



June 16, 2023

Dean Gould, Forest Supervisor
Sierra National Forest

Sent via email to: comments-pacificsouthwest.sierra@usda.gov

Re: **Additional** comments on ongoing and proposed logging in the Nelder giant sequoia grove

Dear Mr. Gould,

On behalf of the John Muir Project of Earth Island Institute, the Tehipite Chapter of the Sierra Club, Sequoia ForestKeeper, Los Padres ForestWatch, California Chaparral Institute, Western Watersheds Project, and Biofuelwatch, we are submitting these additional comments opposing the ongoing and proposed post-fire logging, commercial “thinning”, and unnecessary tree plantation establishment in the Nelder Grove—particularly in the portion of the Grove that experience high severity fire in 2017 and no longer contains any mature Giant Sequoias. This logging is being conducted pursuant to a July 2022 decision from the U.S. Forest Service’s Washington Office using an emergency exemption from NEPA, specifically 36 C.F.R. § 220.4(b)(2). For the reasons discussed in our December 2022 comments, and based on our additional comments below, the ongoing and planned logging in the grove is not proper under 36 C.F.R. § 220.4(b)(2), and must be halted at least until and unless an EA or EIS are first prepared and a site-specific decision subsequently issued.

Most of the Planned and Ongoing Project Activities are Not Covered by the July 2022 Emergency Exemption and Cannot Proceed Under that Exemption

Page 3 of the Forest Service’s Emergency Exemption description of exempted activities in each sequoia grove (see attached July 2022 Emergency Exemption description of activities, hereafter “Emergency Exemption Description”) states the following:

The objective for emergency response is to provide for long term survival of Giant Sequoias by reducing the likelihood and effects of high severity wildfire before it occurs in previously *unburned or moderately* burned Giant Sequoia groves. Proposed urgent treatments include removal of green and dead surface and ladder fuels ***from immediately around large Giant Sequoias to prevent trees from torching***. Emergency fuels treatments include hand cutting of small trees, with piling or lop-and-scatter of debris; mechanical removal of trees < 20” dbh; application of borate on green stumps; pulling duff away from the base of large Giant Sequoias; and prescribed burning.¹

(emphasis added)

The text on p. 2 of the Emergency Exemption Description repeatedly states that the goal, and the claimed urgency, pertains to prevention of mortality of live, mature giant sequoias.

Therefore, by its own terms, the Emergency Exemption Description only applies to unburned or moderately burned forests—not high-severity fire areas—and, within such unburned to moderately burned forests, tree removal activities are further narrowed to activities “immediately around” live, mature sequoias. Notably, there are no live, mature giant sequoias in the high-severity fire areas of the Nelder Grove. By logging and conducting other destructive activities in these highly sensitive areas, the Service is significantly impacting the environment by disturbing the naturally-occurring post-fire regeneration in high-severity fire areas of Nelder Grove.

The Washington Office of the Forest Service issued a Decision Memorandum on July 22, 2022, approving the request made with the July 2022 Emergency Exemption Description.

On August 23, 2022, Sierra National Forest sent an email to interested parties describing specific activities that would occur under the emergency exemption in the Nelder Grove, along with a map (see attached). The email stated that hazard trees would be “Felled” (not removed) adjacent to key access roads and adjacent to “live monarch” sequoias, in order to ensure the safety of crews that would be “Creating fuels buffers around the live monarchs”. The map attached to the email message showed the location of the live sequoia monarchs and showed a narrow buffer

¹ Although the Emergency Exemption Description, on p. 3, alludes to both manual and mechanical treatments in 1,432 acres of the Sierra National Forest—possibly describing Nelder Grove—the interested public cannot be expected to parse vague and contradictory statements in order to determine the scope and location of a project. Additionally, these activities are still limited to “previously unburned or moderately burned Giant Sequoia Groves”, “immediately around” live, mature sequoias. Similarly, the July 22, 2022, Decision Memo specifically limits the project to “fuels reduction treatments” that “reduce wildfire risk threaten[ing]...giant sequoia groves” and thus does not encompass many of the activities taking place in the Western and Northern portions of the Grove where future wildfire risk is low due to recent wildfires.

(about a 60-foot radius) immediately around the base of each live monarch. The email further stated the following: “None of the work planned for Phase 1 will be completed via mechanical treatments.”

Then, on November 8, 2022, Sierra National Forest issued a detailed description and map, describing a series of other actions that the Forest Service claimed were “covered by the emergency action” and planned to conduct across the Nelder Grove Historical Area prior to conducting environmental analysis under NEPA (hereafter “Nelder Grove Project Description”, see attached). These activities included hundreds of acres of “mechanical” logging for lumber and biomass energy commodities, including removal of live, mature trees up to 20 inches in diameter in low/moderate-severity fire areas from the 2017 Railroad fire—most of which would not occur “immediately around” live, mature sequoias, post-fire logging of high-severity fire areas where no live, mature sequoias exist, as well as artificial tree planting of nursery-grown sequoia seedlings that would compete with the naturally regenerating sequoia seedlings and saplings. None of these activities were authorized or covered by the Emergency Exemption and the Forest Service’s Emergency Exemption Description of the limited activities that would occur immediately around the base of live, mature sequoias in unburned to moderately burned areas under that Exemption.

In fact, as discussed above, Emergency Exemption Description of activities and the associated map authorized only handwork immediately adjacent to live monarch sequoias and hazard tree felling adjacent to certain roads in the Nelder Grove—not mechanical logging of live, mature trees up to 20 inches in diameter across several hundred acres, mechanical logging of snags in high-severity fire areas, and artificial planting in high-severity fire areas that currently have abundant sequoia seedling/sapling reproduction. Moreover, as discussed in our December 2022 comments, the roadside activities conducted by the Forest Service last fall were not limited to hazard tree “felling”, with no mechanical treatments, as promised, but instead involved extensive mechanical felling and piling of trees, which killed most of the post-fire naturally regenerating giant sequoia saplings in the areas where such mechanical logging occurred.

Notably, the maps in Appendix A of the Emergency Exemption Description delineate two categories of sequoia groves: “high priority” groves; and groves that are not a high priority. The Nelder grove is shown as being in the latter category, which undermines the Forest Service’s claim that actions in the Nelder grove are urgent, requiring an emergency exemption from NEPA.

