January 13, 2025

Kurt Davis, Deputy Forest Supervisor
Coronado National Forest
300 W Congress Street
Tucson, AZ 85701

Submitted by email to: objections-southwestern-coronado@usda.gov

Submitted to the Public Comment Form at:
https://cara.fs2c.usda.gov/Public//CommentInput?Project=56958

Re: OBJECTION: Pinaleño FireScape Project, Project #56958

Dear Mr. Davis:

The Center for Biological Diversity submits these objections to the U.S. Forest Service's Final Environmental Assessment ("EA") and draft Decision Notice for the Pinaleño FireScape Project ("Project") on the Coronado National Forest.

Project Objected To

Pursuant to 36 C.F.R. § 218.8(d)(4), Center for Biological Diversity *et al*. object to the following project:

> *Project*: Pinaleño FireScape Project, Coronado National Forest, Safford Ranger District
> *Responsible Official and Forest/Ranger District:* Christian Larson, Acting Safford District Ranger, Coronado National Forest

Timeliness

Notice of the availability of the Draft Decision notice and Final EA was published in the *Eastern Arizona Courier* (the newspaper of record) on November 27, 2024, making the deadline to submit comments January 13, 2025. These objections are therefore timely filed.

Lead Objector

Per 36 C.F.R. § 218.8(d)(3), the Objectors designate the "Lead Objector" as follows:

> Brian Nowicki, Senior Public Lands Advocate
> Center for Biological Diversity
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Interests and Participation of the Objectors

The Center for Biological Diversity is a non-profit environmental organization with more than 1.7 million members and online activists who value wilderness, biodiversity, old growth forests, and the threatened and endangered species which occur on America's spectacular public lands and waters. Our members and supporters use and enjoy the Coronado National Forest, and the lands of the Pinaleño FireScape Project area for, among other things, recreation, photography, wildlife viewing, nature study, and spiritual renewal.

The Center for Biological Diversity has for decades advocated for the sound management of lands in the Pinaleño Mountains, particularly in relation to efforts to protect the Mount Graham red squirrel, one of the most endangered mammals in North America. As an example of close engagement in the protection of Mount Graham, we have submitted a 2010 Notice of Intent to Sue the Forest Service written by the Center's Dr. Robin Silver. Most recently, we filed a complaint against the U.S. Fish and Wildlife Service for the continued failure to update the critical habitat for the Mount Graham red squirrel (MGRS).[1]

The Center for Biological Diversity has advocated, since the mid-1990s, for forest restoration that combines appropriate mechanical thinning, a right-scaled restoration industry, prescribed burning, and community protection while maintaining or enhancing large and old trees, key ecological process such as fire, and protecting sensitive and listed species.

The Center for Biological Diversity has been an active stakeholder throughout the project planning process. The Center for Biological Diversity submitted comments during scoping for the Pinaleño FireScape Project on September 4, 2020, and we submitted an objection during the first objection period in April 2024. Center members and staff have repeatedly visited and toured the project area, most recently in November 2023.

OVERVIEW AND SUMMARY OF THE ISSUES

The Center for Biological Diversity strongly supports the reintroduction of fire as an ecological process on Mount Graham, including within occupied habitat for sensitive and protected species.

The Center for Biological Diversity supports the positive changes made to the Final EA in response to our objection comments in 2024. In particular, we support the decision to remove from the project the application of herbicides, because of the potential impacts to Gila Trout, Gila Chub and their habitats. We also support the design features intended to protect Western Yellow-Billed Cuckoo and its habitat.

However, this EA represents a continuing failure of the Forest Service to address the urgency of the fire threat on Mount Graham by failing to prioritize the reintroduction of ecologically beneficial fire on as much of the landscape as possible as soon as possible. Instead of identifying

[1] https://biologicaldiversity.org/species/mammals/Mount_Graham_red_squirrel/pdfs/Mount-Graham-Red-Squirrel-FILED_2024_03_19.pdf.

those places where minimal thinning would allow for the maximal reintroduction of fire, the Pinalenos Firescape Project continues to pursue extensive forest thinning, including the harvest of large trees, as a precondition to reintroducing fire. Such an approach is expensive, unrealistic, and *dangerous*. It is dangerous because it predicates fuels reduction and project implementation on commercial markets and industry needs that do not exist, and may not exist in the future. This effectively guarantees that the reintroduction of fire will be slower and less extensive than needed, and it increases chances that, during intervening years, unnaturally severe fires will impact the project area and ecological values therein. Because it bears centrally on project goals and critical ecological values, the EA must address contingencies and strategies to maximize the pace and scale of safely reintroducing ecologically beneficial fires in the project area.

In this objection letter, we seek to build upon the improvements and clarifications made to the Final EA in 2024, in order to provide necessary protections for sensitive and imperiled species within the project area, and the habitats they rely on. Without such improvements, the Pinaleño FireScape Project, as defined in the Final EA, includes actions that unnecessarily threaten imperiled and sensitive species within the project area, and fails to include measures that would significantly reduce risk and impacts to those species, and to Mount Graham red squirrel and Mexican spotted owl (MSO) in particular.

We raise the following objections:

I. The EA fails to properly disclose and analyze the impacts of spring burning to Mexican spotted owl and Mount Graham red squirrel.

   A. The Project focuses on treating MGRS and MSO occupied habitat instead of prioritizing actions that would reduce the risk of large-scale active crown fire in large portions of occupied habitat.

   B. The Project proposes to use thinning and prescribed fire within MGRS and MSO occupied habitat during breeding season for both species, despite the outsized impacts that operations disturbance, fire and smoke would have on breeding individuals and offspring.

   C. The Project proposes to use prescribed fire in spring, despite the fact that the risk of unexpected winds and high fire weather is much higher in spring, and the impacts of an escaped prescribed fire in spring would have outsized impacts to MGRS and MSO.

II. The EA fails to disclose and analyze the effects of fire retardants on protected species.

III. The EA fails to properly disclose and analyze the impacts of removing large trees up to 24” in diameter, and using mechanical thinning across 68,048 acres.

IV. The EA fails to analyze the effects of livestock grazing with respect to prescribed fire.

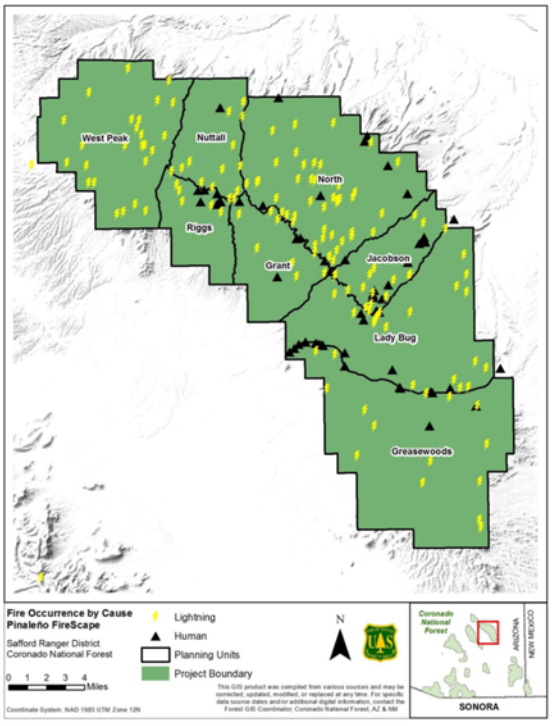
V. The Forest Service relies on a flawed analysis to reach a finding of no significant impacts.

I. THE EA FAILS TO PROPERLY DISCLOSE AND ANALYZE THE IMPACTS OF SPRING BURNING TO MEXICAN SPOTTED OWL AND MOUNT GRAHAM RED SQUIRREL.

A. The Project focuses on treating MGRS and MSO occupied habitat instead of prioritizing actions that would reduce the risk of large-scale active crown fire in large portions of occupied habitat.

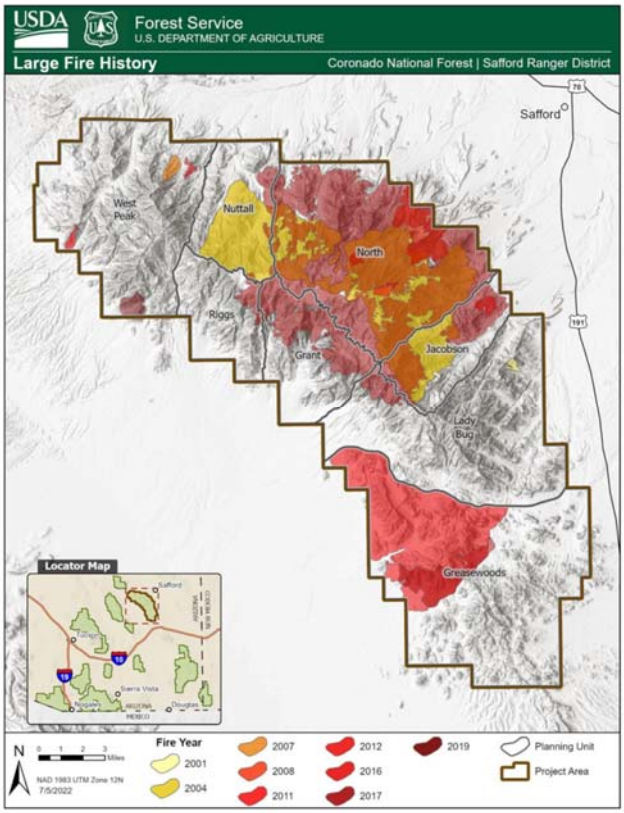
A review of the maps included in the EA and Fire and Fuels Specialist Report strongly indicates that prescribed fire on the southwest flank of the mountain, largely far outside of MGRS and MSO occupied habitat, would provide the greatest protection against high-severity fire affecting substantial portions of occupied habitat.

Figure 2, *Fire Occurrence by Cause (2001-2020)*[2], shows that lightning strikes occur primarily at the highest elevations, near the ridgeline, and on the northeast flank of Mount Graham. Human-caused ignitions occur primarily along roads and in developed areas.



[2] Fire and Fuels Report at 4.

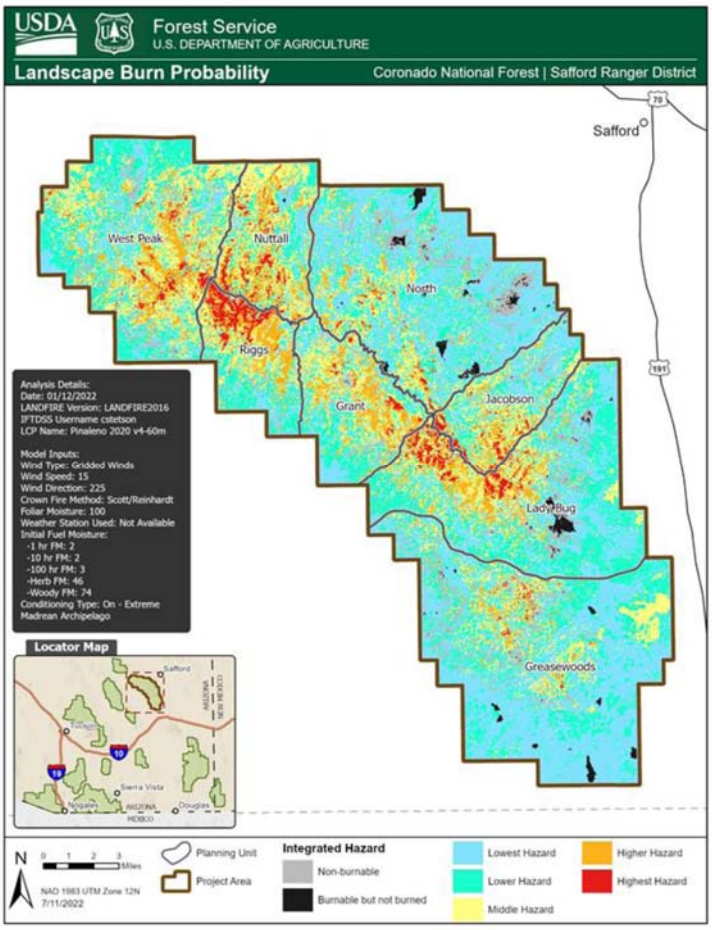
Figure 3, *Large Fire History (11+ acres) within Planning Units (2001-2020)*[3] shows that, as a result of these ignitions, large fires have occurred recently throughout much of the high-elevation forest, often initiating near the ridge and spreading outward to the northeast.



Partly as a result of these recent fires, the fire hazard ratings for much of the MSO and MGRS occupied habitat is lower and less continuous than on the southwest flank of the mountain, as seen in Figure 4, *Planning Unit Integrated Hazard Map*.[4]

[3] Fire and Fuels Report at 5.

[4] EA at 9.



