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Submitted electronically: comments-intermtn-humboldt-toiyabe-mtncity@usda.gov

Re: East Humboldt and Ruby Mountains Fuels Reduction and Landscape Resilience Project

Dear Mr. Nicholes:

Thank you for the opportunity to comment on the East Humboldt and Ruby Mountains Fuels Reduction and Landscape Resilience Project. The following comments are submitted on behalf of the Center for Biological Diversity (the "Center") and its members.

The Center is a non-profit environmental organization dedicated to the protection of native species and their habitats in the Western Hemisphere through science, policy, and environmental law. The Center has over 1.7 million members and supporters throughout Nevada, Utah and the United States, including supporters who live in near the Ruby Mountains, and who utilize public lands for recreation and other uses. The Center's Nevada program focuses on the protection of wildlife and endangered species, the preservation of public lands, and the sustainability of Nevada's groundwater resources.

We note at the outset that the project description's focus on wildfire in the wildland-urban interface (WUI) is inconsistent with the Forest Service's proposal, which would authorize large-scale vegetation manipulation throughout the Ruby Mountains. Many of the affected areas are not within the WUI, and the scoping notice does not adequately explain the need for intensive management in these areas. Further, the proposed action would have significant, adverse impacts on ESA-listed species, watersheds, vegetation, and special-status wildlife habitat. Below we discuss some of the likely impacts of the project, which must be carefully analyzed through an Environmental Impact Statement (EIS). In particular, we are concerned about impacts to Lahontan Cutthroat Trout (LCT), an ESA-listed fish species that occurs throughout the proposed project area. This letter also discusses the Forest Service's obligations under applicable federal law, including the Endangered Species Act (ESA), the National Environmental Policy Act (ESA), and the National Forest Management Act (NFMA).

All references cited herein may be found at: https://centerforbiologicald-my.sharepoint.com/:f:/g/personal/slake_biologicaldiversity_org/EuUtLRTxP8tPsFSVEImvbKoBaH_SDw1xjvxI-YMKMSs_-A?e=oHKtNs

The Forest Service Must Prioritize the Protection and Recovery of Lahontan Cutthroat Trout

Section 7(a)(1) of the ESA imposes on all federal agencies, including BLM, a mandatory duty to conserve listed species. 16 U.S.C.A. § 1536(a)(1). The statute defines the terms "conserve," "conserving," and "conservation" to mean "the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary." 16 U.S.C. § 1532(3). Accordingly, Section 7(a)(1) requires agencies to take actions that will tend to increase endangered and threatened species' populations. See 16 U.S.C.A. § 1532(3); *Sierra Club v. Clark*, 755 F.2d 608 (8th Cir. 1985).

This is more than a generalized duty; it requires agencies to consult, develop programs, and "take whatever actions are required to ensure the survival of each [listed] species." *Sierra Club v. Glickman*, 156 F.3d 606, 616 (5th Cir. 1998). The Act's legislative history is replete with statements that Congress intended this affirmative duty to be taken literally and seriously by agencies. *See TVA v. Hill*, 437 U.S. 153, 183-84 (1978) (statement of Rep. Dingell); see also *House v. United States Forest Serv.*, 974 F. Supp. 1022, 1028 (E.D. Ky. 1997) (enjoining timber sale due to agency's failure to comply with affirmative duty to place an endangered species "at the top of its priority list").

Further, Section 7(a)(1)'s affirmative conservation duty supersedes a federal agency's primary mission as well as other statutory duties. *Carson-Truckee Water Conservancy Dist. v. Clark*, 741 F.2d 257, 259 (9th Cir. 1984); *Pyramid Lake Paiute Tribe of Indians v. United States Dep't of Navy*, 898 F.2d 1410, 1417-18 (9th Cir. 1990). As the U.S. Supreme Court has observed, the ESA requires the Secretary of the Interior to give the "highest priority" to the preservation of listed species, and directs federal agencies to "halt and reverse the trend toward species extinction, whatever the cost." *Hill*, 437 U.S. at 184.

Here, Section 7(a)(1) requires BLM to give the "highest priority" to the preservation and recovery of LCT. This duty supersedes the Forest Service's obligations under its multiple-use, sustained-yield mission. However, the description of the proposed action does not currently reflect this priority, focusing instead on achieving "desired" conditions in relation to wildfire suppression. The Forest Service must revise its purpose and need for the project, and examine a range of alternatives that reflects the Congressional imperative to prioritize the conservation of listed species.

The Forest Service Must Comply with Section 7(a)(2) of the Endangered Species Act

ESA Section 7(a)(2) requires each federal agency, in consultation with a federal wildlife agency (Fish and Wildlife Service for the Lahontan cutthroat trout), to insure that any proposed action is not likely to jeopardize the continued existence of a listed species. 16 U.S.C. § 1536(a)(2). To "jeopardize the continued existence of" means "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." 50 C.F.R. § 402.02.

Whenever a proposed action may affect a listed species, the action agency must engage in "formal consultation" with the wildlife agency. *Id.* § 402.14(a). During formal consultation the wildlife agency prepares a "biological opinion," *id.* § 402.14, which must detail "how the agency action affects the species or its critical habitat." 16 U.S.C. § 1536(b)(3)(A).).

A biological opinion must evaluate both the current status of any affected listed species as well as the effects of the proposed action on those listed species. 50 C.F.R. § 402.14(g)(2)-(3). Under Section 7's implementing regulations, "effects of the action" include:

> [A]ll consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later

> in time and may include consequences occurring outside the immediate area involved in the action.

Id. § 402.02. Agencies are required to "use the best scientific and commercial data available" in assessing impacts to protected species during the formal consultation process. *Id.* § 402.14(d); 16 U.S.C. § 1536(a)(2).

Based on this information, the wildlife agency must determine whether the action, taken together with cumulative effects, is "likely to jeopardize the continued existence of listed species." 50 C.F.R. § 402.14(g)(4). Although the wildlife agency is responsible for the content of the biological opinion, the ultimate duty to ensure that an activity does not jeopardize the continued existence of a listed species, or result in the destruction or adverse modification of critical habitat, lies with the action agency—in this case, the Forest Service.

It is clear from the scoping notice that the proposed action may affect LCT. The Forest Service states that it intends to carry out treatments in riparian areas, and the project description does not include any components that would restrict treatment methods in or around LCT occupied or critical habitat. Further, the potential for negative impacts from the proposed treatment methods has been well documented in the scientific literature (*See, e.g.*, USFWS 2020a, 2022). Potential adverse impacts include increases in stream temperature, increases in erosion and sedimentation, changes in water chemistry and pH, changes to aquatic food webs, hydrologic impacts, streambank instability and changes to channel structure, introduction of invasive and undesirable vegetation, and impacts to native riparian vegetation communities that stabilize stream banks and control water temperature. Smaller headwater streams are particularly vulnerable to these impacts.

The Forest Service Must Prepare an Environmental Impact Statement (EIS)

NEPA requires federal agencies to prepare a full environmental impact statement (EIS) before undertaking "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(C). *See also* 40 C.F.R. § 1501.3. The Ninth Circuit affirms this approach.

> We have held that an EIS must be prepared if 'substantial questions are raised as to whether a project ... may cause significant degradation to some human environmental factor.' To trigger this requirement a 'plaintiff need not show that significant effects will in fact occur,' [but instead] raising 'substantial questions whether a project may have a significant effect' is sufficient.

Idaho Sporting Cong. v. Thomas, 137 F.3d 1146, 1149-50 (9th Cir. 1998) (citations omitted) (emphasis original). *See also Ocean Advocates v. U.S. Army Corps of Eng'rs*, 402 F.3d 846, 864- 65 (9th Cir. 2005) ("To trigger this [EIS] requirement a plaintiff need not show that significant effects will in fact occur, but raising substantial questions whether a project may have a significant effect is sufficient." (internal quotations, citations, and alterations omitted)).

Other circuits courts agree. "If the agency determines that its proposed action may 'significantly affect' the environment, the agency must prepare a detailed statement on the environmental impact of the proposed action in the form of an EIS." *Airport Neighbors Alliance v. U.S.*, 90 F.3d 426, 429 (10th Cir. 1996) (citation omitted).

If an agency "decides not to prepare an EIS, 'it must put forth a convincing statement of reasons' that explains why the project will impact the environment no more than insignificantly. This account proves crucial to evaluating whether the [agency] took the requisite 'hard look.'" *Ocean Advoc.*, 402 F.3d at 864.

Here, the Project is likely to adversely affect an ESA-listed species, Lahontan cutthroat trout. *See* 40 C.F.R. § 1501.3 ("In considering the potentially affected environment, agencies should consider, as appropriate to the specific action, the affected area (national, regional, or local) and its resources, such as listed species and designated critical habitat under the Endangered Species Act.").