We ask the Forest Service to halt all activities inconsistent with the July 2022 Emergency Exemption Description.

There is No Emergency Here, and New Analyses Find that the Emergency Exemption and Nelder Grove Project Documents Were Based on Erroneous Preliminary Information and Assumptions, and are Arbitrary and Capricious

The Emergency Exemption Description and the Nelder Grove Project Description are based on six core assertions/assumptions. None of these were vetted through public comments from interested non-governmental organizations and scientists under the NEPA comment and analysis process. Over the subsequent months, we have investigated these claims and none of them are accurate or credible; therefore, there is no rational basis for the declaration of an emergency and the associated NEPA exemption.

The core assertions/assumptions were as follows:

1: The claim that 22% of all mature sequoias in existence were killed in the 2020 and 2021 wildfires. This was based on a very preliminary assessment in an unpublished memo, Brigham 2020, which had not been peer-reviewed, regarding the 2020 Castle fire, and an unsourced claim attempting to quantify additional mature sequoia mortality in the 2021 fires. The Emergency Exemption Description, on p. 2, stated the following:

“Then in 2020, approximately 17 percent of all monarch Giant Sequoias were killed in the Castle Fire (Brigham 2020). At that time the agency began to understand what the extreme fuels buildup and drought could do to Giant Sequoias and began environmental analysis to start addressing the problem. Then in 2021, the Windy Fire and the KNP Complex burned another five percent of the monarch Giant Sequoias.”

2: The claim that, until 2015, mortality of mature sequoias had not occurred in a wildfire since the year 1217. The Emergency Exemption Description, on p. 2, claimed the following:

“Prior to 2015, the last known wildfire to kill monarch Giant Sequoias was in 1217.”

3: The claim that high-severity fire is the primary threat to giant sequoias, and that the Nelder grove and other sequoia groves are best protected by ensuring a low-severity fire regime. See pp. 1-3 of the Nelder Grove Project Description and pp. 1-2 of the Emergency Exemption Description.

4: The claim that there is a high and imminent potential for high-severity fire in the Nelder Grove, such that the Forest Service cannot take the 9-12 months that the agency stated would be needed to conduct normal NEPA analysis and public comments, prior to a decision and implementation. See pp. 1-2 of the Emergency Exemption Description, and pp. 1-3 of the Nelder Grove Project Description.

5: The claim that dense, mature forest conditions in the low/moderate-severity fire areas, and the abundance of snags (standing dead trees) in the high-severity fire areas, create a high potential for severe wildfire, and that that high-severity wildfire can be effectively prevented through logging of mature live trees up to 20 inches in diameter (over 5 feet in circumference) and extensive removal of snags (standing dead trees). See pp. 1-3 of the Nelder Grove Project Description and pp. 1-2 of the Emergency Exemption Description.

With regard to assertion/assumption #1 above:

The claim that 22% of all mature sequoias in existence were killed in the 2020 and 2021 wildfires.

First, the documents relied upon by the Forest Service, for the claim that 22% of all mature sequoias had been killed in the 2020 and 2021 wildfires, did not say that. Those documents claimed that 16% of mature sequoias, not 22%, were killed in 2020-2021 (but even that 16% figure was an exaggeration, and was based on a biased, non-representative sampling, as discussed below). The Emergency Exemption Description, on p. 2, cites Brigham (2020) for the proposition that 17% of all mature sequoias were killed in the Castle fire, and includes, on p. 6, the following reference for Brigham (2020):

Brigham, Christy 2020. Initial estimates of sequoia mortality in the 2020 Castle Fire. Sequoia and Kings Canyon national parks. Version: May 25, 2021.

We obtained this exact version from the author, Christy Brigham (see “Brigham 2020”, attached), and it states on p. 1 the following:

“Preliminary estimates suggest that the 2020 Castle Fire killed 31% to 42% of large sequoias (those with trunk diameters of 4 ft or more) within the Castle Fire’s perimeter, or 10% to 14% of all large sequoias in the Sierra Nevada.”

The mid-range of the Brigham (2020) estimate is 12% mortality of all mature sequoias in existence (across all groves that exist), based on a mid-range estimate of 36.5% mortality (9,050 mature sequoias killed) of the estimated 24,795 mature sequoias within the Castle fire perimeter. Even the high end of the estimate range from Brigham (2020) was 14% mortality of all mature sequoias in existence, not 17%.

The claim on p. 2 of the Emergency Exemption Description—that the 2021 fires (KNP Complex and Windy Complex) killed an additional 5% of mature sequoias—is also at odds with the only report to attempt to derive an estimate of mature sequoia mortality from the 2021 fires: Shive et al. (2022) (attached). On p. 1, Shive et al. (2022) reports that “an estimated 3-5%” of all mature sequoias were killed in the 2021 fires. The mid-range of this estimate is 4% (not 5%).

Therefore, combining the mid-range estimates of both “Brigham (2020)” (which was actually dated May 2021, not 2020) and Shive et al. (2022), these two reports claim that a combined total of 16% of all mature sequoias were killed in the 2020-2021 fires, not 22%.

The Brigham (2020) estimate of 12% mortality of all mature sequoias in existence (across all groves that exist) was based on a mid-range estimate of 36.5% mortality of the estimated 24,795 mature sequoias within the Castle fire perimeter, or 9,050 mature sequoias killed.

Shive et al. (2022) state that the 2021 fires, the KNP Complex fire and the Windy fire, burned a total of 6,109 acres of sequoia groves, with 2.61 mature sequoias per acre, for a total of 15,944 mature sequoias within the perimeters of the 2021 fires. Shive et al. (2022)’s mid-range estimate

of mature sequoia mortality from the 2021 fires was 2,949 mature sequoias, or 18.5% mortality of the mature sequoias within the perimeters of these two fires.

For the 2020 and 2021 fire seasons combined, Brigham (2020) and Shive et al. (2022) estimated that the fires killed 11,999 of a total of 40,739 mature sequoias within the perimeters of the 2020 and 2021 fires, i.e., 29.5% mortality of mature sequoias within these 2020-2021 fires. Since the Forest Service's Emergency Exemption Description mischaracterized the sequoia mortality estimates from these reports, claiming levels of mature sequoia mortality that were 37.5% higher than the reports estimated (i.e., 22% mortality of all mature sequoias in existence versus 16% from the combined reports), the Emergency Exemption Description therefore assumed the equivalent of 40.6% mortality of mature sequoias within the perimeters of the 2020-2021 fires (29.5% plus 0.375 times 29.5% = 40.6%).

