May 20, 2024

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 April 3, 2024, making the deadline to submit comments May 20, 2023. 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:

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> 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 Fish and Wildlife Service for the continued failure to update the critical habitat for the Mount Graham red squirrel.[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. We have repeatedly visited and toured the project area, most recently in November 2023.

The Center strongly supports the reintroduction of fire as an ecological process on Mount Graham, including within occupied habitat for sensitive and protected species. However, the Pinaleño FireScape Project, as defined in the Final EA, includes actions that unnecessarily and irresponsibly threaten those species, and fails to include measures to minimize impacts to Mount Graham red squirrel and Mexican spotted owl in particular.

The following objections are raised in this letter:

I. The EA fails to disclose and analyze the impacts of removing large trees up to 24" in diameter, reducing forest stands to 20 square foot basal areas, and using mechanical thinning across 68,048 acres—34% of the project area.

II. The EA fails to disclose and analyze the impact of herbicide treatment across 19,467 acres.

III. The EA fails to properly disclose and analyze the impacts to Mexican spotted owls.

IV. The EA fails to properly disclose and analyze the impacts to Mount Graham red squirrels.

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

V. The EA Fails to Disclose and Analyze the Effects of Fire Retardants on Mount Graham Red Squirrel and Mexican Spotted Owl

VI. The EA fails to properly disclose and analyze the impacts to western yellow-billed cuckoo.

VII. The EA fails to properly disclose and analyze the impacts to Gila trout and Gila chub.

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

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

I. THE EA FAILS TO DISCLOSE AND ANALYZE THE IMPACTS OF REMOVING LARGE TREES UP TO 24" IN DIAMETER, REDUCING FOREST STANDS TO 20 SQUARE FOOT BASAL AREAS, AND USING MECHANICAL THINNING ACROSS 68,048 ACRES—34% OF THE PROJECT AREA.

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".[2] 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.[3] The ecological significance of old growth forest habitat and large trees comprising it is widely recognized.[4,5] There is no agreed-upon scientific basis for removing large trees to promote fire resistance in southwestern forests.[6,7] Any NEPA document prepared for this project must address the need for retaining these components on the landscape through addition of meaningful plan components.

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:

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

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

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

[5] 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.

[6] 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.

[7] Brown et al. 2004, Dellasala et al. 2004

> 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 (16 inches) dbh and all trees with old-growth morphology regardless of size (i.e., yellow bark, large drooping limbs, twisted trunks, flattened tops).[8]

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.[9]

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, and in fact underscores why the agency needs to disclose baseline conditions and proposed actions on a site-specific basis.

The EA identifies 68,048 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.[10] Within these areas, "free thinning" will be used to reduce forests to "a Target BA [basal area]…focused on trees <u>≤ 24" DBH</u>".[11] 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 68,046 acres of forest targeted for prescribed cutting would be subject to limitations on the removal of large

[8] 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.

[9] EA at 25.

[10] EA at 14, Table 3.

[11] EA at 14, Table 3. Underline added.

trees. Instead, the EA indicates that trees up to 24 inches diameter would be subject to prescribed cutting across 68,048 acres of the project area.

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; 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."[12] 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.[13,14] Retention of large trees is fundamentally important to fire resistance of treated stands.[15] Mature conifers have a high capacity to survive and recover from crown scorch.[16] Large tree structure enhances forest

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

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

[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.

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

resilience to severe fire effects[17, 18, 19] whereas removing them may undermine fire resilience.[20, 21] 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.[22]

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.[23] 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."[24] 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 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 68,048 acres of the project area subjected to prescribed cutting. However, neither the EA nor the accompanying specialists' reports discloses the number of large trees that would be removed,

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[17] 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.

[18] 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.

[19] 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.

[20] 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.

[21] 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.

[22] 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.

[23] EA at 10.
[24] EA at 10.

their location, their unique value to the ecosystem, or any evaluation of the existing large-tree component of the targeted areas such that the EA could 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).[25]

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 Pinaleños FireScape project, or whether and to what extent canopy gaps are deficient in those forest stands.[26]

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.[27] 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 percentage of 40%.[28]

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".[29] 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

[25] EA at 25.

[26] 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.

[27] Pinaleño FireScape Forest and Woodland Vegetation Effects Analysis, Appendix C at 30 to 32.

[28] Pinaleño FireScape Forest and Woodland Vegetation Effects Analysis, Appendix C at 32.

[29] Pinaleño FireScape Forest and Woodland Vegetation Effects Analysis, Appendix C at 31.

removal of large trees.[30] 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. 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 68,048 acres targeted for free thinning in the project area, the EA purports an explicit need to remove trees "of all size classes," dependent on undefined "management objectives."

> Overall desired conditions and desired basal area ranges per ERU are identified by the Forest Plan. Free thinning will be used as a technique during site-specific prescriptions. Free thinning is a silvicultural technique that promotes tree release, or the growth of individually selected trees. Free thinning will be used to remove trees of all size classes and canopy positions to promote stand health, tree growth, irregular spacing (clumps and openings), enhance estimated old growth areas, resilience to disturbance, and desirable species composition. 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. [31]

In other words, the EA argues that, because some forest stands may contain more than the desired number of trees 10 inches in diameter, the Project must remove trees up to 24 inches in diameter. And this is despite the fact that the forest is deficient in trees larger than 20 inches diameter. In essence, the Forest Service claims that they will design prescriptions that will be dependent upon existing conditions, but the EA doesn't disclose those conditions or the criteria that will guide the development of those prescriptions, so there's no way for the Forest Service or the public to know where such treatments will occur, what those treatments will be, the existing conditions in which they will be applied, or what the condition of the forest will be afterward.

