March 5, 2023, Via Email

Objection against the Draft Decision Notice, FONSI, and Environmental Assessment for the South Otter Landscape Restoration and Resilience Project, Forest Service, Custer Gallatin National Forest, Ashland Ranger District

Identification of Objectors:

Lead Objector: Michael Garrity, Director, Alliance for the Wild Rockies (AWR)

PO Box 505

Helena, MT 59624;

Phone 406-459- 5936.

And for

Sara Johnson

Native Ecosystems Council

PO Box125
Willow Creek, MT 59760.

And for

Edward B. Zukoski, Senior Attorney

Center for Biological Diversity

1536 Wynkoop Street, Suite 421

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Signed for Objectors this 5th day of March 2023

/s/ Michael Garrity

Michael Garrity

Name of the Responsible Official, National Forest, Ranger District where Project is Proposed:

The Responsible Official, RONALD HECKER, Ashland District Ranger, has made available a Draft Decision Notice for the South Otter Project and its associated Finding of No Significant Impact (FONSI). The South Otter project area is in the Ashland Ranger District of the Custer Gallatin National Forest (CGNF). The project area is approximately 318,800 acres in size (292,000 acres of National Forest System lands and approximately 26,000 acres of interspersed privately owned land. The project area located approximately 6 miles south of Ashland, Montana in Powder River and Rosebud Counties, Montana.

Description of those aspects of the proposed project addressed by the objection, including specific issues related to the proposed project if applicable, how the objector believes the environmental analysis, Finding of No Significant Impact, and Draft Decision Notice (DDN) specifically violates law, regulation, or policy:

The EA and DND are contained in the USFS webpage at: https://www.fs.usda.gov/project/?project=58396. The

selected alternative includes four silvicultural treatments that will be implemented when certain on-the-ground conditions are met (see Appendix B and Appendix C): approximately 26,350 acres of commercial thinning, non-commercial thinning of approximately 11,165 acres, reforestation on approximately 39,340 acres, and prescribe burn approximately 184,150 acres. Associated road activities include maintenance on 80 miles of existing Forest System roads and 153 miles of coincident routes, reconstruction of 31 miles of Forest System roads, approximately 168 miles of temporary road construction, and 26.5 miles of private road access agreements.

As a result of the Draft DN, individuals and members of the above mentioned groups would be directly and significant-ly affected by the logging and associated activities. Appellants are conservation organizations working to ensure protection of biological diversity and ecosystem integrity in the Wild Rockies bioregion (including the CGNF). The individuals and members use the project area for recreation and other forest related activities. The selected alternative would also further degrade the water quality, wildlife and fish habitat. These activities, if

implemented, would adversely impact and irreparably harm the natural qualities of the Project Area, the surrounding area, and would further degrade the watersheds and wildlife habitat.

1. Objectors names and addresses:
   Lead Objector Mike Garrity, Executive Director,
   Alliance for the Wild Rockies
   P.O. Box 505; Helena, MT 59624
   Phone 406 459-5936

And
Sara Johnson
Native Ecosystems Council

P.O. Box 125
Willow Creek, MT 59760

And for

Edward B. Zukoski, Senior Attorney
Center for Biological Diversity
1536 Wynkoop Street, Suite 421
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(303) 641-3149
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2. Signature of Lead Objector:

Signed this 5th day of March 2023 by Lead Objector,

/s/ Michael Garrity

3. Lead Objector: Michael Garrity, Alliance for the Wild Rockies

4. Name of the Proposed Project, Responsible Official, National Forest and Ranger District where Project is:

South Plateau Area Landscape Treatment Project; Ashland District Ranger Ronald Hecker is the Responsible Official; The project is in the Ashland Ranger District of the Custer Gallatin National Forest. Ranger Hecker chose the proposed or selected alternative in the Draft Decision Notice and FONSI.

NOTICE IS HEREBY GIVEN that AWR objects pursuant to 36 CFR section 218 to the Responsible Official's adoption of the selected Alternative. As discussed below, the South Plateau Project as proposed violates the Clean

Water Act, the National Environmental Policy Act (NEPA), the National Forest Management Act (NFMA), the Endangered Species Act (ESA), the Custer Gallatin Forest Plan and the Administrative Procedure Act (APA).

