considered long-term for management practices. This term is used liberally in the forest plans and often in reference to achievement of a desired condition in the future. There is a specific reference to the time frame on long-term in the section on Conservation Watersheds considers “long-term” to be “multiple planning cycles.” Given the planning rule has a cycle of 15 years (+/-), multiple planning cycles would be more than 30 years. This seems to be an excessively long period of time given the risky and explosive nature of the chemicals to be stored.

Second, the 2022 standard omits reference to refueling within RCAs. The 2022 standard would now allow an action that has a high likelihood of spilling fuel in the RCA during the acquisition and use of fuels. These changes increase the risk of fuels and toxic materials entering the RCA and damaging sensitive resources and adversely affecting aquatic integrity, yet the FEIS does not evaluate the environmental impacts related to this change.

Suggested resolution: To reduce the risk of contamination from fuels and toxic materials in RCAs, WTR-RCA-STD 03 should be revised to state:

WTR-RCA-STD 03

Prohibit storage of fuels and other toxic materials within RCAs except at designated administrative sites and sites covered by a Special Use Authorization. Prohibit refueling within RCAs unless there are no other alternatives.

III. At-Risk Species

A. Fisher

Pacific fisher is a forest carnivore closely associated with closed canopy, late-successional forests. Due in part to logging practices, the fisher’s distribution in the Sierra Nevada has been reduced to a small, isolated population in the southern Sierra Nevada. Pacific fisher was listed under the Endangered Species Act endangered in May 2020.

We commented on plan components for this species in 2016 and 2019. However, the plan components for fishers were substantially changed between the 2019 draft plans and the 2022 versions of the plans as noted in the FEIS (FEIS, p. 464-465). Habitat definitions were added, new desired conditions were included, and measures to minimize impacts to denning habitat were changed. As such, this is the first opportunity for public review and comment of most of the fine-filter plan components for Pacific fishers.

1. Management Targeting “Larger Blocks” of Potential Denning Habitat

“Larger blocks” of habitat are identified as greater than 25 acres in SPEC-FSHR-GDLs 01 and 02. The origin of this as a threshold value is not discussed in the revised plans, the FEIS, the biological assessment, or the biological opinion. It is also not specifically identified in the management recommendations for fisher from 2020 (Thompson et al. 2020). The science support and rationale for this as a threshold value for fisher conservation should be cited in the plan documents.

We believe that SPEC-FSHR-GDLs 01 and 02 are important approaches to conserving fishers. However, we are concerned that limiting their application to habitat blocks greater than 25 acres will allow the reduction in habitat quality of smaller patches of “high quality denning habitat.” Patches of potential denning habitat may only be available in small patches as a result of past management and impacts from recent disturbances (drought, beetles, and wildfire). As written, this guideline only maintains “high quality denning habitat” if it is included in a large patch of “potential denning habitat.”

Despite what we see as the potential to degrade smaller patches of high quality denning habitat, the biological assessment (BA) assumes that this habitat type will not be degraded or altered by commercial logging:

Areas with CWHR characteristics of fisher High Quality Denning Habitat will not be considered available for commercial thinning due to the plan direction described below that limit the amount of mechanical treatment and the extent of habitat change allowed.

(USDA Forest Service 2022c, p. 99) We ask that you clarify the specific plan components that restrict commercial logging in high quality denning habitat.

We also ask that you include a standard to protect high quality denning habitat of any patch size while allowing management actions that improve fire resiliency. Our request is supported by the 2020 fisher interim recommendations referenced in the FEIS (p. 465):

6.1.3a – In areas defined as high quality denning habitat, limit vegetation management activities to hazard tree abatement, surface/ladder fuel treatment, single-tree selection for the purpose of separating tree clumps, and low-intensity prescribed fire. **Use methods that do not fundamentally change stand structure, canopy cover, or CWHR category.** Retain multistory conditions and understory heterogeneity (both vertical and horizontal) where ecologically appropriate. (Emphasis added).

(Thompson et al. 2020, p. 27). This recommendation was, in part, a response to recent drought induced habitat changes resulting in a loss of 39 percent of the estimated highest quality habitat within the southern Sierra Nevada (Thompson et al. 2020, p. 9).

Suggested resolution: We ask that you:

1) Include the following standard to protect highest quality habitat of any patch size:

SPEC-FSHR-STD 02

In areas defined as high quality denning habitat, limit vegetation management activities to hazard tree abatement, surface/ladder fuel treatment, single-tree selection for the purpose of separating tree clumps, and low-intensity prescribed fire. Use methods that do not fundamentally change stand structure, canopy cover, or CWHR category.

2) Evaluate baseline conditions to assess potential to degrade high quality denning habitat and to determine where potential denning habitat is dominated by small patches that would not be maintained by SPEC-FSHR-GLD 01;

3) Revise SPEC-FSHR-GLD 02 to remove reference to patch sizes greater than 25 acres in subsections “a” and “b”:

SPEC-FSHR-GLD 02

When creating fuelbreaks and permanent linear features devoid of surface vegetation within suitable fisher habitat, to limit fragmentation of habitat, facilitate connectivity, and reduce the impact of predation on fisher, include the following design features, as feasible.

a. Do not create permanent linear features devoid of surface vegetation or screening cover in known den clusters, den buffers, or high quality denning habitat unless no feasible alternative exists.

b. Do not create fuelbreaks in known den clusters or that would bisect patches of high quality denning habitat. If fuelbreaks must intersect potential denning habitat, maintain at least 40 percent canopy cover in high quality denning habitat, and at least 30 percent canopy cover in other denning habitat.

4) Provide a science-based rationale for the use of the 25-acre threshold for patch size when applied to vegetation management in “potential denning habitat.”

2. Home Range Size Is Not Adequately Defined

Among other things, SPEC-FSHR-GLD 01 seeks to minimize habitat quality reduction by limiting it to no more than “50 percent of the potential denning habitat available within the immediate home range-sized area.” We think it is good to limit reduction of potential denning habitat in home range-sized areas, but believe that additional clarification is needed for this standard to be effective.

First, the term “immediate home range-sized area” is not a conventional or commonly used term and is not defined in the forest plans. Home ranges for fishers are quite variable in size across in the southern Sierra Nevada and can be upwards of 21,000 acres for males depending on methods used to measure home range (Spencer et al. 2015, p. 15). Home range cores are another attribute that is sometimes reported; these are generally defined as the high use areas of the home range and are smaller than the home range (Spencer et al. 2015, p. 15). The fisher conservation strategy that predated the interim recommendations scaled the conservation measures to a 2,500-acre hexagon selected to approximate a female home range (Spencer et al. 2016, p. 5). We found a reference in the FEIS stating that Alternative B-modified would minimize habitat reduction “within 1,000-acre areas that represent a female fisher’s home range.” Given that home ranges sizes in the literature are variable, the specific 1,000-acre size of the home range area should be noted in this guideline.

Second, the discussion of this guideline in the FEIS concludes that conservation under Alternative B-modified will be improved with these 1,000-acre assessment units because they “would limit potential impacts using estimated home range areas that do account for landscape features, topography, connectivity, and existing habitat elements.” How specifically will the guideline “account for landscape features, topography, connectivity, and existing habitat elements”? We agree that these attributes are important to assess when evaluating impacts, but this guideline as written does not direct that.

Suggested resolution: We ask that you:

1) Revise SPEC-FSHR-GDL 01, b. ii. as follows:

- ii. Habitat quality reduction is limited to no more than 50 percent of the potential denning habitat available within a 1,000-acre area representing the immediate fisher home range.

2) Provide an explanation about how this 1,000-acre area will be used to “account for landscape features, topography, connectivity, and existing habitat elements” when applied to project planning and implementation.

3. Plan Components for Den Buffers

A den buffer is the 370-acre area surrounding a den cluster. Its purpose is described in the 2020 fisher interim recommendations:

The three-hundred and seventy acres surrounding a known or potential den cluster represents the second tier of fisher denning habitat protection. Within this area, female fishers may be sensitive to disturbance during the denning season. At the same time, resiliency-based management may have the benefit of protecting the integrity of the den cluster within. Therefore management activities within this footprint should be carefully assessed with respect to the timing, intensity, and potential for cumulative effects.

Whenever possible, management within this footprint should be avoided between March

1 and June 1 (unless surveys have indicated that no female fishers are present), and treatments should leave at least 50% of the overall area with canopy cover greater than 60%. When unavoidable, potential negative impacts should be mitigated by minimizing the use of mechanical equipment, identifying and retaining potential den structures, and limiting the amount of time spent working within the buffer.

Different types of management activity may be assessed differently. For example, commercial thinning during that temporal window would likely be highly disruptive to active denning, while hand thinning of surface and ladder fuels may not be. Mechanical work can often be deferred until after June 1, while prescribed fire often cannot. And a management activity in one area may cause a female fisher to relocate kits away from the disturbance, but if multiple management activities are ongoing around the den she may be forced to move kits further and leave them unattended longer, increasing the risk of mortality to both mother and kits.

(Thompson et al. 2020, p. 19). This recommendation emphasizes two management concerns about den buffers. First, that if treated at least 50 percent of the area should retain canopy cover above 60 percent. This recommendation is designed to limit disturbance in areas adjacent to dens and to retain habitat conditions important for denning. Second, activities, if planned for in adjacent den buffers, should be dispersed over time to limit the intensity of activities. These important management recommendations should be included in the forest plans.

Suggested resolution: To provide the ecological conditions necessary to support reproduction, we ask that SPEC-FSHR-STD 01 be revised to include den buffers (additional wording in bold/underline):

SPEC-FSHR-STD 01

Within known fisher den clusters **and den buffers**, retain habitat quality in suitable fisher habitat:

- a When treatment is necessary, focus on reducing surface and ladder fuels in a patchy pattern, through hand treatments and prescribed fire.
- b Within treated units that are CWHR 4M, 4D, 5M, 5D, or 6, do not decrease the existing CWHR size or canopy class.
- c Retain conifer snags greater than 35 inches dbh, and hardwood snags greater than 27 inches dbh and those that have den tree characteristics described in regional guidance documents.
- d Where present, retain multistory conditions in stands with canopy greater than 60 percent.
- e Construct no new permanent or temporary roads.

Exception: Does not apply in community buffers.

4. Improving Protection For Large Snags

Large snags have been identified as an essential ecological condition to support denning, resting and foraging, and all fisher life stages (FEIS, Appendix D). The importance of large snags is

emphasized in the 2020 interim fisher recommendations and reflected in these statements and recommendations:

In order to provide additional future fisher resting opportunities in areas with currently limited habitat quality, managers might consider retaining 5-10 snags/acre greater than 20" DBH, with particular emphasis on retaining any conifer snags >35" DBH or hardwood snags > 27" DBH (Fry et al. 2014), when doing so does not pose an immediate risk to human safety.

(Thompson et al. 2020, p. 18).

6.1.1d – Except where it threatens public safety or the ability to meet fisher habitat objectives based on site conditions, preferentially retain >4 of the largest snags per acre (>20" DBH), particularly those surrounded by remaining live trees and in high quality denning habitat.

(Thompson et al. 2020, p. 25). Snag levels were also highlighted as an essential component of high quality habitat in the conservation strategy that pre-dates the 2020 interim fisher recommendations:

Snags occur in all size classes, but with many >35 in dbh or the largest possible depending on site conditions. At the landscape and stand scales, mixed-conifer forests have on average 5-40 large snags >20 in dbh per 10 acres, but densities vary tremendously at finer scales. Snags are clustered at the stand scale, with most dense clusters found near canyon bottoms and on mesic slopes. At the finer scale, snag densities range from 0-25 snags per acre.

(Spencer et al. 2016, p. 50). These strategy documents emphasize the large size of snags that are most beneficial and that these features are often available at higher densities at the local scale than would be contemplated from the desired conditions for snags presented in the forest plans.

To address the need to retain large snags to enhance habitat in key areas, additional plan components should be adopted in the final forest plans.

Suggested resolution: To provide sufficient large snags to support denning and resting, adopt our recommendation for revisions to the Wildlife Habitat Management Area to address snag retention for species like fisher that are associated with old forest habitats. See section III.H. for detailed recommendation.

B. Sierra Marten

Our concerns remain the same regarding the risks to marten from logging in old forests, as established in our August 2016 comment letter. The final Sierra and Sequoia National Forest plans not only underestimate these risks, they do not offer plan components to ensure marten viability given the 60 percent increase in mechanical treatments called for in modified alternative B (FEIS p. 34). Without specific plan components that retain high quality marten habitat during

intense and widespread logging allowed under the new forest plans, the conditions necessary for marten survival and persistence are not provided in the planning areas.

Multilayered forest structure is critical for marten denning and resting and are described as follows (Spencer et al. 1983, Hargis and McCullough 1984, Ruggiero et al. 1998, Bull and Blumton 1999, Bull and Heater 2000, Bull et al. 2005, Slauson and Zielinski 2008):

- Late successional, old forests CWHR 5D and 6.
- Canopy cover of 60 percent and greater on the Westside Sierra Nevada
- Presence of large snags and logs on the ground [18 snags per acre (Martin and Barrett 1991) or 48 square feet per acre of snags (Spencer 1983).

Marten populations decline and become extirpated in areas where canopy cover is managed below 65-75% (Hargis et al. 1999; Potvin et al. 2000; Moriarty et al. 2011).

Moriarty et al. (2016) tracked 22 Sierra marten for four years with GPS collars to examine their habitat requirements. The researchers describe marten home ranges with 40-80% structurally complex stands and 24-33% simplified stands (ie. recently treated DFPZ fuel reduction treatments at 40% canopy cover) and 4-10% openings (meadow, talus, group selection on public lands and clear cuts on private lands). They conclude that these habitat conditions are not ideal for marten because the mortality rate (mostly bobcat and coyote predation) during the study was the highest ever recorded for marten, and in fact these habitat conditions may be at a critical threshold beyond which marten may not survive *Id.*

The Sierra and Sequoia final plans do not specify how much forest cover and structure to leave in marten cores, therefore they don't assure that habitat elements required by marten are maintained or restored. Fine filter plan components for marten core areas must specify how to support marten persistence during mechanical treatments there.

1. The Final Sierra and Sequoia Plans Do Not Maintain Ecological Conditions Needed for Sierra Marten Persistence in the Plan Areas

The final Sierra and Sequoia plans recognize the need for both a coarse-filter and fine-filter to provide plant and animal diversity across the forests (FEIS p. D-1). The plans also acknowledge they must provide for the ecological conditions necessary to contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species and maintain a viable population of each species of conservation concern (SCC). *Id.* Unfortunately, as explained below, neither the coarse-filter nor the fine-filter provide adequate protections for marten.

To address key threats to marten persistence, the Forest Service developed coarse-filter objectives to increase pace and scale of restoration (logging) treatments to mitigate threats of fire and resist stressors such as drought. Constraints on these treatments include a 30" to 40" upper diameter limit and a requirement to retain 0-4 snags/acre (Sierra plan, p. 27, 34, 39 and Sequoia

plan p. 27, 33, 39). The Forest Service acknowledges that threats to marten from logging must also be addressed:

Marten appear to be very sensitive to removal of key resting and breeding habitat features from their home ranges (Zielinski 2014). Moriarty et al (2011) provide compelling evidence for a decline in the marten population at Sagehen Experimental Forest affected by the loss and fragmentation of habitat associated with decades-long timber harvest that consisted of clearcut [4%], shelterwood [12%], [thinning from above or below, 38%], and salvage sales [41%]. This study documented a substantial decline in the number of martens detected. Key factors contributing to decline in marten numbers on the Sagehen site included decreases in habitat patch size, acres of core habitat area, and total marten habitat acres, and an increase in the distance between habitat patches. Loss and fragmentation of suitable habitat composed of large-diameter live and dead or dying trees reduces the availability of resting and denning sites for marten.

(FEIS, p.D-41). Clearly, more specific plan components are needed to alleviate risks posed to marten from logging, as acknowledged in the FEIS. Despite this, species-specific standards and guides are missing to ensure marten viability in the plan areas. The new plan components for marten are vague. For example, the guideline for Sierra marten core areas, SPEC-SM-GDL-01 states:

Within marten core habitat, retain overtopping and multistoried canopy conditions in patches consistent with vegetation desired conditions, including some shade-tolerant understory trees such as firs, especially in drainages, swales, and canyon bottoms, and on north- and east- facing slopes. Retain a patchy mosaic of shrubs and understory vegetation, separated by more open areas to reduce fuel continuity, increase habitat heterogeneity, support prey and provide hiding cover, with a goal of 10 to 20 percent shrub cover at the home range scale.

(Sierra plan, p.58; Sequoia plan, p.59). This component provides little guidance about the amount of habitat that is appropriate in marten cores, except that some amount of multistory canopy is desired and 10 to 20 percent shrub cover.

The marten core habitat from Spencer and Rustigian-Romsos (2012) was used to delineate marten core areas (Sierra plan p. 192, Sequoia plan p. 196). The marten core areas in the final plans represent high quality marten habitat that researchers recommend be managed to maintain and minimize fragmentation *Id* (p. 9). The conditions that reflect the use of core areas by marten and should be the basis of habitat conditions in these areas. Detail about these habitat conditions is needed in the plan components because the logging, i.e., group selection, thinning and other practices, can degrade or render habitat unsuitable for denning, resting and foraging. Moriarty et al. (2016) found that marten mortality was elevated in habitat treated with DFPZ and group selection and these treatments can lead to population decline (Moriarty et al. 2011). Guidance

about acceptable actions is also necessary since the red fir and lodgepole pine types used by marten are largely within desired conditions for seral stage and other characteristics.

We recommend changes to marten core areas and wildlife habitat management areas (WHMA, see separate section) to guide forest management in these areas and ensure marten persistence in the plan areas.

2. The Plans Do Not Ensure Denning and Resting Habitat is Maintained in Marten Core Areas

The desired conditions for marten core areas are informed by more general ecosystem desired conditions for vegetation types. SPEC-SM-DC-2, refers to desired conditions for terrestrial vegetation (Sierra plan, p. 58 and Sequoia plan p. 59). A similar issue exists in the plan component SPEC-SM-GDL-01, which says “Within marten core habitat, retain overtopping and multistoried canopy conditions in patches consistent with vegetation desired conditions...” *Id.* The problems with both these species-level plan components referring to ecosystem desired conditions for terrestrial vegetation is first, that the species plan components never get more specific than the ecosystem plan components they refer to, so they don’t add detail to these general conditions that would ensure the conditions that define the marten core areas will be maintained. Second, these vegetation desired conditions do not by themselves reflect desired conditions for the marten denning and resting habitat. For example, in moist mixed conifer vegetation, the desired canopy cover is “20-50 percent, may exceed 75 percent in small patches.” (both plans, Table 2, p. 33). A similar issue exists with dry mixed conifer (10-50 percent canopy, *Id.*), red fir (20-75 percent canopy cover, both plans, Table 5, p. 38). A similar issue exists for snags and logs where the plan components that set densities are lower than that which marten require (see both plans, Table 3, p. 44 and Table 6 p. 39).

A further concern with the guideline for marten core areas, SPEC-SM-GDL-01, is as it relates to desired seral stages in red fir and other forest types found in the marten core. The desired proportion of CWHR 6, 5D and 4D here for red fir is 10 to 40 percent of the landscape (Sierra plan Table 4, p. 38, Sequoia plan, Table 4 p. 37) and it’s lower for ponderosa pine and dry mixed conifer (Sierra plan Table 1, p. 30). When the landscape is comprised primarily of marten core, then this target is unacceptable and can lead to significant degradation of essential habitat. Further direction in the marten core is needed to retain denning and resting habitat where it exists in these areas.

3. The Final Plans Do Not Define Marten Habitat Consistently or Accurately

The FEIS persistence analysis incorrectly defines key ecological conditions required by marten on the Sierra National Forest that include

large diameter trees and snags, multilayered canopies, large down wood, moderate to high canopy cover (more than 30%) and structurally diverse and complex understory that is interspersed with riparian areas and meadows.

(FEIS, p. D-40). This 30 percent canopy cover threshold is below what is suitable for marten according to the Rationale for Animal Species Considered for Species of Conservation Concern, (USDA Forest Service 2022e, p. 75). This canopy cover is far below conditions known to support marten populations (Spencer et al. 1983, Hargis and McCullough 1984, Ruggiero et al. 1998, Bull and Blumton 1999, Bull and Heater 2000, Bull et al. 2005, Slauson and Zielinski 2008, Moriarty et al. 2011, Moriarty et al. 2016). The final Sequoia plan defines marten habitat more accurately, as 40-60% canopy cover (FEIS, p. D-43) although this represents movement habitat, and not higher canopy cover required in denning and resting habitat. The reason for this discrepancy between plans and reports is not clear, however the FEIS definitions should be corrected to include a canopy threshold that does not conflict with supplemental reports or best available science, and supports marten viability.

Further, the FEIS persistence analysis calls for restoring terrestrial vegetation to “promote delayed mortality” and towards desired conditions referred to in SPEC-SM-DC-2 and SPEC-SM-GDL-1 in order to address threats posed by vegetation management to marten on the forest (FEIS, p. D-41). It is not the case that avoiding tree mortality and managing vegetation toward desired conditions with low canopy cover and fewer snags than marten need will provide the ecological conditions to maintain a viable population of the Sierra marten in the plan areas. It would diminish essential habitat upon which the marten core areas were established and upon which marten viability depends.

4. The Plans Impacts on Marten Habitat and Persistence are not Evaluated in the FEIS

As with other species dependent upon dense forest conditions, the effects analysis for Sierra marten is descriptive but does little to actually estimate effects of the allowable activities on habitat quality and quantity. The FEIS does not evaluate the potential for practices like thinning and group selection to degrade habitat or cause it to become unsuitable. Further, the FEIS does not disclose how many acres or where habitat reductions would occur in 6, 5D, or 4D in marten core areas. The FEIS also did not consider impacts of mechanical treatments on marten habitat suitability described in Moriarty et al. (2016) in the effects analysis.

Further, timber harvest and other vegetation treatments on Forest Service lands can fragment habitat and reduce or eliminate use by martens (Slauson and Zielinski 2008; Moriarty et al. 2011; Rustigan-Romsos and Spencer 2012; Zielinski et al. 2014). The 2012 rare carnivore report identifies areas on the Sierra National Forest that are vulnerable to local extirpation:

Conservation and management should strive to minimize such effects [local extirpations] in key locations, such as narrow constrictions in habitat cores or areas where habitat loss or fragmentation could isolate marten subpopulations from larger, more contiguous habitat areas... Similarly, there are some narrow constrictions in habitat distribution on the Stanislaus and Sierra National Forests where extensive vegetation treatments, or large, severe wildfires, could potentially fragment the north-south distribution of martens into isolated subpopulations.”

(Rustigan-Romsos and Spencer 2012, p. 29). The vulnerability of marten in the plan areas to local population extirpations was not considered in the FEIS and the risk of removing key habitat elements that would risk local isolation and extirpation was also not considered, contrary to the National Environmental Policy Act (NEPA). The location of marten on the Sierra National Forest makes them particularly vulnerable to disturbances that reduce habitat quality such as logging and extreme fire. The FEIS has not disclosed how the proposed logging in the new plans would impact the marten core area and protect it from fragmentation.

Suggested resolution: To provide for the ecological conditions necessary to provide for the persistence of marten, we request the following revised of additional plan components be adopted in the final plans.

Revise this guideline (from Sierra plan, p. 58; Sequoia plan, p. 58):

SPEC-SM-GDL-1

Within marten core habitat, retain overtopping and multistoried canopy conditions in patches consistent with the **upper range of** vegetation desired conditions including some shade-tolerant understory trees such as firs, especially in drainages, swales, and canyon bottoms, and on north- and east-facing slopes. Retain a patchy mosaic of shrubs and understory vegetation, separated by more open areas, to reduce fuel continuity, increase habitat heterogeneity, support prey, and provide hiding cover, with a goal of 10 to **25** percent shrub cover at the home range scale.

The vegetation desired conditions used to define marten core habitat conditions in SPEC-SM-DC-2 and SPEC-SM-GDL-1 conflict with TERR-FW-GDL-2 which states that essential elements for denning, nesting and roosting habitat are provided (Sierra plan, p. 27; Sequoia plan, p. 28). They also conflict with TERR-FW-DC-5 which requires plans to support the persistence of species of conservation concern (Sierra plan, p. 25; Sequoia plan, p. 25), and SPEC-SM-DC-3 that states marten habitat is well distributed throughout its range. These deficiencies and conflicts should be corrected by adding another plan component to marten core areas to:

SPEC-SM-GDL-02

Maintain and promote CWHR 6, 5D, 4D, 5M and 4M, including old forest structural complexity such as shrubs and logs where they exist in marten habitat management areas.

Marten occur mostly outside of the community wildfire protection area at elevations above 5,500 feet in elevation where fire regime conditions are not highly departed and retention of dense forests and snags would not interfere with community protection (Slauson and Zielinski 2009).

And lastly, add a guideline:

SPEC-SM-GDL-03

When conducting vegetation treatments, road construction and potentially disruptive recreational activities (as determined by wildlife biologist) near marten den sites, protect

marten from noise and activity disturbances in a 100-acre buffer around den sites with a limited operating period from May 1 through July 31 as long as habitat remains suitable.

E. California Spotted Owl

We raised concerns about proposed changes to the conservation measures for California spotted owl to the existing forest plans in our comments on the draft environmental impact statement in 2016 and the revised draft environmental impact statement in 2019.

The 2022 forest plans provide clearer plan direction for CSO than the 2016 and 2019 draft plans did. We remain concerned though that CSO plan components will not deliver the necessary conditions on which the species depends at the territory or activity center scales and will not provide for population viability at the plan scale. We are also concerned that aspects of several key plan components are not based on the best available science and/or the effectiveness and rationale of key plan components is not analyzed in the FEIS or supporting documents. We use the recent SERAL project (<https://www.fs.usda.gov/project/?project=56500>) as an example in our comments below to illustrate how various plan components are likely to be interpreted and implemented.

We also take issue with the response to comments related to concerns we raised about science support and analysis of effects for plan components derived from the CSO strategy produced by the Forest Service in 2019 (USDA Forest Service 2019a). When we questioned the science-based rationale for a plan component or asked that the effects of the changed approach be evaluated in the FEIS, the response to comments only provided *pro forma* declarations that the CSO strategy was the best available science and the proposed forest plans follow that. Despite this belief that the CSO strategy is the best available science, the strategy document itself provides no science-based rationale for several measures, including use of a circular territory, not designating protected activity centers (PACs) for territorial singles, criteria to allow abandonment of PACs, and thresholds of habitat modifying logging allowed in PACs. These elements are of particular concern because the measures are more permissive and provide less conservation than the alternatives we proposed. This leads us to our related issue – that the FEIS does not directly evaluate these measures against more protective measures provided in other alternatives. For example, there is no analysis in the FEIS that specifically addresses the impact of not designating PACs for territorial singles on the conservation of CSO. There was no environmental analysis of the impact of these measures in the CSO strategy document, and there is no analysis in the FEIS. We also raise these points in various sections below.

1. Criteria for Designating Activity Centers, Protected Activity Centers, and Territories

The current direction on national forests in the Sierra Nevada is to manage 300 acres of the best quality habitat around CSO activity centers as a protected activity center (PAC). Activity centers are designated when owl surveys completed by an established protocol detect reproductive pairs, territorial pairs and single birds that exhibit territorial behavior. PACs are managed to provide

nesting and roosting habitat within close proximity to the nest stand. PACs are maintained as protected areas in the network unless habitat is substantially altered by a disturbance event at which time they may be retired.

The CSO strategy changes this in two significant ways that are incorporated into the 2022 forest plans. First, it requires establishment of an activity center only for territorial owl pairs. The second issue, abandonment of activity centers after three consecutive years of surveys, will be discussed more fully in the next section of these comments. The CSO strategy states that:

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 2019a, p. 27). This means that activity centers would not be designated and PACs would not be established for territorial single birds.