However, even the figure of 16% mortality of all mature sequoias in existence, from Brigham (2020) and Shive et al. (2022) combined, is a substantial overstatement. Both "Brigham (2020)" and Shive et al. (2022) used preliminary fire severity data ("RAVG" data, from satellite images just 30 to 60 days post-fire), which often substantially overstates fire severity. The final, more accurate, fire severity data from the Forest Service and USGS ("MTBS" data, based on one-year post-fire satellite imagery) was not yet available when they prepared their reports. In addition, to derive an estimate of mature sequoia mortality in the 2020 Castle fire, "Brigham (2020)" used: a) the Alder Creek grove, which burned in the 2020 Castle fire; b) the high-severity fire only areas of the sequoia groves in Sequoia and Kings Canyon National Park (SEKI) that burned in the 2020 Castle fire; c) the Nelder grove, which burned in the 2017 Railroad fire; and d) the Blacks Mountain grove, which burned in the 2017 Pier fire. The exclusion of the very low severity, low severity, and moderate severity areas in the SEKI groves that burned in the Castle fire is a major source of bias, since those areas were heavily dominated by very low and low severity. Making matters much worse, "Brigham (2020)" did not use an unbiased sampling protocol for any of the grove areas. Only a subset of the mature sequoias in the grove areas that were analyzed were used for the Brigham (2020) analysis, and it is unknown and undisclosed by that report how mature sequoias were sampled and chosen from within the groves.

For its estimates of mature sequoia mortality in the 2021 fires, Shive et al. (2022) used two of the same sequoia groves used in the Brigham (2020) analysis—the Blacks Mountain grove and the Nelder grove—but also included the Evans, Kennedy, and Lockwood groves that burned in the 2015 Rough fire. Like Brigham (2020), mature sequoias were included subjectively in Shive et al. (2022), and there was no unbiased sampling protocol to ensure that the sequoias included would be representative of the population.

Dr. Chad Hanson of John Muir Project conducted a detailed assessment of mature giant sequoia survival in all of the sequoia groves that were included in Brigham (2020) and Shive et al. (2022), but also included the very low severity, low severity, and moderate severity areas, from the SEKI groves in the Castle fire, which were omitted by Brigham (2020). Dr. Hanson used the final, accurate fire severity data from MTBS (www.mtbs.gov), and used an unbiased sampling protocol for mature sequoias that were included from these sequoia groves for the analysis. This was done by using the Forest Service's sequoia grove boundaries and the Forest Service's Observed Tree Inventory (OTI) data, which includes the exact location of individual sequoias, as

well as their crown diameters (these GIS data were provided by US Forest Service analyst, Rodney Hart, via email). For larger groves, OTI data does not include sequoias in the interior of the grove area, whereas all sequoias are included in smaller groves (such as Nelder grove). Dr. Hanson assessed mortality/survival of all mature sequoias (defined as those with crown diameters of 10 meters or greater) in the OTI data in the groves analyzed by Brigham (2020) and Shive et al. (2022), based on USDA NAIP satellite imagery from three years post-fire, except for the Alder Creek grove and the SEKI groves in the Castle fire, since only two-year post-fire imagery is currently available for those groves. The interactive map, with grove boundaries, MTBS fire severity data, OTI tree locations for sequoias with crown diameters of 10 meters and larger, and post-fire NAIP satellite imagery, is at this link, and was prepared by GreenInfo Network, an expert GIS analysis firm:

<https://ginfo.maps.arcgis.com/apps/mapviewer/index.html?webmap=1f34984187ec41dd92d1d8f89b465957>

In summary, Dr. Hanson found that only 15.5% of mature sequoias were killed within the perimeters of the 2020-2021 fires (Table 2), not 40.6% mortality, as was erroneously claimed by the Forest Service’s Emergency Exemption Description. In other words, the Forest Service inflated mature sequoia mortality from the 2020-2021 fires by a factor of 2.62; instead of 22% mortality of mature sequoias from the 2020-2021 fires, as the agency claimed, it was only 8.4% mortality.

The Emergency Exemption Description falsely exaggerated mature sequoia mortality in the 2020-2021 fires by *nearly threefold* in order to justify circumventing public participation and environmental analysis under NEPA and rushing forward with commercial logging plans in the Nelder Grove and other sequoia groves.

Table 2. Actual mortality of mature sequoias in the groves analyzed by Brigham (2020) and Shive et al. (2022), from Hanson analysis.

<u>Fire Severity Category</u>	<u>% Mature Fire Mortality</u>
Very Low	2/624 = 0.30%
Low	16/955 = 1.70%
Moderate	126/713 = 17.70%
High	254/307 = 82.70%

**Overall mortality of
mature sequoias within
2020-2021 fires = 15.5%**

With regard to assertion/assumption #2 above:

The claim that, until 2015, mortality of mature sequoias had not occurred in a wildfire since the year 1217.

The Forest Service's own report, Stephenson (1994), contradicts the false claim that no mature sequoias have been killed by fire for hundreds of years, until the recent fires, 2015-2021. For example, Stephenson (1994) specifically describes multiple locations where high-severity fire killed mature sequoias in the 1860s in the central portion of the Giant Forest grove and in the 1870s in the Atwell grove, also noting that "most sequoia recruitment was limited to areas where the fire killed all or most of the forest canopy". Stephenson (1994) also describes John Muir's firsthand account of high-severity crown fire in the Atwell grove in 1875.

Another study, Stephenson et al. (1991), reported the following:

"the 1987 Pierce wildfire which burned with mixed to predominantly high intensity through a 20-ha section of Redwood Mountain Grove...Foliage scorch occurred well into the canopy of even the largest sequoias, and 24 of 148 sequoias over 2 m in diameter were scorched to the crown. One year after the fire, 14 of these sequoias appeared to be dead...In 1886, a locally intense fire in the Burnt Grove portion of Redwood Mountain Grove apparently killed most trees, including several large giant sequoias, over several hectares."

