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Comments: October 7, 2024

Re: Preliminary scoping comments to the Hermits Peak-Calf Canyon Recovery Project

Ms. Amina Sena, District Ranger
USDA Forest Service
Santa Fe National Forest
Pecos/Las Vegas District

Submitted via: https://cara.fs2c.usda.gov/Public/CommentInput?Project=66857

Dear Ms. Sena,

Santa Fe Forest Coalition is providing comments to the Hermits Peak-Calf Canyon Recovery Project (HPCC Recovery Project) #66857 as described in the September 6, 2024 scoping letter. Proposed are a broad range of activities on 167,700 acres that maybe subject to post-fire flooding as a result of the 2022 Hermits Peak-Calf Canyon wildfire and an adjacent 33,083 acres of unburned lands. In part, these include removing hazardous trees, restoring damaged infrastructure, and reducing hazardous fuels both in burned and unburned areas.

1. Please Explain How Post-Fire Tree Cutting Recovers Forests

The project calls for cutting and removing dead or dying hazardous trees on approximately 40,000 acres that burned with high and moderate burn severity and opening both unburned areas and areas that burned with low severity to fuelwood cutting. This is characterized as necessary to "recover" the forest following the Hermits Peak-Calf Canyon wildfire ignited by an escaped intentional burns in April 2022. However, post-fire tree cutting at this scale can result in the opposite of recovery by increasing the fire hazard, degrading water quality and impairing wildlife habitat and the ecological function of the forest.

In the past, the Forest Service and private timber companies in the southwest have often "salvaged" logged dead and dying standing trees to recover their commodity value following wildfire. In this case, a different reason is given for cutting millions of trees, namely the recovery of forest function following various burn intensities.

There is little, if any, substantive scientific evidence supporting the idea that fire-adapted forests might be improved by cutting dead or dying trees following a fire event. However, there is robust scientific consensus that cutting fire damaged trees increases fire risk by adding materials such as tree tops, limbs, needles, and other by-products of tree cutting to the forest floor, thus increasing the available fine fuels. This increases the reburn potential by concentrating flammable slash near the ground. In addition, the largest, most fire-resistant snags, which provide perching, nesting and feeding sites for wildlife, are often removed.

Post-fire tree cutting disrupts natural ecological processes, threatens the habitat of wildlife species, and reduces water quality. In addition, cutting dead and dying trees hinders forest regeneration and restoration by compacting soils, damaging riparian corridors, introducing and spreading invasive species, causing erosion, adding sediment to streams, degrading water quality and removing trees utilized for habitat.

In a summary of the research findings into post-fire logging, Donato et. al. 2006 found that ". . . post-fire logging by removing naturally seeded conifers and increasing surface fuel loads, can be counterproductive to goals of forest regeneration and fuels reduction. The results presented suggest that post-fire logging may conflict with ecosystem recovery goals."

In testimony before the House Subcommittee on Resources (November 10, 2005), eminent forest ecologist and University of Washington Professor Dr. Jerry Franklin noted that logging dead trees often has greater negative impacts than logging of live trees. He concluded that "timber salvage is most appropriately viewed as a 'tax' on ecological recovery."

We are sending separately pdfs. of studies documenting the scientific consensus that post-fire tree cutting is counter productive to forest recovery. Please review the proposed action and stated purpose and need of this project in light of these findings.

2. Please consider More Robust Protection of Goshawk and Its Prey

Managing the habitat of the northern goshawk, a species of conservation concern, and its prey species have long been seen as necessary to preserve viable populations of wildlife on the Santa Fe National Forest. In 1996 the Forest Service amended every forest plan in the Southwestern Region, including the Santa Fe National Forest Plan, to incorporate the Management Recommendations for the Northern Goshawk in the Southwestern United States (Reynolds et al. 1992 or MRNGs) arguing that these expert recommendations provide the best available scientific information (BASI) for managing the habitat of the northern goshawk and its prey species.

The current SFNF forest plan adopted a much more limited version of the MRNG. Detailed recommendations regarding the management of nest areas, post-fledgling family areas and foraging habitat are absent. We suggest that this project not limit itself to these minimum guidelines but integrate the MRNG recommendations for minimal canopy cover requirements, forage utilization standards, snags, woody debris, road minimums and maintenance of mycorrhizal networks into the project's purpose and need.