Our first concern about the criteria used to designate an activity center has to do with occupancy status. The CSO strategy allows PACs to be abandoned if they are occupied by single birds that are territorial. This change in criteria for establishing a protected activity center and in turn PACs and territories is particularly concerning given the spotted owl abundance on national forest lands has been declining at a faster rate than spotted owl occupancy (Connor et al. 2016). This is due to fewer PACs being occupied by pairs and more PACs becoming occupied by territorial singles (Conner et al. 2016). It is not entirely clear what is responsible for the trend in loss of pair status on the national forests, it may be the result of habitat loss and degradation from the interaction between past forest management, current forest management, high severity fire, and climate change, but there are also likely other factors at play (e.g., competition with barred owls and rodenticide poisoning).

Because one cannot say for sure what is causing the trend for loss of pair status across the national forests, it is reckless to begin to purge the system of spotted owl territories occupied by singles, as this practice could compromise the ability of the species to recover from ongoing population declines if the cause(s) of the loss of pair status were ameliorated. CSOs are long lived and tend to stay in a central location. 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 (Gutiérrez et al. 2017). For similar reasons, conservation measures for northern spotted owl include identifying and maintaining activity centers for territorial singles and any detected pair; and habitat guidelines in the territory around these activity centers (USDI Fish and Wildlife Service 2009 and 2012).

We also note that the CSO strategy document does not provide any discussion or scientific information to indicate the basis for the change in criteria or if the recommended change in criteria will improve owl conservation. The FEIS and supporting documents for the Sequoia and

Sierra forest plans also do not provide science support for this change in criteria nor does the FEIS evaluate potential impact of this change on CSO persistence.

Suggested resolution: 1) Establish spotted owl PACs and territories for territorial singles, as well as territorial pairs in the forest plans; 2) revise SPEC-CSO-STD 03 to apply habitat management direction to territories occupied by territorial singles; 3) If the forest plans are not changed to continue establishing PACs for territorial singles, disclose in the FEIS how changing from designating PACs and territories for territorial singles and pairs to only designating PACs and territories for territorial pairs will affect the overall spotted owl population, including survival and occupancy of territorial singles.

2. Criteria for Abandoning PACs

The CSO strategy also directs the abandonment of PACs after three consecutive years of surveys without a detection of a territorial pair. This means that territories occupied by territorial singles could be abandoned. 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 “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, 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 [barred owls] are at high densities).

(USDA Forest Service 2019b). The basis for the criterion for surveys of three years is not clearly supported by a science-based rationale in the CSO strategy. The CSO strategy also did not evaluate the effects of changing the criteria on CSO persistence or species viability. The FEIS and supporting documents for the Sierra and Sequoia forest plans also did not disclose the impacts of this change in management approach on CSO. Lastly, this change reduces the conservation benefit to CSO relative to current practices or an alternative that would require, for example, five consecutive years of surveys.

Suggested resolution: 1) Extend the number of years of negative surveys to five consecutive years; 2) If the forest plans are not changed to extend the number of survey years, disclose in the FEIS how shortening the survey requirement could overlook an occupancy event in years 4 and 5 and how this could impact CSO persistence.

3. Maintaining Habitat Quality When the Amount of Highest Quality Habitat is Less Than Desired

The 2022 forest plans direct that “best quality habitat” be maintained in territories with owl pairs that do not meet the desired conditions with “highest quality habitat”, but makes no distinction between the quality differences between the CWHR 4M and 4D habitat that constitutes “best quality habitat.”

The CSO strategy prioritizes habitat quality in territories in following CWHR size/density classes in descending order of priority: 6, 5D, 5M, 4D, and 4M. This means that CWHR 4D has a higher priority or habitat benefit compared to CWHR 4M. Habitat dominated by CWHR 4D (defined as 12- 24” dbh trees and >60 percent canopy cover) is a critical component of CSO nest areas, PACs, and territories. Dense canopy with medium to large trees is the only habitat covariate consistent with CSO 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). The forest plans should maintain and improve CWHR 4D in PACs and territories as a priority over CWHR 4M when CWHR 5M, 5D, and 6 types are underrepresented when compared to the desired conditions for PACs and territories.

We use an example from the SERAL project (Stanislaus National Forest) to illustrate how not prioritizing CWHR 4D over 4M affects habitat conditions in territories. The SERAL logging and fuel reduction project encompasses 118,795 acres on the Stanislaus National Forest including 53 California spotted owl PACs and 57 territories (USDA Forest Service 2022c, p. 29). “Highest quality habitat” is generally defined as (CWHR 5M, 5D, and 6). The desired condition for PACs is to have nearly all of the PAC or territory in highest quality habitat (USDA Forest Service 2019a). However, 25 of the PACs in the SERAL project have 50 percent or more of their area in CWHR 4D (USDA Forest Service 2022c, p. 33). In the absence of highest quality habitat, this lower quality habitat provides essential breeding and roosting habitat for these birds. However, there is no provision in the CSO strategy nor in the SERAL project to maintain and improve CWHR 4D habitat, the next best quality habitat, in PACs when other higher quality habitat is not available or in low amounts.

We also examined the pre- and post-treatment impacts of the SERAL project on territories, a 1,000-acre circle centered on a spotted owl breeding season activity center. The biological evaluation (BE) for the SERAL project reported the pre- and post-treatment stand conditions for Alternative 1 (the proposed action) as described in the FEIS (USDA Forest Service 2022a). The relevant table from the BE is included as Attachment A to these comments. We used information in this table to estimate the proportion of suitable habitat (CWHR 4M, 4D, 5M, 5D, and 6) in each territory before and after treatment. Focusing on territories that accounted for 1,000 acres of habitat, we found that several territories met the minimum conditions for a territory prior to logging, but would not meet these minimum conditions after logging, i.e., they would have less than 40% of the territory in CWHR 4M, 4D, 5M, 5D, and 6. We also found that the logging

targeted higher quality habitat over lower quality habitat, the opposite of what was intended in the CSO strategy.

Owl site TUO 0171 illustrates this problem. Prior to logging, 92% of this territory contained suitable habitat (CWHR 4M, 4D, 5M, 5D, and 6). After logging, the BE estimated that the territory would contain 28% suitable habitat. Twenty-eight percent is well below the 40-60% habitat criterion for owl territories. Beyond this, the logging would degrade CWHR 5D and 4D habitat and “create” the lesser quality CWHR 4M habitat. Thus, no effort was made to ensure that logging maintained the minimum amounts of suitable habitat or to preferentially retain higher quality habitat in a given territory. This is not the only example of this problem in the SERAL project, as close examination of the table in Attachment A indicates.

Suggested resolution: 1) Revise SPEC-CSO-STD 03 to prioritize maintaining or improving CWHR 4D habitat over CWHR 4M when managing to meet desired conditions in CSO territories (revisions are in bold/underline and includes the revision suggested at end of section II.E.1.):

SPEC-CSO-STD 03

In California spotted owl territories that do not currently meet the territory desired condition (SPEC-CSO-DC-02), retain habitat quality in the highest quality nesting habitat wherever it exists throughout the territory. If this desired condition has been met, vegetation treatments to improve resilience and increase heterogeneity should maintain highest quality nesting and roosting habitat as identified in SPEC-CSO-DC-02. In territories where survey data indicate ~~pair~~ occupancy and DC-02 is not met, if retaining habitat quality in the highest quality nesting habitat is insufficient to achieve the desired condition, also retain habitat quality in the best available nesting and roosting habitat **prioritizing CWHR 4D over 4M** to the level described in the DC-02.

4. Mechanical Treatment and Habitat modification In PACs

The preface to the CSO section in the forest plans offers a perspective about habitat modification that is tempered and encourages the maintenance of habitat quality in PACs and territories:

Given the role vegetation management plays in increasing forest resilience at the landscape scale, vegetation management that does not reduce spotted owl habitat quality is encouraged within and around owl territories and, if necessary, in protected activity centers. In some instances, vegetation management that may reduce spotted owl habitat quality in the near term may be necessary to preserve long-term sustainability of spotted owl habitat.

(Sequoia plan, p. 60; Sierra plan, p. 60). This restraint, however, is not translated well to the forest plan components. As we identify below, there are plan components that appear at first look to limit disturbance and habitat alteration in PACs, but in practice do not.

First, SPEC-CSO-GDL 01 directs that vegetation treatments in PACs “that may reduce habitat quality in the near term should be avoided in protected activity centers with the highest likely contribution to reproductive success” and then establishes criteria for setting priorities for treatment, with an emphasis on treating those territories that have the lowest contribution to reproductive success. As a concept, this appears to be a reasonable approach, but in practice the guideline is meaningless. The SERAL project serves as a case in point. This project included this guideline in the project amendment but determined without explanation that all 53 PACs in the project area would be treated and that for most PACs, the maximum 100 acres of habitat reduction/degradation would occur. There was no priority setting in the SERAL project, and habitat reduction in the near term was not avoided in those PACs with the greatest contribution to reproductive success.

Second, SPEC-CSO-STD 02 allows habitat quality to be reduced on up to 100 acres of habitat outside of highest quality nesting and roosting in each PAC. Although recommended in the CSO strategy, there was no science basis or rationale provide about why this was an acceptable threshold of habitat reduction in PACs. The CSO strategy also did not provide an environmental analysis of the consequences of reducing habitat quality of CWHR types 4M and 4D in PACs by logging trees up to 30 inches diameter and reducing canopy cover to 50% across up to one third of a PAC. There was no environmental analysis of this practice in the CSO strategy document and similarly there is no environmental analysis in the FEIS evaluating the differences in impacts to CSO persistence between Alternative B-modified and the current practice. There is also no analysis of how these differences would affect the probability of occupancy of a territorial single or pair, and reproduction or survival in PACs and across the PAC network in the plan areas.

Numerous studies over the past 25 years have found that spotted owls depend on high canopy cover forests dominated by medium and large trees for nesting and roosting. These studies emphasized the importance of PACs for protecting the species from management activities that are likely to compromise habitat attributes essential to occupancy, survival, and reproduction (Berigan et al. 2012). Based on the well-documented association between spotted owls and >70 % canopy cover and higher densities of medium and large trees, we are extremely concerned that the ability to reduce habitat quality on up to 100 acres of habitat in PACs that is relied on for nesting and roosting will have significant adverse effects to PACs across the landscape. The best available science suggests that such activities are likely to result in a loss of occupancy of the PAC. Given the example from the SERAL project where all PACs in the project area are to be treated and most with the maximum 100 acres of habitat reduction, the plan components as written are likely to compromise species viability at the plan scale. To counter this, additional plan components should be adopted to limit reductions in habitat quality within PACs.

Suggested resolution: 1) Include a standard that mechanical treatment intensity or extent within PACs should not cause a loss of occupancy by a territorial spotted owl pair or single; 2) Include a standard that when mechanical treatments are determined to be necessary within PACs, treatments should not remove trees greater than 20” DBH or reduce stand average canopy cover

by more than 10%; 3) Revise SPEC-CSO-GDL 01 to allow habitat reduction only to PACs that are unoccupied; 4) Provide the science-based rationale for the 100-acre threshold of habitat reduction in PACs; 5) Analyze in the FEIS the effects of authorized habitat modifications within PACs, disclose how many PACs would be affected by habitat modification over 15 years, and determine the probability of loss of occupancy, reproduction, survival and removal from the system due to loss of occupancy.

5. Territory Circles Versus Best Available Habitat

Guidance for establishing 800-acre territories is included in the 2022 forest plans:

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.

(Sequoia plan, p. 61; Sierra plan, p. 61). As we describe below, this approach to territory delineation risks overlooking important habitat on which the resident CSOs are likely to depend for persistence.

Biologically, a territory is the portion of a home range that is actively defended from conspecifics and sometimes other species. However, determining each individual spotted owl's true biological territory for statistical analysis would be extremely difficult. Because spotted owls are territorial and central place foragers, scientists have been using a circular area equal to half the mean nearest neighbor distance as a surrogate for approximating true territories (e.g., Seamans and Gutiérrez 2007, Jones et al. 2018). This surrogate, i.e., the circular territory, allows for defensible statistical analyses to be applied across a study area. But in reality, CSO territories are not circles and activity centers may not be found at the center of the territory, even though the species is a central place forager. For example, below is Figure 3 from Atuo et al. (2019) where the true activity center is clearly not located at the center of the home range or territory.

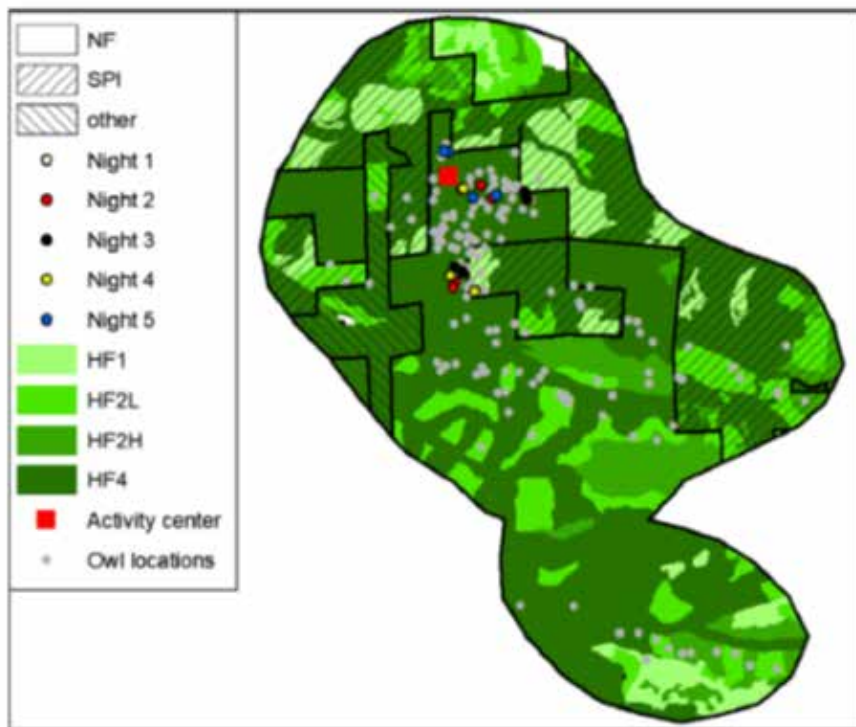


Fig. 3. Distribution of GPS locations within 95% kernel home range across different cover types and landownership categories. Circular symbols of the same color indicate locations collected on a single night for five different nights and grey symbols represent locations from all other nights.

The SERAL project offers an example of how this measure would be applied in project planning and illustrates some of the consequences that negatively impact CSO. The SERAL project adopted a plan component that allows the adjustment of territories (LAND-SERAL-WILDLIFE-02) (USDA Forest Service 2022a, p. 154) and that is the same as the direction in the 2022 forest plans. Despite the opportunities for adjustment, the Forest Service informed us at a meeting in January 2022 that the circular territories drawn for owl sites in the SERAL project would not be adjusted to include more suitable habitat even if the circular territory included unsuitable habitat like clear cuts, lava cap, other non-habitat areas, or non-Forest Service lands. They provided no analysis to indicate why this approach was better for CSO conservation.

The SERAL project is located in a landscape that is complicated by clearcuts on industrial forest lands, areas that will not support CSO habitat due to site conditions, and locations where other management has degraded habitat conditions. The circular territories also miss including highest quality nesting and roosting habitat that is in close proximity to owl sites. For instance, the circular territories in the SERAL project depend on 4,547 acres of CSO habitat being provided on private land to meet desired conditions (USDA Forest Service 2022a, p. 93, Table 33). The Forest Service should not count habitat on private land to meet desired conditions in territories

because these lands do not share Forest Service's land management priorities and responsibilities.

The map below (Figure 4) shows circular territories in the eastern portion of the SERAL project. Nearly all of the territories in the SERAL project do not meet desired conditions (DC) with highest quality nesting and roosting habitat (circles in red). Private lands (shown in grey stipple) are extensive and overlap with many territories, including those that don't meet desired conditions. A significant amount of the private land in the project boundary is industrial timberland where clearcutting and even-aged management is the primary management objective. These areas either do not provide nesting and roosting habitat today, or will not provide it in the future. Boundaries of many territories could have been adjusted to avoid private lands and include more of the highest quality nesting habitat on Forest Service lands. Such adjustments would clearly provide conservation benefit for CSO because highest quality habitat could then be maintained and promoted, yet the Forest Service declined to make these improvements out of hand.

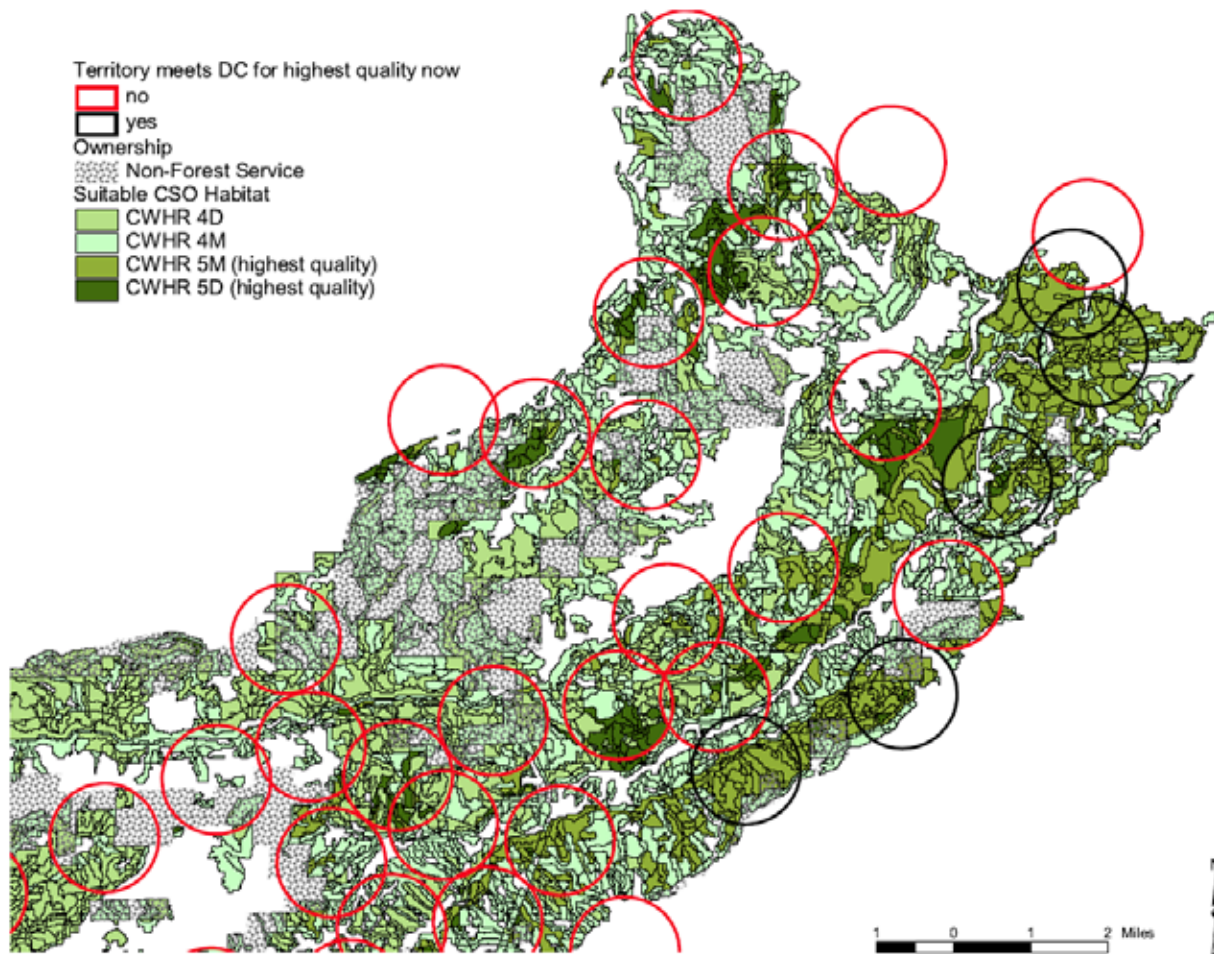


Figure 4. Habitat conditions in 1,000-acre circular territories as described by California Wildlife Habitat Relationships (CWHR) for the SERAL project. Map derived from GIS data supplied by the SERAL project.

There is extensive evidence that CSOs do not confine their habitat use to circular territories (see for example Jones et al. 2016 and Blakey et al. 2019). These simple circles around activity centers do not protect best foraging and nesting habitat when it occurs outside the circle. Further, several recent studies demonstrate that although CSO territories may contain up to 36 percent forest openings, the patch size and configuration of these open areas are important in predicting CSO habitat suitability. CSO 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 the territory scale, where odds of site colonization decreased 8.3 percent for every 10 ha severely burned. Similarly, Jones and Tingley (2021) report that CSO 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 territories as a result of including clearcuts and lava caps do not reflect the habitat heterogeneity owls have been shown to select in recent foraging studies.

The current direction for CSO conservation in forest plans requires 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). Identifying areas of concentrated use within a home range can be accomplished using common habitat associations (e.g., highest quality nesting and roosting habitat), expert judgement, and field observations from protocol surveys. This is how Home Range Core Areas are delineated under current forest plan direction. Habitat suitability in these areas is to be maintained by following guidelines to protect large trees structures, snags, down wood, and higher cover preferred by CSO 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).

In contrast, managers under the 2022 forest plans are to identify the highest quality habitat within an 800-acre territorial circle surrounding the activity center. The only exception provided allowing managers to adjust the boundary to be outside the 800-acre circle is “to include the most sustainable areas of high-quality habitat and exclude areas less likely to support suitable habitat.” Because an 800-acre circle may not be biologically appropriate in many situations (e.g., see Figure 3 above from Atuo et al. 2019), the forest plan should direct managers to define territorial habitat by including the highest quality habitat that is most likely to be used for nesting, roosting and foraging, regardless if the habitat is located within the 800-acre territorial circle.

Suggested resolution: 1) Include language in a plan component allowing territory boundaries to be adjusted and be non-circular to include the best available habitat with the highest probability of use based on expert judgement and field observations from any recent protocol surveys.

6. Minimizing Effects of Salvage Logging

The draft revised forest plans provide no limitations on salvage logging within spotted owl territories and provide no analysis of the effects that salvage logging is likely to have on the species. This approach ignores the affirmation in the U.S. Fish and Wildlife Service's Conservation Objectives Report that salvage logging negatively affects the species:

Salvage logging has few short-term ecological benefits (Wagenbrenner et al. 2015), though longer term trade-offs are less clear (Peterson and Dodson 2016). Because CSO can persist in low-moderate severity fires, salvage logging of remaining suitable habitat may negatively affect occupancy (Peery et al. 2017). In high-severity fires, salvage logged CSO sites had a slightly lower probability of being occupied than sites that only burned and did not undergo salvage logging treatment (Lee et al. 2013, Lee and Bond 2015b). Recent work on NSO found that high severity-fire interacts with salvage logging to jointly contribute to declines in site occupancy (Clark et al. 2013). Salvage logging may reduce the quality of foraging habitat through the removal of legacy snags in particular, although it is difficult to disentangle the effects of salvage logging from high-severity fire.

(USDI Fish and Wildlife Service 2017, p. 18). The effects of wildfire, and more specifically high severity fire on CSO, is nuanced. Most studies have found that the effects of low and mixed severity wildfire on spotted owl demographic parameters are neutral or beneficial. However, there remains uncertainty over the short- and long-term effects of larger patches of high severity fire. It has been demonstrated that spotted owls will forage in severely burned forests that have not been salvage logged (Bond et al. 2009, Eyes et al. 2017), with one study finding that some owls disproportionately selected for severely burned forest for foraging (Bond et al. 2009). However, habitat selection, use, and occupancy do not necessarily equate to adequate survival (Rockweit et al. 2017). High severity fire likely negatively affects the species when enough habitat within a territory burns severely (Lee et al. 2013, Jones et al. 2016, Rockweit et al. 2017). Although Rockweit et al. (2017) suggest that severely burned territories may act as population sinks, sink territories may help support population viability by providing "life boat" habitat for individuals to occupy and emigrate from in the event nearby source habitat becomes available.

Although the effects of high severity fire are nuanced, there is no debate that salvage logging negatively effects the species (USDI Fish and Wildlife Service 2017). Furthermore, nearly all forest and fire ecologists and spotted owl biologists agree that fires that burn within the natural range of variation (NRV) have beneficial ecological effects and are unlikely to negatively affect the species. Despite this, the U.S. Forest Service routinely salvage logs dead and "dying" trees from occupied spotted owl territories that burned within NRV, including low- and moderate-severity fire effects. The agency also salvage logs portions of occupied spotted owl territories that burn at high severity, regardless of the proportion of the territory that burned at high severity or the sizes of the high severity patches. See for instance salvage operations in the King Fire on the Eldorado National Forest (USDA Forest Service 2017). In other words, there is relative

consensus that low-, moderate-, and mixed-severity fire effects are consistent with NRV, do not negatively affect the species, increase forest resilience to future wildfires and climate-related tree mortality, and salvage logging negatively effects the species. This is also reflected in the Fish and Wildlife Service’s Conservation Objectives Report:

California spotted owls persist in territories that experience low-moderate and mixed severity fire”, and “in situations where over half a territory has burned at high severity (Jones et al. 2016a) and individuals have abandoned the territory, astute salvage could be warranted.

(USDI Fish and Wildlife Service 2017, p. 28; Emphasis added) This indicates that salvage logging may not be warranted in occupied territories, regardless of the post-fire habitat conditions.

Suggested resolution: 1) Develop a standard stating that the removal of dead and fire-damaged trees should not occur within occupied spotted owl territories, except to address hazard trees and to provide for firefighter safety in strategic locations to facilitate landscape fire use for ecological benefits; 2) Provide an analysis of spotted owl use of burned forest and the effects of salvage logging, including an acknowledgment of the threat of salvage logging identified by the US Fish and Wildlife Service (2017).

7. Management Actions That Require Surveys

SPEC-CSO-STD 01 establishes when CSO surveys are required before implementing management activities. There is one phrase used in this standard that make it difficult to interpret when surveys are required. We discuss those below.

The standard refers to “nesting and roosting habitat.” Based on our interpretation of the habitat definitions in the forest plans (Sierra plan, p. 60; Sequoia plan, p. 60), we believe that this requirement is addressing both highest quality nesting and roosting habitat and best available nesting and roosting habitat. In other words, “nesting and roosting habitat” is meant to include CWHR types 4M, 4D, 5M, 5D, and 6. This could be misunderstood though and interpreted to only apply to, for instance, highest quality nesting and roosting habitat, or some other subset of the habitat types. The standard should be revised to clarify the CWHR types to which it applies.

8. Redundancy in Plan Components

SPEC-CSO-STD 03 refers to habitat qualities that should be retained in territories following vegetation management activities. This standard states in part:

In territories where survey data indicate pair occupancy and DC-02 is not met, if retaining habitat quality in the highest quality nesting habitat is insufficient to achieve the

desired condition, also retain habitat quality in the best available nesting and roosting habitat to the level described in the DC-02.

(Sierra plan, p. 65; Sequoia plan, p. 65). Notwithstanding our objection to limiting this standard to territories occupied by a pair, we believe that this is appropriate and necessary as a standard.

We are confused though about essentially the same wording being listed as a potential management approach:

If surveys indicate a protected activity center is occupied by a pair, treatment is necessary to promote resilience, and highest quality nesting and roosting habitat is lacking, design treatments to also maintain or improve the highest quality and best available nesting and roosting habitat within the protected activity center.

(Sierra plan, p. 67; Sequoia plan, p. 67). To ensure that there is no confusion about the direction in SPEC-CSO-STD 03, we ask that you remove the item referenced above from the “Potential Management Approaches” section.

9. Table 8 on Key Management Constraints

We think that Table 8 on management constraints is very helpful (Sierra plan, p. 63; Sequoia plan, p. 63). We have one suggestion for improvement though. We ask that you include citations to specific plan components for each block, especially for those blocks not referring to plan components that are desired conditions. This has been done for some blocks, but not all. Although citing specific desired conditions might also be helpful, they are probably too numerous for this table.