Location

The South Otter project area located approximately 6 miles south of Ashland, Montana in Powder River and Rosebud Counties, Montana..

5. Specific Issues Related to the Proposed Projects, including how Objectors believes the Environmental Analysis or Draft Record of Decision specifically violates Law, Regulation, or Policy: We included this under number 8 below.

Thank you for the opportunity to object on the South Plateau Project. Please accept this objection from me on behalf of the Alliance for the Wild Rockies, Native Ecosystems Council, and Center for Biological Diversity, hereafter (Alliance).

6. Suggested Remedies that would Resolve the Objection:

We recommend that the “No Action Alternative” be selected. We have also made specific recommendations after each problem.

7. Supporting Reasons for the Reviewing Office to Consider:

This landscape has very high wildlife values, including for big game species, and wildlife species that dependent upon unlogged and unlogged forests. The project area will be concentrated within some of the best wildlife habitat in this landscape which is an important travel corridor for wildlife. The agency will also be exacerbating an ongoing problem of displacing elk to adjacent private lands in the hunting season due to a lack of security on public lands. The public interest is not being served by this project.

Suggested Remedies to Resolve the Objection:

We recommend that the “No Action Alternative” be selected. We have also made specific recommendations after each problem.

Thank you for the opportunity to object.

NOTICE IS HEREBY GIVEN that, pursuant to 36 CFR Part 218, Alliance objects to the Draft Decision Notice (DDN) and Finding of No Significant Impact (FONSI) with the legal notice published on January 18, 2023, including the Responsible Official's adoption of proposed or selected Alternative.

Alliance is objecting to this project on the grounds that implementation of the Selected Alternative is not in accordance with the laws governing management of the national forests such as the FLPMA, ESA, NEPA, NFMA, the Gallatin National Forest Forest Plan and the APA, including the implementing regulations of these and other laws, and will result in additional degradation in already

degraded watersheds and mountain slopes, further upsetting the wildlife habitat, ecosystem and human communities. Our objections are detailed below.

If the project is approved as proposed, individuals and members of the above-mentioned groups would be directly and significantly affected by the logging and associated activities. Objectors are conservation organizations working to ensure protection of biological diversity and ecosystem integrity in the Wild Rockies bioregion (including the CGNF). The individuals and members use the project area for recreation and other forest related activities. The selected alternative would also further degrade the water quality, wildlife and fish habitat. These activities, if implemented, would adversely impact and irreparably harm the natural qualities of the Project Area, the surrounding area, and would further degrade the watersheds and wildlife habitat.

Statements that Demonstrates Connection between Prior Specific Written Comments on the Particular Proposed Project and the Content of the Objection.

We wrote on our comments submitted on 11/25/22 by the Center for Biological Diversity:

I. THE SOUTH OTTER PROJECT EA VIOLATES NEPA BY FAILING TO DISCLOSE THE PROJECT'S SITE-SPECIFIC IMPACTS.

The South Otter Project EA purports to be a project-level analysis. The EA does not contemplate additional National Environmental Policy Act (NEPA) analysis once this analysis is complete. Thus, any NEPA document prepared for the project must include the detailed information and analysis that NEPA and the Council on Environmental Quality (CEQ) regulations require because there will be no further NEPA analysis for this large, landscape-scale analysis.[1]

A. NEPA Requires Agencies to Take a Hard Look at Site-Specific Impacts.

In enacting NEPA, Congress recognized the "profound impact" of human activities, including "resource exploitation," on the environment and declared a national policy "to create and maintain conditions under which man and nature can exist in productive harmony." 42

U.S.C. § 4331(a). The statute has two fundamental two goals: "(1) to ensure that the agency will have detailed information on significant environmental impacts when it makes decisions; and (2) to guarantee that this information will be available to a larger audience." Envtl. Prot. Info. Ctr. v. Blackwell, 389 F. Supp. 2d 1174, 1184 (N.D. Cal. 2004) (quoting Neighbors of Cuddy Mt. v. Alexander, 303 F.3d 1059, 1063 (9th Cir. 2002)); see also Earth Island v. United States Forest Serv., 351 F.3d 1291, 1300 (9th Cir. 2003) ("NEPA requires that a federal agency 'consider