Courts have found that an action is environmentally "significant," and thus requires an EIS, where it is likely to affect an ESA-listed species. *See, e.g., Environmental Def. Ctr. v. Bureau of Ocean Energy Mgmt.*, 36 F.4th 850, 879 (9th Cir. 2022) ("[T]he agencies . . . concluded that [listed species] were likely to be adversely affected by oil spills. This finding of adverse effects, especially after the EA was published, is prima facie evidence that an EIS should have been prepared."); *see also Forest Service Employees for Envtl. Ethics v. U.S. Forest Serv.*, 726 F. Supp. 2d 1195, 1217-18 (D. Mont. 2010); *Klamath-Siskiyou Wildlands Ctr. v. U.S. Forest Serv.*, 373 F. Supp. 2d 1069, 1082-83 (E.D. Cal. 2004); *Western Land Exch. Project v. U.S. Bureau of Land Mgmt.*, 315 F. Supp. 2d 1068, 1090-92 (D. Nev. 2004); *Montana Envtl. Info Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1102–03 (D. Mont. 2017). An action does not have to "jeopardize" the existence of a listed species to have a significant effect. *NRDC v. Winter*, 518 F.3d 658, 692 (9th Cir. 2008) (stating that an agency action can have significant effects short of threatened extinction*), rev'd on other grounds*, 129 S. Ct. 365 (2008). Just because an area has not been designated as critical habitat does not mean that its potential destruction is not significant. *Environmental Prot. Info. Ctr. v. Blackwell*, 389 F. Supp. 2d 1174, 1195 (N.D. Cal. 2004).

Further, the size of the proposed project alone—covering 245,600 within a larger 340,338 acre area—is significant. The affected landscape is one of the most unique and recognizable landscapes in Northern Nevada, providing habitat for a multitude of wildlife species along with unparalleled recreational opportunities. Potentially affected wildlife species, other than LCT, include the greater sage-grouse, the pinyon jay, and the pygmy rabbit. The latter two species have been petitioned for listing under the ESA due to widespread habitat losses and population declines. The area also includes crucial habitat and migration corridors for big game species such as mule deer. All of these species could suffer significant impacts from the proposed vegetation removal actions.

Finally, the "treatments" proposed in the scoping notice also indicate that the project will likely have significant environmental impacts. These include hand thinning (logging), mastication, chaining, mowing, prescribed burning, and livestock grazing. The Forest Service states it intends to conduct approximately 20,000 acres of "treatment" per year, for an indefinite amount of time. Further "implementation would require multiple treatments to occur over several years with some treatment units receiving more than one entry using various types of treatment methods." As described below, the Forest Service's chosen methods are certain to be highly impactful to the affected areas, and may permanently alter vegetation communities and wildlife habitats through factors such as the introduction of invasive species and elimination of slow-growing woody species like sagebrush.

For all of these reasons, the Forest Service should prepare an EIS. While NEPA and its implementing regulations allow the Forest Service to prepare an environmental assessment to determine whether an EIS is necessary, it would violate NEPA to ignore the potential for the project to have widespread and long-term significant impacts on the local environment.

The EIS Must Take a "Hard Look" at the Project's Environmental Impacts

NEPA is "our basic national charter for protection of the environment." *Ctr. for Biological Diversity v. U.S. Forest Serv.*, 349 F.3d 1157, 1166 (9th Cir. 2003). In passing NEPA, Congress "recogniz[ed] the profound impact of man's activity on the interrelations of all components of the natural environment" and set out "to create and maintain conditions under which man and nature can exist in productive harmony." 42 U.S.C. § 4331(a). To bring federal action in line with Congress' goals and to foster environmentally informed decision-making by federal agencies, NEPA "establishes 'action-forcing' procedures that require agencies to take a 'hard look' at environmental consequences." *Metcalf v. Daley*, 214 F.3d 1135, 1141 (9th Cir. 2000).

An agency's NEPA analysis serves two purposes:

> First, it ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts. Second, it guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision.

Dep't of Transp. v. Pub. Citizen, 541 U.S. 752, 768 (2004). By focusing agency and public attention on the environmental effects of proposed agency action, "NEPA ensures that the agency will not act on incomplete information, only to regret its decision after it is too late to correct." *Marsh v. Or. Natural Res. Council*, 490 U.S. 360, 371 (1989).

Under NEPA, an agency must analyze the direct, indirect, and cumulative impacts of a proposed action. These analyses undergird NEPA's "hard look" requirement—a "thoughtful and probing reflection of the possible impacts associated with the proposed project." *Silverton Snowmobile Club v. U.S. Forest Serv.*, 433 F.3d 772, 781 (10th Cir. 2006). "General statements about 'possible' effects and 'some risk' do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided." *Neighbors of Cuddy Mountain U.S. Forest Serv.*, 137 F.3d 1372, 1380 (9th Cir. 1998); *Conservation Cong. v. Finley*, 774 F.3d 611, 621 (9th Cir. 2014). "The agency must explain the conclusions it has drawn from its chosen methodology, and the reasons it considered the underlying evidence to be reliable." *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1075 (9th Cir. 2011) (citation and internal quotation marks omitted). Without "quantified, detailed information," the Forest Service cannot adequately assess the project's environmental impacts. *See Neighbors of Cuddy Mountain*, 137 F.3d at 1380. The agency may not simply rely on its staff's opinions without hard data. *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 996 (9th Cir. 2004).

The Forest Service Must Consider a Range of Reasonable Alternatives

NEPA requires the Forest Service to consider a range of reasonable alternatives. As the 1978 NEPA regulations stated, the range of alternatives is "the heart of the environmental impact statement." 40 C.F.R. § 1502.14 (1978). The Forest Service must "[e]valuate reasonable alternatives to the proposed action" and "[d]iscuss each alternative considered in detail, including the proposed action, so that reviewers may evaluate their comparative merits." See 40 C.F.R. 1502.14 (2020). "An agency must look at every reasonable alternative, with the range dictated by the nature and scope of the proposed action." *Nw. Envtl. Defense Center v. Bonneville Power Admin.*, 117 F.3d 1520, 1538 (9th Cir. 1997). An agency violates NEPA by failing to "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed action. *City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1310 (9th Cir. 1990). Reasonable alternatives include those that are more environmentally protective as well.

NEPA requires that an actual "range" of alternatives be considered, so as to "preclude agencies from defining the objectives of their actions in terms so unreasonably narrow that they can be accomplished by only one alternative . . . ." *Col. Envtl. Coal. v. Dombeck*, 185 F.3d 1162, 1174 (10th Cir. 1999) (citing *Simmons v. U.S. Corps of Eng'rs*, 120 F.3d 664, 669 (7th Cir. 1997)). This requirement prevents the outcomes of the agency's planning from becoming "a foreordained formality." *City of New York v. Dep't of Transp*., 715 F.2d 732, 743 (2d Cir. 1983). *See also Davis v. Mineta*, 302 F.3d 1104 (10th Cir. 2002).

The Forest Service's stated purpose and need offers a unique opportunity for the Forest Service to consider a suite of alternatives that would comply with its ESA obligations, minimize environmental harm, and achieve the provide the greatest benefits across a large landscape. These include protection of important habitat areas from anthropogenic impacts like motorized recreation, energy development, and livestock grazing.

The EIS should analyze alternatives that would minimize or exclude large, surface-disturbing treatments in favor of passive restoration in largely intact ecosystems, focusing any mechanically intense restoration methods only on severely degraded areas. The Forest Service should also include an alternative that addresses significant causes of degraded habitat and enhanced fire potential, and includes prescriptions that protect habitat and treatment areas from impacts resulting from activities such as motorized recreation, development, and livestock grazing; and attempts to anticipate, address and mitigate climate stressors that are likely to frustrate restoration efforts.

The EIS Must Establish and Discuss the Environmental Baseline

"The establishment of a 'baseline' is not an independent legal requirement, but rather, a practical requirement in environmental analysis often employed to identify the environmental consequences of a proposed agency action." *Oregon Natural Desert Ass'n v. Jewell*, 840 F.3d 562, 568 (9th Cir. 2016) (holding that the BLM violated NEPA by failing to establish baseline presence or absence of sage-grouse in area affected by proposed wind energy development). "It is against baseline information that environmental impacts are measured and evaluated; therefore it is critical that the baseline be accurate and complete." *Landwatch v. Connaughton*, 905 F. Supp. 2d 1192, 1197 (D. Or. 2012). *See also Northern Plains Resource Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1083–85 (9th Cir. 2011) (finding that agency violated NEPA's requirement that it "provide the data on which it bases its environmental analysis," and that it failed to gather sufficient baseline data to allow it to take a hard look at environmental impact of proposed railroad construction); *Conservation Northwest v. Rey*, 2009 WL 4897727, at *9 & n.12 (W.D. Wash. 2009) (noting that "[a]llowing an agency to ignore a change by deciding that it is of little consequence is a slippery slope to eroding the meaningfulness of a baseline").