The data in the Fire and Fuels Report indicate that the largest contiguous areas of high fire hazard are not *within* MSO and MGRS occupied habitat, but along the southwest flank of the mountain, mostly farther than half a mile from the edge of most MSO PACs and more than a mile from most MGRS occupied habitat. The hazard ratings within much of the MGRS and MSO occupied habitat tends to be patchy with large portions of middle and lower hazard.

Large fires in this range have a strong tendency to spread primarily southwest to northeast, as far as several miles long and sometimes spreading to several miles wide. Given that MSO and MGRS occupied habitat is located largely along the ridgeline that runs northwest to southeast, a fire initiating *upwind* of the occupied habitat and to the southwest is much more likely to spread into a fire that affects a large number of PACs and middens than a fire initiating *within* occupied habitat.

Therefore, reintroducing fire to reduce the risk of active crown fire along the southwest slope, extending to the south and west from MGRS and MSO occupied habitat, should be the highest priority in reducing the risk of high-severity fire reaching MGRS and MSO occupied habitat.

The fire hazard ratings reported in the EA are based solely on fuel loads and canopy cover, and do not take into consideration historic fire behavior for each forest type. The resulting fire hazard analysis is extremely simplistic, with no consideration of likely ignition points, predominant

wind direction, or the fire hazard of adjacent areas.[5] In addition, the fire hazard ratings are greatly limited by the fact that they do not distinguish between forest types, aspect, slope, or the likelihood of active crown fire entering from neighboring forest.

By focusing solely on these fire hazard ratings (i.e. fuel loads) the Project places an outsized emphasis on treating precisely those areas where treatment is most difficult, dangerous, and unproductive—areas where the forests are not adapted to frequent fire, are difficult vegetation types in which to control fire, and where fires burning outside of parameters are most likely to have significant negative impacts to MGRS and MSO. The areas identified as high fire hazard include wet mixed conifer and spruce-fir forest types, both of which are not adapted to frequent fire or low-severity understory burns.

Instead of analyzing fire risk solely on the basis of fuel loads and canopy cover at the acre scale, the EA should analyze fire hazard as the risk that fire in an area could result in active crown fire spreading to a much larger area. Because of the high density of extremely limited populations of MGRS and MSO, and the fact that Mount Graham is the sole habitat for MGRS, the fire hazard analysis should place particular emphasis on the risk of fire spreading to large areas of MSO and MGRS occupied habitat. Because of the location of MSO PACs and MGRS occupied habitat near the top of the mountain, and because of the location of recent large fires, the risk that a fire ignition within MSO and MGRS occupied habitat would result in active crown fire over large areas of MSO and MGRS habitat is potentially quite low compared to the risk from fires coming up the southwest slope of the mountain.

In particular, the Landscape Burn Probability map in Figure 4, Planning Unit Integrated Hazard Map, indicates that reintroducing fire to reduce fuel loads in the areas southwest of the ridgeline, extending up to three miles down the slope to the southwest, would provide the greatest protection against large-scale crown fire in MGRS and MSO occupied habitat. Only a handful of MSO PACs in this area are dominated by forest rated as high fire hazard—two PACs at the top of the Riggs planning unit, and three in Ladybug, near the intersection with Grant, North, and Jacobson planning units. Very little MGRS occupied habitat occurs southwest of the ridgeline in areas dominated by high fire hazard.

In prioritizing actions to protect MGRS occupied habitat, the EA relies on faulty reasoning from an internal document.[6] Although this document is not included in the posted materials in the project files, a summary is included in the Wildlife Specialist Report.

> PERP treatments prior to the Frye Fire have shown their effectiveness in reducing wildfire effects on the landscape. For example, 18 overstory thinning units were in the process of being treated in PERP prior to the Frye Fire. Untreated areas within these units

[5] "The general strategy for treatment implementation priority is to treat areas of a higher hazard risk rating along with critical areas that would aid in managing wildfires managed for multiple objectives." Fire and Fuels Report at 11.

[6] The Wildlife Specialist Report cites this document as "USFS. 2022f. Note to file on observations of MGRS and fire Severity post-Frye Fire- Provided by B. Woods. Safford, AZ."

showed tree mortality ranging from 0% to 100% of the stand, showing the variability of fire effects within the fire. Approximately 12 of the 18 units had thinned 10% of the acreage within the units prior to the fire, and an average of 66% of the stands within these units were lost by the fire. Six units had thinned 25% or more of the acreage within the units, and an average of 11% of trees within these stands were lost to the fire. The results from these data indicate that thinning would effectively reduce wildfire severity while maintaining MGRS habitat (USFS 2022f). Wildlife Specialist Report at 50.

These conclusions are the result of faulty reasoning based on anecdotal evidence with no scientific study design. Without determining quantitatively that the units that had 10% of their acreage thinned had comparable fuel loads, aspect, fire exposure, and suppression effort during the Frye Fire, these findings are meaningless. Furthermore, these findings, as reported, offer no evidence that thinning effectively maintains MGRS habitat. However, the most important point here is not that these conclusions are unfounded and scientifically invalid; the most important point is that this clearly shows how the Project is overly focused on treating the areas within occupied habitat and justifying the impacts to MGRS and MSO, rather than pursuing treatments that would best protect and conserve that occupied habitat, wherever those treatments may be needed.

We strongly suspect that an analysis of fire risk to MSO and MGRS occupied habitat based on the risk of fire spreading to affect large portions of occupied habitat will indicate that reintroducing fire to the southwestern flank of Mount Graham is the highest priority for protecting MGRS and MSO habitat. Appendix D, Implementation Strategy, focuses on prioritizing operations by planning unit, with adjustments made for seasonal operability.[7] If an analysis of fire risk to MSO and MGRS occupied habitat shows what we expect it will, the Project should instead prioritize specific sections of planning units that provide the greatest benefit.

NEPA requires the Forest Service to use the best available science and to focus on the most significant issues. By focusing simplistically on fire hazards within MGRS and MSO occupied habitat and ignoring the more significant threat of fire spreading upwind from more fire-prone areas, the EA provides a misleading and unsupported view of the threat the project seeks to address, and the likely ineffectiveness of the proposed action to address that more significant threat. This violates NEPA's hard look mandate. Because the EA fails to address the potential for upwind fire spread from likely ignition areas to the southwest, the Forest Service is potentially blinding itself to the most effective way to protect forest, MSO, and MRGS in the project area. We strongly urge the agency to avoid this outcome.

B. The Project proposes to use thinning and prescribed fire within MGRS and MSO occupied habitat during breeding season for both species, despite the outsized impacts that operations disturbance, fire and smoke would have on breeding individuals and offspring.

[7] EA at 156, 157.

The Project proposes to implement thinning and broadcast burning within MSO PACs and occupied habitat during breeding season.[8] The EA implies that broadcast burning during breeding is expected to be the primary scenario, with burning outside of breeding season occurring only occasionally, and only in addition to burning within breeding season.

> "Prescribed burning may also occur outside the breeding season, if possible." EA at 148, underline added.

Both the Wildlife Specialist Report (Biological Assessment) and the Fish and Wildlife Service's (FWS's) Biological Opinion acknowledge the extraordinary impacts that breeding season burning have on individuals and offspring.

> Fire, smoke, destruction of the nest or disruption of parental care could affect the development, care, and survival of young. Therefore, some mortality or injury of juveniles could occur. Wildlife Specialist Report at 46-47.

> The project may have short- and/or long-term effects on owl reproductive success within at least 20 PACs and may result in harm to individual adult owls, eggs, nestlings, and/or fledglings because of burning during the owl-breeding season (March 1 through August 31), particularly with the potential to conduct burning in the early portion of the breeding season (March 1 through May 31) when female owls are incubating eggs, adults are tending to nestlings, or young owls have or are attempting to fledge (leave the nest). Biological Opinion at 73.

> Smoke produced from prescribed burns may also result in negative effects to owls, particularly during the breeding season when they are tied to their nest area. Biological Opinion at 69.

Both the Wildlife Specialist Report (Biological Assessment) and the FWS's Biological Opinion acknowledge that burning during breeding season is contradictory to the MSO Recovery Plan.

> The proposed action does apply prescribed fire during the MSO breeding season (March 1 through August 31) in up to 20 PACs including nest cores over 10 years. The project may have short- and/or long-term effects on owl reproductive success within 20 PACs and may result in harm to individual adult owls, eggs, nestlings, and/or fledglings because of burning during the owl-breeding season. This is a deviation from the MSO Recovery Plan (Discussed in the Treatment in Mexican Spotted Owl Habitat section of the proposed action). Wildlife Specialist Report at 69.

[8] "The Forest Service will conduct broadcast burning activities in no more than 20 MSO nest cores and associated PACs during the owl breeding season (March 1st - August 31st). The Forest Service expects broadcast burning may also affect an additional 1 to 3 adjacent PACs during the breeding season annually (meaning that areas within 1-3 PACs, outside of nest cores, may experience prescribed fire). The Forest Service will coordinate prescribed fire planning (as well as other project activities) with USFWS prior to the actions occurring to minimize effects to the extent practicable. Prescribed burning may also occur outside the breeding season, if possible." EA at 147-148.

> We support the use of prescribed fire and return of fire to fire-adapted landscapes. However, conducting prescribed burns in owl nest cores when adult and eggs, nestlings, and fledglings are tied to a nest site is a substantial adverse effect. Biological Opinion at 70 (underscore added).
>
> The Recovery Plan (USFWS 2012) recommendation is to conduct prescribed burns in PACs outside the breeding season (September 1 through February 28) unless protocol surveys determine owls are non-breeding. However, the biological assessment states that options to apply this recommendation may be limited due to weather, the timing of early season burns that would not allow for determining nesting status, and most importantly in our opinion, the inability for surveyors to safely access some nesting sites to determine nesting status per the protocol. Biological Opinion at 68.

Given the outsized risks and impacts of breeding season burns, the Biological Opinion states that mechanical and prescribed fire treatments in PACs should occur outside of the breeding season.

> The Recovery Plan (USFWS 2012) recommends land managers conduct light burning of surface and low-lying fuels within PACs following careful review by biologists and fuel-management specialists on a case-specific basis and that mechanical or prescribed fire treatments should occur during the non-breeding season (September 1 through February 28) to minimize disturbance to resident owls, unless non-breeding is inferred or confirmed that year per the accepted survey protocol (Appendix D, as amended). Biological Opinion at 73.

The Project file includes an addendum titled "*MSO Breeding Season Justification*" or "*Unique Characteristics and Circumstances on the Pinaleno Mountains which necessitate some work within Mexican Spotted Owl Protected Activity Centers in the Breeding Season to meet Project Objectives*." That document refers to the various factors that complicate operations within MSO PACs, factors such as "remoteness and ruggedness of the project area, unpredictable variable weather patterns caused by climate change leading to extended monsoon seasons followed by early and late winter snow, limited equipment access and hauling limitations, limited resource availability, staffing shortages, funding limitations, administrative delays, and other circumstances led to treatment delays," and cites these factors as reasons for needing to implement thinning and burning operations during breeding season.[9] All of these factors

[9] "Implementation of the Pinaleño Ecosystem Restoration Project (PERP) provides an example of why restricting implementation to outside the MSO breeding season severely limits the opportunity for operations. The project started in 2014 with accomplishments planned for 5,754 acres. The original proposed action did not allow for breeding season treatments. Between 2014–2017, only 277 acres were completed. Factors such as remoteness and ruggedness of the project area, unpredictable variable weather patterns caused by climate change leading to extended monsoon seasons followed by early and late winter snow, limited equipment access and hauling limitations, limited resource availability, staffing shortages, funding limitations, administrative delays, and other circumstances led to treatment delays. The available units for treatment were reduced after the 2017 Frye Fire to 1,648 acres due to the high-severity fire in many of the units. After the Frye Fire, we reconsulted with USFWS and included the ability to conduct some limited work during the MSO breeding season. Approximately 1,500 acres will have been treated with prescribed cutting as of 2024. This highlights the critical need for flexibility on MSO breeding

similarly apply to the ability of the Forest Service to perform protocol surveys to confirm non-breeding status prior to spring treatments. Specifically, remoteness and ruggedness of the project area, unpredictable variable weather patterns, limited equipment access and hauling limitations, limited resource availability, staffing shortages, funding limitations, and administrative delays all limit the USFS ability to perform spring surveys.

This limitation is explicitly named as an issue in the Biological Opinion, which urges that treatments in PACs, should they be determined to be unavoidable, should be scheduled for late in the breeding season.

> Because the Forest Service is unlikely to be able to conduct owl surveys prior to implementing spring burns both because of timing and, in some cases, lack of access to owl nest cores because of steep and inaccessible terrain, we assume that prescribed burning during the owl breeding season will result in disturbance to breeding owls and potential death and/or injury of nesting adult owls, eggs, nestlings, and/or fledglings if the prescribed fire burns the nest tree, results in the adult leaving eggs or nestlings unattended, or causes adult and/or fledgling owls to flee and become susceptible to predation. The potential for adverse effects to nesting owls, nestlings, and recently fledged young <u>will decrease if prescribed burns occur later in the breeding season</u> (July through August) because the adults are not tied to a nest tree and could flee if a tree catches on fire. Recently fledged young would still be susceptible to injury if they try to flee or are on the ground. Biological Opinion at 68 (underscore added).