F. Great Gray Owl

We raised concerns about proposed changes to the conservation measures for great gray owl in the existing forest plans in our comments on the draft environmental impact statement in 2016 and the revised draft environmental impact statement in 2019.

The great gray owl population in California is estimated at 160 individuals (Wu et al. 2016), is highly vulnerable to extirpation, and likely suffering from a genetic bottleneck (Hull 2010). Avian biologists identified a subspecies in California genetically distinct and geographically isolated from the Holarctic species *Id.* Great gray owls are closely associated with meadows and late-successional forests in the Sierra Nevada. They are dependent on old forest, snags and tree cavities for nesting (Bull and Henjum 1990, Wu et al. 2015, Wu et al. 2016). Canopy cover at nest stands averages 85 percent (Greene 1995, Wu et al. 2015). Nesting territories average six large snags per acre at the core of the subspecies range in Yosemite National Park (Beck and Winter 2000). They forage in open areas, such as open forest and meadows. Great gray owl hunt rodents in meadows, such as voles and gophers. Gophers may be sufficient to maintain non-breeding individuals, and vole abundance is strongly associated with great gray owl presence and reproduction (Greene 1995).

The FEIS acknowledges that substantial concern exists regarding the great gray owl's ability to persist on the Sierra National Forest (USFS 2022 SCC rationale). The FEIS also recognizes threats to great gray owl persistence posed by timber harvest and grazing that are within the agency's control (Jepsen 2011, Hull 2014, Wu et al. 2016). Forest plan components attempt to address these risks but are insufficient and instead reduce great gray owl breeding habitat protection compared to the current plans, threatening the owl's viability on the Sierra National Forest.

There are 14-16 great gray owl PACs on the Sierra National Forest, and only incidental sightings documented on the Sequoia National Forest. The FEIS acknowledges 14 great gray owl PACs on the Sierra National Forest, but there are 16 mapped PACs in the GIS layer (provided by the planning team in July 2022). We do not understand this discrepancy in PAC numbers on the Sierra National Forest, especially since there have not been in any significant fires since 2000 where these PACs occur (USDA Forest Service 2022e).

1. The Final Plans Do Not Protect Nesting Habitat in PACs and Threaten Great Gray Owl Viability

The desired conditions for great gray owl PACs aim to "provide nesting habitat that contributes to successful reproduction in PACs" but new plan components are vague and do not ensure nesting habitat will be retained.

In SPEC-GGO-DC-02, refers back to "the upper range of NRV" for snags in great gray owl PACs. This translates to a desired condition of possibly 4 snags per acre (see moist mixed conifer, black oak/ ponderosa pine, and red fir, in FEIS page 34, 39). This condition does not stipulate large snags used by great gray owls, and is lower snag density than the average at nest stands at 5-6 large snags per acre greater than 24 inches (Beck and Winter 2000 from Winter 1986) and 4 large snags per acre in Wu et al. (2015). Retention of large snags in PACs is critical given that these birds use large snags with broken tops for nesting (USDA Forest Service 2001, Wu et al. 2015). This issue could be addressed with changes to the WHMA. See section III.I. of this objection.

There are three great gray owl PACs that are at high risk of nesting habitat loss or degradation because they are outside of fisher cores. Two of these are also located outside WHMA in community Wildfire Protection Zones (CWPZ). They represent 18 percent of great gray owl PACs on the Sierra NF (counting all 16 PACs in the GIS layer provided). Intensified logging focused in the PACs under the new plans without the sideboards provided in fine-filter plan components threatens great gray owl viability. Protecting 50-acres of breeding habitat in great gray owl PACs involves a tiny fraction of the forest, but makes all the difference for this species.

2. The Final Plans Do Not Protect Meadow Habitat in PACs and Threaten Great Gray Owl Viability

The plans do not provide a quantifiable definition of meadow habitat in the glossary compared to what is provided for forest habitat:

Great gray owl PACs are established and maintained to include the forested area and adjacent meadow around all known great gray owl nest sites. A protected activity center encompasses at least 50 acres of the highest quality nesting habitat (CWHR type 6, 5D and 5M) available in the forested area surrounding the nest. A PAC also includes the meadow or meadow complex that supports the prey base for nesting owls.

(Sierra plan, p.190; the Sequoia plan differs slightly and is addressed below). The new plans do not ensure vole habitat is maintained in capable meadows despite their association with great gray owl occupancy and reproduction (Greene 1995, Kalinowski et al. 2014, Wu et al. 2016). A similar issue occurs in SPEC-GGO-GDL-01:

In meadow areas of great gray owl PACs, manage to enhance habitat for prey species.

(Sierra plan, p.68; Sequoia plan, p. 68). This guideline simply repeats the desired condition and glossary rather than provide direction on how to achieve the desired conditions for prey species. As we have provided on numerous occasions, vegetation heights recommended in the science literature to provide for prey species are greater than 12 inch stubble heights and greater than 8 inch sward heights. Other conditions simply do not provide for voles, which are critical to support great gray owl reproduction (Greene 1995, Kalinowski et al. 2014, Wu et al. 2016).

The problem of standards and guidelines simply repeating desired conditions continues with RANG-FW-STD-01 which directs forests to:

Manage livestock grazing **to attain desired conditions** in great gray owl protected activity centers and riparian conservation areas. Where livestock grazing is found to prevent or retard **attainment of desired conditions**, modify grazing practices (such as number of livestock, timing, schedule rest, and range structures). If adjusting practices is not effective, remove livestock from the area using appropriate administrative authorities and procedures. (Emphasis added).

(Sierra plan, p.92). This would be a fine plan component if desired foraging conditions for great gray owl PACs were well-defined. Meadow conditions that support key prey species such as voles must be described in order to provide conditions necessary to support great gray owls, especially in conjunction with active cattle allotments. However, SPEC-GGO-DC-01 does not serve this purpose:

Meadow habitat in PACs supports a sufficient prey species population to provide a food source for great gray owls through the reproductive period...

(Sierra plan, p.68; Sequoia plan, p. 68). By not allowing for wet meadow conditions that support voles where appropriate, the plan components fail to provide for the habitat needed during breeding, threatening species viability in the plan area.

The species of special concern rationale also recommends proper meadow management for great gray owls that the plan components omit, including:

Recommendations for some prey species include maintaining sward height of at least 20cm (8 in) (Kalinowski et al. 2014) or maintain herbaceous vegetation at a height of 300mm (12 in) (Beck 1985, Greene 1995). Proper range management would reduce impacts on prey species habitat. Limiting, restricting, or resting meadows from grazing activity if they are not functioning properly is also recommended (Beck 1985, Beck and Winter 2000).

(USDA Forest Service 2022e, p.36). The meadow habitat conditions and range management actions recommended in this SCC report are not reflected in the final plans.

3. The New Plans are Inconsistent with Each Other, and Stray Significantly from Regional Direction for Establishing and Abandoning Great Gray Owl PACs

The Sierra and Sequoia plans differ in their definitions of great gray owl PACs. The Sierra plan states:

Great gray owl PACs are established and maintained to include the forested area and adjacent meadow around all known great gray owl nest sites. A protected activity center encompasses at least 50 acres of the highest quality nesting habitat (CWHR type 6, 5D and 5M) available in the forested area surrounding the nest. A PAC also includes the meadow or meadow complex that supports the prey base for nesting owls. A protected activity center encompasses at least 50 acres of the highest quality nesting habitat (CWHR type 6, 5D and 5M) available in the forested area surrounding the nest.

(Sierra plan, p. 190). The Sequoia glossary includes the text from the Sierra plan above, plus an additional phrase:

Great gray owl PACs may be removed after stand replacing events if the habitat has been rendered unsuitable or may be removed as otherwise provided in current regional guidance.

(Sequoia plan, p. 196). This new text regarding abandoning PACs is contrary to the regional survey protocol. The reason why it is needed at all or just on the Sequoia is not clear. This text is problematic because regional protocol and best available science indicate great gray owls can use burned areas with grass-forb cover to nest and forage in if there are sufficient live or dead trees to maintain some canopy cover around nests (Beck and Winter 2000, p.17, Polsik et al. 2015, Wu et al. 2016). Further, it threatens species viability to abandon habitat protections in the great gray owl PAC network without following the protocol and regional guidance.

The new forest plans also change how to establish great gray owl PACs, stating they are “established and maintained to include the forested area and adjacent meadow around all known

great gray owl nest sites.” (Sierra plan p.190, Sequoia plan, p.194). This definition ignores many situations where great gray owls could be detected during surveys and breeding activity is implied, such as when nestlings are found. Great gray owl nests are cryptic and especially difficult to locate because they often are at the tops of snags or inside oak cavities (Wu et al. 2016). Therefore, establishing great gray owl PACs should not hinge simply on the ability to find a nest. The regional great gray owl survey protocol includes broader criteria to establish a PAC:

An activity center is that part of the territory most important for nesting or, if nesting is not occurring, for roosting...A single territorial owl or a pair of owls will be the basis for an activity center. While these may be found without signs of nesting, they should be considered to indicate potential nest territories, depending on the habitat.

(Beck and Winter 2000, p. 25). These changes to the definition of and conditions in great gray owl PACs in the new plans have enormous impacts on great gray owl conservation and differ significantly from regional guidance. The new plan glossaries should be corrected to agree with each other and with regional guidance in order to provide for persistence in the plan area.

4. The New Plans Do Not Protect Great Gray Owl from Road Mortality

Auto collisions are a significant source of adult mortality. Approximately 26 great gray owls have been hit by vehicles in the greater Yosemite area between 1955-2005, including at least 12 in Yosemite since 1985 (Keane et al. 2011). The SCC Rationale (USFS 2022, p.37) shows six out of 15 great gray owl PACs pictured are located on level four and five roads on the Sierra National Forest.

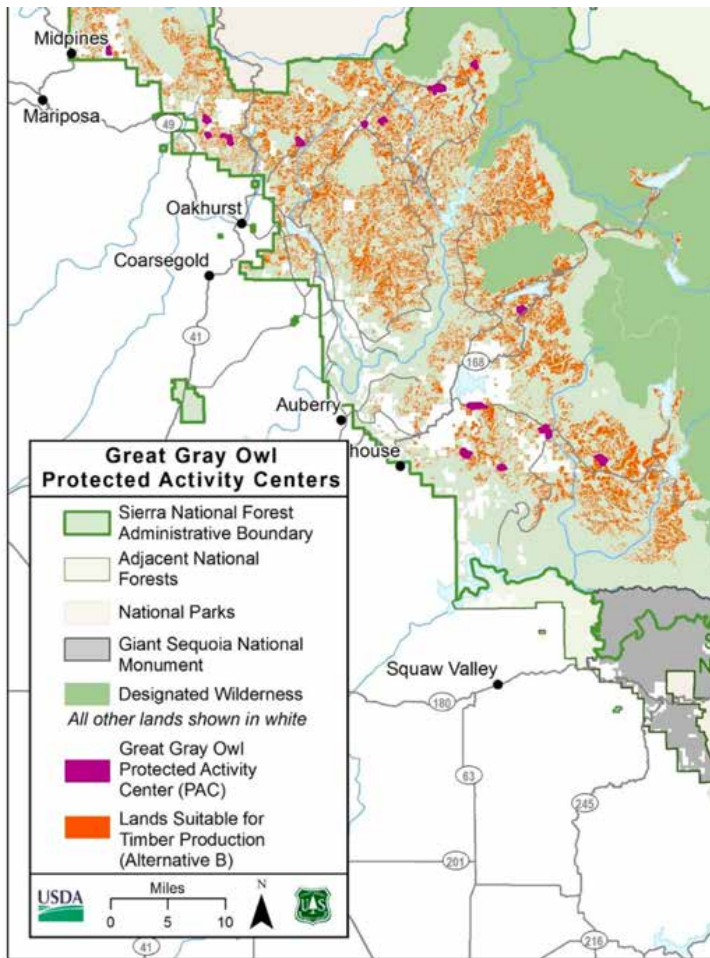


Figure 4. Great gray owl protected activity centers on the Sierra National Forest

The FEIS identifies car strikes as a risk factor for great gray owl but does not consider mitigating for this as we suggested in our 2016 letter.

5. The FEIS Does Not Consider Key Impacts to Great Gray Owl from the New Forest Plans

Throughout the planning process we have provided information on the specific habitat needs of great gray owls recommended by species experts. The SCC rationale (USFS 2022) acknowledges expert recommendations related to specific habitat requirements of great gray owls (in Britting et al. 2016), but does not disclose the justifications for omitting these habitat requirements from the plans, and how management activities conflict with the requirements. For example, Alternative C and E in the FEIS includes this guideline:

Guideline (SPEC-GGO-GDL) 01- In meadow areas of great gray owl protected activity centers, manage to enhance habitat for prey species. Refrain from grazing between February 15 and August 15 unless meadow assessment indicates vegetation height standards and range condition and trend standards appropriate to the meadow type are met.

We supported the inclusion of this guideline as we believe it would help provide for higher quality prey habitat and support successful great gray owl reproduction. The planning materials did not discuss why it was not included in the final plan and how it differs from Modified Alternative B.

In another NEPA-related issue, the FEIS did not acknowledge or discuss the impact of abandoning PACs, or changing the conditions needed to establish PACs. Further, the FEIS does not discuss the impact of lower snag retention would have on great gray owls.

Lastly, there are two great gray owl PACs located in the CWPZ and outside of the WHMA, one near Bass Lake and one near Midpines (FEIS, p.504) where absolutely zero plan components apply for great gray owl, not even a limited operating period (LOP) (Sierra plan, p. 68-69). The FEIS does not consider how stripping all protections from a great gray owl PAC would impact the viability of the species. A great gray owl PAC logged on the Stanislaus NF was no longer active for many years following defense zone thinning from below in the Sampson project (A. Rich January 2022, personal communication). The FEIS also did not discuss how LOPs or nest site protections on less than one acre are critical to wildlife management in the area. It is unacceptable to not retain breeding habitat in a great gray owl PAC when there are only 14-16 on the forest. Great gray owl PAC habitat protection should apply within the CWPZ.

Suggested resolution: 1) Provide a complete definition of great gray owl PAC that includes what kind of meadow habitat is needed to support target prey base and allow for establishment of PACs that is aligned with the regional guidance (Beck and Winter 2000, p. 25):

Great gray owl PACs are established and maintained around known and suspected breeding sites to include the forested area and adjacent meadow. A protected activity center encompasses at least 50 acres of the highest quality nesting habitat (CWHR type 6, 5D and 5M and all large snags over 20 inches diameter) available in the forested area surrounding the detection site. A PAC also includes the meadow or meadow complex that supports the habitat needs of prey species associated with breeding, such as meadow vole habitat with a 12-inch stubble height and 8-inch sward height.

2) Adopt suggested changes to the WHMA to ensure greater snag retention for old forest associated species. See section III.I. of this objection.

3) Remove the CWPZ exception in great gray owl PACs that threatens two PACs on the Sierra National Forest.

4) Change SPEC-GGO-GDL-01 to

In meadow areas associated with great gray owl protected activity centers, maintain greatest herbaceous vegetation commensurate with site capability. Determine site-specific meadow capability using fenced grazing exclusions for the meadow portion of the PAC.

5) Include new SPEC-GGO-GDL-04

Multiple use activities within great gray owl protected activity centers should not compromise the structure and function of PACs.

6) Remove the following wording from Sequoia plan (p.194): Great gray owl PACs may be removed after stand replacing events if the habitat has been rendered unsuitable or may be removed as otherwise provided in current regional guidance.

7) Add a potential management approach to consider vehicle strike mitigation in vehicle strike hotspots using the great gray owl conservation strategy (Wu et al. 2016, p.10).

G. Northern Goshawk

We raised concerns about proposed changes to the conservation measures for northern goshawk in the existing forest plans in our comments on the draft environmental impact statement in 2016 and the revised draft environmental impact statement in 2019.

We congratulate the Forest Service again for including goshawk as a species of conservation concern and for providing a clear definition of breeding habitat: 200 acres of best available contiguous CWHR 6, 5D and 5M breeding habitat surrounding the nest. The final plans now also articulate when to establish a goshawk PAC in the glossaries (Sierra plan, p.195, Sequoia plan, p.199). However, we echo prominent raptor biologists' concerns that 200 acres is not adequate to sustain goshawk populations. Recent research defines goshawk nest core areas as 500 acres in the Sierra Nevada (Keane 2008, Morrison et al. 2011, Woodbridge et al. 2012), and found that PACs here are restricted in size, containing less than 25 percent of all roost sites (Blakey et al. 2020a). Nevertheless, we recognize that putting the goshawk back on the SCC list and designating PACs is a step in the right direction for the conservation of this remarkable species.

We have concerns regarding the new Sierra and Sequoia final plans. They allow mechanical treatment in goshawk PACs, but because forest wide plan components are not integrated with desired conditions for goshawk PACs, and because species-specific direction to maintain breeding habitat associated with goshawk occupancy is missing, the plans do not provide the conditions necessary for goshawk persistence in the plan area. Given that habitat loss from logging is a key threat to the species in the plan area (FEIS, p. D-81), the plans pose a significant threat to goshawk viability.

Outside of PACs, the new USFS strategy for providing goshawk nesting habitat relies on a network of WHMAs, fisher areas and spotted owl PACs. Conceptually this is a good approach because long-term management plans for goshawks should include alternate patches of nesting habitat in case of loss of existing habitat to severe disturbances (Woodbridge et al. 2012). However, the habitat retention in these areas should be aimed at maintaining medium and high suitability habitat in order to achieve its purpose. Currently, the WHMA only promotes habitat following large-scale, high severity disturbances (in MA-WHMA-GDL-01, Sierra plan p.107,

Sequoia plan p.105). Direction is needed here to maintain habitat where it exists pre-disturbance, as well. Issues with the WHMA, spotted owl and fisher management areas are addressed elsewhere in our objection.

1. Final Plans Do Not Maintain Sufficient Goshawk Habitat in PACs to Ensure Persistence in the Plan Areas

Goshawk nest stands are characterized by large old trees with greater than 70 percent canopy cover and open understory (Squires and Reynolds 1997, Keane et al. 1999, USDA Forest Service 2001). The FEIS similarly describes goshawk nesting areas as having dense canopy cover at 52 to 99 percent with large trees and old forest characteristics (SCC Rationale USFS 2022 p.46).

Goshawk territory occupancy is positively related to the amount of dense, mature forest canopy cover at the nest core scale (500 acres). For example, Morrison et al. (2011) reported that frequently occupied goshawk nest cores contained 73 percent greater coverage of densely-canopied forest (greater than 60 percent mean canopy cover) compared to infrequently occupied breeding territories. Similarly, Woodbridge et al. (2012) reports the author's unpublished, but "relatively rigorous and long-term density study" in California found that frequently occupied territories had more than twice the proportion of densely-canopied, mature forest (greater than 60 percent mean canopy cover and greater than 16 inches dbh) in core areas as did ephemeral territories (greater than 2-3 year gaps in occupancy), and nearly six times as much as did territories abandoned during the study (Woodbridge et al. 2012, p.139). Goshawks avoid roosting in severely burned areas, but use mixed severity burn areas to forage (Blakey et al. 2020b). The new forest plans must protect nesting habitat in PACs that maintain goshawk occupancy and persistence in the plan areas, as described here.

The desired condition for goshawk PACs in the Sierra and Sequoia forest plans is to "provide habitat conditions that support nesting and successful reproduction including high canopy cover with large trees and old forest characteristics." (SPEC-NG-DC-01). No standards or guides are developed from this desired condition to provide breeding habitat that sustains occupancy such as canopy cover, CWHR type or basal area as described above. Under new plans, only the nest tree itself and surrounding few trees that provide thermal cover are maintained in a forest-wide plan component (see SPEC-FW-GDL-02). The new plans are missing guidance to protect goshawk habitat in PACs. This situation could be addressed by adopting suggested changes to the WHMA presented in a separate section.

The only two plan guidelines that apply to goshawk PACs are a LOP and a priority list for mechanical treatments in PACs. The LOP in SPEC-NG-GDL-01 (both plans, p.70) reduces the buffer distance protecting nests from power equipment such as chainsaw noise disturbance from 0.25 miles (1,320 feet) in the old plans to 300 feet in the new plans. This is a significant reduction in noise buffer given goshawks are known to be particularly sensitive to disturbance (Morrison et al. 2011). The persistence analysis acknowledges human disturbance as a threat to goshawk nesting success and reproduction, but claims it is minimized in the new plans (FEIS p.D-81-82). There is no evidence to support this claim. This risk is increased by this reduction in buffer distances in the new plans.

The other guideline in goshawk PACs, SPEC-NG-GDL-02, is regarding mechanical treatments in the PAC (both plans, p.70). It weighs PAC occupancy with resilience in order to prioritize which PACs to treat. Resilience is defined as departure from NRV and the FEIS considers all goshawk PACs to have exceeded NRV (SCC rationale, USFS 2022, p.55). So automatically all PACs are prioritized for treatment according to this definition. This guideline does not offer any direction for habitat retention in PACs, and as such does not protect PACs from habitat degradation and habitat loss from logging, despite the FEIS claims (FEIS p.D-81-82). Given that goshawk PACs comprise only 3 percent (13,240 acres) of the Sierra National Forest and only 7 percent of the Sequoia National Forest (68,056 acres), essential goshawk habitat should be retained in PACs.

2. The FEIS Makes Erroneous Conclusions About Goshawk Conservation Status and Does Not Consider Impacts of New Plans on Goshawk Viability

Goshawks are a California bird species of special concern (Schuford and Gardali 2008) with a California Natural Diversity Database (CNDDB) state rank of 3, meaning they are considered vulnerable in California and

At moderate risk of extirpation in the state due to restricted range, few populations, occurrences, steep declines or severe threats or other factors.

(California Natural Diversity Database 2022). U.S. Forest Service raptor biologist Dr. John Keane reports goshawk populations have declined 20-40 percent in California and are projected to decline another 10-15 percent (Keane 2008). The FEIS persistence analysis similarly states that

...Northern goshawk in the Sierra Nevada was rated as Moderately Vulnerable which is defined as 'abundance and/or range extent within geographical area assessed likely to decrease by 2050.' (Siegel et al. 2014).

(FEIS p.D-82). In contrast, the FEIS claims:

Northern goshawks in California are well distributed and relatively abundant in most forested areas across their core breeding range, and populations have remained stable over the past 50 years.

(FEIS, p.D-82 and D-83). This contradicts publications by Forest Service scientists and the state ranking from CNDDB. No citations support this claim, it is arbitrary given the widely acknowledged state of the species in California.

The FEIS also erroneously claims goshawks only occur up to 8,000 feet in elevation (FEIS p.D-83). The regional species of conservation concern rationale acknowledges they occur up to 10,500 feet in the Sierra Nevada (USFS 2022 SCC rationale p. 45). Again, we are puzzled by

these unsupported claims. Underestimating the elevation range of goshawks affects decisions about habitat management for the life of the plans.

The FEIS did not analyze the effects of logging on goshawk PACs proposed in the new plans, including likely number of PACs treated over the life of the plan and the extent of treatment within PACs, as well as effects on occupancy and reproduction under all alternatives. Nor does the FEIS disclose what the impact of goshawk PACs not encompassed by proxy protection areas (fisher cores, spotted owl PACs and WHMAs) or what the impact is if additional goshawk PACs were established outside these areas.

The FEIS does not disclose the basis for removing PACs after a “stand replacing event” nor what conditions exactly would constitute such as event (Sierra plan p.199, Sequoia plan p.195). Research on goshawk use of mixed-severity fire suggests that goshawks use burned areas for foraging (Blakey et al. 2020b). It is unclear if patches of drought-related tree mortality lead toward changes in goshawk habitat use because the FEIS does not consider this. Removing goshawk PACs due to drought mortality is inappropriate without presenting any reasoning or discussion in the FEIS.

Finally, the FEIS did not analyze the effects of changing the LOP from 0.25 miles (1,320 feet) to 300 feet. The persistence analysis claims that human disturbance is minimized in the new plans, but this is not the case. Goshawks have sensitive hearing and adults sometimes have a flight response to noise and disturbance in the nest stand, costing adults energy and putting nestlings or eggs at risk of exposure or predation (Morrison et al. 2011, Woodbridge et al. 2012). The potential for breeding failure from human disturbance is increased by this reduction in disturbance buffer distance in the new LOP and the FEIS does not disclose the impacts of this change, contrary to NEPA.

Suggested resolution:

- 1) Corrections are needed to the FEIS to accurately convey goshawk imperiled conservation status and elevation range in the plan areas.
- 2) A guideline is also needed protecting nesting habitat in PACs and minimizing human-related disturbance in PACs: Ensure that breeding habitat structure and function, including CWHR 6, 5D, 5M, 4D and 4M, snags and downed wood at higher levels than average, be maintained in PACs, and that treatments should be designed to achieve fire and fuels resilience.
- 3) Change LOP guidance in SPEC-NG-GDL-01 to increase distance of chainsaws and power equipment from 300 feet to 0.25 miles from nest or PAC boundary if nest location is not known.
- 4) Analyze impacts of plans to goshawk persistence in plan area using raptor scientist input with any proposal to remove goshawk PACs from the network. We suggest a change to goshawk PAC in glossary to:
Northern goshawk protected activity centers (PACs) are established to include the forested area around all known or suspected northern goshawk nest sites. A PAC encompasses at least 200 acres of the highest quality nesting habitat (i.e., California Wildlife Habitat Relationship type 6, 5D and 5M) available in the forested area surrounding the nest. The protected activity center should be in the largest contiguous

block possible and not include large patches of non-forest vegetation. If the best available habitat is in smaller blocks, they must be within 0.5 mile of one another. PAC boundaries may be adjusted to encompass known or suspected nest stands and the best available forested habitat. Northern goshawk PAC boundaries may be adjusted to replace habitat lost to recent stand replacing events. PACs may be removed if there is no nesting or roosting habitat available within 1 mile of a PAC consumed by high severity fire. (Sierra plan, p. 195, Sequoia plan, p.199)

H. Willow Flycatcher

We raised concerns about proposed changes to the conservation measures for willow flycatcher in the existing forest plans in our comments on the draft environmental impact statement in 2016 and the revised draft environmental impact statement in 2019.

Willow flycatcher sightings regularly occur in the spring and summer on the Sierra National Forest, however evidence of breeding has not been recorded in over a decade on either the Sierra or Sequoia National Forests (FEIS, p.506, D-90, and D-91). This suggests willow flycatchers continue to return to the planning area during the breeding season and could attempt to establish breeding territories. The FEIS states "...it is possible that willow flycatcher breeding occurs in isolated patches of riparian habitat in the plan area." (FEIS, p. D-91). The forest planning period represents a critical window to respond to willow flycatcher decline in the Sierra Nevada.

Researchers believe willow flycatchers use the presence of conspecific birds as cues for breeding sites and recommend a three-tiered approach to restoring willow flycatcher meadows in the Sierra Nevada (Loffland et al. 2014). The FEIS identifies habitat loss from grazing and other forest management as a threat to willow flycatcher that can be addressed by restoring meadows (FEIS, p. D-88, D-89), however recommendations from willow flycatcher experts on how best to restore meadows and encourage willow flycatchers to return to breed were left out of the final plans.

On the Sierra National Forest, Loffland et al. (2014) identifies Markwood, Dinkey, and Lost meadows for a 3-tiered approach to restoration for willow flycatcher because of their size (greater than 16 acres) and history of occupancy. Restoration is required under standard and guideline 60 in the current forest plans in these meadows. We asked that the recommendations provided in Loffland et al. 2014 (pgs. 17-21)¹ be incorporated into plan components. The FEIS supporting documents acknowledge the promise of the approach (USDA Forest Service 2022e, p. 61). The restoration approach has been field tested (Schofield et al. 2018) and may be the best shot at species persistence in the plan areas. In a discussion of this study and the use of automated playback calls to attract willow flycatchers back to restored meadows, the authors remarked:

¹ A 3-tiered approach of 1) hydrogeomorphic habitat restoration, 2) passive restoration through improved grazing management, and 3) experimenting with conspecific attraction to lure Willow Flycatchers back to meadows where suitable habitat has been restored.

