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Submitted via electronic portal: https://cara.fs2c.usda.gov/Public//CommentInput?Project=65019

Subject: Public Comment on the Draft Environmental Assessment for the Lower North-South Vegetation Management Project.

December 4, 2024

Dear Mr. Nehl and Ms. Wyndham:

The following are the comments of the undersigned on the draft environmental assessment for the Lower North-South Vegetation Management Project (hereinafter "Project" or "LNS"). These comments complement and extend our previous comments on this project, dated February 19, 2024 and March 18, 2024. We hereby incorporate those previous comments by reference.

I. INTRODUCTION. The undesigned appreciate the desire of the Forest Service and other parties to reduce the susceptibility of infrastructure and communities to wildfire. However, the intensity and extensiveness of the proposed Lower North-South Project is questionable, and the proposed project does not ensure that proven activities to protect communities will be prioritized and executed. Lack of site-specific information, conclusory paragraphs about impacts, and vague references to undefined and yet-to be identified "adaptive management," are insufficient for NEPA's hard look analysis. These shortfalls are compounded by the fact that the proposed project would have significant impacts on federally listed and management indicator species and prized roadless forests. Given the project's scale, size, duration, and impacts, including to roadless forests and federally listed species and designated critical habitat, an Environmental Impact Statement must be prepared for this proposed project.

II. FLAWED RATIONALES FOR THE CLAIMED PURPOSE AND NEED RELATED TO VEGETATIVE MANAGEMENT, AND EFFECTS OF THE NO ACTION ALTERNATIVE.

The Forest Service provides cursory rationales to support its vegetation treatments and aggressive basal area targets, namely by citing departures from historic conditions, threats from natural disturbances (wildfire, insects and diseases), and increased wildfire risks due to past wildfire suppression grazing, logging and infrastructure development. The agency's underlying assumption that it can manipulate vegetation to address decades of mismanagement is both highly controversial and uncertain, thereby necessitating detailed environmental analysis under

an EIS. To ensure that the agency has taken the required "hard look," courts hold that the agency must utilize "public comment and the best available scientific information." *Biodiversity Cons. Alliance v. Jiron*, 762 F.3d 1036, 1086 (10th Cir. 2014). As such, the Forest Service must adequately demonstrate that the widespread use of specific proposed treatments under the proposed actions will actually move the vegetation to be more resilient to disturbances and be more fire-adapted, restore ecological conditions, improve watersheds, and promote and maintain biodiversity, which are the stated purposes of the project. In doing so, we caution the Forest Service not to rely on uncertain and controversial assumptions that the proposed treatments will effectively achieve the intended purposes and meet the stated needs.

A. CLIMATE CHANGE & HISTORICAL REFERENCES

Recent science has questioned the common assumption that the entire lower elevation forested landscape was primarily shaped by frequent, low intensity fires and that current trends toward higher severities are substantially departed from historic ranges of variability.

Specifically, Baker et al., 2023 explained the following:

> The structure and fire regime of pre-industrial (historical) dry forests over ~26 million ha of the western USA is of growing importance because wildfires are increasing and spilling over into communities. Management is guided by current conditions relative to the historical range of variability (HRV). Two models of HRV, with different implications, have been debated since the 1990s in a complex series of papers, replies, and rebuttals. The "low-severity" model is that dry forests were relatively uniform, low in tree density, and dominated by low- to moderate-severity fires; the "mixed-severity" model is that dry forests were heterogeneous, with both low and high tree densities and a mixture of fire severities. Here, we simply rebut evidence in the low-severity model's latest review, including its 37 critiques of the mixed-severity model. A central finding of high-severity fire recently exceeding its historical rates was not supported by evidence in the review itself. A large body of published evidence supporting the mixed-severity model was omitted. These included numerous direct observations by early scientists, early forest atlases, early newspaper accounts, early oblique and aerial photographs, seven paleo-charcoal reconstructions, >18 tree-ring reconstructions, 15 land survey reconstructions, and analysis of forest inventory data. Our rebuttal shows that evidence omitted in the review left a falsification of the scientific record, with significant land management implications. The low-severity model is rejected and mixed-severity model is supported by the corrected body of scientific evidence.

Baker et al, 2023 (Ex. 6).

Specific to the northern Colorado Front Range, Sherriff and Veblen, 2007 (Ex. 48) found that only about 20 percent of the ponderosa pine forests in northern Colorado were subject to a frequent, low-intensity fire regime.[1] An earlier study by these researchers found the following:

> These findings for the P. ponderosa zone above ca. 2200 m (i.e. most of the zone) contradict the widespread perception that fire exclusion, at least at the stand scale of tens to hundreds of hectares, has resulted in unnaturally high stand densities or in an atypical abundance of shade-tolerant species. At relatively mesic sites (e.g. higher elevation, north-facing), the historic fire regime consisted of a variable-severity regime, but forest structure was shaped primarily by severe fires rather than by surface fires.

Sherriff and Veblen, 2006 (Ex. 47).

Thus, the Forest Service cannot assume that the entire landscape was composed of open, park-like tree stands. Widespread application of treatments that would make every stand very open (see section III below) would clearly not be appropriate for the Lower North-South landscape. It would be a shock wave through important wildlife habitat and roadless areas, altering the forests for decades, if not generations.

Recent research indicates the futility of efforts designed to stop fire on the landscape scale and the damage done to important resources by attempting to do so (Dellasalla et al, 2022 (Ex.17).:

> Fire suppression policies and "active management" in response to wildfires are being carried out by land managers globally, including millions of hectares of mixed conifer and dry ponderosa pine (Pinus ponderosa) forests of the western USA that periodically burn in mixed severity fires. Federal managers pour billions of dollars into command-and-control fire suppression and the MegaFire (landscape scale) Active Management Approach (MFAMA) in an attempt to contain wildfires increasingly influenced by top down climate forcings. Wildfire suppression activities aimed at stopping or slowing fires include expansive dozerlines, chemical retardants and igniters, backburns, and cutting trees (live and dead), including within roadless and wilderness areas. MFAMA involves logging of large, fire-resistant live trees and snags; mastication of beneficial shrubs; degradation of wildlife habitat, including endangered species habitat; aquatic impacts from an expansive road system; and logging-related carbon emissions. Such impacts are routinely dismissed with

[1] These authors state: "Management attempts to restore historic forest structures and/or fire conditions must recognize that infrequent severe fires were an important component of the historic fire regime in this cover type in northern Colorado."

> minimal environmental review and defiance of the precautionary principle in environmental planning. Placing restrictive bounds on these activities, deemed increasingly ineffective in a changing climate, is urgently needed to overcome their contributions to the global biodiversity and climate crises. We urge land managers and decision makers to address the root cause of recent fire increases by reducing greenhouse gas emissions across all sectors, reforming industrial forestry and fire suppression practices, protecting carbon stores in large trees and recently burned forests, working with wildfire for ecosystem benefits using minimum suppression tactics when fire is not threatening towns, and surgical application of thinning and prescribed fire nearest homes.

The DellaSala et al., 2022 (Ex.17) article comes in response to Prichard et al. 2021 (Ex. 41); an article that we see the Forest Service often cite to support its proposed actions and assert broad scientific consensus as to their efficacy. However, even here Prichard et al. 2021 calls into question the Forest Service's assumption that its proposed actions will achieve the stated purpose and need. For example, they explain:

> Fuel reduction treatments are not appropriate for all conditions or forest types (DellaSala et al. 2004, Reinhardt et al. 2008, Naficy et al. 2016). In some mesic forests, for instance, mechanical treatments may increase the risk of fire by increasing sunlight exposure to the forest floor, drying surface fuels, promoting understory growth, and increasing wind speeds that leave residual trees vulnerable to wind throw (Zald and Dunn 2018, Hanan et al. 2020).

Such conclusions indicate that treatments within areas of mesic site conditions may not be appropriate. In addition, Prichard et al, 2021 (Ex. 41) explains the following:

> In other forest types such as subalpine, subboreal, and boreal forests, low crown base heights, thin bark, and heavy duff and litter loads make trees vulnerable to fire at any intensity (Agee 1996, Stevens et al 2020). Fire regimes in these forests, along with lodgepole pine, are dominated by moderate- and high-severity fires, and applications of forest thinning and prescribed underburning are generally inappropriate.

In any case, there are limitations on the benefits of fuel reduction treatments. Any kind of fuel treatment is unlikely to reduce the area burned in the years following treatment. Reinhardt et al, 2008 (Ex. 42). Furthermore, fuel treatment may increase the rate of spread of subsequent fires because thinned areas are more open to the sun and wind; they dry out and thus become more easily ignitable. Ibid.

As we have previously stated, a smaller project, one more focused on treating the area immediately surrounding infrastructure, would be more appropriate for the project area. Please see our February, 2024 comments at 2.

B. ASSUMPTION AND UNCERTAINTY ABOUT VEGETATION TREATMENTS AND WILDFIRE.

Ultimately, the agency's assumptions that reducing tree densities and fuel loadings will result in less intense fire behavior is controversial. Science shows that fuel treatments have a modest effect on fire behavior, and that fuel reduction does not necessarily reduce wildfire across a broad landscape such as the LNS project area. Lydersen, et al., 2014 (Ex. 34) (explaining that reducing fuels does not consistently prevent large forest fires, and seldom significantly reduces the outcome of large fires). Studies from the Forest Service's own Rocky Mountain Research Station refute the Forest Service's assumptions that vegetation treatments will result in less intense fire behavior. Calkin, D.E., et al., 2014 (Ex. 10) (explaining, "[p]aradoxically, using wildfire suppression to eliminate large and damaging wildfires ensures the inevitable occurrence of these fires").

Large fires are driven by several conditions that completely overwhelm fuels (Pierce, J. and G. Meyer, G, 2008) (Ex. 40). Because weather is often the greatest driving factor of a forest fire, and because the strength and direction of the wildfire is often determined by topography, fuels reduction projects cannot guarantee fires of less severity (Rhodes, J. 2007 (Ex. 43), Carey, H. and M. Schumann, 2003 (Ex. 12)).

Vegetation treatments based on historical reference conditions to reduce high-intensity wildfire risk on a landscape scale are undermined by the fact that land managers have shown little ability to target treatments where fires later occur *in* Barnett, K. et al, 2016 (Ex. 7), Rhodes, J. and Baker, W. 2008 (Ex. 44) (finding that fuel treatments have a mean probability of 2-8% of encountering moderate- or high- severity fire during the assumed 20-year period of reduced fuels). Analysis of the likelihood of fire is central to estimating likely risks, costs and benefits incurred with the treatment or nontreatment of fuels. If fire does not affect treated areas while fuels are reduced, treatment impacts are not counterbalanced by benefits from reduction in fire impacts. Results from Rhodes and Baker 2008 (Ex. 44) indicate that "even if fuel treatments were very effective when encountering fire of any severity, treatments will rarely encounter fire, and thus are unlikely to substantially reduce effects of high-severity fire."

Fuel treatments could even make fire worse—exacerbating the very problems the Forest Service is claiming to address. Fuel reduction may exacerbate fire severity in some cases as such projects leave behind combustible slash through at least one dry season, open the forest canopy to create more ground-level biomass, and increase solar radiation which dries out the understory (Graham,

R.T., et al, 2012 (Ex. 19), Martinson, E. J. and P. N. Omi, 2013 (Ex. 35) - finding that in about a third of cases reviewed mechanical fuel reductions increased fire spread). Also fuel reduction can exacerbate fire spread by opening a forest to wind penetration, which draws fire up into the crowns.

The wisdom and efficacy of attempting to control wildfire instead of learning to adapt to fire is questionable. *See* Schoennagel, T., et al., 2017 (Ex. 46) (explaining, "[o]ur key message is that wildfire policy and management require a new paradigm that hinges on the critical need to adapt to inevitably more fire in the West in the coming decades"). The Forest Service must recognize that past logging and thinning practices may have actually increased risk of intense fire behavior on this landscape, not lessened it. But instead of learning from these past mistakes, here the Forest Service is committing to the same mistakes by proposing widespread, aggressive tree cutting and repeated burning across the landscape. It is well-established that communities (homes) are best protected from fire by home hardening, and judicious removal of fuels within the surrounding 100 ft radius. Syphard et al. 2014 (Ex. 49), Cohen, 2000 (Ex. 14). The Forest Service needs to address the fact that addressing the home ignition zone will do more to protect property than the proposed action. Failing to do so is irresponsible. When the Forest Service, as it does here, fails to prioritize and focus on the proven activities that protect human lives and property, it leaves communities vulnerable to devastation that at the very least is mitigatable with proper attention and commitment.

III. THE DEA FAILS TO TAKE A HARD LOOK AT ENVIRONMENTAL IMPACTS.

A. GENERAL CONCERNS. The total project area is 261,096 acres, with 228,238 of the acres National Forest System lands and would result in up to 116,000 acres that would radically thin existing stands, creating openings in some areas, and in others, reducing basal area to as low as 30 square feet per acre in ponderosa pine/Douglas-fir stands and 40 square feet in dry mixed conifer. DEA at 3, 9, 10. This would make the area too open, as is discussed in our February, 2024 comments at pp. 3, 10. See also further comments below.

The proposed treatment would also create a large amount of small diameter, easily-ignited fuel in the form of branches, twigs, needles, and small diameter trees that are unmerchantable. This fuel would need to be treated, or fire susceptibility in treated areas would increase compared to the condition prior to treatment.

According to DEA Table 1, p. 7, prescribed burning is proposed for every treatment type in the project. Prescribed burning following logging would reduce existing and activity-produced fuel, but it could create a hot enough pulse to damage soils. There is no analysis in DEA of this possibility, what it means for water quality, or for compliance with the Land Resource Management Plan that erosion from any management activity must be reduced to the natural rate

is the same season of disturbance and sediment yields within one year of the activity. LRMP at III-51.

It would be much easier to reduce surface fuels produced during treatment (as well as the fuels already there) if treatment were confined to areas closest to homes and other infrastructure. Follow-up treatments of surface fuels on these areas treated could be done to reduce the fuel load to an acceptable level. However, that would be very difficult to do on 116,601 acres, the total acreage that could be treated under the proposed project and fails to prioritize the areas where treatments are most appropriate and even warranted to protect homes and infrastructure. DEA at 6. The time, money, personnel, and state permits needed to carry out burning over most of the total acreage treated would make full accomplishment unlikely in the foreseeable future.

Proposed treatments would remove much forest cover to the detriment of various wildlife species. This is discussed further below.

B. THE DEA FAILS TO DISCLOSE THE SITE-SPECIFIC DIRECT AND INDIRECT EFFECTS.

Although NEPA requires that analysis disclose specific information about the when, where, and how of any agency action, so that the impacts and alternatives can be described and weighed, the DEA fails to contain much of this data, violating NEPA.

