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Comments: These comments are submitted on behalf of the Center for Biological Diversity, WildEarth Guardians, Santa Fe Forest Coalition and The Forest Advocate, regarding the U.S. Forest Service's Draft Environmental Assessment for the Hermit's Peak and Calf Canyon Fires Recovery Project.

October 18, 2025

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Submitted electronically to: https://www.fs.usda.gov/r03/santafe/projects/66857

Re: Hermit's Peak and Calf Canyon Fires Recovery Project #66857

To District Ranger Sena and the Santa Fe National Forest:

These comments are submitted on behalf of the Center for Biological Diversity, WildEarth Guardians, Santa Fe Forest Coalition and The Forest Advocate, regarding the U.S. Forest Service's Draft Environmental Assessment for the Hermit's Peak and Calf Canyon Fires Recovery Project ("HPCC Recovery Project," "Draft EA," "proposed action," or "Project"). The legal notice of availability of the Draft EA was published on September 18, 2025, with a 30-day comment period ending on October 18, 2025.

We support many components of the proposed Project, including the removal of dead hazard trees along roads, the repair of fish habitat and in-stream features to block the movement of non-native fish, the construction of structures to control flooding and direct water flows, the restoration and planting of riparian vegetation, the closure of decommissioning of roads, the repair of recreation infrastructure, and the repair of bridges and other stream crossings.

We generally oppose post-fire salvage logging as being broadly damaging to post-fire landscapes, forest ecosystems, and wildlife habitat. While we recognize and support various considerations within this Draft EA to reduce the scale of certain impacts, these comments urge the subsequent EA to fully analyze on a site-specific basis the impacts of the proposed salvage logging activities. These comments also urge the Forest Service to revise its approach to identifying hazard trees, consistent with the science and Regional guidance; to disclose and analyze the impacts of roads within the Project area; to revise its approach to green tree logging to minimize, disclose, and analyze the impacts on a site-specific basis, and conserve wildlife habitat; and to eliminate generally prohibited uses within designated wilderness.

1. The desired benefits of salvage logging must be weighed against the known impacts on a site-specific basis.

We generally oppose post-fire salvage timber sales as being broadly damaging to post-fire landscapes, forest ecosystems, and wildlife habitat. In this case, we strongly support the proposal

not to include unauthorized roads and trails in the categories of areas requiring hazard tree removals, as doing so would tacitly recognize these unauthorized impacts and entrench them
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further. Furthermore, we strongly support the proposal not to implement hazard tree removal treatments in Inventoried Roadless Areas, Designated Wilderness, Recommended Wilderness,
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Wild and Scenic River, and Eligible Wild and Scenic River areas.

Removing trees-whether living or dead-causes soil disturbance and the destruction of existing natural regeneration. These impacts would add debris to downstream water flow and impact
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downstream communities, the avoidance of which is a purpose of the Project. The larger the area treated, and the farther from system roads such treatments extend, the greater the impacts. Similarly, mechanical operations, operations on slopes, and proximity to drainages and waterways all increase the impacts.

The EA must consider these impacts in balance with the desired benefits of more intensive and more expansive hazard tree removal. Failing to do so fails to satisfy NEPA's requirement that the agency take a "hard look" at the impacts of the project and reasonable alternatives that could result in reduced environmental impacts.

Also, the hazard tree abatement for watershed protection would result in significant impacts with little or no benefits.

Hazard tree abatement for watershed protection treatments will focus on mitigating the increased risk from heavy accumulations of woody material due to moderate or high
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severity burns.

The Draft EA is vague as to the nature of the risk posed by "heavy accumulations of woody
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material". If the risk is related to future fire risk, the Draft EA fails to provide any analysis of that risk in terms of projected flame length and fire severity. Nor does the Draft EA acknowledge that the HPCC fire likely resulted in lower fire risk in burned areas by removing fine fuels, and potentially bringing burned areas into alignment with their projected Fire Regime Groups. Furthermore, the Draft EA fails to identify the specific environmental components or infrastructure sites that are threatened by reburn in the locations targeted for hazard tree abatement for watershed protection.

This issue is of greatest concern with respect to bird nesting sites in riparian areas. The Draft EA invokes the need to reduce "heavy accumulations of woody material," without defining such material or identifying any criteria for determining the need for removal. Nor does the Draft EA include any criteria or limitations for removal in riparian management zones, which can contain high densities of bird nesting sites.

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Draft EA at 8.
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Draft EA at 8

3
Draft EA at 5.
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Draft EA at 8.
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Draft EA at 8.
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Especially in areas with steep slopes and burned vegetation, there must be a careful balancing of the soil disturbance that comes from logging and tree removal in comparison to the actual benefit gained from removing the targeted trees. The Draft EA fails to disclose or analyze these impacts or indicate that the Forest Service will consider such factors.

Furthermore, while the hazard tree abatement for watershed protection is generally restricted to areas within a quarter-mile of system roads, the two largest areas where this treatment will be applied have high road densities that essentially mean that the treatment could be applied across an area four miles by two miles on the edge of the Pecos Wilderness (along Gallinas Creek), and another area four miles long near Tecolote Creek, near the southern edge of the project area. Logging activities across these large areas would result in a massive amount of soil disturbance in a concentrated area. Any subsequently prepared NEPA document must disclose, and consider measures to mitigate, such impacts.