[1] *The Forest Service fails to make clear which NEPA regulations govern this proposal. Although CEQ issued a final rulemaking in July 2020 fundamentally rewriting those regulations, the new rules apply only "to any NEPA process begun after September 14, 2020," or where the agency has chosen to "apply the regulations in this subchapter to ongoing activities." 40 C.F.R. § 1506.13 (2020). The South Otter Project NEPA process appears to have begun in September 2020, so the 1978 regulations may apply; the Custer Gallatin NF's Schedule of Proposed Actions listed in October 2020 EA listed South Otter as a "Developing Proposal" with "Est. Scoping Start 09/2020." See https://www.fs.usda.gov/sopa/components/reports/sopa-110111-2020-10.pdf (last viewed Nov. 25, 2022). The Forest Service appears to rely on both sets of regulations to the project. The draft Finding of No Significant Impact (FONSI) included in the EA cites the*

2020 regulations concerning "the determination of significance established by the Council for Environmental Quality regulations (40 CFR 1501.3(b))," South Otter Project EA at 62, but cites the 1978 CEQ regulations for the definition of significance in terms of context and intensity, language removed from the 2020 regulations. See id. at 63, n.11 (citing the 1978 CEQ regulation's definition of significance, since repealed by the 2020 CEQ regulations). The Forest Service should eliminate the confusion about which regulations it intends to apply in any subsequently prepared NEPA document.

every significant aspect of the environmental impact of a proposed action ... [and] inform the public that it has indeed considered environmental concerns in its decision-making process.'").

"NEPA promotes its sweeping commitment to 'prevent or eliminate damage to the environment and biosphere' by focusing Government and public attention on the environmental effects of proposed agency action." Marsh v. Or. Natural Res. Council, 490 U.S. 360, 371 (1989) (quoting 42 U.S.C. § 4321). Stated more directly, NEPA's "'action-forcing' procedures . . . require the [Forest Service] to take a 'hard look' at environmental consequences" before the agency approves an action. Metcalf v. Daley, 214 F.3d 1135, 1141 (9th Cir. 2000) (quoting Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 348 (1989)). "By so focusing agency

attention, NEPA ensures that the agency will not act on incomplete information, only to regret its decision after it is too late to correct." To ensure that the agency has taken the required "hard look," courts hold that the agency must utilize "public comment and the best available scientific information." Biodiversity Cons. Alliance v. Jiron, 762 F.3d 1036, 1086 (10th Cir. 2014) (internal citation omitted).

In Natural Resources Defense Council v. U.S. Forest Service, for example, the Court faulted the Forest Service for providing empty disclosures that lacked any analysis, explaining the agency "d[id] not disclose the effect" of continued logging on the Tongass National Forest and "d[id] not give detail on whether or how to lessen the cumulative impact" of the logging. Natural Res. Def. Council v. U.S. Forest Serv., 421 F.3d 797, 812 (9th Cir. 2005). The Court explained that "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." Or. Natural Res. Council Fund v. Brong, 492 F.3d 1120, 1134 (9th Cir. 2007) (citation omitted); see also Or. Natural Res. Council Fund v. Goodman, 505 F.3d 884, 892 (9th Cir. 2007) (holding the Forest Service's failure to discuss the importance of maintaining a biological corridor violated NEPA, explaining that "[m]erely disclosing the existence of a biological corridor is inadequate" and that the agency must "meaningfully substantiate [its] finding"). The court reasoned that the Forest Service also must provide the public "'the underlying environmental data'

from which the Forest Service develop[ed] its opinions and arrive[d] at its decisions." WildEarth Guardians v. Mont. Snowmobile Ass'n, 790 F.3d 920, 925 (9th Cir. 2015). In the end, "vague and conclusory statements, without any supporting data, do not constitute a 'hard look' at the environmental consequences of the action as required by NEPA." Great Basin Mine Watch v. Hankins, 456 F.3d 955, 973 (9th Cir. 2006). "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).

