November 12, 2019

Randall Walker, District Ranger
North Kaibab Ranger District, Kaibab National Forest
430 S. Main St.
Fredonia, AZ 86022

Delivered via email: comments-southwestern-kaibab-north-kaibab@fs.fed.us

RE: Comments on the Kaibab Plateau Ecological Restoration Project Environmental Assessment

Dear District Ranger Walker:

This letter supplies the Center for Biological Diversity's comments on the Kaibab Plateau Ecological Restoration Project (KPERP) Environmental Assessment (EA). The Center for Biological Diversity ("the Center") is a non-profit environmental and wildlife conservation organization with over 70,000 members, and 1.6 million activist-supporters nationwide who value wilderness, biodiversity, old growth forests, and the threatened, endangered and sensitive species which occur on America's spectacular public lands and waters. Many of the Center's members and supporters frequently use and enjoy the spectacular landscapes of the Kaibab National Forest for recreation, sustenance, nature study, and spiritual renewal, especially the Kaibab Plateau.

At the Center for Biological Diversity, we believe that the welfare of human beings is deeply linked to nature — to the existence in our world of a vast diversity of wild animals and plants. Because diversity has intrinsic value, and because its loss impoverishes society, we work to secure a future for all species, great and small, hovering on the brink of extinction. We do so through science, law and creative media, with a focus on protecting the lands, forests, waters and climate that species need to survive. The Center has and continues to actively advocate for increased protections for species and their habitats in Arizona and across the American Southwest.

We appreciate the KPERP's collaborative approach supported thus far by the Kaibab National Forest. We feel that the Forest Service is listening to our concerns and modifying some aspects of the project accordingly. Other significant landscape-scale restoration projects in Region 3 have shunned collaboration, including the Luna Restoration Project on the Gila National Forest, which, despite our attempts, made minimal efforts to incorporate public concerns and perspectives.

We also appreciate the willingness of Forest Service staff to make Specialist Reports available on the Project website. These reports are helpful in understanding the analysis process, and should be posted to project websites as standard practice. Other forests, especially the Apache-Sitgreaves National Forest, have forced us to file FOIA requests for Specialist's Reports, which we find completely counter to the public disclosure and participation requirements of NEPA. Again, thank you for your commitment to helping the public engage in this process, and we look forward to continued collaboration in the analysis and implementation phases of the KPERP.

I. Elements of the proposed action which we appreciate and support.

A. A commitment to non-commercial mechanical treatments.

The Center supports limited and strategically located mechanical thinning of dry conifer forests and woodlands as a step in restoring natural fire regimes, wildlife habitat, and attendant structural and compositional ecosystem components. By limiting tree felling to a non-commercial approach, the KPERP will likely avoid many of the economic and silvicultural pressures that lead to what we consider as undesirable outcomes in forest restoration, those being the removal of old and large trees, thinning to densities and basal areas below or at the low end of natural range of variability, reduction in canopy cover such that canopy dependent species are negatively affected, and fragmentation of habitat with intrusive operations and infrastructure.

To be clear, we do not support commercial logging and timber harvesting on the Kaibab Plateau outside of the wildland-urban interface, especially when that logging may lead to the removal of old and large trees. This project (the KPERP) should be the only type of management action used on the Plateau, as a non-commercial approach is a good basis for retaining all old and large trees. Unfortunately, the Forest Service has indicated that future commercial projects are to be proposed elsewhere across the Kaibab Plateau.[1] We will continue to oppose commercial projects on the Kaibab Plateau which include removal of large volumes of sawtimber, Burnt Corral included, especially as the Forest Service has thus far refused to modify desired conditions to better reflect the best available science for determining the natural range of variability for the forests of the Kaibab Plateau. In our scoping comments[2] we suggested that Burnt Corral be included in this project for a number of reasons, one of them being limited industry capacity in the region. The Forest Service has admitted that industry is not sufficient to support commercial timber harvest,[3] so we again urge the Kaibab National Forest to end commercial logging on the Plateau. Leaving the Burnt Corral analysis area as a "doughnut hole" in the KPERP defies basic landscape analysis and planning principles, and commits the Kaibab National Forest to a failed model of industrial forestry in a remote and wild region valued for so much more than timber production.

B. A commitment to large tree protection and retention.

The three allowance categories provided on page 15 of the EA, which permit limited removal of large trees, are reasonable. We appreciate that in response to public comments two exception categories listed in the October 2018 Proposed Action were removed: 1) to meet resource objectives; and 2) to obtain desired species composition and structure or for other forest health-related reasons in a group of trees that need to be thinned. These two exceptions significantly undercut the value of the project, and by removing them the Forest Service has shown recognition

[1] Statement of District Ranger R. Walker at the KPERP Stakeholders Workshop, Flagstaff Arizona, 11/27/2018.

[2] Letter of J. Trudeau, Center for Biological Diversity to R. Walker, Kaibab National Forest (Nov. 5, 2018).

[3] "*The proposed action does not include timber harvest. Timber harvest is one method for working toward desired conditions; but the lack of infrastructure for handling and processing timber products limits treatments at the landscape scale needed to address the vulnerable existing conditions, and the controversy over timber harvests could delay implementing the much-needed additional prescribed fire on the plateau. The established timber industry in northern Arizona and southern Utah does not have the processing capability (i.e., workers, equipment, and facilities) to address the treatment needs on a large enough scale required to move towards desired conditions. Timber harvest is not a viable option for many places on the North Kaibab Ranger District due to low timber values and other resource concerns*." EA at 3.

that large trees have tremendous ecological and social value and there are very few justifiable reasons for their removal. The Forest Service could greatly improve the EA by adding language to protect old growth trees, as those may be smaller diameters and not covered by the large tree cutting limitations. Currently, the EA provides no such direction for old tree retention, and it is not sufficient to assume that large tree restrictions will protect all old trees. The EA (at 77, emphasis added) states that "*The ponderosa pine potential natural vegetation type (PNVT) is highly-departed from reference conditions, including uncharacteristically* ***dense forests with many more young trees than were present historically****, reduced understory, and increased risk of uncharacteristic, high-severity fire (forest plan).*" There are few old and large trees left on the Kaibab Plateau, and a commitment to selected removal of just small and young trees would benefit the project greatly.

C. Following recommendations for Mexican Spotted Owl Recovery Habitat.

We appreciate that "*Design Element WLD04 would be applied to treatments within recovery habitat and mixed conifer PNVTs to ensure consistency with the Mexican spotted owl recovery plan.*"[4] Design Element WLD04 accurately depicts MSO Recovery Plan recommendations for this habitat stratum, and by managing for these values the Forest Service will maintain the habitat elements needed by spotted owls and other canopy dependent wildlife.

D. Minimizing the effects of mechanized operations on the Kaibab Plateau.

We appreciate several project design features which reduce the long-term deleterious effects of forest management activities. For one, thank you for prescribing only hand-tool thinning activities in Inventoried Roadless Areas.[5] Also, thank you for proposing a project without proposing any new roads.[6] These two self-imposed restrictions, combined with addressing impacts to habitat connectivity and fragmentation, set this project on a level above most other restoration projects in the Southwest which rely on extensive mechanical intervention, creation of new roads or dozens of miles of new temporary roads, and fragmentation of habitats. However, as we said in our scoping comments, restoration should include closing roads, which this project does not propose. We would like to see any subsequent NEPA document prepared for this project include the closure of existing system roads that are unnecessary for public travel and fragment wildlife habitat. As an example, the 4FRI Record of Decision includes roads to be closed as part of restoration activities.