Finally, although the hazard tree abatement for watershed protection treatments are supposed to focus on areas of moderate or high severity burns, the areas indicated in the map on page 62 as targeted for watershed protection treatment do not entirely line up with the areas identified as moderate and low severity in the BAER Fire Severity map on page 61. Any subsequently prepared NEPA document must address or correct this discrepancy. Also, please note that the distance key for both of these maps is incorrect.

2. The Draft EA fails to disclose and analyze the impacts related to road activities.

The Forest Service proposes a number of post-burn recovery activities specific to the forest road system, including road maintenance, relocation, decommissioning, and improving fish passage
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under roads. We support actions that reduce harmful road-related environmental impacts and improve the overall ecological integrity of the planning area. For this reason, we urge the Forest Service to take this opportunity to identify and achieve a minimum road system as directed by
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the Travel Management Rule under subpart A. Such a right-sized road system would address poor road conditions that may be contributing to impaired or degraded watershed function in the planning area.

Complying with subpart A and implementing a minimum road system is a win-win-win approach: (1) it's a win for the Forest Service's budget, closing the gap between large maintenance needs and inadequate (and declining) funding through congressional appropriations; (2) it's a win for wildlife and natural resources because it reduces negative impacts from the forest road system; and (3) it's a win for the public because removing unneeded roads from the landscape allows the agency to focus its limited resources on the roads we all use, improving public access across the forest and helping ensure roads withstand strong storms.

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HPCC EA at 10-12, 14-15.
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See 36 CFR 212.5(b).
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The Draft EA states that there are approximately 400 miles of system roads within the planning
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area. It is unclear how many miles will be decommissioned, or the specific actions to remove those roads from the system. The Forest Services explains there are five different decommissioning actions it could utilize, but the analysis fails to identify any specific road for decommissioning or its corresponding treatment. We urge that any subsequently prepared NEPA document include the omitted information.

Our preference would be full road obliteration and recontouring, but we also recognize this may not be feasible and may cause significant short-term environmental consequences. In such instances, we still urge the agency to consider a partial recontouring of the first ¼ mile of the road or ripping and blocking the road in a manner to preclude unauthorized use. The proposed action also includes maintaining roads to their "designated" maintenance level. However, it is not clear if that pertains to the operational or objective maintenance level, and we would urge the latter with the caveat that the agency confirm the road is still necessary. We request that any subsequently prepared NEPA document include the omitted information.

As stated, the Forest Service should identify a minimum road system for the planning area and decommission unneeded roads. If the agency determines that a road should be retained as part of the minimum system, we recommend identifying ML 2 roads for placement in ML 1 status by hydrologically disconnecting and placing them in long-term storage if they are not on the motor vehicle use map (MVUM) or needed for project implementation. In the case of the latter, such roads should be closed after use. Conversely, any ML 2 road not on the MVUM that has missed its routine scheduled maintenance (i.e. has deferred maintenance), should also be decommissioned. The Forest Service notes there are 340 miles of ML 2 roads, and "ML 2 roads
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are on a rotating schedule and are typically maintained every 3-5 years." We know that routine maintenance is often prioritized for ML 3-5 roads, and the Forest Service omitted information on roads that have missed its scheduled maintenance and failed to include any discussion of its deferred road maintenance backlog, or how that backlog has affected watershed conditions (see discussion below). Such omissions must be corrected in any subsequent analysis. It is also unclear how many ML 2 roads are on the MVUM. Rather, the agency simply listed 130 miles of road on the MVUM, but did not specify their Maintenance Level.

We also urge that all ML 1 roads be considered for decommissioning if not needed for the project activities, or at the very least, hydrologically disconnecting them (if not already) and placing them in long-term storage as well. Any such road should be effectively blocked to prevent unauthorized access.

Further, the Forest Service must include clear direction to obliterate all unauthorized roads and trails. As it stands, the proposed action makes it optional to remove unauthorized trails, labeled as "user-created:" "User-created trails, undesignated as system trails, may be decommissioned,

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HPCC EA at 14.
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HPCC EA at 51, Table 9.
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or closed and blocked with vegetation where they intersect with system trails, to prevent natural
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or cultural resource damage, as well as preserve a coherent and usable trail system."

Retaining any unauthorized trail only invites more illegal use, and any effort to close such trails would likely be unsuccessful. For this reason, we urge the agency to fully obliterate such trails, and likewise, any unauthorized roads.

While the Forest Service provided at least some direction on user-created trails, the EA lacks specific requirements for non-system roads. The Forest Service did not identify any known unauthorized roads within the planning area, which it should confirm in any subsequent analysis. We note that for the entire Santa Fe NF, there are approximately 250 miles of unauthorized roads that the agency classified as "undetermined" according to the INFRA database obtained through the Southwestern Region GIS database. See Exhibit 1. Definitions under the Travel Management
11
Rule do not include "undetermined" roads, and we consider these unauthorized. Here we calculated the total miles of "undetermined" roads with national forest jurisdiction that have not been decommissioned and have an existing route status. We were able to clip the INFRA road data to the HPCC project boundary to identify 21 miles of undetermined roads where approximately 9 miles are closed (ML 1) and 12 miles open as high-clearance roads (ML 2). See Exhibit 2. The Forest Service should confirm status for each of these road segments, which is especially important given the Forest Service states the project is consistent with Forest Plan direction at FW-DISREC-DC-3 that states "Unauthorized access (e.g., roads and trails) and non-
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system routes are not present on the landscape." Such consistency does not comport with the data we obtained. In any event, the Forest Service must include design features that direct the full removal of any unauthorized road or trail in order to show consistency with the Forest Plan's desired condition.