While the DEA vaguely describes a number of different activities based on forest type that it would implement over the Project's 261,096 acre area, it does not identify when, where, and how these activities would be executed over the 20-year project within the project area. Rather, the DEA discusses broadly what the activities it seeks to do and treatment objectives for the various types of vegetation communities it would undertake activities in (DEA 6-14) but provides no site-specific information of where these particular activities will take place over the 261,096 acre area on a subset of to-be-identified 116,601 acres. *Id*.; *see also* DEA at Table 1. Without identifying this site-specific information, it is impossible for the Forest Service and the public to make any informed decision about impacts, and what mitigation is appropriate to reduce impacts. Similarly it is impossible for the agency to conclude that an EIS is not needed for this project that would degrade Colorado Roadless Areas and adversely affect endangered and threatened species.

The where and the how of new temporary road construction are not disclosed either. Instead, the DEA opts for general statements about possible effects and some risk, which courts have routinely found to fall short of NEPA's hard look requirement absent a justification as to why more definitive information could not be provided. *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").

Road construction – even for temporary roads – removes all vegetation within the area graded, eliminates and fragments habitat, alters hydrology, and can act as a vector for human-caused fires and the spread of noxious weeds. Road use can cause roadkill, disturb wildlife during critical periods (winter, nesting/calving, etc.), and increase opportunities for poaching. Thus, the nature and location of the road network to be used and constructed is critical to understanding this project's impacts. However, the DEA fails to define the location of temporary road use and road construction, and omits other data important to understanding road impacts.

The Forest Service has long acknowledged that temporary roads can have significant impacts. In its 2000 analysis of the Roadless Area Conservation Rule – which generally barred the construction of both permanent and temporary roads – the agency stated:

> Although only used for relatively short periods, temporary roads present most of the same risks posed by permanent roads, although some may be of shorter duration. Many of these roads are designed to lower standards than permanent roads, are typically not maintained to the same standards, and are associated with additional ground disturbance during their removal…. While temporary roads may be used for periods ranging up to ten years, and are then decommissioned, their short- and long-term effects can be extensive to terrestrial species and habitats.

USDA Forest Service, Final Environmental Impact Statement, Roadless Area Conservation Rule (Nov. 2000) (Ex. 50) at 3-150 excerpts attached. *See also id.* at 3-30 ("temporary roads are not designed or constructed to the same standards as classified roads and are not intended to be part of the National Forest System Transportation System. The results can be a higher risk of environmental impacts over the short run."); *id.* at 3-164 (concluding that "[t]emporary roads present most of the same risks posed by permanent roads" to rare plants, "although some [impacts] may be of shorter duration.").

The Final EIS on the Roadless Rule also noted that "[t]he use of temporary roads may have the same long lasting and significant ecological effects as permanent roads, such as the introduction of nonnative vegetation and degradation of stream channels." Roadless Area Conservation Rule Final EIS (Nov. 2000) (Ex. 50) at 2-18. Temporary "[s]kid roads and trails, log landings, and similar disturbances within the [timber] sale area are the main cause of soil erosion and can contribute up to 90% of the sediment generated by timber sale activity (Patric 1976; Swift 1988)." Roadless Area Conservation Rule Final EIS (Nov. 2000) (Ex. 50) at 3-45. The Roadless Rule Final EIS acknowledged that temporary road construction can cause increased risk of

surface erosion and landslides, but that this varies widely and depends on local site characteristics. Roadless Area Conservation Rule Final EIS (Nov. 2000) (Ex. 50) at 3-45. But the DEA does not disclose local site characteristics, because that document fails to disclose the location of any proposed temporary roads. Because the DEA fails to disclose the location of temporary roads, or the values and conditions they might impact, it cannot provide the decision maker or the public with whether or where these mitigation measures may be required. This violates NEPA's hard look mandate.

Further, the width of new roads – which defines the level of direct habitat destruction from bulldozing – is not defined, and the DEA provides little guidance as to when, if ever, widths might be restricted, again making it impossible for the public or the agency to know the extent of project impacts. For example, the DEA states: "Limit roads and other disturbed sites to the minimum feasible number, width, and total length consistent with the purpose of specific operations, local topography, and climate." DEA at 111; *see also* DEA at 44. This provides little helpful information about the location, number, width, or impacts of the routes.

The DEA similarly provides little information about skid trails. The DEA states "re-using preexisting skid trails, temporary roads and landings to the extent practicable to minimize ground impacts." DEA at 45. This provides neither the public nor the decisionmaker with any idea as to the number, length, or scope of potential impacts from such trails, which will crush vegetation, cause a loss of habitat, and compact soil, among other impacts. The DEA also fails to take the required hard look at the impacts of temporary roads because it fails to disclose not only their location and size, but also the values that could be impacted by road construction and use. For example, the DEA fails to define the "where" of sensitive soil resources.

With respect to wildlife, the DEA and the associated project files provide no maps showing the location of habitat for any species or the relative value of such habitat, or where such habitat may be impacted by logging, road construction, road use, or fire. This makes it difficult for the public or the agency to understand impacts, or to evaluate whether an alternative to avoid certain areas could be crafted.

In short, specific road construction plans may be designed only after project approval, meaning that only then will the Forest Service have the site-specific information necessary to understand the project's impacts and mitigate them. This gets NEPA compliance backwards. NEPA mandates that agencies look before they leap. The Forest Service here is leaping before looking.

In the sections below, more problems that flow from the DEA's failure to disclose site-specific direct and indirect impacts is discussed.

C. THE DEA FAILS TO DISCLOSE IMPORTANT BASELINE CONDITIONS IN THE PROJECT AREA.

The DEA's failure to disclose the where and the how of the project also results in a failure to comply with another NEPA requirement: the mandate that agencies succinctly describe the environment of the area(s) to be affected or created by the alternative under consideration. NEPA requires the action agency to set an appropriate baseline detailing the nature and extent of the resources in the area. "Without establishing ... baseline conditions ... there is simply no way to determine what effect [an action] will have on the environment and, consequently, no way to comply with NEPA." *Half Moon Bay Fishermans' Mktg. Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988).

Without baseline data, neither the public nor the agency can understand the effects of the proposed action or craft and analyze alternatives and mitigation measures to protect these values. As such, the Forest Service has a duty to identify the environmental baseline and affected environment, as well as the scope of impacts and where those impacts are most likely to be felt. The DEA contains little site-specific information on a variety of resources, including wildlife and wetlands. Indeed, the DEA is transparent that wildlife surveys have not been fully conducted and would only be done post-NEPA. *See e.g.* DEA at 112 ("Perform sensitive species surveys prior to mechanical treatment in each unit and enact protection measures to enhance species viability in the Project Area."), 113.

Indeed, the Colorado Natural Heritage Program (CNHP) has identified numerous Potential Conservation Areas (PCAs) (Ex. 13) within the project area, but the DEA fails to mention any of them. These areas have been carefully mapped by CNHP and are areas with Very High and High Biodiversity, with intact rare plant communities with high Floristic Quality Index ratings. Several of these plant communities are globally imperiled. By not including them in the analysis and excluding them from treatment areas, the project may well destroy these biodiversity hot spots, in conflict with State of Colorado legislative policy that the state's biodiversity be preserved. See more detailed information in section III I (eye) below.

Baseline information will better enable the public to understand whether there is a need for the project. Below are a few of the statements the DEA makes that are indicative of the Forest Service's failure to provide baseline information:

- "The Proposed Action overlaps with or abuts other nearby vegetation management activities such as the Crossons-Longview, Upper Monument Creek, and Lake George vegetation management plans, among other detailed in Appendix D. These projects have the objective of reducing fuel accumulation and/or restoring forest health and structure within their treatment areas. Like the Proposed Action, these projects would use mechanical treatment or prescribed fire to achieve desired conditions." DEA at 31.

- "Some portions of the Project Area have received prescribed burn treatment in the past, resulting in larger residual trees and more open conditions in those areas." DEA at 34.
- "CRAs such as Green Mountain, Gunbarrel Sheep Rock, and Thunder Butte have been impacted by either the Buffalo Creek or Hayman fire with degraded water quality and excess sediment." DEA at 87.
- "In accordance with the publicly available inventory published in April 2023, the Project Area contains 4,498 acres of mature and old-growth forest, with 4,444 of those acres being included in general treatment areas. Stand and large tree age is not known for all stands within the Project Area. Ages of all forest types within the Project Area are unknown but thought to be less than 140 years because of the historical harvests that occurred in the area starting in the 1880's. Based on the stand condition and likely ages of the stands, much of the Project Area does not meet the definition of old-growth forest conditions. Due to the unknown, there are likely small occurrences of old growth forest conditions. This information is based on stand survey data collected in 2008." DEA at 89.

These statements raise numerous questions which the DEA fails to answer: Where are the acres that have previously been burned in wildfires or prescribed fires? How many acres total is this? Are these areas contained in any cutting units? What basal area remains? Did the prescribed fire and previous treatment areas result in residual basal area that approximated what the Project proposes to achieve? Where are the areas of mature and old growth forest in the Project area? What is the basal area of stands currently in the Project area? How is the 2008 study that the DEA references still relevant 16 years later? What has been the outcome of the previous treated areas and overlapping projects areas mentioned in Appendix D and the DEA at 31-32? Have timber removal activities, prescribed fire, and wildfire effectively fire-proofed large portions of the project area, or at least greatly reduced the risk of future high intensity fire, is there still a need for the project? The agency should have disclosed as part of the DEA the common stand exam data and associated files to the public could be adequately informed of the projects' impacts and contextualize the project's Purpose and Need as well as the baseline conditions that exist across the proposed project area.

The Forest Service's failure to address these issues, which go to the project's purpose and need as well as its impacts, violates NEPA.

D. THE DEA FAILS TO DISCLOSE MEANINGFUL INFORMATION ABOUT CUMULATIVE EFFECTS.

The key to cumulative impact analysis is that it must provide "useful analysis" that includes a detailed and quantified evaluation of cumulative impacts to allow for informed decisionmaking and public disclosure. *Kern v. U.S. Bureau of Land Management*, 284 F.3d 1062, 1066 (9th Cir. 2002); *Ocean Advocates v. U.S. Army Corps of Engineers*, 361 F.3d 1108 1118 (9th Cir. 2004).

Throughout the DEA, however, the cumulative impact sections fall far short of providing useful analysis, and instead, largely consist of self-serving conclusory sentences that the proposed project would have positive cumulative impacts or negligible negative impacts.

When discussing cumulative effects on forest vegetation, the DEA concludes that "ongoing foreseeable activities may combine with or counteract desired conditions of the Proposed Action; however, these supporting or offsetting effects would be minor across the 20-year implementation period for the Project." DEA at 32. There is no quantitative or robust qualitative assessment of the combined impacts, however, of the various other projects or activities that are occurring within the Project Area to support this conclusion. *See* DEA at 31-32, Appendix D (which merely lists other projects and activities and the resources that are relevant). While the DEA here lists some of the activities that are relevant to this analysis, like grazing, recreation, and other mechanical tree cutting and prescribed fire projects, it does not clarify the spatial extent of overlaps or timing with these activities. Without that information, the public and decisionmaker cannot determine whether cumulative effects might compound, negate, or exacerbate each other.

In the discussion about invasive species and noxious weeds, the cumulative effects of the proposed action are that it would "restore the Project Area and surrounding the PSICC's natural resistance to invasive species and noxious weeds, counteracting the effects of historical fire suppression, creating a cumulative long-term beneficial effect by reducing invasive and noxious weeds." DEA at 59. This sentence does not provide analysis of what the project's cumulative effects are in the context of all the actions listed in Appendix D and instead is looking at only the direct and indirect effects of the project itself. This is a blatant cumulative impacts analysis failure.

For cumulative effects on water yield, peak flows, sediment yield, soil productivity, and wetlands and floodplains, rather than analyzing what the effect would be, the agency concludes that the proposed project in tandem with the other timber cutting and prescribed fire projects is "anticipated to be smaller than the cumulative impacts from sediment and peak flows produced by the effects of future high-intensity fires" and then concludes that as a result, "cumulative effects of the Proposed Action are anticipated to be like the direct and indirect effects to water yield, peak flows, sediment yield, soil productivity, and wetlands and floodplains as described in the sections above." DEA at 46. Here, the Forest Service justifies its failure to analyze the aggregate impacts concluding that whatever those undefined and undetermined impacts would be, it would somehow still be less than high-intensity wildfires, and thus, not be any different that direct and indirect effects. That makes no sense, as the cumulative effects are the aggregate of the proposed project with all other projects and activities. By the very definition it is not equivalent to direct and indirect effects. The Forest Service cannot shirk its duty to disclose these

reasonably foreseeable cumulative impacts by merely claiming it would be less than impacts of something else.

Additional problems with the agency's approach to this analysis are discussed below as well.

E. TREATMENT IN ENGELMANN SPRUCE-SUBALPINE FIR IS NOT NEEDED AND SHOULD BE DELETED FROM THE PROJECT

The DEA states:

> The Proposed Action would treat up to 2,000 acres of Engelmann spruce-subalpine fir forests, without any specific desired condition for basal area. With the understanding that these stands are generally tolerant of moderate-to-high-severity fire, treatment activities in these forest types are more so intended to regulate the degree of fire severity so as to bridge gaps between forests of less-capable fire tolerance (i.e., mixed-conifer or ponderosa pine stands).

Id. at 30.

This is incorrect. Spruce-fir stands are NOT tolerant of moderate and high-severity fires. They have thin bark, which means they will burn easily and quickly die under dry conditions. Burned areas do not reforest easily because neither spruce nor fir establish well in open areas, unlike pines. See Alexander, 1987 (Ex. 1), at 17, 29.

Treatment would not regulate the degree of fire severity, as these stands either burn or they don't; and when they do, it is almost always a stand replacement fire, though occurrence is very infrequent. The DEA admits this - see id. at 12, bottom of page. The DEA also notes that this forest type is "less departed", i.e., is less changed from the historical disturbance regime. Given its very long fire return interval (250 years or more), it is probably not departed at all. It thus does not need any treatment.

The proposed action would create large openings, 10-20 acres, in this forest type. DEA at 13. The DEA justifies this in part with the following:

> These openings would also help return Engelmann spruce-subalpine fir forests to their historic disturbance patterns, which would reduce fire severity and ultimately facilitate the resilience of adjacent forests that might otherwise not be able to overcome such severe (sic) fires as these stands can.

Id. at 30-31.

This is blatantly incorrect. No treatment will restore historic disturbance patterns because there is little to no variation from the historic pattern, thus no "restoration" is possible, let alone needed. Also, logging is not the same as fire. Fire recycles nutrients, whereas logging removes them. Logging requires roads, with many adverse impacts, which have no natural counterpart.

Treatment in spruce fir may degrade lynx habitat. See further discussion below.

Treatment in spruce-fir must be removed from the project.

F. DELETE TREATMENT IN LODGEPOLE PINE.

The DEA states:

> The Proposed Action would treat up to 11,000 acres of lodgepole pine and focus on mid-seral, closed stands of lodgepole pine, preserving late-seral stands to protect wildlife cover. . . .
>
> a return to historical frequency and intensity of fire would allow for lodgepole pine to continue, as the mechanism of its continuation (wildfire) would be preserved.