E. Reduction in mechanical treatment in Pinyon-Juniper systems.

Table 1 in the EA shows greatly reduced acres of mechanical treatment in Pinyon-Juniper ecosystems. In our scoping comments, we went into great detail on the risks and uncertainty involved in mechanical activities in woodlands, and the reduction of acres slated for treatment acknowledge those concerns. While the EA and Vegetation Specialist report make brief mention of retaining some old woodland trees, we would like to see stronger language prohibiting the removal of pinyons and juniper of large diameters and with old tree characteristics.

[4] KPERP EA at 76.

[5] KPERP EA at 16.

[6] KPERP EA at 16.

II. Desired conditions for forests must be tailored to Kaibab Plateau reference sites.

The Center has considerable concerns with General Technical Report 310 (Reynolds et al 2013; GTR-310) which we have addressed in previous correspondence with the Kaibab National Forest, including our scoping comments on the KPERP. GTR-310 is the Forest Service's own self-published desired conditions for dry conifer forest in the Southwest and its relevance to the KPERP should be questioned. The KPERP EA repeatedly states that the project will move towards desired conditions consistent with GTR-310. These statements are provided:

"*The Kaibab Plateau Ecological Restoration Project was developed to work towards desired conditions identified in the Land and Resource Management Plan for the Kaibab National Forest (2014) (forest plan; excerpts located in appendix A). Moving toward those desired conditions will restore resiliency so vegetation communities are better able to resist and adapt to current and future disturbance events that now occur at higher frequencies and intensities because of climate change (forest plan p. 3; Reynolds and others 2013).*"[7]

"*Where quantifiable objectives were not described in the forest plan, reference conditions utilizing key elements to guide a restoration framework for ponderosa pine and conifer stands were primarily used from General Technical Report RMRS-GTR-310, Restoring Composition and Structure in Southwestern Frequent Fire Forests (Reynolds 2013).*"[8]

In our scoping comments, we argued that GTR-310 too narrowly defines desired conditions and does not account for the unique forests of the Kaibab Plateau. We stated, among other things, that:

"*We request that the Kaibab National Forest will recognize, based on this basic analysis, that the GTR-310 framework is not suited for immediate adoption for meeting ecological needs, formulation of desired conditions, or development of restoration and ecosystem management projects and prescriptions for KPERP.*"

In response to the EA, we reiterate those comments here, and will say more.

As an initial matter, the KPERP analysis mischaracterizes and misrepresents oft-cited scientific sources of information which describe the natural range of variability for the forests of the Kaibab Plateau. The Vegetation Specialist Report states that:

"*Ranges of reference conditions for ponderosa pine and dry mixed conifer forests which include ponderosa pine in the southwest United States indicate that desired densities occur at a range of 11-124 trees per acre (Reynolds 2013). This number of trees per acre generally supports the desired basal area ranges identified in the forest plan*."[9]

The Kaibab Forest Plan states that in ponderosa pine forests "*Basal area within forested areas generally ranges from 20 to 80 square feet per acre*"[10] and in mixed conifer forests "*Basal area within forested areas generally ranges from 30 to 100 square feet per acre.*"[11] The Forest Plan bumps up desired conditions for

[7] KPERP EA at 1.

[8] KPERP Vegetation Report, Prepared by Ted Frank, Silviculturist, USDA Forest Service Enterprise Program, September 2019: page 2.

[9] KPERP Vegetation Report, Prepared by Ted Frank, Silviculturist, USDA Forest Service Enterprise Program, September 2019: page 8.

[10] Kaibab Forest Plan at 17.

[11] Kaibab Forest Plan at 22.

basal area significantly for mesic mixed conifer and spruce fire forests, stating that "*Density ranges from 20 to 250 square feet of basal area per acre.*"[12]

These ranges – and thus the Forest Service's prescriptions for KPERP's treatments – specifically for ponderosa pine and dry mixed conifer forest, are not supported by the best available science for application on the Kaibab Plateau. As a matter of "good forestry," trees per acre and basal area are not interchangeable. For example, 100 small trees per acre would be dramatically lower basal area than 100 large trees per acre. Heedless of these facts, the Vegetation Report suggests that the trees per acre ranges in GTR-310 are appropriate for the Kaibab Plateau. Regardless, looking at the two metrics of density and basal area, the best available science is clear that the range reported in GTR-310 and the Forest Plan are far below what occurred on the landscape naturally, and thus that reliance on GTR-310's metrics will lead to treatments that will result in a-historical conditions at the low end of or below the natural range of variation.

The Vegetation Report cites Fulé et al (2002), but that report does not accurately reflect Fulé's paper. We have summarized reference conditions reported in Fulé's paper in the table below which refutes the ranges reported in GTR-310 and the Forest Plan.

Data reported in Fulé et al 2002, "Natural variability in forests of the Grand Canyon, USA" Reconstructed 1880's forest structure at Grand Canyon area study sites. Reported values for Density (trees/acre) shown in Table 6 (Fulé et al 2002, p. 39)

General Area	*Study site*	*Mean Density*	*Minimum Density*	*Maximum Density*
South Rim	Kaibab Forest	58.7	8.1	226
South Rim	Grandview Point	56.7	4.1	247
North Rim	Powell Plateau	63.6	**8.2** (low)	**261.6** (high)
North Rim	Fire Point	61.8	16.2	125.6
North Rim	Rainbow Plateau	64.7	8.1	227.6
North Rim	Swamp Ridge	99.5	36.5	151.3
North Rim Mean	4 North Rim sites	72.4	**17.3** (mean low)	**191.5** (mean high)

Based on the numbers reported by Fulé et al (2002), and transposed into the table above after converting from metric to standard units, the density values for the Kaibab Plateau, based on the four North Rim study sites, should be 8.2 to 261.6 trees/acre. Alternatively, the mean of ranges should be 17.3 to 191.5 trees/acre. These ranges are *substantially higher* than the density values reported in GTR-310 and the Kaibab Forest Plan. The KPERP must adopt the expanded ranges reported in Fulé et al (2002) and other sources or risk making an arbitrary and capricious decision that does not reflect the best available science.

[12] Kaibab Forest Plan at 25.

We have also provided the basal area values reported in Fulé et al (2002) which also are incongruent with GTR-310 and the Forest Plan. These are below.

Data reported in Fulé et al 2002, "Natural variability in forests of the Grand Canyon, USA" Reconstructed 1880's forest structure at Grand Canyon area study sites. Reported values for Basal Area (square feet/acre) shown in Table 6 (Fulé et al 2002, p. 39)				
General Area	*Study site*	*Mean Basal Area*	*Minimum Basal Area*	*Maximum Basal Area*
South Rim	Kaibab Forest	54.9	14.4	132.4
South Rim	Grandview Point	39.6	1.3	99.3
North Rim	Powell Plateau	78	20.5	**336.7** (high)
North Rim	Fire Point	89.3	28.3	131.6
North Rim	Rainbow Plateau	74	**19.1** (low)	281
North Rim	Swamp Ridge	124.1	65.8	235.2
North Rim Mean	4 North Rim sites	91.35	**33.4** (mean low)	**246.1** (mean high)

Based on the numbers reported by Fulé et al (2002), and transposed into the table above after converting from metric to standard units, the basal area values for the Kaibab Plateau, based on the four North Rim study sites, should be 19.1 to 336.7 ft^2/acre. Alternatively, the mean of ranges should be 33.4 to 246.1 ft^2/acre.