Some of the omissions we identify above stems from the Forest Service's use of the "Flexible Toolbox Approach" that fails to properly disclose the potential environmental consequences of the alternatives. The agency explains it will perform on the ground assessments of site-specific conditions, and then select an action to implement along with the appropriate design feature after
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it has signed the final project decision. NEPA requires a hard look analysis, and disclosure of environmental impacts before authorizing site-specific actions, not after. In addition, it appears that the Forest Service has sufficient data to make informed decisions, but fails to include this information in its analysis: Currently comprehensive information about the conditions found across every acre in the landscape is incomplete, however sufficient data is available to make informed decisions about what kinds of treatments work for certain conditions and what kind of
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protections need to be in place to prevent significant impacts to resources.

In fact, the Forest Service cites several sources of information it currently has available:

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HPCC EA at 13 (emphasis added).
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36 CFR § 212.1.

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 HPCC EA at 100.
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 HPCC 6-7.
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 HPCC EA at 6.
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Assessments conducted as part of the Burned Area Emergency Response (BAER) program, including the Hydrology Resource Reports Phase 1 - Phase 3, and Soil Resource Assessment Reports Phase 1 - Phase 3 (USDA 2022, 2022a, 2022b, 2022c, 2022d and 2022e), describe post-fire watershed conditions as highly degraded, particularly in areas that experienced high soil burn
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severity.

Yet, the Forest Service failed to include summaries of these reports in its analysis, or include the reports in any project files. While the agency did disclose the soil burn severities occurring
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across the project area, it failed to explain how they affect forest resources, particularly roads. The omission is particularly glaring since the Forest Service did disclose the range infrastructure occurring within different soil burn severities:

* 60 miles of fences located within high severity burn areas
* 60 miles of fences located within moderate burn areas
* 75 miles of fences located within low burn areas
17
* 10 miles of fences located within unburned areas

Certainly, the agency could disclose similar information pertaining to roads, either as total miles within each SBS category, or more specifically miles broken down by Maintenance Level (ML). In other words, it is not unreasonable for the Forest Service to list the total miles of ML 1-5 roads that occur within different soil burn severities, and what emergency actions identified by the BAER teams were completed. This is particularly important since BAER funding focuses on critical resource values and often prioritizes emergency actions on just those roads open to the public. In other words, the BAER program has specific limitations and its recommendations
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often must be implemented through separate actions such as the HPCC Fire Recovery project. The Forest Service should include those actions in any subsequently prepared HPCC analysis.

Further, the Forest Service failed to disclose how specific watershed conditions changed due to post-burn conditions. The agency lists Watershed Condition Framework (WCF) ratings for each subwatershed in the planning area, noting none are functioning properly, but it is unclear how the
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HPCC fire affected those conditions. Looking at the WCF subwatershed classifications, the Forest Service explains:

Watershed-level conditions now reflect a wide range of burn severity and post-disturbance hydrologic disconnection.
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Several are considered functioning at risk, indicating moderate departure from ecological integrity, while others meet the threshold for impaired, particularly where water quality, water quantity, aquatic habitat, riparian vegetation condition, road and trail networks, and

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HCPP EA, Soil & Hydrology Specialist Report at 1.
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Id.
17
HPCC EA at 44.
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See Exhibit 2.
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HPCC EA Soils and Hydrology Specialists Report at 2-3, Table 1.
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soil condition have been affected by burn severity, post-fire erosion and sedimentation
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(Table 1).

Together, these statements suggest that the WCF ratings reflect post-burn conditions, but it is unclear, and regardless, the analysis fails to disclose how the HPCC fires affected those ratings, specifically in relation to the road-trail indicator scores. For example, the Forest Service fails to disclose how risks of mass wasting may have changed due to post-burn conditions, especially on highly erosive soils. In addition, certainly the maintenance needs have now changed due to post-burn conditions, but the analysis also fails to explain how this was reflected in the WCF scores. Further, the Forest Service failed to disclose the miles of road or trail within the proximity to water. The Watershed Condition Classification Technical Guide (WCC) explains that a good functioning score requires "No more than 10 percent of road/trail length is located within 300
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feet of streams and water bodies or hydrologically connected to them." Yet, the analysis lacks any details about the miles of road or trail segment within 300 ft of a water body or even within the riparian management zone. The latter is particularly important given the agency's assertion that the proposed action is in compliance with the Santa Fe Revised Forest Plan that has desired condition FW-ROADS-DC-3: "Roads do not adversely affect watercourses or sensitive riparian areas." The agency cannot claim such consistency without disclosing the miles of roads within riparian areas or demonstrate that its design features will successfully preclude any adverse effects to watercourses during project implementation. We urge the Forest Service to make such disclosures in any subsequently prepared NEPA document for the project.

The Forest Service should also have disclosed and compared both pre and post burn subwatershed conditions for each indicator and supporting attribute as displayed in the Watershed Condition Classification Technical Guide.

Ultimately, the Forest Service must include more detailed information to comply with NEPA and to demonstrate consistency with the Santa Fe Revised Forest Plan. Finally, we want to emphasize the need to identify and implement a minimum road system across the planning area to comply with the Travel Management Rule under subpart A.