This would ensure protection for the 7 goshawk prey species requiring dense canopies that are deficient in the post-fire recovery area. The most significant of these is the tassel-eared squirrel (Sciurus aberti) that attains high populations in closed canopied forests interspersed with younger age classes. This arboreal squirrel lives and nest in ponderosa pine trees, and their food consists almost exclusively of items produced by ponderosa pine and the mycorrhizal fungi symbiotic with it. The tassel-eared squirrel's optimum habitat is mid-to-late-seral ponderosa pine forest, i.e., trees approximately 12-19 inches in diameter, intermixed with larger trees, with interlocking crowns. A study on the Carson National Forest determined that "Density of 12-16 DBH ponderosa pine was the single best predictor of squirrel density" (Frey 2004).

In addition to being an important goshawk prey species, the tassel-eared squirrel sustains the ponderosa pine ecosystem by consuming mycelium and fruiting bodies of hypogeous fungi (truffles) and epigeous fungi (mushrooms) and distributing spores in their fecal pellets (Dodd at al. 2003; States and Wettstein 1998; Stephenson 1975; Maser et al. 1978). This mycorrhizal network enhances seedling survival and forest regeneration and enables trees of different species to share water and nutrients and exchange information such as the presence of defoliating insects (Simard et al. 1997).

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

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

Implementation of the Dodd guidelines requires that this project (1) conduct surveys for the optimal habitat characteristics as identified by Dodd and others; (2) designate meso-reserves containing the best quality habitat; and (3) limit tree cutting in designated areas that may adversely impact tassel-eared squirrels and the hypogeous fungi that provide a crucial dietary component.

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

If the project decides to forgo these recommendations, please explain the scientific basis for removing critical elements of the MRNG and the suggested BASI required to maintain viable goshawk prey populations. 36 C.F.R § 219.3.

3. Consider Standards to Protect All White Pine Trees

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

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

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

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

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

Respectfully Submitted,

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REFERENCES

Andresen, John W.; Steinhoff, Raphael J. 1971. The taxonomy of Pinus flexilis and Pinus strobiformis. Phytologia 22(2) 57-70

Baird, B.N. 2006. Comment on "Post-Wildfire Logging Hinders Regeneration and Increases Fire Risk". Technical Comment, Science Vol. 313. (42KB PDF)

Benda, L., et.al. 2003. Effects of Post-wildfire Erosion on Channel Environments, Boise River, Idaho. Forest Ecology and Management 178, 105-119. (646KB PDF)

Beschta, R.L., et.al. 1995. Wildfire and Salvage Logging: Recommendations for Ecologically Sound Post-Fire Salvage Logging and Other Post-Fire Treatments on Federal Lands in the West. Pacific Rivers Council. Eugene, OR. 14 pp. (361KB PDF)

Beschta, R.L. et.al. 2004. Postfire Management on Forested Public Lands of the Western United States. Conservation Biology, 18(4) 957-967. (41KB PDF)
Beiler, K. et al. 2004. Ectomycorrhizal fungal responses to management practices in a southwest ponderosa pine forest, Ecological Society of American meeting, Portland, Oregon.

Beyers, J.L. 2004. Postfire Seeding for Erosion Control: Effectiveness and Impacts on Native Plant Communities. Conservation Biology, 18(4) 947-956. (145KB PDF)

Conklin DA, Fairweather ML, Ryerson DE, Geils BW, Vogler DR. 2009. White pines, blister rust, and management in the Southwest. USDA Forest Service, Southwestern Region, R3-FH-09-01

Dodd, N. L. 2003. Landscape scale habitat relationships to tassel-eared squirrel
population dynamics in north-central Arizona. Arizona Game and Fish Department Technical Guidance Bulletin No. 6, Phoenix, Arizona. 28 pp.