These ranges are *substantially higher* than the basal area values reported in GTR-310 and the Kaibab Forest Plan. The KPERP must adopt the expanded ranges reported in Fulé et al (2002) and other sources or risk making an arbitrary and capricious decision that does not reflect the best available science.

As we said in scoping, desired conditions for dry conifer forests suggested by Reynolds and others (2013) are clearly not specific to the Kaibab Plateau, and should be critically reviewed prior to assuming their usefulness. Covington and Moore[13] reported that presettlement forests of the Kaibab Plateau were the densest of any forests studied in the Southwest up to that point in time, so the desired conditions for KPERP and all future projects should be modified to account for these site-specific characteristics. In our scoping comments we provided a copy of the Environmental History of the Kane and Two-Mile Ranches, which reviewed the best available science and historical accounts of the Kaibab Plateaus forests. That document, which supports our call for site-specific desired conditions, should be consulted as it is one of the most thorough evaluations of reference site reports and factors in determining the natural range of variability for the Kaibab Plateau.

[13] Covington, W. W., Moore, M.M., 1994. Post settlement changes in natural fire regimes and forest structure: ecological restoration of old-growth ponderosa pine forests. J. Sustain. For. 2, 153-181.

The Vegetation Specialist Report cites Stoddard (2011) by claiming that in mixed conifer forests "*research has indicated that tree density of southwestern warm/dry mixed-conifer forests ranged from about 21 to 99 trees per acre while basal area varied from 34 to 124 ft^2 per acre, prior to Euro-American settlement of the region*."[14]

Interestingly, Stoddard's report does not actually support this claim. Stoddard's Table 1 describes the range of density values reported for mixed conifer varied from 43 to 235 ft^2/acre and 36 to 151 trees/acre. For ponderosa pine, Stoddard's Table 1 describes the range of density values reported varied from 0 to 337 ft^2/acre and 4 to 247 trees/acre. For both the mixed conifer and ponderosa pine types, Stoddard's report indicates that the densest forests in the Southwest were those of the Kaibab Plateau.

We suggest the Forest Service again review the data reported in Stoddard (2011) and see that the columns labelled as "range" of values are reflected properly in our comments, and not in the EA or the Vegetation Specialist Report. Failure to use the best available science and high-quality information would violate NEPA.

The EA (at page 39) states that "… *over the entire simulation period, this frequent-fire mixed conifer would continue to carry tree densities higher than reference conditions as identified in Reynolds (2013)*." As we have described in our scoping comments and again here, the ranges reported in GTR-310 do not reflect the studies cited therein. Reynolds and others compiled the available studies and developed their desired range based on averages, which excludes the full range of values reported in the literature. Furthermore, Reynolds and others (p. 12) admit uncertainty in their recommendation of desired conditions for dry conifer forest resulting from a paucity of supporting information and geographic imbalance of accessible data, stating this:

"*There is a clear need for additional reference condition data sets, including sites from a wider spectrum across environmental gradients (e.g., soils, moisture, elevations, slopes, aspects) occupied by frequent-fire forests in the Southwest, especially in dry mixed-conifer. While the quantity of reference data sets is increasing, existing data represent a largely unbalanced sampling across gradients (e.g., most data sets are from basaltic soils and on dry to typic plant associations), and there have been few studies quantitatively*."

The KPERP Vegetation Specialist Report states that:

"*Desired conditions are described in the forest plan, and we have not identified a need to amend the forest plan. The project is designed to be consistent with the forest plan. It is beyond the scope of this project to change the forest plan*."[15]

Many restoration projects include forest plan amendments, including recent projects like the Cragin Watershed Protection Project, the South Sacramento Restoration Project on the Lincoln National Forest, and many more. Forest Service regulations specifically anticipate that a Forest Plan may be amended together with a project-specific decision. The scoping notice did not specifically state that no forest plan amendment would be completed as part of this analysis, so it's not too late to begin that process so that desired conditions for the North Kaibab can be modified to reflect the best available science which we have reviewed in this and past comments.

[14] KPERP Vegetation Report, Prepared by Ted Frank, Silviculturist, USDA Forest Service Enterprise Program, September 2019: page 13.

[15] KPERP Vegetation Report, Prepared by Ted Frank, Silviculturist, USDA Forest Service Enterprise Program, September 2019: page 8.

As such, any subsequent NEPA document prepared for the KPERP should include a forest plan amendment to adjust the desired conditions ranges in line with the best available science which we have presented here and in scoping comments. The EA does not indicate that those information sources were evaluated. By failing to adjust the desired conditions to what is reported in Fulé et al (2002) and other sources described in the Environmental History of the Kane and Two-Mile Ranches report and our scoping comments, the Forest Service risks making an arbitrary and capricious decision that does not reflect the best available science as NEPA requires.

III. The Forest Service must analyze the 'Strategic Treatments for Fire Use' Alternative.

In our scoping letter, we described and proposed a Strategic Treatments for Fire Use Alternative for the KPERP. This was not a trivial academic exercise; we actually requested that the alternative be analyzed. It was not, and the Forest Service provided no explanation for why the alternative was discarded, which violates NEPA. Because the Strategic Treatments for Fire Use Alternative would meet the project's purpose and need, and is not identical to the proposed action, the Forest Service must analyze that alternative in any subsequently prepared NEPA document.

A. The Forest Service must analyze a range of reasonable alternatives.

CEQ regulations which apply to all NEPA documents, and not just EISs, require that agencies "*to the fullest extent possible . . .* [i]*mplement procedures . . . to emphasize real environmental issues and alternatives*" and to "*use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment*."[16]

For decades, the Ninth Circuit and district courts therein have explicitly held that the alternatives requirement applies equally to EAs and EISs. "*Any proposed federal action involving . . . the proper use of resources triggers NEPA's consideration of alternatives requirement, whether or not an EIS is also required*."[17] Other courts agree.[18]

[16] 40 C.F.R. § 1500.2(b), (e).

[17] *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1229 (9th Cir. 1988), cert denied, 489 U.S. 1066 (1988). *See also W. Watersheds Project v. Abbey*, 719 F.3d 1035, 1050 (9th Cir. 2013) (in preparing EA, "an agency must still give full and meaningful consideration to *all* reasonable alternatives" (emphasis added) (internal quotation and citation omitted)); *Te-Moak Tribe v. Interior*, 608 F.3d 592, 601-602 (9th Cir. 2010) ("Agencies are required to consider alternatives in both EISs and EAs and must give full and meaningful consideration to all reasonable alternatives."); *Native Ecosystems Council v. U.S. Forest Service,* 428 F.3d 1233, 1245 (9th Cir. 2005) ("alternatives provision" of 42 U.S.C. § 4332(2)(E) applies whether an agency is preparing an EIS or an EA and requires the agency to give full and meaningful consideration to all reasonable alternatives); *Gifford Pinchot Task Force v. Perez*, 2014 U.S. Dist. Lexis 90631, No. 03:13-cv-00810-HZ (D. Or. July 3, 2014) (finding agency failed to consider range of reasonable alternatives in an EA); *Envtl. Prot. Info. Ctr. v. Blackwell*, 389 F. Supp. 2d 1174, 1199 (N.D. Cal. 2004) (stating that "an EA must consider a reasonable range of alternatives"); *Or. Natural Desert Ass'n v. Singleton*, 47 F. Supp. 2d 1182, (D. Or. 1998) ("The requirement of considering a reasonable range of alternatives applies to an EA as well as an EIS" (citing 40 C.F.R. § 1508.9(b)).