The EIS Must Consider Cumulative Impacts

Cumulative effects are effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. 40 C.F.R § 1508.1(g) (effective May 20, 2022). "Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time." *Id.*

Recent changes in 2022 to the Council on Environmental Quality's (CEQ) NEPA implementing regulations confirm that NEPA requires a robust discussion of indirect and cumulative impacts. *See* 87 Fed. Reg. at 23,466 (April 20, 2022) (explaining that "[a]gencies should treat cumulative effects under the final rule in the same fashion as they treated cumulative impacts under the 1978 regulations.").

The 2022 CEQ rule also eliminates restrictions (imposed by the prior 2020 rule) on consideration of temporally or geographically removed environmental effects, "but for" causal relationships, and "effects that the agency has no ability to prevent due to its limited statutory authority or would occur regardless of the proposed action." CEQ explained, "These qualifications may unduly limit agency discretion and stating them as categorical rules that limit effects analyses is in tension with NEPA's directives to produce a detailed statement on the 'environmental impact of [a] proposed action,' 'any adverse environmental effects which cannot be avoided,' and 'the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity.'" 87 Fed. Reg. at 23,466 (quoting 42 U.S.C.§ 4332(2)(C)).

In restoring the regulatory requirement to consider cumulative impacts, CEQ has reaffirmed the importance of evaluating cumulative impacts, stating:

> [C]onsideration of reasonably foreseeable cumulative effects allows agencies and the public to understand the full scope of potential impacts from a proposed action, including how the incremental impacts of a proposed action contribute to cumulative environmental problems such as air pollution, water pollution, climate change, environmental injustice, and biodiversity loss. Science confirms that cumulative environmental harms, including repeated or frequent exposure to toxic air or water pollution, threaten human and environmental health and pose undue burdens on historically marginalized communities. CEQ does not consider such harms to be inconsequential or irrelevant, but rather critical to sound agency decision making.

87 Fed. Reg. at 23,467. And CEQ clarified in the 2022 rule that it "considers the disclosure of all reasonably foreseeable direct, indirect, and cumulative effects to be critical to the informed decision-making process required by NEPA, *see, e.g.*, 42 U.S.C. 4332, such that the benefits of any such disclosure outweigh any potential for shorter NEPA documents or timeframes." 87 Fed. Reg. at 23,467.

An adequate cumulative effects analysis requires some "quantified or detailed" information. *Klamath-Siskiyou Wildlands Ctr.*, 387 F.3d at 993. *Cf. Sierra Club v. Bosworth*, 510 F.3d 1016, 1028-30 (9th Cir. 2007) (requiring consideration of cumulative impacts for activities covered by categorical exclusion for fuel reduction activities); *Soda Mountain Wilderness Council v. Norton*, 424 F. Supp. 2d 1241, 1266-67 (E.D. Cal. 2006) (finding one-page cumulative impact analysis inadequate).

Generalized, conclusory statements about the insignificance of cumulative effects or how they will be effectively mitigated will not suffice. *Te-Moak Tribe of Western Shoshone of Nevada v. U.S. Dept. of Interior*, 608 F.3d 592, 606 (9th Cir. 2010) (failure to include quantified or detailed information on cumulative effects of past, present, and reasonably foreseeable mining activities). *See also Great Basin Mine Watch v.*

Hankins, 456 F.3d 955, 971-74 (9th Cir. 2006) (holding cumulative impact analysis for gold mining operations inadequate because it consisted of "vague and conclusory statements, without any supporting data" and lacked any explanation for why other mining projects were not explicitly discussed).

Agencies not only have an obligation to discuss the cumulative impacts of related projects; they also have an "affirmative duty to locate, describe, and consider other projects that could have cumulative impacts when combined with the project under consideration." *Edwardsen v. United States Dep't of the Interior*, 268 F.3d 781, 786 (9th Cir. 2001); *Kettle Range Conservation Group v. United States Forest Serv.*, 148 F. Supp. 2d 1107, 1129 (E.D. Wash. 2001). In assessing cumulative impacts, "the [agency] must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment." *Lands Council v. Powell*, 395 F.3d 1019, 1028 (9th Cir. 2005). *See also Western Watersheds Project v. Kraayenbrink*, 620 F.3d 1187, 1207 (9th Cir. 2010) (failure to address combined effects of various reductions in opportunities for public participation in process of issuing grazing allotments); *League of Wilderness Defenders-Blue Mountains Biodiversity Project v. United States Forest Serv.*, 549 F.3d 1211, 1218–19 (9th Cir. 2008) (identification of one past timber sale and general statement that other timber sale had occurred insufficient); *Oregon Natural Res. Council Fund v. Goodman*, 505 F.3d 884, 892-93 (9th Cir. 2007); *Oregon Natural Res. Council Fund v. Brong*, 492 F.3d 1120, 1133 (9th Cir. 2007).

Additional, Site-Specific NEPA Analysis is Required to Authorize Fuels Reduction Treatments

The Project Area encompasses 245,600 acres; accordingly, the scoping notice appears to contemplate a programmatic NEPA analysis at a scale that is too broad to authorize site-specific action. Additional, site-specific NEPA analysis will be require before any ground-disturbing treatments can proceed.

NEPA permits an agency to forecast broad cumulative impacts of related actions in a programmatic NEPA document before it knows the actual direct and indirect effects of implementation decisions on specific project areas. *See, e.g., Nat'l Wildlife Fed'n v. Appalachian Reg'l Comm'n*, 677 F.2d 883, 888 (D.C. Cir. 1981) (examining programmatic EIS and requirement to perform site-specific NEPA analysis); *New Mexico ex rel. Richardson v. BLM*, 565 F.3d 683, 717-18 (10th Cir. 2009). However, once the site-specific effects of a proposed action become reasonably foreseeable, an agency must analyze the direct and indirect effects of the proposed action. *Id.* This analysis must take place in a NEPA document. *See S. Utah Wilderness Alliance v. Norton*, 457 F. Supp. 2d 1253, 1264 (D. Utah 2006), *aff'd in part, appeal dismissed in part on other grounds sub nom. S. Utah Wilderness Alliance v. Kempthorne*, 525 F.3d 966 (10th Cir. 2008).

Where an agency seeks to authorize site-specific actions through a single NEPA document—that is, where the broad-scale analysis represents the agency's "last word" on environmental impacts before ground-level implementation—the required level of analysis is stringent. *See, e.g., Friends of Yosemite Valley v. Norton*, 348 F.3d 789, 800-01 (9th Cir. 2003). At the "implementation stage," NEPA review must be more tailored and detailed because the agency is confronting "individual site specific projects." *California v. Block*, 690 F.2d 753 (9th Cir. 1982); *SE Alaska Conservation Council v. US Forest Serv.*, 443 F. Supp. 3d 995, 1010-1014 (D. Alaska 2020); *Forest Ecology Ctr., Inc. v. U.S. Forest Serv.*, 192 F.3d 922, 923 n.2 (9th Cir. 1999). Federal courts have faulted land management agencies for failing to provide site-specific information in a landscape level analysis.

For example, in *Southeast Alaska Conservation Council*, the Forest Service attempted to authorize a 15-year timber harvest program across 1.8 million acres through a single programmatic EIS. The EIS did not provide the specific locations or configurations of logging or road building within the affected area.

> Instead, the Project EIS provide[d] that "site-specific locations and methods" for activities such as timber harvest "[would] be determined during implementation" over the 15-year lifespan of the Project. It explain[ed] that siting decisions and the parameters of actual timber sales [would] be determined pursuant to an Implementation Plan. . . . [T]hese subsequent, site-specific decisions [would] not be subject to additional NEPA review.

Id. at 1002-03. The Forest Service in *Southeast Alaska Conservation Council* "maintain[ed] that its 'landscape-scale NEPA analysis' enable[ed] informed decision-making about integrated resource management at the programmatic level and contain[ed] sufficient site-specific information and analysis to proceed with individual timber sales over the 15-year Project period without additional NEPA review." *Id.* at 1006-07.

The court found several flaws with this approach. First, observing that the EIS "reserve[d] actual siting decisions for the future, as individual timber sales are offered," the court found that the EIS did not "allow the public to identify where specific harvest activities will occur in relation to various cognizable [environmental] values." *Id.* at 1010. Further, the EIS's "worst-case scenario" approach, coupled with the lack of site-specific information, "detract[ed] from a decisionmaker's or public participant's ability to conduct a meaningful comparison of the probable environmental impacts among the various alternatives." *Id.* at 1013.