Meyer and Safford (2011), another Forest Service study, describes high-severity fire in sequoia groves in two 2008 fires, a 1987 fire, and a 1928 fire. The McGee fire burned most of the Cherry Gap grove at high severity in 1955 (<https://jenikirbyhistory.getarchive.net/media/fires-regrowth-of-mcgee-fire-1955-93b171>). Caprio (2016) documented numerous huge wildfires that swept across the entire Kaweah watershed from 1700 to 1900, a watershed that includes many sequoia groves.

With regard to assertion/assumption #3 above:

The claim that high-severity fire is the primary threat to giant sequoias, and that the Nelder grove and other sequoia groves are best protected by ensuring a low-severity fire regime.

Stephenson (1994) makes clear that, over the past century or so, there has been a "massive failure of sequoia reproduction" due to exclusion of fire, but not just any fire. Stephenson (1994)

notes: “After a low-intensity fire, [sequoia] seedling establishment is low, and will yield insignificant recruitment regardless of the weather in the following summers.” Stephenson (1994), reviewing the evidence, concludes: “Giant sequoia is what is known as a ‘pioneer species’, requiring canopy-destroying disturbance to complete its life cycle.” Stephenson (1994) makes clear that sequoias depend on high-intensity fire, not low-intensity, to successfully reproduce and survive over time as a species. These findings were further corroborated by Meyer and Safford (2011), who found an almost total absence of sequoia reproduction in low-severity fire areas, some reproduction in moderate-severity fire areas, and high reproduction in high-severity fire areas (see Figure 1 below).

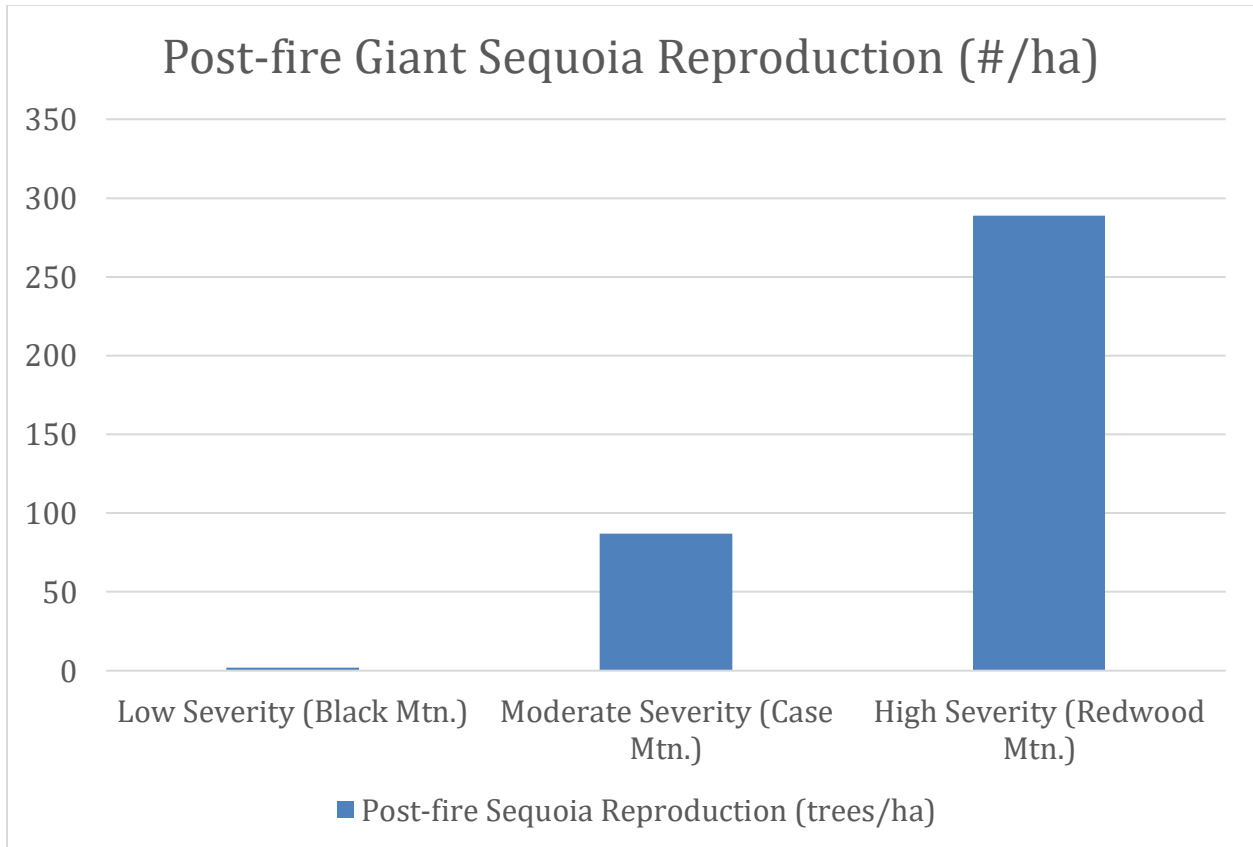


Figure 1. Post-fire sequoia reproduction levels by fire severity. Data are from Figure 2 of Meyer and Safford (2011).

Stephenson (1994) noted that John Muir personally witnessed and wrote about a high-severity crown fire in the Atwell sequoia grove in 1875. Importantly, consistent with the findings of Meyer and Safford (2011)—that giant sequoias grow not only much more abundantly, but also much faster, in high-severity fire patches—Stephenson (1994) presented age-versus-diameter data for hundreds of sequoias from two different grove areas. In the Giant Forest, where high-severity fire had only occurred to a limited extent in recent centuries, sequoias were much older for a given diameter; whereas, in the Atwell Grove, after high-severity fire in 1875, many giant sequoias reached “mature” size (4 to 5 feet in diameter at breast height) within just 90 to 170 years (See figure 2 below).