[18] *See Davis v. Mineta*, 302 F.3d 1104, 1120 (10th Cir. 2002) (granting injunction where EA failed to consider reasonable alternatives); *Diné Citizens Against Ruining Our Env't v. Klein*, 747 F. Supp. 2d 1234, 1254 (D. Colo. 2010) (alternatives analysis "is at the heart of the NEPA process, and is 'operative even if the agency finds no significant environmental impact.'" (quoting *Greater Yellowstone Coal. v. Flowers*, 359 F.3d 1257, 1277 (10th Cir. 2004)).

NEPA requires that federal agencies consider alternatives to recommended actions whenever those actions "*involve*[] *unresolved conflicts concerning alternative uses of available resources*."[19] "*NEPA's requirement that alternatives be studied, developed, and described both guides the substance of the environmental decisionmaking and provides evidence that the mandated decisionmaking process has actually taken place*."[20] In taking the "*hard look*" at impacts that NEPA requires, an EA must "*study, develop, and describe*" reasonable alternatives to the proposed action.[21] CEQ regulations explicitly mandate that an EA "[s]*hall include brief discussions . . . of alternatives*."[22] The purpose of the multiple alternative analysis requirement is to insist that no major federal project be undertaken without intense consideration of other more ecologically sound courses of action, including shelving the entire project, or of accomplishing the same result by entirely different means.[23]

Reasonable alternatives must be analyzed for an EA even where a FONSI is issued because "*nonsignificant impact does not equal no impact. Thus, if an even less harmful alternative is feasible, it ought to be considered*." When an agency considers reasonable alternatives, it "*ensures that it has considered all possible approaches to, and potential environmental impacts of, a particular project; as a result, NEPA ensures that the most intelligent, optimally beneficial decision will ultimately be made.*" [24,25] In determining whether an alternative is "*reasonable*," and thus requires detailed analysis, courts look to two guideposts: "*First, when considering agency actions taken pursuant to a statute, an alternative is reasonable only if it falls within the agency's statutory mandate. Second, reasonableness is judged with reference to an agency's objectives for a particular project*."[26]

Additionally, the Court recognizes two exceptions under which an agency may decline to consider an alternative: where it has in "*good faith*" found the alternative to be "*too remote, speculative, or impractical or ineffective*,"[27], or where the alternative is not "*significantly distinguishable from the alternatives already considered*."[28] When an alternative meets the guideposts, and is not subject to the exceptions, an

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[19] 42 U.S.C. § 4332(2)(E). *See also* 40 C.F.R. § 1501.2(c) (agencies must "study, develop, and describe appropriate alternatives to the recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources as provided by section 102(2)(E) of the Act.").

[20] *Bob Marshall Alliance*, 852 F.2d at 1228 (citation omitted).

[21] 42 U.S.C. § 4332(2)(C) & (E).

[22] 40 C.F.R. § 1508.9(b).

[23] *Environmental Defense Fund v. Corps of Engineers*, 492 F.2d 1123, 1135 (5th Cir. 1974); *Methow Valley Citizens Council v. Regional Forester*, 833 F.2d 810 (9th Cir. 1987), *rev'd on other grounds*, 490 U.S. 332 (1989) (agency must consider alternative sites for a project).

[24] *Ayers v. Espy*, 873 F. Supp. 455, 473 (D. Colo. 1994) (internal citation omitted).

[25] *Wilderness Soc'y v. Wisely*, 524 F. Supp. 2d 1285, 1309 (D. Colo. 2007) (quotations & citation omitted).

[26] *Diné Citizens Against Ruining Our Env't*, 747 F. Supp. 2d at 1255 (quoting *New Mexico ex rel. Richardson*, 565 F.3d at 709). *See also Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1520 (9th Cir. 1992) ("nature and scope of proposed action" determines the range of reasonable alternatives agency must consider).

[27] *Richardson*, 565 F.3d at 708 (quoting *Colo. Envtl. Coal. v. Dombeck*, 185 F.3d 1162, 1174 (10th Cir. 1999)).

[28] *Id.* at 708-09 (citing *Westlands Water Dist. v. U.S. Dep't of the Interior*, 376 F.3d 853, 868 (9th Cir. 2004)).

agency must consider it in detail.[29] Any alternative that is unreasonably excluded will invalidate the NEPA analysis. "*The existence of a viable but unexamined alternative renders an EA inadequate*."[30] The agency's obligation to consider reasonable alternatives applies to citizen-proposed alternatives.[31] "*In respect to alternatives, an agency must on its own initiative study all alternatives that appear reasonable and appropriate for study at the time, and must also look into other significant alternatives that are called to its attention by other agencies, or by the public during the comment period afforded for that purpose*."[32]

Courts hold that an alternative may not be disregarded merely because it does not offer a complete solution to the problem.[33] Even if additional alternatives would not fully achieve the project's purpose and need, NEPA "*does not permit the agency to eliminate from discussion or consideration a whole range of alternatives, merely because they would achieve only some of the purposes of a multipurpose project*."[34] If a different action alternative "*would only partly meet the goals of the project, this may allow the decision maker to conclude that meeting part of the goal with less environmental impact may be worth the tradeoff with a preferred alternative that has greater environmental impact*."[35]

Further, courts reviewing EAs have consistently found them lacking where there existed feasible mid-range or reduced-impact alternatives failing between the extremes of granting in full or denying in full the proposed action, but the agency opted not to analyze them in detail.[36] The courts also

[29] *Id.* at 711.

[30] *Western Watersheds v. Abbey*, 719 F.3d. at 1050; *see also Diné Citizens Against Ruining Our Env't*, 747 F. Supp. 2d at 1256 ("The existence of a viable but unexamined alternative renders an alternatives analysis, and the EA which relies upon it, inadequate.").

[31] *See Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin*., 538 F.3d 1172, 1217-19 (9th Cir. 2008) (finding EA deficient, in part, for failing to evaluate a specific proposal submitted by petitioner); *Colo. Envtl. Coal. v. Dombeck*, 185 F.3d 1162, 1171 (10th Cir. 1999) (agency's "[h]ard look" analysis should utilize "*public comment* and the best available scientific information") (emphasis added).

[32] *Dubois v. U.S. Dept. of Agric*., 102 F.3d 1273, 1291 (1st Cir. 1996) (quoting *Seacoast Anti-Pollution League v. Nuclear Regulatory Comm'n,* 598 F.2d 1221, 1230 (1st Cir. 1979).

[33] *Natural Resources Defense Council, Inc. v. Morton*, 458 F.2d 827, 836 (D.C. Cir. 1972).

[34] *Town of Matthews v. U.S. Dep't. of Transp.*, 527 F. Supp. 1055 (W.D. N.C. 1981). *See also Citizens Against Toxic Sprays v. Bergland*, 428 F. Supp. 908, 933 (D. Or. 1977) ("An alternative may not be disregarded merely because it does not offer a complete solution to the problem.").

[35] *North Buckhead Civic Ass'n v. Skinner*, 903 F.2d 1533, 1542 (11th Cir. 1990).