The EA proposes to limit project activities during MSO breeding season (March 1 to August 31) *where practicable*, but does not describe any criteria for determining where and when such actions would be practicable, and thus the extent to which these activities might be undertaken during the breeding season.[10] Nor does the EA include any provision that explicitly addresses the Biological Opinion's recommendation that activities should be scheduled within PACs late in the breeding season. As such, the EA fails to consider alternatives and mitigation measures to reduce impacts to MSO, and fails to disclose the impacts of routinely undertaking activities with occupied MSO PACs during the breeding season. The EA's failure to acknowledge that the proposed action does not ensure avoidance of "substantial adverse effects" to MSO also violates NEPA's hard look duty.

The MSO PACs on Mount Graham have substantial overlap with MGRS occupied habitat, such that broadcast burning in MSO PACs inevitably includes MGRS occupied habitat.

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season restrictions to reduce fuels within and adjacent to Mount Graham red squirrel habitat in order to conduct treatment at the pace and scale needed. The availability of a wider implementation window (i.e., during MSO breeding season) from the project's inception may have allowed implementation of treatments that precluded the Frye Fire. After the Frye Fire, some limited take in the breeding season has allowed for what is left of the project acres to be accomplished successfully at almost three times the original pace of work." MSO Breeding Season Justification at 6.

[10] The Forest Service will limit project activities where practicable within PACs during the Mexican spotted owl breeding season (March 1– August 31). EA at 147.

The EA acknowledges the impacts of fire during breeding season—disruption, smoke and displacement—could affect breeding success of MGRS.

> Some treatments could occur in the spring and summer during the breeding season or when young are dependent. Fire, smoke, destruction of the nest or disruption of parental care could affect the development, care, and survival of young. Therefore, some mortality or injury of juveniles could occur. Wildlife Specialist Report at 46-47.

Also, the Design Features listed in Appendix C of the EA acknowledge that the timing of operational activities is a significant factor in impacting MGRS.[11] However, the design features say little more than that "timing of activities throughout the year could be adjusted as needed to avoid disturbance to squirrels during the breeding season."[12] Nothing in the design features nor elsewhere in the EA provides any specific criteria or processes for determining when and how the timing of activities would be adjusted. Instead, the EA uses phrasing like "generally preferable" and "whenever possible", which obfuscates the Project's potential impacts and makes it impossible to determine if a Reasonable and Prudent Measure is being properly implemented.

> Although project work could occur year around - depending on implementation, logistics and the conditions required to meet project objectives - it is generally preferable to avoid implementation during times when wildlife is breeding or young of the year are not highly mobile and vulnerable to disturbance and when plants are developing seeds. Whenever possible, implementation timeframes of projects from September 1st to February 28th should be favored over timeframes of March 1st to August 31st. Reasonable and Prudent Measure WFP-9, EA at 144.

The Project proposes to develop a plan for monitoring treatment impacts to MGRS and MSO as the basis for annual coordination meetings between the USFS and FWS, before the Forest Service determines which treatments may be implemented each year within MGRS and MSO occupied habitat.[13] The details of that monitoring plan, and the extent to which it is implemented,

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[11] "The timing of activities throughout the year could be adjusted as needed to avoid disturbance to squirrels during the breeding season in the spring or during the fall and winter as needed. Work will be conducted in as condensed a timeframe as possible to limit disturbance. If more than 5 middens are destroyed (defined as 50% or more of the midden is burned or removed or mean canopy cover within 30 ft [9 m] of the midden center falls below 75%) during broadcast burning activities in any one year, or more than 8 middens are destroyed over a consecutive 2-year period, broadcast burning will cease for 1 year within Mount Graham red squirrel occupied habitat to evaluate the overall effects to the squirrel and adjust treatments accordingly." EA, Appendix C at 146.

[12] EA, Appendix C at 146.

[13] "The Forest Service shall develop a monitoring plan in collaboration with USFWS, including the geographic and species leads, that is sufficient to measure effects of broadcast burning to key habitat components of Mount Graham red squirrel habitat, in particular around middens and nest trees. This monitoring plan shall be developed prior to implementing prescribed fire activities, but no later than August 31, 2024." Decision Notice at 6.

are critical in determining if it is "sufficient to measure effects of broadcast burning to key habitat components of Mount Graham red squirrel habitat, in particular around middens and nest trees…"[14] However, the first version of that monitoring plan, dated August 29, 2024, fails to measure the effects of broadcast burning on MGRS in a way that would allow for meaningful protection of the population and habitat.

Specifically, while the Pinaleno FireScape Wildlife Survey and Monitoring (Version 1, last updated August 29, 2024) does express the need for common stand exams before and after broadcast burning, it contains nothing that could be used to evaluate the health of the population or the response of individuals and the population to treatment activities. In addition, the monitoring plan allows for up to five years to measure the basic results of burning within MGRS habitat.

> Within 2-5 years, with an ideal window of 2-3 years, quantitatively measure the effects of broadcast burning on key MGRS habitat components (large trees, large snags, hardwoods (diversity), coarse woody debris, and canopy closure) within current established habitat. Methodology is described in the Habitat Monitoring for Broadcast Burning section at the end of this document. Monitoring Plan at 2.

The monitoring plan includes no measurement of MGRS success or changes in habitat use or distribution in response to burning. The only measurements of effects to individuals or populations are the measurements related to take exceedance—mortalities from vehicle strikes, destruction of middens, and an overall population decline as determined through the annual surveys.

The Monitoring Plan expresses the take exceedance for Mount Graham red squirrel as follows:

> The Mount Graham red squirrel population decreases to less than 124 individuals as estimated during the annual Fall census. This population estimate is appropriate as it is based on the current estimated population (144, Fall 2023 census; AZGFD 2023a) and subtracts the 20 middens (assuming one midden per squirrel) that may be destroyed due to project activities during project implementation. Monitoring Plan at 3.

Under this scenario, the Project would be allowed to result in a decline by as much as 20 individuals (13%) while failing to determine what factors are causing the decline, so long as the Project destroys fewer than six MGRS middens in a year, or 20 middens in the first ten years. Furthermore, using as a exceedance limit a decline of 20 individuals over the entire population ignores the fact that the MGRS population on Mount Graham is divided into several isolated

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"The Forest Service shall develop a monitoring plan in collaboration with USFWS, including the geographic and species leads, that is sufficient to measure effects of prescribed burning to key habitat components of Mexican spotted owl habitat within nest cores, PACs, and nest/roost recovery habitat. This plan specifically will include, but not be limited to, how to quantitatively monitor effects to owls and owl habitat from the application of prescribed burns within and outside the owl-breeding season. This monitoring plan shall be developed prior to implementing prescribed fire activities, but no later than August 31, 2024." Decision Notice at 6.

[14] Decision Notice at 6.

clusters separated from each other by one to two miles, with little or no viable habitat between them. A decline of ten individuals could represent half of the population at one of those sites, but the Project would consider that decline only in the context of the entire population and would therefore not have to address the impacts. These limitations, and the monitoring plan as described, fail to provide protection against impacts other than the immediate destruction of middens.

The EA's failure to take a hard look at the impacts of prescribed fire within MGRS and MSO occupied habitat during breeding season violates NEPA, and is arbitrary and capricious.

C. The Project proposes to use prescribed fire in spring, despite the fact that the risk of unexpected winds and high fire weather is much higher in spring, and the impacts of an escaped prescribed fire in spring would have outsized impacts to MGRS and MSO.

The Project maintains the option to use prescribed fire in spring, despite the fact that spring burning inherently carries a higher risk because of the greater variability of strong winds.

> The proposed action does apply prescribed fire during the MSO breeding season (March 1 through August 31) in up to 20 PACs including nest cores over 10 years. Wildlife Specialist Report at 69.

The data presented in the Fire and Fuels Report make clear that the incidence of fires ramps up sharply between May and July, and drops off precipitously after July.[15] Also, the Fire and Fuels Report highlights the 2017 Frye Fire as an example of large, uncontrolled fire.[16] As with many of the large uncontrolled fires on Mount Graham, the Frye Fire began in late spring—specifically, in early June.

An escaped burn almost anywhere along the western and southern flanks of Mount Graham would have a substantial probability of reaching occupied habitat at the top of the mountain, and any such fire could expand in width sufficient to harm a large number of PACs and middens. Given that the Mexican spotted owl PACs in the project area are clustered tightly along the ridgeway of the Pinaleños Mountains, upslope and downwind from the steep western slopes targeted for extensive prescribed burning, any single escaped prescribed burn has the potential to burn at high severity through ten or more PACs.[17] A fire one mile wide is greater than the width of any of the five locations of MGRS occupied habitat, meaning that a single escaped fire of that size could burn through as much as 25% of the existing MGRS population. To put these in context, some recent fires on Mount Graham were larger than 7 miles across.[18]

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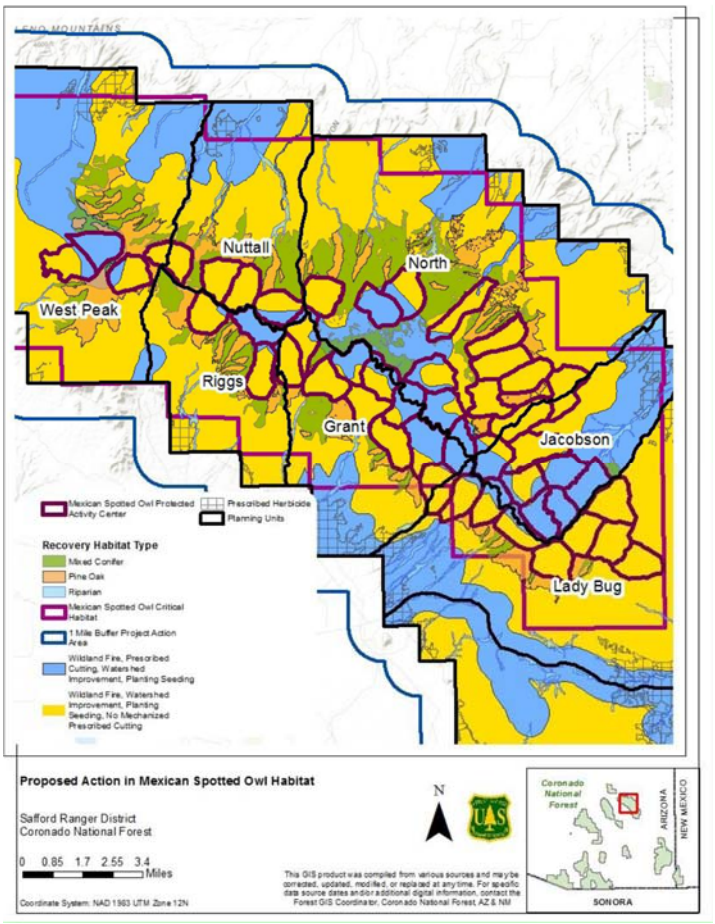
[15] Fire and Fuels Report at 3.

[16] Fire and Fuels Report at 3.

[17] See map of MSO PACs, Map 18 in the Wildlife Specialist Report at 227, inserted below.

[18] See Figure 3, Large fire history, Fire and Fuels Report at 5.



MSO PACs, Map 18 in the Wildlife Specialist Report at 227.

Nonetheless, the EA fails to disclose and analyze the impacts of such an outcome, nor does the EA compare the impacts of prescribed burning outside of the breeding season. Instead, the Forest Service insists on the need to implement prescribed burning in spring and during the breeding season. The Forest Service takes this approach despite the fact that the 1978 NEPA regulations, which the agency purported to use to analyze this project, define "reasonably foreseeable impacts" to include "impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of impacts is supported by credible scientific evidence … and is within the rule of reason."[19] Here, given the long history of escaped prescribed fires in the Southwest—in 2022, wildfires caused by escaped prescribed fires in the Southwest compelled the Forest Service chief to pause the Forest Service's prescribed fire program pending a program review—the risk of such a fire in the Pinaleños is substantial.

Both the Wildlife Specialist Report and the Biological Opinion acknowledge the particularly harmful impacts that breeding season burning has on MSO and MGRS individuals and offspring. But the EA fails to analyze the increased risk of fire impacts in spring—due to escapes or higher

[19] 40 C.F.R. § 1502.22(c) (1978); *See* November 2024 Draft Decision Notice at 11 ("This environmental analysis was conducted according to the Council on Environmental Quality's 1978 regulations"). The Forest Service Handbook 1909.15, ch. 13, applies the same test, as have decades of caselaw.

severity as a result of winds—when winds are generally stronger and less predictable than later in the year, increasing the risk that prescribed fire could burn beyond parameters or escape containment.

