CENTER *for* BIOLOGICAL DIVERSITY

Wild Nature Institute

THE JOHN MUIR PROJECT of EARTH ISLAND INSTITUTE

August 15, 2022

Objection Reviewing Officer
USDA Forest Service, Pacific Southwest Region
ATTN: Objection Coordinator
Objections-Pacificsouthwest-Regional-Office@fs.fed.us
https://cara.fs2c.usda.gov/Public//CommentInput?Project=3375

RE: Sierra and Sequoia National Forests Plan Revision Objection

Dear Reviewing Officer:

Pursuant to 36 C.F.R. § 219.54, the Center for Biological Diversity,[1] John Muir Project of Earth Island Institute, and Wild Nature Institute submit the following objection to the Sierra and Sequoia National Forests Plan Revision. The names and titles of the responsible officials are as follows: Forest Supervisor Dean Gould (Sierra National Forest), Forest Supervisor Teresa Benson (Sequoia National Forest), and Regional Forester Jennifer Eberlien (list of species of conservation concern).

Statement Of The Issues And/Or The Parts Of The Plan Revision To Which The Objection Applies:

Our objection addresses the following aspects of the Forest Plans, Final Environmental Impact Statement (FEIS), and associated documents:

- Timber harvest components, especially with respect to wildlife habitat, carbon storage, and diameter limits
- Post-fire logging components
- Wildlife and plant components, including species of conservation concern
- Grazing components
- Road system components
- Riparian area components

This objection seeks principally to address conservation of the wildlife and plants present in the Sierra and Sequoia National Forests. To that end, we object to, and suggest changes to, the standards and guidelines in the revised Plans. Further, the Plan process violates NFMA and NEPA for the reasons described below and in our previous comments.

[1] Attached with this objection are objection statements from our supporters.

Link Between Prior Substantive Comments And The Content Of The Objection:

We previously submitted detailed, formal comments regarding the above-listed issues. Specifically, our organizations have been participating in the plan revision process since its inception, including the submission of extensive written comments regarding the above issues with respect to the following documents issued by the Forest Service: the Science Synthesis, the Bio-regional Assessment, the Natural Range of Variation reports, each Forest-specific Assessment, the Need to Change, the Draft Desired Conditions, the Proposed Action in Support of the Need to Change, the Draft List of Species of Conservation Concern, the 2016 Draft Plans, Draft EIS, and associated documents, and the 2019 Draft Plans, Draft EIS, and associated documents. We incorporate those comments/submissions by reference here.

Legal Framework

A. National Forest Management Act

The National Forest Management Act directs the Secretary of Agriculture to issue regulations "that set out the process for the development and revision of the land management plans, and the guidelines and standards prescribed by this subsection."[2] The Secretary "shall…incorporate the standards and guidelines required by this section in plans for units of the National Forest System…"[3]

In 2012, the Forest Service finalized regulations implementing NFMA. These regulations, commonly referred to as the "2012 Planning Rule," establish a process for developing and updating forest plans, and set conservation requirements that forest plans must meet.[4] The 2012 Rule addresses many aspects of forest planning, including:

Best Available Science (Section 219.3)

The 2012 Planning Rule requires the use of the best available scientific information and requires the Forest Service to justify how it has met this mandate.[5]

Ecological Sustainability (Section 219.8)

Ecological sustainability is the capability of ecosystems to maintain ecological integrity.[6] Plans "must include plan components, including standards or guidelines, to maintain or restore the ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area…"[7] These components must consider contributions of the plan area to ecological conditions within the broader landscape influenced by the plan area and conditions in the broader landscape that may influence the sustainability of resources and ecosystems within the plan area.[8] The Rule also

[2] 16 U.S.C. §1604(g)
[3] *Id*. at § 1604(c)
[4] 36 C.F.R. § 219
[5] 36 C.F.R. § 219.3
[6] 36 C.F.R. § 219.19
[7] 36 C.F.R. § 219.8
[8] *Id*.

references "[s]ystem drivers, including dominant ecological processes, disturbance regimes, and stressors, such as natural succession" and wildland fire.[9]

Ecosystem Integrity and Diversity (Section 219.9(a))

Rule 219.9(a) requires plan components to include standards or guidelines to maintain or restore the ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area, including plan components to maintain or restore their structure, function, composition, and connectivity.[10] Rule 219.9(a) further mandates that Plans contain "components, including standards or guidelines, to maintain or restore the diversity of ecosystems and habitat types throughout the plan area…includ[ing] plan components to maintain or restore: (i) Key characteristics associated with terrestrial and aquatic ecosystem types; (ii) Rare aquatic and terrestrial plant and animal communities; and (iii) The diversity of native tree species similar to that existing in the plan area."[11]

Recovery of listed species, conservation of proposed and candidate species, and maintaining viable populations of species of conservation concern (Section 219.9(b)).

The 2012 Planning Rule also includes a distinct set of substantive requirements for management of wildlife. To protect Forest wildlife and plants, section 219.9(b) requires the Forest Service to "determine whether or not the plan components…provide 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 within the plan area."[12] If the Plan components do not unequivocally achieve that mandate, then section 219.9(b) requires "additional, species-specific plan components, including standards or guidelines… to provide such ecological conditions in the plan area."[13]

Wildlife Protection and Timber (Section 219.11)

Section 219.11 of the Planning Rule specifically requires that logging "be carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, and aesthetic resources," and that "[w]here plan components will allow clearcutting, seed tree cutting, shelterwood cutting, or other cuts designed to regenerate an even-aged stand of timber, the plan must include standards limiting the maximum size for openings that may be cut in one harvest operation, according to geographic areas, forest types, or other suitable classifications."[14]

Monitoring Program (Section 219.12)

Section 219.12 of the Planning Rule requires the development of "a monitoring program for the plan area" that "should enable the responsible official to determine if a change in plan

---

[9] *Id.*
[10] 36 C.F.R. § 219.9(a)
[11] *Id.*
[12] 36 C.F.R. § 219.9(b)
[13] *Id.*
[14] 36 C.F.R. § 219.11

components or other plan content that guide management of resources on the plan area may be needed."[15] This monitoring is important as it is "designed to inform the management of resources on the plan area, including by testing relevant assumptions, tracing relevant changes, and measuring management effectiveness and progress toward achieving or maintaining the plan's desired conditions or objectives."[16] To that end the program's "questions and associated indicators" must address the "status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems," "status of focal species to assess the ecological conditions required under 219.9," and "status of a select set of the ecological conditions required under 219.9 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."[17] They must also address "measurable changes on the plan area related to climate change and other stressors that may be affecting the plan area."[18] The program must be developed as "part of the planning process for a …plan revision."[19]

B. National Environmental Policy Act

The National Environmental Policy Act ("NEPA") is America's "basic national charter for protection of the environment."[20] NEPA ensures that federal agencies "will have available, and will carefully consider, detailed information concerning significant environmental impacts" and that such information "will be made available to the larger [public] audience."[21] To this end, NEPA requires federal agencies to prepare a detailed Environmental Impact Statement (EIS) for any "major federal action significantly affecting the quality of the human environment."[22]NEPA "ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts."[23] The statute's bedrock principles are "informed decision-making and informed public participation."[24]

The EIS must describe (1) the "environmental impact of the proposed action," (2) any "adverse environmental effects which cannot be avoided should the proposal be implemented," (3) alternatives to the proposed action, (4) "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity," and (5) any "irreversible or irretrievable commitment of resources which would be involved in the proposed action should it be implemented."[25] The Council on Environmental Quality ("CEQ") has promulgated regulations to implement NEPA, and all federal agencies must comply with the CEQ NEPA regulations.[26]

---

[15] 36 C.F.R. § 219.12(a)(1)
[16] 36 C.F.R. § 219.12(a)(2)
[17] 36 C.F.R. § 219.12(a)(5)
[18] 36 C.F.R. § 219.12(a)(5)(vi)
[19] 36 C.F.R. § 219.12(c)
[20] 40 C.F.R. § 1500.1(a)
[21] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989)
[22] 42 U.S.C. § 4332(2)(C)
[23] *Friends of the Clearwater v. Dombeck*, 222 F.3d 552, 557 (9th Cir. 2000)
[24] *League of Wilderness Defenders/Blue Mts. Biodiversity Project v. U.S. Forest Serv.*, 689 F.3d 1060, 1075 (9th Cir. 2012)
[25] 42 U.S.C. § 4332
[26] 40 C.F.R. § 1507.1

As part of the EIS, each federal agency must "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources."[27] An agency must "rigorously explore and objectively evaluate all reasonable alternatives."[28] When conducting an alternatives analysis, "[t]he stated goal of a project necessarily dictates the range of 'reasonable' alternatives and an agency cannot define its objectives in unreasonably narrow terms."[29]

NEPA further requires that federal agencies take a "hard look" at the environmental consequences of their actions and do so while addressing reasonably foreseeable, direct, indirect, and cumulative impacts to the natural and physical environment.[30] "Taking a 'hard look'…should involve a discussion of adverse impacts that does not improperly minimize negative side effects."[31] It also means "provid[ing] full and fair discussion of significant environmental impacts…General statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided."[32] Cumulative impacts are impacts that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over time.[33]

Moreover, "[a]gencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement."[34] Agencies must also disclose and discuss opposing viewpoints.[35] Furthermore, the agency cannot give "short shrift" to public concerns and instead must respond "objectively and in good faith."[36]

Federal agencies have a continuing obligation to gather and evaluate new information relevant to the environmental impact of its actions. "An agency that has prepared an EIS cannot simply rest on the original document. The agency must be alert to new information that may alter the results of its original environmental analysis, and continue to take a 'hard look' at the environmental effects of [its] planned action, even after a proposal has received initial approval."[37]

---

[27] 42 U.S.C. § 4332(2)(E)
[28] 40 C.F.R. § 1502.14(a)-(c)
[29] *City of Carmel-By-The-Sea v. U.S. Dept. of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997)
[30] *See* 40 C.F.R. §§ 1502.16, 1508.7, 1508.8; *see also Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d (9th Cir. 1998); *Earth Island Institute v. U.S. Forest Serv.*, 442 F.3d 1147 (9th Cir. 2006)
[31] *League of Wilderness Defenders/Blue Mountains Biodiversity Project v. U.S. Forest Serv.*, 689 F.3d at 1075
[32] *Conservation Cong. v. Finley*, 774 F.3d 611, 616 (9th Cir. 2014)
[33] 40 C.F.R. § 1508.7
[34] 40 C.F.R. § 1502.24
[35] 40 C.F.R. § 1502.9
[36] *W. Watersheds Project v. Kraayenbrink*, 632 F.3d 472, 493 (9th Cir. 2011)
[37] *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 373-74 (1989)

C. Endangered Species Act

Congress enacted the ESA in 1973 "to provide a program for the conservation of… endangered species and threatened species" and to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved."[38]

If a federal project may affect a listed species, the action agency must engage in "consultation" with the U.S. Fish & Wildlife Service under Section 7 of the ESA. Section 7 is the central enforcement provision that operates to prohibit federal agencies from authorizing, funding, or otherwise carrying out any action that is likely to "jeopardize" the continued existence of an endangered species or result in the destruction or adverse modification of the species' critical habitat.[39]

Forest Plans are recognized as important programmatic documents that set out guidelines for resource management. Section 7 consultation is required for forest plans, and the 2012 Planning Rule requires Plans to "provide the ecological conditions necessary to: contribute to the recovery of federally listed threatened and endangered species."