Over 35% of restored meadows with playback were recolonized compared to 5% of meadows with no playback...These results strongly suggest that playback of Willow Flycatcher calls could benefit efforts to reestablish the species in restored habitat, with the caveat that this technique should only be used when the unoccupied habitat has been carefully assessed and found to be high-quality.

(Institute for Bird populations 2022). This is additional evidence that the 3-tiered approach has merit, yet this approach was never considered for use on the Sierra or Sequoia National Forests. On the Sequoia National Forest, willow flycatcher breeding sites at the South Fork Wildlife Area has ranged between 27 and 44 pairs. This site is presumed to contain *Empidonax traillii extimus* (an ESA-listed species) but *Empidonax traillii brewsterii* (a USFS species of special concern) may also occur (FEIS, p. D-90). Essential habitat is managed in partnership with the U.S. Fish and Wildlife Service primarily to provide for the riparian vegetation and riparian forest habitat required by this species. Grazing has been eliminated in most willow flycatcher breeding areas. Management focuses on five goals, (1) protecting and/or restoring habitat; (2) reducing cowbird nest parasitism; (3) reducing influx of exotic species; (4) researching life histories of the species; and (5) increasing public education. A similar effort should be focused on restoring historically occupied meadows in the plan area to recover riparian shrubs and attract the Sierra Nevada subspecies of willow flycatcher, *Empidonax traillii brewsterii*.

In addition to the specific meadow restoration recommendations above, there are several additional reports urging the USFS to undertake more meadow restoration in the plan area. Campos et al. (2021) found that small meadows (0.7 to 16 acres) on the SNF do not provide high quality habitat for wet-meadow associated birds. Researchers noted that hydrologic restoration and vegetative restoration were needed in the planning area:

Across the nine meadows we surveyed on Sierra NF, the habitat value for meadow bird focal species ranged from poor (Meserve) to good (Benedict), with all but one meadow, Benedict, falling short of our target for high quality bird habitat (Campos et al. 2014). Hydrologic restoration has the potential to improve habitat quality for meadow birds at some or all of these meadows (Campos et al. 2020)... Hydrologic restoration alone, however, will likely not achieve the restoration targets for meadow birds at the meadows under the target; additional restoration and management actions focused on vegetation are needed.

The cover and height of wetland deciduous shrubs was insufficient to support a high abundance and richness of meadow birds at most of the meadows. The cover and height of wetland deciduous shrubs and trees are a primary driver of habitat quality for most meadow-dependent bird species (Campos et al. 2014, 2020; Loffland et al. 2014).

(Campos et al. 2021, p. 8). This finding is significant given it is in the planning area and the planning currently underway. The Sierra NF SCC rationale (USFS 2022) also concludes that an increased pace and scale of meadow restoration is necessary to aid wet meadows in the plan area:

The estimated projected trend (2012-2032) of wet meadow habitat potentially used by willow flycatcher on the Sierra National Forest is 1.4 percent. A decreasing trend is expected if : 1) pace and scale of meadow restoration does not increase, such as by reducing tree encroachment, removing roads and trails from meadows that cause a change in hydrology, and eliminating grazing impacts that result in drying of meadow systems and cause a change in hydrology; and 2) continued climate changes resulting in less water availability.

(USDA Forest Service 2022e). The plans do not offer guidance to reverse these trends.

1. The Ecosystem-level Plan Components Do Not Provide for Willow Flycatcher Persistence in the Plan Area

Wet montane meadows comprise only 2 percent of the Sierra Nevada but provide diverse ecological services such as water storage, water filtration and also serve as biodiversity hotspots. Grazing has been shown to have negative consequences for all these resources (Vernon et al. 2022). Meadow ecosystem plan components list many desired conditions including:

WTR-RCA-MEAD-DC-06

Healthy stands of willow, alder and aspen are present within and adjacent to meadows with suitable physical conditions for these species.

(Sierra plan, p. 20), however these desired conditions are vague and do not guide specific meadow restoration for willow flycatchers discussed above. In another example, the single forest-wide objective (an optional plan component) aspires to:

WTR-RCA-MEAD-OBJ-01

Enhance or improve conditions on at least five meadows of any size within 15 years following plan approval.

(Sierra plan, p.21). This is far too modest of a goal given the urgency of willow flycatcher conservation needs in the plan area. The flycatchers generally use larger meadows over 10 acres. The plans should more directly address the restoration needs of willow flycatcher.

The potential management approaches for meadows are focused on thinning, conifer removal and maintaining “diverse vegetative cover” (Sierra and Sequoia plans, p.15). This is insufficient for willow flycatcher because the meadows that would need this restoration are not even disclosed in the FEIS, as requested in our Revised Draft Environmental Impact Statement (RDEIS) comments. Further, the FEIS offers no evidence for conifer encroachment or inappropriate fuel loading in meadows in particular, and in fact researchers found the opposite—those meadows didn’t show evidence of conifer encroachment— during meadow surveys on the Sierra National Forest (Campos et al. 2021). While we do not oppose removal of encroaching

conifers from meadows, the ecosystem plan components do not address specific urgent meadow restoration priorities for willow flycatcher.

2. The Species-level Plan Components Do Not Provide for Willow Flycatcher Persistence in the Plan Area

The plan components developed for willow flycatcher in the final forest plans only apply to occupied breeding sites, however there are no known occupied sites in the plan area² (FEIS, p. D-90, D-91). This overall strategy for willow flycatcher and the ability of the forest plans to provide for species viability is critically flawed and will have little effect on providing the necessary conditions on which the species depends to recover from this decline. Furthermore, although the revised forest plans include standards and guidelines that are to be implemented in occupied willow flycatcher sites, the plan does not ensure that any meadow will be surveyed to determine occupancy. The FEIS did not provide an analysis of the likelihood that these plan components would ever be implemented if meadows were reoccupied by the species.

The Forest Service's gestures at meadow restoration in the new plans do not ensure persistence of willow flycatcher in the plan area. Restoration accomplishments related to standard and guide 60 are not mentioned in the FEIS. The Sierra and Sequoia National Forests have yet to complete riparian protection measures on seven areas called for in allotment NEPA from 2011 over ten years ago (FEIS, p. D-89). Sites where fencing was completed moved to an acceptable standard, while unprotected sites continue to incur unacceptable impacts from livestock *Id.* Incomplete riparian fencing approved in 2011-2012 allotment NEPA for these forests suggests that riparian and meadow restoration are a low priority.

Despite recognizing meadow habitat loss as a threat to the species, the FEIS fails to adequately address the threat of habitat loss to willow flycatcher and does not follow recommendations in the SCC report to accomplish a greater pace of meadow restoration. The plans also ignore scientist recommendations to restore meadow hydrology and deciduous riparian shrubs in particular meadows on the Sierra NF. Furthermore, the new plans abandon the charge to restore historically occupied meadows in the 2004 plans.

Suggested resolution: Recognize the necessary ecological conditions provided in Loffland et al. (2014): 1) hydro- geomorphic habitat restoration, 2) passive restoration through improved grazing management, and 3) experimenting with conspecific attraction to lure willow flycatchers back to meadows where suitable habitat has been restored.

To provide for ecological conditions necessary to restore willow flycatcher and associated riparian birds to the planning areas, we ask that you include the following revised or additional plan components to promote meadow restoration that benefits willow flycatchers and to provide for essential habitat:

² No known breeding sites on the Sierra National Forest and none on the Sequoia National Forest except the South Fork Wildlife Area with unknown presence of the target SCC subspecies.

WTR-RCA-MEAD-OBJ-01

Enhance or improve conditions on at least fifteen meadows of any size and at least five meadows over 10 acres within 15 years following plan removal. Exclude livestock grazing for up to five years following restoration (Vernon et al. 2022).

Add a Potential Management Approach:

Pursue Federal, Tribal, State and local agency partnerships to achieve habitat restoration in willow flycatcher historically occupied meadows. Cooperate with willow flycatcher researchers to attract willow flycatchers using playback calls after meadow restoration per Schofield et al. (2018). Conduct meadow and willow flycatcher restoration at Markwood, Dinkey and/or Lost meadows per Loffland (2016).

Modify three standards:

SPEC-WF-STD-01

In meadows with occupied willow flycatcher sites, allow late season grazing. If habitat conditions are not supporting willow flycatcher or trend downward, suspend grazing in the meadow.

Modify SPEC-WF-STD-02

Determine occupancy of willow flycatcher using established protocols in historically occupied meadows every 4 years. During allotment management planning or when authorizing livestock or pack stock use determine occupancy of willow flycatcher in potential habitats.

SPEC-WF-STD-03

In historically occupied meadows where willow flycatchers are not detected, assess restoration needs of meadow; if habitat is degraded, develop restoration objectives and take appropriate actions (such as physical restoration, limiting or re-directing grazing activity).

(Adapted from Sierra plan, p. 70; Sequoia plan, p. 70)

I. Wildlife Habitat Management Area

We raised concerns about the application of the Wildlife Habitat Management Area in our comments on the revised draft environmental impact statement in 2019. The focus of the WHMA changed since the prior draft plan, and we describe additional concerns below.

The forest plans include the Wildlife Habitat Management Area (WHMA) that was originally designed to focus on the “best remaining habitat for old-forest-associated species outside of wilderness where the need and opportunity to improve resilience was the greatest” (Sierra plan,

p. 106; Sequoia plan, p. 103). Since first conceived, there have been several large wildfires that affected the WHMA. Despite the changes in habitat, the WHMA is still valued as a management area focusing “on the long-term goal of developing and maintaining habitat for old-forest-associated species, while managing in a post-disturbance landscape.” (Sequoia plan, p.104; Sierra plan, p. 106). We are concerned, however, that the guideline included for this management area is limited to responding to conditions in post disturbance landscapes.

We believe this is a very useful management area and that its application should be expanded geographically (especially to the east) to include overlooked habitat for northern goshawk and Sierra marten, expand beyond post-disturbance settings, and address more directly the retention of large snags and dense canopy to benefit species dependent on old forests, including California spotted owl, Pacific fisher, Sierra marten, great gray owl, and northern goshawk.

1. Essential Ecological Conditions for Species Dependent on Old Forests: Large Snags

Large snags are mentioned as essential ecological conditions for old forest-associated species such as great gray owl, which prefer “high densities of large snags (Sears 2006, Wu et al. 2015)at the rate of four per acre greater than 40 inches DBH...” (SCC Rationale, USFS 2022 p.35-36). Similarly, marten decline was associated with loss of large snags from the landscape at Sagehen Experimental Forest (USFS 2022, SCC Rationale 2022 p.73).

For several species, high densities of large snags are identified in science information as being critical to supporting essential functions like reproduction, roosting/resting, and foraging.

Fisher: “6.1.1d – Except where it threatens public safety or the ability to meet fisher habitat objectives based on site conditions, preferentially retain >4 of the largest snags per acre (>20” DBH), particularly those surrounded by remaining live trees and in high quality denning habitat.” (Thompson et al. 2020, p. 25).

California spotted owl: Nest sites contained an average of 24 snags per acre in the Southern Sierra Nevada (Steger et al. 1997).

Great gray owl: Nest stands contain five to six large snags per acre in the Central Sierra Nevada (Beck and Winter 2000 from Winter 1986).

Sierra marten: Rest sites contain 18 snags, 15 logs and 26 stumps per acre in the Sierra Nevada (Martin and Barrett 1981).

These values are higher than the range provided for a 10-acre area in the “Terrestrial Ecosystems” sections of each forest plan.

We recognize that many desired condition statements in the forest plans support the clumpy distribution of snags across the landscape and emphasize the retention of large snags at both the ecosystem and species scales. However, it is critical that the highest quality habitat types for these species that support the key functions of nesting, denning resting and roosting contain

sufficient numbers of large snags. Because the desired conditions for snags are presented as a range in the Terrestrial Ecosystems section (see for example Table 3 of the Sierra Plan, p. 34) that is bounded by “0”³, it is important to include a guideline that directs higher retention levels for large snags when they occur in the highest quality habitat for old forest dependent species.

Suggested resolution: To provide for ecological conditions important to reproduction and persistence for numerous species dependent on old forests, we ask that you include the following guideline to promote the retention of higher levels of snags in higher quality habitat:

MA-WHMA-GDL 02

Retain large snags (greater than 20” DBH) at the upper end of the density range of desired conditions for the relevant forest vegetation type in high quality denning, nesting, roosting and resting habitat, generally characterized as CWHR types 4D, 5M, 5D, and 6. Retain snags in an irregular patchwork with densities in the patches higher than the average reflected in the desired condition tables.

2. Essential Ecological Conditions for Species Dependent on Old Forests: Mature Forest Habitat

The FEIS persistence analyses for marten, goshawk and great gray owl rely on dense, mature habitat provided in the WHMAs to alleviate the risk of habitat loss from logging and other threats in the planning area (FEIS, p. D-41, D-79, D-68). There are two problems with this approach though. First, the only guideline in the WHMA focused on management references only post-disturbance landscapes. Significantly large fires have affected both the Sequoia and Sierra National Forest in the last several years (USDA Forest Service 2022 – appendix on post fire conditions). It is unclear to us if the post-disturbance landscape to be considered is that within the proximate footprint of the post-disturbance landscape or something larger. We believe that the landscape forestwide should be considered when undertaking forest management actions within the WHMA. This is because the recent wildfires and mortality events affected such a significant proportion of the landscape and areas outside the immediate area of disturbance are critical to address when providing for the ecological conditions needed to support persistence for species associated with old forest habitat. Because the wide-ranging impacts that recent disturbances have had on these habitat types, we believe that guideline MA-WHMA-GDL-01 should apply to all management activities planned in the WHMA.

Second, the WHMA desired conditions for canopy density is informed by general forest vegetation types rather than conditions found in high quality nesting, foraging and denning habitats. The guideline for the WHMA is to “identify, retain and promote...the best available patches of high-quality nesting, foraging and denning habitat,” but then the guideline directs that “the amount, location and configuration of habitat retention should be informed by terrestrial vegetation desired conditions for the forest type.” See for example Sierra plan, p. 107. Although high quality nesting, foraging and denning habitats generally fall within those ranges, they are at the upper end of the ranges and sometimes exceed the averages reflected by the ranges. For example, Sierra marten and great gray owl both require 65 to 99 percent canopy cover (Spencer

³ Table 3 shows snags bounded by 2-40 per 10 acres in Dry Mixed Conifer and 5-40 per 10 acres in Moist Mixed Conifer, which amounts to 0-4 snags per acre (Sierra plan, p. 34).

et al. 1983, Moriarty 2011, Wu et al. 2016). Goshawk nest stands with canopy cover of 77 to 94 percent are associated with greater occupancy and reproduction (Woodbridge et al. 2012). California spotted owl occupancy, survival, and reproduction are positively associated with a canopy cover greater than 70 percent (Blakesley 2005, Tempel et al. 2014). We ask that the guideline for the WHMA be revised to address these concerns.

Suggested resolution: To ensure that management actions address high-quality nesting, foraging, and denning habitat, we request the following revision (strikeout omitted; addition in bold/underlined):

MA-WHMA-GDL-01

Before authorizing vegetation treatment identify, retain, and promote the best available patches of high-quality nesting, foraging, and denning habitat (6, 5D, 5M, 4D, and 4M in descending order of priority) to provide habitat for old-forest associated species. Desired conditions for the amount, location and configuration of habitat retention should be informed by **the upper range of** terrestrial vegetation desired conditions for the forest type.

Exemption: Does not apply to community buffers

I. At-Risk Plant Species

We object to aspects of the at-risk plant species plan components and suggest they be revised to emulate the at-risk plant components in the 2019 Land Management Plan for the Inyo National Forest (“Inyo Forest Plan”). As written, the at-risk plant components do not provide sufficient direction to ensure that threats to at-risk plants in the Sierra and Sequoia National Forests will be adequately mitigated or that population trends of at-risk plants will be monitored to confirm that the ecological conditions necessary for their survival are in fact being promoted. The at-risk plant components in the Inyo Forest Plan were the result of close collaboration between the Forest Service and interested parties, including the California Native Plant Society. Revising the Sierra and Sequoia plans to be consistent with the Inyo Forest Plan would rectify the current deficiencies in the plans’ at-risk plant sections. We suggest the following specific changes.

1. Omitted Plan Components

First, important language that was included in the Inyo Forest Plan has been omitted entirely from the Sierra and Sequoia Plan Revisions. We are concerned about the omission of the following five plan components from the Sierra and Sequoia plans.

Desired Condition (SPEC-FW-DC) 03 (from the Inyo forest plan)

Land management activities are designed to maintain or enhance self-sustaining populations of at-risk species within the inherent capabilities of the plan area by considering the relationship of threats (including site-specific threats) and activities to species survival and reproduction.

(USDA Forest Service 2019d, p. 34). We object to the absence of equivalent language in the Sierra and Sequoia Plans. The desired conditions guide the planning and development of projects and management activities. Including the maintenance and enhancement of at-risk species as a desired condition is critical for ensuring that forest managers adequately consider at-risk species when implementing projects or making management decisions.

Suggested resolution: Add Desired Condition (SPEC-FW-DC) 03 from the Inyo Forest Plan to the Sierra and Sequoia plans.

Standard (SPEC-FW-STD) 02 (from the Inyo Forest Plan)

Avoid or mitigate impacts on known and unknown occurrences of at-risk plants and lichens that would limit their persistence or recovery in the plan area.

(USDA Forest Service 2019d, p. 35). We object to the absence of equivalent language in the Sierra and Sequoia Plans. Avoiding and/or mitigating impacts to both known and unknown at-risk plant populations is necessary for achieving the desired conditions for animal and plant species.

Suggested resolution: Add Standard (SPEC-FW-STD) 02 from the Inyo Forest Plan to the Sierra and Sequoia plans.

Potential Management Approaches from the Inyo Forest Plan:

- Develop and implement a consistent, systematic, biologically sound program for plant species of conservation concern and their habitat so that federal listing does not occur.
- Do not construct new facilities in suitable habitat.
- Do not construct new roads, landings, parking or equipment staging areas in suitable habitat.

(USDA Forest Service 2019d, p. 36-37). We object to the absence of equivalent language in the Sierra and Sequoia Plans. Though potential management approaches are not formal plan components, they nonetheless provide important guidance to responsible officials about the focus and priorities of management direction. Each of the above potential management approaches are important for maintaining at-risk plant populations within the forest plan area, and equivalent potential management approaches should be included in the Sierra and Sequoia plans.

A consistent, systematic, biologically sound program for minimizing impacts to plant Species of Conservation Concern is especially important in light of the plans' heavy reliance on maintaining ecological conditions as the means of managing at-risk plant species. Maintaining ecological conditions will only be an effective means of maintaining the at-risk species if we have enough data and information about each species' ecological needs and responses to management actions. For many rare plant species within the plan areas, we do not have enough knowledge about the effects of ecological conditions-based management. A program for surveying for at-risk species

prior to management actions and monitoring post-action to make sure special plants have the ecological conditions necessary for long-term survival needs to be integrated into the Sierra and Sequoia plans.

Suggested resolution: Add the above three Potential Management Approaches from the Inyo Forest Plan to the Sierra and Sequoia plans.

2. Revisions to At-Risk Plant Components

Second, portions of the at-risk plan components have been weakened either because they are categorized as a guideline, which is less binding than a standard, or they include language that makes the component too flexible. We suggest the following changes to four plan components.

Guideline (SPEC-FW-GLD) 01: “Design features, mitigation, and project timing considerations should be incorporated into projects that may affect habitat for at-risk species where they occur to minimize impacts to ecological conditions that provide for the persistence of at-risk species.”

(Sierra plan, p. 49; Sequoia plan, p. 50).

Suggested resolution: Reclassify the component as a Standard and change the phrase “should be” to “are.”

Rationale: Standards are mandatory constraints on project and activity decision making, whereas guidelines are more flexible and decision making can depart from the terms of the guideline so long as its purpose is being met. The requirement that design features, mitigation, and project timing be incorporated into projects to minimize impacts to ecological conditions for at-risk plant species should be a mandatory constraint. These prescriptions should not be optional and designating this component as a Standard, similar to the way it is designated in the Inyo Forest Plan, will help ensure that responsible officials adhere to it.

Standard (SPEC-PLANT-STD) 01:

Use information that is current, accurate, and precise enough to avoid or mitigate impacts on at-risk plant species when designing projects...

(Sierra plan, p. 74; Sequoia plan, p. 71).

Suggested resolution: “Use information that is current, accurate, and precise enough to avoid or mitigate impacts on at-risk plant and lichens when designing projects.”

Rationale: In the event the Species of Conservation Concern lists are modified to include lichens, the plans will not need to a formal amendment to become consistent with the Species of Conservation Concern list. This revision is also consistent with the Inyo Forest Plan.

Potential Management Approach

As feasible, gather necessary information early in the planning process to locate unknown occurrences and confirm known occurrences of at-risk plant species to avoid or mitigate project impacts on these species.

(Sierra Plan p. 74, Sequoia Plan p. 71).

Suggested resolution: “Gather necessary information early in the planning process to locate unknown occurrences and confirm known occurrences of at-risk plant species, and lichens, to avoid or mitigate project impacts on these species.”

Rationale: Potential Management Approaches already are the least stringent level of plan components, so the phrase “as feasible” is unnecessary and may suggest to plan readers that gathering information is optional or need only be done if convenient. On the contrary, gathering information early in the planning process is critical to ensuring that project activities do not impact at-risk species. Deleting “as feasible” will more directly encourage early information gathering. Including lichens will avoid the need for a formal plan amendment if lichens are added to SCC lists in the future. These revisions will make the Potential Management Approach consistent with the Inyo Forest Plan.

Potential Management Approach

Consider potential mitigation measures, including timing of activities, for road and trail maintenance during active growth and reproduction for at-risk plant species that occur along existing roads and trails.

(Sierra plan p. 74, Sequoia plan p. 72).

Suggested resolution: “Avoid road and trail maintenance during active growth and reproduction for at-risk species that occur along existing roads and trails.”

Rationale: Strict avoidance of at-risk plants during active growth or reproduction is critical for ensuring that those populations will not be harmed by project activities. Merely allowing responsible officials to “consider potential mitigation measures” such as timing of activities is insufficient. The suggested revision was adopted in the Inyo Forest Plan, and we suggest the Sierra and Sequoia Plans incorporate it as well.

IV. Wilderness Recommendations and Roadless Area Protection

Summary: We believe that the evaluation of wilderness-quality lands in the Sierra and Sequoia National Forests was inadequate and flawed, as there was no sound, systematic method identified to evaluate roadless areas as required by law and regulation. In addition, several evaluation criteria were misapplied in assessing wilderness characteristics. The process was inconsistent,

not rigorous, not quantifiable, and not fully transparent. Therefore, there was no way for the public to assess the roadless-area evaluation; it was arbitrary, capricious, and an abuse of discretion.

Suggested resolution: Ideally, a new analysis should be conducted, taking into account all of the suggested changes we propose below. However, in the interest of a timely resolution to the deficiencies in the FEIS and proposed ROD, we have prepared a list of roadless areas that—due to their high degree of wilderness characteristics or lack of non-conforming uses or lack of ecological degradation—are some of the highest-priority areas for recommended wilderness. The current Forest Service analysis almost certainly led to many fewer roadless areas being recommended for wilderness than would be warranted from a consistent, systematic method. Therefore, we describe below wilderness characteristics of nine roadless areas that we suggest should be recommended to Congress for wilderness designation. Recommendation of these areas would satisfy our objections to the deficiencies in the FEIS and proposed ROD.

As noted in our comments on the RDEIS for the Sierra and Sequoia National Forests Revised Land Management Plans, the opportunity to inventory and evaluate wilderness-quality lands is an integral component of the forest planning process and presents a rare opportunity to provide administrative protection to some of the most spectacular and ecologically important undeveloped lands on our national forests. These areas provide our drinking water, habitat for imperiled wildlife, physical, mental, and spiritual renewal for millions of Americans, and a buffer to the impacts of climate change. Thus, we are extremely disappointed to see no change in wilderness recommendations resulting from our extensive comments and recommendations in the RDEIS. In the Draft Record of Decision only one area of 4,906 acres on the Sequoia National Forest is being recommended for wilderness designation and not a single acre is being recommended for wilderness designation on the Sierra National Forest, despite many deserving areas on both forests that, if recommended, would greatly enhance the forests' ecological health and integrity, opportunities for sustainable recreation, and protection of imperiled species, among other social and ecological benefits.

While deserving of wilderness recommendation, the 4,906 acres on the Sequoia NF represent only about 0.58% of the final 841,700-acre inventory of wilderness-quality lands on the Sierra and Sequoia National Forests. By contrast, Alternative C, as currently written, would recommend 466,215 acres across the two forests (about 55% of the final inventory), including many (but not all) of the most deserving areas.

For this section of the objection, we have adopted a formatting convention to identify our previous comments, the Forest Service's responses, and our current reply and suggested resolutions. We have read the Forest Service responses (labeled in ***bold italics***, *text in italics*) to each of our previously submitted comments (referenced directly above the Forest Service responses and indented) and give our replies and suggested resolutions (labeled in ***bold italics***, *text in italics*) in the relevant sections below. The sections follow the same sequence as our previous comments so that you may easily see the link between prior substantive formal

comments that we submitted and our current objections. We have determined whether each of our comments was addressed and, if so, whether the responses were sufficient or violate laws, regulations, or policies. For each concise statement explaining our objection, we suggest how the proposed plan decision may be improved.

For the reasons described below and in our previous comments, we believe that the Final Record of Decision for the revised forest plans

should include at least all areas in Alternative C for recommended wilderness (in addition to the other areas we recommended in our previous comments on the RDEIS) and apply a Backcountry Management Area designation (as in Alternative E) to protect all remaining roadless areas that are not recommended for wilderness protection. (RDEIS comments, p. 41)

Public interest in establish a Backcountry Area management strategy that administratively protects roadless areas has been ignored. At the minimum, if the Forest Service chooses to not incorporate into the Forest Plans a Backcountry Area management allocations that protects roadless and wilderness qualities, than the plans should at the minimum incorporate Roadless Area Conservation Rule protections into the Forest Plans management direction (see subsection D).

***Forest Service response:** These [wilderness] recommendations are consistent with one of the FEIS alternatives; therefore, it is within the decision-making space and could be selected in the decision.*

***Objection and suggested resolution:** While the recommendations in the Draft Record of Decision are consistent with at least one of the FEIS alternatives, we believe that the alternatives were developed, evaluated, and analyzed in violation of laws, regulations, or policies, as described in the sections that follow. Suggestions for improvement are included in each section below.*

A. Background and Regulatory Framework

The 2012 Planning Rule requires forests undergoing a plan revision to “[i]dentify and evaluate lands that may be suitable for inclusion in the National Wilderness Preservation System [NWPS] and determine whether to recommend any such lands for wilderness designation.” 36 C.F.R. § 219.7(c)(2)(v). Chapter 70 of the Forest Service Land Management Planning Handbook (FSH) 1909.12 prescribes a four-step process for doing so: (1) inventory all lands that may be suitable for inclusion in the NWPS based on their size, roadless nature, and lack of improvements that are substantially noticeable in the area as a whole; (2) evaluate the wilderness characteristics of each inventoried area pursuant to the criteria in the Wilderness Act of 1964; (3) analyze a range of alternatives for recommended wilderness in the plan EIS; and (4) decide which areas or portions

of areas to recommend for inclusion in the NWPS. Chapter 70 requires opportunities for public participation “early and during each step of the process.” FSH 1909.12, ch. 70, § 70.61.

Given the myriad ecological and social benefits of wilderness and other highly protected lands, the wilderness recommendation process is a key component of satisfying the substantive requirements of the 2012 planning rule. The overarching purpose of the rule is to provide for the development of plans that:

will guide management of [National Forest System] lands so that they are ecologically sustainable and contribute to social and economic sustainability; consist of ecosystems and watersheds with ecological integrity and diverse plant and animal communities; and have the capacity to provide people and communities with ecosystem services and multiple uses that provide a range of social, economic, and ecological benefits for the present and into the future.