[36] *See, e.g.*, *W. Watersheds Project v. Abbey*, 719 F.3d at 1050 (finding EA arbitrary and capricious where it failed to consider "reduced-grazing" alternatives); *Pac. Coast Fed'n of Fishermen's Ass'ns v. Dep't of Interior*, 655 F. App'x 595, 599 (9th Cir. 2016) (holding that agency's "decision [in EA] not to give full and meaningful consideration to the alternative of a reduction in maximum interim contract water quantities was an abuse of discretion, and the agency did not adequately explain why it eliminated this alternative from detailed study"); *Wild Fish Conservancy v. Nat'l Park Serv.*, 8 F. Supp. 3d 1289, 1300 (W.D. Wash. 2014) (finding agency's EA deficient because the "conclusion that there is not a meaningful difference, or viable alternative, between 0% and 90% [of fish survival] [was] suspect"), aff'd, 687 F. App'x 554 (9th Cir. 2017); *Native Fish Soc'y v. Nat'l Marine Fisheries Serv.*, 992 F. Supp. 2d 1095, 1110, (D. Or. 2014) (holding that agency "erred in failing to consider a reasonable range of alternatives" in EA, and finding that "[g]iven the obvious difference between the release of approximately 1,000,000 smolts and zero smolts, it is not clear why it would not be meaningful to analyze a number somewhere in the middle").

require that an agency adequately and explicitly explain in the EA any decision to eliminate an alternative from further study.[37]

B. The Kaibab Plateau Ecological Restoration Project EA fails to analyze a range of reasonable alternatives.

The Kaibab Plateau Ecological Restoration Project EA evaluates in detail only the proposed action and the "no action" alternative. However, the Forest Service failed to consider at least one alternative proposed by the Center during scoping: the Strategic Treatments for Fire Use (STFU) alternative. The Forest Service's failure to analyze this alternative in detail, or explain why the agency would not, violates NEPA. The Forest Service must consider the STFU alternative in detail in any subsequently prepared NEPA document.

1. The Strategic Treatments for Fire Use Alternative.

The Center's comments on scoping, submitted on November 5. 2018, describe at length the STFU alternative and specifically request that the Forest Service analyze such an alternative.

At the core of the Strategic Treatments for Fire Use Alternative is our position that the current direction in planning, analysis and implementation of Southwestern forest restoration is overly reliant on meeting structural and compositional targets, representing what is in effect a non-viable silvicultural solution to a complex ecological problem. The quest to create the ideal vegetative state across every operable acre has marginalized the overriding importance of fire-driven ecological processes. The Center rejects a framework which assumes that complex ecosystems can be wrangled into fixed proportions of tree ages and sizes that must be repeatedly tinkered with at 30-year rotations to maintain "desired conditions." In areas where strategically located mechanical intervention is implemented, fire alone can and should be the primary future maintenance tool.[38] Measuring the health of the forest on the basis of density-metrics represents a worn-out allegiance to a past industrial paradigm. This regulated-forest model defines successful restoration as growing large, defect-free trees as quickly as possible and ignores the complexity of process-centered ecosystem function. Restoring a forest is not an exercise in manipulating every quantifiable metric into a neat category, or alleviating any form of stress that might lead to unexpected mortality. Renowned fire ecologist Dr. Pete Fulé stated that "*The fire-related adaptations of pine forests are associated with fire's role as a selective force going far back in evolutionary time,*"[39] suggesting that restoration of fire adapted dry forests is inseparable from the influence of recurrent fire as a primary selective force. Applying a new form of growth and density regulation, as articulated in GTR-310[40], cannot by itself

[37] *See Wilderness Soc'y*, 524 F. Supp. 2d at 1309 (holding EA for agency decision to offer oil and gas leases violated NEPA because it failed to discuss the reasons for eliminating a "no surface occupancy" alternative); *Ayers*, 873 F. Supp. at 468, 473.

[38] North, M., B.M. Collins, and S. Stephens. 2012. Using Fire to Increase the Scale, Benefits, and Future Maintenance of Fuels Treatments. *Journal of Forestry* 110(7): 392-401; and Reinhardt, E.D., R.E. Keane, D.E. Calkin, and J.D. Cohen. 2008. Objectives and considerations for wildland fuel treatment in forested ecosystems of the interior western United States. *Forest Ecology and Management* 256:1997-2006.

[39] p. 528 in Fulé 2008. Does it make sense to restore wildland fire in changing climate? *Restoration Ecology* 16(4): 526-531.

[40] Reynolds *et al.* 2013. Restoring composition and structure in Southwestern frequent-fire forests: A science-based framework for improving ecosystem resiliency. RMRS-GTR-310.

accomplish restoration at meaningful landscape scales; only the additive effects of frequent fire can fully restore these ecosystems. We are hopeful that because the KPERP is a "non-commercial" project that our vision for strategically designed and implemented small-scale treatments fits well into the Forest Service's proposed action. Unfortunately, the Forest Service has neglected to take this fantastic opportunity to analyze an alternative that maximizes return on limited resources.

As described in our scoping letter, the STFU would utilize a modified version of the methodology developed by the Hurteau lab and used by Krofcheck and colleagues.[41,42] Their research has developed "*prioritization strategies for implementing fuel treatments … with the goal to maximize treatment efficacy using optimal placement and prescription options under typical and extreme fire weather conditions*." [43]

Their optimization model, under which the land manager would mechanically treat only the operable areas with the highest probability of mixed- and high-severity fire, was shown in multiple fire simulations to be as effective as thinning all operable acres at reducing wildfire burn severity and facilitating landscape scale low-severity fire restoration. This approach could inform landscape-scale restoration planning nationwide, as "*Testing of strategic placement of treatments by resource managers will add data in the years ahead and provide information that can be shared and applied in other locations*."[44]

Krofcheck and colleagues have recently completed similar optimization simulations for the Santa Fe Fireshed,[45] which should provide additional direction for utilizing such an approach in Southwestern ponderosa pine and mixed conifer forests. A significant added benefit of the optimization strategies developed by the Hurteau lab is the increased carbon that is retained on the landscape through minimizing logging and maximizing the use of fire to achieve restoration objectives. In a briefing paper summarizing this recent research, Krofcheck and colleagues wrote that

"*Prioritizing the allocation of thinning treatments to areas with the greatest chance of burning under high-severity wildfire and treating the rest of the land-scape with prescribed burning, can substantially reduce the area requiring thinning. Optimally locating thinning treatments can result in greater carbon storage across the landscape, with less risk of stand-replacing wildfire. The benefits of treatment optimization persist even as fire weather becomes more severe with changing climate. Restoring high-frequency fire regimes is critical for reducing the risk of high-severity wildfire and stabilizing carbon*."

[41] Krofcheck, D.J., M.D. Hurteau, R.M. Scheller, and E.L. Loudermilk. 2017. Prioritizing forest fuels treatments based on the probability of high-severity fire restores adaptive capacity in Sierran forests. Global Change Biology DOI: 10.1111/gcb.13913.

[42] Krofcheck, D.J., M.D. Hurteau, R.M. Scheller, and E.L. Loudermilk. 2017. Restoring surface fire stabilizes forest carbon under extreme fire weather in the Sierra Nevada. *Ecosphere* 8(1): 1-18.

[43] http://www.hurteaulab.org/

[44] p. 15 in Peterson, D. L. and M.C. Johnson. 2007. Science-based strategic planning for hazardous fuel treatment. *Fire Management Today* 67(3):13-18.

[45] Krofcheck, D.J., C.C. Remy, A.L. Keyser, and M.D. Hurteau. 2019. Optimizing forest management stabilizes carbon under projected climate and wildfire. *Journal of Geophysical Research: Biogeosciences* 10.1029/2019JG005206.