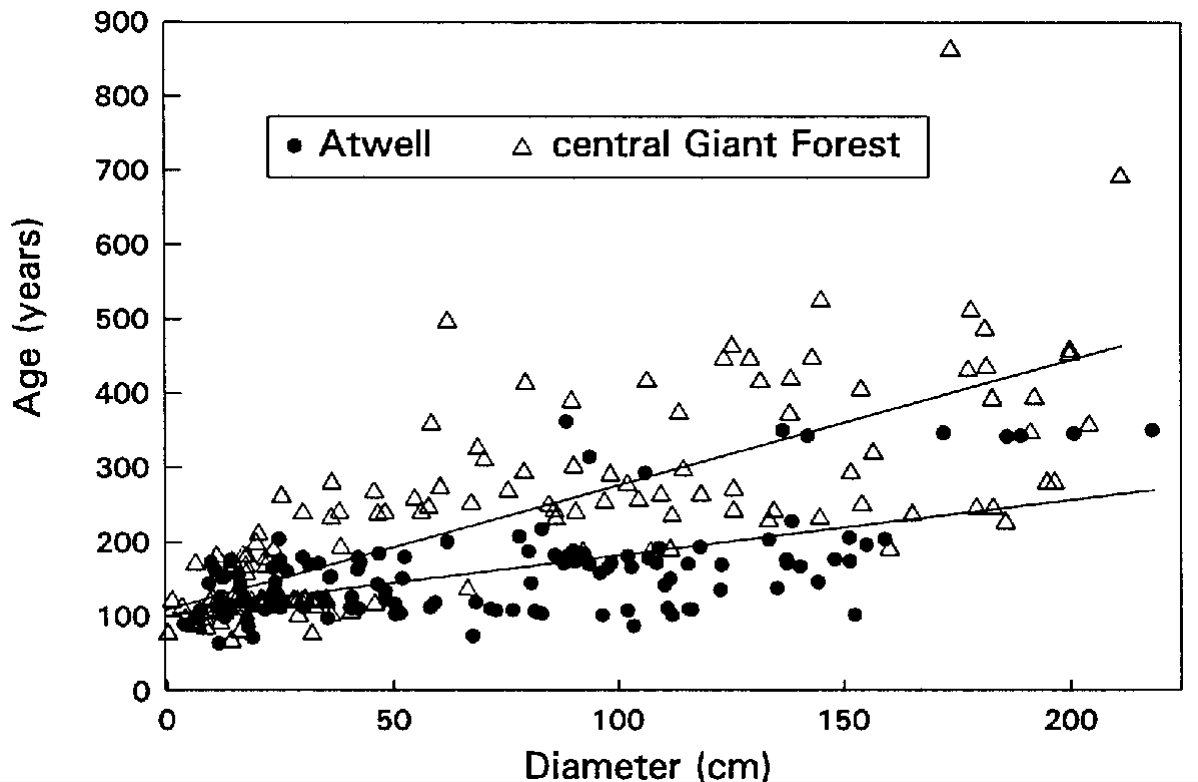


Figure 2. Age of giant sequoias by diameter in two different grove areas, from Figure 1 of Stephenson (1994).

Moreover, Stephenson (1994) presented data on the age class distribution of giant sequoias prior to fire exclusion. Omitting the 20th century—the era in which widespread fire exclusion began—we see from these data that less than 10% of giant sequoias were over 1,000 years old historically, and nearly half of them (48%) were less than 100 years old, prior to fire exclusion (1900 and earlier) (See Figure 3 below).

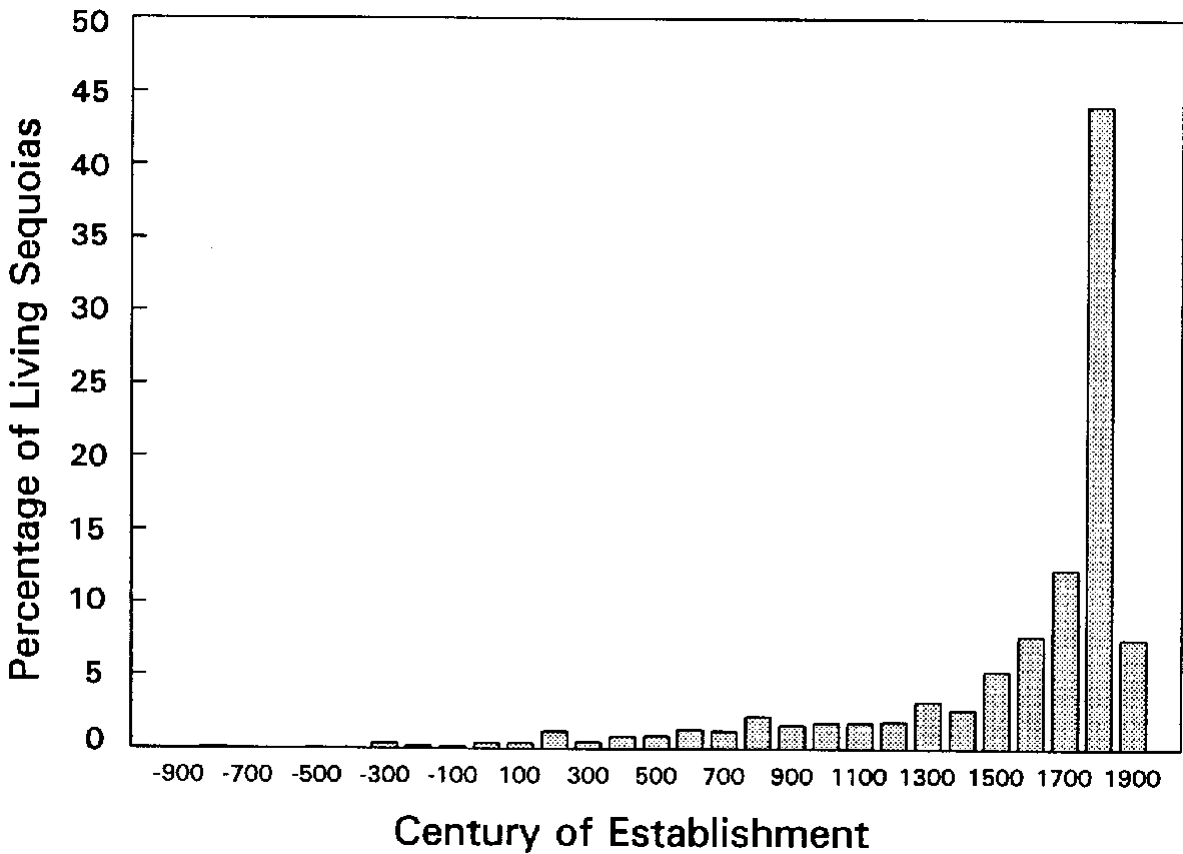


Figure 3. Age class distribution of giant sequoias, prior to fire exclusion, from Figure 2 of Stephenson (1994).