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 support its dismissal of a large tree protection alternative, the agency must analyze that alternative in detail in a subsequently prepared EIS.

The EA Does Not Properly Disclose or Analyze the Impacts of Reducing Forests to 20 BA

[30] EA at 25.

[31] EA at 13. Underline added.

The EA identifies a target basal area of 20-180 BA for 3,497 acres of wet mixed-conifer forest, 30-100 BA for 5,984 acres of dry mixed-conifer, and 20-80 BA for 2,968 acres of ponderosa pine forest.[32] The EA provides no information on how these very wide ranges of basal are targets would be applied within the project area, and instead refers generally to the Forest Plan for basal area targets.[33]

> Overall desired conditions and desired basal area ranges per ERU are identified by the Forest Plan. Free thinning will be used as a technique during site-specific prescriptions. Free thinning is a silvicultural technique that promotes tree release, or the growth of individually selected trees. Free thinning will be used to remove trees of all size classes and canopy positions to promote stand health, tree growth, irregular spacing (clumps and openings), enhance estimated old growth areas, resilience to disturbance, and desirable species composition. 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. [34]

However, the Forest Plan provides only these same basal area ranges, which cover the full range of potential site conditions across the entire Coronado National Forest, which ranges from desert to alpine. Presumably, the very low basal areas of 20 and 30 square feet per acre apply to the lowest elevations and poorest growing conditions. The EA does not evaluate whether such conditions occur within the project area, let alone to what extent and in which locations. Nor does the EA or the Forest Plan provide any criteria or guidance on particular basal area targets, beyond these very broad, forest-wide ranges.[35] The Forest Service must have access to projected site conditions (growing capacity) for forest stands, or the Vegetation Effects Analysis would not have been able to calculate model results for vegetation growth at 10 and 20 years after treatment.[36] However, the Forest Service has decided not to disclose this information in the EA.

As a result, the public is not told the existing conditions in the project area, what the conditions will be after treatment, what criteria will be applied to decide the treatment, or even what specific objectives the Forest Service intends to achieve with any particular treatment or in any specific

[32] EA at 14, Forest and Woodland Vegetation Effects Analysis at 2 to 4.

[33] 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.

[34] EA at 13. Underline added.

[35] In our scoping comments, we discussed the need for strategic placement of 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.

[36] *See* Pinaleño FireScape Forest and Woodland Vegetation Effects Analysis, Appendix B and C.

location. Instead, the EA indicates that the prescriptions will be determined later, based on condition that will be determined at the time, and based on objective that will be determined at the time, years after the Forest Service has supposedly evaluated the impacts of those treatments.

In the absence of any site-specific information in either the EA or the Forest Plan, the Project allows for 3,497 acres of wet mixed-conifer forest to be reduced to 20 BA, 5,984 acres of dry mixed-conifer to be reduced to 30 BA, and 2,968 acres of ponderosa pine forest to be reduced to 20 BA. The areas targeted for prescribed cutting, and subject to these basal area targets, include many high-elevation forest stands, good growing conditions, and habitat for sensitive and protected wildlife species. However, neither the EA nor the accompanying Specialists' Reports provide any disclosure or analysis of the impacts of reducing high elevation forests to 20 and 30 square foot basal areas, or the impacts to habitat for sensitive and protected species. Nor does the EA disclose how areas of low density might be distributed across the landscape, or how the Forest Service will be determine the target basal area for any location, or the different impacts of reducing the forest to a basal area of 20 square feet versus 80 square feet.

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 68,048 acres, more than a third of the project area.[37]

> Treatment methods would include, but not be limited to, chainsaws and other hand tools, tracked and rubber-tired machinery with mastication and/or harvesting attachments, skidders, forwarders.[38]

The EA includes Design Features that would limit the use of mechanical thinning on slopes 40% or greater.[39] 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.[40]

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

[37] 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.

[38] EA at 13. Underline added.

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

[40] 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.

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 Forest Service has 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 68,048 acres while simultaneously stating that prescribed cutting treatments "would likely affect between 250 and 750 acres per year" for 20 years.[41] Although the EA provides no evidence for this assertion, if true it would presumably limit the negative impacts of prescribed cutting to less than 68,048 acres.

The EA fails to provide meaningful analysis of the impacts of the proposed thinning treatments. For example, instead of providing quantitative estimates of impacts to the quantity and quality of large trees, the impacts analysis simply purports that it is "reasonably expected that under the proposed action, prescribed cutting would increase the quantity and quality of large trees"[42] without providing any evidence for this claim. In fact, the Vegetation Effects Analysis indicates 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 28%.[43] 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 as a fire-surrogate or in preparation for fire treatments".[44] However, more than half of the area targeted for prescribed cutting is rated as "lower hazard" and "lowest

[41] EA at 13.

[42] EA at 67.

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

[44] EA at 64.

hazard" for landscape burn probability.[45] [Compare the areas designated for prescribed cutting in the map of proposed treatments on page 17 of the EA and the areas designated as higher and highest fire hazard on page 10 of the Fire and Fuels Report. 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.] 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".[46] In short, the EA fails to demonstrate how the proposed action will meet the stated purpose and need.