Furthermore, they wrote that they

"*…found that mechanically treating areas with the highest risk of high-severity wildfire and using prescribed fire to treat the unthinned areas (optimized scenario),* [they] *could reduce the area mechanically treated when all operable areas were thinned (prioritized scenario) by 54%. This outcome required a 27% increase in the area treated with prescribed burning. Both scenarios reduced high-severity wildfire when compared to the no-management scenario, as well as a significant reduction in wildfire carbon emissions. However, the optimized scenario did so at a considerable carbon savings in the short term, yielding a significant reduction in carbon lost from the system. Both of* [their] *scenarios achieved a reduction in high-severity fire and stabilized the remaining carbon. However, in both the management scenarios, maintaining carbon stability under changing climate and increasingly severe fire weather was contingent on the regular application of prescribed fire at return intervals that are consistent with historic fire regimes*."[46]

Optimizing spatial prioritization of non-commercial mechanical treatments reflects an evolution of fire management, placing emphasis on restoring fire as a natural process, rather than simply disrupting fire spread and protecting areas from burning.[47] The result of a strategic approach is to move away from managing for short-term outcomes and towards achievement of long-term restoration goals and objectives, consistent with calls from the scientific community to increase the use of prescribed and managed wildfires for resource benefit.[48] In a review of optimization strategies, Collins and colleagues stated that "*The basic idea is that an informed deployment of treatment areas, a deployment that covers only part of the landscape, can modify fire behavior for the entire landscape.*"[49]

In sum, the STFU alternative, compared to the proposed action, would: better achieve ecological and restoration outcomes; result in less disturbance from mechanical treatment; require fewer Forest Service resources; and better protect our shared climate.

2. The STFU Alternative meets the KPERP Project's Purpose and Need.

The Forest Service's stated purpose of the KPERP project "*is to reduce the threat of uncharacteristic high-severity wildfire and restore fire-resilient conditions to the Kaibab Plateau.*"[50] The EA states that the need for the project includes:

- promot[ing] forest structure and processes that are more resilient to changes in climate; reduc[ing] the potential for active crown fire; and increase[ing] diversity in the ponderosa pine forests by promoting regeneration, oak, herbaceous understory production, and large trees …;

[46] Briefing paper on Krofcheck et al 2019.

[47] Ager, A.A., N.M. Vaillant, and A. McMahan. 2013. Restoration of fire in managed forests: a model to prioritize landscapes and analyze tradeoffs. *Ecosphere* 4(2): 1-19.

[48] Stephens, S.L., B.M. Collins, E. Biber, and P.Z. Fulé. 2016. U.S. federal fire and forest policy: emphasizing resilience in dry forests. *Ecosphere* 7(11): 1-19.

[49] p. 25 in Collins *et al.* 2010. Challenges and approaches in planning fuel treatments across fire-excluded forested landscapes. *Journal of Forestry* Jan/Feb 2010: 24-31.

[50] KPERP EA at 5.

- increase[ing] [the Forest Service's] ability to let fire play its natural role in the frequent-fire mixed conifer communities by reducing the potential for active crown …;
- promot[ing] conditions in pinyon-juniper communities that are resilient to disturbances and climate variability …;
- reduc[ing] conifer tree encroachment and reestablish characteristic forest succession patterns resulting from low-intensity surface fires in grassland communities …;
- reduc[ing] emissions from wildfires over time by reducing fuel loads …;
- … protect[ing] cultural resources from direct adverse impacts of wildfires …; and
- reduc[ing] the risk of uncharacteristic high-intensity wildfires to firefighter safety and human developments ….

The STFU alternative would meet the project's purpose and need for all of the identified needs listed above. The STFU would utilize the same degree of landscape scale prescribed fire, but strategically locate mechanical or hand thinning treatments where the least amount of mechanical operations would support the most use of fire. This is further valuable given the EA's acknowledgement that industry capacity is insufficient to meet the demands of widespread timber harvest.

In the EA, locating mechanical treatments strategically is mentioned numerous times:

"*Fuels reduction treatments in strategic locations adjacent to the wildland-urban interface aid fire managers in managing wildland fires. It is beneficial to locate treatments in these areas because treating every acre is improbable due to ecologic and economic concerns*."[51]

The EA even refers to language in the Kaibab Forest Plan that states that "[m]*echanical treatments are costly, so the capacity to implement such treatments across the landscape is limited. Strategic placement and design of mechanical treatments increases their effectiveness in protecting values at risk.*"[52]

The EA further states that "[s]*trategic placement and design more efficiently protects values at risk, given the limited resources and capacity to implement activities across the landscape*."[53]

The EA (at 31) also cites the Mexican Spotted Owl Recovery Plan, and clams consistency with the plan, saying that "*combinations of mechanical and prescribed fire treatments may be used to minimize risk of high-severity fire effects while striving to maintain or improve habitat conditions for the owl and its prey*."

Interestingly, the EA completely ignores the next sentence in the Recovery Plan, which states that "[t]*reatments should be placed strategically to minimize risk of high-severity fire effects to the nest core while mimicking natural mosaic patterns*."[54]

[51] KPERP EA at 16.

[52] Kaibab Forest Plan at 75.

[53] KPERP EA at 31.

[54] Mexican Spotted Owl Recovery Plan (2012) at 288.

The EA also completely ignores another important sentence in the Recovery Plan, two sentences later, where the recovery Plan states that "[a] *landscape-level assessment should be conducted to strategically locate and prioritize prescribed and hazardous fuels treatments to best mitigate the risk of stand replacing fires and high severity fire effects to current and future spotted owl habitat elements."*[55]

It is only after the Recovery Plan provides this full suite of recommendations for prescribed fire and hazardous fuels treatments does it state that "[t]*hese recommendations, when implemented, should help reduce high-severity fire effects across broader forest landscapes and help protect Mexican spotted owl PACs, potential habitats, and suitable nesting/roosting habitat locations from future stand-replacing wildland fires and enhance landscape-level forest resiliency to climate variability*."[56]

The KPERP Fire and Fuels Effects Analysis Report (at 12-13) states that the "*KPERP project is aligned and supports*" the National Cohesive Wildland Fire Management Strategy (2009). However, as we pointed out in our scoping letter, the Strategy advises the Forest Service to design and prioritize fuel treatments and strategically place those fuel treatments to interrupt fire spread across landscapes. The National Strategy clearly asserts that "[p]*rescribed fire and managing wildfire for resource objectives have the greatest potential for treating large areas at lower cost than mechanical treatments.*"

Based on these statements, it seems apparent that strategically placing and prioritizing mechanical treatments is in fact part of the proposed action. However, there is no indication that such an approach has been undertaken in the KPERP, and indeed, our proposed alternative was not analyzed. Therefore, the proposed action, which is lacking in any direction for strategic treatments, is not a surrogate for the STFU.

Because the STFU alternative meets the project's purpose and need, it is a reasonable alternative that the agency must consider in detail.

3. The STFU Alternative Is Not Remote, Speculative, Impractical or Ineffective.

The STFU alternative is not remote, speculative, impractical or ineffective. In fact, based on scientific studies, the STFU alternative would meet the purpose and need for the project with less cost, and fewer adverse environmental impacts, than the proposed alternative.

As we described in scoping, and again here, treatment optimization is a long-studied management tool which the Forest Service has made available for use in NEPA projects. One common fundamental similarity between all optimization models is that they seek to reduce fire-severity or minimize wildfire risk, balancing tradeoffs between the size of treatment units, the placement of treatments, and the proportion of the landscape treated.[57,58,59] Collins and colleagues[60] also reviewed

[55] Mexican Spotted Owl Recovery Plan (2012) at 288.