At the project level, as compared to a programmatic decision, 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," the NEPA review is more tailored and detailed because the Forest Service is confronting "individual site specific projects." Forest Ecology Ctr., Inc. v. U.S. Forest Serv., 192 F.3d 922, 923 n.2 (9th Cir. 1999). Indeed, federal courts have 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.***

WildEarth Guardians v. Montana Snowmobile Ass'n, 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." California v. Block, 690 F.2d 753, 763 (9th Cir. 1982). 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 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," and therefore location data is critical to the site-specific analysis NEPA requires. Id. 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).

Courts in the Ninth Circuit have taken a similar approach. For example, the U.S. District Court for the District of Alaska in 2019 issued a preliminary injunction in the case Southeast Alaska Conservation Council v. U.S. Forest Service, halting implementation of the Tongass National Forest's Prince of Wales Landscape Level Analysis Project. Southeast Alaska Conservation Council v. U.S. Forest Serv., 413 F. Supp. 3d 973 (D. Ak. 2019). The court did so because the Forest Service's condition-based management approach, which failed to disclose the site-specific impacts of that logging proposal, raised "serious questions" about whether that approach violated the National Environmental Policy Act (NEPA).

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 . .*

> *. Implementation Plan . . . .” The Forest Service has termed this approach “condition-based analysis.”*

See id. at 976-77 (citations omitted). The Prince of Wales EIS made assumptions “in order to consider the ‘maximum effects’ of the Project.” Id. at 977. It also identified larger areas within which smaller areas of logging would later be identified, and approved the construction of 164 miles of road, but “did not identify the specific sites where the harvest or road construction would occur.” Id.

The Court found the Forest Service’s approach contradicted federal appellate court precedent, including City of Tenakee Springs v. Block, 778 F.2d 1402 (9th Cir. 1995). In that case, the appellate court set aside the Forest Service’s decision to authorize pre-roading in a watershed without specifically evaluating where and when on approximately 750,000 acres it intended to authorize logging to occur. The district court evaluating the Prince of Wales project found the Forest Service’s approach was equivalent to the deficient analysis set aside 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."***

Id. at 982 (citations omitted). The district court concluded that plaintiffs in the case raised "serious questions" about whether the Prince of Wales EIS condition-based management approach violated 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." Id. at 983, 984.

On March 11, 2020, the Alaska district court issued its merits opinion on the Prince of Wales Project, reaffirming its September 2019 preliminary injunction decision and holding that the Forest Service's condition-based management approach violated NEPA. Southeast Alaska Conservation Council v. United States Forest Serv., 443 F. Supp. 3d 995 (D. Ak. 2020). The court explained that "NEPA requires that environmental analysis be specific enough to ensure informed decision-making and meaningful public participation. The Project EIS's omission of the actual location of proposed timber harvest and road construction within the Project Area falls short of that mandate." Id. at 1009 (citations omitted).

The district court also concluded that the Forest Service's "worst case analysis" was insufficient, explaining: "This approach, coupled with the lack of site-specific information in the Project EIS, detracts 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. Consequently, the court concluded that

> *By authorizing an integrated resource management plan but deferring siting decisions to the future with no additional NEPA review, the Project EIS violates NEPA. The Forest Service has not yet taken the requisite hard look at the environmental impact of site-specific timber sales on Prince of Wales over the next 15 years. The Forest*

> ***Service's plan for condition-based analysis may very well streamline management of the Tongass ... however, it does not comply with the procedural requirements of NEPA, which are binding on the agency. NEPA favors coherent and comprehensive up-front environmental analysis to ensure ... that the agency will not act on incomplete information, only to regret its decision after it is too late to correct.***

Id. at 1014-15 (internal citations and quotations omitted). [1] ***The Forest Service opted not to appeal, and has abandoned the commercial logging portions of the project.***

The South Otter project is a project-level decision. [2] ***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. Failure to provide such site-specific data would preclude informed agency decision-making and informed public comment, in violation of NEPA.***

[1] ***The Forest Service should not interpret the Alaska District's decision to somehow endorse the use of condition-based analyses for environmental assessments.***

Where the exercise of site-specific discretion is material to a project's environmental consequences, NEPA requires consideration of site-specific proposals and alternatives, regardless of whether the effects are "significant." 42 U.S.C. § 4332(2)(C), (E).