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.

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 proposes to allow mechanical thinning across 68,048 acres, including the removal of all trees up to 24 inches diameter, and the reduction of forests to basal areas of 20 and 30 square-feet per acre.

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.

II. THE EA FAILS TO DISCLOSE AND ANALYZE THE IMPACT OF HERBICIDE TREATMENT ACROSS 19,467 ACRES.

The project would apply herbicide treatment across 19,467 acres "as a primary treatment to address broad-sale invasion of woody species that are difficult to control with fire or mechanical

[45] Pinaleño FireScape Fire and Fuels Report at 10, Figure 4, Planning Unit Integrated Hazard Map.

[46] EA at 64.

means."[47] The EA names only a number of native plants species as the targets for herbicide application, the native plants Sonoran scrub oak, whitethorn acacia, catclaw acacia, catclaw mimosa, and prickly pear. [48]

In our scoping comments we discussed at length the impacts associated with the specific herbicides proposed for use in this Project and the need for site-specific analysis of any applications of herbicide.[49] In those comments, we proposed that the Forest Service develop an Integrated Pest Management approach and analyze an alternative that does not rely on herbicides to control sprouting of native plants.[50] The Forest Service rejected this proposal without analyzing it in detail or developing an Integrated Pest Management approach, based on the reasoning that herbicide is less invasive than grubbing, and that fire does not remove prickly pear.[51] In its rejection of an alternative to reduce or minimize the use of herbicides, the EA further states that the "long-term benefits of herbicide use outweigh the short-term negative impacts and help to fully and sufficiently meet the purpose and need of this project." The EA provides no data or analysis to support any of these claims.

The EA identifies 12 herbicides to use in the Pinaleño FireScape Project, and explains that those herbicides "are adopted from Appendix C of the Chiricahua FireScape Environmental Assessment.[52] In turn, Appendix C of the Chiricahua FireScape EA states that the EPA "has approved all of these herbicides for controlling native and non-native plants…"[53] It is the Forest Service that extrapolated from the initial EPA reviews to generate risk assessments reports for the use of these herbicides in the context of forest and range applications. However, a review of the Forest Service Human Health and Risk Assessment reports makes it clear that the herbicides were decidedly <u>not</u> evaluated for "controlling native and non-native plants" and were <u>not</u> evaluated for the applications proposed in the Pinaleño FireScape project.

Eight of the twelve Forest Service Human Health and Risk Assessment reports indicate that the USFS evaluated those herbicides specifically for purposes <u>other than</u> the control of native plants in wildland environments, the purposes proposed in the Pinaleño FireScape project.

> **2,4-D** are most commonly used in wildlife opening, rights-of-way maintenance, and noxious weed control. [54]

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[47] EA at 14.

[48] EA at 14.

[49] Center for Biological Diversity, Comments on Scoping for the Pinaleño FireScape Project Environmental Assessment, September 4, 2020, at 24-26, 26-47.

[50] Center for Biological Diversity, Comments on Scoping for the Pinaleño FireScape Project Environmental Assessment, September 4, 2020, at 28.

[51] EA at 24.

[52] EA at 110.

[53] Chiricahua FireScape EA at 75.

[54] 2,4-D: Human Health and Ecological Risk Assessment at xii.

> The Forest Service uses only a single commercial formulation of **clopyralid**, Transline. The Forest Service uses Transline almost exclusively in noxious weed control.[55]
>
> **Glyphosate** is a herbicide used in Forest Service programs primarily in conifer release, site preparation, and noxious weed control. [56]
>
> **Hexazinone** is a herbicide used in Forest Service programs almost exclusively in conifer release and site preparation in the southeastern United States. [57]
>
> The Forest Service will typically use **imazapic** in noxious weed control and rights-of-way management. [58]
>
> **Oryzalin** is used for preemergence control of both grasses and broadleaved weeds on a variety of crops, including cotton, fruit trees, nut trees, vines, ornamentals, soya beans, berries, rice, amenity turf and non-crop areas. [59] At 2.
>
> **Picloram** is used in Forest Service programs primarily for the control of noxious weeds. [60] At 4.
>
> **Triclopyr** is used in Forest Service programs primarily for conifer and/or hardwood release, noxious weed control, site preparation, and rights-of-way management.[61]

Only the remaining four proposed herbicides—aminopyralid, dicamba, imazapyr, and tebuthiuron—have any mention of applications that are ostensibly consistent with the purposes described in the EA.

> The most likely uses of **aminopyralid** will involve applications to forest and rangelands, rights-of-way, and developed recreational areas such as campgrounds, picnic areas and trails. Aminopyralid. [62]
>
> Proposed application methods for **dicamba** include roadside hydraulic spraying, cut-surface treatments, and directed foliar treatments. [63]

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[55] Clopyralid: Human Health and Ecological Risk Assessment at xii.

[56] Glyphosate: Human Health and Ecological Risk Assessment at xviii.

[57] Hexazinone: Human Health and Ecological Risk Assessment at xii.

[58] Imazapic: Human Health and Ecological Risk Assessment at x.

[59] Oryzalin: Human Health and Ecological Risk Assessment at 2.

[60] Picloram: Human Health and Ecological Risk Assessment at 4.

[61] Triclopyr: Human Health and Ecological Risk Assessment at 4.