D. Administrative Procedure Act

The Administrative Procedure Act prohibits "arbitrary and capricious" decision-making,[40] and provides an important layer of legal oversight to agency actions such as the Forest Plan process. The Forest Service must demonstrate a rational connection between the facts found and choices made.[41]

<u>Concise Statement Explaining The Objection And Suggesting How The Proposed Plan Decision May Be Improved, And How The Plan Revision Is Inconsistent With Law, Regulation, Or Policy:</u>

We object to the lack of components in the Final Plans to adequately protect wildlife habitat for species such as the fisher, California spotted owl, Sierra marten, great gray owl, northern goshawk, Yosemite toad, Sierra Nevada yellow-legged frog, and black-backed woodpecker. NFMA requires, for example, that Plans contain "components, including standards or guidelines, to maintain or restore the diversity of ecosystems and habitat types throughout the plan area…includ[ing] plan components to maintain or restore: (i) key characteristics associated with terrestrial and aquatic ecosystem types; and (ii) rare aquatic and terrestrial plant and animal communities."[42] NFMA similarly requires that Forest Plans "contribute to the recovery of federally listed threatened and endangered species . . . and maintain a viable population of each species of conservation concern within the plan area."[43] The existing Plan components do not

---

[38] 16 U.S.C. § 1531(b)
[39] *Id*. § 1536(a)(2)
[40] 5 U.S.C. § 706
[41] *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983)
[42] 36 C.F.R. § 219.9
[43] *Id*.

achieve those mandates, especially in light of Alternative B-modified's proposed increase in mechanical treatments.[44]

Relatedly, we object to the contradiction created by the Plan components wherein the desired conditions for forested areas (e.g., dry mixed-conifer) are contrary to the habitat needs of rare species like the fisher and spotted owl. For example, while both fishers and spotted owls rely heavily on dense, late-seral forest, the Plan components contain desired conditions that seek "0-20% dense mature forest" in the dry mixed-conifer forest where these species can be found.[45] Furthermore, the post-fire forest habitat (referred to as complex early seral forest) relied upon by woodpeckers, bats, songbirds, bees, and many other species is not protected.

The FEIS fails to take a hard look at these issues, as it does not adequately explain, for example, how the Plans will meaningfully protect the wildlife that relies on the dense, mature forest that the Plans target for timber harvest; how species like the Yosemite toad and great gray owl will be protected from grazing harm; or how ephemeral post-fire habitat will be maintained for the many species that use it.

The Forest Service must address these issues, including by changing Plan components, and below we offer specific edits and additions to the existing Plan components (additions are provided in underline format and deletions in strikethrough format), as well as more detail regarding NFMA and NEPA violations:

A. Plan Components

The following Plan components are edited to ensure that the Plans "maintain or restore the diversity of ecosystems and habitat types throughout the plan area," and "contribute to the recovery of federally listed threatened and endangered species . . . and maintain a viable population of each species of conservation concern within the plan area."[46]

Forestwide Components for Terrestrial Ecosystems
Standard (TERR-FW-STD) (Sierra Plan, p. 27)[47]
01 Retain live conifer trees greater than ~~30~~ 24 inches in diameter except in the case of imminent threat to life and property, or if one of the conditions below is met:

a When required for equipment operability, individual trees less than 35 inches in diameter may be removed on an incidental basis.

b Outside of California spotted owl territories and where necessary to move toward terrestrial vegetation desired conditions, live trees greater than ~~30~~ 24 inches but less than 40 inches in diameter may be felled for coarse woody debris, or removed, under the following limited circumstances:

[44] See e.g., FEIS, pp. 34, 692; Sierra Plan, p. 26
[45] Sierra Plan, p. 30
[46] 36 C.F.R. § 219.9
[47] Our objection uses the Sierra National Forest Plan as its focus but our points apply to the Sequoia Plan as well.

- When removing trees is needed for aspen, oak, or meadow restoration treatments or for cultural or Tribal importance;
- ~~In overly dense stands to favor retention or promote the growth of even larger or older shade-intolerant trees to meet tree species composition and forest structure restoration goals more effectively;~~
- ~~To promote the establishment, growth, and development of shade-intolerant species by creating small gaps (generally less than 0.5 acre) in stands historically dominated by shade-intolerant species;~~
- ~~To improve the growth and vigor of rust-resistant sugar pine trees greater than 16 inches in diameter by reducing competition from surrounding trees; or~~
- ~~To reduce loss of large-diameter trees due to competition in overly dense stands within homogeneous plantations.~~

Reason for edits: Large trees (>24 inches dbh) in the forests of the southern Sierra provide numerous benefits, including critically important habitat and climate benefits. Unfortunately, however, there currently exists a severe deficit of large trees in the Sierra region, largely due to past logging. For example, McIntyre et al. 2015 observed "[d]eclines of ∼50% in large tree numbers . . . in the Sierra Nevada . . . ."[48] This dearth of trees over 24 inches dbh shows that a 24 inch diameter cap is necessary to allow large tree numbers to recover and thereby ensure ecosystem and ecological integrity in the southern Sierra. This is especially so in light of the fact that many rare species, such as fishers and spotted owls, heavily rely on large trees for their well-being. It is not possible to protect or recover these at-risk species without protecting and recovering the large trees they depend upon.[49] Moreover, the above conditions we object to are too broad to ensure they will not be used extensively, especially from a cumulative perspective. For example, in "overly dense stands," can a 40 inch tree anywhere in the stand be cut, or must it be, e.g., when the bole is within the drip line, or double the drip line, of the larger tree? No such details/limitations currently exist in the condition to prevent it abuse.

Complex Early Seral Habitats
Standards ~~Guidelines~~ (TERR-CES-STD~~GDL~~) (Sierra Plan, pp. 46-47)
02 Post-disturbance restoration projects ~~should be~~ shall be designed to protect and restore important wildlife habitat. The following guidance shall be followed to achieve that outcome when planning post-fire actions:

- "Manage a substantial portion of post-fire areas for large patches (20–300 acres) burned with high severity as wildlife habitat."

[48] McIntyre, PJ, JH Thorne, CR Dolanc, AL Flint, LE Flint, M Kelly, DD Ackerly. 2015. Twentieth-century shifts in forest structure in California: Denser forests, smaller trees, and increased dominance of oaks. Proceedings of the National Academy of Sciences 112 (5), 1458-1463

[49] E.g., "Recent research indicates that observed population declines of California spotted owl on National Forest System lands in the Sierra Nevada may partly be explained by the result of a lag effect from prior removal of large trees (Jones et al. 2018)."

- "Retain high severity patches in areas where pre-fire snags are abundant as these are the trees most readily used by cavity nesting birds in the first three years after a fire."
- "Snag retention immediately following a fire should aim to achieve a range of snag conditions from heavily decayed to recently dead in order to ensure a longer lasting source of snags for nesting birds."
- "Retain smaller snags in heavily salvaged areas to increase snag densities because a large range of snag sizes, from as little as 6 inches DBH, are used by a number of species for foraging and nesting. Though, most cavity nests are in snags over 15 inches DBH."
- "Retain patches of high burn severity adjacent to intact green forest patches, as the juxtaposition of unlike habitats is positively correlated with a number of avian species."

05 Large fires with ~~more than 1,000 acres of contiguous blocks of~~ high vegetation burn severity in forest vegetation types (ponderosa pine, Jeffery pine, dry or mesic mixed conifer, and red fir) shall ~~should~~ retain as much as possible but at least ~~10~~ 50 percent of the high vegetation burn severity area without harvest to provide areas of complex early seral habitat.

06 To minimize disturbance to nesting birds in post-fire habitat, apply a limited operating period prohibiting salvage logging and shrub abatement activities from May 1—July 31.

Reason for edits: The above edits and additions are drawn from the following research conducted in the Sierra Nevada region with respect to post-fire forests and wildlife: Blakey et al. 2019[50] (discussing bat use of burned forest); Bond et al. 2009[51], 2013[52] (discussing spotted owl use of burned forest); Buchalski et al. 2013[53] (discussing bat use of burned forest); Burnett et al. 2010[54], 2012[55] (discussing avian use of burned forest); Campos and Burnett 2015[56], 2016[57], 2017[58] (discussing avian and bat use of burned forest); Fogg et al. 2015[59], 2016[60] (discussing

[50] Blakey, Rachel & Webb, Elisabeth & Kesler, Dylan & Siegel, Rodney & Corcoran, Derek & Johnson, Matthew. 2019. Bats in a changing landscape: Linking occupancy and traits of a diverse montane bat community to fire regime. Ecology and Evolution. 9. 10.1002/ece3.5121.
[51] Bond, M. L., D. E. Lee, R. B. Siegel, & J. P. Ward, Jr. 2009. Habitat use and selection by California Spotted Owls in a postfire landscape. Journal of Wildlife Management 73: 1116-1124
[52] Bond, ML, DE Lee, RB Siegel, and MW Tingley. 2013. Diet and home-range size of California spotted owls in a burned forest. Western Birds 44:114-126
[53] Buchalski, M.R., J.B. Fontaine, P.A. Heady III, J.P. Hayes, and W.F. Frick. 2013. Bat response to differing fire severity in mixed-conifer forest, California, USA. PLOS ONE 8: e57884
[54] Burnett, R.D., P. Taillie, and N. Seavy. 2010. Plumas Lassen Study 2009 Annual Report. U.S. Forest Service, Pacific Southwest Region, Vallejo, CA
[55] Burnett, R.D., M. Preston, and N. Seavy. 2012. Plumas Lassen Study 2011 Annual Report. U.S. Forest Service, Pacific Southwest Region, Vallejo, CA
[56] Campos, Brent R. and Ryan D. Burnett. 2015. Avian monitoring of the Storrie and Chips Fire Areas: 2014 report
[57] Campos, Brent R. and Ryan D. Burnett. 2016. Bird and Bat Inventories in the Moonlight, Storrie, and Chips Fire Areas: 2015 report to the Lassen and Plumas National Forests
[58] Campos, B.R., R.D. Burnett and Z.L. Steel. 2017. Bird and bat inventories in the Storrie and Chips fire areas 2015-2016: Final report to the Lassen National Forest. Point Blue Conservation Science, Petaluma, CA.
[59] Fogg, Alissa M., Zachary L. Steel and Ryan D. Burnett. 2015. Avian Monitoring of the Freds and Power Fire Areas
[60] Fogg, Alissa, Zack Steel, and Ryan Burnett. 2016. Avian Monitoring in Central Sierra Post-fire Areas

avian use of burned forest); Hanson and North 2008[61] (discussing woodpecker use of burned forest); Hanson 2014[62] (discussing avian use of burned forest); Hanson and Chi 2020 (discussing woodpecker use of burned forest); Hanson et al. 2019[63] (discussing spotted owl use of burned forest); Lee 2020,[64] Lee et al. 2012[65], Lee and Bond 2015[66] (discussing spotted owl use of burned forest); Loffland et al. 2017[67] (discussing bee use of burned forest); Manley and Tarbill 2012[68] (discussing woodpecker use of burned forest); Roberts et al. 2021[69] (discussing avian use of burned forest); Seavey et al. 2012[70] (discussing woodpecker use of burned forest); Siegel et al. 2012[71], 2013[72], 2014[73], 2014[74], 2016[75], 2019[76], 2022[77] (discussing woodpecker and owl use of

---

[61] Hanson, C. T. and M. P. North. 2008. Postfire woodpecker foraging in salvage-logged and unlogged forests of the Sierra Nevada. Condor 110: 777–782

[62] Hanson, C.T. 2014. Conservation concerns for Sierra Nevada birds associated with high- severity fire. Western Birds 45: 204-212

[63] Hanson CT, Bond ML, Lee DE. 2018. Effects of post-fire logging on California spotted owl occupancy. Nature Conservation 24: 93–105. https://doi.org/10.3897/natureconservation.24.20538

[64] Lee, D. E. 2020. Spotted Owls and forest fire:Reply. Ecosphere 11(12):e03310

[65] Lee, D.E., M.L. Bond, and R.B. Siegel. 2012. Dynamics of breeding-season site occupancy of the California spotted owl in burned forests. The Condor 114: 792–802

[66] Lee D.E., Bond M.L. 2015. Occupancy of California Spotted Owl sites following a large fire in the Sierra Nevada, California. The Condor 117: 228–236

[67] Loffland, H.L., J.S. Polasik, M.W. Tingley, E.A. Elsey, C. Loffland, G. Lebuhn, and R.B. Siegel. 2017. Bumble bee use of post-fire chaparral in the central Sierra Nevada. The Journal of Wildlife Management 81:1084–1097.