The EA similarly fails to acknowledge that the effectiveness of the proposed mitigation measures would be greatly diminished in the context of a prescribed fire that burns outside of planned parameters and/or escapes containment, an event that is more likely to occur in spring due to the greater potential for high winds in spring. Winds in southeastern Arizona, and on Mount Graham, are highest March through June, with wind speeds peaking in April and May.[20] . During the windiest months of March, April, and May, the wind is primarily from the Southwest, the direction that poses the greatest risk that prescribed fires along the southern and western slopes of Mount Graham would threaten the mountaintop habitat.[21]

PREVAILING WIND DIRECTION

SAFFORD AIRPORT, AZ (KSAD)

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Wind Direc-tion	East	East	WNW	WNW	WNW	WNW	West	East	East	East	East	East
Wind Speed (mph)	7.0	7.4	8.0	8.6	8.3	7.8	6.4	5.9	6.6	7.0	7.1	6.9

Western Regional Climate Center data

Mount Graham red squirrel habitat extends for several miles along the highest elevations of the Pinaleño Project area.[22] However, the vast majority of active middens are grouped together in five distinct clusters, each within an approximate area one mile square or smaller. In 2023, these clusters accounted for more than 110 of the total 144 individual red squirrels on Mount Graham. These groups of middens occur primarily near the ridgetop, at high risk of burning from prescribed fires that escape containment anywhere along the western flank of the Pinaleño Mountains. A single escaped prescribed fire could feasibly burn through a group of middens representing more than a third of all active middens identified in 2023.

Acknowledging that prescribed burning poses a substantial risk to red squirrels, the Biological Opinion requires a halt in prescribed burning if the Mount Graham red squirrel population declines to fewer than 124 individuals.

> If, during project implementation, the Mount Graham red squirrel population estimate (represented by the number of active middens counted during a rolling 3-year census window) decreases to less than 124 individuals (using the most recent census information

[20] See https://weatherspark.com/y/2986/Average-Weather-in-Safford-Arizona-United-States-Year-Round.

[21] See https://wrcc.dri.edu/Climate/comp_table_show.php?stype=wind_dir_avg.

[22] Wildlife Specialist Report at 224, *Map 17: Proposed action in the Mt. Graham red squirrel species range and designated critical habitat.*

> of 144 individuals and accounting for the 20 middens that may be destroyed during broadcast burning activities), the Forest Service will pause broadcast burning activities in occupied red squirrel habitat and reinitiate consultation on those activities.[23]

This is inadequate protection against inadvertent losses to prescribed burning. Because this criterion is based on a three-year rolling average, the pause might not go into effect until two full burning seasons had passed, and additional losses accrued. For example, if there are 144 active middens surveyed in the first year and 104 in the second year, the pause would not be triggered until the third year, when the surveys might indicate even lower population estimates. Because the Forest Service insists on implementing prescribed burning in the spring, potentially before it is possible to collect survey data effectively, burning would occur for a third year before the three-year rolling average could show that the population had further declined.

Also, using as a exceedance limit a decline of 20 individuals over the entire population ignores the fact that the MGRS population on Mount Graham is divided into several isolated clusters separated from each other by one to two miles, with little or no viable habitat between them. A decline of ten individuals could represent half of the population at one of those sites.

Furthermore, 124 individuals is a perilously low population, in any case. This is the population level authorized in the Biological Opinion, under the assumption that prescribed burning could result in the loss of 20 active middens over ten years, reducing the population from 144 to 124.

> Conservation measures are included that limit midden destruction to no more than 5 middens in any given year and no more than 8 middens in any two consecutive years. No more than 20 middens may be destroyed within the 10 years analyzed in this opinion.[24]

The loss of 20 active middens (and, potentially, individuals) over a ten-year period is a potentially devastating impact, especially if the losses of these individuals correspond to long-term declines in the population.

Importantly, the southwest slope of the mountain is southwest-facing and drops away quickly to lower elevations, meaning that it is warmer and drier than the high-elevation forest that contains MGRS and MSO occupied habitat. In any year, the southwest slope of the mountain is going to have more opportunity for operations outside of spring and breeding season than the high-elevation habitat will have.

The failure of the EA to take a hard look at the impacts of an escaped prescribed fire reaching MSO and MGRS occupied habitat, and the measures that would be used within that habitat to suppress such a fire, violates NEPA, and is arbitrary and capricious.

Suggested Remedies

To address the agencies' failure to take the hard look NEPA requires at the impacts of fire on imperiled species, the Forest Service must disclose the impacts of defined, site-

[23] BO at 53.

[24] BO at 52.

specific proposed actions in a subsequently prepared NEPA document. Specifically, the Forest Service must identify the existing silvicultural conditions that necessitate burning in MSO and MGRS occupied habitat.

The Forest Service should analyze fire risk to MSO and MGRS occupied habitat based on the risk of fire spreading to affect large portions of occupied habitat. The highest operational priorities should be those areas that provide the greatest protection to the largest areas of occupied habitat, with the lowest impacts to occupied habitat and populations. These operational priorities should be identified at the operational scale, not by planning unit.

The Forest Service should analyze and disclose the impacts of a mitigation measure or an alternative that includes specific guidelines for avoiding prescribed burning in MSO and MGRS occupied habitat during breeding season, with a clear directive to work outside the breeding season except in limited, defined circumstances set forth in the EA, and with a NEPA analysis that describes the potential impacts of those exceptions. Such guidelines should include clear, quantitative criteria for determining if and when operations during breeding season must be considered and for scheduling those operations to occur as late in the breeding season as possible. Only if operations outside of breeding season have been repeatedly postponed due to weather-related factors should the Forest Service consider operations in MSO and MGRS occupied habitat during breeding season, as part of the annual spring coordination meeting with USFWS prior to implementation.

The Forest Service should analyze and disclose the impacts of a mitigation measure or alternative that would avoid spring burning in areas to the south and west of the ridge, where escaped prescribed burns could enter MSO and MGRS occupied habitat. The Project should include clear, quantitative criteria for determining if and when prescribed burning operations in these areas during breeding season must be considered and for scheduling those operations to occur as late in the breeding season as possible. Spring burning should be focused in areas to the north and east of MSO and MGRS occupied habitat, downwind of the predominant wind direction.

The Forest Service should make the wildlife and habitat monitoring plan available to the public. Ahead of each spring burn season, the Forest Service should make the prescribed fire plans for that year available to the public, along with the most recent wildlife and habitat monitoring results.

II. THE EA FAILS TO DISCLOSE AND ANALYZE THE EFFECTS OF FIRE RETARDANTS ON PROTECTED SPECIES.

Despite the fact that the project authorizes the use of fire retardant, and that fire retardants may harm listed species, the EA fails to take the hard look at the impacts of fire retardant on those species as NEPA requires.

The EA makes clear that the Forest Service intends to use fire retardants in their prescribed burning operations, including in occupied habitat for federally protected species.

> RAW-10. The use of fire retardants or chemical foams in riparian habitats or within 300 feet of aquatic habitats would be avoided; particularly sites occupied by federally listed species. Retardant Avoidance Zones will be followed. EA at 150.
>
> Wildland fire treatments (broadcast burning, jackpot burning, and pile burning) could harm or kill MGRS through burning by flames, inhalation of smoke, and/or crushing or striking from chainsaw use, machinery use, vehicle use, ground and aerial water or retardant applications, or falling trees or debris. It is possible that fire retardant could be applied during the project. Wildlife Specialist Report at 46.
>
> This project does not limit any tool from being used to implement operations and new tools can be considered and used adaptively. Rather, there is a suite of conservation measures that limit certain activities in certain situations or areas (Appendix C). Prescribed Fire: chainsaws, hand tools, small and large vehicles (e.g., UTVs, trucks, engines, crew buggies), ground and aerial ignition devices (e.g., torches, plastic sphere dispenser (PSD)), mechanized equipment (e.g., dozers, excavators, bobcats, feller bunchers), portable pumps and dip-sites, hose lays, fixed and rotor wing aircraft, Unmanned Aircraft Systems (UAS), bucket drops, fire retardant. EA at 45.
>
> The following situations are examples of where fire retardant or water drops might be used…to reduce fire behavior and limit negative fire effects to a value (e.g., threatened, endangered, or sensitive species (TES)… EA at 46.

The Biological Opinion further makes clear that the Forest Service intends to use aerial drops of fire retardants explicitly in the context of prescribed burning, and in occupied habitat for federally protected species. As described in the BO, aerial drops by fixed wing aircraft can occur safely only at gentle slopes and ridgetops. In the case of the Pinaleño FireScape project area, Mount Graham red squirrel occupied habitat and Mexican spotted owl PACs occur through much or most of the higher elevation gentle slopes and ridgetops.

> To reduce fire spread and fire behavior outside of broadcast burn units and limit negative fire effects to TES, the Forest Service proposes to use aerial delivery of water and/or fire retardant during prescribed fire activities, including bucket or tanker drops. Bucket drops involve dropping fire retardants, water, or other suppressants in a targeted area from specially designed buckets slung below a helicopter or UAS. Tanker drops release water or fire retardant out of the hold of a fixed-wing aircraft in a swath to enhance the effectiveness of fire breaks by widening a break such as a road, meadow, old fire scar, or rock outcrop. Fire retardant is a substance or chemical agent used to put out a fire by cooling the burning material, blocking the supply of oxygen, or chemically inhibiting combustion.
>
> Bucket drops using water are the preferred tool if helicopters and dip sites (Figure 3) are available, especially near TES and areas of concern. Retardant use is dependent on location, weather, aircraft availability, and other factors. Fixed-wing aircraft can only safely apply fire retardant to ridgetops and more gentle sloping areas, which occur in the upper portions of the Pinaleño EMA and the lower elevations. The middle two-thirds of the mountain is extremely steep, which limits use of fixed-wing aircraft in these areas.

> This includes most streams on the mountain, which are in very steep and deep canyons. The Forest Service could also use ground-based retardant on a case-by-case basis to proactively buffer specific sensitive resources and locations. Biological Opinion at 14.
>
> The Forest Service proposes to conduct prescribed fire activities (Figures 7-14) using broadcast burning, jackpot burning, and pile burning when implementing the Pinaleño FireScape Project, and plans to use fire control lines and aerial delivery of water and/or fire retardant during these activities to assist in controlling these fires. Biological Opinion at 12.
>
> For prescribe fire activities, the Forest Service will use aircraft and UAS to assist in reconnaissance missions, long line supply missions, crew shuttles, fire implementation, ignitions, holding operations, applications of water and/or fire retardant, and fire behavior and effect monitoring. Biological Opinion at 19.

The fact that the Forest Service anticipates the need to use aerial applications of fire retardant in the control of prescribed burns, including in the habitat of federally protected species, indicates that the Forest Service is well aware that the prescribed burns pose a substantial threat to those species and their habitat.

The 2023 Revised Final Biological Opinion for the U.S. Forest Service Programmatic Nationwide Aerial Application of Fire Retardant on National Forest System Land specifically included a consideration of the impacts to Mount Graham red squirrel.[25] That Biological Opinion found that effects to red squirrels would be minimal, under the assumption that fire retardant would not be applied directly to the Mount Graham red squirrel habitat.

> The Mount Graham red squirrel is found on the Coronado Forest (a high retardant use forest). Although the species occurs in mature growth tree stands, we expect the use of fire retardant would be extremely unlikely to occur in these types of habitats, as retardant is considered to be less effective for this habitat type. These squirrels may also be impacted by the noise disturbance from the aircraft delivering the retardant near their habitat, such as on nearby openings or ridges. However, although fire season occurs during the nesting season, nests are in tree cavities and nesting squirrels would not likely leave the nest due to noise disturbance. These squirrels would also not likely be directly impacted by a retardant drop as retardant would generally not be used over mature trees. Therefore, we consider these effects to be discountable. 2023 Revised Final Biological Opinion for the U.S. Forest Service Programmatic Nationwide Aerial Application of Fire Retardant on National Forest System Land at 16.

The 2023 Biological Opinion for the U.S. Forest Service Programmatic Nationwide Aerial Application of Fire Retardant on National Forest System Land included a similar statement on the expected impact to Mexican spotted owl, based on a similar assumption that application of fire retardant in Mexican spotted owl habitat would be limited.

[25] Submitted as an attachment to this objection letter, and available at https://www.fs.usda.gov/sites/default/files/2023-02/Fire-Retardant-FWS-Biological-Op.pdf

> We also anticipate that some individual Mexican spotted owls will consume contaminated prey. Ingestion of large volumes of exposed prey would result in the loss of some individuals (see discussion in the introduction to the bird section above regarding toxicity), although direct exposure of the owls and prey in their foraging habitats is anticipated to be rare due to the limited overlap of preferred habitat with application areas. 2023 Revised Final Biological Opinion for the U.S. Forest Service Programmatic Nationwide Aerial Application of Fire Retardant on National Forest System Land at 155.