[62] Aminopyralid: Human Health and Ecological Risk Assessment at xi.

[63] Dicamba: Human Health and Ecological Risk Assessment at xii.

> **Imazapyr** is a herbicide used in Forest Service vegetation management programs, primarily in the Southern United States, to control a variety of grasses, broadleaf weeds, vines, and brush species. [64]
>
> **Tebuthiuron** is a soil active herbicide – i.e., the herbicide is intended to be applied to soil rather than to foliage – used primarily for the control of woody vegetation. [65]

The EA acknowledges that the effects of the proposed herbicide application are highly dependent on the particular chemical, the particular use, and the particular site.

> Consideration of need and on-site soil and water conditions such as soil type, proximity to surface water and groundwater, as well as slope must all be carefully considered along with herbicide attributes prior to the selection of herbicide and method of application.[66]

Nonetheless, the Forest Service proposes a finding of no significant impact despite failing to disclose or analyze the impact of any particular chemical that would be used for any particular use at any particular site.[67]

This is perplexing when the Forest Service apparently has in hand certain information that would inform the public and inform this analysis. Specifically, the EA states that herbicide application would be used "in sites where tree and shrub cover is over 10%," and further states that the potential area treated annually with herbicide would range from 0-10 acres.[68] Thus, the EA proposes herbicide application across 19,467 acres, when the Forest Service is apparently expecting to use herbicide application on a total of 200 acres or less over the 20-year duration of the project, although the Forest Service declines to disclose precisely (or generally) where those applications might occur.

> ***Suggested Remedies:***
>
> The Forest Service should disclose in a revised NEPA document, preferably an EIS, the impacts of defined, site-specific proposed actions. Specifically, the Forest Service must identify the specific herbicides to be used at any site, and the specific purpose for the application.
>
> The Forest Service must analyze the site-specific impacts of herbicide applications.

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[64] Imazapyr: Human Health and Ecological Risk Assessment at xii.

[65] Tebuthiuron: Human Health and Ecological Risk Assessment at 5.

[66] EA at 72.

[67] 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.

[68] EA at 15.

In the absence of site-specific proposed actions, the Forest Service must analyze the impacts of the maximum allowed treatment under the proposed project. Specifically, the EA proposes to allow the application of twelve different herbicides across 19,467 acres.

III. THE EA FAILS TO PROPERLY DISCLOSE AND ANALYZE THE IMPACTS TO MEXICAN SPOTTED OWLS.

The EA Does Not Contain Information Necessary to Determine the Impacts

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.[69] 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 [70]

For each of these, the Forest Service has checked the box indicating that this information has been provided. 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."

That is, despite the explicit need for certain silvicultural information to adequately complete the MSO checklist, which in turn is needed to ensure a baseline level of protection for Mexican spotted owl habitat, 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

[69] 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.

[70] MSO Habitat EA Checklist at 2.

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.[71]

One of the Primary Constituent Elements of Mexican spotted owl critical habitat is: 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.[72] 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".[73]

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.

The EA Does Not Disclose or Analyze the Impacts of Thinning Operations Within the PAC During MSO Breeding Season

The EA states:

> The Forest Service will limit project activities where practicable within PACs during the Mexican spotted owl breeding season (March 1– August 31). For example, the Forest Service will attempt to do prep work for spring burns in PACs (e.g., snagging) outside the breeding season.[74]

Inherent in this statement is the implication that the Forest Service may decide that it's necessary to operate chainsaws and heavy machinery within spotted owl PACs during the breeding season. However, the EA provides no evidence or argument as to why this might be necessary or the criteria that would be used to determine whether it is practicable to avoid such disruptions to breeding pairs. The Forest Service should have also analyzed and disclosed the impacts of a mitigation measure or alternative that prohibited without exception project activities within PACs during breeding season.

[71] Wildlife Specialist Report at 224.

[72] BO at 74.

[73] BO at 74.

[74] EA at 102.

The EA Does Not Disclose or Analyze the Impacts of Prescribed Burning in Spring and/or During MSO Breeding Season

The EA explicitly proposes the use of spring burning within PACs.

> 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 1 to August 31). 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).[75]

The EA provides no evidence or argument as to why it would be necessary to use prescribed burning in the spring and/or during the Mexican spotted owl breeding season.

Breeding season is the period when thinning and prescribed burning would be most disruptive to spotted owls, with potential impacts to individuals and breeding success. As described in the Biological Opinion, implementing prescribed burning during the breeding season—as opposed to late summer and fall--creates exceptional risks, including expected "lethal" effect, for spotted owls.

> However, because the proposed action includes implementation of these actions during the owl-breeding season (March 1 through August 31), and particularly because the proposed action could include burning in the earliest portion of the breeding season (March through June) due to weather window constraints, there may be potential injury or death to owls due to burning of active nest trees (female, eggs, and/or nestlings), as well as disturbance and displacement that may occur to owls.[76]

> Effects to Mexican spotted owls from burning during the owl breeding season may include injury or death from implementation of planned fire during the owl breeding season, particularly March through June, which includes courtship (typically the month of March), egg incubation (30 days when the female is continuously on the nest, typically the month of April), nestlings (typically the month of May), and fledglings (early to mid-June when fledglings are unable to fly at all or very well). 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 will decrease if prescribed burns occur later in the breeding season (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. Because the Forest

[75] EA at 102.