[68] Manley, Patricia N., and Gina Tarbill. 2012. Ecological succession in the Angora fire: The role of woodpeckers as keystone species. Final Report to the South Nevada Public Lands Management Act. U.S. Forest Service

[69] Roberts, L.J.; Burnett, R.; Fogg, A. 2021. Fire and Mechanical Forest Management Treatments Support Different Portions of the Bird Community in Fire-Suppressed Forests. Forests 12, 150.

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

[71] Siegel, R.B., M.W. Tingley, and R.L. Wilkerson. 2012. Black-backed Woodpecker MIS surveys on Sierra Nevada national forests: 2011 annual report. Report to U.S.D.A. Forest Service Pacific Southwest Region. The Institute for Bird Populations, Point Reyes Station, CA

[72] Siegel, R.B., M.W. Tingley, R.L. Wilkerson, M.L. Bond, and C.A. Howell. 2013. Assessing home range size and habitat needs of Black-backed Woodpeckers in California: Report for the 2011 and 2012 field seasons. Institute for Bird Populations

[73] Siegel, R.B., M.W. Tingley, and R.L. Wilkerson. 2014. Assessing home-range size and habitat needs of Black-backed Woodpeckers in California: report for the 2013 field season. Report to U.S.D.A. Forest Service Pacific Southwest Region. The Institute for Bird Populations, Point Reyes Station, CA

[74] Siegel, R.B., R.L. Wilkerson, M.W. Tingley, and C.A. Howell. 2014. Roost sites of the Black-backed Woodpecker in burned forest. Western Birds 45:296–303

[75] Siegel, R.B., M.W. Tingley, R.L. Wilkerson, C.A. Howell, M. Johnson, and P. Pyle. 2016. Age structure of Black-backed Woodpecker populations in burned forests. The Auk: Ornithological Advances 133:69–78

[76] Siegel, R.B., S.A. Eyes, M.W. Tingley, J.X. Wu, S.L. Stock, J.R. Medley, R.S. Kalinowski, A. Casas, M. Lima-Baumbach, and A.C. Rich. 2019. Short-term resilience of Great Gray Owls to a megafire in California, USA. The Condor: Ornithological Applications 121:1–13

[77] Siegel, R.B., M.W. Tingley, and R.L. Wilkerson. 2022. Black-backed Woodpecker MIS surveys on Sierra Nevada national forests: 2021 annual report. The Institute for Bird Populations, Petaluma, CA. Siegel et al 2022 states for example: "[E]arly post-fire sites with high snag densities have a relatively higher probability of being colonized than other sites. By comparison, only burn severity showed a moderately negative association with extinction (i.e., more severe fires make extinction less likely)." … colonization (after fires are greater than 1 year old) is a relatively unlikely event, but one which is strongly associated with both fire age and snag density. Colonization after one-year post-fire, consequently, is an important dynamic strongly influencing the observed distribution of Black-backed Woodpeckers on a landscape. If management actions were to be aimed at increasing overall occupancy, these results suggest that colonization should be targeted rather than extinction, presumably through targeted retention of early post-fire stands with high snag densities (Tingley et al. 2018)."

burned forest); Stillman et al. 2019[78], 2019,[79] and 2021[80] (discussing woodpecker use of burned forest); Taillie et al. 2018[81] (discussing avian use of burned forest); Tingley et al. 2014[82], 2016,[83] and 2020[84] (discussing woodpecker use of burned forest); White et al. 2016,[85] 2019[86] (discussing avian use of burned forest).

The above referenced studies explain, for example: "[M]anagement plans that incorporate habitat for multiple woodpecker species would maintain the greatest biodiversity." And the studies point out that "suppressing high-severity fire would negatively affect a number of species in the Sierra Nevada," including not only woodpeckers but also "species associated with understory vegetation and shrubs, particularly after roughly a decade following fire." Thus, "Forest managers should consider these lasting effects of high-severity fire on shrub development and supporting shrub-associated birds that are far less abundant in unburned forest."

The LOP is needed to ensure that nesting birds are not killed or harmed during the nesting season (see e.g. "A Conservation Strategy for the Black-backed Woodpecker in California v2.0" at p. 10).

Fisher
Standard (SPEC-FSHR-STD) (Sierra Plan, p. 54)
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 existing canopy ~~class~~ coverage.

---

[78] Stillman, A.N., R.B. Siegel, R.L. Wilkerson, M. Johnson, and M.W. Tingley. 2019. Age-dependent habitat relationships of a burned forest specialist emphasise the role of pyrodiversity in fire management. Journal of Applied Ecology 56:880-890

[79] Stillman, A.N., R.B. Siegel, R.L. Wilkerson, M. Johnson, C.A. Howell and M.W. Tingley. 2019. Nest site selection and nest survival of Black-backed Woodpeckers after wildfire. The Condor: Ornithological Applications XX:1–13

[80] Stillman, A.N., T.J. Lorenz, R.B. Siegel, R.L. Wilkerson, M. Johnson, and M.W. Tingley. 2021. Conditional natal dispersal provides a mechanism for populations tracking resource pulses after fire. Behavioral Ecology 2021:1-10

[81] Taillie, P. J., R. D. Burnett, L. J. Roberts, B. R. Campos, M. N. Peterson, and C. E. Moorman. 2018. Interacting and non-linear avian responses to mixed-severity wildfire and time since fire. Ecosphere 9(6):e02291. 10.1002/ecs2.2291

[82] Tingley, M.W., R.L. Wilkerson, M.L. Bond, C.A. Howell, and R.B. Siegel. 2014. Variation in home range size of Black-backed Woodpeckers (*Picoides arcticus*). The Condor: Ornithological Applications 116: 325–340

[83] Tingley, M.W., V. Ruiz-Gutiérrez, R.L. Wilkerson, C.A. Howell, and R.B. Siegel. 2016. Pyrodiversity promotes avian diversity over the decade following forest fire. Proceedings of the Royal Society B 283:20161703.

[84] Tingley, M.W., A.W. Stillman, R.L. Wilkerson, S.C. Sawyer, and R.B. Siegel. 2020. Black-backed woodpecker occupancy in burned and beetle-killed forests: disturbance agent matters. Forest Ecology and Management 455:117694.

[85] White, A. M.; Manley, P. N.; Tarbill, G. L.; Richardson, T. W.; Russell, R. E.; Safford, H. D.; Dobrowski, S. Z. 2016. Avian community responses to post-fire forest structure: implications for fire management in mixed conifer forests. Animal Conservation. 19(3): 256-264

[86] White, A.M., G.L. Tarbill, B. Wilkerson, and R. Siegel. 2019. Few detections of Black-backed Woodpeckers (Picoides arcticus) in extreme wildfires in the Sierra Nevada. Avian Conservation and Ecology 14:17

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.

Guidelines (SPEC-FSHR-GDL) (Sierra Plan, p. 55)
01 To increase habitat sustainability while minimizing short-term habitat impacts, vegetation management activities in fisher potential denning habitat should be designed to maintain habitat quality ~~in larger blocks (greater than 25 acres)~~, especially in high quality denning habitat; while achieving fuels objectives, increasing habitat resiliency, and increasing average tree size.

a Within high quality denning habitat, where possible, limit vegetation management to patchy treatment of surface and ladder fuels to achieve fuels objectives and reduce fuel continuity, while still meeting high quality denning habitat classification criteria and:

i. Do not decrease the existing CWHR size or existing canopy ~~class~~ coverage.

ii. 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~~ (except where a safety hazard).

iii. Where present, retain multistory conditions in stands with canopy greater than 60 percent.

b Within potential denning habitat (which includes high quality denning habitat and other denning habitat), if habitat quality reduction is necessary while achieving fuels objectives, and increasing habitat resilience and average tree size:

i. High quality denning habitat must still meet potential denning habitat criteria post treatment; similarly, other denning habitat must still meet suitable habitat criteria post treatment.

ii. Habitat quality reduction is limited to no more than 50 percent of the potential denning habitat available within the immediate fisher home range-sized area.

iii. Avoid reducing habitat quality in the largest patches of potential denning habitat within the home range-sized area.

iv. Retain trees with mistletoe infestation

Reason for edits: In addition to large snags, snag basal area is a critical aspect of fisher habitat (e.g. Purcell et al. 2009). And canopy cover is likewise a critical aspect of fisher denning habitat (e.g. Purcell et al. 2009) and should therefore be maintained as it exists, not allowed to drop based on class. Purcell et al. 2009 also states the following: "Trees used by fishers for resting were among the largest available and frequently had mistletoe infestations . . . Resting locations used by fishers included cavities, old squirrel nests or platforms, witches brooms, and large branches. Although no data were collected on the proportion of trees infected with mistletoe over the study area, a significant number of resting structures exhibited some degree of infestation. Selection for ponderosa pine and white fir was likely related to the occurrence of mistletoe brooms in these species (Hawksworth and Wiens, 1972). Aubry and Raley (2006) found that fishers used mistletoe brooms more than any other microsite." It is thus critical to protect trees with mistletoe. Finally, limiting the Guideline to habitat "blocks greater than 25 acres" would allow degradation of smaller patches. For an endangered species like the fisher, all patches should be protected to contribute to recovery.

Sierra Marten

Standard~~Guideline~~ (SPEC-SM-STD~~GDL~~) (Sierra Plan, p. 58)

01 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~~.

Reason for edits: Like fishers, martens require dense old forest habitat with high canopy cover. It is therefore essential to maintain and enhance old forest structural complexity and canopy cover including shrubs where they exist in marten habitat management areas. Moriarty et al. 2016 states: "Fuels treatments that simplify forest structure (e.g., removal of small diameter trees, downed logs) have negative effects on marten movement dynamics. Thus, the most obvious recommendation to benefit martens is to plan fuels treatments outside of their habitat. . . .." Moreover, "[t]he physical structure of the forest, including large live and dead trees, coarse woody debris, and a relatively low and closed canopy, appears more important for Sierra martens than species composition."

California Spotted Owl

Standards (SPEC-CSO-STD) (Sierra Plan, pp. 64-65)

01 ~~For vegetation treatments that maintain or improve habitat quality in California spotted owl nesting and roosting habitat outside of protected activity centers, pre-implementation surveys are not required.~~ Before authorizing mechanical vegetation treatments within existing protected activity centers or vegetation treatments that may reduce near-term habitat quality in California spotted owl nest or roost habitat of unknown occupancy, follow current guidance for the Pacific Southwest region to:

- Determine occupancy status;
- Identify owl nest sites (where nest location is not known, the most recent daytime roost); and
- Delineate new or modify existing protected activity centers and territories, as necessary, within the project area;
- Conduct post-project surveys for at least 5 years after a mechanical vegetation treatment project begins implementation.

02 In California spotted owl protected activity centers, all management activities must maintain or improve habitat quality in the highest quality nesting and roosting habitat. ~~Where necessary to increase long-term resilience, vegetation treatments that may reduce near-term habitat quality may be authorized in up to 100 acres outside of the highest quality nesting and roosting habitat.~~ Throughout protected activity centers all vegetation treatments must:

- Retain the largest/oldest trees, known nest trees, and other large trees and snags with cavities, deformities, broken tops, or other habitat features of value to old-forest species;
- Retain connected areas of moderate (at least 40 percent) and high (at least 60 percent) canopy cover between the known nest site (if nest site is not known, use the most recent known roost site) and areas in the remainder of the protected activity center;
- Avoid mechanical treatments ~~within a 10-acre area surrounding the most recent known nes~~t;
- Avoid creating new landings, new temporary roads, or canopy gaps ~~larger than 0.25 acre~~;
- Increase the quadratic mean diameter of trees at the protected activity center scale; and
- Maintain the average canopy cover of the protected activity center above ~~5~~70 percent.

04 When mechanical treatments create canopy gaps within California spotted owl territories, but outside of protected activity centers, individual openings shall not exceed 0.25~~ 1.25 ~~acres~~ (and should generally not exceed 0.5 acre) ~~and shall not comprise more than 10 percent ~~20 to 30 percent (as appropriate depending on the desired conditions for the terrestrial vegetation type and existing site conditions) ~~of the total area in the territory. This includes openings created for the construction of landings or temporary roads (restricted to 0.57 mile or less).