The court thus found that by "authorizing an integrated resource management plan but deferring siting decisions to the future with no additional NEPA review, the Project EIS violate[d] NEPA," because the Forest Service had not, and would not, "take[] the requisite hard look at the environmental impact of site specific timber sales" over a 15-year period. *Id.* at 1014.

Similarly, in *WildEarth Guardians v. Montana Snowmobile Association*, the court faulted the Forest Service for failing to provide site-specific information in a landscape-level analysis.

> This paltry information does not allow the public to determine where the range for moose is located, whether the areas open to snowmobile use will affect that range, or whether the Forest Service considered alternatives that would avoid adverse impacts on moose and other big game wildlife. In other words, the EIS does not provide the information necessary to determine how specific land should be allocated to protect particular habitat important to the moose and other big game wildlife. Because the Forest Service did not make the relevant information available . . . the public was limited to two-dimensional advocacy—interested persons could argue only for the allocation of more or less land for snowmobile use, but not for the protection of particular areas. As a result, the Forest Service effectively stymied the public's ability to challenge agency action.

790 F.3d 920, 927 (9th Cir. 2015).

When the Forest Service fails to conduct that site-specific analysis, the agency "does not allow the public to 'play a role in both the decision-making process and the implementation of that decision.'" *Id.* at 928 (quoting *Methow Valley Citizens Council*, 490 U.S. at 349). "Although the agency does have discretion to define the scope of its actions, . . . such discretion does not allow the agency to determine the specificity required by NEPA." *City of Tenakee Springs v. Block*, 778 F.2d 1402, 1407 (citing *California v. Block*, 690 F.2d 753, 765 (9th Cir. 1982)). In *State of Cal. v. Block*, for example, the decision concerned 62 million acres of National Forest land, and the Ninth Circuit still required an analysis of "[t]he site-specific impact of this decisive allocative decision." 690 F.2d at 763. In short, NEPA's procedural safeguards are designed to guarantee that the public receives accurate site-specific information regarding the impacts of an agency's project-level decision *before* the agency approves the decision.

Analyzing and disclosing site-specific impacts is critical because where (and when and how) activities occur on a landscape strongly determines that nature of the impact. As the Tenth Circuit Court of Appeals has explained, the actual "location of development greatly influences the likelihood and extent of habitat preservation. Disturbances on the same total surface area may produce wildly different impacts on plants and wildlife depending on the amount of contiguous habitat between them." *New Mexico ex rel. Richardson*, 565 F.3d at 706. The *Richardson* Court used the example of "building a dirt road along the edge of an ecosystem" and "building a four-lane highway straight down the middle" to explain how those activities may have similar types of impacts, but the extent of those impacts—in particular on habitat disturbance—is different. *Id.* at 707. Indeed, "location, not merely total surface disturbance, affects habitat fragmentation," id., and therefore location data is critical to the site-specific analysis NEPA requires. Merely disclosing the existence of particular geographic or biological features is inadequate—agencies must discuss their importance and substantiate their findings as to the impacts. *Or. Natural Res. Council Fund v. Goodman*, 505 F.3d 884, 892 (9th Cir. 2007).

Here, proposed action is a project-level decision. As a result, any NEPA analysis must include the detailed information and analysis that NEPA and the CEQ regulations require because the Forest Service admits there will be no further NEPA analysis beyond the Final EA or EIS. Failure to do so precludes informed agency decisionmaking and informed public comment, in violation of NEPA.

To cite just one example, the scoping notice states that the Forest Service is relying on LANDFIRE data to assess the degree of "ecological departure" throughout the project area. But according to LANDFIRE itself (https://www.fs.usda.gov/ccrc/tools/landfire), these maps are at best landscape scale, and cannot be used to assess local or site-specific conditions: "LANDFIRE products are not intended to replace local-scale data products. Appropriate landscape-scale analysis may include nationwide, regional (single large states, groups of smaller states), or sub-regional (large landscapes) strategic planning." This statement is itself confusing. It highlights the complexity and uncertainty associated with using this methodology. It was primarily developed based on modeled fire return intervals and fuels characteristics. Applying such methods to disturbance-sensitive arid sagebrush and pinyon-juniper habitats in often already fragmented landscapes without a hard look at the specific local habitat conditions present in relation to wildlife needs may result in significant new habitat degradation or losses to vulnerable species. Thus, the Forest Service cannot rely on LANDFIRE analysis alone and further site-specific analysis is necessary.

The Forest Service Must Ensure that the Project is Consistent with the Humboldt Land and Resource Management Plan, as Amended.

NFMA, 16 U.S.C. §§ 1600–14, governs the U.S. Forest Service's management of the national forests. Once a Forest has developed a land and resource management plan ("Forest Plan"), *see id.* § 1604(a), all "[r]esource plans and permits, contracts, and other instruments for the use and occupancy of National Forest System lands shall be consistent with the land management plans." 16 U.S.C. § 1604(i).

The Ninth Circuit Court of Appeals has explained that "[a]fter a Forest Plan has been developed and implemented, the NFMA prohibits site-specific activities that are inconsistent with the governing Forest Plan." *Great Old Broads for Wilderness v. Kimbell*, 709 F.3d 836, 850 (9th Cir. 2013); *see also Native Ecosystems Council v. U.S. Forest Serv.*, 418 F.3d 953, 961 (9th Cir. 2005) ("It is well-settled that the Forest Service's failure to comply with the provisions of a Forest Plan is a violation of NFMA."); *Idaho Sporting Cong., Inc. v. Rittenhouse*, 305 F.3d 957, 962 (9th Cir.2002) (Procedurally, "all management activities undertaken by the Forest Service must comply with the forest plan, which in turn must comply with the [NFMA].").

Additionally, each project or activity approval document must describe how the project or activity is consistent with applicable plan components. *Id.* § 219.15(d); *Neighbors of Cuddy Mountain v. Alexander*, 303 F.3d 1059, 1062 (9th Cir. 2002) (projects "must be analyzed by the Forest Service and the analysis must show that each project is consistent with the plan"); *see also Idaho Sporting Cong.*, 305 F.3d at 962 ("In order to ensure compliance with the forest plan and the [NFMA], the Forest Service must conduct an analysis of each 'site specific' action, such as a timber sale, to ensure that the action is consistent with the forest plan." (citation omitted)).

The Forest Plan applicable to the Project is the 1986 Humboldt Land and Resource Management Plan, as amended by the 2015 Approved Resource Management Plan Amendment for greater sage-grouse (Plan). The Plan contains goals, objectives, management direction, and desired future conditions that apply on a forest-wide basis, as well as specific management prescriptions for the Ruby Mountains Management Area. Many of these plan components emphasize the maintenance and improvement of fish and wildlife habitat, particularly for Lahontan cutthroat trout, greater sage-grouse, and mule deer. As described elsewhere in this letter, mechanical, prescribed fire, and livestock grazing treatments can have significant adverse impacts to aquatic trout habitat, riparian areas, sagebrush shrublands, and pinyon-juniper woodlands. Such impacts would not be consistent with the Plan's emphasis on habitat conservation. In light of the Plan's direction and the high potential for adverse impacts from the proposed action, the EIS and final decision must ensure, based on appropriate site-specific analysis, that the project will adhere to all applicable Forest Plan direction.

Major Project Components Are Not Responsive to Restoration Needs

The Scoping Notice identifies several departures from desired or historical conditions that result from systemic land management practices within the Project area. It will therefore take systemic changes to resolve them for the long term. The resource concerns that this project is trying to address are common throughout the West. The Forest Service and other federal agencies routinely propose expensive vegetation treatment projects to fix these problems, but care must be taken that treatments don't actually exacerbate resource impacts. Mechanical restoration projects by their very nature are expensive and prone to failure (*see, e.g.*, Jones et al. 2019).

One reason for this is that the Forest Service and other agencies often fail to consider why restoration is required in the first place. The symptoms of improper land use tend to be conflated with the effects of vegetative growth and woodland expansion, leading to costly, ineffective, and ultimately harmful interventions in natural successional processes (Jones et al. 2019 and sources cited therein). For instance, the long history of intensive livestock grazing in pinyon-juniper woodlands and sagebrush shrublands has diminished and altered the composition of herbaceous vegetation, leading to widespread degradation of understory conditions.

Land management practices have led to the current problem and comprehensive management changes, including changing problematic practices and policies, will be required to create a truly healthy landscape. The understories of pinyon-juniper and sagebrush in the project area are already prone to erosion and desertification due to improper land use. Removal of trees or shrubs in these areas will therefore result in significant, potentially permanent losses to site productivity and erosive watershed conditions. Moreover, treated sites will fail to achieve desired conditions as long as inappropriate land-use practices are continued after treatment.