[56] Mexican Spotted Owl Recovery Plan (2012) at 288.

[57] Collins *et al.* 2010.

[58] Chung 2015. Optimizing fuel treatments to reduce wildland fire risk. *Current Forestry Reports* 1: 44-51.

[59] Krofcheck, D.J., M.D. Hurteau, R.M. Scheller, and E.L. Loudermilk. 2017a. Prioritizing forest fuels treatments based on the probability of high-severity fire restores adaptive capacity in Sierran forests. *Global Change Biology DOI: 10.1111/gcb.13913.*

fuel treatment strategies, including much of Finney and Ager's work, and arrived at some basic parameters for optimizing fuel reduction treatments at the landscape scale that provide some guidance for those evaluating tradeoffs and can be used as guidelines in the Strategic Treatments for Fire Use Alternative:

> • Treating 10% of the landscape provides notable reductions in modeled fire size, flame length, and spread rate across the landscape relative to untreated scenarios, but treating 20% provides the most consistent reductions in modeled fire size and behavior across multiple landscapes and scenarios.
>
> • Increasing the proportion of area treated generally resulted in further reduction in fire size and behavior, however, the rate of reduction diminishes more rapidly beyond 20% of the landscape treated.
>
> • Random placement of treatments requires substantially greater proportions of the landscape treated compared with optimized or regular treatment placement.
>
> • The improvements offered by optimized treatments are reduced when 40-50% of the landscape is unavailable for treatment due to land management constraints.
>
> • Treatment rates beyond 2% of the landscape per year yield little added benefit.

Forest Service and academic scientists have been providing mangers with analytical and planning tools for years to encourage informed deployment of mechanical thinning. Projects like the KPERP are exactly where these tools should be utilized. Because the STFU alternative is not remote, speculative, impractical or ineffective, it is a reasonable alternative that the agency must consider in detail.

4. The STFU Alternative Is Significantly Distinguishable from the Action and No Action Alternatives.

The Forest Service may not fail to analyze the STFU alternative on the grounds that it cannot be distinguished from the proposed action. The STFU alternative in fact would result in numerous differences in on-the-ground treatments.

The primary manner by which the STFU is distinguishable from the proposed action is that the STFU would identify thinning treatment areas based on an informed, landscape level optimization analysis, consistent with the best available science, rather than leave decisions for treatment locations up for spur-of-the-moment judgements within a conditions-based management approach.

The EA does not identify where treatments would be placed. The only indication of exactly where mechanical treatments *might* occur is in the line "*Most of this would occur adjacent to existing prescribed fire holding features which are most often existing roads*."[61] It appears that the only factor that determines if any given location is to be treated mechanically or by hand is design feature HSL06, which states "*To avoid adverse impacts to steep slopes such as compaction, rutting, etc.; wheeled or track-mounted ground-based*

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[60] Collins *et al.* 2010

[61] KPERP EA at 75.

machinery would be limited to slopes of less than 40 percent. Wheeled or track-mounted ground-based machinery will not be used on slopes equal to or greater than 40 percent."[62]

Based on these statements, it appears that anywhere that is lower slope than 40% is subject to machinery-based treatment and anywhere over 40% slope is subject to hand thinning, and the exact location for either of those would be determined by nebulous conditions at the time of implementation. In fact, that is made even clearer when considering Design Feature FIR01, which states that:

"*The sequencing of prescribed fire and mechanical treatments would be determined on a site-specific basis and would be dependent on factors, including but not limited to, weather conditions, resource restrictions, available personnel/equipment, thinning and prescribed fire schedules and fuel conditions*."[63]

In contrast, the STFU would evaluate the landscape, including existing holding features, and identify the subset of the landscape that, if thinned, would allow use of prescribed or managed wildfire across a broader area. Thus, the STFU has the added advantage of resulting in disclosure of site-specific impacts of the project, as NEPA mandates.

5. The Forest Service's Failure to Analyze the STFU Is Arbitrary and Capricious.

Because the STFU alternative meets the project purpose and need, would effectively move the forest in the desired direction, and differs from the proposed alternative in critical ways, it is a reasonable alternate that the Forest Service must consider in any subsequently prepared NEPA document. Failure to consider this reasonable, middle ground alternative would violate the "heart" of the NEPA process.

Further, despite the fact that the Center proposed the STFU alternative in detail in comments on scoping, the Forest Service failed to even mention the proposal in the EA. The agency's failure to acknowledge or respond to the Center's proposal is an independent NEPA violation, particularly in light of federal court decisions requiring agencies to either analyze reasonable alternatives or explain why the agency was declining to do so.[64] Here, the Forest Service provided no explanation for declining to consider the alternative.

And, as noted above, federal courts do not permit agencies to ignore alternatives on the grounds that they were submitted by the public, nor because the agency undertook an EA and not an EIS.

For all these reasons, the Forest Service must consider the STFU alternative in any subsequently prepared NEPA document.

[62] KPERP EA at 123.

[63] KPERP EA at 121.

[64] *See* 36 C.F.R. § 220.4(c)(2) (for each Forest Service proposal, Forest Service officials shall "[c]onsider[] environmental documents, public and agency comments (if any) on those documents, and agency responses to those comments.").

IV. Condition-Based Management Approach may be Illegal.

We are concerned with the relatively uninformed analytical approach being used in the KPERP. The Vegetation report admits that "[a]*pproximately 6% of the forested project area had reliable stand exam data*."[65] We understand that stand exams are significant investments of time and money, but decision making at the landscape level should be informed by real data. We suspect that the lack of data, and the uncertainty inherent in nearest neighbor analysis, is a key reason why the EA offers an ambiguous approach to where treatments would be located. This approach is consistent with a current, but questionable, approach being taken within the Forest Service nationally, called condition-based management.

On September 23, the U.S. District Court for the District of Alaska issued a preliminary injunction halting implementation of the Prince of Wales Landscape Level Analysis Project which followed a condition-based management approach. The court did so because the Forest Service's failure to disclose the site-specific impacts of that logging proposal raised "*serious questions*" about whether that approach violated the National Environmental Policy Act.

Because the KPERP takes an approach to NEPA compliance similar to the agency's with respect to the Prince of Wales Project, the KPERP risks violating NEPA and could be enjoined. We therefore urge the Forest Service to modify its approach for the KPERP and ensure that it discloses site-specific details about locations of proposed mechanical thinning activities, locations of proposed dozer lines, and locations of other potential, but thus far undefined watershed and landscape restoration activities. To do otherwise risks violating the law and squandering significant agency resources.

The district court explained the approach the Forest Service took in the Prince of Wales EIS:

> "*each alternative considered in the EIS "describe[d] the conditions being targeted for treatments and what conditions cannot be exceeded in an area, or place[d] limits on the intensity of specific activities such as timber harvest." But the EIS provides that "site-specific locations and methods will be determined during implementation based on defined conditions in the alternative selected in the . . . ROD . . . in conjunction with the Activity Cards . . . and Implementation Plan . . . ." The Forest Service has termed this approach "condition-based analysis.*"[66]

The Prince of Wales EIS made assumptions "*in order to consider the 'maximum effects' of the Project*."[67] It also identified larger areas within which smaller areas of logging would later be identified (similar to the management zones approach in the KPERP), but "*did not identify the specific sites where the harvest or road construction would occur*."[68]

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[65] KPERP Vegetation Report, Prepared by Ted Frank, Silviculturist, USDA Forest Service Enterprise Program, September 2019: page 3.