3. Post-fire tree mortality approaches pre-fire levels by the third year post-fire, so that live crown ratio in 2026 is a poor predictor of tree mortality.

The Project proposed two types of forest treatments that include the removal of hazard trees-- 1) Hazard tree abatement around improvements (6,800 acres), and 2) Hazard tree abatement for

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watershed protection, (22,160 acres).

The Draft EA defines dying trees as those possessing 20 percent or less live crown ratio, and the Draft EA references Hood 2010 as the basis for this definition.

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Id. HPCC
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WCC at 26.
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Draft EA at 7.
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Hazard trees are either dead trees (also called snags) or dying trees where the tree's height and proximity to an improvement poses a hazard to the improvement if it fell.
Improvements are roads, trails, powerlines, fences, campgrounds, structures, and acequias.
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Dying trees are defined as trees that possess 20 percent or less live crown ratio.

Hood et al. (2010) showed that trees suffering more than an 80% crown loss from fire had
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approximately 80% probability of mortality within 5 years.

However, this characterization misstates the findings of the Hood 2010 study, which is that models of post-fire mortality stabilize by the third year post-fire, and mortality rates approach pre-fire levels after that.

Most mortality (70-88% depending on species) occurred within 2 years post-wildfire and
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had stabilized by year 3.

These are also the findings of General Technical Report PNW-GTR-769: A Field Guide to Predict Delayed Mortality of Fire-Damaged Ponderosa Pine: Application and Validation of the Malheur Model. October 2008. Like Hood 2010, GTR-769 found that hazard tree criteria are
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predictive of the mortality within three years of a burn. Both studies found that, by the
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fourth year post-fire, tree mortality in burned units was the same as on unburned units. Beyond three years post-fire, the fire mortality models are not relevant, as trees will either have survived or not. In fact, by the fourth year, post-fire tree mortality is the same as on unburned units.

The HPCC Fire occurred in the spring of 2022; the Project area will be four years post-fire as of the spring of 2026, when the Project treatments of hazard trees will begin implementation.

Instead of applying the arbitrary criteria of less than 20% live crown in the attempt to predict which trees are likely to die, the Forest Service should instead, by the spring of 2026 and afterward, better define trees killed by the HPCC fire as those trees that are dead. Those trees that have survived post-fire and show active growth in the spring of 2026 are likely to survive. By proposing a removal standard of any tree with less than 20% live crown, the project would remove trees that are likely to survive indefinitely and do not constitute a hazard due to

mortality.

23
Draft EA at 8.
24
Footnote in Draft EA at 8.
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Hood, SM, Smith, SL, and DR Cluck. 2010 Predicting mortality for five California conifers following wildfire. Forest Ecology and Management 260750-762.
26
"There is good agreement between the delayed mortality predicted by the Malheur model and the mortality observed 3 years following the burn in the 10 validation stands." PNW-GTR-769 at 16.
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"During the fourth year, the percentage of mortality on burned units was not statistically different from that on nonburned units" PNW-GTR-769 from abstract.
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In addition, the Project fails to correctly apply the USFS Region 3 guidance on post-fire tree mortality, USDA-FS-R3: Tree Risk Assessment and Hazard Tree Mitigation in the Southwestern Region, June 2020, which specifies the following criteria for post-fire removal of ponderosa pine:

1. If no crown consumption is present, crown scorch affecting greater than 85% of the crown indicates 85-90% probability of mortality. 2. Crown consumption greater than 40% indicates 85-90% probability of mortality. 3. Crown consumption between 5 and 40% coupled with crown scorch > 50% indicates greater than 50% probability of mortality…. Most trees suffering 25% (one quadrant) or less cambium kill will survive, while trees suffering 75% or greater (3 quadrants) cambium kill have a high probability
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of mortality."

In the Regional hazard tree guidance, the prediction of post-fire mortality is based on a combination of factors-including crown consumption and bark scorch-and not simply live crown ratio. In addition, this guidance uses a standard of 85% crown scorch, rather than the 80% stated in the Draft EA. However, it is important to understand the Regional guidance in the context of the findings of Hood 2010, in that an 85-90% probability of mortality is entirely consistent with the findings that trees that have survived to year four post-fire are likely to survive indefinitely.

On this point, our concern is primarily about the removal of live, old and large trees, greater than 16 inches diameter. In an area where fire has reduced the large tree component, the remaining live large and old trees within the HPCC Fire area are a critical component of the landscape and the forest ecosystem.

4. The live-tree logging component of the Project is extremely broad, poorly defined, and the Draft EA fails to disclose and analyze the impacts of such logging.

The project includes 20,130 acres of forest thinning to reduce tree densities in forest that burned at low severity in the HPCC fire, or were completely unburned.

Some vegetation within the project area was unburned or experienced the fire at low severity. Here vegetation treatments are needed to reduce stand densities which will increase forest health and vigor, increase forest resiliency to insects and disease outbreaks and wildfires, and provide fuelwood to local communities. Treatments here would keep these forested areas healthy and move these areas towards desired conditions for their vegetation type.[29]

[28] USDA-FS-R3 at 17-18. See Exhibit 3.
[29] Draft EA at 5.