[76] BO at 67. Underline added.

> Service proposes to burn during the early and mid-portions of the breeding season, we must assume that the actions will result in lethal and/or sublethal effects to owls for the reasons described above. The Forest Service states that if fire conditions are suitable, they want to be able to burn in up to 20 PACs, including nest cores, during the breeding season over 10 years. Additionally, the Forest Service plans to conduct prescribed fire within portions of 1-3 PACs annually (up to portions of 30 PACs), outside of nest cores, during the breeding season. [77]

The EA states that it will implement Design Features to reduce the impact to owls, but the EA explicitly rejects the Recovery Plan recommendation to conduct prescribed burns outside the breeding season.

> 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.[78]

In addition, spring weather in the project area tends to include strong winds, dramatically increasing the potential for a prescribed fire to burn outside of planned parameters and/or escape containment to become an uncontrolled wildfire. Because the spotted owl PACs and nest areas in the project area occur along the ridgeline at the top of the Pinaleño Mountains, a prescribed burn that escapes containment would be at extremely high risk of burning a large number of PACs.

While the EA neglects to acknowledge, disclose, or analyze the inherent risk associated with spring burning, the Forest Service is nonetheless aware of these risks and evidently discussed the possible need to use aerial deliveries of water and fire retardant to limit fire effects on spotted owls.

> 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.[79]

Despite being aware of the risks that spring burning poses for spotted owls, and even discussing the need to use fire retardant to contain prescribed burns (an issue discussed later in these comments), the EA nonetheless fails to disclose and analyze the potential impacts to spotted owl associated with the increased potential for spring burns to burn outside of planned parameters and/or escape containment to become an uncontrolled wildfire.

As discussed in the Biological Opinion, the project is expected to result in the take of one spotted owl breeding pair and associated eggs and juveniles each year over the 20-year course of the project.

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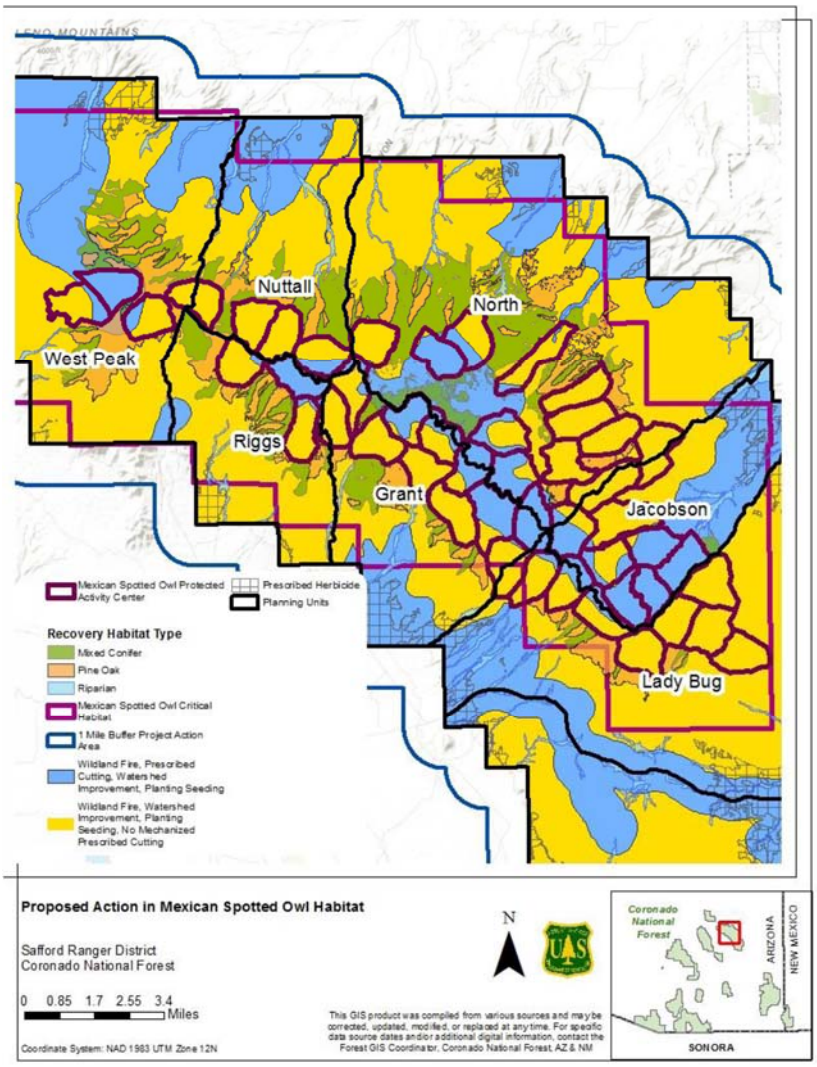
[77] BO at 68. Underline added.

[78] BO at 68.

[79] BO at 14.

> We anticipate the take of up to one pair of Mexican spotted owls and/or associated eggs/ nestlings/ juveniles in the form of non-lethal harm from harassment in up to three PACs every year… Incidental take is exceeded if disturbance occurs within an individual PAC for more than three breeding seasons or if disturbance occurs in more than three PACs in one year due to project activities other than prescribed fire.[80]

However, 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.[81]



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

[80] BO at 80.