07 Removal of dead and fire-damaged trees shall not occur within spotted owl territories, except where a safety hazard.

Reason for edits: Surveys should always be done in order to know the baseline situation and gain knowledge from it to help ensure species viability given the recent rapid declines on National Forests in the Sierra region. Surveys should also be done post-project to help understand how treatments may be impacting owls and to address owl decline. With respect to habitat impacts, as stated in the Plan and FEIS documents: "Recent research indicates that observed population declines of California spotted owl on National Forest System lands in the Sierra Nevada may partly be explained by the result of a lag effect from prior removal of large trees (Jones et al. 2018)."; **"**California Spotted Owls primarily occupy coniferous and mixed pine-oak forests that have late stage characteristics with canopy cover and tree size being the most important predictors of California spotted owl presence (Jones et al. 2018, North et al. 2017, Gutiérrez et al. 2017, Wood et al. 2018)."; "California spotted owls choose roosts and nest sites in microhabitats within areas of dense vegetation, dense canopy cover, and complex, multi-story forest structure (Tempel et al. 2016, USFWS 2017, Atuo et al. 2019, Blakey et al. 2019)."; "Being cavity nesters, they require snags or decadent trees that have cavities or mistletoe platforms, such as black oaks, multi-forked firs, or broken top incense cedars. Snags and large downed woody debris are required as they provide habitat for important prey species including northern flying squirrels and mice."; "Seamans and Gutiérrez (2007) and Tempel et al. (2014) found the availability and amount of late seral forest, with canopy cover greater than 70% and a dominance of medium and large trees >30 cm and >60.9 cm, respectively, were positively correlated with territory occupancy, survival, and population growth. Therefore, reductions in the availability and amount of late-seral forest with high canopy cover (>70%) and dominated by medium and large trees would be expected to reduce occupancy, survival, and population growth based on these correlative studies."; "In a comparison of owl foraging patterns following vegetation treatments, Gallagher et al. found California spotted owl foraging locations were best predicted by proximity to site center, lower proportion of gaps, and steep slopes (Gallagher et al. 2018)."; "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." (U.S. Fish and Wildlife Service 2017).

Great Gray Owl (Sierra Plan, pp. 68-69)
Standards~~Guidelines~~ (SPEC-GGO-STD~~GDL~~)

01 In meadow areas of great gray owl protected activity centers, manage to enhance habitat for prey species and maintain greatest herbaceous vegetation commensurate with site capability. Determine site-specific meadow capability using fenced grazing exclusions for the meadow portion of the PAC.

03 To protect and provide habitat ~~used by fledglings~~, retain large snags ~~or~~ and ~~recruit~~ ~~pockets of~~ dense canopy cover (greater than 65 percent) ~~around nests~~ and retain ~~some~~ low-hanging limbs, within 650 feet (200 meters) of a nest tree or activity center.

04 Post-fire, retain PACs and avoid salvage logging in them (except for safety reasons).

Reason for edits: Great gray owls focus on mature dense forest with large snags and trees >24 inches in diameter within, and canopy cover averaging over 80%.[87] Nest trees are often within 600 feet of meadows where the owls forage. Moreover, in a post-fire landscape, there was "no evidence that the 2013 Rim Fire negatively affected rates of colonization or persistence of Great Gray Owls during the 3 yr after the fire, [and] at nearly every surveyed meadow (21 of 22 meadows) within the fire area where we detected Great Gray Owls in at least 1 yr during the decade before the fire, we also detected Great Gray Owls after the fire. . . , including one meadow with 99% loss of canopy cover in the surrounding forest. . . ., suggesting that fuel

[87] Wu, J.X., R.B. Siegel, H.L. Loffland, M.W. Tingley, S.L. Stock, K.N. Roberts, J.J. Keane, J.R. Medley, R. Bridgman, and C. Stermer. 2015. Diversity of nest sites and nesting habitats used by Great Gray Owls in California. The Journal of Wildlife Management 79:937-947

reduction treatments targeted in Great Gray Owl habitat may not be warranted for facilitating post-fire persistence at burned sites in the short-term."[88]

Northern Goshawk (Sierra Plan, pp. 69-70)
Standards~~Guidelines~~ (SPEC-NG-STD~~GDL~~)
01 To minimize disturbance that may lead to breeding failure, during the nesting and breeding season (February 15 to September 15 or follow current Pacific Southwest regional guidance), apply a limited operating period of an active nest site prohibiting:

- Road construction or extensive heavy mechanized equipment within approximately 0.25 mile of the nest site, unless northern goshawks are not nesting
- Power equipment such as chainsaws or pole pruners within 0.25 mile ~~300 feet~~ of the nest site or known roost site;
- Discretionary low-level helicopter flights or hovering over nests;
- Discretionary landing of helicopters within 0.25 mile of the nest; or
- Extensive hand tool activities, such as fireline construction for prescribed burning or trail construction, maintenance, or repair, within 300 feet of the nest site.

02 Ensure that breeding habitat structure and function, including CWHR 6, 5D, 5M, 4D and 4M, as well as snags and downed wood at higher levels than average, are maintained in PACs.

Reason for edits: Goshawk territory occupancy is positively related to the amount of dense, mature forest canopy cover at the nest core scale. 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. Goshawks avoid roosting in severely burned areas, but use mixed severity burn areas to forage.[89]

The only two guidelines that apply to goshawk PACs are a limited operating period (LOP) and a priority list for mechanical treatments in PACs. The LOP 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. The guidelines do not offer any

[88] Siegel, R.B., S.A. Eyes, M.W. Tingley, J.X. Wu, S.L. Stock, J.R. Medley, R.S. Kalinowski, A. Casas, M. Lima-Baumbach, and A.C. Rich. 2019. Short-term resilience of Great Gray Owls to a megafire in California, USA. The Condor: Ornithological Applications 121:1–13
[89] Blakey, R. V., R. B. Siegel, E. B. Webb, C. P. Dillingham, M. J. Johnson, and D. C. Kesler. 2020. Multi-scale habitat selection and movements by Northern Goshawks (Accipiter gentilis) in a fire-prone forest. Biological Conservation 241:108348

direction for habitat retention in PACs, or beyond even though recent research shows that 200 acre PACs are insufficient to ensure goshawk viability.[90]

Yosemite Toad
Guidelines (SPEC-YT-GDL) (Sierra Plan, p. 72)
03 To help monitor if there is sufficient breeding and rearing habitat to support the survival and recovery of local Yosemite toad populations, grazing utilization should be restricted using Yosemite toad probability of occupancy or reproduction and rangeland habitat indicators (see table 9).

Table 9. Rangeland habitat indicators for grazing management based on Yosemite toad probability of occupancy or reproduction and meadow functional status

Meadow functional status	Known occupied meadows and/or highly suitable breeding and rearing habitats (utilization)	Known occupied meadows and/or highly suitable breeding and rearing habitats (disturbance)	Moderately and low suitable breeding and rearing habitats (utilization)
Properly functioning	Utilize no more than ~~35~~<u>10</u>% of herbaceous vegetation.	Alter breeding habitat no more than ~~20~~<u>10</u>%.	Utilize no more than ~~40~~<u>10</u>% of herbaceous vegetation.
Functional at-risk with upward, static (stable), or unapparent trend	Utilize no more than ~~25~~<u>10</u>% of herbaceous vegetation.	Alter breeding habitat no more than ~~15~~<u>10</u>%.	Utilize no more than ~~30~~<u>10</u>% of herbaceous vegetation.
Non-functional – stable (static)	~~Incidental~~ <u>No</u> grazing. ~~Utilize no more than 10% of herbaceous vegetation.~~	~~Alter breeding habitat no more than 10%~~ <u>No grazing.</u>	~~Utilize no more than 30% of herbaceous vegetation.~~ <u>No grazing.</u>
Functional at-risk with trending downward, Non-functional – not stable (static)	~~Incidental grazing. Utilize no more than 10% of herbaceous vegetation.~~ <u>No grazing.</u>	~~Alter breeding habitat no more than 10%~~ <u>No grazing.</u>	~~Incidental grazing. Utilize no more than 10% of herbaceous vegetation.~~ <u>No grazing.</u>

Reason for edits: The desired condition for the toad is helpful as are some of the components that apply range-wide like RANG-FW-STD-01. However, the species specific guidelines

[90] Blakey, R.V., R.B. Siegel, E.B. Webb, C.P. Dillingham, M. Johnson, and D.C. Kesler. 2020. Northern Goshawk (Accipiter gentilis) home ranges, movements, and forays revealed by GPS-Tracking. Journal of Raptor Research 54:388–401 (e.g., "Comparing our results to current conservation approaches, we determined that USDA Forest Service goshawk Protected Activity Centers protected <25% of both the roost locations and the area used during the daytime. Conservation efforts for Northern Goshawks in the Sierra Nevada would benefit from consideration of year-round habitat needs at larger scales than previously thought.")

undermine toad recovery by allowing substantial utilization and degradation of occupied toad habitat. This guideline should be changed therefore because NFMA requires that Forest Plans contribute to the toad's recovery.

Sierra Nevada Yellow-legged Frog
Standards (new)
01 While continued fish stocking has ended, many trout populations are self-sustaining and are likely to continue to persist unless purposely removed. Therefore, to help the recovery of the Sierra Nevada yellow-legged frog, efforts to eliminate non-native trout from suitable frog habitat shall be prioritized.
02 Livestock grazing has the potential to cause injury or death to Sierra Nevada yellow-legged frogs from trampling. Juveniles could potentially be entrapped in deep hoof prints. Livestock grazing practices could also lead to changes in meadow and stream hydrology affecting suitable habitat by altering water flow, water depth, and surface characteristics important for burrows and basking. Therefore, to help the recovery of the Sierra Nevada yellow-legged frog, livestock grazing shall not occur in allotments occupied by Sierra Nevada yellow-legged frogs.

Reason for edits: Non-native trout are an ongoing threat and should be proactively addressed. Likewise, because grazing can result in harm to the frogs, occupied habitat should not be grazed to address NFMA's requirement that Forest Plans contribute to recovery.

At Risk Plant Species
Standards (SPEC-PLANT-STD) (Sierra Plan, pp. 73-74)

02 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.
03 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.
04 Do not construct new facilities in suitable habitat.
05 Do not construct new roads, landings, parking and equipment staging areas in suitable habitat.
06 Gather necessary information early in the planning process to locate unknown occurrences and confirm known occurrences of at-risk plant species, lichens, and fungi to avoid or mitigate project impacts on these species.
07 Avoid road and trail maintenance during active growth and reproduction for at-risk species that occur along existing roads and trails.

Reason for edits: NFMA requires that Forest Plans "maintain or restore the ecological integrity of terrestrial and aquatic ecosystems," "maintain or restore …. [r]are aquatic and terrestrial plant and animal communities," and "provide the ecological conditions necessary to contribute to the recovery of federally listed threatened and endangered species, . . . and maintain a viable population of each species of conservation concern within the plan area."

Wildlife Habitat Management Area
Standard~~Guideline~~ (MA-WHMA-STD~~GDL~~) (Sierra Plan, pp. 106-107)
01 Before authorizing vegetation treatments ~~following a large-scale, high-severity disturbance in an area that had large trees and high canopy cover prior to the disturbance~~, identify, retain and

avoid areas of CWHR 5D or 6, and avoid mechanical treatment in areas of CWHR 4D ~~promote the best available patches of remaining high-quality nesting, foraging, and denning habitat (6, 5D, 5M, 4D, 4M in descending order of priority)~~ to provide future habitat for old-forest-associated species. ~~Desired conditions for amount, location, and configuration of retention should be informed by terrestrial vegetation desired conditions for the forest type.~~

Reason for edits: CWHR 6 and 5D areas contain the highest quality mature forest habitat and are rare on the landscape and should therefore be protected intact. CWHR 4D areas also are highly important for providing habitat to rare species like the fisher, spotted owl, and goshawk.