The Draft EA states that these vegetation treatments are needed "to reduce stand densities to improve the health and vigor of dense forest. This will increase resiliency to insect and disease outbreaks and wildfires."[30]

This component of the proposed Project is extremely broad, providing little explanation of the intended results other than to "reduce stand densities," with few limitations on the extent of logging other than to "move existing conditions towards ERU specific desired conditions from the 2022 Forest Plan."[31] This broad characterization both fails to describe the Project in any meaningful sense, and fails to disclose and analyze the impact of this component of the Project. The Forest Service must reedy this omission in any subsequently prepared NEPA analysis.

The Draft EA states that the objective of the Project's live-tree logging component is to increase resiliency to insect and disease outbreaks and wildfires.[32] However, the Draft EA contains no analysis of fire risk or the risk of insect and disease outbreak. The Draft EA defines low-severity fire to include forested areas that experienced as much as 25% tree mortality.[33] However, the Draft EA does not acknowledge that low-severity fire results in reduced surface fuels and reduced density of live trees, thereby reducing the fire risk, nor does the Draft EA analyze these effects. Similarly, the Draft EA does not acknowledge or analyze the effects of reducing live tree density by as much as 25% with respect to the risk of insect and disease outbreak.

The Project proposes live-tree logging in spruce-fir, wet mixed-conifer, dry mixed-conifer, and ponderosa pine ERUs, and states that frequent-fire ERUs will be prioritized for treatment.[34] However, the Draft EA fails to acknowledge that spruce-fir is not a frequent-fire ERU. Nor does the Draft EA consider that thinning in spruce-fir stands can increase fire risk, due to increased sunlight penetration and increased surface windspeeds, leading to hotter and drier surface fuels and longer flame lengths. Furthermore, the Draft EA offers no explanation of how the Project will prioritize frequent-fire ERUs for treatment.

The live-tree logging component of the proposed Project seeks to "reduce stand densities," with few limitations on the extent of logging other than to "move existing conditions towards ERU specific desired conditions from the 2022 Forest Plan."[35] However, the Forest Plan does not

specify any stand densities or any criteria for stand densities, other that the broadest range of basal areas across the entire possible range of ages and site productivities. The ranges are 20 to 250 BA for spruce-fir, 20 to 180 BA for wet mixed-conifer, 30 to 125 BA for dry mixed-conifer, [36] and 22 to 89 BA for ponderosa pine. These ranges are extremely wide and obviously include the driest and least productive sites. These are not representative of the areas targeted for live-

[30] Draft EA at 8.
[31] Draft EA at 9.
[32] Draft EA at 8.
[33] Draft EA at 22.
[34] Draft EA at 8-9.
[35] Draft EA at 9.
[36] Santa Fe National Forest Land Management Plan at 35, 39, 42, and 45.

tree logging in the Project, which include, for example, ponderosa pine forest-type transitioning to mixed-conifer and mixed-conifer transitioning to spruce-fir.

Reducing these particular forest sites to the lower end of the stand-density range-the only criteria the Draft EA provides for the live-tree component-would not only degrade the forest ecosystem, it would also degrade forest structure components necessary for bird nesting habitat. To protect against impacts to forest structure and bird nesting habitat, the Project should apply a minimum basal area of 80 square feet per acre.

For all four forest types targeted for live-tree logging in the Project, the Forest Plan specifies that old growth should occur "throughout the landscape, generally in small areas as individual old-[37] growth components or as clumps of old growth." The Forest Plan further states that, for all forest types, "vegetation treatments should be designed such that structural stages and age classes that are under-represented in desired conditions become proportionally represented, and to assure [38] continuous recruitment of old growth characteristics across the landscape over time." However, the Draft EA includes no analysis of the old growth component of the Project area or the areas targeted for live-tree logging, nor does the Draft EA provide any analysis of the size-class distribution in these areas.

Even a cursory survey of the Project area reveals a lack of large trees across the area and within individual stands. Furthermore, due to past timber practices, trees 18 inches in diameter and larger make up less than 5% of the ponderosa pine forest in the Southwest, and trees 24 inches in diameter and larger make up less than a tenth of one percent. At the same time, trees smaller than 12 inches in diameter make up the vast majority of the forest. Except in the case of hazard trees, the Project should retain all trees 16 inches DBH and larger.

At the forest scale, there is a severe deficit of old growth throughout the Southwestern Region,

where only about 14 percent of the historical levels of old growth ponderosa pine and dry mixed-conifer forests remain, according to the 2023 analysis by the Forest Service. Given that there currently may be no existing old growth forest within the areas targeted for live-tree logging, the project should identify areas with the potential to develop old growth characteristics in the future, and retain those areas as developing old growth. A primary component of all old growth is large and old trees, which are at a deficit across the Region, the Forest, and within the Project area. Given the deficit of larger trees and old growth, the Project should retain all trees 16 inches DBH and larger, both as a surrogate for the missing large and old tree components, and as developing old growth.

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The Project includes 11,118 acres of thinning within Mexican spotted owl CH. This includes 3,262 acres of forestry treatments (hazard tree removal and live-tree logging) within MSO
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PACs. The Draft EA rightly proposes to retain all trees greater than 9 inches DBH within

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Santa Fe National Forest Land Management Plan at 35, 38, 41, and 44.
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Santa Fe National Forest Land Management Plan at 32.
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Project BA at 37.
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Project BA at 28.

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PACs. However, the Draft EA contains no criteria for large-tree retention within MSO Critical Habitat generally. For clarity and to be consistent with MSO recovery guidelines, the direction should be "to retain all trees 16 inches DBH or greater within MSO Critical Habitat."