36 C.F.R. § 219.1(c). To accomplish these ecological integrity and sustainability goals, the rule imposes substantive mandates to establish plan components – including standards and guidelines – that maintain or restore healthy aquatic and terrestrial ecosystems, watersheds, and riparian areas; air, water, and soil quality; and the diversity of plant and animal communities, ecosystems, and habitat types. *Id.* §§ 219.8(a)(1)-(3), 219.9. Plans also must provide for sustainable recreation. *Id.* §§ 219.8(b)(2), 219.10(b)(1)(i). The Forest Service must use the best available scientific information to comply with these substantive mandates, *id.* § 219.3, and include in the decision document “[a]n explanation of how the plan components meet [those] requirements, *id.* § 219.14(a)(2).

For areas recommended for wilderness designations, plans must include plan components, including standards and guidelines, “to protect and maintain the ecological and social characteristics that provide the basis for their suitability for wilderness designation.” 36 C.F.R. § 219.10(b)(1). “Any area recommended for wilderness or wilderness study designation is not available for any use or activity that may reduce the wilderness potential of an area.” Forest Service Manual 1923.03(3).

We have provided numerous comment letters and input throughout the wilderness inventory and evaluation process on the Sierra and Sequoia. Our overall view of the process we described in the RDEIS as such:

While the forests’ *inventory* process was rigorous, comprehensive, transparent, and objective, the subsequent *evaluation*, determination of areas to carry forward into the FEIS alternatives, and NEPA analysis have been fraught with problems, as described below. (RDEIS comments, p. 42)

Forest Service response: *These recommendations are general statements and lack the needed substantive context of how the Forest Plans or EIS should be updated.*

Objection and suggested resolution: We gave substantive context and made suggestions about how the Forest Plans or EIS should be updated in the previously submitted RDEIS comments and continue to provide context and suggestions below.

B. The wilderness evaluation and the recommendation process are flawed.

In previous comments, we noted that we were pleased to see that the Forest Service corrected some of its earliest errors in initially identifying only a small proportion of the final wilderness inventory to carry forward for analysis, and that the agency properly adjusted polygon boundaries in some cases (as opposed to excluding entire areas from analysis). *See* RDEIS Appx. B.

In our most recent comments on the RDEIS, however, we noted that the following deficiencies remain:

Appendix B to the RDEIS reveals that the agency misapplied a number of the wilderness evaluation criteria in section 2(c) of the Wilderness Act and section 72 of the Chapter 70 directives to inappropriately exclude areas or portions of areas from analysis in the RDEIS.

The proper evaluation criteria are: (1) apparent naturalness, or the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable; (2) outstanding opportunities for solitude *or* for a primitive and unconfined type of recreation in at least some portion of the unit; (3) whether an area less than 5,000 acres is of sufficient size to make practicable its preservation and use in an unimpaired condition; and (4) the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historical value. 16 U.S.C. § 1131(c); FSH 1909.12, ch. 70, § 72.1. The Chapter 70 directives add a fifth evaluation criterion that is not grounded in the Wilderness Act: the degree to which the area may be managed to preserve its wilderness characteristics, based on the geographic shape and configuration of the area and any governing legal requirements. FSH 1909.12, ch. 70, § 72.1(5). Because the determination of areas to carry forward for analysis must be "[b]ased on the evaluation and input from public participation opportunities," FSH 1909.12, ch. 70, § 73, it is critical that the evaluation criteria are properly applied. (RDEIS comments, p. 43)

Forest Service response: As part of revising the Forest Plans, we identified and evaluated lands that may be suitable for inclusion in the National Wilderness Preservation System. This is a requirement of the 2012 Planning Rule (36 CFR 219.7(c)(2)(v)). We are not designating any wilderness areas through this process; only Congress can take that action.

In appendix B of the FEIS, each analysis polygon identifies which evaluation polygon the analysis polygon was derived from and has a section titled “Summary of factors considered in carrying this area forward for analysis” that lists, in bulleted form, the reasons why each area was carried forward. The summary section also includes tables that articulate the rationale explaining why some areas were not analyzed for recommended wilderness. Taken together, these sections fulfill the requirement in FSH 1909.12.

Objection and suggested resolution: *We understand that the Forest Service does not designate any wilderness areas through this process and that only Congress can take that action; we did not make this claim in our comment letter. This response must pertain to another interested party’s comments and does not apply to ours.*

While we are pleased to see errors corrected in the initial process to bring forward inventoried areas into the analysis phase, there still exists some problems with respect to how areas were eliminated from further analysis. At this stage of the NEPA process, however, we will be focusing our objections on the analysis and recommendation stages, as discussed below.

In our previous comments concerning the initial evaluation and the analysis of inventoried areas that were brought forward, we noted the following deficiencies:

The analysis contained in Appendix B of the RDEIS fails any reasonable test of good science or sound methodology. The methodology is not rigorous, not consistent, not repeatable, not fully transparent, and not quantifiable. The agency produced hundreds of pages of documents yet does not anywhere reveal precisely, or even obtusely, how decisions were made to choose the one area in the preferred alternative over any of the other roadless areas. There is no way that the public can independently verify the process for recommending wilderness areas. We know what factors were considered, but we do not know how those factors were used to make decisions.

For example, there is no ranking system to distinguish one roadless polygon from the next. All decisions were binary; either an area was recommended for wilderness or it was not. There is no quantitative scoring system or even an ordinal system (e.g., high, medium, low as recently utilized for example by the Rio Grande National Forest and the Grand Mesa-Uncompahgre-Gunnison National Forest) of comparison for the factors considered. There isn’t even a threshold given for when a roadless polygon meets the criteria to be recommended as wilderness.

This arbitrariness and lack of rigor is evident in the process to evaluate wilderness characteristics (discussed below) and in the “rationale explaining why some areas were not analyzed for recommended wilderness.” (RDEIS comments, p. 43)

Forest Service response: *As part of revising the Forest Plans, we identified and evaluated lands that may be suitable for inclusion in the National Wilderness Preservation System. This is a*

requirement of the 2012 Planning Rule (36 CFR 219.7(c)(2)(v)). We are not designating any wilderness areas through this process; only Congress can take that action.

In appendix B of the FEIS, each analysis polygon identifies which evaluation polygon the analysis polygon was derived from and has a section titled “Summary of factors considered in carrying this area forward for analysis” that lists, in bulleted form, the reasons why each area was carried forward. The summary section also includes tables that articulate the rationale explaining why some areas were not analyzed for recommended wilderness. Taken together, these sections fulfill the requirement in FSH 1909.12.

Objection and suggested resolution: *As we noted previously, we understand that the Forest Service does not designate any wilderness areas through this process and that only Congress can take that action; we did not make this claim in our comment letter. This response must pertain to another interested party’s comments and does not apply to ours.*

The second part of the Forest Service response is inadequate in addressing the points that we made above. The Forest Service explains how it listed, in bullet form, the reasons why each area was carried forward for analysis. The deficiencies that we identified above, however, also refer to the methods used in the analysis itself and in the process used to decide which inventoried areas to recommend as wilderness. We believe that the decisions about which areas to bring forward for analysis lacked methodological rigor and we also believe that these deficiencies apply to the next stages of the process as well. The “methods” used in analysis and wilderness recommendations, in our estimation, are arbitrary, capricious, and an abuse of discretion under the Administrative Procedures Act and the National Environmental Policy Act. Section 102 A and B of NEPA (42 USC § 4332) requires that the Federal agency “shall utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man’s environment” and “identify and develop methods and procedures...which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations.” We have requested multiple times that the Forest Service utilize and explain the methodology—the systematic, interdisciplinary approach—that you have employed in your analysis to reach your decisions for wilderness recommendation, but we have never received any explanation of quantifiable metrics or repeatable and transparent methodology for arriving at your decisions. The Forest Service has, of course, the discretion to determine what method you use, but it must be systematic, quantifiable, and transparently identified, according to law and regulation.

We suggest that you develop a system and explain how you used that system to analyze polygons and make decisions to recommend inventoried areas for wilderness designation. The Forest Service has already collected information on wilderness characteristics and other factors for each polygon. If you apply a quantifiable, transparent, repeatable methodology to this information, you will be able to make recommendations that the public can independently verify. To date, the method of analysis and decision-making is not available to the public. We believe

that a sound methodology will lead to more areas being recommended as wilderness, as many areas under review have wilderness characteristics equal to or surpassing the one area that was recommended for wilderness in the Draft ROD.

As we noted in our RDEIS comments

there is no indication of how the reasons for *not recommending* a roadless area for wilderness were different from the reasons for *not analyzing* a roadless area; therefore, all of the arguments that we outline below apply equally to the roadless areas that did not advance to the analysis stage of the RDEIS. The wilderness evaluation of areas that were analyzed suffers from inconsistent application of available data. There is no consistent level of detail with respect to all the factors considered. For example, one roadless area may be described as “includ[ing] non-native species,” another area may be described as having “a few invasive species,” and a third may not contain any information at all on invasive or non-native species. Setting aside for now the problem of insufficient detail *about* the invasive species (e.g., what proportion of the roadless area is affected?), one cannot compare the roadless area descriptions that do not mention invasive species with roadless area descriptions that do mention them. The public has no idea if the data were inadvertently omitted, if surveys were conducted in one area but not the other, or if no mention of invasive or non-native species means they do not exist there. This inconsistency of data often leaves one with no basis for “apples to apples” comparison. (RDEIS comments, p. 44)

The Forest Service provided no response to this comment. Again, there is no way that the public can assess the method for analyzing or recommending any given inventory polygon. Any decision based on the (lack of) method that the Forest Service used can only be considered arbitrary until the public is informed of the precise method used. We have raised this issue multiple times including this statement from our previous RDEIS comments:

Overall, it is unclear how the agency made their draft decision whether to recommend an area or not based solely on the presence or absence of activities, features, or wilderness characteristics. The decisions are arbitrary and capricious.

In addition to the lack of methodological rigor and transparent and measurable standards, the RDEIS incorrectly applies the wilderness evaluation regulations in several ways, outlined below. (RDEIS comments, p. 45)

Forest Service response: *As part of revising the Forest Plans, we identified and evaluated lands that may be suitable for inclusion in the National Wilderness Preservation System. This is a requirement of the 2012 Planning Rule (36 CFR 219.7(c)(2)(v)). We are not designating any wilderness areas through this process; only Congress can take that action.*

In appendix B of the FEIS, each analysis polygon identifies which evaluation polygon the analysis polygon was derived from and has a section titled “Summary of factors considered in carrying this area forward for analysis” that lists, in bulleted form, the reasons why each area was carried forward. The summary section also includes tables that articulate the rationale explaining why some areas were not analyzed for recommended wilderness. Taken together, these sections fulfill the requirement in FSH 1909.12.

Objection and suggested resolution: *Again, the response from the Forest Service is inadequate, as it applies to the list of bulleted points that were used to carry forward areas for analysis. This is not the only problem we are raising here. We are interested in gaining clarity about how the agency made their draft decision to recommend as wilderness an inventoried area. Otherwise, the decisions can only be viewed as arbitrary and capricious. We suggest that the Forest Service reveal (or create) the method used to make determinations and recommend new areas based on those methods.*

1. Apparent naturalness versus ecological integrity

We commended the Forest Service for correcting many errors in the draft evaluation narratives, including in the following statement:

The Forest Service appears to have corrected many of the draft evaluation narratives that improperly evaluated the naturalness criterion by focusing in large part on the area’s ecological or historical naturalness or integrity, rather than its *apparent* naturalness, as required under the Wilderness Act and Chapter 70 directives. The evaluation of naturalness must focus on whether the area generally *appears* natural to the average, reasonable visitor who is unfamiliar with the area’s historical or ecological conditions. Chapter 70 makes clear that the agency is to evaluate “[t]he extent to which the area *appears* to reflect ecological conditions that would normally be associated with the area without human intervention” and whether “plant and animal communities *appear* substantially unnatural.” FSH 1909.12, ch. 70, § 72.1(1)(a) & (b). (Emphasis added).

Forest Service response: *These recommendations are general statements and lack the needed substantive context of how the Forest Plans or EIS should be updated.*

We also commented on the changes in language of “apparent naturalness” as follows:

While we appreciate the effort to correct this deficiency in the revised draft evaluation narratives, many of those corrections appear to be largely superficial or semantic. In addition, while the *language* may have been changed in most cases, the *standard* for apparent naturalness is never explained. For instance, polygon 781 (Adjacent to John Muir Wilderness) reads, in its entirety, with respect to apparent naturalness:

Contiguous habitat for fisheries and wildlife species exists within the area. The California Department of Fish and Wildlife stock trout in adjacent waterways. No grazing is currently permitted. Fire suppression has altered vegetation density and composition. Adjacent waterways are stocked with non-native trout. The hydrological regime in the adjacent area is extensively manipulated by the Pacific Gas and Electric hydropower system. Invasive species include bull thistle and woolly mullein. (B-226)

This “evaluation” of the polygon is deficient in several ways. Most importantly, not once does the description mention how the area *appears to the average visitor*—an astonishing oversight given that this should be the heart of the evaluation standard. Despite the shift in terminology from “natural conditions” to “apparent naturalness” in some descriptions, there is still no indication here of how the putative presence or absence of naturalness affects how the area would be perceived by the average visitor. In addition, there is no mention of the *degree* to which an area appears affected primarily by the forces of nature. We know that invasive species “include” bull thistle and woolly mullein, but we have no idea to what degree. Is it one plant? Five percent of the polygon? The entire polygon? And finally, the description includes a mention of the stocking of non-native trout in “adjacent waterways.” What occurs outside of the polygon, with respect to apparent naturalness, is not relevant for this evaluation criterion. (RDEIS comments, p. 46)

Forest Service response: *Changes were made to the Forest Plans, EIS, and/or other planning documents in response to these recommendations.*

Objection and suggested resolution: *This response is inadequate. The Forest Service has not indicated what changes were made to the Forest Plans, EIS, and/or other planning documents in response to these recommendations. We looked at the “detailed” description of polygon 781 to see what changes, if any, were made and discovered that none of the major issues we brought up above were addressed. There is no indication here of how the putative presence or absence of naturalness affects how the area would be perceived by the average visitor. There is no mention of the degree to which an area appears affected primarily by the forces of nature. We know that invasive species “include” bull thistle and woolly mullein, but we have no idea to what degree. Is it one plant? Five percent of the polygon? The entire polygon? And finally, the description still includes a mention of the stocking of non-native trout in “adjacent waterways.” What occurs outside of the polygon, with respect to apparent naturalness, is not relevant for this evaluation criterion.*

We suggest that you develop a system and explain how you used that system to analyze polygons and make decisions to recommend inventoried areas for wilderness designation. The Forest Service has already collected information on wilderness characteristics and other factors for each polygon. If you apply a quantifiable, transparent, repeatable methodology to this information, you will be able to make recommendations that the public can independently verify. To date, the method of analysis and decision-making is not available to the public. We believe

that a sound methodology will lead to more areas being recommended as wilderness, as many areas under review have wilderness characteristics equal to or surpassing the one area that was recommended for wilderness in the Draft ROD.

We also noted the following deficiency in our previous comments:

While the Forest Service appears to have diligently scrubbed the final evaluation narratives of the term “ecological integrity” and replaced it with terms evoking “apparent naturalness,” it is still unclear in most cases how ecological conditions *appear* to the average visitor in a significant number of the descriptions of the areas analyzed for recommended wilderness in the RDEIS. To the extent that apparent naturalness *was* a factor, the Forest Service must make that clear to the public and describe *how* the area appears to the average visitor and *to what degree* it appears natural or unnatural. Simply listing items without any metrics or evaluation is clearly deficient.

Forest Service response: *Evaluation of apparent naturalness is discussed in the analysis section of appendix B. No areas were excluded from analysis based solely on lack of apparent naturalness. For example, see the explanation in appendix B of the FEIS for why polygon 781 was not carried forward for analysis. Also, compare the description of apparent naturalness for Slate Mountain (Polygon 160) in the evaluation and the analysis.*

Objection and suggested resolution: *This response is inadequate. Our comment was about how apparent naturalness was analyzed when determining recommendations for wilderness, not solely about whether apparent naturalness affected whether a polygon was carried forward for analysis. The discussion of apparent naturalness in the analysis section of appendix B is insufficient and vague, consisting only of this as explanation of methodology: “Forest supervisors considered whether human modification (for example, mining operations, plantations) to the area were substantially noticeable. Areas where human modifications were substantially noticeable and adversely affected the appearance of naturalness were not carried forward. Again, there is no mention a method or quantifiable data with respect to human modification.*

We suggest that you develop a system and explain how you used that system to analyze polygons and make decisions to recommend inventoried areas for wilderness designation. The Forest Service has already collected information on wilderness characteristics and other factors for each polygon. If you apply a quantifiable, transparent, repeatable methodology to this information, you will be able to make recommendations that the public can independently verify. To date, the method of analysis and decision-making is not available to the public. We believe that a sound methodology will lead to more areas being recommended as wilderness, as many areas under review have wilderness characteristics equal to or surpassing the one area that was recommended for wilderness in the Draft ROD.

3. Consideration of human activities and improvements

We expressed concern in our RDEIS comments about how the Forest Service was interpreting statements about human activities and improvements and whether the correct standards were being applied:

Many of the final evaluation narratives still improperly rely on the presence of past or current human activities or improvements – such as mining, grazing, fish stocking, restoration activities, timber harvest, recreation developments, historic sites, or wildlife improvements – when evaluating naturalness. The relevant inquiry, however, is not the presence of these activities or improvements, but rather their effect on the area’s apparent naturalness, as judged by the average visitor. FSH 1909.12, ch. 70, § 72.1(1)(c) (“Consider such factors as . . . [t]he extent to which improvements included in the area . . . represent a departure from apparent naturalness.”). Areas need not be pristine or untouched to be suitable for wilderness designation, and an area may include any number of past or present activities or improvements – as long as they are substantially unnoticeable.⁴

Yet statements about the mere presence of grazing or restoration activities, among other examples, still pervade many of the narratives without an evaluation of how those activities or improvements affect the areas’ apparent naturalness. Numerous narratives mention the presence of historic and current grazing. For instance, the narrative for Soaproot (Polygon 357) on the Sierra NF mentions an active allotment in which a corral, fencing, and salt blocks are present, but does not evaluate the effect of that activity and infrastructure on the area’s apparent naturalness. (RDEIS Appx. B at 212). It is unclear whether grazing influenced the determination to exclude Soaproot from wilderness recommendation. Grazing and associated infrastructure is permissible and commonplace throughout many designated and recommended wilderness areas in western national forests.⁵

Forest Service response: Appendix B has been updated to explain that Polygon 357 (Soaproot) was not carried forward for analysis because of fuel breaks and PG&E lines present, as well as a motorized trail under special use permit within the polygon and impacts from sights and sounds of roads near the boundaries. It was not excluded based on impacts of grazing on apparent naturalness.

⁴ See Wilderness Evaluation Process Paper, Attachment B: Guidance for Consideration of Evaluated Areas for Recommendation in an Alternative, at 1 (listing numerous types of activities and improvements that may be included in recommended wilderness areas).

⁵ Congressional grazing guidelines provide that: (1) “[t]he maintenance of supporting facilities, existing in the area prior to its classification as wilderness (including fences, line cabins, water wells and lines, stock tanks, etc.), is permissible in wilderness,” and (2) “[t]he placement or reconstruction of deteriorated facilities or improvements should not be required to be accomplished using ‘natural materials.’” Forest Service Manual 2323.22 - Exhibit 01.

Polygon 772 was mostly included in Alternative C and E of the RDEIS. Deficiencies in the evaluation of apparent naturalness are discussed in the analysis section. Descriptions of naturalness are more specific in the analysis narratives.

Decisions about which areas to recommend as wilderness are to be based on “analysis disclosed in the applicable NEPA document [Environmental Consequences and Appendix B] and input received during public participation” (FSH 1909.12, Chapter 70, section 74). Forest supervisors weigh the tradeoffs involved in proposed management and document their rationale in the record of decision. The analysis in and of itself (including any quantitative factors, scoring, or ranking) does not lead to a purely objective outcome, where the “Best/most wilderness characteristics” are recommended, Forest supervisors use professional judgment for these determinations.

Objection and suggested resolution: *Thank you for clarifying that Polygon 357 (Soaproot) was not carried forward for analysis because of fuel breaks and PG&E lines present, as well as a motorized trail under special use permit within the polygon and impacts from sights and sounds of roads near the boundaries and that it was not excluded based on impacts of grazing on apparent naturalness. However, for the polygons that **were** analyzed for wilderness recommendation, we still do not know which factors led to an area not being recommended for wilderness, not do we know anything about the methodology used to evaluate areas so that the Forest Supervisor may decide which would be recommended as wilderness. The methodology (or lack thereof) is not rigorous, not consistent, not repeatable, not fully transparent, and not quantifiable. The agency produced hundreds of pages of documents yet does not anywhere reveal precisely, or even obtusely, how decisions were made to choose the one area in the preferred alternative over any of the other roadless areas. There is no way that the public can independently verify the process for recommending wilderness areas. We know what factors were considered, but we do not know how those factors were used to make decisions.*

For example, there is no ranking system to distinguish one roadless polygon from the next. All decisions were binary; either an area was recommended for wilderness, or it was not. There is no quantitative scoring system or even an ordinal system (e.g., high, medium, low as recently utilized for example by the Rio Grande National Forest and the Grand Mesa-Uncompahgre-Gunnison National Forest) of comparison for the factors considered. There isn't even a threshold given for when a roadless polygon meets the criteria to be recommended as wilderness.

The Forest Service response claims that “the analysis in and of itself (including any quantitative factors, scoring, or ranking) does not lead to a purely objective outcome, where the ‘Best/most wilderness characteristics’ are recommended, Forest supervisors use professional judgment for these determinations.” There are two problems with this statement. First there was no analysis that included any quantitative factors, scoring, or ranking whereby one could assess “best/most wilderness characteristics.” That would have been helpful and is why it is required by law. Second, the statement that “Forest supervisors use professional judgment for these

determinations” is valid only if the method, data, or rationale that he or she used is revealed to a degree that it could be understood or repeated by members of the public. “Professional judgment” without a clear and sufficient explanation of the methodology for making the decision is the definition of arbitrary. We understand that the Forest supervisor can address tradeoffs in explaining the rationale for decisions—if the tradeoffs and rationale are clearly stated. We discuss this in more detail in the next set of responses below.

We suggest that you develop a system and explain how you used that system to analyze polygons and make decisions to recommend inventoried areas for wilderness designation. The Forest Service has already collected information on wilderness characteristics and other factors for each polygon. If you apply a quantifiable, transparent, repeatable methodology to this information, you will be able to make recommendations that the public can independently verify. To date, the method of analysis and decision-making is not available to the public. We believe that a sound methodology will lead to more areas being recommended as wilderness, as many areas under review have wilderness characteristics equal to or surpassing the one area that was recommended for wilderness in the Draft ROD.

4. Opportunities for solitude *or* primitive and unconfined recreation

We pointed out in our RDEIS comments that the Forest Service has often in the past improperly conflated the criterion that an area has *either* outstanding opportunities for solitude *or* primitive and unconfined recreation. Both the plain language of the Wilderness Act, 16 U.S.C. § 1131(c)(2), and the Chapter 70 directives make clear that this is an either/or criterion: “an area only has to possess one or the other” and “does not have to possess outstanding opportunities for both elements, nor does it need to possess outstanding opportunities on every acre.” FSH 1909.12, ch. 70, § 72.1(2). Thus, the evaluation must consider them separately and cannot aggregate, average, or otherwise conflate the two. Specifically, we noted the following:

Unfortunately, while the Forest Service has been diligent in now using the “either/or” language for this evaluation criterion in the evaluation subheadings, the agency continues to conflate the two in the narratives. The majority of rationales for areas not recommended as wilderness state that “opportunities for solitude or primitive and unconfined recreation are limited” (often due to the presence of motorized uses within or adjacent to the polygon, as addressed in detail in subsections 4-6, below). This language – which serves as the primary rationale for excluding most of the areas not recommended – suggests that opportunities for one or the other (but not both) are limited, meaning that the area should not be disqualified. Instead, opportunities for both solitude *and* primitive and unconfined recreation would have to be limited throughout the unit to disqualify it. [If a polygon must have opportunities for either solitude *or* primitive recreation to qualify as wilderness, then one must find that *both* factors are absent to disqualify an area]. To the extent the Forest Service meant to express the latter, its evaluation does not support such a finding. For instance, the sort of pervasive outside sights and sounds that might limit opportunities for solitude (see subsection 4, below) do not impact whether portions

of the unit have outstanding opportunities for primitive and unconfined types of recreation.

Forest Service response: *The Forest Service revised the evaluation narratives in Appendix B to specifically remove text that implied that motorized use, other activities, sights and sounds that limit opportunities for solitude also limit opportunities for primitive and unconfined recreation. As a result, the evaluation no longer conflates the analysis of opportunities for solitude and primitive and unconfined recreation.*

Tables B-6 and B-7 of Appendix B do not provide rationales for areas not recommended as wilderness, but rather these tables provide rationale for explaining why some areas were not analyzed for recommended wilderness. Rationales for why areas are not recommended as wilderness are not provided in the DEIS or appendices, instead they will be provided in the record of decision, per FSH 1909.12, Chapter 70.

The statement that “opportunities for both solitude and primitive and unconfined recreation would have to be limited throughout the unit to disqualify it,” is not correct. An area need not lack both opportunities for solitude and opportunities for primitive and unconfined recreation throughout the unit.

There are no requirements for carrying forward areas for analysis because they possess one or more wilderness characteristics. Virtually all areas in the inventory possess at least one wilderness characteristic and most polygons offer opportunities for primitive and unconfined recreation in at least part of the polygon, but this does not mean that such polygons must be carried forward for analysis. The only requirement is that “the responsible official shall document the reason for excluding it from further analysis” FSH 1901.12, Chapter 70, Section 73. The responsible official may choose to carry forward or not carry forward any area from evaluation to analysis, as long as they provide the reason. There are no criteria in FSH 1909.12, Chapter 70 for valid reasons.

It was not the Forest Service’s intent to express that areas not carried forward for analysis as recommended wilderness lack both opportunities for solitude and opportunities for primitive and unconfined recreation. It is not correct to state that areas were not carried forward for analysis because they lacked opportunities for primitive recreation.

Objection and suggested resolution: *We are gratified to read that “the evaluation no longer conflates the analysis of opportunities for solitude and primitive and unconfined recreation.” It is surprising, however, that fixing the conflation of opportunities for solitude and primitive recreation did not result in a single area being added to areas recommended for wilderness. In fact, for all of the “fixes” that the Forest Service has made to the so-called analysis, there has been no change in the decision. Given that there is no transparent methodology for the decision, the public could be excused for thinking that the decision to recommend only one area for*

wilderness designation was pre-ordained and that the analysis was merely a post-hoc justification for that decision.

Nevertheless, the Forest Service notes that “the statement that ‘opportunities for both solitude and primitive and unconfined recreation would have to be limited throughout the unit to disqualify it,’ is not correct. An area need not lack both opportunities for solitude and opportunities for primitive and unconfined recreation throughout the unit.” We disagree. The proper evaluation criterion is “outstanding opportunities for solitude **or** for a primitive and unconfined type of recreation **in at least some portion of the unit.**”

The Forest Service states that “rationales for why areas are not recommended as wilderness are **not** provided in the DEIS or appendices, instead they will be provided in the record of decision, per FSH 1909.12, Chapter 70.” We consulted the Draft Record of Decision for the Sierra NF and found only a one-paragraph statement that gave the rationale for why no areas were recommended as wilderness. In its entirety:

“I carefully considered tradeoffs and input on managing areas as recommended wilderness and managing them as other land allocations. Tradeoffs include restrictions on fuels management, wildland fire management, post-fire recovery, and climate change resilience activities. I believe such uses and options for future uses and management provide valuable contributions to the multiple use mission of the Forest Service and should continue. In this decision, my aim is to ensure that the Sierra provides access for a wide range of recreation experiences including all anticipated types of uses and number of users, while integrating values related to wilderness with the other values and benefits the Sierra provides.”