Based on Cyr et al. (2009) (See Figure 4 below), this age class distribution is consistent with an historical mortality rotation interval of approximately 150 to 200 years, conservatively. In other words, within any given 100-year period of time, about half of giant sequoias would have been killed by wildfire, while the fires simultaneously facilitated the establishment and growth of many new sequoias. At any given point location, this would have been highly variable, with some locations burning twice at high-severity within just a few decades or less, and some locations not experiencing high-severity fire sufficiently intense to kill mature sequoias for more than a millennium. The age class distribution of pre-fire suppression sequoias from Stephenson (1994) cannot be credibly explained any other way.

Stephenson (1994) concluded that, at this rate of sequoia mortality from higher-severity fire, sequoia reproduction would have been high, and sequoia populations were stable or increasing, with mortality more than balanced by recruitment after intense fire patches. But, with only low-severity fire, sequoia reproduction is nearly absent, and mortality is not balanced by recruitment, resulting in populations that would decline toward ultimate extinction.

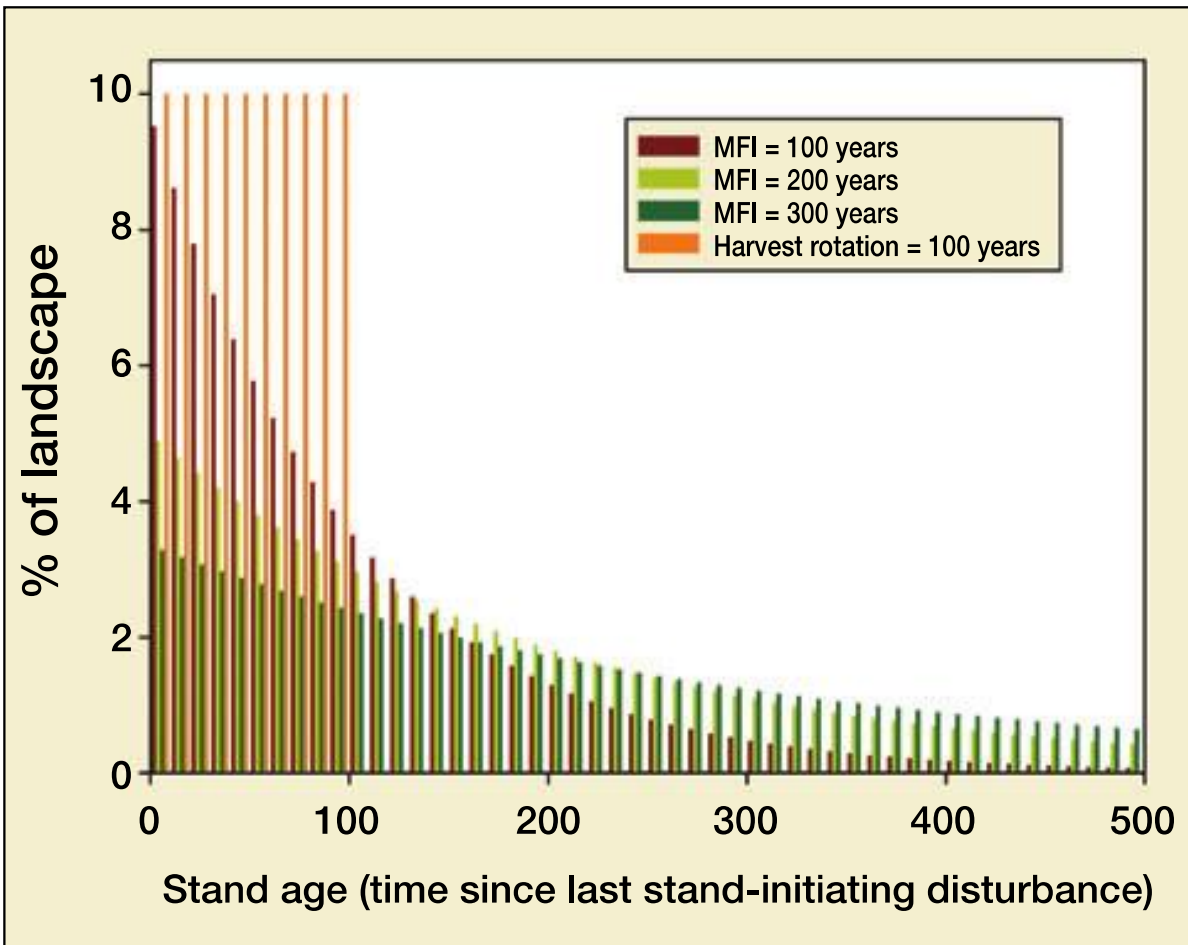


Figure 4. Age class distributions associated with different mortality-rate intervals, from Figure 1 of Cyr et al. (2009).

One key question pertains to current rates of mature sequoia mortality from fire. Bryant Baker, M.S., of Los Padres ForestWatch, conducted an analysis of fire severity in giant sequoia groves since 1984, using the Forest Service’s own grove boundaries (from Rodney Hart) and the MTBS fire severity data from the Forest Service and USGS. This analysis revealed that 92.3% of the 10,137 hectares (25,038 acres) of total sequoia grove area has burned in wildfires or prescribed fires since 1984. Only 12.9% of this fire in the groves has been high-severity fire (Table 1).

Table 1. Area and percent of sequoia groves burned since 1984 by fire severity category.

Fire Severity Class	Hectares Burned	% of Burned Area
Very Low	1346	14.4
Low	4734	50.6
Moderate	2070	22.1
High	1203	12.9
No Severity Data	4	0.0
No Fire	775	0.0
Total Burned Area	9357	
Total Grove Area	10137	

Based on the foregoing: a) the sequoia groves have been ecologically restored by recent wildfires; b) high-severity fire is a minor component of this recent natural ecological restoration by lightning fires; and c) the Forest Service’s Emergency Exemption, and Nelder Grove Project, are pursuing an extinction strategy for giant sequoias by attempting to eliminate high-severity fire patches, which drive giant sequoia reproduction, and manage for essentially homogenous low-severity fire, which guarantees almost no sequoia reproduction.