[2] While the South Otter Project EA envisions further site-specific data collection, monitoring, and project design after the decision is approved, it does not anticipate or describe any future NEPA analysis or any future public involvement consistent with that law.

B. The South Otter Project EA Fails to Disclose the Project's Site-Specific Direct and Indirect Effects.

Although NEPA requires that analysis disclose specific information about the when, where, and how of any agency action, so that the impacts and alternatives can be described and weighed, the South Otter Project EA fails to contain virtually any data or analysis. Instead, the Forest Service plans to postpone important components of site-specific project design and impacts analysis until after the NEPA process is complete. This upends NEPA's central purpose that agencies look before they leap, as the court explained in Southeast Alaska Conservation Council.

Here, the Forest Service proposes a landscape project of uncertain extent and duration. The EA estimates that the project will involve logging over 37,515 acres (nearly 60 square miles, almost the size of the District of Columbia), and prescribed burning over 184,150 acres. South Otter

Project EA at 18. The project could result in the bulldozing of 168 miles of "temporary" road, and the reconstruction of an additional 31 miles of road, although the location of this road construction and reconstruction is nowhere disclosed. Id. Further, apparently an additional "153 miles of motorized trails are proposed for project access and these routes would receive maintenance activities of differing types," although this "would generally improve the condition of trail surface," effectively upgrading the road. Id. at 60.[1]

The EA fails to disclose with certainty the project's duration. The EA variously states that the project's impacts "were analyzed over the planning period (10-15 years)," South Otter Project EA at 22; that the project's impacts on jobs would occur over "the next eight to 10 years," id. at 13; and that the "[t]he proposed treatments … will be implemented … over the next 20 to 30 years." Id. at 51. Any subsequently prepared NEPA document must explain these discrepancies.[2] *But assuming that this project will require 30 years to implement, it will outlive the recently adopted Custer Gallatin Forest Plan revision by 15 years.*

The EA also fails to define the when, where, and how of logging, burning, and other treatments. The nature of the treatments themselves (and hence their impacts) are uncertain and would vary. One treatment type – commercial thinning – would remove 20% of the commercial-sized trees, or maybe twice that many. South Otter Project EA at 14. Logging would be by mechanical

felling, or by hand. Id. Logging methods would include "intermediate harvest," or clearcutting ("regeneration harvest"), or near clearcuts ("shelterwood cutting"), though the EA doesn't clarify which method would be used where. Id. at 15. Such clearcuts could be up to 5 acres in size. South Otter Project EA, Appx. B (Marking Guide) at 2 ("Create new small openings of [up to] 5 acres"). "Ponderosa pine encroachment around or within woody draws may be targeted with harvest treatments," or, apparently, may not be. South Otter Project EA at 43.

Slash materials resulting from non-commercial thinning "would be managed in a variety of ways from lop and scattered (where fuel concentrations are light), hand or machine piled for burning, to jackpot or broadcast burning, depending on the situation," though the EA does not clarify why the Forest Service might choose one method over another, despite the fact that the impacts of each such treatment vary. South Otter Project EA at 13. The EA describes six different types of areas where non-commercial thinning may occur, but fails to identify where any of these places are. "There may be some opportunity for treatments of this nature to utilize mechanized equipment," or there may not; it depends, though the EA doesn't say on what it depends. Id. at 14.

Where prescribed burning would be deployed is also ill-defined; it could be used "in conjunction with one of the above treatments, or as a standalone treatment anywhere within the project area where ground, surface, or ladder fuels could contribute to high intensity or crown fires."

South Otter Project EA at 15. Prescribed burning could be used once or many times on the same area during the (undetermined) life of the project, "depending on conditions." Id. at 16 ("General prescribed burning or maintenance burning would be implemented at intervals of five-to-25 years, depending on conditions."); id. at 56 ("maintenance burning should be implemented in a 5-25 year cycle").