Id. at 30. Mid-seral stands do not need treatment, as they are not at the age where fire would be expected to occur. They will become mature and eventually be affected by natural disturbances such as insects or wildfire. There is no indication that the historical intensity and frequency of fire in lodgepole pine needs to be restored, as it does not appear to have deviated from the natural range of variability.

Similar to spruce-fir lodgepole stands in the project area are less departed from the natural range of variability compared to lower elevation stands. It already has a diverse structure, with a mixture of even- and uneven-aged stands. DEA at 12. Indeed:

> A suitable range of seral stages are represented at appropriate scales, and the stands currently appear healthy and have not been significantly impacted by the mountain pine beetle.

Ibid. Management would focus in part on "increasing structural diversity"; however, the structure is already quite diverse.

There is no need to treat lodgepole pine in the project area.

G. ASPEN TREATMENT.

See our March, 2024 comments at 2-3.

Aspen would be "enhanced" by various treatments, including the following:

> Prescribed fire would be employed to remove encroaching conifers and to promote aspen suckering.

DEA at 13. However, any fire could kill aspen. Though they do not burn easily, aspen trees have a thin, live bark. It does not take much heat to kill them. Any fire hot enough to kill encroaching conifers might be sufficient to kill aspen. This treatment method should thus not be used in the project.

Under the proposed action, decadent aspen would be subject to "regeneration methods", i. e., clearcutting. DEA at 13. However, decaying aspen have the best features for wildlife: cavities, broken tops, etc. These trees should generally be retained.

It is desirable to have aspen on the landscape for the diversity it helps maintain. Fire will likely induce root sprouting, so additional treatment is not necessary to perpetuate aspen.

However, some aspen may be removed in order to encourage new growth. DEA at 31. In most cases, cutting aspen will lead to vigorous spouting of new aspen stems. Such stems are highly desired by elk, and could also be eaten or trampled by livestock. In other words, newly regenerating aspen stands may need protection until the stems grow out of reach of wildlife and livestock. One design feature proposes to address this problem:

> Barriers, such as jackstrawed trees or temporary fencing, may be employed to protect aspen regeneration from excessive herbivory, when necessary.

DEA at 113. However, it might take a long distance of fencing to keep animals out of large areas of aspen sprouts. And to keep elk out, fences would probably have to be six feet or more high, and be checked every year for as long as needed to ensure that snow drifts and windstorms did not significantly damage them. Thus fencing or blocking areas with regenerating aspen over large areas is not financially or logistically feasible. The Forest Service's reliance on the design feature has led to insufficient impact analysis as to what impacts there will be on aspen stands that receive this treatment and what that means for the continued viability of such stands.

H. TREATMENT OF GAMBEL OAK.

Gambel oak is a dangerous fuel type, in that it burns very hot. Fire in this type was responsible for the deaths of 13 firefighters in a fire west of Glenwood Springs in 1994.

This vegetation type is said to likely be over-represented on the landscape because of fire suppression. DEA at 14. However, it is also said to "experience[] infrequent stand-replacing fire under the historical conditions." *Id*. at 27. If fire is infrequent, then gambel oak stands have not missed many fires cycles, if any, and thus should not be over-represented in the project area. This apparent contradiction is not explained.

"Gambel oak generally increases with disturbance or thinning of ponderosa woodlands." See DEA at 27. See also Kaufmann et al, 2016 (Ex. 29): "Gambel oak resprouts aggressively after fire or mechanical treatments kill back the above-ground parts…". *Id*. at 3. Thus, given the ability of Gambel oak to sprout from root stock after a disturbance, any treatment in this type is likely to result in a dense stand of young oak. That would perpetuate the fuel issue with Gambel oak; i.e., the resulting oak stands would likely be very dense.

The DEA states that chemicals would be used to reduce Gambel oak density in "select WUI areas". *Id*. at 3. Without identifying those areas, it is impossible to analyze and determine impacts on resources such as terrestrial and aquatic wildlife, water quality, and drinking water supplies, including ground water. Even though the main chemical to be used, triclopyr, the Forest Service alleges is not toxic to wildlife (DEA at 50-51), it should not be used. While it is correct that the US EPA found triclopyr to be practically non-toxic to slightly toxic to birds on a dietary basis, practically non-toxic to wild mammals on a dietary basis, and practically non-toxic to bees, this does not account for the whole picture. To assess the likelihood of harm (often referred to as "risk"), one must compare toxicity to predicted exposure levels. Toxicity by itself does not tell you much, because the likelihood of a chemical causing harm to an organism will change relative to the exposure level. According to EPA, forestry uses of triclopyr resulted in risks of concern to wildlife, mainly due to its higher application rate relative to other agricultural uses. EPA. Triclopyr (Acid, Choline salt, TEA salt, BEE): Draft Ecological Risk Assessment for Registration Review. Sept. 30, 2029. Pg. 6 (Ex. 37). *Available here*: https://www.regulations.gov/document?D=EPA-HQ-OPP-2014-0576-0026.

EPA found that the forestry, range, pastureland, and rights-of-way uses of triclopyr can expose birds, reptiles and terrestrial amphibians to levels of the herbicide that cause a significant reduction in the survival of offspring. *Id.* at 44 (Ex. 37). The same uses can expose mammals to 37 times the amount of triclopyr known to reduce litter size. *Id.* at 44 (Ex. 37). All labelled uses of triclopyr were found to expose adult and larval bees to levels estimated to reduce survival and larval emergence. *Id.* at 9 (Ex. 37). Harm to bee larva was estimated more than 1,000 feet from the application site. *Id.* at 90 (Ex. 37). Terrestrial plants were also estimated to be exposed to levels of triclopyr that were known to cause harm more than 1000 feet away from the site of application, even for ground applications. *Id.* at 94-95 (Ex. 37).

Triclopyr butoxyethyl ester (BEE) is classified as "highly toxic" to aquatic organisms. *Id.* at 40 (Ex. 37). The EPA has found that triclopyr poses a risk to a federally listed amphibian, the

California Red-legged frog, making a Likely to Adversely Affect determination for the species. EPA. Risks of Triclopyr Use to Federally Threatened California Red-legged Frog (*Rana aurora draytonii*) Pesticide Effects Determination. October 19, 2009 (Ex. 55). *Available here*: https://www3.epa.gov/pesticides/endanger/litstatus/effects/redleg-frog/triclopyr/analysis.pdf.

Accordingly, the Forest Service's self-serving and cherry-picked conclusion that it's non-toxic to dispense with analyzing impacts is not sufficient. The agency must conduct a proper NEPA analysis.

DEA at 51 states that other herbicides may be used for the project. These must be specified and the possible impacts from their use disclosed and analyzed as well, i.e., toxicity to non-target wildlife and plants, effects on water quality, aquatic species, etc.

I. ELIMINATE OR MINIMIZE TREATMENT IN RIPARIAN AREAS. The importance of riparian areas is well known. They stabilize watersheds and provide habitat for many wildlife species. Due to an environment favorable for vegetation growth, such areas usually have denser vegetation relative to most upland areas. Such areas burn infrequently. DEA at 14-15.

Under the proposed action, about 2,500 acres of riparian areas could be treated. DEA at 28. Any kind of treatment involving ground disturbance, such as the use of heavy equipment to cut, process, and remove logs, would be detrimental to soils, which are usually moist and thus subject to compaction or displacement. Burning is not a good treatment because any ignition might not result in a low intensity fire, due to the dense vegetation. Under normal conditions, fires would not burn at all in riparian, as the areas would be too moist. If dry enough to burn, the resulting fire would likely be of high intensity, which would be detrimental to soils, water quality, and the species that rely on this habitat (especially those that rely on this habitat for all or critical periods of their life cycles, like Preble's meadow jumping mouse).

CNHP has proposed several potential conservation areas (PCAs) in the riparian zones of the project area. For example, the PCA known as South Platte River Valley is designated by the CNHP scientists as B1, Outstanding Biodiversity Significance, their highest classification, notably for its crucial Pawnee montane skipper habitat:

> This site supports almost the entire known distribution of Pawnee montane skipper butterfly, including the three highest quality populations of the butterfly currently documented. The site also includes a good (B-ranked) and extant occurrence of the globally imperiled (G2G3/S2) hops azure butterfly (*Celastrina humulus*). Two plant communities occur in this site and include an excellent (A-ranked) occurrence of the apparently secure (G4/S4) Rocky Mountain willow (*Salix monticola*) / mesic forbs shrubland and a good (B-ranked) occurrence of a state rare(G4?/S3) water birch (*Betula occidentalis*) / starry false lily of the valley (*Maianthemum stellatum*) shrubland.

> Northern Leopard Frog, Western Bumble Bee and James' Telesonix have also been documented.

CHNP, 2024a (Ex. 13).

Another instance of a PCA in the riparian is the Buffalo Redskin Creek PCA:

> This site is drawn for a good (B-ranked) occurrence of a Blue Spruce / Water Birch (*Picea pungens / Betula occidentalis*) Montane Riparian Woodland that is both globally and state imperiled (G2/S2). This is a large occurrence that follows first and third order streams for a distance over four miles. Most of the area is in very good condition with a thick band of overhanging vegetation that shades the stream. The narrow canyons are deep and cool with floodplains that support a lush assortment of native plant species. The uplands that are located away from the disturbed roadsides are in excellent condition and include large areas of native grass dominated meadows in a matrix with the surrounding ponderosa pine (*Pinus ponderosa*) woodlands…
>
> Within the site were eleven plant species that ranked a 7 or above on the Colorado Floristic Quality Index (Rocchio 2007): dwarf red blackberry (*Cylactis pubescens*), red baneberry (*Actaea rubra*), slender bog orchid (*Limnorchis stricta*), Parry's bellflower (*Campanula parryi*), starry false lily of the valley (*Maianthemum stellatum*), hemlock parsley (*Conoselinum scopulorum*), enchantress' nightshade (*Circaea alpina*), mountain muhly (*Muhlenbergia montana*), tall fringed bluebells (*Mertensia ciliata*) and water birch (*Betula occidentalis*). Coefficient of Conservation values range from 0-10 with 10 ranks representing species that are always found in unaltered high quality habitats. The presence of species with high FQI values (7-10) is indicative of the high quality of the habitats within the site.

CNHP, 2024b (Ex. 13). This area is rated "B2: very high biodiversity significance." *Id*.

Yet another riparian PCA, in yet a different floral community, is the Turkey Creek at South Platte Canyon PCA:

> This site contains a small, near pristine (A-ranked) occurrence of the imperiled (G3/S3) *Picea pungens / Alnus incana* community. The herbaceous layer is completely intact with very few non-native species. It all represents a fine example of a foothills riparian ecosystem…This site occurs within the South Platte Canyon megasite, known for its excellent habitat for Peregrine Falcon (G4T4S2B), the Pawnee Montane Skipper (G4T1 S1?), Lavender Hyssop (G4G5 S1) and Peck sedge (G4G5 S1?).

CNHP, 2024c (Ex. 13). This area is rated "B3: high biodiversity significance." *Id*.

A fourth rare riparian habitat that has been identified, the *Alnus incana* /mesic forb wet shrubland is found at the Bear Creek at South Platte Canyon site:

> This site contains an excellent (A-ranked) occurrence of a community which is vulnerable on a global scale. The unfragmented occurrence is the best known example of this vulnerable (G3/S3) *Alnus incana* / mesic forb community on the eastern slope, thus merits the B2 rank. The herbaceous layer is completely intact with very few non-native species and represents a fine example of a foothills riparian ecosystem."

CNHP, 2024d (Ex. 13). This area is rated "B2: very high biological diversity significance." *Id*.

These areas must be avoided in treatment but cannot be if they are not identified and protected by the Forest Service. Since treatment in riparian areas is proposed, it is reasonable to assume that PCAs would be affected by project implementation.

However, we find no analysis of possible effects on PCAs in the DEA or the specialist reports. This is a violation of NEPA – failing to consider possible impacts on an important resource. As we argue elsewhere, an EIS should be prepared for the Lower North-South Project. At a minimum, the EA for the project must be amended to analyze and disclose the potential impacts to PCAs.

Riparian areas are very valuable ecologically. Treatment is not likely to be beneficial and should generally not be done in the project area.

IV. RETAIN LARGE TREES WITH WILDLIFE-FRIENDLY CHARACTERISTICS.

Large and mature dominant and subdominant ponderosa pine trees would generally be retained except when these trees are "damaged, diseased or declining". DEA at 29. However, some of the "damaged, diseased, or declining" large trees are exactly the ones that need to be retained, as they provide considerable benefit for wildlife. Note the following design feature:

> In timber or burn unit preparation, favor retention of live trees with desirable characteristics for wildlife, such as large diameter, partially dead, internal decay, sloughing or loose bark, spike-tops, broken tops or limbs, split tops, abnormal "wolfy" crowns, lightning or fire scarred, or excavated cavities. Native insect and disease infestation within the natural range of variability is necessary in perpetuity to support biodiversity.…

DEA at 113; emphasis added; *see also* DEA at 50. Another design feature at DEA at 113 says to favor larger size classes for retaining snags.

The largest trees in each stand proposed for treatment must be retained. Any sizable trees with the characteristics listed above in the design feature or any others that are needed by wildlife should be retained. It is problematic that the Forest Service has failed to define how it will identify and what constitutes large trees. Similarly problematic is the failure to define and address retention of trees with old growth morphology. Additionally, it is not clear how the proposed project is consistent with the Forest Plan's silvicultural standards and any areas that are managed for old growth. LRMP III-99-101. Because not all large trees are mature and vice versa, it is critical that the Forest Service adopts and analyzes sideboard to protect both types of trees and to comply with NEPA's hard look mandate for direct, indirect, and cumulative impacts. The Forest Service also needs to explain why it is not adopting a DBH cap and why a 16" DBH or a 20" DBH cap and protection for other old trees and why such a cap would be insufficient to meet the project purpose and need.

V. PROTECT AND MAINTAIN HABITAT FOR THREATENED, ENDANGERED, SENSITIVE, AND MANAGEMENT INDICATOR SPECIES.

The proposed project would adversely affect at least four species listed under the Endangered Species Act: Mexican spotted owl, Preble's meadow jumping mouse, Pawnee montane skipper, and Canada lynx. The Draft Programmatic Biological Assessment (DPBA) analysis of the proposed action states:

- "The proposed action ***may affect and is likely to adversely affect*** the Canada lynx." (p. 49) (emphasis in original).
- "The project ***may affect and is likely to adversely affect*** Preble's meadow jumping mouse. (p. 54, 58) (emphasis in original),
- "The proposed action ***may affect and is likely to adversely affect*** the Mexican spotted owl." (p. 66, 70) (emphasis in original).
- "The proposed action ***may affect and is likely to adversely affect*** the Pawnee montane skipper." (p. 76) (emphasis in original).