The Society for Ecological Restoration defines "ecological restoration" as "the process of assisting the recovery and management of ecological integrity." "Ecological integrity" includes "a critical range of variability in biodiversity, ecological processes and structures, regional and historic context, and sustainable cultural practices." According to this definition, many of the proposed treatments are not appropriate or effective forms of restoration. There is already a great diversity of species within pinyon-juniper woodlands, sagebrush shrublands, and the transition zones between them. The removal of trees and shrubs will not, by itself, assist in the restoration of native biodiversity or ecological processes.

For sites that should be pinyon-juniper forests—including where pinyon-juniper colonization represents a natural phase of ecological succession—tree clearing to restore the ecosystem is inappropriate. The same can be said for sagebrush removal in sagebrush communities. Ecological restoration by tree or shrub removal to replicate historic fire patterns is not supported for most pinyon-juniper stands in this region. Fire intervals were never frequent in these ecosystems (Romme et al. 2009; Bukowski and Baker 2013).

Where sagebrush communities are identified as sage grouse habitat, the Forest Service should not reduce of the amount of sagebrush canopy. 20-38% percent sagebrush canopy cover has been cited as a desired condition for nesting sites in the most widely used agency management guidelines (Connelly et al. 2000). Good winter habitat for sage grouse often has higher canopy cover amounts. Vegetation treatments for sagebrush cover under 30% are not recommended (Connelly et al. 2000). In addition, prescribed fire is not recommended for sagebrush where the annual precipitation is less than 12 inches per year (Connelly et al. 2000, Hagen et al. 2007, Beck et al. 2009).

While selective hand-cutting of pinyon and juniper has been shown to benefit sage-grouse nesting habitat where other factors are not limiting (Severson et al. 2017), there is no scientific basis for the proposed large-scale mechanical removal of pinyon-juniper woodlands. (see Jones 2019 and sources cited therein).

Once the desired community for restoration is accurately described, the factors that led to today's degraded state need to be identified. Ecological restoration cannot succeed without eliminating the factors that lead to degradation. As noted, livestock grazing has led to tremendous shifts in forest and shrubland plant communities. Where current livestock grazing practices are a factor, grazing practices will need to change as a part of ecological restoration. Similarly, where cheatgrass (*Bromus tectorum*) invasions have changed the fire cycle of the site, action will need to be taken to restore the balance of native species.

The Forest Service Must Carefully Consider the Effectiveness of the Proposed Treatments and the Potential for Adverse Impacts

Studies and past experience indicate that many vegetation treatments will fail, with significant negative consequences for resource values following the disturbance caused by the treatment (e.g., Arkle et al.

2014). Such consequences can include invasion by exotic weeds and failure of grasses and forbs to reestablish even after seeding. Jones et al. (2019) report that:

> [S]ubstantial among-site variation in key ecological attributes will likely always cloud our ability to predict specific outcomes for many sites. Interannual variation, especially in the availability of water in spring, blurs predictive ability further. Archer and Predick (2014) agree, stating that "our ability to predict ecosystem responses to treatments is limited for many attributes, (e.g., primary production, land surface-atmosphere interactions, biodiversity conservation) and inconsistent for others (e.g., forage production, herbaceous diversity, water quality/quantity, soil erosion, and carbon sequestration)." The ecological legacies of past and current management make prediction of outcomes even more difficult (Monaco et al. 2018; Morris et al. 2011; Morris and Rowe 2014; Morris et al. 2014).

Even treatments judged successful in terms of meeting a project's goals will have negative consequences. For example, use of heavy equipment or improvement of access tracks may cause permanent destruction of biological soil crusts, soil water loss, and erosion. Removal of pinyon will decrease resources for pinyon-dependent species (see discussion of pinyon jay, below). Another important negative outcome can be loss of soil carbon as woody material is burned or degraded by decay following treatment, with a concomitant contribution to global warming.

In order to choose among alternatives, including the "no-action" alternative, there must be a hard look at both pros and cons. Because many of the negative effects may not be fully apparent for years (Jones et al. 2019), it is essential that analysis refer to the body of scientific studies on recovery following vegetation treatments in an attempt to predict likely outcomes.

Mechanical and Fire Treatments Will Likely Increase Annual Grass Invasions

Among the most foreseeable adverse impacts from the proposed treatments is invasion of exotic annual grasses such as cheatgrass (*Bromus tectorum*). According to a literature review on mechanical vegetation treatments (Jones et al. 2019):

> Pinyon-juniper treatments can lead to an increase in invasive and/or annual plants, particularly cheatgrass (Evans and Young 1985, 1987; Havrilla et al. 2017; Monaco et al. 2017; Provencher and Thompson 2014; Stephens et al. 2016). Cheatgrass can outcompete the forbs and grasses the treatment was intended to increase (Bates et al. 2007). Many studies found that mechanical treatments in pinyon-juniper woodlands may increase herbaceous production, but the increase in invasive, annual plants may not necessarily improve overall ecosystem conditions. For example, Vaitkus and Eddleman (1987) concluded that after juniper removal in Oregon, herbaceous production doubled but much of the increase came from annual plants. Davis and Harper (1989) reported significant increases in weedy annuals on chained treatments in Utah. Owens et al. (2009) observed increases in cheatgrass following lop and scatter/pile burn and mastication treatments in Colorado. Ross et al. (2012) found that in Utah cheatgrass was not present on control sites but it comprised more than 18% cover on lop and scatter/pile burn treatments and between 11% and 18% cover on mastication treatments. Bybee et al.

(2016) found that the fine woody debris produced by mastication increased cover of both native and non-native herbaceous plants.

As with pinyon-juniper treatments, many studies show that if invasive, annual plants are present on the site prior to sagebrush treatments, the cover of these species often increase after treatment. For example, Prevey et al. (2010) found three to four times more non-native herbaceous species in sites where sagebrush was removed than in undisturbed sites.

There is a high risk of cheatgrass invasion after treatment, especially in warmer and drier sites. To prevent increase of cheatgrass after treatment, restoration and maintenance of perennial herbaceous species should be facilitated with revegetation and appropriate post-treatment livestock grazing (Roundy et al. 2018).

The degree to which invasive exotics spread is directly correlated to human activities and control efforts in the area. Once firmly established in disturbed habitats, weeds can be effective at invading previously undisturbed habitats. Research indicates that if cheatgrass is present before a treatment it will return afterwards, especially on warm, dry sites (Chambers et al. 2014; Roundy et al. 2018).

The best way to prevent the establishment and expansion of invasive exotics, especially cheatgrass, is to reduce surface disturbance. Therefore, the Forest Service has the opportunity to prevent its expansion using less invasive methods of control. Chief among these is the reduction of surface-disturbing management activities and uses that contribute to soil disturbance and weed invasions, including livestock grazing, OHV recreation, and mineral development.

The EIS Must Consider the Ecological Value of Pinyon-Juniper Woodlands

Pinyon and juniper forests are ecologically rich areas that provide habitat for at least 450 species of vascular plants and 150 species of vertebrates (Jones et al. 2019). Important game species such as elk, mule deer, and wild turkey are year-round residents in pinyon-juniper woodlands and depend on this habitat for food and cover (*Id.*). Pinyon-juniper woodlands also support high avian abundance and diversity, with many obligate and semi-obligate species, and with a low level of avian community similarity to other forest habitats (USDA 1999).

The impacts of the widespread removal of pinyon and juniper woodlands on this biodiverse community is not well understood. As discussed below, the pinyon jay—and pinyon-juniper obligate—is one of the fastest and most persistently declining land bird species in the intermountain West. But even though the population has fallen by more than 50% from 1968 to 2015, the pinyon jay has not been widely studied, and little is known about the factors responsible for its diminishing numbers.

Pinyon-Juniper and Sagebrush Removal Will Not Restore Natural or Historic Fire Intervals

As one of the Forest Service's primary goals for the project is to reduce wildfire frequency and severity, the Forest Service must acknowledge that there is little evidence supporting the removal pinyon, juniper, or sagebrush for this purpose. Prior to European settlement, fire in pinyon and juniper communities was thought to be rare in general, and fire cycle in persistent pinyon-juniper communities were likely hundreds of years (Romme et al. 2009; Jones et al. 2019). When fires did occur, they were often severe. Anthropogenic factors such as fire suppression, grazing, the spread of flammable invasive species, and climate change have altered the fire dynamics of these communities. At present, there is little research supporting the contention that removing pinyon and juniper reduces fire frequency. And because treatments often increase flammable non-natives (either through invasion or seeding), they may further shorten the fire cycle rather than restore the natural fire regime.