However, the EA contains no indication that fire retardant would not be used in mature trees or in habitat occupied by Mexican spotted owl and Mount Graham red squirrel, as assumed in the 2023 Biological Opinion excerpted above. Nor does the EA adopt or analyze prescriptions that would assure that result. Instead, the EA indicates that aerial application of fire retardant may be used anywhere except in riparian habitats or within 300 feet of aquatic habitats.[26] Neither of these restrictions apply to the vast majority of habitat occupied by Mexican spotted owl and Mount Graham red squirrel in the Pinaleño project area. At the same time, the project proposes prescribed burning in the entirety of the habitat occupied by Mexican spotted owl and Mount Graham red squirrel, and the Forest Service plans to use fire control lines and aerial delivery of water and/or fire retardant to assist in controlling these fires.[27] In sum, the 2023 Biological Opinion doesn't apply to the Pinaleño project because the Pinaleño Project does in fact allow for the spraying of fire retardant directly on Mexican spotted owl and Mount Graham red squirrel habitat, the very thing the 2023 Biological Opinion explicitly stated that it does not cover.

The Forest Service *could* have adopted an alternative or a design criteria or mitigation measure that limits the application of fire retardant directly on occupied habitat for Mexican spotted owl and Mount Graham red squirrel, but the EA contains no such alternative or measure.[28]

Without identifying the specific planned applications of fire retardant, it is impossible for the EA to analyze the potential effects of such treatment. As such, the EA fails to disclose the potential impacts as required under NEPA, and the EA fails to perform the analysis of potential effects as required under NEPA's "hard look" mandate.

In addition to fully disclosing and analyzing the potential impacts of fire retardant to federally protected species, the Forest Service should adopt measures to severely restrict the non-emergency use of fire retardant in occupied habitat and provide site-specific guidance for emergency uses of fire retardant in these habitats. The Forest Service should provide a detailed proposal for the non-emergency and emergency uses of fire retardant in the Pinaleño Project and consult with the U.S. Fish and Wildlife Service on the potential impacts to federally protected species. Failure to do so would violate the ESA.

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[26] EA at 150.

[27] BO at 12.

[28] The impacts of fire retardants were not addressed in our comments to the Draft EA because the Final EA is the first document in which the Forest Service made any mention of the use of fire retardant in this project.

In addition to the impacts associated with aerial application of fire retardant on occupied habitat, the proposed use of fire retardant in the Pinaleño Project strongly implies that the Forest Service anticipates that prescribed fires will burn outside of the planned parameters and/or escape containment. However, the EA fails to disclose and analyze this risk and the potential impacts, despite the possibility that an escaped prescribed fire could be catastrophic to Mount Graham red squirrel and Mexican spotted owl on Mount Graham. This, too, is a violation of NEPA's hard look mandate.

Instead of providing additional protection against the impacts of an escaped prescribed fire burning outside of planned parameters in occupied habitat, the proposed non-emergency application of fire retardant raises the concern that the Forest Service will fail to take all necessary precautions to assure the safety of Mexican spotted owl and Mount Graham red squirrels and their habitats. By relying on fire retardant to help contain prescribed fire, the Forest Service risks applying prescribed fire closer to occupied habitat and in a wider range of conditions than they would without the application of fire retardant. This increases the risk to Mexican spotted owl and Mount Graham red squirrel on Mount Graham.

To be clear, this issue is separate from the emergency use of fire retardant that may be necessary in the case of a wildfire or escaped prescribed fire, in which case fire retardant may be necessary to protect Mexican spotted owl and Mount Graham red squirrel. The purpose of identifying site-specific parameters for the use of prescribed fire and fire retardant in the Project is to minimize the risk that such emergency uses will inadvertently become necessary.

Suggested Remedies:

The Forest Service must analyze and disclose the impacts of defined, site-specific proposed actions in a subsequently prepared NEPA document. Specifically, the Forest Service must identify the specific planned application of fire retardants, and analyze the potential effects of such treatments, including the impacts to protected species including red squirrel and MSO.

The Forest Service should adopt measures to severely restrict the non-emergency use of fire retardant in occupied red squirrel and MSO habitat and provide site-specific guidance for emergency uses of fire retardant in these habitats.

The Forest Service should provide a detailed proposal for the non-emergency and emergency uses of fire retardant in the Project and consult with the U.S. Fish and Wildlife Service on the potential impacts to federally protected species.

III. THE EA FAILS TO PROPERLY DISCLOSE AND ANALYZE THE IMPACTS OF REMOVING LARGE TREES UP TO 24" IN DIAMETER, AND USING MECHANICAL THINNING ACROSS 68,048 ACRES.

A. The EA Fails to Take the Required 'Hard Look' at the Impacts of Removing Large Trees.

In our scoping comments, we discussed the need for retention of large and old trees in the project area, and recommended that the EA analyze an action alternative that "bars the removal of trees 16-inch diameter at breast height or greater and 150 years old".[29] Large or old trees are not abundant at any scale in Southwestern forests and they are the most difficult of all elements of forest structure to replace once removed.[30] The ecological significance of old growth forest habitat and large trees comprising it is widely recognized.[31,32] There is no agreed-upon scientific basis for removing large trees to promote fire resistance in southwestern forests.[33,34] NEPA's hard look mandate required the Forest Service to to prepare an analysis for this project that addressed the need for retaining these components on the landscape through addition of meaningful plan components. The Final EA fails to do so.

As provided in our previous comments, one of the most often cited scientific articles on Southwestern ponderosa pine restoration stated that a core ecological restoration principle is:

> Retain trees of significant size or age.—Large and old trees, especially those established before ecosystem disruption by Euro-American settlement, are rare, important, and difficult to replace. Their size and structural complexity provide critical wildlife habitat by contributing crown cover, influencing understory vegetation patterns, and providing future snags. Ecological restoration should protect the largest and oldest trees from cutting and crown fires, focusing treatments on excess numbers of small young trees. Given widespread agreement on this point, it is generally advisable to retain ponderosa trees larger than 41 cm

[29] Center for Biological Diversity, Comments on Scoping for the Pinaleño FireScape Project Environmental Assessment, September 4, 2020, at 50.

[30] Agee, J.K. and C.N. Skinner. 2005. Basic principles of forest fuel reduction treatments. *Forest Ecology and Management* 211: 83-96.

[31] Friederici, P. (Ed.). 2003. *Ecological Restoration of Southwestern Ponderosa Pine Forests*. Island Press: Washington, DC.

[32] Kaufmann, M.R., W.H. Moir, and W.W. Covington. 1992. Old-growth forests: what do we know about their ecology and management in the Southwest and Rocky Mountain regions? Pp. 1-10 in: M.R. Kaufmann, W.H. Moir, and R.L. Bassett (eds.). *Old-Growth Forests in the Southwest and Rocky Mountain Regions: Proceedings from a Workshop* (1992). Portal, AZ. USDA For. Serv. Gen. Tech. Rep. RM-213. Fort Collins, CO.

[33] Allen, C.D. M.A. Savage, D.A. Falk, K.F. Suckling, T.W. Swetnam, T. Schulke, P.B. Stacey, P. Morgan, M. Hoffman, and J.T. Klingle. 2002. Ecological restoration of southwestern ponderosa pine ecosystems: A broad perspective. *Ecological Applications* 12: 1418-33.

[34] Brown, R.T., J.K. Agee, and J.F. Franklin. 2004. Forest restoration and fire: principles in the context of place. Conservation Biology 18: 903-12; DellaSala, D.A., J.E. Williams, C.D. Williams and J.F. Franklin. 2004. Beyond smoke and mirrors: a synthesis of fire policy and science. Conservation Biology 18: 976-86.

> (16 inches) dbh and all trees with old-growth morphology regardless of size (i.e., yellow bark, large drooping limbs, twisted trunks, flattened tops).[35]

Despite these issues—and without responding to the information provided—the EA dismisses the alternative of protecting large and old trees based on the following argument:

> Removing the ability to cut trees greater than 16 inches DBH or trees older than 150 years old would limit the application, timeliness, and scale of prescribed cutting treatments in areas severely departed from desired conditions currently susceptible to uncharacteristic, large-scale, high-severity wildfire, drought, climate shifts, and/or insect and disease outbreaks, and thus was not a viable alternative to be fully analyzed in detail.[36]

However, the EA fails to disclose the number, location, or extent of such trees "in areas severely departed from desired conditions currently susceptible to uncharacteristic, large-scale, high-severity wildfire, drought, climate shifts, and/or insect and disease outbreaks," nor has it identified precisely where treatments will occur, so it can have no idea whether such an alternative would interfere with the agency's ability to achieve the project purpose and need. Thus, the Forest Service's dismissal of the large-tree protection alternative on these grounds is wholly unsupported, arbitrary and capricious, and in fact underscores why the agency must disclose baseline conditions and proposed actions on a site-specific basis, something the EA fails to do.

The EA identifies 15,000 acres of the project area as subject to "prescribed cutting", including 3,497 acres of wet mixed-conifer forest, 5,984 acres of dry mixed-conifer forest, and 2,968 acres of ponderosa pine forest.[37] "Group selection openings within and outside of MSO PACs/cores, nest/roost recovery, and MGRS habitat would be designed to focus on treatment on vegetation less than 24" DBH while minimizing the removal of large diameter trees >18" DBH. In limited cases, trees greater than 24" DBH may be removed due to insects/disease or human health and safety concerns."[38]

While the EA does acknowledge the existence of some limitations on the removal of large trees—specifically, a 12-inch diameter limit on thinning in Mexican spotted owl nest cores and a 9-inch diameter limit on thinning in yellow-billed cuckoo habitat—the EA does not indicate how much, if any, of the 15,000 acres of forest targeted for prescribed cutting would be subject to these limitations on the removal of large trees. Instead, the EA indicates that trees up to 24 inches diameter would be subject to prescribed cutting across 15,000 acres of the project area.

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[35] Page 1425 in Allen, C.D. M.A. Savage, D.A. Falk, K.F. Suckling, T.W. Swetnam, T. Schulke, P.B. Stacey, P. Morgan, M. Hoffman, and J.T. Klingle. 2002. Ecological restoration of southwestern ponderosa pine ecosystems: A broad perspective. *Ecological Applications* 12(5): 1418-1433.

[36] EA at 52.

[37] EA at 21, Table 4.

[38] EA at 26, 27, 28, regarding Mixed Conifer with Aspen, Mixed Conifer-Frequent Fire, and Ponderosa Pine-Evergreen Oak forest types.

Aside from the general reference to potential limitations on the size of trees removed in Mexican spotted owl nest cores and yellow-billed cuckoo habitat, the EA contains no estimate of the number of large trees to be removed, no criteria for the removal of large trees, and no design features to ensure that free thinning does not degrade or deplete the large-tree component of areas subjected to prescribed cutting.

Nor does the Forest Plan provide specific criteria for the retention or removal of large trees that would limit the project's damage. Instead, the Forest Plan offers only vague statements such as "At the landscape scale, the dry mixed-conifer type is a mosaic of forest conditions composed of structural stages ranging from young to old trees… Old growth occurs throughout the landscape, generally in small areas as individual old-growth components, or as clumps of old growth."[39] That is, the Forest Plan vaguely acknowledges the existence of large and old trees but offers no specific direction on their removal or retention, nor does the Forest Plan acknowledge that large and mature trees are necessary for the recruitment and development of future old growth.

Retention of old and large trees is a core management approach that will allow the Coronado National Forest to achieve restoration objectives and move towards desired conditions. Past timber management destroyed nearly all ponderosa pine and mixed conifer old growth forest in Arizona and New Mexico, including on much of Mt. Graham. Even-aged or simplified forest has replaced the complex forests of the pre-settlement southwestern landscape.[40,41] Retention of large trees is fundamentally important to fire resistance of treated stands.[42] Mature conifers have a high capacity to survive and recover from crown scorch.[43] Large tree structure enhances forest

[39] Coronado National Forest Land and Resource Management Plan at 42.

[40] Covington, W.W., and M.M. Moore. 1994. Southwestern ponderosa forest structure: Changes since Euro-American settlement. *Journal of Forestry* 92: 39-47.

[41] Sesnie, S. and J. Bailey. 2003. Using history to plan the future of old-growth ponderosa pine. *Journal of Forestry* 99(7) (Oct/Nov): 40-47.

[42] DellaSala, D.A., J.E. Williams, C.D. Williams and J.F. Franklin. 2004. Beyond smoke and mirrors: a synthesis of fire policy and science. *Conservation Biology* 18: 976-86.