And during project implementation, the agency may determine "that changing some areas from one treatment to a commercial thin treatment or a non-commercial thinning would better meet the project objectives," although who and how that would be determined is not defined. South Otter Project EA at 13.

Baseline conditions within the project area, and the project's impacts, are also not well defined. For example, while roads are unlikely to be built through wetlands, the EA's design features do not prohibit that result, and admit that such wetlands destruction may occur. South Otter Project EA at 9 (alleging that such "rare" bulldozing may occur when "a temporary road needs to be routed through a wetland area"). The EA fails to contain much useful information at any scale other than the multi-hundred-thousand-acre scale of the entire project to allow the public to understand hoe the project may change the current environment, or how the project might be beneficial or damaging.

The EA's lack of specificity as to the where, when, and how of treatments (and thus disclosure of the project's impacts) is a feature of this project, and not a bug. The EA's Appendix C explains the process the agency will use to implement the project, and it makes clear project level actions will not be defined until after the NEPA process is complete, and a decision made.

The Forest Service cannot allege that its post-NEPA implementation process described in Appendix C can substitute for NEPA. While the Forest Service process for identifying specific treatments provides for a public "workshops and other public involvement techniques," South Otter Project EA, Appx. C at 2, that "involvement" is not well-defined, and will occur only after the NEPA process is complete.[3] This means that the agency need not respond to comments, need not address the best available science, need not consider alternatives, and that the public will have no mechanism to hold the agency accountable if the agency ignores science and citizen input. While a post-hoc NEPA process might ensure that some information about logging, bulldozing, skidding and the like are available to officials and the public before a site-specific project proceeds, it fails to ensure that "environmental information is available to ... citizens before decisions are made," as the law requires. 40 C.F.R. § 1500.1(b) (1978) (emphasis added); see also Methow Valley Citizens Council, 490 U.S. at 349.

Tellingly, the Forest Service admits that it is only during this post hoc public involvement period that the public

will be able to "provide their input on what, where and when activities are to be implemented before the activities are made final." South Otter Project EA, Appx. C at 4. The Forest Service will survey for site-specific conditions to identify "treatment layout, to identify need for mitigations, to identify areas that should be avoided or seek to minimize effects (e.g. cultural sites, sensitive wildlife areas, etc.), and to establish treatment-specific objectives and desired outcomes" only after the NEPA process is complete. Id., Appx. C at 5. Again, this is precisely the information that the Forest Service must disclose during the NEPA process, not after the decision is made.

The Forest Service explains its rationale for postponing site-specific analysis and project design until after the NEPA process is complete:

> *The landscape-based management approach allows resources to use the most current site-specific information at the landscape scale. Considering the potential of elapsed time between the decision and implementation, outlining how treatments would occur across the landscape, would result in a more flexible, efficient, and effective approach to achieving desired outcomes.*

South Otter Project EA at 1. This explanation lacks support and ignores CEQ and Forest Service regulations on at least two counts.

First, the EA ignores that NEPA already is a flexible tool that permits agencies to supplement NEPA documents to address changed circumstances. Since at least 1978, NEPA regulations have explicitly provided that flexibility by authorizing agencies to change a project and/or to account for changed conditions via the use of supplemental NEPA analysis. See 40 C.F.R. 1502.9(c)(1) (2020); 40 C.F.R. 1502.9(c) (1978). Forest Service guidance incorporates and expands on the agency's duties and authorities to address new information, change circumstances, and adjustments to a project's actions, including when the analysis is contained in an EA. Forest Service Handbook 1909.15, Ch. 18. If years pass between NEPA completion and project implementation, the agency has the flexibility to take new conditions into account and to modify the project accordingly following supplemental analysis.

Second, NEPA also provides for a "phased" approach, wherein the agency can prepare a programmatic analysis followed by more concise, site-specific NEPA analysis when site-specific treatments are identified. Forest Service regulations also explicitly provide for "adaptive management." See 36 C.F.R. §§ 220.3, 220.5(e)(2). See also 73 Fed. Reg. 43,084, 43,090 (July 24, 2008) (preamble to 2008 rule adopting adaptive management provisions, stating that "[w]hen proposing an action[,] the responsible official may identify possible adjustments that may be appropriate during project implementation. Those possible adjustments must be described and their effects analyzed in the EIS.").