The Forest Supervisor addresses here only one side of the balance of tradeoffs (restrictions under a wilderness designation) and not all of the benefits of wilderness, which brings into high relief how inadequate the assessment of tradeoffs was. Any discussion of tradeoffs should address the counter-balancing arguments found in the overarching purpose of the 2012 planning rule, such as ecological integrity, ecological sustainability, and viability of diverse plant and animal populations that may be aided by wilderness recommendations and more protective management. We believe that the wilderness recommendation process—an important component of forest planning—should merit more explanation and systematic review than a single paragraph that addresses merely one side of the balance of the issue. In addition, what is the point of including hundreds of pages of “analysis” of apparent naturalness, outstanding opportunities for solitude or primitive and unconfined recreation, and human activities and improvements if the decision to recommend wilderness areas is not based on any of those factors?

We suggest that you develop a system and explain how you used that system to analyze polygons and make decisions to recommend inventoried areas for wilderness designation. The Forest Service has already collected information on wilderness characteristics and other factors for each polygon. If you apply a quantifiable, transparent, repeatable methodology to this

information, you will be able to make recommendations that the public can independently verify. To date, the method of analysis and decision-making is not available to the public. We believe that a sound methodology will lead to more areas being recommended as wilderness, as many areas under review have wilderness characteristics equal to or surpassing the one area that was recommended for wilderness in the Draft ROD.

We provided some specific examples in our RDEIS comments, such as:

For example, over 37,000 acres of potential additions to the Ansel Adams Wilderness (polygon 819) were deemed unsuitable for wilderness due (ostensibly; it is difficult to tell with certainty given the lack of a written methodology) to “limited” opportunities for solitude *or* primitive and unconfined recreation.

Opportunities for solitude or primitive and unconfined recreation are limited in the area with unauthorized motorized trails; sights and sounds penetrate this small area. (B-234)

There are four problems with this statement.

1. Outside sights and sounds must be “pervasive” to disqualify an area from wilderness recommendation (see section 4 below).
2. Even if sights and sounds are pervasive in one area, that fact does not disqualify the entire polygon (in this case, the area in question is “small”).
3. Even if outside sights and sounds are pervasive *and* penetrate the entire polygon, the polygon is not necessarily disqualified, because it must have *either* the opportunity for solitude *or* the opportunity for primitive and unconfined recreation.
4. The statement links sights and sounds to both solitude *and* primitive recreation without any justification why primitive recreation is impacted by sights and sounds.

The same polygon (819) description states that “primitive recreation includes hiking and horseback riding on a few infrequently maintained trails.” That statement implies that there is, in fact, opportunity for primitive and unconfined recreation. If that is not the case, the description must make clear precisely why.

The evaluation narrative for this polygon improperly lumps opportunities for solitude with opportunities for primitive and unconfined recreation, and neither explains how nor why the presence and use of unauthorized motorized trails in certain portions of the polygon limit *both* opportunities for solitude *and* opportunities for primitive and unconfined recreation throughout the entire polygon. Indeed, the narrative suggests that outstanding opportunities for both exist in portions of the polygon. Nor did the Forest Service attempt to adjust the polygon boundary to exclude the areas it believes are disqualifying; instead, they disqualified the entire 37,000 acres – the majority of which are entirely free of motorized uses or their sounds.

Forest Service response: *Same as above.*

Objection and suggested resolution: *The remaining responses to each of our RDEIS comments (indented below) are the same as the above comment. Therefore, we refer the Forest Service to the objections and improvements that we have stated above.*

In addressing the previous issue of conflating of opportunities for solitude or primitive recreation, the Forest Service stated that they “revised the evaluation narratives in Appendix B to specifically remove text that implied that motorized use, other activities, sights and sounds that limit opportunities for solitude also limit opportunities for primitive and unconfined recreation.” This would mean that any motorized use, outside sights and sounds, and any other activities would not disqualify an area in terms of opportunities for primitive and unconfined recreation. Yet, once again, the resulting recommendation for wilderness did not change in the Draft ROD. We need to know how that major change in analysis did not result in any change in the decision.

There are several issues that we bring up below that the Forest Service does not address in their comments above. We consider these to be insufficiently addressed. The suggested remedy, however, is similar: provide a better accounting of the methodology used and employ it to recommend more areas to the wilderness system.

5. Outside sights and sounds

We repeat our arguments from the RDEIS here for reference, aware that the Forest Service claims it fixed the conflation problem. There are other issues we raise here that are not addressed, however.

The Forest Service appears to have disqualified numerous areas due to the improper consideration of outside sights and sounds – often related to motorized activity on roads or trails outside the polygon. Outside sights and sounds are relevant to the evaluation of opportunities for solitude only to the extent that they are “pervasive and influence a visitor’s opportunity for solitude” throughout the unit. FSH 1909.12, ch. 70, § 72.1(2)(a).⁶ While many of the narratives refer to “pervasive” motorized use (inside and/or outside the unit), the narratives generally lack an evaluation of whether the sights and sounds originating from that use are themselves pervasive and how they influence a visitor’s opportunity for solitude throughout the unit. Instead, many of the narratives make the unsupported conclusion that sights and sounds “would likely penetrate throughout much of the polygon.” None of the assertions are supported by empirical data, models of noise attenuation, or surveys from within the roadless polygons. The rationales for areas not carried forward for analysis repeat these same errors.

⁶ See also Bureau of Land Management Manual (BLM) 6310.06(C)(2)(c)(i)(1) (“Only consider the impacts of sights and sounds from outside the inventory area on the opportunity for solitude if these impacts are pervasive and omnipresent.”).

Of particular concern is the fact that many narratives and rationales rely on sights or sounds associated with motorized use of the roads that necessarily define the boundaries of the polygon, or are cherry-stemmed, to disqualify all or portions of the unit. Many designated wilderness areas, however, are closely bordered by high-traffic roads. For example, California State Route 120 bisects the Yosemite Wilderness in Yosemite National Park. This two-lane, paved expressway with a 50-m.p.h. speed limit and an average annual daily traffic count of 2,450 vehicles at Tioga Pass is buffered from the Yosemite Wilderness by less than 0.05 miles. California State Route 108, another two-lane, paved expressway, runs along the Emigrant Wilderness in the Stanislaus National Forest with an average annual daily traffic count of 630 vehicles at the Tuolumne/Mono County line, yet is only 0.25 miles from the wilderness boundary.⁷ This situation is ubiquitous throughout designated wilderness in California and around the country.⁸ If Congress saw fit to use these highways and other major thoroughfares as wilderness boundaries, we do not see how, especially in the absence of real data, the Forest Service can justify the claim that the noise caused by lesser roads or even motorized trails can create a “pervasive” loss of wilderness values across large, rugged, and usually trackless landscapes.

Disqualifying an area based on outside sights and sounds is also contrary to longstanding direction from Congress. For instance, during subcommittee hearings on the 1978 Endangered American Wilderness Act, Congress found that:

[M]any areas, including the Lone Peak [outside Salt Lake City] ..., received lower wilderness quality ratings because the Forest Service implemented a “sights and sounds” doctrine which subtracted points in areas where the sights and sounds of nearby cities (often many miles away) could be perceived from anywhere within the area. This eliminated many areas near population centers and has denied a potential nearby high quality wilderness experience to many metropolitan residents, and is inconsistent with Congress’ goal of creating parks and locating wilderness areas in close proximity to population centers. The

⁷ 2014 *Traffic Volumes on the California State Highway System*. State of California, California State Transportation Agency, Department of Transportation, Division of Traffic Operations, Sacramento, CA 95814. Prepared in Cooperation with the U.S. Department of Transportation, Federal Highway Administration.

⁸ Other examples from the Sierra Nevada include the Ansel Adams Wilderness (bordered by Kaiser Pass Road and Edison Lake Road), Hoover Wilderness (bordered by Highway 120), Mokelumne Wilderness (bordered by Highway 4 and Blue Lakes Road), Carson-Iceberg Wilderness (bordered by Highway 4 and Highland Lakes Road), John Muir Wilderness (bordered by Rock Creek Road, Pine Creek Road, Horton Creek Road, Bishop Bowl Road, Highway 168, Onion Valley Road, Horseshoe Meadows Road and Florence Lake Road), John Krebs Wilderness (bordered by Mineral King Road), Sequoia-Kings Canyon Wilderness (bordered by the Generals Highway), Yosemite Wilderness (in addition to Highway 120, mentioned above, it is also bordered by Evergreen Road, Tioga Road, Oak Flat Road, Glacier Point Road, Wawona Road and Mariposa Grove Road), Kaiser Wilderness (adjoins Kaiser Loop Road and Kaiser Pass Road), Monarch Wilderness (bordered by Highway 180), Sacatar Trail Wilderness (adjacent to Nine Mile Canyon Road), Owens Peak Wilderness (bordered by Kennedy Meadows Road, Sherman Pass Road and Highway 178), Kiavah Wilderness (bordered by Highway 178 and South Kelso Valley Road) and the Domeland Wilderness (bordered by Kennedy Meadows Road).

committee is therefore in emphatic support of the Administration's decision to immediately discontinue this "sights and sounds" doctrine.

H.R. Rep. No. 95-540, at 5 (1977). During Senate hearings on the same Act, then Assistant Secretary of Agriculture assured Congress that "there is no reference in the Wilderness Act to criteria for wilderness that includes such things as the sights, sounds, and smells of civilization which is a set of criteria which has been misapplied to wilderness areas." Hearings on S. 1180 before the Subcomm. On Parks and Recreation of the S. Comm. on Energy and Nat. Res., 95th Cong. At 41 (1977) (Statement of M. Rupert Cutler, Assistant Sec., U.S. Dep't of Agric.).

In summary, we made this suggestion in our RDEIS comments:

Thus, the Forest Service bears a high burden to show that outside sights or sounds are in fact pervasive and limit a visitor's opportunity to experience solitude throughout the unit. And even where the agency can meet that high burden, it must also show that the area *also* fails to possess outstanding opportunities for primitive and unconfined recreation prior to disqualifying the unit. The information in Appendix B to the RDEIS does not come close to demonstrating that the Forest Service has satisfied that burden. Unfortunately, improper consideration of sights and sounds is the most frequently cited rationale by the Forest Service for not recommending some of our highest-priority areas for recommended wilderness in Alternative C, including the Golden Trout additions (Polygon 1387), Oat Mountain (Polygon 227), Bright Star additions (Polygon 1426), Soaproot (Polygon 357), and Cat's Head (Polygon 304).

Forest Service response: *Same as above.*

6. Consideration of motorized uses

The first issued we raised in our RDEIS comments have been responded to (if not remedied in the analysis):

The Forest Service's treatment of authorized motorized uses throughout the evaluation and determination of areas to carry forward for analysis and areas to recommend as wilderness has been deeply flawed, as we have repeatedly pointed out. The primary rationales for this blanket exclusion of areas with motorized trails appears to be that the presence of the motorized uses within the unit limit "opportunities for solitude or primitive and unconfined recreation" and/or would frustrate management of the unit as recommended wilderness. Both of these rationales are faulty.

Forest Service response: *Same as above.*

The point we make in the following paragraph, however, was not addressed in the FEIS or Draft ROD:

First, the presence of authorized motorized activity in an area does not necessarily impede its wilderness character. Indeed, Congress, the Forest Service, and other agencies have routinely determined that areas with authorized motorized activity possess wilderness characteristics and managed them to maintain their suitability for inclusion in the NWPS.⁹

The first and second paragraphs that follow we have covered above, but issue in the third paragraph has not been responded to by the Forest Service.

Second, as described in subsections 3 and 4, above, the Forest Service has not demonstrated how or why the presence of motorized uses degrades *both* opportunities for solitude *and* primitive and unconfined types of recreation throughout the entire unit.

In many instances, the Forest Service appears to have disqualified areas or large portions of areas due to the presence of only a handful of motorized trails and without making the requisite showing of how that use would affect a visitor's ability to experience solitude elsewhere, taking into account factors such as topography, presence of screening, and distance from impacts. *See* FSH 1909.12, ch. 70, § 72.1(2)(a). Importantly, as with outside sights or sounds, impacts originating within the unit must be "pervasive and influence a visitor's opportunity for solitude" throughout the area. *Id.* Moreover, authorized motorized uses within a unit are irrelevant to whether there are opportunities to engage in primitive and unconfined recreational activities "that lead to a visitor's ability to feel a part of nature." *See id.* § 72.1(2)(b).

Third, as described in detail in subsection 6, below, the presence of motorized uses is not a proper manageability consideration at the evaluation stage. Instead, consideration of how to balance motorized recreational opportunities with protection of wilderness values is a management trade-off that should be analyzed in the RDEIS.

Forest Service response: Same as above.

The Forest Service did not address the following issue concerning subpart A of Travel Analysis.

⁹ *See, e.g.,* Public Law No. 96-550, § 103, 94 Stat. 3221 (Dec. 19, 1980) (designating six wilderness study areas in New Mexico National Forests to be managed "to maintain their presently existing wilderness character and potential for inclusion in the [NWPS]: *Provided, [t]hat . . . current levels of motorized . . . uses . . . shall be permitted to continue subject to . . . reasonable rules and regulations*"); Payette National Forest, Land and Resource Management Plan, ROD-9, III-74, III-82 (2003), *available at* <http://www.fs.usda.gov/detail/payette/landmanagement/planning/?cid=stelprdb5035589> (recommending over 200,000 acres for wilderness designation and permitting existing motorized uses to continue in those areas unless it degrades wilderness values or causes resource damage or user conflicts); BLM Manual 6320.06(A)(2)(d)(v) (BLM-identified Lands with Wilderness Characteristics may include motorized uses on designated routes); BLM, Little Snake Field Office, Record of Decision and Approved Resources Management Plan at 33 (Oct. 2011), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/co/field_offices/little_snake_field/rmp_revision/rod.Par.83246.File.dat/01_LS-ROD_Approved-RMP.pdf (motorized activity permitted on designated roads and trails within Lands with Wilderness Characteristics).

Finally, we are deeply concerned that portions of polygons containing system roads identified as “likely not needed” in the Sequoia’s Travel Analysis Process that are currently open to public use were, as a blanket matter, not carried forward. This appears to have affected a large number of areas and significant acreage.¹⁰ This approach is contrary to the language and intent of Forest Service laws, policies, and objectives aimed at restoring roaded areas to a more ecologically and fiscally sustainable condition. The travel analysis process under subpart A of the Forest Service travel management regulations is a key component of the agency’s restoration agenda.

Forest Service response: Same as above.

Recognizing the significant ecological and fiscal liabilities associated with the current, unsustainable forest road system, subpart A directs the Forest Service to identify the “minimum road system needed for safe and efficient travel and for administration, utilization and protection of National Forest System lands,” as well as roads “that are no longer needed to meet forest resource management objectives and that, therefore, should be decommissioned or considered for other uses, such as for trails.” 36 C.F.R. § 212.5(b). As a first step in achieving compliance with this regulation, forests were required by the end of fiscal year 2015 to conduct a science-based analysis (referred to as a travel analysis report) of their road system that includes recommendations for roads likely not needed for future use. March 29, 2012 Memorandum from Leslie Weldon to Regional Foresters *et al.* Re Implementation of 36 CFR 212.5(b). As the Forest Service properly recognized when promulgating the Chapter 70 directives, roads identified in a travel analysis report as likely unneeded do not disqualify an area from the wilderness inventory and evaluation. FSH 1909.12, ch. 70, § 71.22a(1)(b). This provision is specifically aimed at ML2 or greater roads (since areas with ML1 roads are already included in the inventory under section 71.22a(1)(a)) that might otherwise be disqualifying, but will likely be decommissioned or converted in the future, thereby restoring the affected area to a roadless condition. While the Sequoia National Forest properly applied this criterion when conducting its inventory, the blanket determination not to analyze areas including such roads in the RDEIS undermines the whole intention behind linking the travel analysis process to the Chapter 70 process – as well as the Forest Service’s broader restoration agenda.

While we appreciate that the relevant roads are currently open to public use on the forest’s Motor Vehicle Use Map, that in no way precludes consideration of those areas as recommended wilderness. Travel management decisions must be periodically revisited to meet changing conditions and ensure consistency with the governing land management plan. 36 C.F.R. §§ 212.54, 212.57, 219.15. And the forest plan revision is the appropriate place to take a high-level look at restoration needs and objectives related to roads. More specifically, the RDEIS is the appropriate place to weigh the tradeoffs associated with permitting ongoing public use of roads identified through a rigorous, scientific analysis as likely unneeded because they pose a high risk

and/or have low benefit, versus restoring the affected area to a more ecologically and fiscally sustainable condition and managing it to protect its wilderness characteristics. Should the agency decide to pursue a restoration and wilderness protection strategy in some of the affected areas, it can then revisit any preexisting travel management decisions to ensure consistency with forest plan direction. *See* 36 C.F.R. § 219.15(e) (“[Travel management] plans developed prior to plan decision must be evaluated for consistency with the plan and amended if necessary.”). But by failing to carry forward any of these areas into the RDEIS, the Forest Service has prematurely precluded that important opportunity.

C. Wilderness Areas That Should be Recommended in the Final plans

Out of a final 841,700-acre inventory of wilderness quality lands, it is truly disappointing that the Final Plans include in the preferred alternative only one wilderness recommendation – a modest 4,906-acre addition to the Monarch Wilderness on the Sequoia Forest. No wilderness was recommended on the Sierra Forest.

CalWild and others spent considerable effort reviewing potential wilderness boundaries for possible conflicts with non-wilderness uses and consulting with stakeholders in local communities. Consequently, we identified our top wilderness recommendations for both Forests with boundary adjustments. But we can find no evidence in the Final Plans/FEIS that our boundary adjustments were ever considered. Indeed, the Forest Service hasn’t taken the time to fix a boundary error that we have been pointing out since December 2015 – the clearly mistaken inclusion of the motorized Cannell Meadow National Recreation Trail within the roadless area boundary for what became the Domeland West Wilderness Addition under Alt. C.

We recall that a Forest Service official at the first public meeting for the planning process in Clovis, CA, shared his opinion that the Sierra Forest already had “enough” wilderness. It is understandable that many public members don’t believe that public comments make a difference when presented with this pre-decisional bias. However, we do believe that substantive and detailed comments based on science and on the ground reality can make a qualitative difference in the seeming intractable debate about wilderness.

We avoided getting involved in debates about how much wilderness is enough or whether wilderness limits fuels work and increase wildfire danger. We are committed to encouraging the Forest Service to always use the minimum tool test – whether it is to determine how to treat wildfire fuels in wilderness without harming its roadless qualities or how to maintain trails in wilderness with limited funds and personnel. Reasonable people can always find ways to solve these problems.

We concentrated on fixing the problems we could fix, like adjusting boundaries to avoid existing roads and development, legal mountain bike and motorized trails, and popular rock climbing areas with fixed safety routes. To accomplish this, we consulted with local residents and trail users, as well as with organized interests such as the Outdoor Alliance, and we conducted

targeted field work. As a result, we compiled a list of 9 potential recommended wilderness areas that include a wide range of ecosystems and primitive outdoor recreation opportunities and avoids conflicts with non-wilderness uses.

Suggested resolution: Adopt the following high priority wilderness recommendations in the Sierra and Sequoia forest plans.

Devil Gulch-Ferguson Ridge Wilderness (South Fork Merced River) – This 46,298-acre wilderness proposal on the Sierra Forest is one of the largest and undeveloped low elevation wild places in the Sierra Nevada. The South Fork Merced Wild and Scenic River (WSR) flows through the proposed Wilderness and its roadless qualities help protect the river's biotic integrity and its state-designated Wild Trout Waters. Protection of the area would facilitate the migration of species in response to climate change from the Sierra foothills into Yosemite National Park. The area provides habitat for Pacific fisher, western pond turtle, California spotted owl, and great gray owl and it supports sensitive plants and a rare example of an undisturbed Ponderosa pine forest. Leading into the heart of the area, the Hite Cove Trail along the South Fork is a popular spring wildflower destination. Boundaries were adjusted to avoid existing roads, fuel breaks, motorized trails, and private inholdings. The boundaries are best represented in the Devil Gulch-Ferguson Ridge Recommended Wilderness Map for Alt. E.

Ansel Adams – Mt. Raymond Wilderness Addition – This 9,117-acre addition to the Ansel Adams Wilderness on the Sierra Forest is also directly adjacent to Yosemite National Park and encompasses the south bank of more than four miles of the South Fork Merced Wild and Scenic River. A primary purpose of this proposal is to protect the South Fork's biotic integrity, as well as the exposed underbelly of Yosemite National Park. Segments of Iron and Grizzly Creeks flow through the area into the South Fork. Old growth mixed conifer forests, meadows, streams and lake systems represent intact ecosystems that support California spotted owl, Yosemite toad and Sierra yellow-legged frog. Opportunities for solitude and primitive recreation abound, including the Iron Creek, Grizzly Creek, and Chiquito Pass Trails, which lead through the proposed wilderness to the South Fork and Yosemite Park. Boundaries were adjusted to avoid roads, motorized trails, and private inholdings. These boundaries are best represented in the Ansel Adams Mt. Raymond Additions 1 Alt. C map.

Bear Mountain Wilderness (Potential Dinkey Lakes Addition) – This 9,245-acre proposed wilderness on the Sierra Forest is adjacent to the existing Dinkey Lakes Wilderness, but separated from the wilderness by a wide corridor that includes the Swamp OHV Route. Elevations range from 6,000 feet to the 9,526-foot-high peak of Bear Mountain. Forests and streams support significant habitat for Pacific fisher, Sierra marten, northern goshawk, California spotted owl, Lahontan cutthroat trout, and Sierra Nevada yellow-legged frog. The area has an extensive area of glacially carved granite, including the magnificent Dinkey Dome, a favored destination of rock climbers. Dinkey Creek, an eligible WSR, flows through this area, providing seasonal class V whitewater kayaking in a spectacular setting. Campgrounds in the nearby Dinkey Creek Recreation Area provide ideal basecamps to explore the Bear Mountain potential

wilderness, and the Dinkey Creek eligible Wild and Scenic River. We excluded all legal roads, motorized trails, and private inholdings from the wilderness proposal. This proposal is best reflected by the Bear Mountain Alt. C map.

Sycamore Springs – This 17,907-acre wilderness proposal on the Sierra Forest encompasses the lower segment of Dinkey Creek and the highly rugged and scenic Patterson Bluffs, Indian Rock, and Black Rock. The area includes ecosystems under-represented in the wilderness system and support numerous rare, threatened, and endangered species of wildlife and plants. Lower Dinkey Creek offers world class experts-only whitewater kayaking that attracts international boaters. The proposed wilderness would help protect the biotic integrity of Dinkey Creek, an eligible Wild and Scenic River. Rich in cultural and historical values, the area is of special interest to local Native Americans. Boundaries were adjusted by CalWild to avoid popular fixed climbing routes in the Patterson Bluffs and to exclude roads and powerlines. These adjusted boundaries are best reflected in the Sycamore Springs Recommended Wilderness maps for both Alt. C and E.

Monarch Wilderness Addition West (Kings River) – This 66,322-acre proposed wilderness addition to the existing Monarch Wilderness on the Sequoia and Sierra Forests would provide a protected corridor facilitating the migration of species in response to climate change from 1,000 feet elevation to 14,000 feet elevation. Encompassing the designated and eligible segments of the Kings Wild and Scenic River, the wilderness would help protect the biotic integrity of the river, its state-designated Wild Trout Waters, and its watershed. The area includes ecosystems under-represented in the wilderness system and supports Pacific fisher and other rare, threatened, and endangered wildlife and flora. Just a few of its outstanding recreation values include whitewater boating on the Kings River and hiking/backpacking on the Kings River National Recreation Trail. The Yucca Point Trail provides a short hike down to the magnificent confluence of the Middle and South Forks Kings Wild and Scenic Rivers. We excluded roads and existing motorized trails in the Crabtree Hollow area. We did keep most of the former Verplank Trail in the proposed wilderness. Verplank is a motorcycle trail so overgrown and damaged by wildfire that it is virtually impassable and difficult to find. We are willing to discuss further boundary changes if needed. This proposal is best reflected in the Monarch Wilderness Addition Alt. C map (although this map excludes the Verplank Trail and much of the southwest corner of the roadless area).

Golden Trout Wilderness Addition (North Fork Kern River) – This 41,282-acre addition to the existing Golden Trout Wilderness on the Sequoia Forest encompasses the rugged canyon of the North Fork Kern Wild and Scenic River and several of the river's major tributaries. Providing habitat for the Pacific fisher, foothill yellow-legged frog, slender salamanders, and several rare plants, the area includes ecosystems under-represented in the wilderness system, including part of the Freeman Creek Giant Sequoia Grove. The President George H.W. Bush Giant Sequoia Tree is adjacent to the area. We excluded all legal roads, most motorized trails, and fixed climbing routes at Hermit Rock. The popular Needles climbing area is avoided altogether. The northern segments of the Rincon and Rattlesnake Creek Trails leading to the existing wilderness boundary were included in the wilderness addition to discourage illegal

entry, but the southern segments of these trails remain outside of the proposed wilderness and open to encourage use of loop routes with other trails. This is best reflected in the Golden Trout Addition Alt. E map.

Domeland Wilderness Addition West – This 26,697-acre addition to the existing Domeland Wilderness on the Sequoia Forest encompasses scenic Sirretta Peak and the source of Salmon Creek (an eligible WSR). The addition also includes the Twisselman Botanical Area, which is the only known location in the California where foxtail, limber, western white, Jeffrey, and lodgepole pine all occur. The area is the southern-most limit of several Sierra Nevada plant species, including foxtail pine. Adding this area to the Domeland Wilderness would improve and protect biological connectivity between the Kern Plateau and the lower elevation Kern River canyons. We adjusted boundaries to avoid all legal roads and the Cannell Meadow National Recreation Trail (a popular motorcycle trail). The addition does include the Sirretta Peak Trail, which is currently open to motorcycle use even though the Forest Service promised to close the trail to motorized use in a legally binding settlement agreement in 1990. These adjustments are best reflected in the Domeland West Addition Alt. E map

Cannell Peak – The 30,910-acre proposed wilderness on the Sequoia Forest encompasses the east slopes of the rugged North Fork Kern Wild and Scenic River. It also includes segments of two North Fork tributaries eligible for WSR protection, Salmon and Brushy Creek. Salmon Creek tumbles over one of the highest waterfalls in the southern Sierra in the heart of the proposal and Brushy Creek is a popular whitewater kayak run. With elevations ranging from 3,000 to 9,500 feet, the area supports an incredible diversity of plants and animals and includes ecosystems under-represented in the wilderness system. Stands of endemic Piute cypress grow here and wet meadows on the edge of the Kern Plateau are home to the endangered mountain yellow-legged frog and several species of salamanders. The proposed wilderness would protect the high biotic integrity of the North Fork and provide important biological connectivity between the river and the higher elevation Kern Plateau. We adjusted boundaries to ensure that the Rincon Trail and Cannell Meadows National Recreation Trail, which are popular motorcycle and mountain bike routes, are outside the proposed wilderness. Service roads, powerlines, and other facilities associated with the Kern River #3 Hydroelectric Project were also excluded. We also intended to exclude the network of “Edison” trails popular with mountain bikers in the southwest corner of the area but because these trails are not legal and cannot be found on official maps, there may be some overlap. This proposal is best represented in the Cannell Peak Alt. E map.