All Riparian Conservation Areas
Suitability (WTR-RCA-SUIT)
01 Riparian conservation areas (perennial, intermittent, and ephemeral streams and special aquatic features) are not suitable for timber production. Timber harvest is allowed for other multiple-use purposes including safety and restoration toward desired conditions, but not with mechanical treatments.

Reason for edits: Substantial timber harvest would occur under the Plans under the rubric of "restoration," and therefore additional guidance and protection is needed for riparian areas to protect them from the harms associated with mechanical timber harvest. By disallowing mechanical treatments in riparian areas, some timber harvest can still take place but without leading to substantial degradation of riparian areas and their numerous values.

Add Standard for the Protection of Meadows and Riparian Areas and to Protect the Sierra Nevada Yellow-legged Frog and Yosemite Toad:
Locate new facilities for gathering livestock and pack stock outside of meadows and riparian conservation areas.

Reason for edits: This is needed to protect riparian resources as well as habitat from damage.

B. Large Trees (>24 Inches dbh) Must Be Protected

The Plans currently allow logging of trees up to 30 inches in diameter generally, and up to 40 inches in diameter under a number of exceptions to the 30 inch rule. We object to these limits because the best available science shows that a 24 inch dbh limit is necessary due to the deficit of large trees in the southern Sierra (e.g., McIntyre et al. 2015, discussed above).

The Plans and their supporting documents do not discuss the need to allow large tree numbers to recover, nor do the documents explain why it is appropriate to log large trees given the baseline situation. No data is provided that contradicts McIntyre et al. 2015, and instead, arguments are made that fail to address the existing baseline.

Logging large trees would also undermine the climate benefits that large trees offer. Large trees play a major role in carbon sequestration and storage, whereas logging leads to significant carbon harm and loss of biodiversity.[91] Logging continues to be the lead driver of carbon losses from California's forests—Harris et al. 2016 reported that between 2006 and 2010 logging was responsible for 60% of the carbon losses from California's forests,[92] while Berner et al. 2017 reported that logging was the largest cause of tree mortality in California forests between 2003 and 2012.[93]

Recent studies further explain the need to protect the carbon benefits associated with large tree retention, noting for example that "many of the current and proposed forest management actions in the United States are not consistent with climate goals, and that preserving 30 to 50% of lands for their carbon, biodiversity and water is feasible, effective, and necessary for achieving them."[94] Moreover, even burned large trees retain their carbon for long periods as "the vast majority of aboveground woody biomass is not combusted" in a fire.[95] "If dead trees are allowed to remain in place, the natural decomposition process could take many decades to centuries to release fire-killed carbon. In contrast, if logged and removed for biomass energy, much of this carbon could be released relatively quickly."[96]

Large trees are also the most resistant to burning in a fire, and when they do burn, it is due to conditions, such as severe weather or severe dryness, where crown fire would occur regardless of the fuels situation. Moreover, the dense forest habitat preferred by fishers and spotted owls can act as a fire refugia: "Converting older, closed-canopy forests that function as fire refugia to more open forests does in no way assure a dampening effect on wildfire severity, due in part to the complex changes in the microclimate of forest stands after thinning. Recently disturbed forests have higher and more variable shortwave radiation, temperature and wind speed, all of which can increase fire severity. Fuel loads and arrangement are a component of the fire environment, so forest thinning that alters microclimates may increase flammability."[97]

The failure to properly address the best available science and data, the existing baseline, or to take a hard look at logging of trees over 24 inch dbh can still be corrected. The Plans' objectives, as well as the scarcity of large trees, can both be achieved, and in fact can only be achieved, via the adoption of a 24 inch dbh limit.

---

[91] Law B.E., Moomaw W.R., Hudiburg T.W., Schlesinger W.H. 2022. Creating Strategic Reserves to Protect Forest Carbon and Reduce Biodiversity Losses in the United States. Land. 11

[92] Harris, N.L. et al. 2016. Attribution of net carbon change by disturbance type across forest lands of the conterminous United States. 11 Carbon Balance and Management 24

[93] Berner, Logan T. et al. 2017 Tree mortality from fires, bark beetles, and timber harvest during a hot and dry decade in the western United States (2003-2012),. 12 Environmental Research Letters 065005

[94] Law et al. 2022; see also Bartowitz KJ, Walsh ES, Stenzel JE, Kolden CA and Hudiburg TW (2022) Forest Carbon Emission Sources Are Not Equal: Putting Fire, Harvest, and Fossil Fuel Emissions in Context. Front. For. Glob. Change 5:867112

[95] Harmon, Mark & Hanson, Chad & Dellasala, Dominick. (2022). Combustion of Aboveground Wood from Live Trees in Megafires, CA, USA. Forests. 13. 391. 10.3390/f13030391

[96] Id.

[97] Lesmeister, D. B., R. J. Davis, S. G. Sovern, and Z. Yang. 2021. Northern spotted owl nesting forests as fire refugia: A 30-year synthesis of large wildfires. Fire Ecology 17:32

C. The Plans and FEIS Fail to Meaningfully Address NFMA's Best Available Science Standard, or NEPA, Especially with Respect to Science that is Contrary to the Forest Service's Positions

The 2012 Planning Rule requires the use of the best available scientific information, and NEPA requires agencies to disclose and take a hard look at opposing viewpoints, and to do so objectively and in good faith. The FEIS and Plans do not adhere to these requirements and instead wrongly dismiss extensive published literature that doesn't align with the agency's positions.

The Forest Service identifies "References that are not considered accurate, reliable, and/or relevant to the Sequoia and Sierra Land Management Plans and Final Environmental Impact Statement." Included in the document are the following seven publications relating to historical fire and forest structure in the Sierra Nevada region: Baker 2014, 2015, 2017; Baker and Hanson 2017; Baker and Williams 2018, 2019; and Baker et al. 2018. These particular publications were reportedly excluded based on five criteria: "(1) a series of serious analytical and methodological issues and flaws, (2) unreasonable inferences and inappropriate conclusions drawn, (3) scientific methods and analyses poorly developed and described, (4) science information that is placed in inappropriate ecological context, and (5) other related issues (technical references inappropriately cited and placed out of context)." The exclusions are not documented to have a sound evidence basis, however, nor is the evidence provided specific to the excluded paper, and instead a list of 6 potential sources that supposedly explain why each publication does not meet the 5 criteria for best available science is cited: "See: (1) Levine et al. 2016..., (2) Fule et al. 2014..., (3) Haggman et al. 2018..., (4) Miller and Safford 2017..., (5) Levine et al. 2019..., (6) Safford and Stevens (2017)..., and (7) other similar references cited in these..." This list does not specify which publication applies to each excluded article, and the below explanation from Bill Baker shows that all seven exclusions are not valid:[98]

> Four of the six cited sources do not provide valid scientific evidence that meets the five criteria because these four sources were specifically rebutted and shown to be invalid: Levine et al. (2016) was specifically rebutted by Baker and Williams (2018); Fule et al. (2014) by Baker and Williams (2014); Hagmann et al. (2018) by Baker and Williams (2018); and Levine et al. (2019) by Baker and Williams (2019). None of these published peer-reviewed rebuttals, that have highly relevant scientific evidence, was addressed. These rebuttals of four of the six sources (and their omission) means these four sources do not provide valid scientific evidence, since their evidence has been rebutted in peer-reviewed publications.
>
> The two other citations (Miller and Safford 2017, Safford and Stephens 2017) critique the use of reconstructions from US General Land Office (GLO) survey tree data in Baker (2014), because, they argue: (1) the small sample size of bearing trees leads to low accuracy, (2) fire-severity reconstruction from tree-size structures are uncertain, given other sources (e.g., wet periods, fire-free intervals, other disturbances) of similar forest structure, (3) timber inventories showed that

[98] William Baker, personal communication, 2022

tree density was lower, thus the GLO reconstructions overestimate historical tree density, and (4) Levine et al. showed that the GLO reconstruction method inherently overestimates tree density. Miller and Safford also suggest: (5) the reconstructions are from the Gold Rush period, which is unrepresentative of historical conditions, and that (6) some sites where the GLO reconstructions found forest in the 1800s now are montane hardwoods and chaparral.

Regarding (1), Baker (2014 p. 7) showed quantitatively that GLO data and tree-ring reconstructions "...often use similar tree sample sizes to produce comparable reconstructions with similar accuracy." Regarding (2), this critique was excluded as a valid explanation in the original Williams and Baker (2012 p. 1050) paper that first applied GLO reconstruction methods across large land areas. This critique was first outlined in Fule et al. (2014), who simply did not read Williams and Baker carefully. In response, Williams and Baker (2014 p. 2) referred readers back to Williams and Baker (2012) for the details of the exclusion of this critique. This critique has thus been popular to repeat without citing and explaining our rebuttal of it. Regarding (3), it is the timber inventories that have been clearly shown to be inaccurate and to underestimate tree density (Baker and Hanson 2017, Baker et al. 2018), Regarding (4), Levine et al. (2017) and (2019) have both been rebutted and shown to be the result of incorrect coding of our method (Baker and Williams 2018) and use of incorrect equations and inappropriate study areas (Baker and Williams 2019). Regarding (5) the reconstructions in the Sierra are for 1865-1884, which includes Gold Rush and logging effects, but the specific study area of Baker (2014) explicitly excluded all locations showing any recorded impacts of mining, logging, or other land uses within 1-4 km (Baker 2014 p. 8), excluding or at least minimizing these potential land-use impacts. Regarding (6), it is well known that lower-elevation forests have suffered extensive tree mortality from human impacts, droughts, fires, and other disturbances, and no surprise that some areas that were forested historically now have shrub dominance.

Thus, critiques of Baker (2014) by Miller and Safford (2017) and Safford and Stevens (2017) are all refuted, and can also be refuted regarding the other six of the seven papers. In the case of Baker (2015), Safford and Stevens (2017) did not cite Baker (2015) and provided no relevant evidence. Miller and Safford's (2017) critiques are refuted in the previous paragraph. In the case of Baker (2017) and Baker and Hanson (2017), neither Miller and Safford (2017) nor Safford and Stevens (2017) cited these two papers or provided otherwise relevant evidence, thus the exclusion of Baker (2017) and Baker and Hanson (2017) is clearly not valid. In the case of Baker and Williams (2018), which simply summarizes GLO reconstructions, the rebuttals of Miller and Safford (2017) and Safford and Stevens (2017) are above in the defense of Baker (2014). Baker and Williams (2019) directly rebuts Levine et al. (2019), which was shown to be invalid because of the use of incorrect equations. In the case of Baker et al. (2018), neither Miller and Safford (2017) nor Safford and Stevens (2017) could cite this paper, as theirs preceded it, and these sources provided no relevant evidence. In summary, all critiques of these seven papers are refuted, and exclusion of these seven papers is shown to be incorrect.

Very few of our comments of September 25, 2019 on the Sequoia/Sierra RDEIS were heeded. This Final EIS still excludes a large body of uncontested and independent scientific evidence that is highly relevant. Specific criteria were still not provided to explain why each publication was excluded. The refutation of the list of excluded publications by Baker et al. (2018) was still not reported and remedied. We pointed out that several published peer-reviewed rebuttals were not evaluated at all in making exclusion decisions, and this is still true. The omission of four published peer-reviewed rebuttals (Williams and Baker 2014, Baker and Williams 2018, Baker et al. 2018, Baker and Williams 2019) of key publications used in the Final EIS to exclude seven highly relevant peer-reviewed publications is troubling and must be remedied. The Final EIS is currently based on a large body of refuted evidence.[99]

Similarly, the Forest Service has not addressed Odion et al. 2016, a reply to Stevens et al. 2016 (which the FEIS cites for support). Odion et al. 2016 noted that Stevens et al. 2016 did not challenge or contest the great majority of Odion at al.'s findings, including extensive records of dense historical forests and extensive historical patches of high-severity fire, and Odion et al. 2016 refuted the aspects of Odion's research that Stevens et al. 2016 did challenge.