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

Nonetheless, the EA fails to disclose and analyze the impacts of such an outcome, nor does the EA analyze 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 2019 NEPA regulations 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."[82] 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 possibility of such a fire in the Pinaleños cannot be said to be zero.

Suggested Remedies:

The Forest Service must disclose the impacts of defined, site-specific proposed actions in a subsequently prepared NEPA document, preferably an EIS. Specifically, the Forest Service must identify the existing silvicultural conditions within PACs, especially the large-tree component, and specify the need for removing trees greater than 16-inches diameter.

The Forest Service should disclose and analyze the potential impacts of implementing thinning treatments and prescribed burns during the Mexican spotted owl breeding season. This must include the potential for escaped prescribed fires.

The Forest Service should analyze and disclose the impacts of a mitigation measure or alternative that prohibits thinning treatments within PACs during Mexican spotted owl breeding season and prohibits prescribed burning within or near PACs during breeding season.

IV. THE EA FAILS TO PROPERLY DISCLOSE OR ANALYZE THE IMPACTS TO MOUNT GRAHAM RED SQUIRRELS.

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

[82] 40 C.F.R. § 1502.22(c).

Graham red squirrel habitat.[83] The need for protections for the Mount Graham red squirrel was a major point in our earlier comments on this project.[84]

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.[85] 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".[86] 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.[87] Furthermore, the project allows for mechanical thinning across 50%-60% of the available Mount Graham red squirrel habitat.[88]

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.[89]

As described earlier in this objection letter, 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

[83] Wildlife Specialist Report at 224.

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

[85] 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)."

[86] EA at 99.

[87] EA at 101. "Prescribed fire and mechanical thinning will aim to remove less than four large cone-bearing trees per acre in MGRS occupied habitat."

[88] Wildlife Specialist Report at 224.

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

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.

Prescribed Burning During Breeding Season Increases the Risk of Death and Habitat Loss

The Biological Opinion acknowledges the risk that prescribed burning can result in the death of red squirrels and the loss of red squirrel habitat.

> Burning in Mount Graham red squirrel habitat will result in disturbance to red squirrels and potential death and/or injury of adults, pups, and/or juveniles if the prescribed fire destroys the active midden, burns the nest tree, results in the adult leaving pups unattended, or causes adult and/or juvenile squirrels to flee and become susceptible to predation. Because broadcast burning has not been widely used as a fuels-reduction treatment in this mountain range in over 20 years, and the Forest Service proposes to broadcast burn within Mount Graham red squirrel habitat during any year at any time, we must assume that the actions could result in lethal and/or sublethal effects to squirrels.[90]

To address this risk, the EA proposes design features to mitigate the effects of prescribed burning on Mount Graham red squirrels and key habitat components. In particular, prescribed burning would be planned to affect five or fewer active middens at a time and would be designed to avoid "buffers" around active middens.[91] However, as stated in the Biological Opinion, "it is difficult to reduce fuels and protect habitat components that are also sources of fuel (such as logs and snags)".[92] Despite these design features, it is very likely that key habitat components will nonetheless be lost to prescribed burning. That is, it is practically impossible that prescribed burning will not degrade habitat for the Mount Graham red squirrel—at least in the short-term, and possibly for the long-term—even under the most amenable conditions.

> Additionally, the Forest Service will avoid using prescribed fire in red squirrel habitat with a high concentration (six or greater) of active middens, thereby avoiding these effects. However, in some cases, one to five active middens or nests may be in areas that are inaccessible or impossible to treat except with prescribed fire, in which case fire staff will attempt to protect the midden or nest from fire, if possible. In these cases, we think it is likely that key habitat components of red squirrel habitat will be lost to fire and that this could result in short-term adverse effects to red squirrel habitat if fire intensity is low, considering red squirrels continue to occupy areas that burned at low intensity during past wildfires (Figure 18). However, if fire intensity is higher due to fuel loading, fire weather conditions, etc., effects to habitat could be more long-term, especially if dozer lines or

[90] BO at 44.

[91] EA at 99-101.

[92] BO at 45.

> other type of actions that completely remove habitat are used to maintain desired fire perimeters.[93]
>
> We expect that prescribed fire will reduce the risk of wildfire by reducing accumulations of fuels, but it will also modify and/or result in the loss of the key habitat components (such as snags and logs) that comprise Mount Graham red squirrel habitat. Some of these key habitat components will be recruited through the use of prescribed fire, as well.[94]

In locations where it is difficult to protect active middens from the effects of prescribed burning—which could include loss of the midden, loss of key habitat components, and loss of red squirrel individuals—the Forest Service proposes to use sprinklers to protect those middens.

> In some places, one to five active middens may be present in an area that are unable to be protected, in which case the Forest Service may create a fire control line around these middens (at least 30 ft [9 m] away) or may use a hose lay including sprinklers to protect these middens during broadcast burning treatments, if feasible.[95]

The EA 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. In addition, the EA fails to acknowledge that the potential for prescribed fire to burn outside of planned parameters and/or to escape containment is much greater in spring, due to the greater potential for high winds in spring. Winds in southeastern Arizona are highest March through June, with wind speeds peaking in April and May.[96] During these months, the wind is primarily from the Southwest, the direction that poses the greatest risk that prescribed fires along the southern and western flanks of Mount Graham would threaten the mountaintop habitat.[97]

Mount Graham red squirrel habitat, described as Mount Graham red squirrel species range, extends for several miles along the highest elevations of the Pinaleño Project area.[98] 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.