5. The actions proposed in the Hermit's Peak and Calf Canyon Fires Recovery Project would violate the Wilderness Act.

Approximately 74,515 acres of the project footprint lie within the designated Pecos Wilderness, a protected area governed by the stringent mandates of the 1964 Wilderness Act. The agency proposes to utilize prohibited mechanized equipment, such as chainsaws and ATVs, and to install virtual fencing base stations within this designated Wilderness area. This constitutes a fundamental violation of the Wilderness Act.

There is a core tension between the supposed urgent need for post-fire hazard mitigation and the permanent legal requirement to maintain the untrammeled character of the Wilderness. The Santa Fe National Forest is executing this recovery under the Emergency Authority Determination (EAD) authorized by the Infrastructure Investment and Jobs Act (IIJA) Section 40807. While the EAD grants procedural relief by exempting the project from the pre-decisional administrative review process (36 CFR 218), it does not grant blanket immunity from the specific, restrictive statutory prohibitions defined in the Wilderness Act.

The reliance on the EAD for the overall recovery effort should not be mistaken for a legal justification for bypassing the Wilderness Act's specific restrictions. The EAD addresses procedural requirements related to environmental analysis and public comment for the wider

project area. Conversely, the Wilderness Act addresses the inherent quality and prohibited actions within the Wilderness itself. Therefore, the EAD, which grants administrative speed and exemption from public objection under 36 CFR 218, does not negate the necessity of meeting the statutory standard for prohibited activities within the 74,515 acres of the Pecos Wilderness.

The prohibitions clause of the Wilderness Act (16 U.S.C. § 1133(c)) enumerates strict prohibitions designed to maintain the undeveloped and primitive character of the land. The prohibitions clause mandates that, except as specifically provided, there shall be: no temporary road, no use of motor vehicles, no use of motorized equipment, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any designated Wilderness area.

This list directly targets the tools and infrastructure typically associated with modern resource management and convenience. The Forest Service's proposed activities-chainsaw use, ATV/UTV access, and virtual fencing base stations-each fall squarely into one or more of these prohibited categories.

The use of chainsaws and All-Terrain Vehicles (ATVs), as well as the deployment of solar-powered virtual fencing base stations, constitute prohibited activities within Wilderness. These

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Project BA at 23.
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actions must be shown to be the absolute minimum necessary for the administration of the area as Wilderness, a standard requiring rigorous justification through a Minimum Requirements Analysis (MRA), which should be completed prior to the EA (the EA is out and no MRA is available) and approval of the project for the sake of transparency. Furthermore, the reliance on virtual fencing introduces severe technical and cybersecurity vulnerabilities. The technology's dependence on external power, communication networks, and complex software creates a high risk of system failure or malicious manipulation, which could lead to resource damage and violate Wilderness policy. We request that the Forest Service make the MRA available to the public as soon as possible, and before any decision on the project is made.

A key principle of Wilderness protection is non-degradation. The Wilderness Act defines an area of Wilderness as undeveloped Federal land that retains its "primeval character and influence" and is protected and managed to preserve its "natural conditions." To meet this definition, the area must "generally appear to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable."

Further, the proposed use of virtual fencing technology represents perhaps the starkest contradiction to the Wilderness Act's mandate to preserve an environment free from "permanent improvements or human habitation" where man's imprint is "substantially unnoticeable."

The Wilderness Act explicitly bans any "structure or installation" within designated areas. This clause is designed to prevent the introduction of fixed, man-made components that alter the landscape's natural appearance and primitive character. The installation of technological infrastructure undermines the experiential qualities of Wilderness.

It would be difficult to argue that a 4 foot x 4 foot aluminum box outfitted with electronics, solar panels, and drilled into the ground with steel anchors does not constitute a "structure or installation." The presence of modern, technological infrastructure as is required for virtual

fencing is incompatible with the primeval and undeveloped quality of wilderness. The deployment of these virtual fencing base stations represents a profound shift from natural management to overtly technological control, a transformation that should only be permitted if absolutely necessary, and the absolute minimum tool required, which cannot be true if traditional management alternatives exist.

Further, setting up a satellite monitoring program diverges from the expectations of wilderness.

Therefore, we recommend that the Forest Service reject non-conforming uses for convenience. All vegetation clearing and fence work within the Pecos Wilderness should be completed with hand tools (crosscut saws) and primitive transport (foot/livestock), consistent with the non-mechanized methods already prescribed for specific Wilderness activities in the EA. Authorization for chainsaws or ATVs must be rejected.

Lastly, we recommend two things: First, the Forest Service temporarily close the allotments affected by the fire until recovery occurs. This is often necessary when these events occur. Second, the Forest Service should immediately eliminate the proposed virtual fencing base stations within the Pecos Wilderness. It is assumed that the allotment's permittee should tend to
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their cattle in a way that is compatible with the Wilderness Act, rather than depending on non-conforming infrastructure to keep their cattle from roaming.

6. The Project fails to provide for viable populations of Species of Conservation Concern including the Northern Goshawk.