[66] *See Se. Alaska Conservation Council v. U.S. Forest Serv.*, No. 1:19-cv-00006-SLG, 2019 U.S. Dist. LEXIS 161639 (D. Ak. Sep. 23, 2019) at *4 (citations omitted), attached as Ex. 1.

[67] *Id.* at *5.

[68] *Id.* at *6

The Court found the Forest Service's approach contradicted Ninth Circuit precedent, *City of Tenakee Springs v. Block*, 778 F.2d 1402 (9th 1995), concerning logging on the Tongass National Forest. There, the appellate court set aside the Forest Service's decision to authorize pre-roading in the Kadashan Watershed, without specifically evaluating where and when on approximately 750,000 acres of land on Baranof and Chichagof Islands it intended to authorize logging to occur. The district court evaluating the Prince of Wales project found the Forest Service's condition-based analysis there was equivalent to the deficient analysis found unlawful by the Ninth Circuit nearly a quarter-century ago in *City of Tenakee Springs*.

> "*Plaintiffs argue that the Project EIS is similarly deficient and that by engaging in condition-based analysis, the Forest Service impermissibly limited the specificity of its environmental review. The EIS identified which areas within the roughly 1.8-million-acre project area could potentially be harvested over the Project's 15-year period, but expressly left site-specific determinations for the future. For example, the selected alternative allows 23,269 acres of old-growth harvest, but does not specify where this will be located within the 48,140 acres of old growth identified as suitable for harvest in the project area. Similar to the EIS found inadequate in City of Tenakee Springs, the EIS here does not include a determination of when and where the 23,269 acres of old-growth harvest will occur. As a result, the EIS also does not provide specific information about the amount and location of actual road construction under each alternative, stating instead that "[t]he total road miles needed will be determined by the specific harvest units offered and the needed transportation network.*"[69]

The Court concluded that plaintiffs in *SEACC* case raised "*serious questions*" about whether the Prince of Wales EIS violates NEPA because "*the Project EIS does not identify individual harvest units; by only identifying broad areas within which harvest may occur, it does not fully explain to the public how or where actual timber activities will affect localized habitats.*"[70] After finding the plaintiffs also met the other factors for preliminary injunction, the court enjoined all logging until a decision on the merits.[71] The court expects to issue a final decision on the merits by March 31, 2020.

This decision demonstrates that the Forest Service's condition-based management approach conflicts with NEPA's "hard look" mandate, and that where the Forest Service employs it, the agency risks projects being set aside and subject to further, compliant NEPA review.

The Forest Service is in just that precarious position with respect to the KPERP, which is proposed to follow a condition-based approach. While the term "condition-based management" is not used, excerpts from the EA illustrate how the approach is being followed. Consider this:

"*Management activities, as described previously, would align with conditions on the ground at the time of implementation using a combination of field surveys, design elements (appendix B), and requirements in prescribed fire plans.*"[72]

And this:

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[69] *Id.* at *13-*14 (citations omitted).

[70] *Id.* at *16, *18.

[71] *Id.* at *19-*23.

[72] KPERP EA at 17.

"*Maximum acres and miles of proposed activities are shown by vegetation type in table 2, table 3, and table 4. These are estimates only, and actual amounts may vary based on conditions at time of implementation*." [73]

And this:

"*Mechanical treatments are currently proposed and represents only about 1/3 of the prescribed burning acres . . . and additional future treatments were not modeled in FVS due to less predictability where, or what stands, it would be applied and is contingent on site specific stand conditions*."[74]

The KPERP EA fails to disclose where specific logging or other treatments will occur, where new dozer line construction or road re-construction will occur, nor does it disclose where certain values may exist that vegetation treatments are designed to protect or avoid. Thus, while the KPERP's written record does not use the exact term "condition-based management," it employs a similar approach to avoid disclosing site-specific impacts, an approach the federal court found likely to violate NEPA and sufficient to halt the Prince of Wales project.

We therefore request that any subsequent NEPA document undertake the necessary site-specific analysis before issuing a final review and proposed decision. This approach would ensure that the Forest Service does not waste resources by preparing a final EA that has a strong likelihood of being found illegal.

V. Adaptive Management and Monitoring Plan are insufficient.

The proposed Monitoring and Adaptive Management plan is insufficient. The Forest Service needs to provide much more detailed parameters for this aspect of the project. That the EA cites Crist et al 2019 as a source for adaptive management principles[75] is in itself concerning. That paper is not a source of guiding information for developing an adaptive management and monitoring framework for a forest restoration project. We advise the Forest Service to incorporate trigger points in adaptive management. Science-based adaptive management involves "*treating management interventions as experiments, the outcomes of which are monitored and fed back into management planning*."[76]

Essentially, as outlined by land management experts, an adaptive management approach to forest management should include creation of management strategies, implementation of those strategies/actions, monitoring of the effects (under the monitoring framework developed as part of the NEPA process), and predetermined triggers for changes in management based on the results of monitoring.[77]

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[73] KPERP EA at 10.

[74] KPERP Vegetation Report, Prepared by Ted Frank, Silviculturist, USDA Forest Service Enterprise Program, September 2019: page 4.

[75] EA at 18.

[76] Gillson, Lindsey, Terence P. Dawson, Sam Jack, and Melodie A. McGeoch. 2013. Accommodating climate change contingencies in conservation strategy. Trends in Ecology & Evolution 28(3): 135-142.

[77] Schultz, Courtney, and Martin Nie. 2012. Decision-making triggers, adaptive management, and natural resources law and planning. Natural Resources Journal 52:443-521.

Triggers may include decreases in species occurrence, loss of key habitat components, increases in invasive plants or animals, declines in focal species, or other identified negative outcomes. In some cases, it may be appropriate for the Forest Service to identify a range of management strategies for a specific forest use, such as livestock grazing, which could be used at different times based on relevant conditions and the results of monitoring. One potential way to facilitate this type of monitoring and adaptive management approach is through the use of control areas or experimental management zones, which would allow for evidence-based management changes and approaches.

VI. Conclusion.

As we have written here, our primary concerns remaining with the KPERP are the Forest Service's dismissal without explanation of our proposed alternative, the adherence to desired conditions which are not applicable to the Kaibab Plateau, and the apparent conditions-based management approach to the entire project. We have other, outstanding concerns which we brought forward in scoping but which the EA fails to adequately address, such as the effect of continued livestock grazing on meeting desired conditions in the forest plan and for the project. In addition, we still strongly feel that this project should be analyzed with a full EIS, that which would include analysis of our STFU alternative.

Thank you for this opportunity to provide our comments on the KPERP EA. Please keep us apprised of any additional opportunities for engagement.

Sincerely,

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Attachments:

Gillson, L., T.P. Dawson, S. Jack, and M.A. McGeoch. 2013. Accommodating climate change contingencies in conservation strategy. *Trends in Ecology & Evolution* 28(3): 135-142.

Krofcheck, D.J., C.C. Remy, A.L. Keyser, and M.D. Hurteau. 2019. Optimizing forest management stabilizes carbon under projected climate and wildfire. *Journal of Geophysical Research: Biogeosciences* 10.1029/2019JG005206.

Krofcheck et al 2019 Santa Fe Fireshed Briefing paper.

Schultz, C., and M. Nie. 2012. Decision-making triggers, adaptive management, and natural resources law and planning. *Natural Resources Journal* 52:443-521.

Stoddard, M.T. 2011. Compilation of historical forest structural characteristics across the southern Colorado Plateau. Flagstaff, AZ: Ecological Restoration Institute, Northern Arizona University.