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[93] BO at 45.

[94] BO at 45.

[95] EA at 101.

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

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

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

Furthermore, the EA fails to acknowledge that the negative effects of prescribed burning are likely to be greatest during the breeding season, when Mount Graham red squirrels are raising pups, which have limited or no mobility. Instead, the EA explicitly proposes to use prescribed fire in spring and during breeding season.

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 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.[99]

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.

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.[100]

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. This would represent a population decline of 13%.

> ***Suggested Remedies:***
>
> The Forest Service must disclose the impacts of defined, site-specific proposed actions in a subsequently prepared NEPA document. Specifically, the Forest Service must identify the existing silvicultural conditions within Mount Graham red squirrel habitat, especially

[99] BO at 53.

[100] BO at 52.

the large-tree component, and specify the need for removing trees greater than 16-inches diameter.

The Forest Service must disclose and analyze the potential impacts of implementing thinning treatments and prescribed burns during the Mount Graham red squirrel breeding season. This must include the potential for escaped prescribed fires.

The Forest Service should analyze and disclose the impacts of a mitigation measure or alternative that prohibits thinning treatments within PACs during Mount Graham red squirrel breeding season and prohibits prescribed burning within or near PACs during breeding season.

V. THE EA FAILS TO DISCLOSE AND ANALYZE THE EFFECTS OF FIRE RETARDANTS ON MOUNT GRAHAM RED SQUIRREL AND MEXICAN SPOTTED OWL.

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.[101]

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

[101] EA at 105.

> 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.[102]
>
> 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.[103]
>
> 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.[104]

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.[105] 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

[102] BO at 14.

[103] BO at 12.

[104] BO at 19.

[105] 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

> impacted by a retardant drop as retardant would generally not be used over mature trees. Therefore, we consider these effects to be discountable.[106]

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.

> 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.[107]

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. 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.[108] 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. 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.[109] In sum, the 2023 Biological Opinion doesn't apply to the Pinaleño project since 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 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. Instead, the EA fails almost entirely to disclose the planned application of fire retardant, mentioning the action only indirectly in a design feature in Appendix C of the EA.[110] The planned use of fire retardants is not

[106] 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.

[107] 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.

[108] EA at 105.

[109] BO at 12.

[110] EA at 95.

mentioned elsewhere in the Final EA, and is not mentioned at all in the Draft EA, nor in any of the specialists' reports.[111]

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.

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.

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 instead 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 Pinaleño Project is to minimize the risk that such emergency uses will inadvertently become necessary.

Suggested Remedies:

The Forest Service must 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.

[111] The impacts of fire retardants were not addressed in our previous comments on this project 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.

> 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.

VI. THE EA FAILS TO PROPERLY DISCLOSE AND ANALYZE THE IMPACTS TO WESTERN YELLOW-BILLED CUCKOO.

While there are no known observations of western yellow-billed cuckoo within the project area, there is occupied location directly adjacent to the project area, and there are 12,162 acres of potential YBCU habitat in the project area.[112]

> Cuckoos have recently been detected within the action area and have been observed within 0.125 miles from the proposed action, which is within the known normal daily dispersal distance of up to 2.09 miles (3.36 km) per day. Because potential cuckoo habitat exists within the Pinaleño EMA and cuckoos could be using this habitat as they transit through the area, it is reasonable to conclude that cuckoos could be present in the proposed action area and therefore could be affected by the proposed action.[113]

The Project proposes mechanical thinning across 80% of the yellow-billed cuckoo potential habitat in the project area and proposes herbicide application in at least half of the potential habitat.[114] The EA finds that the proposed actions may affect, and are likely to adversely affect, yellow-billed cuckoo.[115] The Biological Opinion finds that the proposed action are not likely to jeopardize the continued existence of the species, in large part because there are currently no known occurrences of western yellow-billed cuckoo and no designated critical habitat in the project area.[116]

In our scoping comments, we discussed the need for site-specific information on silvicultural treatments in order to provide necessary protections for sensitive and protected species, and we recommended that the Forest Service analyze as an alternative the proposed strategic placement of thinning treatments to facilitate the use of prescribed burning to restore forest structural diversity, an approach we describe as Strategic Treatments for Fire Use.[117] As discussed above in these objections, the Forest Service neglected to analyze an such an alternative. At the same

[112] Wildlife Specialist Report at 76.

[113] BO at 90.

[114] EA at 233.

[115] EA at 51.

[116] BO at 99.

[117] Center for Biological Diversity, Comments on Scoping for the Pinaleño FireScape Project Environmental Assessment, September 4, 2020, at 51-56.

time, the EA fails to consider alternatives that reduce or eliminate the impacts of thinning and prescribed burning in western yellow-billed cuckoo habitat.

Suggested Remedies:

The Forest Service should consider design features, measures, and alternatives that reduce or eliminate the impacts of thinning and prescribed burning in western yellow-billed cuckoo habitat.