[43] McCune, Bruce. "Ecological diversity in North American pines." American Journal of Botany (1988): 353-368.

resilience to severe fire effects[44, 45, 46] whereas removing them may undermine fire resilience.[47, 48] Research demonstrates no advantage in fire hazard mitigation resulting from mechanical forest treatments that remove large or old trees compared to treatments that retain them. Modeled treatments that removed only trees smaller than 16-inches diameter were marginally more effective at reducing long-term fire hazard than so-called "comprehensive" treatments that removed trees in all size classes.[49]

The EA includes no measures to retain the large trees that provide these important fire-resistance characteristics. The EA does mention the April 22, 2022, Executive Order 14072, Strengthening the Nation's Forests, Communities, and Local Economies, and the Forest Service's subsequent release of a notice of intent to amend all land management plans to maintain and improve amounts and distributions of old-growth forest conditions within national forest ecosystems.[50] The EA further states that prescribed cutting treatments would "reduce vegetation density and/or composition as a fire-surrogate or in preparation for fire treatments, and to improve forest health management. These treatments would enhance and improve estimated old growth by reducing stressors such as resource competition, drought, climate shifts, uncharacteristic, large-scale high-severity wildfire, and insect and disease outbreaks while allowing for greater available resources for stands to continue to grow into old growth."[51] However, nowhere does the EA discuss any specific criteria for the retention of old growth trees or the retention of mature trees that are needed to develop into future old growth that has been heavily depleted in the project area by past Forest Service actions such as logging.

In the absence of any criteria in either the EA or the Forest Plan, it can be assumed that the Project would allow the removal of any and all large trees up to 24-inches diameter across the 15,000 acres of the project area subjected to prescribed cutting. However, neither the EA nor the

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[44] Arno, S.F. 2000. Fire in western ecosystems. Pp. 97-120 in: J.K. Brown and J.K. Smith (eds.). *Wildland Fire in Ecosystems, Vol. 2: Effects of Fire on Flora*. USDA For. Serv. Gen. Tech. Rep. RMRS-42-vol.2. Ogden, UT.

[45] Omi, P.N., and E.J. Martinson. 2002. *Effect of Fuels Treatment on Wildfire Severity*. Unpubl. report to Joint Fire Science Program. Fort Collins: Colorado State Univ. Western Forest Fire Research Ctr. March 25. 36 pp.

[46] Pollett, J. and P.N. Omi. 2002. Effect of thinning and prescribed burning on crown fire severity in ponderosa pine forests. *International Journal of Wildland Fire* 11: 1-10.

[47] Brown, R.T., J.K. Agee, and J.F. Franklin. 2004. Forest restoration and fire: principles in the context of place. *Conservation Biology* 18: 903-12.

[48] Naficy, C., A. Sala, E.G. Keeling, J. Graham and T.H. DeLuca. 2010. Interactive effects of historical logging and fire exclusion on ponderosa pine forest structure in the northern Rockies. *Ecological Applications* 20: 1851-64.

[49] Fiedler, C.E., and C.E. Keegan. 2003. Reducing crown fire hazard in fire-adapted forests of New Mexico. Pp. 29-38 in: P.N. Omi and L.A. Joyce (tech. eds.). *Fire, Fuel Treatments, and Ecological Restoration: Conference Proceedings*. 2002 April 16-18: Fort Collins, CO. USDA For. Serv. Rocky Mtn. Res. Sta. Proc. RMRS-P-29. Fort Collins, CO.

[50] EA at 19. While the rulemaking has been terminated, the executive order remains in force.

[51] EA at 19.

accompanying specialists' reports discloses the number of large trees that would be removed, their location, their unique value to the ecosystem, or any evaluation of the existing large-tree component of the targeted areas. Thus, the EA did not and could not evaluate whether and to what extent the removal of larger trees would retain, degrade or deplete the large-tree component of areas subjected to prescribed cutting. In short, the EA fails to take any look, let alone a hard look, at the project's impacts on the large and old tree component of the ecosystem.

The EA explicitly rejects the idea of applying limits or criteria for the removal of large trees.

> Smaller diameter caps, such as treating only trees less than 16 inches DBH, trend stands toward large diameter, single story, closed canopy conditions that do not allow for the sustainable growth of shade intolerant (fire resistant) tree species nor provide canopy gaps to support robust understory vegetation for plant diversity and wildlife habitat. This is especially evident in Dry Mixed Conifer forests, as a diameter cap favors the retention and regeneration of uncharacteristic proportions of shade-tolerant, non-fire-resistant conifer species (Triepke, Higgins, Wiesz, Youtz and Nicolet 2011).[52]

However, this statement is general in the extreme and provides no information on whether and to what extent shade-intolerant species are deficient in the forest stands targeted for free thinning in the Project, or whether and to what extent canopy gaps are deficient in those forest stands.[53]

Furthermore, the Vegetation Effects Analysis clearly indicates that large trees (greater than 20 inches diameter) are highly deficient in every forest type for which the large-tree component is reported as a separate figure.[54] Specifically, trees 20 inches in diameter and larger make up 0% of spruce-fir forest stands within the project area; in wet mixed-conifer forest, trees 20 inches in diameter and larger make up 11% of the forest, compared to the desired percentages of 44% and 40%, respectively.[55]

For dry mixed conifer and ponderosa pine forests, the Vegetation Effects Analysis fails to report large trees as a discrete category, and instead conflates all trees 10 inches diameter and larger as "Medium and Larger Trees".[56] By conflating all trees 10 inches diameter and larger into a "medium and larger tree" category, the Vegetation Effects Analysis provides no information as to whether and to what extent trees larger than 16 inches diameter contribute to "closed canopy conditions that do not allow for the sustainable growth of shade intolerant (fire resistant) tree species," or whether and to what extent trees larger than 16 inches diameter contribute to the deficiency of "canopy gaps to support robust understory vegetation for plant diversity and wildlife habitat," the justifications that the EA provides for rejecting limits or criteria for the

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[52] EA at 51.

[53] In our scoping comments, we raised this issue in the context of the discussion of the need for site-specific analysis. Center for Biological Diversity, Comments on Scoping for the Pinaleño FireScape Project Environmental Assessment, September 4, 2020, at 24-26.

[54] Pinaleño FireScape Forest and Woodland Vegetation Effects Analysis at 38.

[55] Pinaleño FireScape Forest and Woodland Vegetation Effects Analysis at 38.

[56] Pinaleño FireScape Forest and Woodland Vegetation Effects Analysis at 37.

removal of large trees.[57] It also fails entirely to disclose the existing condition of these stands with respect to large trees, despite the fact that NEPA mandates that agencies disclose baseline conditions in order to understand project impacts.[58] Neither the EA nor the Vegetation Effects Analysis provides an estimate of the large-tree component for dry mixed-conifer and ponderosa pine forests outside of these broad and misleading categories.

Despite the clear indication that the project area is deficient in large trees, despite providing no information to the contrary, and despite the lack of specific management objectives for any particular area within the 15,000 acres targeted for free thinning in the project area, the EA purports an explicit need to remove trees up to 24 inches in diameter across 15,000 acres.

The description of treatment methods in the EA states that "[stand]-level desired conditions would be determined on a site-specific basis through silvicultural prescriptions. These prescriptions would include identified desired post-treatment conditions such as species composition, size class distribution, stand structure, and stocking levels. Basal area, canopy cover, tree size distribution, and species composition will be dependent upon existing conditions, desired conditions, forest health implications, potential vegetation group classification, and management objectives." Thus, the EA explains neither why nor how large trees up to 24 inches in diameter might be targeted, and fails to disclose the location, juxtaposition, or number of large trees that would be removed.

And this is despite the fact that the forest is deficient in trees larger than 20 inches diameter.

This is arbitrary and capricious because the facts do not support the decision, a violation of NEPA's disclosure mandates. Because the Forest Service has failed to provide a reasoned basis for its dismissal of a large tree protection alternative, the agency must analyze that alternative in detail in a subsequently prepared EIS. Further, this approach violates NEPA's "hard look" mandate because the Forest Service will not know or disclose the when, where, how, and why of large tree logging until after the project is approved, meaning that the agency cannot disclose the project's site-specific impacts before making a decision.

B. The EA Does Not Contain Information Necessary to Determine the Impacts to MSO.

[57] EA at 51 to 52.

[58] Federal courts hold that "[w]ithout establishing … baseline conditions ... there is simply no way to determine what effect [an action] will have on the environment and, consequently, no way to comply with NEPA." *Half Moon Bay Fishermans' Mktg. Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988); *see also N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1084–85 (9th Cir. 2011) (holding that agency did not take a sufficiently "hard look" at environmental impacts because it did not collect baseline data).

The "Region 3 MSO Habitat NEPA Checklist" in the project record explicitly indicates that the Forest Service should describe pre-treatment and post-treatment conditions for the project area.[59] For example…

> Describe existing pre-treatment conditions in PACs, ***outside of nest/roost core***. May include information regarding the following:
>
> a) Diversity of patch size outside nest/roost core
>
> b) Horizontal and vertical vegetative heterogeneity within patches, including tree species composition
>
> c) Tree species diversity, especially with a mix of hardwoods and shade-tolerant species
>
> d) Diverse composition of vigorous native herbaceous and shrub species
>
> e) Opening sizes between 0.04 – 1 hectare (0.1 – 2.5 acres)
>
> f) Minimum canopy cover of 40% in pine-oak and 60% in mixed-conifer within stands (openings or canopy gaps between patches are not included in canopy cover measurements)
>
> g) Structural diversity of trees [60]

For each of these, the Forest Service has checked the box indicating that the agency has provided this information. However, it has not. Instead of providing the document and page number that contains the required information, the Forest Service has repeatedly entered the phrase "Silvicultural information gathering will be phased with project implementation."

The Forest Service makes this response, despite the explicit need for certain silvicultural information to adequately complete the MSO checklist, which is necessary to ensure a baseline level of protection for Mexican spotted owl habitat. Instead, the Forest Service admits that it does not have the required information now because it has deferred the collection of this information until some undefined time, by some undefined process. In the meantime, the Project proposes to use prescribed fire through 100% of the Mexican spotted owl habitat in the Pinaleño Mountains and mechanical thinning in 24 of the 45 Mexican spotted owl PACs on the mountain. In twelve PACs, thinning would be used across the entirety of the PAC.[61]

Similarly, the EA fails to identify MSO Recovery Nest/Roost habitat. Instead, the Monitoring Plan defers the required identification of MSO recovery nest/roost habitat to the undefined future, and defers evaluation entirely if the Forest Service determines that project activity would not cause habitat values to drop below recovery habitat characteristics, without identifying what

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[59] In our scoping comments, we discussed the need for site-specific information on silvicultural treatments in order to provide necessary protections for Mexican spotted owl. Center for Biological Diversity, Comments on Scoping for the Pinaleño FireScape Project Environmental Assessment, September 4, 2020, at 51-56.

[60] MSO Habitat EA Checklist at 2.

[61] Wildlife Specialist Report at 224.

criteria and thresholds would be used to make such a determination and under what planning process.

> At the time of this analysis, there is 11,664 acres of recovery habitat within mixed conifer ERUs in the Pinaleño Mountains, so in the future, at least 25% of this area (2,916 acres) should be identified as Recovery Nest/Roost Habitat. Because of the large area and rough terrain of the mountain, this effort will need to be phased with implementation. Evaluation should occur before implementation if project activity would drop habitat values below recovery habitat characteristics (MSO Recovery Plan Table C.3). Monitoring Plan at 4.

FWS identifies Primary Constituent Elements of Mexican spotted owl critical habitat including: A range of tree species, including mixed-conifer, pine-oak, and riparian forest types, composed of different tree sizes reflecting different ages of trees, 30% to 45% of which are large trees with dbh of 12 inches or more.[62] However, by failing to identify the large tree component across the project area, failing to identify the large-tree composition of PACs as required in the MSO Habitat EA Checklist, and refusing to limit the removal of large trees 16 to 24 inches in diameter, the project fails to protect and maintain this primary constituent element. As the Biological Opinion succinctly puts it, the Project will remove "an unknown number of trees up to 24 inches dbh".[63]

In sum, the Forest Service proposes to treat 100% of the MSO habitat in the Pinaleño Mountains with a mixture of mechanical thinning and prescribed burning, and it has declared that the project will have no significant impact to the Mexican spotted owl or its habitat, despite being unable to provide the basic information necessary to make such a determination. Here, again, the Forest Service has failed to disclose baseline conditions, failed to take a hard look at the project's impacts, and failed to demonstrate whether and how the selected alternative will achieve the project's purpose and need. Each of these failures violates NEPA and the Administrative Procedure Act.

C. Thinning Would Remove Large, Cone-Bearing Trees from Red Squirrel Occupied Habitat.

The Project proposes to use prescribed fire across 100% of the Mount Graham red squirrel habitat within the project area; and mechanical thinning across 50%-60% of the available Mount Graham red squirrel habitat.[64] The need for protections for the Mount Graham red squirrel was a major point in our earlier comments on this project.[65]

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[62] BO at 74.

[63] BO at 74.

[64] Wildlife Specialist Report at 224.

[65] Center for Biological Diversity, Comments on Scoping for the Pinaleño FireScape Project Environmental Assessment, September 4, 2020, at 1, 2, 48-56.