The South Otter Project, with its emphasis on "landscape" planning could also be considered a programmatic NEPA document. An agency may prepare a "programmatic" NEPA document broadly analyzing the cumulative effects of a program of work or set of connected actions, to which subsequent site-specific analyses may "tier." Ventling v. Bergland, 479 F. Supp. 174, 179 (D.S.D. 1979), aff'd, 615 F.2d 1365 (8th Cir. 1979); Earth First v. Block, 569 F. Supp. 415 (D. Or. 1983) (holding that the Forest Service erred by relying on a programmatic EIS that was deemed insufficient by the Ninth Circuit to prepare a subsequent EIS for the same Wilderness Area). Well-designed programmatic analysis can increase the efficiency in agency decision-making by deferring site-specific decisions for which site-specific information would be time consuming to obtain. See, e.g., Memorandum from Michael Boots, Acting Director of Council on Env't Quality, to Heads of Fed. Dep'ts and Agencies, Effective Use of Programmatic NEPA Reviews (Dec. 18, 2014), available at https://obamawhitehouse.archives.gov/sites/default/files/docs/effective_use_of_programmatic_nepa_reviews_final_dec2014_searchable.pdf (last viewed Nov. 25, 2022). NEPA analysis works like a funnel, where the mouth is the full breadth of the agency's discretion and the spout is concrete, on-the-ground action. If an agency is starting from scratch every time, its site-specific analyses will be unwieldy and duplicative. Programmatic analysis, however, moves the agency partway down the funnel,

putting sideboards on future actions and commensurately reducing the complexity of site-specific analysis.

This appears to be an apt description of the South Otter Project's approach. But the Forest Service cannot rely on a programmatic NEPA analysis to disclose site-specific impacts; step-down NEPA is required to address site-specific impacts. If the agency were to retool the South Otter Project EA as a programmatic analysis and commit to subsequent disclosure of site-specific actions and impacts, that might pass legal muster. We hope that the Forest Service considers such an approach.

The Environmental Protection Agency's comments on the EA succinctly summarize the implications of the Forest Service's failure to provide the site-specific data NEPA mandates:

> *According to the available information in the EA, the Forest appears to be using a condition-based management approach for the South Otter project. The EA lacks site-specific evaluations of existing conditions, analyses of impacts, and mitigation measures. Instead, the Forest proposes to use best management practices, project design features, marking steps, and an implementation plan to identify and manage each individual treatment and logging area. Given this information, we were unable to evaluate the likelihood that significant*

effects will be avoided for the EA and FONSI. NEPA requires a "hard look" at potential environmental impacts of a proposed action and public disclosure of those impacts prior to implementation. The impacts associated with the proposed action will vary based on site-specific conditions, including: vegetation community composition, soil-types, slopes, proximity to residences, proximity to aquatic resources, proximity to Class I and Class II airsheds, road construction needs, road maintenance status, volume and type of material burned, equipment used, volume of truck traffic, sensitive species habitat, etc., and those site-specific conditions are varied across the South Otter landscape.

Although conditions vary throughout the planning area, and so impacts would be expected to vary as well, the EA does not contain the actual locations of the timber sales and harvest units or where the temporary roads will be built and therefore it cannot disclose, analyze, or describe the localized impacts that can potentially occur. Individual treatment project design and impact assessment will occur post-FONSI, years or decades after the public comment period on this EA. This lack of site-specificity hampers informed decision-

> ***making and meaningful public participation on the individual treatment projects as part of the NEPA process, both important for understanding the potential for significant impacts and determining mechanisms for avoiding them.***

Letter of L. McCoy, Manager, NEPA Branch, EPA Region 8 (Nov. 21, 2022) at 3, attached as Ex. 1. We agree. And a federal court will likely agree as well.