The Lower North South Project cannot advance under the analysis of the current DPBA or the DEA, due the fact that the proposed action of analysis has determined that it may affect and is likely to adversely affect multiple ESA listed species. The analysis of impacts in the DEA is woefully insufficient and incomplete due to, among other issues, the failure of the DEA to identify what treatments would occur in any given area within the project area, where those treatments would be, and when they would be taken.

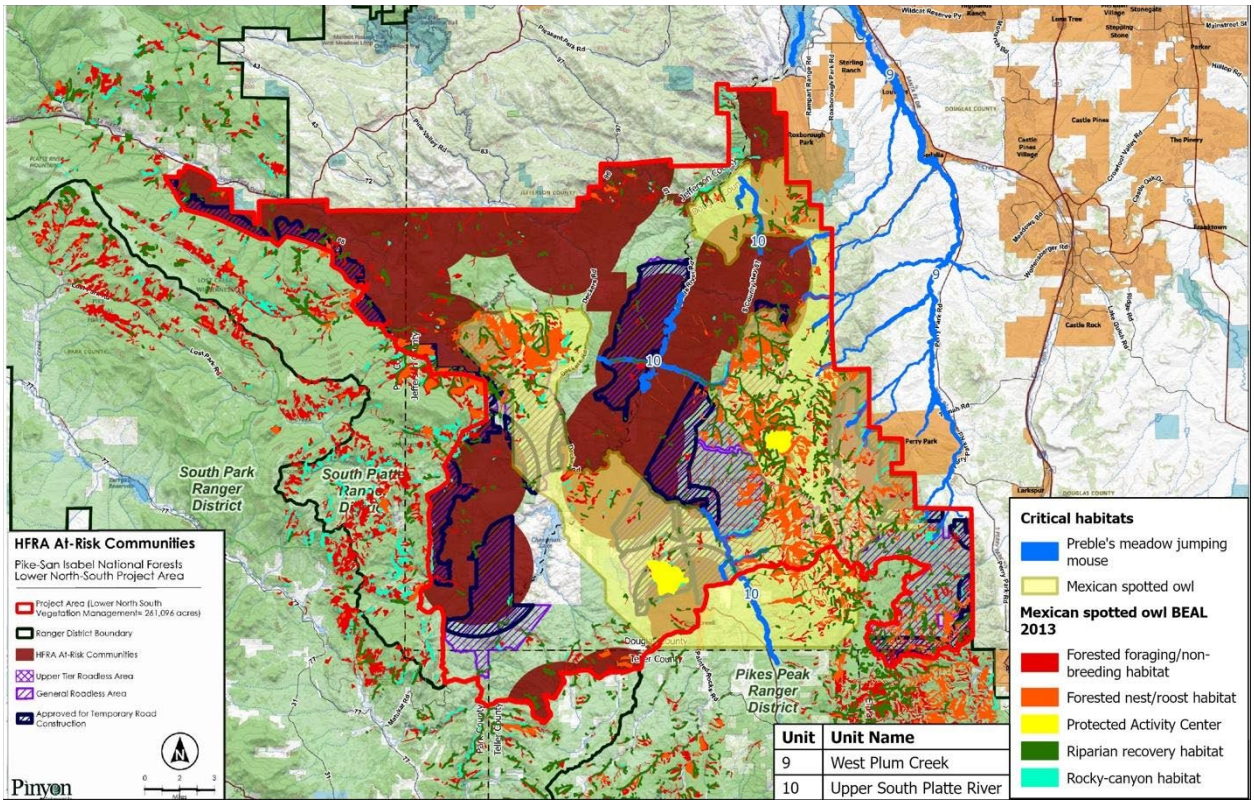

Figure 10 from the DEA with Preble's meadow jumping mouse and Mexican spotted owl critical habitat overlaid, including PACs and other vital habitat areas.

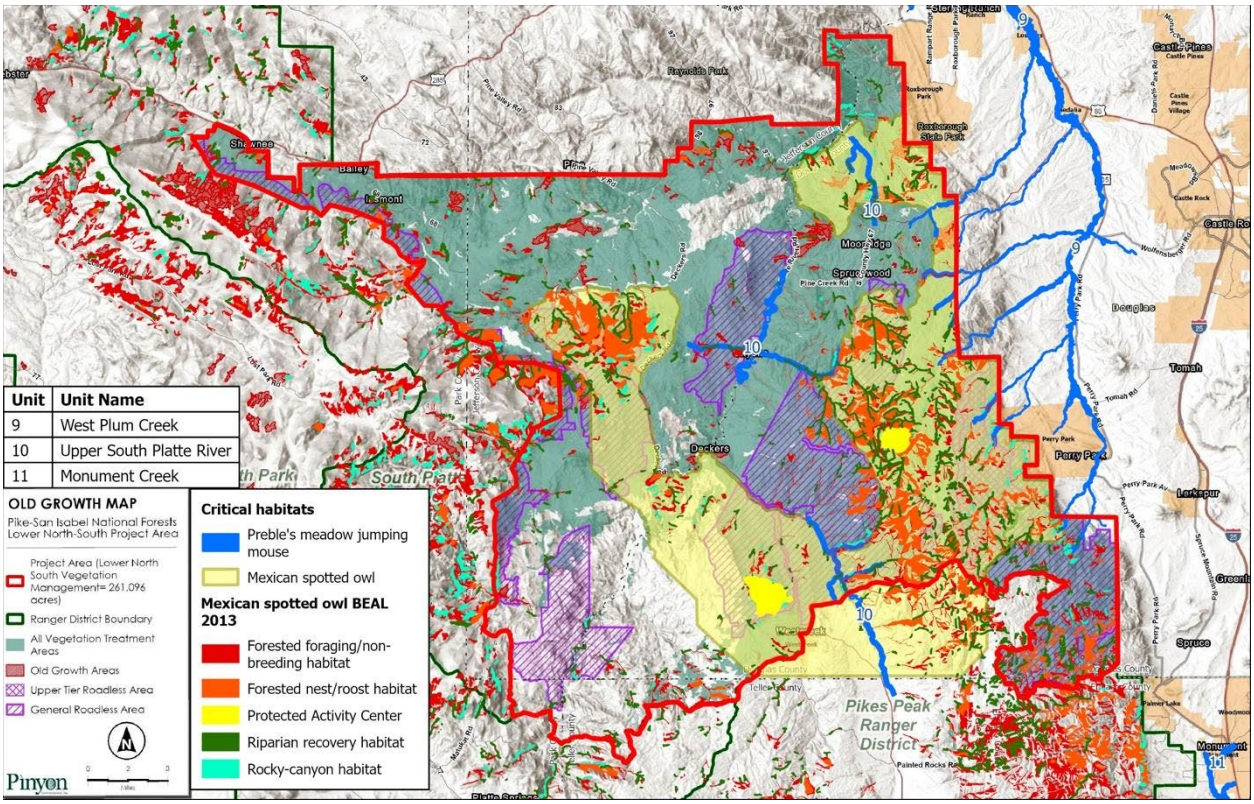

Figure 12 from the DEA with Preble's meadow jumping mouse and Mexican spotted owl habitat overlaid, including layers showing PACs and other vital habitat areas.

The Forest Service must engage in formal consultation with the FWS and a complete Biological Opinion ("BiOP") that includes an Incidental Take Statement ("ITS") and other mandatory legal requirements must be issued. If the Forest Service believes that the Lower North South project will not adversely affect these species, because the project area is smaller than area analysis of the BA, then it must produce a separate Tier 2- BA only for the Lower North South project area, or specific actions within the project. No final decision on the Lower North South Project can be rendered without a BiOp in place.

The proposed project would also adversely affect some sensitive species and one management indicator species. Notably, there is no information in the DEA on how the ESA-listed species might be affected by proposed activities. *See id*. at 50 et seq. Nor is there any indication of where an interested party might find such information.

There is some information in the Draft Programmatic Biological Assessment (DPBA), dated September 30, 2024. This should be at least referenced in the DEA, but doing so without curing NEPA and ESA shortfalls would remain legally insufficient.

The information on ESA-listed species may be contained in programmatic consultation with the Forest Service and Fish and Wildlife Service:

> After the LNS EA is finalized and site-specific projects are developed for implementation, site-specific biological assessments, or "Tier 2" BAs, shall be submitted to USFWS to complete consultation prior to implementation.

DEA at 47. In other words, site-specific impacts on ESA-listed species for the Lower North-South Project would not be disclosed until after the project had been approved.

The Forest Service is required by NEPA to analyze the impacts to ESA-listed species and make this information available to the public prior to a decision on any project affecting these species. The Forest Service cannot, as proposing here, entirely fail to analyze and disclose these impacts and yet find that there is no significant impact.

A. LYNX. As we discuss above, there is no reason to treat spruce-fir stands in the project area, and such treatment needs to be removed from the proposed project. By removing overhead cover, proposed treatment would reduce lynx habitat, especially proposed openings of 10-20 acres (DEA at 13). Creating these large openings would convert suitable habitat to unsuitable, and would not be beneficial to lynx in any way. These openings created would not reforest easily because spruce and fir trees do not establish or grow well in their early years when exposed to full sunlight. Also, openings created for fuel breaks would be kept open and would inhibit lynx movement. DPBA at 46. Thus the impact of proposed vegetation removal in lynx habitat would be permanent. But even in areas, if any, that are treated and allowed to reforest, lynx use would be precluded until trees regrow to form dense horizontal cover sufficiently to support hare. DPBA at 47. This would take decades and maybe even longer.

Some of the area in lynx analysis units (LAUs) is not in the wildland-urban interface (WUI). Compare map at DEA p. 4 with DPBA Figure 3 at p. 43. Thus in at least part of the spruce-fir acreage within the project area, the Southern Rockies Lynx Amendment (SRLA) exemptions for WUI would not apply. In any case, creation of openings is not likely to comply with the SRLA or the design features in the DPBA. The Forest Service needs to demonstrate how these overly aggressive and unnecessary timber removal activities are compatible with the SRLA.

Any thinning, even hand thinning, would also degrade or eliminate lynx habitat, as it would reduce or remove smaller trees that form the dense horizontal cover needed by lynx' favorite prey, snowshoe hare.[2] Any treatment would likely reduce habitat for red squirrel, an important

[2] DPBA-op p. 37 states that dense horizontal cover is essential to support snowshoe hare. See also id. at 47.

secondary prey for lynx. These impacts need to be fully analyzed and disclosed, and in a site specific manner, in which the EA fails to do.
See also February comments at 7.

B. MEXICAN SPOTTED OWL (MSO). See our February comments at 7 and our March comments at 4-5.

The agency's analysis of this project as it relates to Mexican Spotted Owl (MSO) recovery is insufficient. We do not believe this proposed action will support the recovery of MSO. There is a great deal of uncertainty regarding the efficacy of tree cutting and prescribed burning in preventing severe wildfires at a landscape-scale and this includes within MSO recovery habitat. Additionally, the Forest Service has failed to, although it must, identify MSO protected activity centers (PACs) prior to conducting any proposed treatments of this project. It is unclear what activities would occur in MSO PACs. While the EA references "special direction in the biological opinion" that may be given for activities that could affect MSO habitat in the project area there is no actual biological opinion (pg. 113-114 of the EA). There is a draft "Programmatic Biological Assessment" (DPBA) "for the Fuel and Fire Risk Reduction Treatment Actions to Promote Ecological Restoration and Forest Resiliency on the Pike-San Isabel National Forests". In this document there are Project Design Features (PDFs) for MSO (and other listed species). While we appreciate the inclusion of these PDFs to adjust for MSO habitat requirements, the Forest Service needs to: a) clean up the language in the DEA to properly reference the DPBA (it is not a BiOp, more on this below); and b) create a clear process for ensuring such PDF's will be implemented.

In the DPBA, PDF O2 on p. 28 state "If treatment within a PAC is deemed necessary, early coordination will take place between the Forest Service and the appropriate FWS office to make sure treatment is consistent with the guidance in the Recovery Plan and to evaluate if additional project design features are needed (2012 MSO Recovery Plan, p. 261-264)." It does not appear however that FS has established a process that facilitates review of treatment actions within PAC to make sure treatment is consistent with the guidance in the Recovery Plan and to evaluate if additional project design features are needed (2012 MSO Recovery Plan, p. 261-264. We suggest that Region 2 adopt the use of the Region 3 checklist, or create their own, to ensure compliance with the Recovery Plan.

In Forest Service Region 3, the agency has worked with FWS and the MSO Leadership Forum, of which WildEarth Guardians is a member, to develop and implement several processes and related documents to ensure protection of MSO. To assist with (and document) the process of identifying MSO habitat and survey needs, as well as project implementation, several guidance documents and checklists have been developed. The guidance and checklists are mandatory components of vegetation management projects in MSO habitat throughout the region, and

should be used during all stages (planning-development-analysis-implementation-reporting). For projects in Region 2 where MSO habitat may be impacted, we ask that similar processes and documents be used to establish a process by which all activities and treatments that may impact MSO are able to be properly analyzed and tracked.

Documents that should be replicated for use in Region 2 and the LNS project include the following documents which can be obtained from Shaula Hedwall.[3]

1. **MSO Habitat Environmental Analysis Project Checklist a.k.a "MSO NEPA Checklist":** The purpose of this document is to assist and guide Interdisciplinary Teams (IDT) on how to conduct environmental analysis for vegetation management projects in MSO habitat. (We are attaching version from 5/4/2023). (Ex. 51)

2. **Step-by-Step MSO Habitat Treatment and Implementation Guidance:** The purpose of this guidance is to address MSO management prior to and during both analysis and implementation of forest vegetation treatments in MSO habitat. In situations during NEPA planning where site-specific data on MSO habitat is not yet available, this document should be included as a design feature appendix in the project record and in the Decision. (We are attaching version from 5/4/2023). (Ex. 52)

3. **MSO Pre-implementation Compliance Review:** The purpose of this checklist is to ensure all vegetation management projects in MSO habitat with signed NEPA decisions are compliant with the appropriate MSO Recovery Plan (2012). These checklists should be added to the project record, as well as uploaded to the public project files. (We are attaching version from 5/4/2023). (Ex. 53)

We are also including by reference the Region 3 Mexican Spotted Owl Management Strategy Instructions, also from 5/4/2023. (Ex. 54) This document provides an overview of processes and documents used in Region 3 to ensure implementation of the MSO Recovery Plan. LNS project staff, and NEPA coordinator should review these documents, and develop a process to replicate and implement them for the LNS project as well as all other projects that impact MSO habitat in Region 2.

We believe doing so is of particular importance because as one reviews the DPBA PDFs for things like meeting desired nest/roost conditions, and recovery habitat conditions, the habitat needs of MSO are in contradiction with the LNS proposed actions. The PNPA and DEA identify treatment objectives for different "ecological systems". These include objectives to reduce

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residual basal area ranges from 30 to 50 ft2 per acre in Ponderosa pine – Douglas fir forest and from 40 to 60 ft2 per acre in Dry Mixed-Conifer forests (DEA Section 2.2.1.1 and 2.2.1.2). These contradict the 2021 MSO Recovery plan desired nest/roost project level threshold conditions as identified in the DPBA PDF O4 (p. 29), of "Maintain[ing] a tree basal area of at least 120 square feet/acre." Without additional project specific analysis through an Environmental Impact Statement (EIS) or Tier-2 BA, or other processes identified to ensure PDFs will be implemented where needed, the public cannot be assured the Forest Service understands the impact of the LNS project on MSO habitat, its cumulative effects on MSO habitat, or that the FS will properly implement PDFs and conform the project to the 2012 Recovery Plan.