Hagmann et al. 2021, also relied upon by the Forest Service, claimed to be a scientific literature review of historical forest structure and fire regimes, listing a series of studies juxtaposed to subsequent response articles criticizing the studies. However, Hagmann et al. 2021 omitted all of the reply articles that refuted the response articles listed by Hagmann et al. 2021. A detailed analysis of the Hagmann et al. 2021 omissions is found in Baker et al. 2022.[100] Likewise, the FEIS relies upon Prichard et al. 2021, but DellaSala et al. 2022[101] addresses Prichard et al. 2021, explaining for instance that Prichard et al. 2021 acknowledges that commercial thinning can

[99] Publications cited: Baker, W. L. 2014. Historical forest structure and fire in Sierran mixed-conifer forests reconstructed from General Land Office survey data. Ecosphere 5:article 79; Baker, W. L. 2015. Are high-severity fires burning at much higher rates recently than historically in dry-forest landscapes of the western USA? PloS One 10:e0136147; Baker, W. L. 2017. Restoring and managing low-severity fire in dry-forest landscapes of the western USA. PloS One 12:e0172288; Baker, W. L., and C. T. Hanson. 2017. Improving the use of early timber inventories in reconstructing historical dry forests and fire in the western United States. Ecosphere 8:article e01935; Baker, W. L., C. T. Hanson, and M. A. Williams. 2018. Improving the use of early timber inventories in reconstructing historical dry forests and fire in the western United States: Reply. Ecosphere 9:article e02325; Baker, W. L., and M. A. Williams. 2018. Land surveys show regional variability of historical fire regimes and dry forest structure of the western United States. Ecological Applications 28:284-290; Baker, W. L., and M. A. Williams. 2019. Estimating historical forest density from land-survey data: Response. Ecological Applications 29:e02017; Williams, M. A., and W. L. Baker. 2012. Spatially extensive reconstructions show variable-severity fire and heterogeneous structure in historical western United States dry forests. Global Ecology and Biogeography 21:1042-1052; Williams, M. A., and W. L. Baker. 2014. High-severity fire corroborated in historical dry forests of the western United States: response to Fulé et al. Global Ecology and Biogeography 23:831-835
[100] Baker, W. L., Hanson, C. T., Williams, M. A., & DellaSala, D. A. 2022. Evaluating critiques of evidence of historically heterogeneous structure and mixed-severity fires across dry-forest landscapes of the western USA. https://doi.org/10.32942/osf.io/tpb65
[101] DellaSala, Dominick A., et al. 2022. Have western USA fire suppression and megafire active management approaches become a contemporary Sisyphus?. Biological Conservation 2 68

increase fire severity, and pointing out that the studies cited by Prichard et al. 2021 for the proposition that commercial thinning is an effective fire management approach do not actually present results that support that proposition.

The table in the project record also dismisses DellaSala and Hanson 2019,[102] which investigated whether large high-severity fire patches are increasing in forests currently. DellaSala and Hanson 2019 found that there was an increase from the 1980s through the 1990s, but no increase over the past two decades; the authors also found numerous sources of historical evidence for very large high-severity fire patches in mixed-conifer and ponderosa pine forests of the Sierra Nevada. The statement given by the Forest Service in the table is as follows:

> Information sources for estimation of historical high severity patch size in the Sierra Nevada relies completely on citations that do not meet the criteria for best available science information because they contain: (1) a series of serious analytical and methodological issues and flaws; (2) unreasonable inferences and inappropriate conclusions drawn; (3) scientific methods and analyses poorly developed and described; (4) science information that is placed in inappropriate ecological context; and (5) other related issues (technical references inappropriately cited and placed out of context).

However, no reasoning or evidence is provided to substantiate this false claim.

In another example, the Forest Service classifies Jones et al. 2020 as best available science. Jones et al. 2020 was a response to a meta-analysis of California spotted owls, wildland fire, and post-fire logging impacts by Lee 2018, which found that mixed-severity fires, including big ones, are not a threat to spotted owl populations in the absence of post-fire logging. Jones et al. 2020 questioned whether the Lee 2018 results might have been different if Lee 2018 had analyzed the data in several different ways. But the FEIS and the project record tables neglect to mention that Lee published a reply to Jones et al. 2020, side by side in the same issue of the journal *Ecosphere*. In the reply, Lee 2020 re-analyzed all of the data, based on the suggestions from Jones et al. 2020, and came once again to the same conclusion: large mixed-severity fires have neutral or positive effects on California spotted owl populations in the absence of post-fire logging, while post-fire logging significantly reduces spotted owl populations.[103]

These failures to comply with NFMA or to take a hard look under NEPA are all highlighted by the fact that time and again the reply papers that Dr. Baker and others published in response to critiques of their papers are entirely ignored. That is not an objective good faith effort. Furthermore, the above studies are supported by the literature regarding wildlife in the Sierra. This literature shows that many species rely not only on dense forest habitat, but also on moderate-high severity burned forest. Thus, Dr. Baker and others findings that mixed-severity fire with a significant high-severity component to it was prevalent in the pre fire suppression era is well supported and cannot be dismissed. Yet, nearly every desired condition/goal/objective is designed to undermine canopy cover and forest density and snag basal area and nowhere do the

---

[102] DellaSala, D.A.; Hanson, C.T. 2019. Are Wildland Fires Increasing Large Patches of Complex Early Seral Forest Habitat? Diversity 11, 157

[103] Lee, D. E. 2020. Spotted owls and forest fire: Reply. Ecosphere, 11(12)

FEIS/ Plans account for, or even address, this serious inconsistency between what the USFS desires and what wildlife desires (a complex system that includes a large component of closed canopy forest and moderate-high severity fire). The above studies and their findings and information should be incorporated, not dismissed, and the Plans should be fixed to account for the needs of wildlife.

Page 180 of the FEIS also states the following:

> We did not include information sources in the FEIS or forest plans that failed to meet our best available science criteria during our evaluation of the natural range of variation in Sierra Nevada fire regimes and forest ecosystems. Refer to the project record for a description of the evaluation of best available scientific information.

This too violates NEPA. NEPA requires agencies to include a full and meaningful discussion of opposing viewpoints in the EIS itself, not somewhere in the project record.[104] Moreover, neither the text on pp. 179-181 of the FEIS, nor the tables in the project record pertaining to the Forest Service's claims and classifications regarding best available science, meet NEPA's requirements to take a hard look at, and meaningfully address, opposing views. This NEPA obligation cannot be met by perfunctory dismissal of science that contradicts the agency's preferred objectives, nor can the Forest Service avoid its responsibility to fully and meaningfully respond to opposing views by attempting to classify them as preliminary or unreliable as was done here.[105]

Finally, the Forest Service's stated reasons for dismissing opposing viewpoints are not only unsupported, they are also contradicted by the agency's actions. For example, the Forest Service dismisses Thompson et al. 2007 as irrelevant because it was conducted in forests of northwestern California, not in the Sierra Nevada. Yet the Forest Service relies upon Fule et al. 2014 regarding historical Sierra Nevada forest structure and fire regimes, despite the fact that Fule et al. 2014 pertained to others forests in the western U.S., but did not include Sierra Nevada forests. Numerous examples of this double-standard exist in the project record tables along these lines.

D. The Plans Violate NFMA Because They Do Not Contribute to the Recovery of ESA-listed Species or Ensure Viable Populations of Species of Conservation Concern, and the FEIS Violates NEPA Because It Does Not Adequately Address the Plans' Environmental Consequences or Take a "Hard Look" at Wildlife Impacts

We object to the Plans and FEIS because they do not comport with NFMA and NEPA as to wildlife conservation, environmental consequences of the action, and NEPA's mandate to take a "hard look" at the Plans' impacts. This is especially so in light of the fact that the revised Plans (alternative B-modified) seek to greatly increase the amount of annual mechanical treatment on the Sierra and Sequoia National Forests. As discussed above, there are a number of Plan components that can be edited or added to address wildlife protection. Below, we further expound on wildlife conservation and the Plans' failure to adequately address it.

---

[104] See e.g. *Ctr. for Biological Diversity v. U.S. Forest Serv.*, 349 F.3d 1157, 1167-68 (9th Cir. 2003)
[105] See e.g. *Earth Island Institute v. U.S. Forest Serv.*, 442 F.3d 1147, 1169-1173 (9th Cir. 2006)

Fisher

The population of endangered fishers in the southern Sierra Nevada is extremely small (likely less than 300), and it is therefore essential that the revised Plans meaningfully contribute to fisher recovery. Doing so requires protecting fisher habitat, such as the large trees (esp with cavities and decadence), as well as high canopy cover, that have consistently been identified as essential habitat components for denning and resting.[106] Purcell et al. 2009 also found that one of the most important variables was high snag basal area. Unsurprisingly, research has shown avoidance of treated areas, and moreover, "salvage logging had negative effects on fisher … density."[107]

The components in the Plans designed to address fisher habitat do not ensure that the habitat will continue to contain the elements—canopy cover, large trees, large snags, high basal area, decadent trees (especially with mistletoe)—that fishers rely upon for their survival. Moreover, the Plans' desired conditions, such as for dry mixed-conifer forest, look nothing like the conditions fishers prefer; for example, the desired conditions seek open canopy conditions while fishers seek dense forest closed canopy conditions. It is therefore necessary to modify the Plans' standards and guidelines.

The FEIS nowhere explains how a single fisher standard that only protects den clusters (which are only 60 acres in size) will be sufficient to promote the recovery of fishers. Nor does the FEIS explain how the discrepancy between desired conditions (e.g., for dry mixed conifer forest) and fisher habitat requirements (e.g., high canopy cover) will be reconciled. This failure to adequately examine the environmental consequences of the Plans, or to take a hard look at fisher survival and recovery, violates NEPA.

Sierra Marten

The best available science has found for martens that "[f]uel treatments that simplify stand structure negatively affected marten movements and habitat connectivity."[108] Thus, to ensure marten viability, standards and guidelines are necessary that incorporate this reality by protecting martens from logging practices that simplify stand structure such as mechanical thinning and group selection. The Plans do not ensure marten viability because they seek to increase logging, especially fuel treatment logging, in contravention of marten habitat findings, while at the same time not providing standards and guidelines to meaningfully protect marten habitat. Moreover, while marten are generally found at higher elevations than owls and fisher, the Plans make no guarantee that fuel treatments will not occur there. Consequently, until plan components, including standards and guidelines, exist to ensure marten viability by protecting marten habitat from logging practices that simplify stand structure (or worse, eliminate/reduce medium/large trees and snags as well), the Plans will be in contravention of NFMA. Likewise, the failure to

---

[106] Purcell, Kathryn L.; Mazzoni, Amie K.; Mori, Sylvia R.; Boroski, Brian B. 2009. Resting structures and resting habitat of fishers in the southern Sierra Nevada, California. Forest Ecology and Management 258(12): 2696-2706

[107] Green, David S.; Martin, Marie E.; Powell, Roger A.; McGregor, Eric L.; Gabriel, Mourad W.; Pilgrim, Kristine L.; Schwartz, Michael K.; Matthews, Sean M. 2022. Mixed-severity wildfire and salvage logging affect the populations of a forest-dependent carnivoran and a competitor. Ecosphere. 13(1): e03877.

[108] Moriarty, KM, CW Epps, WJ Zielinski. 2016. Forest thinning changes movement patterns and habitat use by Pacific marten. The Journal of Wildlife Management 80(4): 621–633

adequately examine in the FEIS what the Plans contents mean for marten habitat and marten viability violates NEPA.