The project must include species-specific plan standards and guidelines to maintain viable
42
populations of at-risk Species of Conservation Concern (SCC) in the fire-impacted project area. In pre-scoping comments we urged the full implementation the Management Recommendations for the Northern Goshawk in the Southwestern United States (Reynolds et al. 1992 or MRNGs) and the Dodd guidelines (see below) to ensure maintenance of viable populations of goshawks
43
and their prey. The goshawk is a SCC on the SFNF and a keystone forest species essential for recovering ecological integrity.

In 1996 the Forest Service amended every forest plan in the Southwestern Region, including the SFNF forest Plan, to incorporate the MRNG. However, the current 2022 SFNF forest plan no longer requires the MRNG's minimal canopy cover requirements, forage utilization standards, snags, woody debris, road minimums and maintenance of mycorrhizal networks for the goshawk and its prey. The HPCC fire has created conditions that necessitate species-specific management, such as the MRNG and the Dodd guidelines, to ensure the persistence of goshawk populations and their prey in the project area.

Full implementation of the MRNG would ensure protection for the seven goshawk prey species requiring dense canopies that are deficient in the post-fire recovery area. The most significant of these is the tassel-eared squirrel (Sciurus aberti) that attains high populations in closed canopied forests interspersed with younger age classes. This arboreal squirrel lives and nest in ponderosa pine trees, and their food consists almost exclusively of items produced by ponderosa pine and the mycorrhizal fungi symbiotic with it. The tassel-eared squirrel 's optimum habitat is mid-to-late-seral ponderosa pine forest, i.e., trees approximately 12-19 inches in diameter, intermixed

with larger trees, with interlocking crowns. A study on the Carson National Forest determined that "Density of 12-16 DBH ponderosa pine was the single best predictor of squirrel density"
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(Frey 2004).

In addition to being an important goshawk prey species, the tassel-eared squirrel sustains the ponderosa pine ecosystem by consuming mycelium and fruiting bodies of hypogeous fungi (truffles) and epigeous fungi (mushrooms) and distributing spores in their fecal pellets (Dodd at

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36 CFR § 219.9(b)
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Reynolds, Richard T.; Graham, Russell T.; Reiser, M. Hildegard; and others. 1992. Management recommendations for the northern goshawk in the southwestern United States. Gen. Tech. Rep. RM-217, Ft. Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 90 p.
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Frey, J. 2004. Abert's squirrel (Sciurus aberti) monitoring and habitat analysis on Carson National Forest, New Mexico. A Final Contract Report R3-83A7-4-0038 Completion Report. Carson National Forest, December 9, 2004. 21p.
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al. 2003; States and Wettstein 1998; Stephenson 1975; Maser et al. 1978). This mycorrhizal network enhances seedling survival and forest regeneration and enables trees of different species to share water and nutrients and exchange information such as the presence of defoliating insects
46
(Simard et al. 1997).

There is a strong association between hypogeous fungi production, ponderosa pine canopy
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closure and squirrel abundance (States and Gaud 1997; States and Wettstein 1998). Cutting mid-to late-seral unburned ponderosa pine trees to "recover" forests in the project area may negatively impact squirrel populations and mycorrhizal networks. The number of truffles gathered by tassel-eared squirrels as evidenced by dig sites reflect the lower abundance of truffles where management has reduced tree density (Beiler et al. 2004). Given that truffles are an important component of the diet of these squirrels, tree cutting could significantly reduce habitat quality by reducing mycorrhizal colonization and thereby reducing truffle abundance.

The Dodd guidelines (Dodd et al. 2003) are acknowledged as the best available scientific
48
information for tassel-eared squirrel management. Named for Norris Dodd, a squirrel researcher employed by the Arizona Department of Game and Fish, they call for designation and maintenance of 20-36 hectare (50-90 acres) "meso-reserves" throughout a landscape unit, such as this project area, that contain the best remnants of high quality post-fire squirrel habitat. This approach responds to the current understanding that squirrel survival requires maintenance of appropriate forest structure at the patch scale. Outside the designated meso-reserves, the Dodd guidelines call for leaving residual "refugia," or clumps of interlocking canopy trees.

Implementation of the Dodd guidelines requires that this project (1) conduct surveys for the optimal habitat characteristics as identified by Dodd and others; (2) designate meso-reserves containing the best quality habitat; and (3) limit tree cutting in designated areas that may

adversely impact tassel-eared squirrels and the hypogeous fungi that provide a crucial dietary component.

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Maser, C.; Trappe, J.M.; Nussbaum, R.A. 1978. Fungal-small mammal interrelationships with emphasis on Oregon coniferous forests. Ecology. 59: 799-809. States, J.S., and P.J. Wettstein. 1998. Food habitats and evolutionary relationships of the tassel-eared squirrel (Sciurus aberti). Pages 185-194 in M. A. Steele, J. F. Merritt, and D. A. Zegers, editors. Ecology and evolutionary biology of tree squirrels. Virginia Museum of Natural History Special Publication No. 6, Martinsville, Virginia, USA. Stephenson, R. L. 1975. Reproductive biology and food habits of Abert's squirrels in central Arizona. Thesis, Arizona State University, Tempe, Arizona, USA.
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Simard SW, Perry DA, Jones MD, Myrold DD, Durall DM, Molina R. 1997. Net transfer of carbon between ectomycorrhizal tree species in the field. Nature 388: 579-582.
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States, J.S., and W.S.Gaud. 1997. Ecology of hypogeous fungi associated with ponderosa pine. I. Patterns of distribution and scorocarp production in some Arizona forests. Mycologia 89:712-721.
48
Dodd, N. L. 2003. Landscape scale habitat relationships to tassel-eared squirrel population dynamics in north-central Arizona. Arizona Game and Fish Department Technical Guidance Bulletin No. 6, Phoenix, Arizona. 28 pp.