Stormy Canyon – This 32,000-acre proposed wilderness on the Sequoia Forest encompasses the west slopes of the rugged North Fork Kern Wild and Scenic River. It also includes Bull Run Creek (an eligible WSR) and several other tributaries flowing from the Greenhorn Mountains, which helps to protect the North Fork’s high biotic integrity. The entire area provides a scenic backdrop to the thousands of people who recreate in and along the North Fork. With ecosystems underrepresented in the wilderness system, the area also provides important biological connectivity between the Kern Plateau, North Fork Kern, and the Greenhorn Mountains. The proposal includes part of the Baker Point Botanical Area, home to many “rock-loving” rare

plants. We adjusted the proposed wilderness boundaries to exclude popular mountain bike routes such as the Whiskey Flat, Tobias, and Baker's Point trails, as well as the upper Bull Run motorcycle trail. We recently became aware of a network of unofficial trails associated with the Whiskey Flat Trail in the vicinity of Stormy Canyon. We would be willing to exclude these trails if there is any official map depicting them. The historic Baker's Point lookout and communications site is also excluded. This proposal is best represented by the Stormy Canyon Alt. E map.

Suggested resolution: Sit down with interested stakeholders to work out boundaries that meet most needs. Based on this effort, include revised proposals for recommended wilderness in the Final Plan and Record of Decision.

D. Alternative Protection of Roadless Areas

Recognizing the intense public interest in the protection of wild places, many of the first generation of forest plans proposed some level of administrative protection for roadless areas. For example, the 1991 Sierra Forest Plan allocated portions of the Devil Gulch-Ferguson Ridge, Mt. Raymond, and Dinkey Lakes Addition to non-regulated timber management to discourage future road building and logging. Although the 1988 Sequoia Forest Plan did not propose administrative protection of roadless areas, the legally binding 1990 Mediated Settlement Agreement allocated portions of several roadless areas on the Sequoia Forest to unregulated management to discourage road building and logging. Other Forest Plans went even further by administratively establishing semi-primitive backcountry areas where road building and commercial logging were prohibited.

In 2000, the Clinton Administration adopted the Roadless Area Conservation Rule (RACR) to protect inventoried roadless areas (IRAs) from road building and commercial logging. Logging is allowed under RACR but only if it is needed to protect roadless values. Unfortunately, only inventoried roadless areas identified in the 1979 RARE II process are protected under RACR – it does not apply to additional roadless lands identified in the forest planning process that are not already in the 1979 inventory.

Although the 2022 Sierra and Sequoia Plans acknowledge that 1979-era inventoried roadless areas will remain protect under RACR, the plans specifically state that they “don’t incorporate the Roadless Rule.”¹¹ What this means is that RACR protection will not apply to IRAs on the Sierra and Sequoia Forests if the RACR is overturned or weakened by a future administration.

Public interest in the protection of roadless areas remains high. Simply hoping that a future administration won’t eliminate or weaken RACR protection is not enough. At the minimum, RACR protections should be specifically included as plan management direction – which means

¹¹ Sequoia Forest Final Plan, USDA Forest Service, June 2022, pg. 126; Sierra Forest Final Plan, USDA Forest Service, June 2022, pg. 123.

that they remain if the RACR is rescinded nationally and cannot be eliminated or changed except through a Forest Plan amendment.

Ideally, roadless areas should be protected administratively as backcountry areas where road building and logging are prohibited via specific plan management direction. But the programmatic focus of the Revised Forest Plans discourages on the ground management designations.

Suggested resolution: Specifically adopt RACR protections as Forest Plan management direction or establish a system of Backcountry Areas that are off limits to road building and logging.

VI. Wild and Scenic Rivers

A. Proposed New Management Direction for Existing WSRs

The 2013 Sequoia Forest Assessment identified visitor impacts on the North Fork Kern WSR, noting that “[o]vercrowding, congested parking and poor sanitation practices in the Upper Kern River corridor demonstrate the need for more intensive management of this area.”¹²

The Sierra National Forest Assessment raised similar concerns about the Merced WSR, noting that “[t]here is a trend toward unmet recreational demand in the corridor of the Merced WSR,” and high use by the public was leading to trash and sanitation issues, with a trend towards larger groups of dispersed campers, less knowledge of hunting and fishing regulations, and less knowledge of the leave no trace ethic.¹³

In its scoping, draft plan, and revised draft plan comments, we recommended adoption of a management standard that includes monitoring of visitor use impacts on WSRs and requires updating of Comprehensive River Management Plans (CRMPs) to resolve such problems. The plans fail to adopt this management standard, proposing it instead as a “Potential Management Approach.”¹⁴

Given that adverse impacts on WSR values are occurring now from poorly managed visitor use, we are uncomfortable with the “Potential Management Approach.” There is no guarantee that it will ever be implemented. And although interim steps can be taken (like the current Forest Order 0513-22-04, closing the Old Goldledge Dispersed Campground on the NF Kern WSR on busy holiday weekends in the summer), Forest Orders are difficult to adopt until considerable damage and disruption has already occurred. Adopting a management direction provision requiring WSR monitoring and updating appropriate CRMPs to address visitor and other National Forest use impacts (from grazing, mining, etc.) on WSRs is the permanent solution to this chronic problem.

¹² Sequoia National Forest Plan Assessment, USDA Forest Service, Sep. 2013, pg. 205.

¹³ Final Sierra National Forest Assessment, USDA Forest Service, (no date), pgs. 204-205.

¹⁴ Sequoia Final Plan pg. 124, Sierra Final Plan pg. 122.

We recommend adoption of a management standard in both Final Plans that requires monitoring of use impacts on WSRs and updates of the appropriate CRMPs when needed to resolve these impacts. Adopting this provision as a Management Standard is crucial because neither the law, regulations, or guidelines require updates of CRMPs. The existing CRMPs for the Merced, Kings, and Kern WSRs are now all more than 25 years old and fail to reflect significant changes in circumstances such as climate change impacts on hydrology, changes in recreation technology (mountain bikes, electric bikes, more highly maneuverable kayaks, etc.), and increasingly heavy use by the public of outdoor river-based recreation opportunities.

Suggested resolution: Adopt as WSR management standard in both Final Plans: DA-WSR-STD 08: Monitor the impacts of National Forest uses (visitor use, grazing, mining, etc.) and if monitoring documents adverse impacts on a wild and scenic river, the appropriate Comprehensive River Management Plan shall be updated to resolve the problem.

B. River Systems Approach and Biotic Integrity of Watersheds

Forest Service land management planning guidance encourages a river systems approach to the identification of potentially eligible rivers:

Consider the entire river system, including the interrelationship between the main stem and its tributaries and their associated ecosystems which may contain outstandingly remarkable values. At a minimum, a river study area includes the length of the identified river segment and the land within one-quarter mile of each river bank's ordinary high water mark along the river segment. The river corridor to be studied may be wider to include areas beyond the minimum one-quarter mile from a bank's high water mark that may be needed to protect river-related outstandingly remarkable values, other important river resources or facilitate management of the river area. For example, the boundary of a study river corridor may be extended to include key scenic features, upstream spawning areas in tributaries, or the entire river floodplain.¹⁵

We raised early in the planning process the issue of needing to conduct WSR inventories from a river systems perspective. Rivers are linear systems. Natural processes and human activities alike upstream and downstream of a WSR may affect river flows and values. It's best to be as expansive as possible when identifying eligible WSRs, particularly by considering the contribution of river flow provided by upper segments and watersheds, as well as the tributaries and downstream segments that may contribute or complement river values.

The response to this concern varies between the Final Plans. The Sequoia WSR inventory best represents the river systems approach. Numerous tributaries to the North and South Fork Kern WSRs were found eligible because they contribute water flow, provide habitat, and offer

¹⁵ FSH 1909.12-82.61—LAND MANAGEMENT PLANNING HANDBOOK CHAPTER 80—WILD AND SCENIC RIVERS.

restoration opportunities for outstandingly remarkable native wild trout species (Little Kern Golden Trout, California Golden Trout, Kern River Rainbow Trout) that make these rivers suitable for designation. Even when there was no direct fishery issue to encourage expansive thinking, the Sequoia Final Plan also identified as eligible several tributaries of the lower Kern River and Middle Fork Tule River that share similar values, creating the opportunity to protect nearly complete upper river systems.

On the other hand, the Sierra Final Plan seemed to limit its river systems approach to a handful of streams where strong public comment encouraged more of the river to be considered eligible. For example, the eligibility of Dinkey Creek was revised from two unconnected eligible segments totaling 4.7 miles in the 2019 Revised Final Plan/RDEIS to all 29 miles being eligible in the 2022 Final Plan/FEIS. While gratified by this positive change, we must note that there was apparently no consideration of the benefit of including Dinkey Creek's tributaries that were previously identified as eligible in 2016 but not in 2019, including the South Fork Dinkey Creek, Bear Creek, Glen Meadow Creek, Bear Meadow Creek, Cow Creek, and Rock Creek. The flows from and the values of these creeks contribute to the flows and values in the 29 eligible miles of Dinkey Creek.

Similar opportunities to consider potentially eligible tributaries of the Kings and Merced WSRs, and the eligible/suitable segments of the upper San Joaquin River (North, Middle, South Forks, and main stem) were also ignored in the Sierra Final Plan. However, we appreciate that in response to our 2019 comments, much of Granite Creek – a major tributary of the NF San Joaquin – was reinstated as an eligible stream after it and scores of other previously eligible stream segments were purged between the 2016 and 2019 plans.

Failure to take a river systems approach appears to be a significant factor in the huge purge of previously eligible WSRs identified in the 2016 Sierra Revised Forest Plan and the far fewer eligible stream in the 2019 Sierra Final Plan. Some of these problems have been fixed (i.e., Dinkey Creek) but many have not. A river systems approach would be particularly helpful in identifying tributaries that contribute to the biotic integrity of the larger rivers and watersheds.

The primary watersheds of the southern Sierra National Forest and most of the Sequoia National Forest, encompass the largest block of watersheds with good biotic integrity in the mountain range.¹⁶ This includes the Tule and Kern watersheds on the Sequoia, the Kings watershed on both the Sierra and Sequoia Forests, and the Sycamore Creek and Merced/South Fork Merced watersheds on the Sierra Forest. The biotic integrity of these watersheds was assessed using a number of factors, including the amount of roadless and roaded acres in the watershed, presence of native and non-native fish, the number of dams and diversions, and several other factors.

Based on this assessment, watersheds were indexed on a scale of 1 to 100, with watersheds rated at 100 possessing the highest level of biotic integrity in the Sierra Nevada. It is no coincidence

¹⁶ Biotic Integrity of Watersheds, Sierra Nevada Ecosystem Project (SNEP) Final Report, Vol. II, Chap. 34, P.B. Moyle and P.J. Randall, UC Davis, 1996.

that the southern Sierra watersheds from the Kings to the North and South Forks of the Kern were indexed as possessing “good” biotic integrity due to the amount of roadless areas, number of undammed free flowing streams, and the survival to date of native fish such as the Little Kern golden trout, California golden trout, and Kern River rainbow trout. Tributaries that flow into existing WSRs with good biotic integrity like the Kings, North Fork Kern, and South Fork Kern are contributing to that integrity. This is the first significant forest planning opportunity since the publication of Biotic Integrity of Watersheds to identify key tributaries that contribute to biotic integrity.

We particularly appreciate that the 2022 FEIS Appendix C now cites biotic integrity as a factor in several WSR eligibility findings, including Boulder Creek and Grizzly Creek on the Sierra Forest; and Little Kern Lake Creek, Osa Creek, Rattlesnake Creek, Brush Creek, Dry Meadow Creek, Fish Creek, and Freeman Creek on the Sequoia Forest.

Although we support the inclusion of these citations and the resulting eligibility findings, it must be noted that biotic integrity should or could be cited for many other existing eligible WSRs (such as the eligible tributaries to the lower Kern eligible WSR and SF Kern WSR). The contribution of a particular stream to the biotic integrity of its watershed and for the larger streams into which they flow should be considered for all potential WSR candidates. This is particularly pertinent for tributaries of the Kings River that were purged between the 2016 and 2019 plans, including most of the NF Kings River, all tributaries to Dinkey Creek, and many tributaries of the San Joaquin River and SF Merced WSR.

Suggested resolution: We requests a quick Interdisciplinary Team review of the many previously eligible streams that were purged between the 2016 and 2022 Sierra draft plans (see below). We request that a stream’s contribution to the biotic integrity of its watershed and the larger streams into which they flow be considered in this review.

C. Review the 2016-2019 Sierra Forest Purge of Eligible WSRs

The 2016 Sierra Plan/DEIS inventoried 1,482.4 miles of candidate streams and found 633.5 miles to be WSR eligible. But the 2019 Sierra Plan/RDEIS eliminated most of these streams, only identifying 46.9 miles to be WSR eligible, resulting in a purge of 587 eligible miles. Virtually all of the formerly eligible segments in 2016 were eliminated because a review by the Sierra Forest Supervisor determined that they did not possess ORVs.¹⁷ The primary reason why river values were not considered outstanding in most of these eliminations was because one or more values were not considered, “unique, rare, or exemplary.” Non-exemplary values resulted in the elimination of 32 river segments totaling more than 186 miles between the 2016 and 2019 draft plans. Despite the fact that eligible river mileage increased from 46.9 miles to 146.3 miles

¹⁷ No explanation is provided in the 2019 Plan/RDEIS or the 2022 Plan/FEIS to explain why and how the great purge occurred. CalWild learned that it was largely the work of the Forest Supervisor in a phone conversation with Sierra Forest Recreation Officer Judi Tapia.

in the 2022 Final Plan/FEIS, most of the segments eliminated in 2019 remain eliminated and the primary reason cited remains non-exemplary values.

We perceive a pattern in Forest Service WSR eligibility reviews based on what we believe is a misinterpretation of the basic definition of an ORV being a value that is “rare, unique, or exemplary.” First of all, it’s clear that this guidance does not require a river value to meet all three criteria or even two of the criteria – a value can be considered outstanding if it is unique, rare, *or* exemplary. According to the 2019 and 2021 WSR inventory narratives, dozens of streams were discounted because the agency apparently believes that the share similar scenery, recreation, geology, and historical/cultural values and none were considered exemplary.

Even two segments of the same stream sharing the same value were subject to this arbitrary and subjective exemplary criteria. This occurred with Mono Creek. In the 2016 draft, two segments of Mono Creek upstream Edison Reservoir were found to possess a Prehistory ORV and the one segment of Mono Creek downstream of Edison was identified with the same Prehistory ORV (Mono Trail Traditional Cultural Property that stretches from the Mammoth area to Mono Hot Springs, which includes all three Mono segments). But the 2019 draft plan eliminated the lower segment of Mono Creek downstream of Edison Reservoir and this elimination persists in the 2022 plan. Apparently, our comments on the 2019 draft citing various documents showing that all segments of Mono Creek share the same Prehistory ORV did not move the agency to change its opinion (more on this in the river-specific section of this objection).

The Forest Service misinterpretation of the unique, rare, or exemplary criteria apparently leads to a “there can only be one” mindset as the agency reviews similar values of streams in the same region. If multiple streams share similar ORVs in the same region of comparison, the agency tendency is to choose just one of those streams as eligible based on the “exemplary” criteria.

Several eligible streams in the 2016 draft were also eliminated in the 2019-2022 drafts because they apparently failed to possess both unique and exemplary values, with no mention of which values are rare. The basic definitions of unique, rare, and exemplary clearly creates three categories. A unique value on a river is one of a kind and not like anything else. A rare value is seldom occurring and uncommon. An exemplary value represents the best of its kind. Based on these definitions, one would expect to have fewer rivers in a region possessing unique or exemplary values, but there could multiple rivers in region that possess rare values. But few streams were cited as possessing or not possessing rare ORV, raising the question whether the rare criteria was inadvertently conflated with the unique and exemplary criteria.

Suggested resolution: Establish an interdisciplinary team of resource and program specialists with representatives from the local, state, and national levels of the Forest Service to review the formerly eligible streams identified in the 2016 Sierra draft plan that were eliminated in the 2019 and 2022 drafts because of supposed non-exemplary or unique values. Include in this review the contribution of tributaries to the biotic integrity of their watersheds and to the larger streams into which they flow.

D. Sierra National Forest - Stream-Specific Comments

Kings River – 2.106.1-3

FEIS Appendix C provides conflicting information about the ORVs that make the Kings River eligible. Eligibility for the three segments of the Kings River starting at elevation 1,595 feet and ending at Pine Flat Reservoir was first determined in the 1990 Draft Kings River Special Management Area and Wild and Scenic River Plan (KRSMA), which was finalized in 1991. Even though the FEIS specifically states that the Forest Service interdisciplinary team reviewed the 1991 plan and found no changed circumstances or new information affecting the river's ORVs and previous eligibility determinations, the information provided in FEIS Appendix C Table C-15 concerning the river's ORVs is not the same as the ORV information provided in the 1990-1991 plan. And the information provided about ORVs in the detailed segment descriptions for the Kings River on pages C-266-270 is not identical to the ORV information in either FEIS Table C-15 or the 1990-91 Plan. Furthermore, ORV information in one detailed narrative conflicts with the same narrative summary.

These discrepancies include:

Kings segment 2.106.1 – A Botany ORV is identified in Table C-15, but it is not mentioned in the 1990-91 KRSMA Plan or in the FEIS Appendix C narratives (pgs. C-266-270). The 1990-91 KRSMA Plan also identifies a Fish ORV (largest state-designated Wild Trout Stream, finest freestone river for trout), which is also noted in the FEIS Table C-15, but the FEIS narratives declare fish values to be non-remarkable. A Geology ORV is recognized for this segment in the 1990-91 Plan and in Table C-15, but it is not mentioned in the FEIS narratives.

Kings River Segment 2.106.2 – Geology and Fish are recognized ORVs in the 1990-91 Plan and FEIS Table C-15 but not in the FEIS narratives.

Kings River Segment 2.106.3 – Fish is a recognized ORV in the 1990-91 Plan and FEIS Table C-15 but not in the FEIS narratives. The narrative's detailed description includes a Recreation ORV for this segment but the Recreation ORV is not listed in the narrative summary.

Management and protection of the Kings River requires a set of facts that everyone agrees on. The information provided about Kings River ORVs in the FEIS is a recipe for anarchy and conflict. The competing lists of ORVs must be reconciled and final list provided in a corrected appendix. We recommend that the final plan adopt the ORV documented in the 1990-91 Plan, with consideration of the new Botany value (if this proves not be an outright typo).

Suggested resolution: Re-adopt the list of ORVs described in the 1990-91 KRSMA Plan and determine the provenance and veracity of the alleged Botany ORV identified in Table C-15.

Dinkey Creek – 3.68.1-6

Scenery ORV – No segment of Dinkey Creek was found to possess a Scenery ORV, despite RDEIS documentation of high scenic values for segments 1 (“spectacular views of granite domes and lakes”), 3 & 4 (“Variety Class A Distinctive”). In its comments on the 2019 RDEIS, we noted that the entire length of Dinkey Creek represents a continuum of outstanding scenery throughout all its segments. Although Dinkey Creek’s may not be unique, it is exemplary and certainly rare, even in the scenery-rich environment of the Sierra Forest (the region of comparison for Scenery ORVs). Although scenery along all 29 miles of Dinkey Creek varies, agency guidelines do not require outstanding scenery along all segments for a stream to possess outstanding scenery overall.¹⁸

¹⁸ FSH 1909.12, Chap. 80, sec. 82.73a(1).

Dinkey Creek: A Continuum of Outstanding Scenery



LEFT: Dinkey Creek flowing out of the Dinkey Lakes Wilderness. RIGHT: Waterfall in the Dinkey Creek Roof Pendant Geological Special Interest Area.



LEFT: Dinkey Creek flows over glacially carved granite past the spectacular Dinkey Dome in the Bear Mountain roadless area. RIGHT: Dinkey Creek's Superdink - Infinislides kayak run in the Bear Mountain roadless area.



LEFT & RIGHT: Visitors to the Forest Service's Dinkey Creek Campground, Camp Fresno, and the Dinkey Creek Inn enjoy the Creek's outstanding scenery and recreation opportunities.



LEFT: Young girls learn about the outdoors at Dinkey Creek's Camp El-O-Win (the only girls summer camp in the central and southern Sierra). RIGHT: Downstream of Ross Crossing, Dinkey Creek changes radically as it enters the remote Sycamore Springs roadless area.



LEFT & RIGHT: The class V-V+ kayak run on Dinkey Creek in the Sycamore Springs roadless area, once rarely done, has become a marquee destination for both out of state boaters and local paddlers.



LEFT: More class V whitewater on lower Dinkey Creek. RIGHT: Dinkey Creek flows through the rugged and nearly inaccessible Sycamore Springs roadless area and potential recommended wilderness.

Pictures courtesy of Steve Evans (CalWild), Camp El-O-Win, Darin McQuoid.

History ORV – The historic Dinkey Creek truss bridge is recognized as an outstanding History ORV for Dinkey Creek segment 4. The bridge played a major role in attracting tourists who came to visit the McKinley Grove. Workers from the nearby Pine Logging Camp spent much of their off time visiting Dinkey Creek resorts, which also provided lodging and respite for visitors to the McKinley Grove. Before the bridge was built, Fremont and Smith visited Dinkey Creek in their explorations of California and hundreds of others frequented Dinkey Creek to mine gold and graze sheep. The RDEIS ignores these facts about the overall outstanding history of Dinkey Creek and limits the History ORV to the truss bridge.

Ecology/Wildlife ORV – Dinkey Creek drops more than 8,400 feet over 30 miles, transecting a broad range of elevation, vegetation, and ecozones. Old growth forests along Dinkey Creek and within the watershed support Pacific fisher, Sierra marten, California spotted owl and other listed species and Species of Conservation Concern. This constitutes a combined Ecology and Wildlife ORV.

Previously Eligible Tributaries – Tributaries of Dinkey Creek, including South Fork Dinkey Creek, Cow Creek, Rock Creek, Bear Creek, Glen Meadow Creek, and Bear Meadow Creek, were determined eligible in the 2016 draft but not in the 2016 draft or 2022 final. All these tributaries were dropped due to a supposed lack of ORVs. Many of the tributaries share similar if not identical scenery, geology, and history/cultural values. For example, Glen Meadow Creek possessed a History ORV due to the Pine Logging Camp. Workers at this camp often visited and recreated at the resorts on Dinkey Creek. It makes sense from a rivers system perspective to find both streams to possess an outstanding history value that connects them.

Suggested resolution: Find all Dinkey Creek segments to possess a Scenery ORV and a combined Ecology/Wildlife ORV and expand segment 4's History/Culture ORV to include the historic resorts that provided visitor services on Dinkey Creek. Review the formerly eligible tributaries of Dinkey Creek to determine which ones may share identical values and should be considered eligible from a rivers system perspective.

Mono Creek

Mono Creek segments 1-2 (3.166.1-2) – The sole ORV in the 2019 RDEIS is prehistory. This is described as the “Mono Trail Traditional Cultural Property from Mammoth area on the Inyo National Forest to the Mono Hot Springs Area is eligible for National Register of Historic Places listing.” A scenery ORV identified in the 2016 DEIS was eliminated, despite this documentation of high scenery values: “Mono Recesses/peaks and granite-walled river canyons are unique visual features of the Sierra Crest.” This scenery value was eliminated because it is “not exemplary.”

Mono Creek segment 4 (Vermillion Valley Dam to Edison Reservoir, 3.166.4) – This lower segment was found in the 2016 DEIS to possess the same prehistory value as segments 1-2 but this value was dropped and segment 4 found to be ineligible in the 2019 RDEIS. The Mono Trail

Traditional Cultural Property that stretches from the Mammoth area to Mono Hot Springs clearly includes the lower segment of Mono Creek to its confluence with the SF San Joaquin River. This is confirmed by a map of Native American trails and associated sites that we included in its 2019 comments.¹⁹

Suggested resolution: Scenery in the upper Mono Creek segments was found to be “unique” in the 2016 and it should be reinstated in the Final Plan/FEIS. The Prehistory (History/Culture) ORV for lower Mono Creek segment 4 should also be reinstated.

SF San Joaquin River (3.260.2)

The 28-mile segment of the SF San Joaquin River between Florence Dam/Reservoir and the main stem San Joaquin confluence was found eligible in the 2016 DEIS due to outstanding scenery and geology values. The 2019 DEIS eliminated its eligibility, noting without any specific information or analysis that “similar views exist elsewhere within the region” and that the South Fork’s scenery was “not exemplary.” The 2022 FEIS found a Recreation ORV associated with a whitewater boating run for this segment. The systems approach recommended in agency guidelines would likely consider that this lower segment of the South Fork shares identical outstanding scenery, recreation, geology, and cultural values as the eligible/suitable segments of the upper South Fork San Joaquin, the North and Middle Forks, main stem San Joaquin.

Mono Hot Springs is located on this segment of the SF San Joaquin. The Hot Springs is specifically cited as part of the Traditional Mono Trail Cultural Property that makes the upper segments of Mono Creek to be eligible. Mono Hot Springs was an important crossroad for Native American trade and travel routes along the South Fork, Mono Creek, Big Creek, Rancheria Creek, and Rattlesnake Creek and it is important as a Native American cultural site. The trans-Sierra trail that passes by Mono Hot Springs facilitated trade between the Mono tribe west of the Sierran crest and tribal groups on the eastern side. The western Mono traditions include both this seasonal trading activity and spiritual use of the springs.²⁰ The North Mono Tribe’s constitution refers to “the sacred grounds of Mono Indian Hot Springs” in the description of tribal territory.²¹ According to Mr. Johnny Marvin, a member of the Western Mono Band, both Paiute and Western Mono used Mono Hot Springs.²² The 1995 Sierra National Forest Plan recognized the cultural importance of Mono Hot Springs by adopting a Standard and Guideline that “...retains Mono Hot Springs in a near-natural condition to ensure availability of the springs for traditional Native American use.”²³ The Constitution of the North Fork Mono Tribe describes

¹⁹ A Report on Indian Sites and Trails, Huntington Lake Region, California, by Margaret G. Hindes, undated but likely published in 1958 or later.

²⁰ Monitoring thermal springs to improve land management decision-making, Sierra Nevada, California, J.V. De Graff and A. Gallegos, Environmental and Engineering Geoscience, May 2018, pg. 169.

²¹ <http://lessons.jareddahlaldern.net/ConstitutionoftheNorthForkMonoTribe-1.pdf>

²² A Report on Indian Sites and Trails, Huntington Lake Region, California, Margaret Hindes, undated but post-1958.

²³ Sierra National Forest Land Resource Management Plan, USDA Forest Service, 1991, pg. 4-28.

the territory of the tribe in Article 1 as including “...the South and Middle Forks of the San Joaquin River, Vermillion Valley (now partially flooded by Edison Reservoir) and the sacred grounds of Mono Indian Hot Springs.”²⁴

Suggested resolution: Find the upper and lower segments of the South Fork San Joaquin River to be eligible due to its Scenery and Cultural ORVs, and specifically recognize the outstanding Native American cultural value associated with Mono Hot Springs.

San Joaquin River (3.233.1)

Depending on the document, this segment is listed as 1, 1.3, or 2 miles long – this should be clarified. The 1995 Plan/FEIS found the segment eligible but not suitable due to possible future expansion of Mammoth Pool Reservoir. The 1995 ROD promised “further consideration” of suitability if the expansion did not occur (it didn’t). We challenge the notion that the main stem San Joaquin’s Scenery, Fish, and Geology ORVs disappear in the final two miles of the river upstream of the existing Mammoth Pool Reservoir.

Suggested resolution: Clarify the actual length of the segment, reinstate its scenery, fish, and geology ORVs identified in 1995, and add the newly determined whitewater recreation ORV. If a real and credible proposal to raise Mammoth Pool occurs in the future, conduct a suitability study to determine if the segment should be added to the existing suitable segment of the San Joaquin or removed from eligibility/suitability to facilitate Mammoth Pool expansion.

San Joaquin River (3.233.4)

Determined eligible due to its Recreation (whitewater) ORV, we believe this segment of the San Joaquin River also possesses a Cultural (Prehistory) ORV. Hindes’ map of Mono Indian sites and trails shows a Mono Tribe trail west of this San Joaquin River segment, in the vicinity of Kinsman Flat. Kinsman Flat is specifically cited as part of the North Mono Tribe’s territory in the Tribe’s Constitution. In addition, Aldern notes that Kinsman Flat is one of many places crisscrossed by tribal trails, some of which are still visible.