In sagebrush communities, fire is also infrequent and high-intensity (Bukowski and Baker 2013). Historical fire return intervals have been estimated at 171-342 years for Wyoming Big Sagebrush and 137-217 years for mountain big sagebrush. Neither sagebrush nor pinyon-juniper have evolved adaptations to frequent fires, and both take a long time to recover after a burn.

Large-scale vegetation removal, moreover, can have many unintended ecological consequences. For example, exotic annuals such as cheatgrass can outcompete the native forbs and grasses that treatments are intended to increase. Although many studies have found that pinyon and juniper treatments increase herbaceous production, much of this increase often comes in the form of invasive annuals, which do not improve overall ecological conditions (Jones et al. 2019 and sources cited therein).

Sagebrush and pinyon-juniper removal can also have climate impacts. Large-scale mechanical vegetation removal—and associated destruction of biological soil crusts—reduces the landscape's ability to safely sequester carbon. Pinyon and juniper forests, in particular, store a disproportionate amount of carbon compared to other land cover types, such as sagebrush and grasslands. Studies have found that the expansion of shrubs and trees actually sequesters carbon, and removing them could result in the release of stored carbon into the atmosphere (Campbell et al. 2012), leading in turn to additional warming and increasingly extreme fire behavior.

Pinyon-Juniper Removal Actions Will Harm Pinyon Jay

The pinyon jay (*Gymnorhinus cyanocephalus*) is a medium-sized jay found in the western U.S. across a number of states, an obligate and keystone species of pinyon-juniper woodlands in the west and southwest and a major pinyon pine seed disperser. It has suffered steep declines, exceeding that of the greater sage-grouse, with 85% of the population lost since the 1960s (Sauer et al. 2017). Due to these steep population declines, the pinyon jay was recently petitioned for listing under the Endangered Species Act (Defenders of Wildlife 2022).

Based on current trends, the population is expected to decline by an additional 50% by 2035 (Rosenberg et al. 2016). Though there are still substantial populations, the pinyon jay is on the Partners in Flight Yellow Watch List, identified as one of 39 "Species on the Brink" in the U.S. and Canada exhibiting "high vulnerability to extinction, steep population decline, and high urgency" and with a "range-wide loss in abundance [greater than] 1 million," and the most dependent on public lands management. The species is also on the U.S. Fish and Wildlife Service Birds of Conservation Concern list, is designated as a Species of Greatest Conservation Need in State Wildlife Action Plans for seven of the 12 states in which it is found, and is listed as Vulnerable on IUCN's Red List, suggesting a high risk of extinction in the medium-future if current population declines continue.

Leading threats include the loss of pinyon-juniper habitat from pinyon-juniper reduction projects and drought, as well as climate change, though the precise mechanisms for the pinyon jay's decline are not currently well understood (Defenders of Wildlife 2022).

According to the State of New Mexico's Bird Conservation Plan (New Mexico Avian Conservation Partners (NMACP) 2020):

> [H]igh levels of thinning (where unthinned sites had 90% higher tree cover than chained sites) had significant effects on avian community structure. Magee et al. (2019) found that Pinyon Jay occupancy decreased locally in piñon-juniper wood land treated to reduce canopy cover from 36% to 5%. Another study found that Pinyon Jays avoided nesting within parts of a known colony site in persistent piñon-juniper woodland after the colony site was significantly thinned (87% reduction of trees per acre). However, a few birds continued nesting in untreated woodland adjacent to the treated area (Johnson et al. 2018). Based on the above-mentioned research, as well as recent habitat studies of Pinyon Jays (Johnson et al. 2014, 2015), it appears moderate to heavy wood land thinning has negative impacts on the quality of Pinyon Jay habitat.
>
> Many piñon-juniper management projects are conducted based on the assumption that piñon-juniper woodlands are invasive and expanding. While this was true in some areas in the past, and may be true in some areas today, as a whole this expansion has decreased or ceased (Kerr 2007, Miller at al. 2008, Sankey and Germino 2008). Additionally, climate change models predict a large-scale piñon-juniper die off in the future (Williams et al. 2010, McDowell et al. 2016).

Given its coevolved mutualism with pinyon pines, the pinyon jay's population loss will negatively impact other declining pinyon-juniper obligates.

The U.S. Fish and Wildlife Service recently found that the petition to list the pinyon jay as threatened or endangered presented "credible scientific or commercial information" indicating that listing may be warranted. 88 Fed. Reg. 55991. With regard to vegetation manipulation treatments, the Service stated:

> The petition provides the limited available information indicating that certain habitat treatments in piñon-juniper woodlands are potentially having negative effects on pinyon jay occupancy and nesting colony sites and that they are occurring at a species level such that a listing may be warranted (Johnson et al. 2018, 5-6; Magee et al. 2019,7 and 10). The petition presents credible evidence that regulatory mechanisms to manage pinyon jays across their range may be inadequate to ameliorate the impacts of woodland management (Factor D).

(USFWS 2022b) The Fish and Wildlife Service recently published the Conservation Strategy for the Pinyon Jay (Somershoe et al. 2020) to guide managers in minimizing impacts to pinyon jay. One of their recommendations is to avoid nest colony sites, which are characterized by large trees with dense crowns that are used year after year. A 500-meter buffer of undisturbed habitat around a known breeding colony is recommended. The Conservation Strategy also recommends against thinning trees that produce pinyon nuts, which are critical to species survival. These are often older trees, but younger trees are also important to retain for future pinyon nut production.

Sagebrush Removal is Harmful to Sagebrush Obligates and Not Scientifically Supported

Federal range managers have long sought to reduce sagebrush cover on the assumption that it will increase forage for livestock and wildlife. This may be true in the short-term, but sagebrush treatments often have unintended adverse consequences, including increases in nonnative, invasive annual grasses that increase fire risk (Jones et al. 2019). Nor is sagebrush reduction as proposed in the Scoping Notice, recommended for increasing or improving habitat for sagebrush obligates (Beck et al. 2012).

Many sagebrush-obligate wildlife species prefer higher sagebrush cover than is generally desired by range managers. This implies that higher sagebrush cover percentages are both natural and desirable. Reviewing the literature on this topic, Welch and Criddle (2003) concluded that the 10-20% canopy cover often cited by land managers as "natural" is not supported by the available data. In any event, an overabundance of sagebrush has never been identified as a threat to sage-grouse or other sage-grouse obligates.

This is yet another area in which the effects of overgrazing are often conflated with the effects of woody vegetation (Jones et al. 2019). Ungrazed areas have been found to have high sagebrush canopy cover, high perennial bunchgrass cover, and low bare ground percentages (Mueggler and Stewart 1980, Jones 2000). Sagebrush communities at their ecological potential have little bare ground and can be dominated by perennial grasses and biological soil crusts in the absence of grazing.

Nor are sagebrush treatments recommended as a means of establishing natural fire intervals. Range managers often argue that sagebrush is dependent on regular thinning by 10-40 year fire intervals, but Bukowski and Baker (2013) found that actual fire return intervals are much longer, and may be as much as 342 years. Welch and Criddle (2003) note several characteristics of big sagebrush—including its long life span, high flammability, and lack of fire resistance adaptations—that suggest sagebrush in the Intermountain West did not evolve with frequent fire.

Sagebrush Reduction and Pinyon-Juniper Removal Will Harm Sage-Grouse

Sage-grouse populations have been in decline in the 1960s. Average population declines across the range of the species are estimated at 2% per year from 1965 to 2015, or a total of 66% over that same time period. Range-wide population declines prompted the FWS in 2010 to conclude that the greater sage-grouse was "warranted" for listing under the Endangered Species Act. More recently, a USGS study concluded that sage-grouse populations have plummeted by 80% since 1965. Half of that decline has happened since 2002. Declines have been especially severe in the Great Basin, where the primary sage-grouse conservation strategy has relied on treatments like those proposed here. This stands in contrast to the eastern portions of the bird's range, where conservation action has focused to a greater extent on addressing anthropogenic threats such as energy development and agriculture, and recent population declines have been less severe.

The project area includes a large amount of sage-grouse nesting, brood-rearing, and wintering habitat, including priority habitat management areas (PHMA). PHMA is acknowledged as having the highest value to maintaining sustainable sage-grouse populations.

The importance of preserving functional sagebrush communities, particularly in PHMA cannot be overstated. Areas of PHMA generally coincide with areas identified by the U.S. Fish and Wildlife Service (FWS) as "priority areas for conservation" in the 2013 Conservation Objectives Team (COT) report (USFWS 2013). The COT Report emphasized that "[m]aintenance of the integrity of PACs . . . . is the essential foundation for sage-grouse conservation." The COT Report also stated: "There is an urgent need to 'stop the bleeding' of continued population declines and habitat losses by acting immediately to eliminate or reduce the impacts contributing to population declines and range erosion," and that "[t]here are no populations within the range of sage-grouse that are immune to the threat of habitat loss and fragmentation." "Achieving this objective requires eliminating activities known to negatively impact sage-grouse and their habitats, or redesigning these activities to achieve the same goal."