California Spotted Owl

The California spotted owl population has been declining precipitously in the national forests of the Sierra Nevada region (including the Sierra National Forest), and fire impacts have not been the primary cause.[109] This suggests that management practices on national forest lands are likely contributing to the population decline. Yet the revised Plans focus primarily on fire as the threat to address, rather than also taking actions like protecting large trees over 24 inches dbh and prohibiting logging in high quality habitat such as areas that are CWHR 6, 5D, or 4D, i.e., mature coniferous forests with dense canopy cover, multi-layered canopies, and an abundance of medium and large trees as well as significant snag basal area.[110] Furthermore, despite the inadequacy of the 2004 Framework with regard to preventing spotted owl decline, the revised Plans nonetheless reduce the limited protections contained in the 2004 Framework such as (1) allowing extensive logging even within PACs,[111] (2) allowing PACs to be retired prematurely, (3) failing to designate PACs for territorial singles, (4) using circles, rather than best habitat, when designating owl territories, and (5) allowing a 40 inch diameter limit outside of owl territories (i.e., within owl home ranges). In addition, when foraging in burned forest of the Sequoia National Forest, spotted owls have been found to seek out severely burned forest that contains significant basal area/complexity (i.e., complex early seral forest).[112] Yet no post-fire protection of owl habitat exists in the revised Plans. Alone, and together, these actions violate NFMA because they will preclude viability of spotted owls, especially in light of the ongoing decline of owls on national forest lands.

The FEIS does not explain how a reduction in owl protections will prevent the ongoing California spotted owl decline. For example, the FEIS does not explain how allowing logging of 100 acres of PACs (or the changes to PAC designation/retirement) is consistent with the best

---

[109] Conner et al. 2013, 2016.

[110] E.g., (1) live tree basal area (see, e.g., Verner [p. 96], showing 185-350 square feet per acre as well as very high canopy cover); (2) large trees >61 cm diameter at breast height (Call et al. 1992, Gutiérrez et al. 1992, Moen and Gutiérrez 1997, Bond et al. 2004, Blakesley et al. 2005, Seamans 2005); (3) multi-layered canopy/complex structure (Gutiérrez et al. 1992, Moen and Gutiérrez 1997); (4) high canopy cover (mostly > 70 percent; Bias and Gutiérrez 1992, Gutiérrez et al. 1992, Moen and Gutiérrez 1997, Bond et al. 2004, Blakesley et al. 2005, Seamans 2005; Tempel et al. 2014); (5) abundant snags (Bias and Gutiérrez 1992, Gutiérrez et al. 1992, Bond et al. 2004); and (6) downed logs (Gutiérrez et al. 1992)

[111] The USFS has previously noted that "PACs alone are not an adequate conservation strategy for maintaining a viable population of [spotted] owls. They are important because they do provide protection to nest sites. However, the distribution and abundance of owl habitat around PACs and across the landscape are critical considerations that will determine the ultimate adequacy of a PAC-based conservation strategy for maintaining owl viability in the Sierra Nevada." Blakey et al. 2019 explains further the major limitations of only protecting PACs: "PACs protected less than one quarter of foraging space use (volume of use) and fewer than half of observed roosts during the breeding season. . . . GPS observations of the movements of California Spotted Owls confirmed the importance of late seral stage habitat (high canopy cover and large trees) for roosting and foraging at multiple scales . . . .for some owls<5% of their foraging or roost locations were contained within the PAC in which they nested (or nested in the previous year). . . . we hypothesize that insufficient habitat protection from stand-altering activities outside PAC areas could partially explain ongoing population declines." Despite this, the revised Plans would reduce protections even at the PAC level.

[112] Bond et al. 2009

available science, especially given that PACs alone are insufficient to protect owls. Nor does the FEIS explain why post-fire owl habitat can go unprotected.

Great Gray Owl

The great gray owl population in California is estimated at only 160 individuals, and it too is closely associated with late-successional forests in the Sierra Nevada. However, in addition to the importance of mature dense forest with large snags and trees and high canopy cover, great gray owls need their meadow habitat protected as well. Furthermore, great gray owls continue to use their nesting habitat post-fire and therefore need post-fire protection too. The standards and guidelines for great gray owls in the Plans do not yet provide those protections, however, thus failing to ensure viability of this rare species. Protecting great gray owl PACs involves a tiny fraction of the Forests, and is essential for the viability of this species.

The FEIS does not explain the disconnect between great gray owl habitat needs, and the lack of standards and guidelines ensuring those needs. Furthermore, 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). This discrepancy needs to be addressed as well.

Moreover, the Plans do not provide a quantifiable definition of meadow habitat in the glossary compared to what is provided for forest habitat, and do not ensure vole habitat is maintained in capable meadows despite the association of voles with great gray owl occupancy and reproduction. Vegetation heights recommended in the science literature to provide for prey species are >12 inch stubble heights and >8 inch sward heights. Other conditions simply do not provide for voles. By not allowing for wet meadow conditions that support voles where appropriate, the plan components fail to provide for the habitat needed, threatening species viability.

The Sierra and Sequoia plans differ in their definitions of great gray owl PACs. The Sequoia Plan appears to allow PACs to "be removed after stand replacing events if the habitat has been rendered unsuitable or may be removed as otherwise provided in current regional guidance." The best available science indicates great gray owls can use burned areas, however

The 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." This 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 and therefore establishing great gray owl PACs should not hinge simply on the ability to find a nest.

Northern Goshawk

The goshawk is yet another species that relies on dense mature forest with high canopy cover. The only two guidelines that apply to goshawks, however, do not protect habitat, either within goshawk PACS, or beyond. The Plans consequently do not ensure that minimum threshold amounts of habitat will be provided in goshawk PACs, which is further compounded by the Plans' desire to increase logging to reduce dense mature forest habitat. Moreover, recent research shows that 200 acre PACs are insufficient,[113] yet the Plans allow mechanical treatment even in the PACs. Consequently, the Plans pose a significant threat to goshawk viability and fall far short of NFMA's mandates.

The FEIS claims that "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." But this contradicts publications by Forest Service scientists and no citations support this claim. The FEIS also erroneously claims goshawks only occur up to 8,000 feet in elevation where as the species of conservation concern rationale acknowledges they occur up to 10,500 feet in the Sierra Nevada. More broadly, the FEIS does not analyze the effects of logging on goshawk PACs or beyond, nor does the FEIS disclose the impact to goshawk PACs not encompassed by proxy protection areas (fisher cores, spotted owl PACs or WHMAs), or what the impact is if additional goshawk PACs were established outside these areas. And the FEIS does not analyze the effect of changing the LOP from 0.25 miles (1,320 feet) to 300 feet.

Wildlife Habitat Management Area

Plan impacts to the above species that rely on dense, mature forest can be alleviated via standards and guidelines that apply to the Wildlife Habitat Management Area (WHMA). But thus far, no such standards or even guidelines exist in the Plans to protect such habitat within the WHMA even though the WHMA is focused "on the long-term goal of developing and maintaining habitat for old-forest-associated species."[114] We support the concept of the WHMA, but to serve its purpose, it should be expanded geographically (especially to the east) to include overlooked habitat, such as for northern goshawk and Sierra marten, and must contain standards and guidelines to protect mature forest habitat, especially CWHR 6 and 5D, which would help many species, including the fisher, California spotted owl, Sierra marten, great gray owl, and northern goshawk. Similarly, a standard or guideline to protect snags in the WHMA would benefit many species. Perhaps most importantly, the WHMA must also be updated to address the canopy needs of mature forest species. For example, Sierra marten and great gray owl require 65 to 99 percent canopy cover; goshawk nest stands with 77 to 94 percent canopy cover are associated with greater occupancy and reproduction; and California spotted owl occupancy, survival, and reproduction are positively associated with a canopy cover greater than 70 percent. Thus far, however, 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 FEIS does not explain how the WHMA will achieve its purpose without standards or guidelines to protect habitat and the species that rely on that habitat. The WHMA offers a mechanism to meaningfully provide assistance to species that rely on dense mature forest, but thus far the WHMA is not being used to achieve that outcome.

[113] Blakey et al. 2020
[114] Sierra Plan, p. 106

Post-fire Wildlife Habitat

The Plans allow significant post-fire logging even though this forest type—known as "complex early seral forest" (CESF)—provides key habitat for numerous species, such as woodpeckers, bats, songbirds, hummingbirds, and bees. After a fire, the dead trees (snags) offer essential food and shelter, and the wildflowers and shrubs that sprout up attract bees and birds, as well as deer and bears. As noted in one study in the Sierra region: "In high severity burn areas, snags and understory vegetation provide some of the only available habitat for decades following fire. Areas where these features have been eliminated and dense stands of young conifers have been planted support far fewer species even a decade after re-planting. Natural regeneration should be among the most important strategies for managing post-fire for birds and other wildlife." And "areas burned by wildfire, especially those with older high severity patches, may in some cases support equal or greater landbird diversity and total bird abundance [than unburned forest]."

The FEIS does not explain why only 10% of CESF need be retained after a large fire. No discussion exists in the FEIS that addresses the importance of this essential habitat type and instead the habitat type is dismissed as "largely deriv[ing] from unnaturally dense forest stands that lack a historical analog."[115] This assertion is contradicted by a multitude of studies, such as those identified and discussed above. Many of these studies are funded in part by the Forest Service and these studies note, for instance, that their contents help "forest managers to design management activities that are more compatible with the needs of wildlife." Yet the Plans fail to include any of this guidance for how post-fire project-level decisions should be made in order to best assist the wildlife that lives there. Forest Plans are required to provide ecological integrity, protect ecosystems and habitat types, and conserve wildlife through plan components and here they do not do so with regard to CESF. And no discussion exists in the FEIS to explain or justify this outcome. In light of the dozens upon dozens of studies that exist that provide guidance for how to protect CESF, we implore you to use those studies and include their knowledge in the Final Plans.

The Plans must also account for flushing in the standards and guidelines so that flushing will not be ignored as currently is the case in the Plans. Flushing is a significant issue because many trees that might appear dead may in fact still be alive—that cannot be known until flushing is allowed to occur in the spring/summer following the fire.[116] Therefore, standards and guidelines must explicitly address and deal with flushing so as to ensure that post-fire actions by the USFS responsibly account for the actual status of the post-fire condition.

Yosemite Toad

The species specific guideline offered to protect this rare species is not adequate to contribute to recovery, as it allows substantial degradation of both high and low quality toad habitat, and without explaining why such a guideline will ensure toad recovery. Grazing, especially in occupied areas, must be managed to avoid habitat degradation, and Table 9 (Sierra Plan, p. 72) does not achieve that.

---

[115] FEIS, p. 254

[116] Hanson, C.T., and M.P. North. 2009. Post-fire survival and flushing in three Sierra Nevada conifers with high initial crown scorch. *International Journal of Wildland Fire* 18(7): 857–864

E. The Plans and FEIS Fail to Address the Relative Importance of Managed WildFire Versus Thinning

The Plans equate more logging with greater "resilience" rather than focusing on what is needed to achieve long-term forest resilience while simultaneously best protecting human communities from fire. There is broad consensus that more managed wildfire is essential to achieving healthy forests yet the Plans contain increased logging in the preferred alternative (Alternative B-modified). And the most effective way to protect communities from fire is to reduce the ignitability of structures and their immediate surroundings.[117]

The FEIS and Plans rely heavily on commercial thinning to achieve the Plans' goals. Ignored or dismissed are the findings that commercial logging is not a panacea for restoring forest health.[118] Large wildfires are driven mainly by weather, climate, and climate change, and commercial thinning can increase overall fire severity and total tree mortality, killing significantly more trees than it prevents from being killed,[119] while at the same time emitting significantly more CO2 per acre than wildfire alone does.[120] As stated in a recent letter from scientists to Congress

> We have watched as one large wildfire after another has swept through tens of thousands of acres where commercial thinning had previously occurred due to extreme fire weather driven by climate change. Removing trees can alter a forest's microclimate, and can often increase fire intensity. In contrast, forests protected from logging, and those with high carbon biomass and carbon storage, more often burn at equal or lower intensities when fires do occur.[121]

Furthermore, with respect to protecting communities from wildfire, California-focused studies have found that vegetation treatment within about 100 feet from homes and structures is the best

---

[117] Cohen, J.D. 2000. Preventing disaster: home ignitability in the Wildland-Urban Interface. 98 Journal of Forestry 15; Cohen, J.D. and R.D. Stratton. 2008. Home destruction examination: Grass Valley Fire, U.S. Forest Service Technical Paper R5-TP-026b; Gibbons, P. et al. 2012. Land management practices associated with house loss in wildfires. 7 PLoS ONE e29212; Scott, J.H. et al. 2016. Examining alternative fuel management strategies and the relative contribution of National Forest System land to wildfire risk to adjacent homes – A pilot assessment on the Sierra National Forest, California, USA. 362 Forest Ecology and Management 29