Donato, D.C., et.al. 2006. Post-Wildfire Logging Hinders Regeneration and Increases Fire Risk. Science Express Brevia, Science, Vol. 311. no. 5759. (339KB PDF)

Donato, D.C., et.al. 2006. Response to Comments on "Post-Wildfire Logging Hinders Regeneration and Increases Fire Risk". Technical Comment, Science Vol. 313. (121KB PDF)

Duncan, S. 2002. Postfire logging: is it beneficial to a forest? Science Findings (47). USDA Forest Service Pacific Northwest Research Station. (233KB PDF)

Fins, L.; Byler, J.; Ferguson, D.; Harvey, A.; Mahalovich, M.F.; McDonald, G.; Miller, D.; Schwandt, J.; Zack, A. 2001. Return of the Giants; restoring white pine ecosystems by breeding and aggressive planting of blister rust-resistant white pines. Station Bulletin 72. University of Idaho; Moscow, Idaho. 20 p.

Foster, D.R., and D.A. Orwig. 2006. Preemptive and Salvage Harvesting of New England Forests: When Doing Nothing Is a Viable Alternative. Conservation Biology, 20(4) 959-970. (545KB PDF)

Frey, J. 2004. Abert's squirrel (Sciurus aberti) monitoring and habitat analysis on Carson National Forest, New Mexico. A Final Contract Report R3-83A7-4-0038 Completion Report. Carson National Forest, December 9, 2004. 21p.

Hanson, C.T., and M.P. North. 2006. Post-fire Epicormic Branching in Sierra Nevada Abies concolor (white fir). International Journal of Wildland Fire, 15, 31-35. (267KB PDF)

Hutchins, H.E. and R.M. Lanner. 1982. The Central Role of Clark's Nutcracker in
the Dispersal and Establishment of Whitebark Pine, Oecologia 55:192-201.

Hutto, R.L. 2006. Toward Meaningful Snag-Management Guidelines for Postfire Salvage Logging in North American Conifer Forests. Conservation Biology, 20(4) 984-993. (325KB PDF)

Ingalsbee, T. 2003. Salvaging Timber; Scuttling Forests: The Ecological Effects of Post-Fire Salvage Logging. Western Fire Ecology Center, American Lands Alliance. (42KB PDF)

Johnson, J.S.; Sniezko, R.A. Quantitative Disease Resistance to White Pine Blister Rust at Southwestern White Pine's (Pinus Strobiformis) Northern Range. Front. For. Glob. Chang. 2021, 4, 765871.

Karr, J. R., et.al. 2004. The Effects of Postfire Salvage Logging on Aquatic Ecosystems in the American West. Bioscience 54,1029-1033. (465KB PDF)

Kotliar, N.B., S.L. Haire, and C.H. Key. 2003. Lessons from the Fires of 2000: Post-Fire Heterogeneity in Ponderosa Pine Forests. U.S. Forest Service Proceedings RMRS-P-29. (33KB PDF)

Lindenmayer, D.B., and R.F. Noss. 2006. Salvage Logging, Ecosystem Processes, and Biodiversity Conservation. Conservation Biology, 20(4) 949-958. (298KB PDF)

Lindenmayer, D.B., and K. Ough. 2006. Salvage Logging in the Montane Ash Eucalypt Forests of the Central Highlands of Victoria and Its Potential Impacts on Biodiversity. Conservation Biology, 20(4) 1005-1015. (237KB

PDF)

Maser, C.; Trappe, J.M.; Nussbaum, R.A. 1978. Fungal-small mammal interrelationships with emphasis on Oregon coniferous forests. Ecology. 59: 799-809.

McIver, J.D., and L. Starr. 2000. Environmental Effects of Postfire Logging: Literature Review and Annotated Bibliography. U.S. Forest Service, Gen. Tech. Rep. PNW-GTR 486. (396KB PDF)

McIver, J.D., and R. Ottmar. 2007. Fuel Mass and Stand Structure After Post-fire Logging of a Severely Burned Ponderosa Pine Forest in Northeastern Oregon. Forest Ecology and Management 238, 268-279. (857KB PDF)

McHugh, C.W., and T.E. Kolb. 2003. Ponderosa Pine Mortality Following Fire in Northern Arizona. International Journal of Wildland Fire, 12, 7-22. (228KB PDF)

McKinney S.T., Tomback D. F. 2011. Altered community dynamics in Rocky Mountain whitebark pine forests and the potential for accelerating declines. In: Richards KE, editor. Mountain ecosystems: dynamics, management and conservation. New York: Nova Publishers, Inc. pp. 45-78

Menon, M.; Bagley, J.C.; Page, G.F.M.; Whipple, A.V.; Schoettle, A.W.; Still, C.J.; Wehenke, C.; Waring, K.M.; Flores-Renteria, L.; Cushma, S.A.; et al. 2021. Adaptive Evolution in a Conifer Hybrid Zone Is Driven by a Mosaic of Recently Introgressed and Background Genetic Variants. Commun. Biol. 2021, 4, 160.