As described in the Biological Opinion, the annual closed-cone seed crop may be the single biggest factor in the health and survival of the Mount Graham red squirrel.[66] The Project's Design Features include the statement that "retention and regeneration of large mature productive cone-bearing conifer trees, particularly spruce, corkbark fir, Douglas fir and southwestern white pine is a key outcome".[67] However, the EA directly contradicts this statement by proposing to cut trees up to 24 inches in diameter in red squirrel occupied habitat, including as many as three large, cone-bearing trees per acre across the red squirrel habitat.[68] Furthermore, the project allows for mechanical thinning across 50%-60% of the available Mount Graham red squirrel habitat.[69]

Given that there is little suitable habitat within the designated critical habitat, and therefore very few of the active middens on Mount Graham are located within critical habitat, red squirrel habitat is described as the Mount Graham red squirrel species range.[70]

As described earlier in this objection, the EA fails to disclose the existing condition of these stands with respect to large trees, and neither the EA nor the Vegetation Effects Analysis provides an estimate of the large-tree component for most forest types outside of broad and misleading category of trees greater than 10 inches in diameter. As a result, the Forest Service is unable to identify the existing large-tree composition in red squirrel habitat, and fails to identify site-specific factors necessitating the removal of trees larger than 16 inches diameter from these areas. This also means that in allowing the removal of "no more than four trees per acre," the Forest Service has failed to analyze or disclose how many (if any) large trees will remain in MGRS habitat in any logged area.

The removal of large trees through thinning is additionally problematic when there is a substantial possibility that subsequent use of prescribed burning will kill additional large trees, including the large, cone-bearing trees that red squirrels rely on. The EA fails to take a hard look at this impact as well.

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[66] BO at 37. "Forest health and vigor in turn influence the closed-cone seed crop, which seems to explain more variability in red squirrel population size and composition than any other single variable (Gurnell 1987). The supply of food (and to a smaller extent weather) is the main factor affecting population changes in squirrels, which can vary dramatically between years, sometimes by as much as ten-fold or more (Gurnell 1987). For red squirrels in general, conifer seed from stored, closed cones likely influences the length of the breeding season, number of adult females bearing two litters, number of adult yearling females that breed, success of breeding events, longevity of adults, dispersal, diet switches, and perhaps the mean, long-term density of the population (Smith 1968b; Millar 1970; Rusch and Reeder 1978; Halvorson and Engeman 1983; Gurnell 1987)."

[67] Design Feature WFP-10, EA at 144.

[68] EA at 147. "Prescribed fire and mechanized removal should not lead to excessive mortality of large cone bearing trees (defined as fewer than 4/acre [10/ha] based on live trees >40cm DBH…").

[69] Wildlife Specialist Report at 224.

[70] Wildlife Specialist Report at 224, *Map 17: Proposed action in the Mt. Graham red squirrel species range and designated critical habitat.*

D. The EA Does Not Properly Disclose or Analyze the Impacts of Mechanical Thinning Across a Third of the Project Area

The EA retains the option to use mechanical thinning on any acre proposed for "prescribed cutting" across 15,000 acres.[71]

> For prescribed cutting activities, mechanized equipment includes, but is not limited to, tracked and rubber-tired machinery with mastication and/or harvesting attachments, skidders, forwarders, masticators, excavators, grubbing machines, chippers, feller bunchers, processors, tractors, bobcats, and loaders.[72]

The EA includes Design Features that would limit the use of mechanical thinning on slopes 40% or greater.[73] However, the EA does not disclose how much of the 68,046 acres designated for prescribed cutting have slopes less than 40%. Nor does the EA disclose by description, definition, or map, which particular treatment methods might be used in any area.[74]

Without identifying the treatment method, the target basal area, the existing conditions, or the specific management objectives for any particular area, it is impossible for the EA to analyze the potential effects of such treatment. As such, the EA fails to disclose the potential impacts as required under NEPA, and the EA fails to perform the analysis of potential effects as required under NEPA's "hard look" mandate.

This is particularly perplexing when the Forest Service has in hand many lines of data that would inform the public and inform this analysis. For example, the EA presents data on geographic slope, the location of Mexican spotted owl nest cores and yellow-billed cuckoo habitat, the distribution of large trees greater than 20 inches diameter, and the projected site conditions for forest stands. The agency has apparently turned a blind to all of this data, or at least declined to analyze it for the public, which is precisely NEPA's goal and requirement. It is further perplexing that the EA asserts the need to implement prescribed cutting across 15,000 acres while simultaneously stating that prescribed cutting treatments "would likely affect between 250 and 750 acres per year" for 20 years.[75] Although the EA provides no evidence for this assertion, and the draft Decision Notice contains no prescriptions limiting the annual acreage of treatments,

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[71] In our scoping comments, we discussed the need for strategic placement of mechanical thinning treatments to facilitate the use of prescribed burning to restore forest structural diversity, an approach we describe as Strategic Treatments for Fire Use, and which we recommended that the Forest Service analyze as an alternative. Center for Biological Diversity, Comments on Scoping for the Pinaleño FireScape Project Environmental Assessment, September 4, 2020, at 5-14.

[72] EA at 48.

[73] Mechanical treatment is only proposed for areas with slopes less than 40%. EA at 13.

[74] In our scoping comments, we raised this issue in the context of the discussion of the need for site-specific analysis. Center for Biological Diversity, Comments on Scoping for the Pinaleño FireScape Project Environmental Assessment, September 4, 2020, at 24-26.

[75] EA at 41.

if true it would presumably limit the negative impacts of prescribed cutting to less than 15,000 acres.

The EA fails to provide meaningful analysis of the impacts of the proposed thinning treatments, further violating NEPA's hard look mandate. For example, instead of providing quantitative estimates of impacts to the quantity and quality of large trees, the impacts analysis simply purports that "[in] the long term, treatments under the proposed action would result in an increase in canopy cover due to an increase in productivity as well as proportion of large trees."[76] without providing any evidence for this claim. In fact, the Vegetation Effects Analysis plainly contradicts the EA's assertions, indicating that medium and large ponderosa pine trees would decline from 73% to 66% as a result of the action; medium and large dry mixed conifer would decline from 46% to 34%.[77] Again, the EA's analysis conflicts with the facts, rendering any agency decision based thereon arbitrary and capricious.

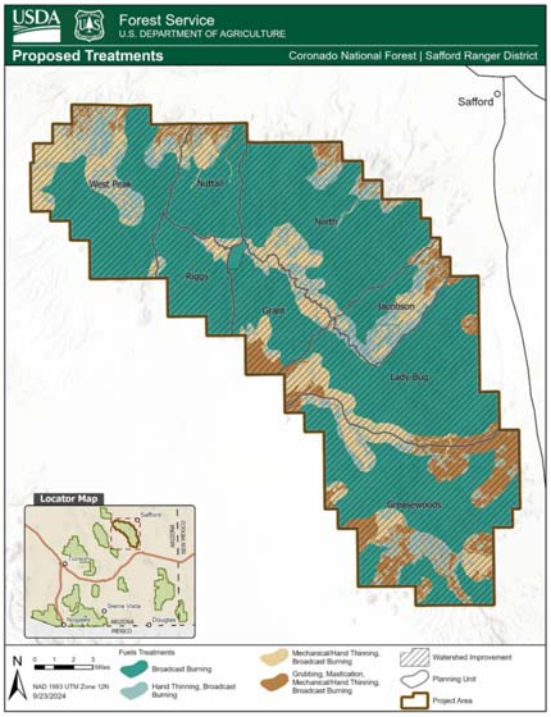
Importantly, if the EA expects that the thinning of medium and large tree stands will develop into "very large trees" in 10 and 20 years, that result will occur only if large-tree retention is prioritized in stands with trees close to 20 inches diameter. The EA provides no such direction; in fact, the EA explicitly rejects such prioritization. More likely, the assertion that the Project will "increase the quantity and quality of large trees" is based on project-wide, averaged data, disconnected from the actual structure and composition of any existing stand. The lack of criteria for the retention of large trees would allow for the removal of precisely those trees that the Vegetation Effects Analysis assumes will develop into very large trees, and which the EA relies on for its statement that "prescribed cutting would increase the quantity and quality of large trees".

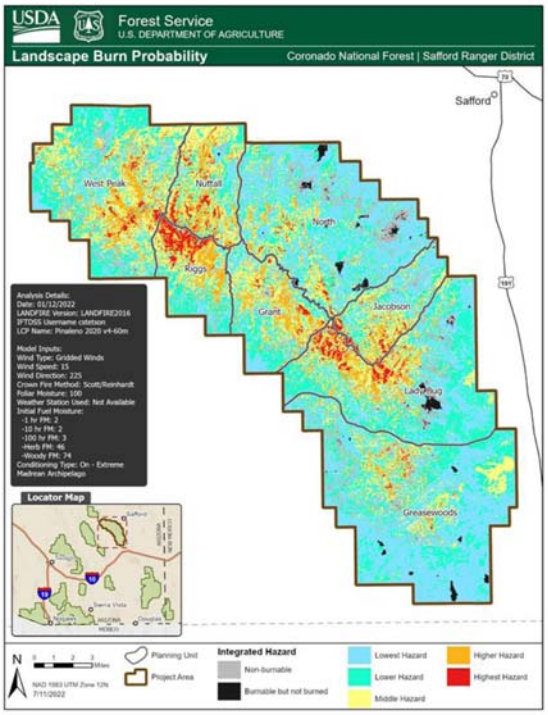
Similarly, the EA effects analysis describes the effects of prescribed cutting as "designed to reduce vegetation density and/or composition as a fire-surrogate or in preparation for fire treatments".[78] However, more than half of the area targeted for prescribed cutting is rated as "lower hazard" and "lowest hazard" for landscape burn probability. [Compare the areas designated for prescribed cutting in the map of proposed treatments on page 22 of the EA and the areas designated as higher and highest fire hazard on page 9. Many areas slated for prescribed cutting are rated as "lower" and "lowest" fire hazard; the areas rated as "higher" and "highest" fire hazard are largely not slated for prescribed cutting.]

[76] EA at 108.

[77] Pinaleño FireScape Forest and Woodland Vegetation Effects Analysis at 31.

[78] EA at 19.





This calls into serious question the EA's assessment of the effects of prescribed cutting, as it states that the action is "reasonably expected" to result in a "decrease in the risk of large, higher severity wildfires due to the breakup of contiguous fuel loads, reduction in density and ladder fuels, as well as an increase in health and vigor across the Forest and Woodland ERUs".[79] In short, the EA fails to demonstrate how the proposed action will meet the stated purpose and need, and conflicts with NEPA's requirement that agencies "ensure the professional integrity, including scientific integrity, of the discussion and analysis in an environmental document" and that they "make use of reliable data and resources in carrying out this Act." 42 U.S.C. § 4332(2)(D) & (E).

Suggested Remedies:

The Forest Service should issue a revised NEPA document, preferably an EIS, that discloses both environmental baseline conditions in the project area, and the impacts of defined, site-specific proposed actions. Specifically, in any revised NEPA analysis, the Forest Service must identify the specific management objectives for each site, the existing conditions, the target basal area, the large-tree component, and the need for removing trees with greater than 16-inches diameter; the Forest Service must disclose and analyze the impacts to the large-tree component and the development of mature and old growth forest.

[79] EA at 108.

The Forest Service must also analyze in detail an alternative that protects large and old growth trees or provide a reasoned explanation for not doing so. The EA's current explanation is arbitrary and capricious.

In the absence of site-specific proposed actions, the Forest Service must, in a revised NEPA document, analyze the impacts of the maximum allowed treatment under the proposed project. Specifically, the EA would allow mechanical thinning across 68,048 acres, including the removal of all trees up to 24 inches diameter.

In a revised NEPA document, the Forest Service should present the results of fire modeling to show the resulting fire hazard ratings of thinning trees up to 24 inches diameter in comparison to fire hazard ratings of thinning trees up to 16 inches diameter.

IV. THE EA FAILS TO ANALYZE THE EFFECTS OF LIVESTOCK GRAZING WITH RESPECT TO PRESCRIBED FIRE.

The EA acknowledges and then rejects without analysis our recommendation to analyze an alternative that addresses the effect of livestock on the Project's objective of restoring fire to the Pinaleño Mountains.[80]

The Center supports the reintroduction of fire to the Pinaleño Mountains. These ecosystems evolved with fire, and prior to Euro-American settlement, rare species were not threatened by fire because the natural cycle had not been interrupted by damaging stressors of logging, fire suppression, and livestock grazing. According to The Nature Conservancy,[81] the Pinaleño Mountains contain one of the largest blocks of former grasslands in the state of Arizona, and "with steady grazing pressure for more than a century, lack of fine fuels…has limited the spread of any fires that ignite. The result has been encroachment of woody shrubs like mesquite and juniper into areas previously dominated by grasses, along with reductions in plant species diversity."[82] The Pinaleño FireScape project seeks to use prescribed fire to reduce fuel loads, and the Forest Service must therefore consider measures and alternatives that modify livestock grazing that reduces the fine fuels that are essential to the use of low-severity surface fire.

The EA rejects any consideration of the effects of livestock grazing with respect to prescribed fire, stating that "there is no requirement under NEPA or the forest plan that a suitability analysis

[80] EA at 50-51.