[118] DellaSala, Dominick A., et al. 2022. Have western USA fire suppression and megafire active management approaches become a contemporary Sisyphus? Biological Conservation 268(9): 109499

[119] Notably, while the intent of logging is sometimes to prevent tree mortality from wildfire, such logging can actually cause its own significant mortality as compared to wildfire: "Similar to the findings of Hanson (2022) in the Antelope Fire of 2021 in northern California, in our investigation of the Caldor Fire of 2021 we found significantly higher cumulative severity in forests with commercial thinning than in unthinned forests, indicating that commercial thinning killed significantly more trees than it prevented from being killed in the Caldor Fire." Baker, B.C.; Hanson, C.T. Cumulative Tree Mortality from Commercial Thinning and a Large Wildfire in the Sierra Nevada, California. Land 2022, 11, 995; see also Hanson, C.T. Is "Fuel Reduction" Justified as Fire Management in Spotted Owl Habitat? Birds 2021, 2, 395–403

[120] Bartowitz KJ, Walsh ES, Stenzel JE, Kolden CA and Hudiburg TW (2022) Forest Carbon Emission Sources Are Not Equal: Putting Fire, Harvest, and Fossil Fuel Emissions in Context. Front. For. Glob. Change 5:867112; Harmon, M.E.; Hanson, C.T.; DellaSala, D.A. Combustion of Aboveground Wood from Live Trees in Megafires, CA, USA. Forests 2022, 13, 391

[121] November 4, 2021 letter from scientists to Congress see also May 13, 22 letter

way to protect those structures from burning.[122] Calkin et al. 2014 emphasized that treating wildland fuels does not "measurably impact the susceptibility of homes to ignition and subsequent destruction."[123] The study highlighted that home losses are increasing despite enormous investments in modifying wildland fuels near population areas. This is because home susceptibility to wildfire is a direct function of their ignitability, which is dependent on the small area of the "home ignition zone" which "is independent of fire behavior in the nearby wildlands." According to the study, "research demonstrates a home's characteristics in relation to its immediate surroundings principally determine home ignition potential during extreme wildfires." Calkin et al. 2014 explained that "[o]vercoming perceptions of wildland-urban interface fire disasters as a wildfire control problem rather than a home ignition problem, determined by home ignition conditions, will reduce home loss." More recent analyses by Syphard et al. 2017 and Syphard et al. 2019 re-affirm the important role of defensible space near the structure. [124] These studies highlighted that community safety is a multivariate problem that requires a comprehensive solution involving defensible space maintenance, fire-safe construction, and land-use and urban planning decisions that reduce the exposure of homes to wildfires (i.e., by restricting development in fire-prone areas).

The Plans and FEIS, on the other hand, offer very little in the way of meaningful assistance with respect to home protection. There is a desired condition that speaks to "increased awareness and understanding about wildfire risk among community leaders, service providers, homeowners, permittees, and Tribes who are invested in or adjacent to the national forest," but the Plans do not offer tangible components to assist human communities with protection of homes and structures from fire. We believe the Plans should take steps to assist communities with vegetation management within the defensible space surrounding homes and structures. Why not invest in a program to directly assist with defensible space creation and education rather than spending millions of dollars on thinning projects? This would not only help protect structures, it would protect firefighters as well.

In short, the Plans and FEIS violate NFMA and NEPA because they have failed to explain or establish why the preferred course of action, increased commercial logging, is justified. We ask that managed wildfire and defensible space be promoted instead.

F. The Current List of Species of Conservation Concern Is Inadequate

1. Black-backed Woodpecker

Substantial biological information demonstrates the black-backed woodpecker's rarity and conservation concern, such as the S2 status finding by CDFW that has existed from 2016 thru

---

[122] Syphard, A.D. et al. 2014. The role of defensible space for residential structure protection during wildfires. 23 International Journal of Wildland Fire 1165

[123] Calkin, David E. et al. 2014. How risk management can prevent future wildfire disasters in the wildland-urban interface. 111 PNAS 746

[124] Syphard, Alexandra D. et al. 2017. The importance of building construction materials relative to other factors affecting structure survival during wildfire. 21 International Journal of Disaster Risk Reduction 140; Syphard, Alexandra D. et al. 2019. The relative influence of climate and housing development on current and projected future fire patterns and structure loss across three California landscapes, 56 Global Environmental Change 41

July 2022: "At high risk of extirpation in the state due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors."[125]

"Substantial concern" exists for numerous reasons, including:

- Their primary habitat—dense, mature, middle/upper-elevation conifer forest that recently burned at high-severity— is rare and ephemeral, both temporally and spatially, and even in large fires can be of limited availability[126] ["Optimal and potential habitat for Black-backed Woodpecker comprise 53.7 km2 and 58.4 km2, respectively, representing 5.1 and 5.6% of the overall footprint of the Rim Fire"].

- This primary habitat can be targeted for logging immediately post-fire (at 1–2 years), which coincides with when such habitat is of greatest value to black-backed woodpeckers. As stated in Siegel et al. 2016, "results indicate that natal dispersal is the primary means by which Black-backed Woodpeckers colonize recently burned areas in western forests, and that breeding dispersal is uncommon. The decline of Black-backed Woodpecker populations 6–10 yr after fire likely reflects the lifespan of individual birds that colonized the burned area, or of offspring that they produced in the early postfire years."[127] Siegel et al. 2016 recommended that high priority be placed on protecting black-backed woodpecker habitat in the early post-fire years, which is when post-fire logging most often occurs.

- Post-fire logging clearly harms woodpecker habitat as evidenced, for example, in Siegel et al. 2013[128] (map of black-backed woodpecker locations with the caption "Note the general absence of foraging locations within the post-fire harvest areas"), and Campos and Burnett 2015[129] ("Black-backed Woodpecker. . . decreased with increasing area salvaged").

- While secondary habitat exists for black-backed woodpeckers in unburned forest, the best available science shows that such habitat is of marginal value (e.g., Rota et al.2014[130] ["population growth rates were positive only in habitat created by summer wildfire"]; Tingley et al. 2014, Siegel et al. 2013 [showing unburned forest home ranges to be much larger than burned forest home ranges, which is indicative of poor

[125] See California Department of Fish and Wildlife, Natural Diversity Database. July 2022. Special Animals List. Periodic publication. (available at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline).
[126] Casas, A., M. Garcia, R.B. Siegel, C. Ramirez, A. Koltunov, and S.L. Ustin. 2016. Burned forest characterization at single-tree level with Airborne Laser Scanning for wildlife habitat assessment. Remote Sensing of Environment 175: 231–241
[127] Siegel, R.B., M.W. Tingley, R.L. Wilkerson, C.A. Howell, M. Johnson, and P. Pyle. 2016. Age structure of Black-backed Woodpecker populations in burned forests. The Auk: Ornithological Advances 133: 69–78
[128] Siegel, R.B., M.W. Tingley, R.L. Wilkerson, M.L. Bond, and C.A. Howell. 2013. Assessing home range size and habitat needs of Black-backed Woodpeckers in California: Report for the 2011 and 2012 field seasons. Institute for Bird Population
[129] Campos, Brent R. and Ryan D. Burnett. 2015. Avian monitoring of the Storrie and Chips Fire Areas: 2014 report
[130] Rota CT, Millspaugh JJ, Rumble MA, Lehman CP, Kesler DC. 2014. The Role of Wildfire, Prescribed Fire, and Mountain Pine Beetle Infestations on the Population Dynamics of Black-Backed Woodpeckers in the Black Hills, South Dakota. PLoS ONE 9(4): e94700

quality, and means the woodpeckers are traveling much farther, and expending far more energy, to obtain lesser food]).

G. At-Risk Plants Must Be Protected

Many rare plant communities exist on the Sequoia and Sierra National Forests that need special management attention. 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, including climate change, overharvesting, logging, grazing, mining, road construction, intensive recreation, invasive species, and wildland fire management will all 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. We therefore ask that additional components, such as those we identified above, are added to the Plans.

The FEIS likewise fails to explain how the Plans provide the necessary specific components to ensure the maintenance or restoration of plant community diversity.

H. The Plans and FEIS Fail to Adequately Address the Road System

Roads have a wide range of impacts on the forest environment. They contribute sediment to streams, act as barriers to species migration, cause direct mortality to terrestrial and avian species, fragment habitat, serve as a vector for non-native, invasive species, increase human presence in remote areas threatening sensitive resources, and lead to an increased risk of human ignition of wildfires. The FEIS does not adequately examine these direct, indirect, and cumulative effects of the existing, or expanded road system, that will invariably be needed to accommodate the increased logging within the Forests that the Plans propose. The FEIS fails to discuss the existing road system, or how it will be expanded or maintained to facilitate the Plans' proposed increased logging. The FEIS does not discuss impacts to fish and wildlife, or if old logging roads will be properly decommissioned. Mechanical treatments for fuels reduction are particularly problematic because recurring entries promote a permanent, high-density road network, and thinning projects involve road and/or landing construction and reconstruction, as well as elevated haul and other use of existing roads, all of which significantly contribute to terrestrial and aquatic degradation. Even if constructed roads and landings are deemed "temporary," their consequent impacts can be long lasting or permanent. The impacts caused by the road system must be addressed with Plan components that prevent degradation in order to maintain ecological integrity. Here, that has not occurred and the further continuance of the existing (or increased) road system, coupled with the Forest Service's failure to reduce its road maintenance backlog, will result in ecological issues that threaten the viability of species of conservation concern and the recovery of federally listed species and is incongruous with preserving the ecological integrity of National Forest lands. No new roads should be constructed until the Forest Service reduces its maintenance backlog, and the FEIS and Plans must discuss and address the specific "decommissioning" activities that will occur on the Forests and how these activities will mitigate environmental impacts occurring throughout the Forests. Moreover, a large road system has been one of the key vectors for spread of invasive species, as well for human ignitions of wildfires. As the Forest Service has noted, "[r]oads can serve as a vector to spread nonnative invasive plant species (NNIS) and impact native plant communities and indirectly the plants and animals that depend on those plant communities."[131] The Plans, however, make no specific commitments to close unnecessary or problematic forest roads or reduce the total number of acres of land with motorized uses and access. Until these obligations are met, NFMA and NEPA compliance is not possible.

I. The Plans Lack Required Monitoring

Section 219.12 of the Planning Rule requires the development of "a monitoring program for the plan area" that "should enable the responsible official to determine if a change in plan components or other plan content that guide management of resources on the plan area may be needed." This monitoring is "designed to inform the management of resources on the plan area, including by testing relevant assumptions, tracking relevant changes, and measuring management effectiveness and progress toward achieving or maintaining the plan's desired conditions or objectives." To that end, the program's "questions and associated indicators" must address the "status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems," "status of focal species to assess the ecological conditions required under § 219.9," and "status of a select set of the ecological conditions required under § 219.9 . . . ." The program must be developed as "part of the planning process for a . . . plan revision."

Section 219.12's mandates are not being met because the monitoring program lacks the questions and indicators necessary to determine if a change in plan components or other plan content may be needed. Nothing in the monitoring information (e.g., Sierra Plan p. 132-133) addresses the status of complex early seral forest; closed canopy mature forest (e.g.., >70% canopy cover with large trees); rare species or focal species that can answer questions about old forest or the recovery of rare wildlife (other than the Yosemite toad). This failure to properly address key characteristics of terrestrial ecosystems or focal species or at-risk wildlife violates NFMA and NEPA.

Sincerely,

Justin Augustine

Justin Augustine, Lead Objector
Center for Biological Diversity
1212 Broadway, Suite 800
Oakland, CA 94612
916-597-6189
jaugustine@biologicaldiversity.org

[131] USDA Forest Service. 2012. Travel Analysis Process Guidebook. Appendix E: Resource Risk Indicators. Washington, DC: USDA Forest Service