Additionally, to meet the habitat conditions established for MSO recovery, see MSO Recovery Plan Table C.3, 25% of recovery habitat must be maintained as nest/roost habitat. The Forest Service has not stated how it would track implementation to maintain 25%. MSO need dense forests with larger trees and basal area of at least 120 square feet per acre. DPBA at 59. However, the proposed treatments would greatly reduce the density of many tree stands, as discussed above and in our previous comments. This would degrade or destroy habitat for MSO, mainly in stands dominated by ponderosa pine and/or Douglas-fir.

It is especially important to maintain protected activity centers (PACs), the 600-acre area surrounding nests. There appear to be two PACs in the project area. DPBA Figure 6 at 60. There is also a sizable amount of nest/roost habitat plus two critical habitat units. Ibid. Nest/roost habitat is considered "most essential to the recovery of the species". DPBA at 65.

Riparian recovery habitat is considered a key habitat for recovery of MSO. *Id*. at 65. Proposed treatment would be designed to reduce fuels, increase structural diversity, and break up continuous canopy cover. Such treatment is likely to degrade or destroy at least any potential nest/roost habitat, and may even convert foraging/non-breeding habitat to unsuitable.

Generally, any treatment in MSO habitat should be limited to foraging/non-breeding habitat. Treating these areas might help protect adjacent nest/roosting habitat. DPBA at 64. Treatment in PACs should be limited to hand thinning and light prescribed burning. No treatment can occur inside the nest/core areas, which are a minimum of 100 acres surrounding the nest. DPBA at 62.

For prescribed fires, aerial ignitions should not occur near PACs to ensure that PACs do not burn too intensely. See *id*. at 69. Outside of PACs, aerial ignitions could reduce nest/roost habitat (DPBA at 64), so they should be done cautiously if at all.

Note direction in the DPBA to retain larger trees. Measure O4, *id*. at 29. Another measure limits opening size to 2.5 acres. Measure O5, ibid.

i. Lack of Biological Opinion and need for DEIS.

Per the Final Designation of Critical Habitat for the Mexican Spotted Owl by the US Fish and Wildlife Service, (Vol. 69, No. 168, August 31,20024), there is an estimated 103,735 acres of MSO Critical habitat in the SRM-C-2 critical habitat unit (Table 2, page 53213) that is within the Pike San Isabel National Forest and within the LNS project area. Meanwhile, the DPBA breaks down approximate acres of MSO habitat types per critical habitat unit using the PSICC 2014 "Beal Model" (Table 8 of DPBA). Here the DPBA identifies just 36,868 acres of MSO habitat based on the "Beal Model" in the SRM-C-2 critical habitat unit. That is a discrepancy of 66,867 acres (103,735– 36,868). The Forest Service must explain why it is only considering only 36,868 acres as critical habitat, and not the entire amount of critical habitat established by USFWS.

On Page 67 of the DPBA the Forest Service states "Critical habitat for Mexican spotted owls occurs on the South Platte, Pikes Peak, and San Carlos Ranger Districts and totals approximately 104,972 acres (Table 8). This represents about 31 percent of the MSO habitat on the PSI. The critical habitat occurs in three designated critical habitat units (CHU) (SRM-C-2, SRM-1a, and SRM-1b: Figure 7)." However, this is just a portion of the actual area designated by FWS as critical habitat in CHUs SRM-C-2, SRM-1a, and SRM-1b (see Fed. Reg, Table 2, page 53213 for acreage data for all CHUs). It appears that the Forest Service could be significantly under accounting for the impact to MSO critical habitat, if it does not use the full acreage established by FWS. Because of this, and the fact that the LNS project is circumventing site-specific analysis with its proposed adaptive management approach (PNPA p. 2), it is not clear how many acres of this critical habitat will be affected by the LNS project. As such a DEIS and Biological opinion should be developed to analyze and clarify the potential impacts to MSO critical habitat. Both NEPA and the ESA require as much.

As mentioned, despite the Draft EA for this project referencing a "biological opinion" seven times, including reference to "special direction in the biological opinion" (p. 113-114); there is no associated Biological Opinion for this project. It appears as if the required biological analysis for impacts of the project on threatened and endangered species is supposed to be covered in the "Biological Assessment for the Fuel and Fire Risk Reduction Treatment Actions to Promote Ecological Restoration and Forest Resiliency on the Pike-San Isabel National Forests" (i. e., the PDBA). However, based on the results of the DPBA, which determined "the proposed action may affect and is likely to adversely affect the Mexican spotted owl" (pp. 66 and 70), formal consultation with the FWS must be conducted and a Biological Opinion must be created. Without these, it is likely the agencies will fail on their duty to take a "hard look" at impacts.

The PDBA does reference Tier-1 and Tier-2 analysis. On page 20 of the PDBA it is stated that "A site-specific vegetation management silvicultural prescription would be developed at the

project-level and described in detail in the tier-2 analysis." The DEA also references Tier-1 and Tier-2 BA's. In Section 3.6.1.2, on page 47, the EA states that *after* the LNS DEA is finalized and site-specific projects are developed for implementation, site-specific biological assessments, or "Tier 2" BAs, shall be submitted to USFWS to complete consultation prior to implementation. If we are to understand this correctly, the Forest Service will be approving a project without either a valid Biological Assessment or a Biological Opinion for the impacts of the LNS project on threatened and endangered species including MSO. And furthermore, a Tier-2 BA will only be conducted once site-specific projects are developed, and *after* the decision on the LNS EA has been determined. This is a violation of NEPA.

In many respects, NEPA was a statute ahead of its time, and it remains relevant and vital today. 42 U.S.C. §§ 4331, *et seq*. It codifies the common-sense and fundamental idea of "look before you leap" to guide agency decision making, particularly in complex and consequential areas, because conducting sound environmental analysis before actions are taken reduces conflict and waste in the long run by avoiding unnecessary harms and uninformed decisions. It establishes a framework for agencies to ground decisions in sound science and recognizes that the public may have important ideas and information on how Federal actions can occur in a manner that reduces potential harms and enhances ecological, social, and economic well-being. *See, e.g.,* 42 U.S.C. 4331, 4332(2)(A).

The Forest Service proposal appears to be both a "black box" and a "blank check." It is a black box because the agency does not disclose which treatments, or which combination of treatments, will occur where, nor does it disclose conditions on the ground across the vast area that could be treated. It is a blank check because the agency will not define the where, when, and how of the project until *after* the NEPA process is complete, and will apparently provide no opportunity for public involvement pursuant to NEPA when the agency develops site-specific actions. Thus, the Forest Service's proposal eliminates the requisite environmental analysis, the consideration of alternatives, and opportunities for meaningful public review and input.

Furthermore, it speaks to the failures of the adaptive management approach being taken by the Forest Service to approve large projects, including the LNS project. While the DEA states one Page 2 that an adaptive management approach "… allows for the Proposed Action to be continually revised up to the point of a final decision based on new information received as part of the planning process..."; the Forest Service fails to disclose what actions will be taken where. As such the FS is unable to disclose the impacts of those actions because they do not yet know what the specific conditions are, or how an action at that location will impact a species, including ESA listed species such as MSO; because they have not yet done the required analysis. This is "*leap before look*" project analysis, which is prohibited by NEPA. Even if a Tier-2 BA is produced for the LNS project, or multiple Tier-2 BA's are produced for different treatments as part of the LNS project, there is no way for the public to provide comment, or object to the

proposed project or treatment. NEPA requires the agency to encourage and facilitate public engagement, inform the public of an agency's proposed action, allow for meaningful engagement during the NEPA process, and ensure decision makers are informed by the views of the public. *See* 42 U.S.C. § 4336. Here, the lack of site-specific information and any information about what treatments will be done where and when, prevents the agency from being able to reach conclusions that the impacts will be insignificant not only to threatened and endangered species but all resources, including non-listed terrestrial and aquatic species, soil health, climate and carbon storage impacts, water quality, and drinking water supplies. 42 U.S.C. § 4332(C)(i), (ii); 42 U.S.C. § 4336(b). For the federally listed species and designated critical habitat, providing biological opinions or BA's after the NEPA process has been complete is antithetical to the NEPA process and showcases EA's failure to contain adequate information and analysis to comply with NEPA's hard look mandate. More information regarding Adaptive Management is found below in Section XV.

At minimum, since the BA under which the LNS project is being approved identifies that the proposed action of analysis *may affect and is likely to adversely affect* multiple ESA listed species (Canada lynx, MSO, Pawnee montane skipper, and Preble's Jumping Mouse), there should be an Environmental Impact Statement developed. The fact the Forest Service cannot at this point say how many acres of MSO critical habitat will be impacted is another reason an EIS should be produced.

Mexican spotted owl (MSO) recovery is only possible if the Forest Service fully commits to implementing and complying with the 2012 Recovery Plan. Towards this end, we urge the Forest Service to include plan components and provide robust supporting analysis in an Environmental Impact Statement (EIS) that incorporates the following directions:

1. The Forest Service must identify, map, and manage for MSO recovery habitat as defined in the 2012 Recovery Plan.

2. The Forest Service must delineate required pre- and post-project monitoring consistent with the 2012 Recovery Plan for all activities, including, but not limited to projects' proposed forest management activities (thinning, logging, prescribed burning), and road building. The Forest Service should require monitoring of MSO PACs for two years pre-treatment and five years post-treatment. This is especially relevant to the agency's unsupported claim that timber management will benefit MSO and its habitat. Such scientific experiments remain unproven.

3. The Forest Service must use the best available science and information, and share that science and information with the public as part of the required processes under the National Environmental Policy Act (NEPA). See 40 C.F.R. 1500.2(b).

4. The EIS must analyze the cumulative impacts of all management activities on MSO.

The Forest Service has an independent duty to demonstrate compliance with the Endangered Species Act (ESA). Under Section 7(a)(2) of the ESA, the Forest Service has an independent duty to consult with FWS to ensure the LNS is not likely to (1) jeopardize the continued existence of any threatened or endangered species, or (2) result in the destruction or adverse modification of the critical habitat of such species. See 16 U.S.C. § 1536(a)(2). As it stands, the DEA fails to provide sufficient analysis to demonstrate compliance with the ESA for MSO and all other listed species and their critical habitat that may be affected.

ii. Lack of monitoring.

The lack of monitoring for MSO is problematic and concerning. The DEA states that "After operations are completed, implementation monitoring would be conducted by Forest Service personnel or partners with the purpose of evaluating the success of treatments in achieving management objectives" (p. 3). And while it further states changes could be made to ensure desired outcomes are met, and that interdisciplinary review would occur after each year's treatments and could lead to changes in the project that would adjust to better meet objectives, there are no post treatment monitoring protocols for MSO established to determine through monitoring the actual impacts of activities on MSO critical habitat, nest/roost, recovery, or PACs. The associated DPBA has a PDF (O3) that "Prior to vegetation management treatments in MSO habitat, MSO surveys will be conducted according to the most updated FWS protocol". However, there is no post treatment monitoring proposed. FS and FWS must identify and clarify how they plan to monitor impacts (positive or negative) on MSO after treatments have occurred. This could and should look similar to the Monitoring and Reporting procedures identified in Canada lynx PDF L8, but as related to the 2012 Recovery Plan and MSO. For example;

> 1) amount of habitat impacted; 2) size of units treated; 3) location in which vegetation management in habitat occurred; 4) amount habitat treated compared to allotted total for the Forest; and 5) acres of habitat treated using various methods, and in different habitat designations (PAC, nest/roost, etc).

iii. Scientific controversy and uncertainty.

We want to further expand on the scientific controversy and uncertainty regarding MSO, forest management, and high severity fire. There are so few studies of fire effects on MSO specifically; the best available science is found in studies of fire in all spotted owl subspecies. However, two publications by Lee, 2018 and 2020, are important to consider. In these two systematic reviews and meta-analyses of all published fire effects on Spotted Owls from across their entire range and including all 3 subspecies, Lee found: Fifteen papers representing more than 20 fires, 425

burned territories and 37 radio-tracked owls reported 50 effects from fire that could be differentiated from post-fire logging. These meta-analyses examined key life history parameters in response to fires as they have burned through spotted owl habitat in recent decades under existing forest structural, fire regime, and climate conditions, including multiple "megafires" with large patches of high-severity burn. Spotted owls were usually not significantly affected by fire, as 83% of all studies and 60% of all effects found no significant impact of fire on mean owl parameters. When all available data are examined objectively in meta-analysis, the larger pattern is revealed that high-severity fire patches from climate-changed wildfire events are still used by spotted owls for foraging in proportion to their availability, and more high-severity fire significantly increases reproduction, but no strong consistent negative effects are apparent.

The strength of meta-analysis as an evidence-based decision support tool is that it enables managers and decision-makers to justify management decisions using patterns and trends from all available data. Contrary to current perceptions and recovery efforts for the Spotted Owl, fire does not appear to be as significant of a threat to owl populations, and the Forest Service analysis fails to adequately demonstrate otherwise. Rather, wildfire has arguably more benefits than costs for spotted owls. Lee (2018) (Ex. 33) found significant positive effects on foraging habitat selection and recruitment from forest fires, and significant positive effects on reproduction from high-severity fire. The absence of any widespread, consistent, and significant negative fire-induced effects and the presence of significant positive effects indicated forest fire is not the outsized threat to spotted owl populations that it is described to be. Therefore, fuel-reduction treatments intended to mitigate fire severity in spotted owl habitat may be unnecessary and counterproductive to the species' recovery.

The Forest Service must consider these findings and any assertion that the LNS proposed action would not significantly affect MSO or MSO recovery habitat would be arbitrary and capricious, and be a violation of NEPA and ESA.

iv. Cumulative impacts and livestock grazing impacts.

Appendix D, and Table 1 of the Draft EA for this project identifies activities considered for cumulative effect analysis. Interestingly, it does not appear that the programmatic project Fuel and Fire Risk Reduction Treatment Actions to Promote Ecological Restoration and Forest Resiliency on the Pike-San Isabel National Forests is included in this list. There are some timber harvest/salvage/mechanical treatment project referenced, but it does not appear any of the activities that are being analyzed in the DPBA for the Fuel and Fire Risk Reduction treatments, which are proposed to be forest wide, are included. They are clearly foreseeable, and must be considered in the cumulative effects analysis of the activities proposed in the project.