Treatments that reduce sagebrush, such as mowing, chaining, and prescribed fire, are not recommended in sage-grouse habitat and have been shown to have negative impacts, particularly where mowing and other techniques are used to reduce sagebrush cover (e.g., Beck et al. 2012; Connelly et al. 2000). As noted, treatments in both sagebrush and pinyon-juniper habitats can also favor invasive annual grasses, which reduce habitat value and increase fire risk (Jones et al. 2019).

Some studies have shown that targeted removal of pinyon and juniper can help sage-grouse (e.g., Severson et al. 2017). However, success depends largely on site potential and the phase of the pinyon-juniper community (Bates et al. 2017). While the removal of scattered trees (i.e., Phase I) in otherwise intact sage-steppe might improve nesting success in some circumstances, these results do not justify the widespread removal of Phase II and III pinyon-juniper woodlands, as appears to be contemplated in the project description. Like sagebrush treatments, pinyon and juniper removal can have negative consequences, particularly the invasion of non-native annual grasses (Jones et al. 2019). At some sites, moreover, the shrub-steppe successional phase may not be expressed (Miller et al. 2000), and thus treatments at these sites would not benefit sage-grouse. A large body of scientific literature warns against implementing treatments such as chaining, mastication, mowing, roller-chopper, dixie harrow, and prescribed fire in sage-grouse habitat, particularly PHMA (*see, e.g.*, Beck et al. 2012).

Wildland fire is one of the most immediate and pervasive threat to sage-grouse, especially in the Great Basin. However, BLM needs to be clear about the factors driving more frequent and intense fires and design an effective response based on credible scientific recommendations. USFWS's COT report lists a number of measures agencies should take to prevent fire in sage-grouse habitats. These include: managing for healthy native perennial grass communities; managing land uses such as livestock grazing and OHV recreation that spread invasive annual grasses and facilitate fire ignition; addressing the degradation of sagebrush systems before it occurs by, for example, improving livestock grazing systems; and closing highly flammable lands to OHV use during the fire season (USFWS 2013). Such reasonable measures are conspicuously absent from the project proposal. Instead, the Forest Service intends to focus rely on highly impactful methods such as mowing, chaining, and prescribed fire, which have not shown to be effective and bring with them a host of adverse consequences. In particular, these actions threaten to increase fire risk in the project area by facilitating the spread of highly flammable invasive and introduced grasses.

Sagebrush Reduction Will Harm Pygmy Rabbit

The pygmy rabbit is a sagebrush obligate that is heavily dependent on dense, tall big sagebrush communities with structural diversity (Lee et al. 2010). Their habitat requirements for food, shelter, burrowing, and dispersal are very specialized (Heady et al. N.D.). These requirements are difficult to meet given that intact, ecologically functioning sagebrush communities have been degraded throughout the species' range by invasive species, fires, vegetation treatments, livestock grazing, and energy development 75 Fed. Reg. 60516-61. Fragmentation of sagebrush communities through mechanical disturbance is also a threat to pygmy rabbits because their dispersal potential is limited (Weiss et al. 1984) and it is harder for them to migrate away from disturbances to suitable habitat.

Not surprisingly, therefore, pygmy rabbits are declining (Heady et al. N.D.). The species was designated as a Federal species of special concern and is currently listed as a "Category 2" species by the United States Fish and Wildlife Service. 75 Fed. Reg. 60516-61.

The persistence of the species depends on preservation and restoration of suitable sagebrush habitat (Edgel et al. 2014). However, the sagebrush reduction treatments conducted by land management agencies to restore understory forage plants can be detrimental to sagebrush obligates like pygmy rabbits. Even if a project is successful, the increases in understory forage may be counterbalanced by decreases in winter forage when these species are most dependent on sagebrush for food and thermal cover (Davies et al. 2009a; Connelly et al. 2000). Davies et al. (2009b) advises that mowing of sagebrush should not be attempted where sagebrush-obligate wildlife occurs. Davies et al. (2009b) also caution that Wyoming big sagebrush may take 20 years or more to recover after treatments.

The pygmy rabbit was recently petitioned for ESA listing (Western Watersheds Project 2023). On January 25, 2024, FWS concluded that the petition presented "credible scientific or commercial information" indicating that listing may be warranted. 89 Fed. Reg. 4884.

The Forest Service Should Use Only Native Seed

It is critically important that the Forest Service use genetically appropriate native seed to restore treated landscapes. Both the 2015 Integrated Rangeland Fire Management Strategy (USDOI 2015) and the National Seed Strategy (Plant Conservation Alliance 2015) highlight the importance of using native seed. When alien plants are released into a new environment, they are free from all of their native herbivores, commonly referred to as "enemy release." This results in unnaturally dense, fire-prone seedings.

The Forest Service should avoid planting non-native species like forage kochia and crested wheatgrass. Exotic forage grasses have already been seeded on large tracts of the Great Basin. While these non-native species may compete with other non-native grasses such as cheatgrass, they can also form monocultures with little sagebrush cover and low diversity of understory vegetation (Heidinga & Wilson 2002). Consequently, "the cheatgrass-wildfire cycle has indirectly resulted in additional loss of native plant diversity as a result of the common practice of planting introduced wheatgrasses, primarily crested wheatgrass, after wildfires" (Pellant & Lynse 2005). Crested wheatgrass "hinder[s] colonization by native species while planted native grasses do not" (Bakker & Wilson 2004).

Because seeding success is critical to treatment success, the Forest Service should make all treatments contingent on the availability of genetically appropriate seeds collected from the areas to be treated before treatment. Crested wheatgrass, Siberian wheatgrass, and other non-native cultivars of other grasses should not be used for fuels reduction projects because of their tendency to become dense monocultures and to compete with native grasses.

The EIS Must Analyze Impacts to Biological Soil Crusts

The Forest Service must take a hard look at all potential impacts to soil crusts, and the ways in which destroying or degrading biological soil crusts may impact the Forest Service's stated restoration goals. Biological soil crusts are an integral component of Great Basin ecology and play a critical role in resisting annual grass invasion and increasing ecological resilience (Root et al. 2019, Chambers et al. 2014). Research has shown that biological soil crusts are sensitive to perturbations including mechanical disturbance, increased frequency and intensity of fire, globally increasing temperatures, and increased UV radiation (Belnap 2003). Loss of crusts leads to increased soil loss from wind and water erosion, as well as a decrease in nitrogen and carbon. Damage that results in even small soil losses can dramatically reduce site fertility and soil surface stability, especially when exacerbated by climate change (i.e., Harper and Marble 1998, Belnap and Eldridge 2001). Depending on soil type and precipitation levels, regeneration of soils and late seral stage crusts can be a decades-long process (Barnard et al. 2019).

The EIS Must Consider the Cumulative Impacts of Permitted Livestock Grazing

The Forest Service must fully consider the impacts of permitted livestock grazing, as this is one of the primary factors influencing both baseline conditions and treatment outcomes. Livestock grazing has had numerous, long-lasting negative impacts to arid western ecosystems (Fleischner 1994). Some major effects of livestock grazing that are relevant to accomplishing the Project purpose are given here:

- Livestock grazing decreases understory biomass and density, reducing competition with conifer seedlings and reducing the ability of the understory to carry low-intensity fire, contributing to dense forests and woodlands with altered species composition (Belsky and Blumenthal 1997).
- Grazing significantly reduces water infiltration into the soil, and rest from grazing allows infiltration rates to recover. USDA research has found that excluding cattle from a landscape for five growing seasons "significantly increased: (1) total vegetative cover, (2) native perennial forb cover, (3) grass stature, (4) grass flowering stem density, and (5) the cover of some shrub species and functional groups" (Kerns et al. 2011).
- Livestock facilitate the spread of exotic species, particularly in combination with fire, and reduce the competitive and reproductive capacities of native species (Brooks et al. 2004). Exotic plant species, once established, can displace native species, in part, because native grasses are not adapted to frequent and close grazing in combination with fire disturbance (Mack and Thompson 1982; Melgoza, et al. 1990; Belsky and Gelbard 2000).
- Grazing also has negative effects on songbirds, reptiles, and other mammals especially if their habitat is close to the ground (Finch and Block 1997).