VII. THE EA FAILS TO PROPERLY DISCLOSE AND ANALYZE THE IMPACTS TO GILA TROUT AND GILA CHUB.

The EA rightly finds that the Project is likely to adversely affect both Gila trout and Gila chub.[118] For both species, the EA acknowledges that the proposed thinning will increase sedimentation and remove trees, leading to increased water temperatures that adversely affect fish survival and reproduction.[119] However, the EA dismisses the negative effects of herbicides based on the assertion that "specific design features address stream crossings and herbicide use".[120]

These design features for herbicide application include one that is directly relevant to Gila chub and Gila trout: "Only herbicides labeled for aquatic use (i.e., Rodeo (glyphosate) Renovate (triclopyr) and Weedar 64 (2,4-D amine)) will be used within 30 feet of streams and other bodies of water".[121] However, in our previous scoping comments on this project we submitted information that strongly indicates the inadequacy of this design feature for these chemicals.

> The labeled, aquatic use of 2,4-D can kill aquatic plants and invertebrates that endangered fish rely on for food and shelter, resulting in the U.S. National Marine Fisheries Service concluding that the use of 2,4-D was likely to jeopardize the continued existence of endangered Pacific salmon and steelhead species.[122]
>
> Some glyphosate formulations and co-formulants have been found to be "highly toxic" to certain species of fish.[123] EPA analysis also indicated that considerable no-spray buffers would be needed to keep off-target plants from being harmed by glyphosate use, more

[118] EA at 51, 52.

[119] EA at 55-56.

[120] EA at 55-56

[121] EA at 97.

[122] NMFS. National Marine Fisheries Service Endangered Species Act Section 7 Consultation. Biological Opinion Environmental Protection Agency Registration of Pesticides 2,4-D, Triclopyr BEE, Diuron, Linuron, Captan, and Chlorothalonil. June 30, 2011. Available here: https://www3.epa.gov/pesticides/endanger/litstatus/final-4th-biop.pdf.

[123] *Id.* at 82, 84.

than 1000 feet for certain aerial applications and nearly 400 feet for certain ground applications.[124]

Triclopyr butoxyethyl ester (BEE) is classified as "highly toxic" to aquatic organisms.[125]

Suggested Remedies:

The Forest Service should analyze the effects of the proposed use of Rodeo (glyphosate) Renovate (triclopyr) and Weedar 64 (2,4-D amine) in close proximity to streams, with respect to the impacts to Gila chub and Gila trout. The Forest Service must analyze as an alternative or mitigation measure EPA's the 1000-foot buffer for aerial application, and the 400-foot buffer for ground applications, or provide a reasoned basis for not doing so.

VIII. 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.[126]

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,[127] 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."[128] 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

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[124] *Id.* page 92.

[125] EPA. Triclopyr (Acid, Choline salt, TEA salt, BEE): Draft Ecological Risk Assessment for Registration Review. Sept. 30, 2029. Pg. 6. Available here: https://www.regulations.gov/document?D=EPA-HQ-OPP-2014-0576-0026.

[126] EA at 24.

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

[128] 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."[129] 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"[130] 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 order to restore fire regimes and facilitate prescribed burning.

IX. 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."[131]

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 Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act identifies several factors that indicate the potential for significant impact.[132] 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.

[129] EA at 24.
[130] EA at 34.
[131] See U.S. Forest Service, Forest Service Handbook, FSH 1909.15.01(1).
[132] 40 CFR 1508.27. Available at: https://www.energy.gov/sites/default/files/NEPA-40CFR1500_1508.pdf.

(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.[133] 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.[134] 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."[135] 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."[136] Taking the required "hard look" requires agencies to "use… the best available scientific information."[137]

NEPA's review obligations are more stringent and detailed at the project level, or "implementation stage," given the nature of "individual site specific projects."[138] "[G]eneral

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[133] EA at 5.

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

[135] 42 U.S.C. § 4332(2)(C); *see also* 40 C.F.R. § 1501.4.

[136] 40 C.F.R. § 1502.1 (1978).

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

[138] *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."[139]

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."[140] 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.[141] Indeed, "location, not merely total surface disturbance, affects habitat fragmentation,"[142] 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."[143] "The agency must explain the conclusions it has drawn from its chosen methodology, and the reasons it considered the underlying evidence to be reliable."[144] 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."[145]

Agencies must disclose impacts that are "cumulative," which regulations define as:

> the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.[146]

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[139] *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").

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

[141] *Id*. at 707.

[142] *Id*.

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

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

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

[146] 40 C.F.R. § 1508.7.

The Forest Service NEPA Handbook further explains:

> Groups of actions may have collective or cumulative impacts that are significant. Cumulative effects must be considered and analyzed without regard to land ownership boundaries or who proposes the actions. Consideration must be given to the incremental effects of the action when added to the past, present, and reasonably foreseeable related future actions of the Forest Service, as well as those of other agencies and individuals, that may have a measurable and meaningful impact on particular resources.[147]

Further, "In analyzing the affected environment, NEPA requires the agency to set forth the baseline conditions."[148] Specifically, NEPA requires agencies to "succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration."[149] The Council on Environmental Quality, the agency charged with interpreting NEPA, has explained that "[t]he concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process."[150] 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."[151]

In other words, 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.

> ***Suggested Remedies:***
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> 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.

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[147] Forest Service Handbook 1909.15, Ch. 15.1.

[148] *Western Watersheds Project v. BLM*, 552 F. Supp. 2d 1113, 1126 (D. Nev. 2008).

[149] 40 C.F.R. § 1502.15 (1978).

[150] Council on Environmental Quality, Considering Cumulative Effects Under the National Environmental Policy Act 41 (1997), https://ceq.doe.gov/publications/cumulative_effects.html (last visited July 5, 2019).

[151] *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).

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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