Looking deeper at the DPBA (p. 70) it does a cursory and incomplete cumulative effects analysis on impacts to MSO. It states: "Livestock grazing on surrounding lands is not a primary concern for the MSO as livestock tend to focus grazing outside of suitable MSO critical habitat." However, grazing can be, and is, a threat to MSO habitat and the habitat of its prey. As FWS recognized in their 1995 MSO Recovery Plan, grazing can influence the Mexican spotted owl by "altering (1) prey availability, (2) susceptibility of spotted owl habitat to fire, (3) the health and condition of riparian communities; (sic) and (4) development of habitat." The 2012 MSO Recovery plans also notes that "Livestock grazing and selective timber harvesting were identified as management practices that resulted in substantial changes to forests" (p. 34). The 2012 Recovery Plan also has a whole section on the impacts of grazing on MSO habitat; pages 42-44. Here they noted that moderate and heavy livestock levels can have negative impacts on habitat, including for prey species, and state "In summary, we view grazing by domestic and wild ungulates as a potential threat to spotted owls when managed insufficiently as to its effects on prey species habitat (e.g., reducing herbaceous ground cover), nest/roost habitat (e.g., limiting regeneration of important tree species, especially in riparian areas), and the capacity for resource managers to restore and maintain conditions supporting natural fire regimes within an array of habitat types." In short, cattle are both a threat to MSO habitat, habitat for their prey, and the ability to support natural fire regimes. Without analysis of the impacts of domestic livestock on the project area and on MSO habitat, and MSO prey habitat the cumulative effects analysis is inadequate.

While the proposed action in the Lower North South project focuses on vegetation management through logging (aka timber treatments, and thinning), prescribed fire and road building to conduct vegetation management activities, grazing will occur in the project in area. Based on information provided by FS in the DEA there "are 30,960 acres of grazing allotments within the Project Area (approximately 12%). The Wigwam allotment (22,216 acres) is the only active allotment in the Project Area, but there are several forage reserve allotments (totaling 8,744 acres) that can be used when needed in an emergency situation, such as wildfire or drought." (p. 73). Furthermore on p.73, "The Wigwam allotment is comprised of three (3) pastures, permitted for 450 animal unit months (AUMs) and managed under a deferred rotation grazing system. Cattle are typically grazed June through October."

While one is able to do a rough comparison of where the wigwam allotment is (and forage reserves are) in Figure 9 of the DEA (p. 75) , with the location of MSO critical habitat and protected activity centers in Figure 7 of the DPBA (p. 63), the Forest Service should provide the public map that overlays existing grazing allotments (cattle, sheep or other domestic livestock) to clearly present if grazing allotments are occurring in MSO critical habitat in the LNS project area. This must also be disclosed and analyzed as it is pertinent to the agency's decision on impacts and significance.

It is well known cattle, in particular, can have great impacts on soil compaction, hydrology and natural restoration efforts. Without knowing the cattle impact, we cannot fully understand the impact of this project on the ecosystem, the treatment area, or habitat for endangered and threatened species such as the MSO. And neither can the agency. A deeper cumulative effects analysis of how cattle will impact MSO habitat, in the project area, and in areas where cattle grazing is known to occur outside of the project area, but may contribute to impacts on MSO critical habitat, as they are foreseeable impacts that may affect the owl and its habitat.

In the 2003 case, *Ctr. for Biological Diversity v. Norton*, the court ruled "While grazing may be only a small part of the overall recovery plan for the [Mexican spotted] owl, the Court finds that failure to implement new grazing standards not only in the interim period between the adoption of the amendments and site specific analysis, as anticipated by the Biological Opinion, but also the failure to implement new standards even at the time of renewal of grazing permits, are actions of the Forest Service which may affect the owl and its habitat. The Forest Service's failure to reconsult is therefore contrary to the provisions of the ESA and not in accordance with law as required by the APA."

The Forest Service knows that grazing impacts MSO habitat and habitat of their prey. The gross dismissal of the impacts of livestock grazing on MSO habitat including possibly within Critical Habitat, nest/ roost habitat, or PAC's in the Lower North South project, via the statement "livestock tend to focus grazing outside of suitable MSO critical habitat" is unacceptable, and currently arbitrary and capricious. Further analysis of livestock impact on MSO habitat in the Lower North South project, and the entire area covered by the Programmatic BA is necessary.

C. PAWNEE MONTANE SKIPPER. See our February comments at 7-8.

There is not a scientific basis, much less analysis, to support the following measure:

> Skipper habitat affected by mechanical vegetation treatment will be considered recovered to a suitable condition 12 months following project completion on the ground.

DPBA at 31, measure S3. Treated areas should not be considered "recovered" until the needed vegetation, prairie gayfeather and/or blue grama, appear in the treated area. That could take more than one year.

It is not clear how burns would be conducted to conserve grassy islands of skipper habitat, as required by measure S7, *id*. at 32, Because there is no information about where and how burns would occur in this habitat, it is impossible to determine whether burns would even be

conducted carefully to avoid destroying too much habitat for the skipper in a short period of time.

D. PREBLE'S MEADOW JUMPING MOUSE. Habitat for this species in the project area includes three critical habitat units totaling 3,533 acres. DPBA at 55. As the maps included above show, there is also extensive critical habitat downstream of the project area as well. Activities like steep slope logging, in the upstream areas could result in downstream effects to this critical habitat and must be disclosed and analyzed. The best way to maintain habitat, including critical habitat, for Preble's is to stay out of riparian areas and adjacent land for at least up to 300 feet.

The main factor threatening this species' is the decline of extent and quality of habitat. Habitat alteration, degradation, loss and fragmentation from urban development, flood control, water development, intensive agricultural activities, and other human land uses are resulting in death by a thousand cuts to this species. It is critical that here, where a federal agency, has large amounts of critical habitat under its management that it is not allowing decisions that will be exacerbating the precious state of the species, much less adversely modifying or destroying habitat. With the lifespan of a Preble's meadow jumping mouse three years, the project and any impacts from it would span generations of this species. Coupled with lower annual survival rates compared to other small rodents, any additive impact could have a cascading effect through the population and habitat. These impacts and effects must be disclosed and analyzed in a way that not only allows the public to understand the risks and effects, but also for the decision maker. This analysis is outstanding and cannot be cured until at least site-specific activities that would be within, adjacent, and upstream of this species' habitat are identified and disclosed.

At a minimum, slash piles should not be constructed in Preble's habitat, especially piles that would be burned. Any fire in Preble's habitat needs to be low intensity although it is not clear given that these areas are riparian if any fire should be conducted in them.

E. ABERT'S SQUIRREL. This species is a ponderosa pine obligate because the inner bark of top stems of ponderosa pine trees is a major food source in winter. It also eats pine nuts". Draft Wildlife, Fish, and Rare Plants Report at 28. It is also a management indicator species for the Pike-San Isabel National Forest.

Abert's needs clumps of ponderosa pine or ponderosa pine/Douglas-fir trees for nesting. The proposed action would greatly reduce the density of trees in treated areas and might not retain the clumpy structure this species needs. Design criteria are needed to ensure that the structure needed for this species' habitat is retained. The one criterion in the DEA calls for retaining one nest clump per every six acres. *Id*. at 114. This would be insufficient because Abert's would have only islands of habitat in a sea of sparse forests. Squirrels dispersing from the nest clumps would

have to travel a long way to find habitat and would thus be subject to predation. The Forest Service has failed to disclose the impacts of the aggressive activities it proposes as to what that means for the species' continued persistence within the forest.

We recommend that nest clumps be no more than 50 feet apart, per Patton, 1977, over at least parts of the areas that will be treated. See our February comments at 8 for more detail.

F. OTHER SPECIES NEEDING ATTENTION. Please see our February comments at 8. Specifically, the habitat needs of northern goshawk, flammulated owl, and pygmy nuthatch, all likely to be present in the project area, need to be considered, with adjustments in the proposed treatment made as needed to ensure high quality, connected habitat for these species, as well as the ones discussed in more detail above. The DEA fails to take a hard look at these species and the impacts that the proposed activities would have.

One project design criterion requires surveys for sensitive species prior to mechanical treatment. DEA at 112-113. Such surveys should also be done prior to prescribed burning, unless such surveys have already been conducted for an associated project action in the same area proposed to be burned, e.g., if the area had been surveyed prior to mechanical treatment and would then be burned. The lack of survey information to date and to inform the NEPA process means the Forest Service has failed to capture the baseline of existing conditions for wildlife species across the project area, even though this is foundational for proper NEPA analysis. Without an accurate baseline of conditions, it is impossible for the agency to make a reasoned decision and analyze and disclose impacts that the proposed action and alternatives would have.

VI. FUEL BREAKS. The Description of each proposed treatment type mentions creation of "strategic fuel breaks". See DEA at 10-15. However, there is no further detail on where these might be located, nor on their size and configuration. As such, it is impossible for the public to understand and comment on the impacts and for the agency to reach any conclusions about what those impacts may be. See our February comments at 10 for additional discussion.

The DPBA states that fuel breaks could be 150 to 1,000 feet wide. *Id*. at 22. This would create large openings that would be detrimental to wildlife species needing continuously forested habitat. See further discussion above.

Effects of fuel breaks would not be addressed until Tier 2 consultation (DPBA at 22), meaning that the public will not get to see any analysis of the effects of fuel breaks until after the project is approved. This is a violation of NEPA.

VII. PROTECT ROADLESS AREAS. Under the proposed action, six Colorado Roadless Areas (CRAs) could be entered. See DEA Table 19 at p. 83.

The proposal to treat roadless forests is unnecessary and not consistent with the agency's own research that has shown that the lack of roads in roadless areas has not stopped fire prevention measures, and fuel management activities in these areas have been more numerous on a per-square kilometer basis than elsewhere in the National Forest System. The agency needs to explain why, given its own research it is appropriate to propose road building in any of the CRAs. This study also concerningly showed that non-native plants are twice as common within 500 feet of roads, with the researchers concluding that "Speculation that eliminating road prohibitions would improve forest health is not supported by nearly twenty years of monitoring data." Healy, S.P. 2020 (Ex. 24). The DEA does not take a hard look at such impacts across the project area, not merely in CRAs, dismissing invasive or noxious species, instead asserting that reliance on "BMPs" will result in minor-to-negligible adverse effect without any site-specific analysis, baseline data about the prevalence of such species, if present, or actual analysis of whether the undefined BMPs would even be sufficient to protect against degradation of the roadless forests. *See* DEA at 59.

For the proposed treatment in CRAs, temporary roads would be needed in at least some areas, and probably for all of them, given that the CRAs do not likely have roads, at least not system roads. When, where, and how many of these temporary roads would be created is not identified in the DEA and has not been subject to public notice and comment. The DEA bewilderingly also does not disclose how many total miles would be built in roadless forests over the course of the two-decade project period. Without this information, the Regional Forester cannot make a determination that "a temporary road is needed," much less multiple such roads under either narrow exemption of the Colorado Roadless rule for tree cutting. 36 C.F.R. § 294.43(c)(I)(vi), (vii). Based on Table 19, the project is proposing to overlap treatment in a total of 13,891 acres of Upper Tier CRA. The narrow exemptions, however, that the DEA is relying on from the Colorado Roadless Rule are only applicable for "non-upper tier acres." 36 C.F.R. § 294.43(c) ("Non-Upper Tier Acres. . . . a road or temporary road **may only be constructed or reconstructed in Colorado Roadless Areas outside upper tier acres** if the responsible official determines . . .") (emphasis added).

The other exemption mentioned in the DEA is not clearly applicable. 36 C.F.R. § 294.43(d)(4) is strictly for "motor vehicles for administrative purposes by the Forest Service and by fire, emergency, or law enforcement personnel." The Forest Service cannot broaden this exemption to allow private entities (i.e. logging truck and machinery movement by private entities) to fall under this exemption.

The DEA also acknowledges that CRAs are designed specifically to prohibit road construction and timber harvest, and that the project "would directly and adversely impact management directions." DEA at 88. Concerningly, however, the proposed project would allow roads to

remain on the landscape in these roadless forests until one year after the 20-year project is completed. *Id*. Roads are not "temporary" that remain on a landscape for two decades. Appendix C does not prevent this outcome either. While here it states that the Forest Service is to "Effectively decommission temporary roads, skid trails, and non-system routes used within the Project Area within one year of treatment area completion," there is no information that constrains a treatment area in a meaningful way. The size, duration of treatment for a treatment area is not defined, it would, however, likely be for activities over multiple years—maybe even the project life. The Forest Service, at a minimum, needs to clarify what the maximum duration of a road, skid trails, and non-system routes would be in CRAs. Allowing these to exist for years, much less two decades would be a violation of the Colorado Roadless Rule. With direction to also maintain the reduced fuel levels to have forests supposedly more resilient to fire and a project design criterion stating that periodic treatments may be needed "to maintain overall stand health and perpetuate old growth characteristics, "(DEA at 115, *see also* DPBA at 22), roads constructed for the LNS Project could be retained in roadless areas for many years so that treated areas can be treated again to supposedly retain low fuel levels. Fire lines would also be needed to control any fires implemented in CRAs. However, there is no direction to decommission fire lines. See DEA at 115. According to the DPBA, lines constructed mechanically would be bladed 8-12 feet wide. *Id*. at 24. This is essentially a road. A road in a roadless area destroys the area's character, by definition. Mechanical fire lines must not be created in roadless areas and are not consistent with the Colorado Roadless Rule.

Proposed treatment in CRAs would degrade roadless area characteristics. It is especially important to conserve the roadless character of the Rampart East CRA, as it is one of the least human-impacted areas along the lower Front Range. See further detail on this and related concerns about proposed treatment in CRAs in our February, 2024 comments at 5-6 and March, 2024 comments at 5-6. The Forest Service needs to disclose and allow for public comment on what treatments it is specifically proposing and where in each roadless area, how many roads and how many miles of road would be built, where they would be located, how long they would stay on the landscape, and explain how, if it can, legally allow for road construction/reconstruction in upper tier acres. Failing to do so violates NEPA and the CRA.

VIII. PROTECT MATURE AND OLD GROWTH FORESTS. The DEA states that 4,498 acres of old growth exist in the project area, with 4,444 acres in treatment areas. DEA at 89. Stand ages are unknown but thought to be less than 140 years. Ibid. The DEA then states that this acreage doesn't likely meet the definition of old growth because of this age, which is due to historic logging in the area that began in the 1880s.[4] This begs the question of how the stands were determined to be old growth in the first place.

[4] 200 years is the minimum age for most forest types to be old growth. See DEA Table 20, ibid.

But regardless, the stands identified as old growth are at least on the way to becoming old growth in a landscape that does not have much of it because of historical logging. Huckaby et al, 2001 (Ex. 26), noted the likely widespread historic presence of old growth in a study of the Cheeseman landscape (prior to it burning in the Hayman Fire in 2002), which was not logged or grazed.[5] These authors also noted the likely historic occurrence of stand-replacing fires. See also Huckaby et al, 2003 (Ex. 27).

Restoration of the project area's landscape must include re-establishment of old growth.[6] Thus the old growth characteristics of the stands identified as old growth stands need to be retained. This seems to be the intent, according to DEA p. 91. However, the prescription for ponderosa pine/Douglas-fir stands is to reduce the basal area to 30-50 square feet per acre. DEA at 9. This is likely well under the historic basal area for areas that with old growth ponderosa pine.