Subsequent livestock management is a critical long-term influence on restoration treatment success, and must be address in the EIS. The USDA recommends removing grazing for at least 3 to 5 years after restoring sage habitats, and inoculating seed or soil with microorganisms and fungal mycorrhizae that are missing from the soil when seeding with native plants (USDA 2005). Livestock grazing is also an important factor to consider with respect to woodland health and fire regime. It directly contributes to fire hazard in the project area by impairing soil productivity and altering vegetation communities, which indirectly contribute to delayed fire rotations, increased woody vegetation density, and reduced forage opportunities for native wildlife.

Targeted Grazing Will Not Accomplish the Forest Service's Restoration Goals

Targeted grazing is unproven and may contribute to continued degradation and loss of sagebrush habitat. Targeted grazing lacks scientific support for use as a restoration tool in the sagebrush ecosystem. The existing scientific literature identifies significant risks to utilizing targeted grazing as a treatment method, provides little support for its use in achieving the Forest Service's objectives, and has the potential to result in the continued degradation and loss of sagebrush.

Reisner et al. (2013) found that, even after controlling for other factors that may contribute to the spread of cheatgrass, there is a strong correlation between grazing effects and cheatgrass incursion (see also Reisner et al. 2015). Cattle grazing increases cheatgrass dominance in sagebrush steppe by decreasing bunchgrass abundance, altering and limiting bunchgrass composition, increasing gaps between perennial plants, and trampling biological soil crusts (Reisner et al. 2013; Knick et al. 2003; Chambers et al. 2016a). "These annual grasses tended to fill vacant spaces among native perennial plants creating a continuous fuel for wildfires to burn and spread (Brooks and others, 2004), especially in areas where perennial herbs had been depleted by inappropriate livestock grazing (Reisner and others, 2013)" (Pyke et al. 2015).

Livestock trampling can also reduce and fragment biological soil crust in sagebrush steppe (Warren and Eldridge 2001; Reisner et al. 2013), increasing the susceptibility of the landscape to invasion by cheatgrass and other weedy species in arid ecosystems (Chambers et al. 2016b). "Cheatgrass, however, may be less effective at invading areas with an intact biological soil crust (Kaltenecker et al. 1999). This notion is supported by field observations and growth chamber experiments that indicate that the presence of certain types of biological soil crusts decreases cheatgrass germination compared to bare soil (Larsen 1995; Serpe et al. 2006)" (Deines et al. 2007). Damage to the soil crust by livestock hooves can lead to an increase in the number of safe sites in which annual grasses can emerge and establish (Pyke et al. 2016).

As summarized by Chambers et al. (2016a):

> Biological soil crusts, which are an important component of plant communities in warmer and drier sagebrush ecosystems, can reduce germination or establishment of cheatgrass (Eckert et al. 1986; Kaltenecker et al. 1999). Disturbances or management treatments that reduce abundance of native perennial grasses and biological soil crusts and increase the distances between these perennial grasses often are associated with higher resource availability and increased competitive ability of cheatgrass (Chambers et al. 2007; Reisner et al. 2013, 2015; Roundy et al. 2014).

Excessive grazing may eventually lead to reductions in perennial plants, increases in cheatgrass dominance, and ultimately result in the conversion of sagebrush steppe habitats to (annual) grasslands (Pyke et al. 2016). In managing for "fire fuels" (including native plants), Chambers et al. (2016b) cautioned that "any potential gains resulting from fine fuel removal by livestock may be counterbalanced by decreased resistance to B. tectorum due to herbivory of native plants that compete with B. tectorum, increased soil disturbance, and damage to biocrusts (Reisner et al. 2013)."

Multiple planning documents prepared as part of the National Greater Sage-Grouse Planning Strategy (BLM 2011) acknowledged that livestock grazing and "excessive grazing" can spread invasive plants (e.g., Buffalo DEIS 2013: 306; Bighorn Basin DEIS 2011, vol. 2: 4-146; Billings-Pompeys Pillar DEIS 2013: 3-88; Miles City DEIS 2013, vol. 1: 3-77; South Dakota DEIS, 2013: 361; Oregon DEIS 2013, vol. 1: 4-89). The draft Nevada/northeastern California plan observed that "[l]ivestock grazing is one of the vectors to introduce and or increase the spread of invasive weeds" and that "[m]ultiple factors can influence an area's susceptibility to cheatgrass invasion, including livestock grazing, perennial grass cover and biological soil crusts" (Nevada DEIS 2013: ch. 4, 54, citing Reisner et al. 2013).

Grazing system designs such as the Green-Brown grazing method (Smith et al. 2012), in which livestock graze when invasive annual grasses are green earlier in spring and native species are cured later in the year, is proposed as a biocontrol for annual grasses to help shift dominance to native sagebrush steppe.

The U.S. Department of Agriculture (USDA) has investigated this method and determined that "there are no published papers demonstrating success of this method for sagebrush steppe. In addition, if locations for targeted grazing are sage-grouse nesting or brood rearing habitat, then adequate perennial grass height for maintaining habitat guidelines may be required" (Pyke et al. 2015).

The USDA's recent review of best management strategies for preventing unnatural fire in the sagebrush steppe also noted that "[i]n general, improper livestock use, such as heavy grazing during the critical growth period, can decrease perennial grasses and forbs, increase woody biomass (fuel loads), and elevate susceptibility to invasive annual grasses" (Chambers et al. 2016a). Williamson et al. (2019) concluded from 14 years of field research that "grazing corresponds with increased cheatgrass occurrence and prevalence regardless of variation in climate, topography, or community composition, and provide no support for the notion that contemporary grazing regimes or grazing in conjunction with fire can suppress cheatgrass."

Lastly, there is no evidence that targeted grazing is effective at reducing the seed bank of invasive annual grasses to decrease competition against native plants. The Bureau of Land Management (BLM) has explicitly acknowledged this, finding that "[i]ntensive livestock grazing is often suggested for controlling cheatgrass competition. Although targeted grazing may have some applications for fuels management, it is not effective in reducing cheatgrass competition . . . . During the short time when cheatgrass is highly palatable in the spring, a sufficient number of livestock cannot be concentrated on a small enough area to reduce the cheatgrass seed significantly or reduce cheatgrass seed lying on the soil surface. In addition, this type of grazing can be detrimental to remaining perennial grasses, opening the site up for further cheatgrass expansion in the future" (Idaho/SW Montana Greater Sage-Grouse DEIS 2014: 3-64 – 3-65). BLM also acknowledges that grazing has already altered 99 percent of the western sagebrush landscape, and it is entirely unclear how additional, prescribed grazing is supposed to restore sagebrush steppe to natural reference conditions. Until targeted grazing is thoroughly researched and empirically tested to prove its efficacy as a restoration treatment, it should not be implemented outside of highly controlled research settings.

The Forest Service Should Develop and Implement a Robust Adaptive Management Plan

While the term "adaptive management" is often called for in land management plans and policies, it rarely is utilized in a deliberate proactive way that bears fruit. Per Stankey et al. (2005), "while adaptive management might be full of promise, generally it has fallen short on delivery." Adaptive management is not a "trial or error" process (Schultz and Nie 2012; Gann et al. 2019) but rather requires "explicit designs that specify problem-framing and problem-solving processes, documentation and monitoring protocols, roles, relationships, and responsibilities, and assessment and evaluation processes." (Stankey et al. 2005; Keenleyside et al. 2012) It also requires deliberate learning and feedback loops and some level of accountability for assuring that new information is applied to future decision-making. *See, e.g., Western Watersheds Project and Randall Hermann v. United States Forest Service*, CV-05-189-E-BLW, 2007 WL 129038 (D. Idaho 2006) (Simply proposing that an agency will use future "adaptive management" protocols, without defining or discussing the implementation of those protocols, is inadequate.) The Forest Service should utilize Crist et al. (2019) and others to design a programmatic multi-scale monitoring and adaptive management framework that will facilitate learning, test hypotheses, and ultimately lead to more effective region-wide management.

Public Participation and Notice

Finally, as you are aware, NEPA requires that agencies "present complete and accurate information to decision makers and to the public to allow an informed comparison of the alternatives considered" in the EIS. Therefore, the Center requests that all information used as part of the decisionmaking process for this project be posted online in a publicly available manner, preferably on a website that allows open access for all members of the public during all comment and objection periods for this project.

Thank you again for this opportunity to submit comments on the East Humboldt and Ruby Mountains Fuels Reduction and Landscape Resilience Project. Please keep the Center informed of any new developments in the planning process. If you have questions or would like to discuss any of these issues further, please contact me at (802) 299-7495 or slake@biologicaldiversity.org.

Sincerely,

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NOTE: All references cited may be found https://centerforbiologicald-my.sharepoint.com/:f:/g/personal/slake_biologicaldiversity_org/EuUtLRTxP8tPsFSVEImvbKoBaH_SDw1xjvxI-YMKMSs_-A?e=uhmEGc

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