Newton, M., et.al. 2006. Comment on "Post-Wildfire Logging Hinders Regeneration and Increases Fire Risk". Technical Comment, Science Vol. 313. (58KB PDF)

Reeves, G.H., et.al. 2006. Postfire Logging in Riparian Areas. Conservation Biology, 20(4) 994-1004. (215KB PDF

Prather et al. 2006. Landscape Models to Predict the Influence of Forest Structure on Tassel-Eared Squirrel Populations. The Journal of Wildlife Management
Vol. 70, No. 3, pp. 723-731

Reynolds, Richard T.; Graham, Russell T.; Reiser, M. Hildegard; and others. 1992. Management recommendations for the northern goshawk in the southwestern United States. Gen. Tech. Rep. RM-217, Ft. Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 90 p.

Saab, V.A., J. Dudley, and W.L. Thompson. 2004. Factors Influencing Occupancy of Nest Cavities in Recently Burned Forests. The Condor106, 20-36. (183KB PDF)

Schwandt, J.W.; Marsden, M.A.; McDonald, G.I. 1994. Pruning and thinning effects on white pine survival and volume in northern Idaho. In: Proc. of Symposium on interior cedar-hemlock-white pine forests: ecology and management. Washington State Univ., Pullman, WA, 99164-6410: 167-172.

Shatford, J.P.A., D.E. Hibbs, and K.J. Puettmann. 2007. Conifer Regeneration after Forest Fire in the Klamath-Siskiyous: How Much, How Soon? Journal of Forestry, April/May 2003, 139-146. (4MB PDF)

Simard SW, Perry DA, Jones MD, Myrold DD, Durall DM, Molina R. 1997. Net transfer of carbon between ectomycorrhizal tree species in the field. Nature 388: 579-582.

States, J.S., and W.S.Gaud. 1997. Ecology of hypogeous fungi associated with ponderosa pine. I. Patterns of distribution and scorocarp production in some Arizona forests. Mycologia 89:712-721.

States, J.S., and P.J. Wettstein. 1998. Food habitats and evolutionary relationships of the tassel-eared squirrel (Sciurus aberti). Pages 185-194 in M. A. Steele, J. F. Merritt, and D. A. Zegers, editors. Ecology and evolutionary biology of tree squirrels. Virginia Museum of Natural History Special Publication No. 6, Martinsville, Virginia, USA.

Steinhoff, R. J., & Andresen, J. W. 1971. Geographic variation in Pinus flexilis and Pinus strobiformis and its bearing on their taxonomic status. Silvae Genetica, 20, 159-167.

Stephenson, R. L. 1975. Reproductive biology and food habits of Abert's squirrels in central Arizona. Thesis, Arizona State University, Tempe, Arizona, USA.

Steinhoff, R. J., & Andresen, J. W. 1971. Geographic variation in Pinus flexilis and Pinus strobiformis and its bearing on their taxonomic status. Silvae Genetica, 20, 159-167.

Tomback, D. F.. 1982. Dispersal of whitebark pine seeds by Clark's Nutcracker: a mutualism hypothesis. Journal of Animal Ecology, 51, 451-467.

Tomback D. F., Anderies A. J., Carsey K. S., Powell M. L., Mellmann-Brown S. 2001b. Delayed seed germination in whitebark pine and regeneration patterns following the Yellowstone fires. Ecology 82: 2587-2600.

Yarborough et al. 2015. Habitat use by Abert's squirrel (Sciurus Aberti) in managed forests. The Southwestern Naturalists 60 (2-3): 166-170

Weatherspoon, C.P. and C.N. Skinner. 1995. An Assessment of Factors Associated with Damage to Tree Crowns form the 1987 Wildfires in Northern California. Forest Science, 41(3) 430-451. (2.3MB PDF)