The stands identified as old growth in the project area should also not be treated if they are composed of mixed conifer, lodgepole pine, and spruce-fir stands. The stands all have a variable fire regime, so conditions that might also favor a stand replacement fire in these areas do not need to be changed. The same is true for ponderosa-dominated stands above about 7,200 feet. See Sherriff and Veblen, 2006 (Ex. 47). For stands dominated by ponderosa pine below about 7,200 feet, it is important to retain the largest/oldest trees in a clumpy structure. Some smaller-diameter understory trees could be removed, and if safe, a low intensity prescribed fire could be implemented.

According to DEA Figure 12, p. 90, about half the stands identified as old growth in the project area are in CRAs, especially the Green Mountain CRA. Notably, mature and old growth trees are absent or nearly so from the southwest part of the project area due to the Hayman fire in 2002. DEA at 91. This area should be managed to encourage full development of old growth. The Forest Service needs to explain how its aggressive BA reduction aligns with Executive Order 14072 that also requires conserving America's mature and old-growth forests on Federal lands.

IX. PROTECT SOILS AND WATERSHED. As we stated in previous comments, we are concerned about treatment on steep slopes in the project area. Soils there are mainly composed of granite and are highly erodible. See Draft Watershed and Soils Report at 26-27. Note that numerous watersheds in the project area are rated as having impaired functioning and several others are rated "functioning at risk." *Id*. at 32-39.

[5] "Trees older than 200 years were found in 70 percent of sampled stands. Trees older than 400 years were found in 30 percent of sampled stands, suggesting that old growth was common and widespread in historical landscapes in the Front Range." *Id*. abstract, p. 19 of the Proceedings, RMRS-P-22.

[6] One purpose of the project is to "restore ecological conditions." DEA at 5.

Note that very high (greater than 50 percent) of some watersheds would be treated under the proposed action. *Id*. at 44-45. This includes some of the watersheds that are impaired. The latter should not be treated, at least not to the extent proposed. At a minimum, treatment in the impaired and at risk watersheds needs to be staggered, i.e., implemented gradually over time rather than all at once. This would be critical for avoiding detrimental effects of increased peak streamflows. *Id*. at 44.

But under the proposed action up to 15,307 acres on steep slopes could be treated. DEA at 7. Areas with steep slopes in watersheds that are impaired or functioning at risk must not be treated. Doing so would risk exacerbating poor watershed conditions.

See additional comments in our February, 2024 comments at 8-9.

The proposed steep slope logging is especially concerning in light of the erosion and scarring that has been observed at the Monarch Pass project on the Salida Ranger District. This project was a steep slope project that alternated strips between removed and retained trees and was implemented starting in 2020. Attached are photos demonstrating not only wholly insufficient mitigation measures to address, much less prevent, erosion that is leading to gully and rill formations. These photos show the stark contrast between areas that were cut with heavy machinery and the strips that were not subjected to the aggressive logging practices. Deep tire track ruts are visible more than two years out from when the project was implemented. The swaths where trees were removed remain bare dirt and rock, with little to no ground cover, lichen, or other matter that keeps soils intact and guards against erosion.

Erosion is evident from the top of steep slopes that were cut to the base of the cut areas. The flimsy erosion mitigation----thin wooden stakes and black plastic tarps----are degrading, ineffective, and resulting microplastic contamination. This is a violation of the LRMP, which requires that the Forest Service must "reduce to natural rate any erosion due to management activity in the season of disturbance and sediment yields within one year of the activity through necessary mitigation measures. . ." LRMP at III-51. The Forest Service cannot reasonably claim that it has sufficient mitigation measures to address erosion from steep slopes for the current proposed project. The Forest Service cannot propose to cut steep slopes as part of this project and comply with the LRMP. At a minimum, the Forest Service, if it refuses to remove steep slopes from this project area must demonstrate and provide opportunities for comment that it can actually design mitigation to prevent the same egregious outcome of the Monarch Pass project. LRMP at III-44, 51.

X. MANAGE RECREATION IN TREATED AREAS. Removing vegetation would make public access easier, including motor vehicle use. See DEA at 61. This could cause adverse impacts to soils, wildlife habitat effectiveness, water quality, and heritage resources. There is already some

illegal off-highway vehicle use in the area. *Id*. at 66. Having more roads and fewer trees to block vehicles would likely increase such activity. This is a reasonably foreseeable impact and must, but has not, been analyzed and disclosed.

Of the measures listed in the project design feature at the bottom of DEA p. 114, the following are preferred:

> …leaving a no treatment buffer wide enough to discourage attempts at creating new travel routes, and/or treatment design modifications to retain a higher tree density where natural on-site features may be sufficient.

Barriers, such as rock or logs, can be moved by determined off-road enthusiasts. Thus it is better to design the project, as suggested above, to not create any new opportunities for off-route use.

It is very important to monitor all areas where substantial thinning has occurred, especially in areas accessed by existing roads, to see if the employed measures are effective in preventing off-route motorized use.

See additional discussion in our February comments at 10-11.

XI. SLASH PILE SIZE AND PLACEMENT.

Under the proposed project's design features, hand piles could be 10' X 10' X 7' and machine piles could be 20' X 20' X 12'. DEA Appendix C at 109. These are very large piles that would degrade the visual quality of treated areas and areas adjacent to them. More importantly, if the piles were burned, the long heat pulse would damage soils beneath the piles by killing all micro-organisms and volatilizing nutrients. The Forest Service has not analyzed and disclosed what these impacts would be or whether there is a way to mitigate this harm by changing the hand pile and machine pile size so they would be less likely, or perhaps not even cause, a long heat pulse that would negatively impact soils.

Another design feature states:

> Consider pile placement in relation to sensitive areas such as riparian areas, private property, and infrastructure.

Id.

This design feature fails to provide any protection for sensitive areas. It must be stronger. Pile placement should be prohibited in riparian areas, especially if they will be burned, as high-

intensity burning could facilitate delivery of sediment into streams, an occurrence the project seeks to avoid by reducing the risk of high-intensity fire.

XII. FIGHT INVASIVE SPECIES AND PROTECT RARE PLANTS.
Under the proposed project design criteria,

> If noxious weeds from Colorado State list A and B, in addition to cheatgrass, are found, they would be documented and added to a treatment plan.
>
> Where feasible, implement treatment plan within 3 years of project completion.

DEA at 110.

This is too weak. Applying this measure as written might allow introduction of new weed populations and spreading of existing ones. Instead, prior to commencing any ground-disturbing activities (e.g., temporary road construction or reconstruction, mechanical or hand treatment, prescribed burning), areas must be surveyed for invasive plant species. Any populations found must be eradicated to the maximum extent practicable prior to any ground disturbance. After completion of work in any area, there should be follow-up surveys for at least two full growing seasons, with eradication of any weeds discovered.

The surveys for invasive species can be used to detect rare plant populations so that they can be protected. There needs to be a no-disturbance buffer around each rare plant population sufficient to ensure the population will not be disturbed during project implementation and will have an opportunity to expand.

The first design feature under botany should be reworded to require field surveys, as existing information on plant populations may not be up to date.

XIII. AN ANALYSIS OF MITIGATION MEASURES AND THEIR EFFECTIVENESS IS REQUIRED, YET MISSING.

Under NEPA, the agency must have an adequate mitigation plan. NEPA requires the agency to consider mitigation that would avoid the impact altogether by not taking a certain action or parts of an action, minimize impacts by limiting the degree or magnitude of the action and its implementation, rectify the impact by repairing, rehabilitating, or restoring the affected environment, reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action, and compensate for the impact by replacing or providing substitute resources or environments. “[O]mission of a reasonably complete discussion of possible mitigation measures would undermine the ‘action-forcing’ function of NEPA. Without such a discussion, neither the agency nor other interested groups and

individuals can properly evaluate the severity of the adverse effects." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 353 (1989). NEPA requires that the agency discuss mitigation measures, with "sufficient detail to ensure that environmental consequences have been fairly evaluated." *Id*. at 352.

> An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective. Compare Neighbors of Cuddy Mountain v. U.S. Forest Service, 137 F.3d 1372, 1381 (9th Cir.1998) (disapproving an EIS that lacked such an assessment) with Okanogan Highlands Alliance v. Williams, 236 F.3d 468, 477 (9th Cir.2000) (upholding an EIS where "[e]ach mitigating process was evaluated separately and given an effectiveness rating"). The Supreme Court has required a mitigation discussion precisely for the purpose of evaluating whether anticipated environmental impacts can be avoided. Methow Valley, 490 U.S. at 351–52, 109 S. Ct. 1835 (citing 42 U.S.C. § 4332(C)(ii)). A mitigation discussion without at least some evaluation of effectiveness is useless in making that determination.

South Fork Band Council v. Dept. of Interior, 588 F.3d 718, 727 (9th Cir. 2009) (rejecting EIS for mining project for failure to conduct adequate review of mitigation and mitigation effectiveness in EIS). "The comments submitted by [plaintiff] also call into question the efficacy of the mitigation measures and rely on several scientific studies. In the face of such concerns, it is difficult for this Court to see how the [agency's] reliance on mitigation is supported by substantial evidence in the record." *Wyoming Outdoor Council v. U.S. Army Corps of Eng'rs*, 351 F. Supp. 2d 1232, 1251 n. 8 (D. Wyo. 2005). *See also Dine Citizens v. Klein*, 747 F. Supp. 2d 1234, 1258–59 (D. Colo. 2010) (finding "lack of detail as the nature of the mitigation measures" precluded "meaningful judicial review").

The EA is devoid of any detailed analysis of the effectiveness of the purported mitigation measures. Two illustrative examples are with sensitive species and roads in CRAs. Regarding mitigation for sensitive species the DEA state: "Project design standards have been created to minimize or mitigate the potential effects of project impacts to sensitive wildlife and rare plant species" but the mitigation are not identified or explained as to how they would reduce impacts. DEA at 50; DEA at 112-113. For roads, the in CRAs, the DEA states mitigation would come from decommission temporary roads within one year of the 20-year project being completed and that other features would restrict permitted/authorized use without analyzing the effectiveness of such measures, including in the context of aggressively reduced basal areas which would make it easier and readily foreseeable that off-road vehicle impacts would increase, potentially even drastically. DEA at 88; DEA at 115.

It is impossible for the Forest Service to contend that it fully reviewed the effectiveness of mitigation measures—as required by NEPA—when the EA lacks any such analysis. Simply referring generally to design features without analysis of whether they are effective to mitigation impacts, as the EA does, does not comply with NEPA. *See* DEA at Appendix C, DEA. As held

recently by the federal courts, an EA violates NEPA if it "fails to address the effectiveness of the mitigation measures." *Gifford Pinchot Task Force v. Perez*, 2014 WL 3019165, at *39 (D. Or. 2014). As in *Gifford Pinchot*, no analysis, let alone mention, of how effective these mitigation measures will be is contained in the EA. As such the EA violates NEPA.

XIV. THE FOREST SERVICE MUST ACCOUNT FOR GREENHOUSE GAS EMISSIONS AND PROVIDE A TOTAL CARBON BUDGET.

While there is a section in the DEA that seeks to analyze direct and indirect effects of the proposed action as it relates to carbon and greenhouse gas emissions, this section fails to provide actual analysis of the impacts from this project. Rather than being analyzed, this section of the DEA is informational, discussing impacts and disturbance from other activities within the project area. That is not analysis, however, of what impacts this project would be. The climate analysis also tries to minimalize the impacts from the project, making it sound minuscule and that it is offset by carbon storage remaining in removed trees. Both of these approaches are inappropriate and do not justify a failure to take a hard look at climate impacts.
And while the DEA acknowledges that the project would impact the aboveground live biomass, forest floor, and soil organic carbon that make up 85% of the carbon stored in the forest, there is no analysis of what the impact would be. DEA at 55. It is not sufficient for the agency to provide a mere conclusory sentence that there will be some unknown amount of alleged temporary impacts. The Forest Service needs to and can quantify these impacts. Indeed, it is also not clear how the agency can reach a favorable cumulative effects determination without quantifying the impact to climate and carbon stores, especially in light of the research that indicates that logging is a substantial source of climate pollution and compaction, erosion, disturbance, that come with the proposed activities would impact the function of 85% of the carbon stores on the forest, by the agency's own assessment. Compliance with NEPA requires this analysis error to be corrected.

Research, including studies done by the U.S. government, indicates that logging on federal forests is a substantial source of carbon dioxide emissions to the atmosphere. *See* Merrill, M.D *et al.*, 2018 (Ex. 36) (finding that between 2005 and 2015, logging on federal lands released 43 MMT CO2 Eq./yr, more than double the amount of carbon lost due to wildfire, 21 MMT CO2 Eq./yr); Harris, N.L. *et al.* 2016 (Ex. 23). And that there is little credible evidence that thinning activities have any added benefit for increasing terrestrial carbon stocks. Campbell, John L. *et al*. 2011 (Ex. 11).

Notably, logging emissions – unlike emissions from natural disturbances – are directly controllable. Models and methods exist that allow agencies to accurately report and quantify logging emissions for avoidance purposes at national, regional, and project-specific scales. As such, the Forest Service has the ability and responsibility to disclose estimates of such

greenhouse gas emissions using published accounting methods with the express purpose of avoiding or reducing the greenhouse gas associated with logging, and acknowledge the substantial carbon debt created by logging mature and old-growth trees and forests on federal lands. *See* Hudiburg, *et al.* 2019 (Ex. 28); Harmon *et al.* (2022) (Ex. 20). The DEA does not do this.

1. The agency should identify and assess the carbon stock of mature and old-growth forests and trees given the substantial carbon value of such trees and forests. *See e.g.* Law, B.E., *et al.*, 2021 (Ex. 57); Law, B.E., et al. 2022 (Ex. 32); DellaSala D.A, *et al.*, 2022 (Ex. 18); Birdsey, R., *et al.*, 2023 (Ex. 8).

2. The agency should identify and assess ***gross*** emissions from logging, particularly logging mature and old-growth trees and forests on federal lands, and including the emissions from logging on site and downstream emissions through the entire chain of custody of milling, manufacturing, and transportation.

3. The agency should provide a high standard of scientific support for any asserted offsets of gross emissions, including discussion of timing factors that address the carbon debit created from logging vs avoiding logging and allowing stocks to further accrue. *See* Moomaw, W.R. *et al.*, 2019 (Ex. 38). Storing some carbon in short-lived wood product pools is not compensatory as an offset or avoidance for using other carbon-intensive materials in construction. *See* Harmon, M.E., 2019 (Ex. 21).