Suggested Resolution: Recognize a Cultural (Prehistory) ORV for the San Joaquin River segment 3.233.4.

San Joaquin River (3.233.6)

Determined eligible due to its Recreation (whitewater) ORV, we believe this segment of the San Joaquin River also possesses a Cultural (Prehistory) ORV. Hindes’ map of Mono Indian sites and trails shows a trail south of this San Joaquin River segment. Aldern notes that tribal trails crossed the San Joaquin River at several points, notably at Horseshoe Bend, which the Mono called

²⁴ Native Sustainment: The North Fork Mono Tribe’s Stories, History, and Teaching of Its Land and Water Tenure in 1918 and 2009, Jared Dahl Aldern, Prescott College Dissertation, May 2010, pg. 150.

Tsobotebau (crossing). Horseshoe Bend is also cited by Aldern as a Mono Tribe “point of interest.” Former North Mono Tribe Council Chairman Ron Goode includes the Horseshoe Bend reach of the San Joaquin River in his map of tribal allotments associated with *Tsobotebau* and Good’s map shows the Horseshoe Bend Trail as as part of a system of “ethnographic” trails within the preliminary *Tsobotebau* boundary.

Suggested Resolution: Recognize a Cultural (Prehistory) ORV for the San Joaquin River segment 3.233.6.

Granite Creek (3.107.1-3), East Fork Granite Creek (3.83), West Fork Granite Creek (3.294.1-2)

The 2016 DEIS found the East and West Forks to possess a Geology ORV (“Glaciated landscape, glacial scoured bedrock and valleys, moraines, significant and unique glacial landforms as spectacular as Yosemite National Park.”) and a 2-mile segment of main stem Granite Creek to possess a Cultural/Prehistoric ORV (“...a NRHP eligible Late Archaic period prehistoric trans-Sierra economic exchange corridor. This is a unique trans-Sierra corridor.”). The 2019 RDEIS determined all segments to be ineligible, stating – without any supporting information – that similar geology “exists elsewhere” and that the cultural sites are “not unique.” A systems approach should find that all of Granite Creek and its East and West Forks possess similar if not identical values as the eligible/suitable segments of upper San Joaquin River system and that Granite Creek complements the free-flowing nature and ORVs of the North Fork San Joaquin (into which it flows).

Suggested resolution: Reinstate the Scenery, Geology, and Prehistory ORVs for the appropriate segments of Granite Creek, EF Granite Creek and WF Granite Creek, and retain the whitewater recreation ORV identified in the 2022 Final. In addition, add a geology ORV for Granite Creek from the Ansel Adams Wilderness boundary to its confluence with the NF San Joaquin because it possesses the same geological value as the eligible/suitable segment of the North Fork.

California & Nelder Creeks

Short segments of Nelder and California Creeks within the Nelder Grove Historic Area were found eligible due to scenery, recreation, and botany (Giant Sequoia groves) ORVs. Our recommendation that a river systems approach would find both creeks eligible from their source and extending downstream beyond the NGHHA were ignored. There is no explanation as to why these streams do not possess a Historical/Cultural ORV given the establishment by the Forest Service of the Nelder Grove Historic Area in the 1991 Forest Plan. The Nelder Grove Historic Area was established to preserve Giant Sequoias (the Botany ORV), early railroad logging activity, and prehistoric habitation sites by Native Americans.²⁵ According to the Forest Service, “...the grove has been managed as an historical site, preserving the uniqueness and historical significance of the giant sequoias and what has occurred beneath their branches...Near the Nelder Grove Campground is an interpretive area containing several historical replicas and displays. Two restored cabins from the center of the site with life-size replications of cross-log and two-pole logging chutes along the original paths loggers used 100 years

²⁵ Sierra National Forest Land Resource Management Plan, USDA Forest Service, 1991, pg. 4-51.

ago...Archaeological studies found the Southern Sierra Miwok were well aware of the grove and had been for several thousand years, camping while gathering acorns and hunting.”²⁶

Suggested resolution: Follow a systems approach and find all of Nelder and California Creeks, from their sources to at least their confluence, to be eligible and add a History ORV in recognition of the unique historical values of the Nelder Grove Historic Area.

Iron Creek

A tributary of the SF Merced WSR, Iron Creek was found eligible in the 2016 DEIS due to its Scenery ORV but was dropped in the 2019 RDEIS and the 2022 FEIS because its scenery is “similar” to the SF Merced WSR (into which Iron Creek flows). Iron Creek’s outstanding scenery is part of and complements not only the SF Merced’s outstanding scenery but also its good biotic integrity. The USFS ineligibility decisions fails to consider the entire river system per guidelines.

Suggested resolution: Follow a systems approach and find Iron Creek to be eligible due to its Scenery ORV, which complements the outstanding values and biotic integrity of the SF Merced WSR, into which Iron Creek flows.

Bishop Creek

A tributary of the SF Merced WSR, Bishop Creek was found eligible in the 2016 DEIS due to its outstanding prehistory value (an NRHP eligible Early Archaic occupation site). A potential Botany ORV was rejected by the USFS because the existing of the Bishop Creek Proposed Research Natural Area (RNA) and its targeted plant community – Ponderosa pine forest – is not considered creek-dependent. The creek was ineligible in the 2019 RDEIS and 2022 FEIS. The rejection of the Historical/Cultural (Prehistory) ORV ignores CalWild’s and other public comments, WSR eligibility guidelines for identifying Historical/Cultural ORVs, and the directive to consider entire river systems. As for the Botany ORV, we need to ask why Giant Sequoia groves are considered to be outstanding botany values on several streams but the ponderosa pines in the Bishop Creek RNA are not?

Suggested resolution: Reinstate eligibility for Bishop Creek due to its Cultural (Prehistory) ORV and Botany ORV (associated with the RNA).

D. Sequoia National Forest – Stream Specific Comments

MF Tule River

We appreciate the apparent river systems approach taken in the 2022 plan to determine eligibility of the Middle Fork Tule River and its tributaries, the North Fork Middle Fork and the South Fork

²⁶ Nelder Grove of Giant Sequoias (fact sheet), USDA Forest Service, Jan. 2012.

Middle Fork. However, we disagree that the only ORVs for the Middle Fork from the North/South Forks confluence to the Forest Boundary is history/prehistory.²⁷ The FEIS acknowledges the popularity of two concessionaire-run day use sites and a river access point but discounts this use as not meeting unique, rare, or exemplary criteria. Further, it discounts whitewater kayaking on this segment as being limited to “a small number” of kayakers capable of safely navigating the river.

The practical impact of the Forest Service’s nearly exclusive focus on rivers attracting recreation visitors from outside the region is the exclusion of popular day use sites heavily used during the summer season by residents of local communities, which are often low income and communities of color. This is a consistent problem with WSR inventories under the current guidelines. For example, similar popular river-based day use recreation sites were not considered eligible in the 2005 Southern California Forest Plan Revisions. With easy access from Highway 190, hundreds if not thousands of visitors from Porterville and other nearby valley communities depend on the recreation opportunities the Middle Fork provides. A Forest Service finding of a recreation ORV for this segment could eventually lead to designation of the river by Congress and increased funding for recreation improvements and management. Even the prospect of a special designation could attract federal funding for recreation improvements and management.

Not recognizing a recreation ORV for the Middle Fork is an example of why the federal government is working to improve equity in providing federal services. For example, President Biden signed an Executive Order 13985 in January 2021 to establish as a “...policy of my Administration that the Federal Government should pursue a comprehensive approach to advancing equity for all, including people of color and others who have been historically underserved, marginalized, and adversely affected by persistent poverty and inequality.” A liberal interpretation of this equity policy would mean that locals who come to swim, fish, or simply relax next to their backyard river should have the same standing as out of region visitors who have the resources to drive to distant rivers and recreate upon them with expensive outdoor equipment.

Given the consistent failure of the Forest Service to recognize heavily used river-based recreation sites popular with nearby low-income communities of color, it is the responsibility of the agency to ensure that it is provide equitable services – this includes protecting a local river that provides joy and relief to many nearby residents. The Middle Fork’s outstanding day use recreation value to local communities should be considered outstandingly remarkable.

Whitewater kayaking on the Middle Fork is not considered outstanding because it attracts a “small number” of kayakers. Although a few of these kayakers may be local, most are likely from out of the region. There is no number threshold attached to the “attracts visitors from

²⁷ The narrative for the MF Tule eligibility on pg. C-99 of the 2022 Sequoia Final Plan FEIS Appendix C documents history/prehistory ORVs but clearly states that recreation is not an ORV. But the entry for the MF Tule in Appendix C Table C-1 listing eligible river segments and their ORVs on pg. C-11 lists a recreation ORV. We assume this is an error.

beyond the region” criteria. Although the Forest Service may not know how many boaters kayak the Middle Fork, it is clear from the sheer number of video reports available on the internet, that it is probably more than the Forest Service thinks. Furthermore, a river systems approach would consider the range of outstanding recreation provided by all eligible segments of the Tule, including popular hiking trails and campgrounds in and near Giant Sequoia groves, water slides and pools that attract visitors from beyond the region (based again on internet reports), day use sites that attract many local residents seeking respite from the summer heat, and expert kayakers who come to explore a little known whitewater run. We believe these different uses on various segments of the Tule represents in combination, a recreation ORV that includes the MF Tule.

Suggested resolution: Recognize popular day use recreation and whitewater boating on the MF Tule as a recreation ORV.

NF Kern Tributaries – Fish ORVs for Salmon, Bull Run, Alder, and Peppermint Creeks

We appreciate the river systems approach used for the WSR inventory in the 2022 Sequoia Plan/FEIS. It resulted in the identification of numerous tributaries of the Little Kern River and the NF Kern River as providing crucial habitat and supporting important populations of Little Kern golden trout and Kern River rainbow trout (KRRT). For NF Kern tributaries, this included CDFW’s priority list to replace sterile non-native hatchery trout with native KRRT in Nobe Young Creek, Bone Creek, Dry Meadow Creek, and Brush Creek. In response to our and other comments, two other NF tributaries have been added – Rattlesnake Creek and Osa Creek.

We recommend adding a few other tributaries known to support native KRRT but that may not currently be CDFW restoration priorities, including Salmon Creek, Bull Run Creek, Alder Creek, and upper Peppermint Creek. The Southern Sierra Fly Fishers believe that Salmon, Bull Run, Alder Creek, and perhaps upper Peppermint Creek “just to name a few” are home to KRRT.²⁸ This complies with CDFW’s intent to “preserve, enhance, and protect native fishes and their habitats” in the NF Kern watershed.

Suggested resolution: Recognize that all these tributaries contribute to the NF Kern’s “good” biotic integrity. Add a fish ORV (KRRT) to the already eligible segments of Bull Run, Salmon, and Alder Creeks and determine Peppermint Creek to be eligible due to its fish ORV.

Classification Issues – Salmon Creek & Freeman Creek

The segment of upper Salmon Creek, east and upstream of the motorized Cannell Meadow National Recreation Trail is in the Woodpecker Inventoried Roadless Area, which is proposed as wilderness under Alternatives C and E. The segment of Freeman Creek upstream of Road 20S78 and the President George Bush Giant Sequoia is in an uninventoried roadless area proposed as wilderness in Alternatives C and E.

²⁸ <https://ssffclub.org/proposals>

Suggested resolution: The upper segments of Salmon Creek and Freeman Creek are located in roadless areas and should be classified as Wild.

Lower Kern River & Tributaries – Greenhorn, Lucas, Stark, and MF Erskine Creeks

Kern River (2.104.4)

The segment of the lower Kern River between Borel Powerhouse and Democrat Hot Springs Reservoir is southern California’s whitewater boating river – it is the literally the closest reliably boatable whitewater river for millions of residents of the south state. The 1988 Sequoia Forest Plan found this segment to possess outstanding scenery and recreation due to the river’s proximity to population centers, diversity of recreation opportunities, and the contrast of the canyon with the adjacent valley.²⁹ This was acknowledged in the 2016 draft plan/DEIS and expounded further upon in the 2019 revised draft plan/DEIS. In addition to popular developed campgrounds at Hobo and Sandy Flat, outfitter campsites operated under special use permits, and the popular day use and river access sites at Miracle Hot Springs, Democrat and Delonega, this segment of the Kern supports private and commercial whitewater boating opportunities that “attract visitors from outside of the region of comparison and are of exceptional quality.”³⁰ The 2022 FEIS confirms these qualities and then inexplicably states that “Recreation is not an outstandingly remarkable value.”³¹

We assume this is a cut and paste typographical error. If not, the Forest Service needs to explain this reversal.

Suggested Resolution: Reinstate the Recreation ORV for Kern River segment 2.104.4.

Kern River (2.104.6)

The segment of the lower Kern between Democrat Dam and SCE’s Kern River 1 Project diversion was originally considered ineligible in the 1988 Sequoia Plan. In an appeal settlement agreement, the Forest Service agreed that the segment was eligible due to its Scenery and Recreation ORVs. Sequoia Forest Supervisor Sandra Key noted that this segment “provides river oriented recreation year-round and respite from the hot valley to the west – a recreation ORV.”³²

In conjunction with eligible upstream segments, this reach of the lower Kern represents a continuum of diverse recreation opportunities that should be recognized as an Recreation ORV.

²⁹ Sequoia National Forest Land and Resource Management Plan FEIS Appendix E, USDA Forest Service 1988, pg. E-29.

³⁰ Revised DEIS for Revision of the Sequoia and Sierra Forest Plans, Vol. 2 Appendix C, USDA Forest Service, June 2019, pg. C-60.

³¹ Sequoia and Sierra Forest Plans FEIS Vol. 4, Appendix C, USDA Forest Service June 2022, pg. C-79.

³² Memo from Sequoia Forest Supervisor Sandra H. Key to Regional Forester, April 21, 1994.

This segment offers three distinct whitewater boating runs, including the class V Cadillac section, the class III-IV Rich Bar section, and the world famous class V Cataracts run.³³ The Forest Service's own promotional materials to the public for the Kern River confirms this: "Below Democrat you'll find numerous class V+ rapids, with a short area of class II and III near Richbar."³⁴

Whitewater boating in these more technical segments of the lower Kern is discounted in the eligibility analysis, which notes that "A few highly experienced whitewater enthusiasts enjoy the challenge of kayaking this segment." It should be recognized by the Forest Service that agency guidelines do not place a threshold on the number of visitors that are attracted from beyond or throughout the region (the basic eligibility criteria for Recreation ORVs). The fact that only a few of the world's top expert kayakers can run the Cataracts is most certainly a unique and rare recreation value.

The challenging Cataracts run is recognized world-wide. Sierra South considers the "world famous" Cataract run to be "one of the pinnacles of whitewater kayaking."³⁵ The internet is replete with videos of the "few" kayakers who challenge this run. For example:

<https://www.facebook.com/watch/?v=1373367166059965>

<https://www.facebook.com/watch/?v=1373367166059965>

https://www.youtube.com/watch?v=X2_jpl9Nun8

This segment of the Kern also provides crucial recreation opportunities for non-whitewater boaters. As the eligibility inventory notes, the segment is immediately adjacent to Highway 178, there are innumerable turnouts and three developed recreation sites where visitors stop to picnic, fish, and enjoy the water, and the segment is close to the Bakersfield area which draws crowds during the hot, summer season. Whitewater boating and family-oriented day use recreation on this segment represents a continuum of varied recreational opportunities that make the other segments of the lower Kern eligible.

Suggested Resolution: Recognize Kern River segment 2.104.6 as providing diverse recreation opportunities (expert whitewater boating, family day use recreation) that attract visitors from throughout and beyond the region.

Greenhorn Creek

The administrative record fails to support the claim that Greenhorn Creek does not possess a Recreation ORV associated with spelunking in Greenhorn Creek Cave. The narrative states that the cave is "well known" to spelunkers locally and regionally, but recreation is not considered a unique or exemplary recreation experience. The same narrative then describes the outstanding geology value of Greenhorn Creek Cave: "The entire creek disappears and flows underground

³³ <https://cacreeks.com/kern-xxx.htm>

³⁴ https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd616009.pdf

³⁵ <https://www.sierrasouth.com/plan-your-trip-to-the-kern-river/kern-river-boaters-guide/>

before reemerging downstream, this deep cave system is developed in granite bedrock, which is highly unusual (almost all caves in the Sierra Nevada are formed marble), and Greenhorn Cave is potentially the deepest granite cave in the United States.” The inventory confirms that this constitutes a Geology ORV for Greenhorn Creek. But given this description, spelunking in Greenhorn Cave should be considered a unique or rare recreational experience in an outstanding geological setting. The only other granite cave in California with a stream flowing through it that we of which we are aware is Millerton Caves on the San Joaquin River Gorge. That cave system is threatened with flooding by the proposed Temperance Flat dam and reservoir. Given the region of comparison for recreation values is the southern California counties of Los Angeles, Ventura, and San Diego and the Central Valley/Sierra Nevada counties of Kern and Tulare, visitors to Greenhorn Cave must be attracted from throughout the region and beyond.

Suggested resolution: Recognize a Recreation ORV for spelunking in the unique Greenhorn Creek Cave.

Classification Issues – Greenhorn Creek, Lucas Creek, Stark Creek, MF Erskine Creek

Much of the middle segment of Greenhorn Creek flows through the Greenhorn Creek Inventoried Roadless Area and portions of the eligible segments of Lucas Creek and Stark Creek flow through the Mill Creek Inventoried Roadless Area. It appears that a portion of the MF Erskine Creek is located in the Woolstaff Inventoried Roadless Area, upstream from the existing motorized route/trail (3E24) which appears to cross the creek on private land.

Suggested resolution: Classify the appropriate segments of Greenhorn, Lucas, Stark, and MF Erskine Creeks in inventoried roadless areas as Wild.

South Fork Kern Tributaries – Trout, Fish, and Lost Creeks

We appreciate the river systems approach with the WSR inventory in the 2022 Sequoia Plan/FEIS, which identifies key tributaries of the SF Kern that provide important habitat for California golden trout. We also appreciate that the Forest Service has appropriately revised the proposed classification for Trout, Fish, and Lost Creeks within the existing South Sierra and Domeland Wilderness areas as Wild.

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Attachment A: Habitat conditions in territories pre- and post-treatment for the SERAL Project. Adapted from the SERAL biological evaluation, Table CSO 10A.

	Existing Condition					Post- treatment Alt 1					Pre to Post Change in Habtiat					Proportion of Habitat Type						
SITE ID	6/5D	5M	4D	4M	Other	6/5D	5M	4D	4M	Other	Change in 6/5D	Change in 5M	Change in 4D	Change in 4M	Change in Other	Pre-Treatment 5M/5D/6	Post-Treatment 5M/5D/6	Pre-Treatment 5M/5D/6/4 D	Post-Treatment 5M/5D/6/4 D	Pre-Treatment 4M/4D/5M/5D/6	Post-Treatment 4M/4D/5M/5D/6	Territory Size (acres)
TUO0004	0	47	0	25	70	0	51	0	2	89	0	4	0	(23)	19	Proportion not calculated since territory <1,000 acres						142
TUO0005	0	816	7	130	47	0	587	0	15	398	0	(229)	(7)	(115)	351	82%	59%	82%	59%	95%	60%	1000
TUO0006	16	388	0	152	146	7	255	0	67	373	(9)	(133)	0	(85)	227	Proportion not calculated since territory <1,000 acres						702
TUO0014	0	479	6	113	98	0	331	0	2	363	0	(148)	(6)	(111)	265	Proportion not calculated since territory <1,000 acres						696
TUO0015	6	99	244	333	318	0	77	74	160	689	(6)	(22)	(170)	(173)	371	11%	8%	35%	15%	68%	31%	1000
TUO0017	17	176	233	418	156	4	144	19	248	586	(13)	(32)	(214)	(170)	430	19%	15%	43%	17%	84%	42%	1001
TUO0018	40	466	10	359	125	6	252	0	23	719	(34)	(214)	(10)	(336)	594	51%	26%	52%	26%	88%	28%	1000
TUO0037	125	22	148	377	200	123	55	22	281	391	(2)	33	(126)	(96)	191	Proportion not calculated since territory <1,000 acres						872
TUO0038	169	27	288	307	209	94	65	135	201	504	(75)	38	(153)	(106)	295	20%	16%	48%	29%	79%	50%	999
TUO0041	0	0	291	249	460	0	10	155	445	389	0	10	(136)	196	(71)	0%	1%	29%	17%	54%	61%	999
TUO0048	8	27	167	484	314	8	27	59	577	329	0	0	(108)	93	15	4%	4%	20%	9%	69%	67%	1000
TUO0049	1	0	462	119	418	0	20	225	365	390	(1)	20	(237)	246	(28)	0%	2%	46%	25%	58%	61%	1000
TUO0050	0	3	17	348	632	0	3	13	268	716	0	0	(4)	(80)	84	0%	0%	2%	2%	37%	28%	1000
TUO0051	21	13	288	242	437	8	66	122	192	612	(13)	53	(166)	(50)	175	3%	7%	32%	20%	56%	39%	1000
TUO0052	139	33	594	165	68	58	169	237	276	260	(81)	136	(357)	111	192	17%	23%	77%	46%	93%	74%	1000
TUO0055	0	0	373	265	362	0	33	144	438	384	0	33	(229)	173	22	0%	3%	37%	18%	64%	62%	999
TUO0056	133	92	264	388	123	120	111	224	343	202	(13)	19	(40)	(45)	79	23%	23%	49%	46%	88%	80%	1000
TUO0058	10	73	324	371	222	10	80	153	308	448	0	7	(171)	(63)	226	8%	9%	41%	24%	78%	55%	999
TUO0093	0	0	217	240	543	0	0	165	274	560	0	0	(52)	34	17	0%	0%	22%	17%	46%	44%	999
TUO0094	0	0	568	182	249	0	0	504	225	270	0	0	(64)	43	21	0%	0%	57%	50%	75%	73%	999
TUO0102	46	35	0	553	320	46	35	0	302	571	0	0	0	(251)	251	8%	8%	8%	8%	63%	38%	954
TUO0105	0	0	313	30	656	0	0	164	336	500	0	0	(149)	306	(156)	0%	0%	31%	16%	34%	50%	1000
TUO0106	0	0	498	72	429	0	0	398	221	380	0	0	(100)	149	(49)	0%	0%	50%	40%	57%	62%	999
TUO0107	0	0	430	110	460	0	0	381	175	443	0	0	(49)	65	(17)	0%	0%	43%	38%	54%	56%	999
TUO0108	0	0	488	316	196	0	0	395	408	196	0	0	(93)	92	0	0%	0%	49%	40%	80%	80%	999
TUO0109	0	0	507	297	196	0	11	212	542	234	0	11	(295)	245	38	0%	1%	51%	22%	80%	77%	999
TUO0110	0	0	661	106	233	0	0	494	286	220	0	0	(167)	180	(13)	0%	0%	66%	49%	77%	78%	1000
TUO0114	0	0	199	0	362	0	0	190	18	352	0	0	(9)	18	(10)	Proportion not calculated since territory <1,000 acres						560
TUO0117	0	143	0	486	350	0	73	0	276	630	0	(70)	0	(210)	280	Proportion not calculated since territory <1,000 acres						979
TUO0121	0	0	257	324	303	0	18	101	429	336	0	18	(156)	105	33	Proportion not calculated since territory <1,000 acres						884
TUO0136	0	0	422	84	494	0	0	387	130	482	0	0	(35)	46	(12)	0%	0%	42%	39%	51%	52%	999
TUO0137	0	0	584	55	361	0	0	435	291	273	0	0	(149)	236	(88)	0%	0%	58%	44%	64%	73%	999
TUO0139	0	0	801	151	48	0	13	430	508	48	0	13	(371)	357	0	0%	1%	80%	44%	95%	95%	999
TUO0152	4	319	98	456	123	0	337	0	95	568	(4)	18	(98)	(361)	445	32%	34%	42%	34%	88%	43%	1000
TUO0153	28	126	82	550	214	16	194	26	250	514	(12)	68	(56)	(300)	300	15%	21%	24%	24%	79%	49%	1000
TUO0154	136	100	165	378	221	34	151	117	197	502	(102)	51	(48)	(181)	281	24%	19%	40%	30%	78%	50%	1001
TUO0157	0	0	18	60	203	0	0	0	3	278	0	0	(18)	(57)	75	Proportion not calculated since territory <1,000 acres						281
TUO0160	85	94	33	406	316	17	173	0	248	497	(68)	79	(33)	(158)	181	Proportion not calculated since territory <1,000 acres						935
TUO0161	0	0	59	0	6	0	0	0	59	6	0	0	(59)	59	0	Proportion not calculated since territory <1,000 acres						65
TUO0163	6	41	142	373	438	0	49	77	385	489	(6)	8	(65)	12	51	5%	5%	19%	13%	56%	51%	1000
TUO0168	0	0	67	9	1	0	18	6	51	1	0	18	(61)	42	0	Proportion not calculated since territory <1,000 acres						76
TUO0170	183	37	66	425	289	161	33	32	87	687	(22)	(4)	(34)	(338)	398	22%	19%	29%	23%	71%	31%	1000

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SITE ID	6/5D	5M	4D	4M	Other	6/5D	5M	4D	4M	Other	Change in 6/5D	Change in 5M	Change in 4D	Change in 4M	Change in Other	Pre-Treatment 5M/5D/6	Post-Treatment 5M/5D/6	Pre-Treatment 5M/5D/6/4 D	Post-Treatment 5M/5D/6/4 D	Pre-Treatment 4M/4D/5M/5D/6	Post-Treatment 4M/4D/5M/5D/6	Territory Size (acres)
TUO0171	75	49	374	426	75	16	78	77	106	722	(59)	29	(297)	(320)	647	12%	9%	50%	17%	92%	28%	999
TUO0172	0	554	5	287	96	0	340	0	68	534	0	(214)	(5)	(219)	438	Proportion not calculated since territory <1,000 acres						942
TUO0189	0	0	678	10	311	0	0	588	107	304	0	0	(90)	97	(7)	0%	0%	68%	59%	69%	70%	999
TUO0190	0	15	401	469	115	0	79	264	403	254	0	64	(137)	(66)	139	2%	8%	42%	34%	89%	75%	1000
TUO0202	0	0	933	16	51	3	5	541	415	36	3	5	(392)	399	(15)	0%	1%	93%	55%	95%	96%	1000
TUO0203	4	3	445	286	261	4	39	152	486	317	0	36	(293)	200	56	1%	4%	45%	20%	74%	68%	998
TUO0207	70	34	352	447	97	22	121	118	332	408	(48)	87	(234)	(115)	311	10%	14%	46%	26%	90%	59%	1001
TUO0208	0	0	506	261	232	0	2	213	541	243	0	2	(293)	280	11	0%	0%	51%	22%	77%	76%	999
TUO0209	290	25	380	282	23	70	140	57	181	552	(220)	115	(323)	(101)	529	32%	21%	70%	27%	98%	45%	1000
TUO0216	0	86	102	465	347	0	104	15	296	584	0	18	(87)	(169)	237	9%	10%	19%	12%	65%	42%	999
TUO0220	114	157	12	379	227	43	142	0	157	546	(71)	(15)	(12)	(222)	319	Proportion not calculated since territory <1,000 acres						888
TUO0221	5	0	747	64	140	4	35	364	437	115	(1)	35	(383)	373	(25)	Proportion not calculated since territory <1,000 acres						955
TUO0222	3	43	275	275	405	3	55	132	353	457	0	12	(143)	78	52	5%	6%	32%	19%	60%	54%	1000
TUO0223	79	160	255	351	154	28	140	81	268	483	(51)	(20)	(174)	(83)	329	24%	17%	49%	25%	85%	52%	1000
TUO0239	15	35	29	158	108	0	75	18	41	209	(15)	40	(11)	(117)	101	Proportion not calculated since territory <1,000 acres						343