[81] Arizona Statewide Grassland Assessment (Schussman and Gori 2004, Gori and Enquist 2003; available at http://www.azconservation.org).

[82] Page 60 in Marshall, R.M., D. Turner, A. Gondor, D. Gori, C. Enquist, G. Luna, R. Paredes Aguilar, S. Anderson, S. Schwartz, C. Watts, E. Lopez, and P. Comer. 2004. *An Ecological Analysis of Conservation Priorities in the Apache Highlands Ecoregion.* Prepared by The Nature Conservancy of Arizona, Instituto del Medio Ambiente y el Desarrollo Sustentable del Estada de Sonora, agency and institutional partners. 152 pp.

[of livestock grazing] be conducted at the project level."[83] This statement is entirely unresponsive to the issue of analyzing the effects of livestock grazing with respect to prescribed fire.

The EA acknowledges the possible need to remove grazing from some areas prior to prescribed burning in order "to have sufficient fuel to carry fire"[84] but the EA fails to analyze any additional measures to modify livestock grazing to affect fuels and fire regimes.

Suggested Remedies:

The Forest Service should analyze an alternative that includes measures to modify livestock grazing in the project area in order to restore fire regimes and facilitate prescribed burning.

IV. THE FOREST SERVICE RELIES ON A FLAWED ANALYSIS TO REACH A FINDING OF NO SIGNIFICANT IMPACTS.

Without sufficiently specific information about site impacts, the Project's impact to sensitive and protected species and their habitats is speculative. The USFS states the following in its internal guidance on compliance with the NEPA: "If the Agency does not know where or when an activity will occur or if it will occur at all[,] then the effects of that action cannot be meaningfully evaluated."[85]

The EA presents a set of actions without being able to identify which action will be taken at which location and at what time, or what the actual nature of that action (e.g., silvicultural prescription) will be, while simultaneously acknowledging that the actions can result in significant negative impacts to sensitive and protected species. Because of the lack of clarity and disclosure, the EA is unable to analyze the significance of those impacts and further fails to analyze the full impacts of the maximum level of activity allowed under the EA.

Furthermore, the Forest Service Handbook identifies several factors that indicate the potential for significant impact.[86] These include the following:

> (3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
>
> (4) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

[83] EA at 50.

[84] EA at 62.

[85] See U.S. Forest Service, Forest Service Handbook, FSH 1909.15.01(1).

[86] Forest Service Handbook 1909.15, Zero Code, Ch. 5.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

The Pinaleño FireScape Project satisfies each of these factors. As described in the EA, the project area includes the 61,315-acre Mount Graham Wilderness Study Area (WSA), the 2,937-acre Mount Graham Astrophysical and Biological Research Area, the 1,218-acre Wet Canyon Talussnail Zoological Area, the 558-acre Goudy Canyon Research Natural Area, the 130,852-acre Pinaleño Inventoried Roadless Area, and 13.4 miles of eligible scenic and recreational rivers.[87] The possible effects on the human environment are highly uncertain, as the Forest Service may not know the existing conditions possibly until many years later, and cannot in the meantime determine either the specific objectives for the actions at any specific site or the specific actions that will be taken to achieve those goals. In addition, the possible effects on the human environment involve unique or unknown risks, in particular because of the potential adverse effects of prescribed fire and the potential that prescribed fire will burn outside of planned parameters and/or escape containment. Furthermore, the action may adversely affect several threatened and endangered species, including the Mount Graham red squirrel, which occupies a highly vulnerable niche that is sensitive to the impacts from multiple actions in the proposed project. For all of these reasons, the project cannot be considered to result in no significant impact.

NEPA requires federal agencies to take a "hard look" at the direct, indirect, and cumulative environmental impacts of proposed actions.[88] To do so, federal agencies must prepare an environmental impact statement (EIS) for all "major Federal actions significantly affecting the quality of the human environment."[89] An EIS must "provide [a] full and fair discussion of significant environmental impacts" associated with a federal decision and "inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment."[90] Taking the required "hard look" requires agencies to "use… the best available scientific information."[91]

NEPA's review obligations are more stringent and detailed at the project level, or "implementation stage," given the nature of "individual site specific projects."[92] "[G]eneral

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[87] EA at 5.

[88] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989).

[89] 42 U.S.C. § 4332(2)(C) (2023).

[90] 40 C.F.R. § 1502.1 (1978). See also 42 U.S.C. § 4332(2)(C)(iii), (F), (H) (requiring analysis of alternatives).

[91] *Colo. Envtl. Coal. v. Dombeck*, 185 F.3d 1162, 1171 (10th Cir. 1999).

[92] *Ecology Ctr., Inc. v. United States Forest Serv.*, 192 F.3d 922, 923 n.2 (9th Cir. 1999); *see also Friends of Yosemite Valley v. Norton*, 348 F.3d 789, 800-01 (9th Cir. 2003); *New Mexico ex rel Richardson v. Bureau of Land Management*, 565 F.3d 683, 718-19 (10th Cir. 2009) (requiring site-specific NEPA analysis when no future NEPA process would occur); *Colo. Envtl. Coal. v. Ofc. of Legacy Mgmt.*, 819 F. Supp. 2d 1193, 1209-10 (D. Colo. 2011) (requiring site-specific NEPA analysis even when future NEPA would occur because "environmental impacts were reasonably foreseeable").

statements about possible effects and some risk do not constitute a hard look, absent a justification regarding why more definitive information could not be provided."[93]

Analyzing and disclosing site-specific impacts is critical because where (and when and how) activities occur on a landscape strongly determines that nature of the impact. As the Tenth Circuit Court of Appeals has explained, the actual "location of development greatly influences the likelihood and extent of habitat preservation. Disturbances on the same total surface area may produce wildly different impacts on plants and wildlife depending on the amount of contiguous habitat between them."[94] The Court used the example of "building a dirt road along the edge of an ecosystem" and "building a four-lane highway straight down the middle" to explain how those activities may have similar types of impacts, but the extent of those impacts – in particular on habitat disturbance – is different.[95] Indeed, "location, not merely total surface disturbance, affects habitat fragmentation,"[96] and therefore location data is critical to the site-specific analysis NEPA requires.

NEPA further mandates that the agency provide the public "'the underlying environmental data' from which the Forest Service develop[ed] its opinions and arrive[d] at its decisions."[97] "The agency must explain the conclusions it has drawn from its chosen methodology, and the reasons it considered the underlying evidence to be reliable."[98] In the end, "vague and conclusory statements, without any supporting data, do not constitute a 'hard look' at the environmental consequences of the action as required by NEPA."[99]

As shown above, this EA is insufficient to authorize a set of actions that could degrade habitat for two endangered species—the Mexican spotted owl and Mount Graham red squirrel—that have endured multiple impacts to their habitats and have a precarious existence on Mount Graham. Furthermore, this EA does not indicate that the Forest Service is taking the necessary care and consideration in developing actions that could inadvertently kill or degrade habitat for one of the most endangered species in the United States. Further, despite the Forest Service Handbook's statement, law, and caselaw, that an agency cannot effectively evaluate the impacts of the agency's action if it "does not know where or when an activity will occur," the EA fails to

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[93] *Or. Natural Res. Council Fund v. Brong*, 492 F.3d 1120, 1134 (9th Cir. 2007) (citation omitted); *see also Or. Natural Res. Council Fund v. Goodman*, 505 F.3d 884, 892 (9th Cir. 2007) (holding the Forest Service's failure to discuss the importance of maintaining a biological corridor violated NEPA, explaining that "[m]erely disclosing the existence of a biological corridor is inadequate" and that the agency must "meaningfully substantiate [its] finding").

[94] *New Mexico ex rel Richardson*, 565 F.3d at 706.

[95] *Id*. at 707.

[96] *Id*.

[97] *WildEarth Guardians v. Mont. Snowmobile Ass'n*, 790 F.3d 920, 925 (9th Cir. 2015).

[98] *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1075 (9th Cir. 2011) (citation omitted).

[99] *Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 973 (9th Cir. 2006).

disclose the location of specific treatments, where large trees will be removed, etc. Without such information, the Forest Service cannot guarantee that the project will have no significant effects.

Suggested Remedies:

The Forest Service should prepare an EIS that provides an analysis of measures and alternatives that would minimize the impacts and risks to threatened and endangered species in the project area.

CONCLUSION

Thank you for considering the information and concerns raised in our comments and highlighted in this objection.

We request a meeting to discuss potential resolution of issues raised in this objection, pursuant to 36 C.F.R. § 218.11(a). We hope that the Forest Service will use the objection process and such a meeting as opportunities to engage with stakeholders, including the objectors here, to develop a project that is legally and ecologically sound.

Sincerely,

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Addenda: Literature cited in this objection and included as exhibits.

Exhibit 1. Agee, J.K. and C.N. Skinner. 2005. Basic principles of forest fuel reduction treatments. *Forest Ecology and Management* 211: 83-96.

Exhibit 2. Allen, C.D. M.A. Savage, D.A. Falk, K.F. Suckling, T.W. Swetnam, T. Schulke, P.B. Stacey, P. Morgan, M. Hoffman, and J.T. Klingle. 2002. Ecological restoration of southwestern ponderosa pine ecosystems: A broad perspective. *Ecological Applications* 12: 1418-33.

Exhibit 3. Arno, S.F. 2000. Fire in western ecosystems. Pp. 97-120 in: J.K. Brown and J.K. Smith (eds.). *Wildland Fire in Ecosystems, Vol. 2: Effects of Fire on Flora*. USDA For. Serv. Gen. Tech. Rep. RMRS-42-vol.2. Ogden, UT.

Exhibit 4. Brown, R.T., J.K. Agee, and J.F. Franklin. 2004. Forest restoration and fire: principles in the context of place. Conservation Biology 18: 903-12;

Exhibit 5. Covington, W.W., and M.M. Moore. 1994. Southwestern ponderosa forest structure: Changes since Euro-American settlement. *Journal of Forestry* 92: 39-47.

Exhibit 6. DellaSala, D.A., J.E. Williams, C.D. Williams and J.F. Franklin. 2004. Beyond smoke and mirrors: a synthesis of fire policy and science. Conservation Biology 18: 976-86.

Exhibit 7. Fiedler, C.E., and C.E. Keegan. 2003. Reducing crown fire hazard in fire-adapted forests of New Mexico. Pp. 29-38 in: P.N. Omi and L.A. Joyce (tech. eds.). *Fire, Fuel Treatments, and Ecological Restoration: Conference Proceedings*. 2002 April 16-18: Fort Collins, CO. USDA For. Serv. Rocky Mtn. Res. Sta. Proc. RMRS-P-29. Fort Collins, CO.

Exhibit 8. Kaufmann, M.R., W.H. Moir, and W.W. Covington. 1992. Old-growth forests: what do we know about their ecology and management in the Southwest and Rocky Mountain regions? Pp. 1-10 in: M.R. Kaufmann, W.H. Moir, and R.L. Bassett (eds.). *Old-Growth Forests in the Southwest and Rocky Mountain Regions: Proceedings from a Workshop* (1992). Portal, AZ. USDA For. Serv. Gen. Tech. Rep. RM-213. Fort Collins, CO.

Exhibit 9. Marshall, R.M., D. Turner, A. Gondor, D. Gori, C. Enquist, G. Luna, R. Paredes Aguilar, S. Anderson, S. Schwartz, C. Watts, E. Lopez, and P. Comer. 2004. *An Ecological Analysis of Conservation Priorities in the Apache Highlands Ecoregion.* Prepared by The Nature Conservancy of Arizona, Instituto del Medio Ambiente y el Desarrollo Sustentable del Estada de Sonora, agency and institutional partners. 152 pp. Page 60

Exhibit 10. McCune, Bruce. "Ecological diversity in North American pines." American Journal of Botany (1988): 353-368.

Exhibit 11. Naficy, C., A. Sala, E.G. Keeling, J. Graham and T.H. DeLuca. 2010. Interactive effects of historical logging and fire exclusion on ponderosa pine forest structure in the northern Rockies. *Ecological Applications* 20: 1851-64.

Exhibit 12. Omi, P.N., and E.J. Martinson. 2002. *Effect of Fuels Treatment on Wildfire Severity*. Unpubl. report to Joint Fire Science Program. Fort Collins: Colorado State Univ. Western Forest Fire Research Ctr. March 25. 36 pp.

Exhibit 13. Pollett, J. and P.N. Omi. 2002. Effect of thinning and prescribed burning on crown fire severity in ponderosa pine forests. *International Journal of Wildland Fire* 11: 1-10.

Exhibit 14. Sesnie, S. and J. Bailey. 2003. Using history to plan the future of old-growth ponderosa pine. *Journal of Forestry* 99(7) (Oct/Nov): 40-47.

Exhibit 15. U.S. Fish and Wildlife Service. 2023. 2023 Revised Final Biological Opinion for the U.S. Forest Service Programmatic Nationwide Aerial Application of Fire Retardant on National Forest System Land