<u>The Forest Service must disclose direct and indirect climate pollution from removing, transporting, and milling wood</u>. This includes emissions from loss of stored carbon during the removal at the forest (in-boundary) and manufacturing and transport process (out-of-boundary). That is, the NEPA documents for the project should more closely specify the need to disclose the GHG emissions from logging on site through the entire chain of custody of milling, manufacturing, and transportation, including:

- construction, reconstruction, and maintenance of logging access routes;
- all forms of logging operations (clearcut, selective, postfire, commercial thinning, etc), including any herbicides, insecticides and related treatments;
- transport of logs to mills;
- milling of the wood; and
- transport of products to other sectors.

These emissions and others are all foreseeable impacts of logging projects. In some cases, these impacts may be considerable. For example, the South Plateau Project in Montana, currently undergoing NEPA review, will result in at least 40,000 trips by fully loaded logging trucks to remove the 83 million board feet of timber, and will involve the construction (and subsequent obliteration) of up to 57 miles of temporary road. We note that in addressing the impacts of coal mine expansions, federal agencies have disclosed the GHG emissions of equipment used to mine

coal and to transport it to market. Land management agencies can and should make similar projections for GHG pollution associated with vegetation removal and landscape restoration projects.

The Forest Service routinely asserts, as it does in the DEA, that the impacts of logging on carbon stores will be minimal because carbon from logged trees will be stored long-term in forest products. Such assertions are contrary to research indicating that much of the carbon stored in removed trees is lost in the near term, and little carbon is stored long-term in wood products.

For example, a 2019 study evaluated the quantification of biogenic emissions in the state of Washington, which included GHG emissions from logging, but not decomposition of wood products. The study concluded that the failure to address decomposition losses amounted to as much as a 25% underestimation of carbon emissions. *See* Hudiburg, *et al.*, 2019 (Ex. 28).

Losses from decomposition vary over time and also depend on the lifetime of the wood product being produced from the timber. *See e.g.* Keith, H. et al., 2014 (Ex. 30); Law, 2014 (Ex. 31). Paper and wood chips, for example, have very short lifetimes and will release substantial carbon to the atmosphere within a few months to a few years of production. Bioenergy production and burning has been found to release more emissions than burning even coal, including methane. Product disposal in landfills results in anaerobic decomposition that also releases methane. Methane has a global warming potential about 30 times that of carbon dioxide over 100 years, and over 80 times that of carbon dioxide over 20 years, magnifying the impact of disposal of short-term wood products.

Longer term wood products can store carbon for many decades, but this depends on the life of the product. To give a sense of the larger picture, a study modeling carbon stores in Oregon and Washington from 1900-1992 showed that only 23% of carbon from logged trees during this time period was still stored as of 1996. *See* Harmon, M.E., *et al.*, 1996 (Ex. 22). Similarly, more than 80% of carbon removed from the forest in logging operations in West Coast forests was transferred to landfills and the atmosphere within decades. In addition, Hudiburg (2019) (Ex. 28) concludes that state and federal carbon reporting had erroneously excluded some product-related emissions, resulting in a 25-55% underestimation of state total CO_2 emissions from logging. Many of the aforementioned decomposition emissions could be avoided if trees were left standing, especially by protecting carbon stocks from logging of mature and old-growth trees and forests on federal lands.

The detailed NEPA analyses that the Forest Service needs to conduct would disclose the trade-off and the importance of maintaining the stock value of mature and old-growth trees. In so doing, the analysis would quantify *both* the short-term *and* long-term gross *and* net impacts of logging. This would allow agencies to disclose and assess the trade-offs between increasing

GHG emissions via logging now – when decreases are most sorely needed – versus alleged increases in storage later. Detailed NEPA analysis would also avoid ignoring short-term carbon losses due to logging based on the erroneous assumption that the residual forest will have significantly reduced potential to have its carbon stores diminished by high-severity fires. Decades of research, however, call these sorts of blanket assertions into question. Moreover, this is not a basis for failing to disclose emissions from the logging itself, especially in comparison to fire. Research shows that emissions from logging greatly exceed those from all natural disturbances combined (fire, insects, windstorms). *See* Harris, N.L., *et al.*, 2016 (Ex. 23); Merrill, M.D. *et al.*, 2018 (Ex. 36); Zald, H.J., and C.J. Dunn, 2018 (Ex. 56).

Further, the CEQ recently issued Guidance clarifying that agencies are to address the emissions and storage impacts of project-specific vegetation removal projects, "such as prescribed burning, timber stand improvements, fuel load reductions, and scheduled harvesting." CEQ, National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change, 88 Fed Reg. at 1206. We support this direction. In addition, the Forest Service should also assess emissions from pile burning related to forestry operations, as such actions can intensify carbon release.

The nature of the climate change emergency is based on multiple points of emission sources, with each contributing to the problem cumulatively. Therefore, project level analysis is a critical undertaking and one for which land management agencies now have the tools to quantify the contribution of each federal action, including in cumulative effects analyses.

Given the significant climate impact of logging on federal lands, it is critical that agencies estimate and quantify greenhouse gas emissions associated with each individual logging project and provide annual estimates of greenhouse gas emissions associated with total logging on federal lands. Agencies should expand their abilities and expectations around accounting for logging emissions as a significant contributor to climate change in tandem with continued progress in fire emissions accounting that more accurately captures actual carbon emissions from forest fires. *See* Harmon, M.E., C.T. Hanson, and D.A. DellaSala. 2022 (Ex. 20).

XV. THE DEA'S RELIANCE ON "ADAPTIVE MANAGEMENT' VIOLATES NEPA.

While adaptive management can be a management tool, it is not a cloak that shields the agency from site-specific analysis, disclosure of site-specific proposed activities, and analyzing the impacts of the proposed actions, necessary mitigation, and other requirements under federal law. Adaptive management is an actionable plan with measurable thresholds and actions if those thresholds are met. It is subject to public notice and comment and integrated into the NEPA process, not fabricated after decisions have already been made.

A. THE LAW OF ADAPTIVE MANAGEMENT.

To be effective and legal, adaptive management must: (1) clearly identify measurable thresholds that, if exceeded as determined by monitoring, will require a change in management; (2) clearly identify what that changed management will entail; and (3) disclose in this NEPA document the impacts caused by that change in management. Because the Final EA, like the Draft, fails on at least the last count, the Forest Service cannot rely on the adaptive management strategy as divulged in the EA.

Forest Service NEPA regulations, adopted in 2008, define adaptive management as "[a] system of management practices based on *clearly identified intended outcomes and monitoring* to determine if management actions *are meeting those outcomes*; and, if not, to facilitate management changes that will best ensure that those outcomes are met or re-evaluated. Adaptive management stems from the recognition that knowledge about natural resource systems is sometimes uncertain." 36 C.F.R. § 220.3 (emphasis added). These regulations further state that:

> An adaptive management proposal or alternative must *clearly identify the adjustment(s) that may be made* when monitoring during project implementation *indicates that the action is not having its intended effect*, or is causing unintended and undesirable effects. The EIS must disclose not only the effect of the proposed action or alternative *but also the effect of the adjustment*. Such proposal or alternative must also *describe the monitoring that would take place* to inform the responsible official during implementation whether the action is having its intended effect.

36 C.F.R. § 220.5(e)(2). The preamble to the Forest Service's regulation that adopted the adaptive management definition states that the agency must identify the proposed changes, and their impacts, in the NEPA document. "When proposing an action the responsible official may identify possible adjustments that may be appropriate during project implementation. Those possible adjustments must be described and their effects analyzed in the EIS." 73 Fed. Reg. 43,084, 43,090 (July 24, 2008).

Federal courts have found agencies violated NEPA or the Endangered Species Act (ESA) where the agency relied on an "adaptive management" plan that was vague, set no specific triggers for future action, failed to describe that future action, or failed to ensure that resources will be protected as the adaptive management plan asserts.

In *Natural Resources Defense Council v. U.S. Army Corps of Engineers*, 457 F. Supp. 2d 198 (S.D.N.Y. 2006), the court found that the Army Corps' attempt to supplement an inadequately-explained finding of no significant impact concerning a dredging project was arbitrary and capricious where the agency relied on ill-defined "adaptive management" protocols to conclude that impacts would be mitigated below the level of significance.

> The EA makes several promises that it will alter its monitoring plan should it prove necessary. For example, the EA relies on a general promise that it will "as appropriate, reevaluate, the need for altering its dredging methods" … through the use of its coordination plan and monitoring program. The EA also explains that the Corps will follow "adaptive management practices as it moves through construction of its contracts," thus allowing it to change future contracts should the data indicate it is necessary. These promises, however, provide no assurance as to the efficacy of the mitigation measures. The Corps did not provide a proposal for monitoring how effective "adaptive management" would be.

Mountaineers v. United States Forest Service, 445 F. Supp. 2d 1235 (W.D. Wash. 2006) set aside a Forest Service decision to open motor vehicle trails where the agency proposed to monitor impacts to wildlife and potentially change the trails later based on an adaptive management plan. The court stated that these adaptive management strategies "amount … to a 'build-first, study later' approach to resource management. This backward-looking decision making is not what NEPA contemplates." *Id*. at 1250. Other cases similarly conclude that NEPA forbids the use of ill-defined adaptive management plans to assume away likely impacts of agency action. *See, e.g., High Sierra Hikers Association v. Weingardt*, 521 F. Supp. 2d 1065, 1090-91 (N.D. Ca. 2007) (overturning a Forest Service decision to liberalize the rules limiting campfires in high country parts of a wilderness area on the grounds that the agency could not rely on adaptive management to overcome an inadequate response to the problems raised in the record).

Courts also hold unlawful agency projects that may impact species protected by the Endangered Species Act where the biological opinion is based on the assumption that a vague and ill-defined monitoring and adaptive management plan will mitigate impacts to the species at issue. These cases provide a useful analogy to adaptive management in the NEPA context. *Natural Resources Defense Council v. Kempthorne*, 506 F. Supp. 2d 322 (E.D. Ca. 2007) is key precedent. In this case, plaintiffs challenged a proposed plan to manage water diversions in a manner that could adversely impact the delta smelt, a species listed as threatened under the Endangered Species Act. The Fish and Wildlife Service prepared a biological opinion (BiOp) on the proposal which concluded that the project would neither jeopardize the smelt nor adversely modify the smelt's critical habitat. "Although the BiOp recognize[d] that *existing* protective measures may be inadequate, the FWS concluded that certain proposed protective measures, including … a proposed 'adaptive management' protocol would provide adequate protection." *Id*. at 333-34 (emphasis in original).

Plaintiffs alleged, among other things, that the BiOp "relie[d] upon uncertain (and allegedly inadequate) adaptive management processes to monitor and mitigate the [project's] potential

impacts." *Id*. at 329. They asserted that the adaptive management plan, which required a working group meet and consider adaptive measures in light of monitoring, failed to meet the ESA's mandate that mitigation be

> "'reasonably specific, certain to occur, and capable of implementation'" because: (1) the [working group] has complete discretion over whether to meet and whether to recommend mitigation measures; (2) even if the [working group] meets and recommends mitigation measures, the [agency management team] group is free to reject any recommendations; (3) there are no standards to measure the effectiveness of actions taken; (4) reconsultation is not required should mitigation measures prove ineffective; and (5) ultimately, no action is ever required.

Id. at 352. *See also id.* at 350 (explaining the "certain to occur" standard and citing *Ctr. for Biological Diversity v. Rumsfeld*, 198 F. Supp. 2d 1139, 1152 (D. Ariz. 2002)).

The *Kempthorne* court cited prior caselaw holding that "a mitigation strategy [in the ESA context] must have some form of measurable goals, action measures, and a certain implementation schedule; i.e., that mitigation measures must incorporate some definite and certain requirements that ensure needed mitigation measures will be implemented." *Id*. at 355 (citing *Rumsfeld*, 198 F. Supp. 2d at1153). The court found that adaptive management plan "does not provide the required reasonable certainty to assure appropriate and necessary mitigation measures will be implemented." *Id*. at 356. The court concluded that

> Adaptive management is within the agency's discretion to choose and employ, however, the absence of any definite, certain, or enforceable criteria or standards make its use arbitrary and capricious under the totality of the circumstances.

Id. at 387.

B. THE DEA DOES NOT COMPLY WITH THE LAW FOR ADAPTIVE MANAGEMENT.

The DEA relies on adaptive management to but fails to contain key elements required to comply with NEPA. Here, the agency has not provided a plan with thresholds and management changes for the instance where thresholds have been met. There is no identification of any triggers that would require a change of action. The DEA provides neither the Forest Service nor the public with any information about how the agency might "adjust" its actions. And because the DEA does not explain what those "adjustment" may entail, the proposed adaptive management plan violates Forest Service regulations requiring that the NEPA analysis "disclose not only the effect of the proposed action or alternative *but also the effect of the adjustment*." 36 C.F.R. §

220.5(e)(2) (emphasis added). The DEA fails to disclose what the impacts will be if actions are adjusted pursuant to adaptive management. The Forest Service has the authority to change a project and/or approve new actions within a project area in response to changes, but it can do so only in accordance with NEPA and the agency's own regulations. The DEA also fails to provide any information about what monitoring would even be in place to track the project's impacts and determine whether changes in course of action would be required. It is not sufficient to merely say for only a few instances there will be some undefined monitoring. *See* DEA at 77, 112, 114. Lawful adaptive management, however, requires identifying what will be monitored, what the monitoring will be, how it will be conducted, as well as the frequency and duration of monitoring (e.g. how many times per month or year and for how long).

Needless to say, the approach in the DEA fails to "clearly identify the adjustment(s) that may be made when monitoring during project implementation indicates that the action is not having its intended effect." 36 C.F.R. § 220.5(e)(2). Here, where there is not even a Biological Opinion in place and multiple species with likely to adversely affect findings, vague assertions that the project will move forward under some undefined, to-be-determined alleged adaptive management approach does not comply with the mandates of NEPA. Because the Forest Service has failed to provide an adaptive management plan in the DEA, it fails to comply with these laws. The Forest Service must develop a specific adaptive management plan in cooperation with the public and all stakeholders before it issues any additional NEPA document or proposed decision.

CONCLUSION. The Proposed project is too large and the Forest Service has not complied with NEPA and the ESA. It would treat stands too intensely to the detriment of wildlife habitat, watershed integrity, and soil quality. It proposes to treat in various types that need no treatment and should not be treated, especially spruce-fir and lodgepole pine stands, but also riparian areas and aspen stands.

Treatment in nest/roost habitat for MSO should be limited to hand thinning. There should be no treatment in nest core areas and only minimal, if any, treatment in the remainder of each PAC.

Treatment must be minimized in roadless areas to conserve roadless area characteristics. Control lines must not be constructed with mechanized equipment, and any control lines and access paths constructed by any means must be fully obliterated, not just closed, upon completion of work in the respective area.

A much smaller project should be proposed, one that focuses on: areas closest to infrastructure where reduced susceptibility to damage from wildfire is in order, and lower elevation ponderosa pine-dominated stands that are certifiably denser than historically because of fire suppression.

This would be much more appropriate for the project area, as it would allow some reduction of fuels while conserving the forest values.

Sincerely,

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Exhibit 53: US Forest Service Region 3, MSO Pre-implementation Compliance Review, Version 5/4/2023.

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