With regard to assertion/assumption #4 above:

The claim that there is a high and imminent potential for high-severity fire in the Nelder Grove, such that the Forest Service cannot take the 9-12 months that the agency stated would be needed to conduct normal NEPA analysis and public comments, prior to a decision and implementation.

We addressed this issue in our previous comments. Here we add to those comments with the following figure from van Wagendonk et al. (2012) (Figure 5a from that study), showing that, in the forests of the Nelder grove area within the Yosemite region, in the unlikely event that the previous wildfire area re-burns in another wildfire, the effects are almost entirely lower severity (Figure 5 below).

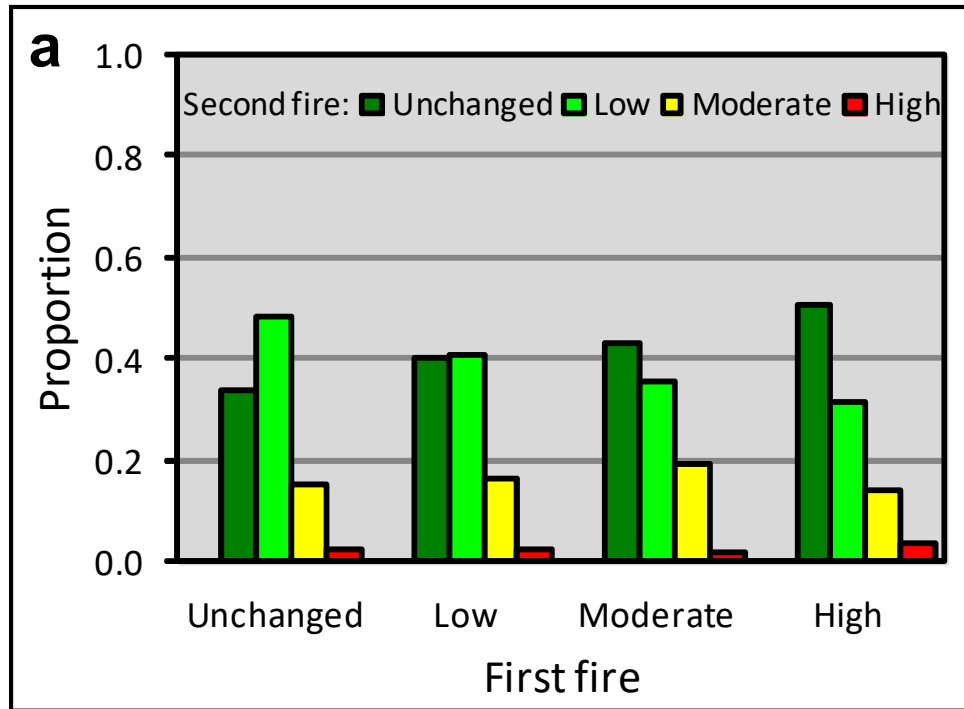


Figure 5. Extremely low potential for high-severity fire areas to re-burn again at high-severity in forests of the greater Yosemite area where the Nelder Grove is located. From Figure 5(a) of van Wagtendonk et al. (2012).

With regard to assertion/assumption #5 above:

The claim that dense, mature forest conditions in the low/moderate-severity fire areas, and the abundance of snags (standing dead trees) in the high-severity fire areas, create a high potential for severe wildfire, and that that high-severity wildfire can be effectively prevented through logging of mature live trees up to 20 inches in diameter (over 5 feet in circumference) and extensive removal of snags (standing dead trees).

Please see our earlier comments on this issue, and the dozens of studies finding that post-fire logging and commercial thinning tend to increase overall severity in fires. We note here that the Forest Service’s own scientists have made this finding.

Regarding post-fire logging and tree planting, Forest Service scientists concluded (Thompson et al. 2007):

“Areas that were salvage-logged and planted after the initial fire burned more severely than comparable unmanaged areas...”

And, in a huge 30-year analysis of wildfires (Lesmeister et al. 2021), concluded the following:

“More open forests with lower biomass had higher fire severity, because the type of open, lower-biomass forests resulting from thinning and other logging activities have ‘hotter, drier, and windier microclimates, and those conditions decrease dramatically over relatively short distances into the interior of older forests with multi-layer canopies and high tree density...’”

The Forest Service Has Not Complied with Relevant Emergency Exemptions 36 C.F.R. § 220.4(b)(2), 40 C.F.R. § 1506.12.

The Forest Service has not yet identified which categorical exclusion it is invoking to proceed under 36 C.F.R. § 220.4(b)(2), but admits it is invoking categorical exclusions for which a decision memorandum and supporting record are required under 36 C.F.R. § 220.6(e) because the Emergency Exemption Description and Decision Memorandum request and approve exemption from documentation requirements of 36 C.F.R. 220.6(e). 36 C.F.R. § 220.6(e) (identifying NEPA procedures for categorical exclusions, including that “[a] supporting record is required and the decision to proceed must be documented in a decision memo”); *see also* 40 C.F.R. 1501.4(a) (directing agencies to identify NEPA procedures for categorical exclusions). At a minimum, the Forest Service should have identified in July 2022, and now should promptly identify, which categorical exclusion(s) it is using under the emergency exemption 36 C.F.R. § 220.4(b)(2) and complete the relevant documentation.

The NEPA alternative arrangements approved in the July 22, 2022, Decision Memo also do not comply the CEQ’s Emergencies regulation at 40 C.F.R. § 1506.12, requiring federal agencies to either “consult with the Council about alternative arrangements for compliance” or otherwise “remain subject to NEPA.” As discussed below, the Forest Service has neither shown it has consulted the CEQ nor followed its own regulations requiring a decision memorandum for categorical exclusions. 36 C.F.R. § 220.6(e); 40 C.F.R. § 1501.4(a). It is further unclear that the Forest Service is properly following its Emergency Exemption, which states that the Forest Service “Chief or Associate Chief” may “grant emergency alternative arrangements under NEPA for environmental assessments, findings of no significant impact and categorical exclusions,” 36 C.F.R. §220.4(b)(2), while the Decision Memorandum states it is not an “alternative arrangement as defined by the Council on Environmental Quality in 40 C.F.R. § 1506.12” and merely approves the project to move forward without NEPA compliance with no discussion of what alternative arrangements were arranged.