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The Dodd guidelines are consistent with Prather et al. 2006 recommendations ". . . that managers leave larger patches (160 ha) of habitat with moderate-to-high canopy cover (40%) as part of any treatment matrix. These untreated or lightly treated patches could serve as important sources for recolonization of treated areas." They are also consistent with Yarborough et al. 2015 that recommend "(w)inter core area forest patches for Abert's squirrels should have canopy closure ranging from 55% to 72% to maximize squirrel density and recruitment."

At a minimum the agency must disclose SCC and their suitable habitat in the project area by evaluating habitat assessments and conducting field reconnaissance. This information is conspicuously absent from the Biological Assessment.

7. The Project fails to consider measures to retain white pine genetic diversity.

The National Forest Management Act (NFMA) requires that the Forest Service adopt guidelines for the management of national forests that "provide for diversity of plant and animal communities." Trees are singled out in NFMA which directs that "steps to be taken to preserve the diversity of tree species." 16 U.S.C. §1604(g)(3)(B). Tree diversity is also emphasized in the 2012 Planning Rule by requiring that plans maintain or restore "the diversity of native tree species similar to that existing in the plan area." 36 CFR 219.9(a)(2)(iii).
In implementing NFMA's diversity mandate, "genetic diversity within species in ecosystems" is given prominence as a key element in the adaptive capacity of ecosystems to respond to disturbances and stressors (USFS Land Management Planning Handbook 1909.12.05). The SFNF Land Management Plan which includes standards for the Desired Conditions for All Vegetation Types (FW-VEG-DC) states: "Habitats and refugia for rare, endemic, and culturally important species, are resilient to stressors and support species' persistence or recovery." (SFNF LMP, p. 30).

The preservation at-risk white pine genetic diversity in the project area is critically important to resist exotic white pine blister rust (Cronartium ribicola) which has recently appeared on the SFNF. These standards should require, to the greatest extent possible, the preservation of all white pine trees to conserve their diverse germ plasm. In addition to disease resistance, preservation of genetic diversity would also aid white pines in confronting potential bark beetle outbreaks and, most significantly, adapting to a rapidly warming and drying climate.

Created openings in white pine habitats should be avoided. Large and small openings heightens the potential for blister rust damage (Schwandt et al. 1994; Fins et al. 2001). Increased sunlight reaching the forest floor often causes Ribes sp., the main alternative blister rust host, to proliferate leading to increased opportunities for the spread of blister rust. Relatively dense forests limit not only Ribes sp. but also dispersal of rust spores. Forest Service pathologists in the Southwest recommend careful consideration of the potential hazard of clearing and burning projects that may increase long-term damage from blister rust (Conklin et al. 2009).

The SFNF's white pine population forms a unique hybrid zone that extends into southern Colorado (Benkman et al. 1984; Andresen and Steinhoff, 1971 and Steinhoff and Andresen, 1971). Two species of five-needle white pines, limber pine (Pinus flexilis) and southwestern
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white pine (Pinus strobiformis) are at or near the limits of their geographical ranges in northern New Mexico. These two closely related species interbreed to create hybrid populations unique to the SFNF. These hybrids may contain novel adaptive traits to not only create more effective resistance to blister rust infection but also increase climate adaption by combining limber pine's greater cold tolerance with southwestern white pine's ability to better withstand drought (Menon et al. 2021).

Recent research has identified high levels of resistance to blister rust in Southwestern white pines. Trees grown from seed collected in the Lincoln, Cibola and Santa Fe National Forests were inoculated with blister rust spores. After 7.5 years three populations had a greater than 70% survival representing perhaps the highest level of resistance documented to date in a North American white pine species (Johnson and Sniezko 2021). These findings add urgency to the need to protect all genetically unique five-needle white pine populations.

Significantly, five-needle white pines have coevolved a mutualistic relationship with Clark 's nutcrackers (Nucifraga columbiana) with the pines obligately dependent upon the bird for dispersal of its large, wingless seeds (Tomback 1982). In late summer and early fall, nutcrackers extract ripe seeds from cones, transporting them to open areas in a specialized sublingual pouch. The seeds are cached in the ground with the birds returning to feed on the seeds for up to a year (Tomback 1982). Unretrieved seeds are the primary source of white pine regeneration (Hutchins and Lanner 1982; Tomback 1982, 2001). After high-severity fire, such as the Hermits Peak/Calf Canyon wildfire, nutcrackers will travel long distances to cache pine seeds in newly open terrain making them among the first trees to stabilize disturbed sites. Clark's nutcracker populations are declining in large parts of their northern range in part due to spreading blister rust infection (McKinney et al. 2008). Preserving all disease resistant white pine germ plasm is necessary to avoid a disruption of this key bird-pine mutualism that is aiding post-fire recovery in the project area.

In summary, this project fails to maintain the genetic diversity of white pines and does not
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maintain tree cover required to limit the spread of white pine blister rust.

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Conclusion

We appreciate your consideration of the information and issues raised in these comments. We would be pleased to answer any questions and provide additional information on any of these points. We hope that the Forest Service offers additional opportunities to engage in the development of this project moving forward.

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