The Present Circumstances in Nelder Grove Do Not Constitute an Emergency Because the Service Has Been Aware of the Potential for High Severity Wildfires Since At Least 2015

By definition, an emergency is an “unforeseen combination of circumstances or the resulting state that calls for immediate action” (Webster’s Third New International Dictionary Of The English Language 1961 and Merriam-Webster’s Collegiate Dictionary (11th ed. 2004)). However, the Emergency Exemption Description, on p. 2, summarizes the current state of “emergency” by explaining that mature Giant Sequoias have been threatened by high severity

wildfires going back to 2015. While even this acknowledgement significantly downplays the historical prevalence of high severity fire in the region, it still demonstrates that the need to address the consequences of fire exclusion in Giant Sequoia groves was foreseeable much earlier than the summer of 2022. Further emphasizing that the currently perceived issues were foreseeable, the Emergency Exemption Description, on p. 2, notes that in 2020 following the Castle Fire “the agency began to understand what the extreme fuels buildup and drought could do to Giant Sequoias.” Designing an “emergency” project five years after the 2017 Railroad Fire burned in Nelder Grove, and two years after the Castle Fire further highlighted the potential for high severity wildfires in Sequoia groves, does not fall within the scope of 36 C.F.R. § 220.4(b), which only applies when “an emergency exists that makes it necessary to take *urgently* needed actions before preparing a NEPA analysis” (emphasis added).

Even if the Present Circumstances Did Constitute an Emergency, the Proposed Actions Are Likely to Have Significant Impacts and Require Consultation With the Council on Environmental Quality (CEQ) in Order to Prepare an Environmental Impact Statement Pursuant to 36 C.F.R. § 220.4(b)(3).

Although the Emergency Exemption Description, on p. 1–2, declares that the proposed actions in Nelder Grove are “not likely to have significant adverse environmental impacts” and will be excluded from any NEPA analysis under an unspecified categorical exclusion, neither of these assertions address the scientific controversy (described above and in our December 2022 comments) surrounding key issues underlying the project’s design such as: the impacts of logging in Sequoia groves that recently experienced moderate and high severity fire, utilizing commercial thinning of live trees up to 20 inches in diameter and removing snags to reduce the risk of future wildfires, and the likelihood that the unburned portion of Nelder Grove will experience high severity wildfire before NEPA analysis could be completed. Regardless of which categorical exclusion is employed, the CEQ’s regulations at 40 C.F.R. § 1507.3(e)(2)(ii) prohibit the use of a categorical exclusion when “normally excluded action may have a significant environmental effect.” Furthermore, scientific controversy indicates that a project is likely to have significant impacts and must be analyzed in an environmental impact statement.² If there is a legitimate emergency, the requirement to prepare an environmental impact statement can be satisfied through alternative arrangements made with the CEQ pursuant to 40 C.F.R. § 1506.12.

Significant New Information and Changed Circumstances Regarding Impacts to California Spotted Owls Precludes Planned and Ongoing Tree Removal and Warrants an EIS.

² This crucial component of an agency’s NEPA analysis has been recognized by federal courts since the Congress enacted the statute in the 1970s. See *City of Davis v. Coleman*, 521 F.2d 661, 675–76 (9th Cir. 1975) (requiring further evaluation of significance of environmental effects of proposed highway interchange where “substantial questions have been raised about the environmental consequences of federal action,” and holding that “this is precisely the kind of situation Congress had in mind when it enacted NEPA”); *Scientists’ Inst. for Pub. Info., Inc. v. Atomic Energy Comm’n*, 481 F.2d 1079, 1082 (D.C. Cir. 1973) (“[T]he controversial environmental effects attendant upon future [agency action]... come[] within both the letter and the spirit of Section 102(C).”).

Please see USFWS's proposed California spotted owl ESA listing proposal, and 60-day comments from spotted owl experts (attached), including the data regarding the severe loss of spotted owl occupancy from both commercial thinning (Stephens et al. 2014) (43% loss of owls over just several years due to commercial thinning) and post-fire logging (Hanson et al. 2018) (*most* owls were lost where post-fire logging occurs). As recognized by USFWS, the biological status of the California spotted owl has changed recently, and the species is now declining at such a level that protection under the ESA is needed. This was not the known state of the California spotted owl in 2022 when the Forest Service decided to conduct extensive post-fire logging and commercial thinning in spotted owl habitat within the Nelder Grove.

An EIS is Required to Analyze Adverse Impacts to the Climate and Health of Environmental Justice Communities from Biomass Logging.

The Nelder Grove Project Description states that the planned post-fire logging in the high-severity fire areas would be conducted for biomass energy production. This would entail clearcutting of the young naturally-regenerating giant sequoia forest, logging and removal of nearly all of the snags (fire-killed trees), and clearcutting the chaparral—all of which would be chipped and burned for kilowatts in nearby biomass energy facilities (Figure 6 below). The Nelder Grove Project Description fails to discuss or disclose the climate change and community health impacts of this decision, and does not even mention the location of the biomass facilities that would be utilized and the communities that would be affected by chronic particulate and toxic emissions from these facilities. Notably, the biomass facilities in this area are disproportionately located in environmental justice communities, including but not limited to the huge Rio Bravo facility south of Fresno (the most likely recipient of the wood chips from Nelder Grove). This impacts the health of the community (<https://www.fresnobee.com/opinion/readers-opinion/article252183428.html>) due to chronic air pollution (<https://www.biofuelwatch.org.uk/wp-content/uploads/Biomass-Air-Pollution-Briefing.pdf>). Further, burning trees or portions of trees for energy emits even more CO₂ into the atmosphere than burning coal, for equal energy produced (Serman et al. 2018) (attached).



Figure 6. (left) the vigorous, young giant sequoia forest growing rapidly in the high-severity fire areas, November 2022; and (right) clearcutting of the young giant sequoia forest, and snags and chaparral, in roadside logging already conducted in the Nelder Grove, November 2022.



Figure 7. Young post-fire regenerated giant sequoia tree cut and bulldozed with others in a giant pile to be incinerated on site or chipped and hauled to a biomass energy facility.

Sincerely,

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