[1] ***We appreciate that "[t]he proposed action proposes no treatments within the Inventoried Roadless Areas and there are no undeveloped acres adjacent to" such areas that could be impacted. South Otter Project EA at 9.***

[2] ***The Forest Service must disclose all of the project's reasonably foreseeable impacts, and cannot put an arbitrary deadline on its scope of analysis (e.g., 10-15 years) if the project may be implemented over a much longer period (25-30 years).***

[3] ***The Forest Service asserts that the agency will provide a "feedback period" to "give[] an opportunity for the public that may not be able to attend the workshops to provide their input on what, where and when activities are to be implemented before the activities are made final," but fails to provide any detail about the length of that period. South Otter Project EA, Appx. C at 4.***

We wrote in our comments 11/25/22 comments submitted by Native Ecosystems Council:

1. ***There is no map provided of all the proposed temporary roads.***

2. ***There are no maps provided that identify each proposed treatment unit for the project, including acres and treatment type; basically, the tiny maps that are provided for proposed treatments are unreadable, so the public cannot actually see how local landscapes will be impacted by the project.***
3. ***There is no map identifying the roads that were decommissioned in the travel plan in 2009; what is the status of implementing the 2009 travel plan?.***
4. ***There is no map identifying the 291 miles of "coincident administrative road" designations for expanding these motorized trails into roads; these changes require an amendment to the travel plan via NEPA, and public involvement; this also needs to define any impacts on IRAs.***
5. ***There is no NEPA process identified for changing the 2009 Ashland Travel Plan.***
6. ***There is no map identifying the 18 miles of previously-closed roads in the project area.***

7. *There is no map identifying the 26.5 miles of private roads that will be used for the project.*
8. *There is no map identifying the location of 168 miles of planned temporary roads.*
9. *There is no information as to how the public will be kept off the new roads built for the project, including during project activities.*
10. *There is no information as to the use of motorized trails converted to project use as per continued public use.*
11. *There is no analysis of the habitat effectiveness levels that will occur during project activities for the 9 sub-project levels; project impacts of motorized activity on wildlife are not provided to the public.*
12. *There is no map of security for big game provided for the project area based on the current best science; project impacts on security are not provided to the public.*
13. *There is no science or monitoring data provided to support the agency's claim that logging and burning will increase forage for big game species, including the 2013 collaborative recommendations between the CG, HLC, and Montana Fish, Wildlife and Parks, or the 15 year elk-logging study by Lyon and others.*
14. *There is no map or information provided on the current old growth in the project area, and*

there is no information provided as to how these stands will be treated.

15. ***The CG LMP and the EA for the South Otter Project do not provide the science as to why logging and burning old growth will maintain values for wildlife.***
16. ***There is no analysis as to how the project will impact hiding cover in the 9 sub-project areas.***
17. ***There is no published science or published management recommendations cited in the draft EA or CG LMP to show there is a scientific consensus that a 40% canopy cover provides valid hiding cover for elk, mule deer and whitetail deer; use of an agency "white paper" is not peer-reviewed and as such does not qualify as the current best science.***
18. ***The project EA did not provide any photo demonstrations as to the hiding cover value of various forest stands with various canopy cover levels, from 10% or greater, to demonstrate to the public the claims of hiding cover values are valid.***
19. ***The EA does not map the Wildland Urban Interface (WUI), including by the definitions of interface and intermix communities.***

The Forest Service responded, ***Response:*** ***Impacts were analyzed and considered for all affected***

resources. The Finding of No Significant Impact considers the context and intensity of effects on the human environment and provides rationale for the findings for nine intensity factors. Thinning, prescribed burning, and reforestation on this landscape are not expected to have significant impacts.

It is arbitrary and capricious for the Forest Service to undertake NEPA without considering the environmental effects. The environmental effects cannot be considered if the specific locations for individual prescribed fires are not identified.

The EA provides little additional information on where burnings will be or how the specifics on how the burning will occur. The EA is programmatic in that they want to log whenever and wherever for the next 20 years with no public over site of their activities. This is a violation of NEPA, NFMA, the APA, and the ESA.

Please see the article below for a ruling on a similar error by the Forest Service.

Federal court blocks timber sale in Alaska's Tongass National Forest

https://www.adn.com/alaska-news/2020/06/25/federal-court-blocks-timber-sale-in-alaskas-tongass-national-forest/

JUNEAU — A federal judge has blocked what would have been the largest timber sale in Alaska's Tongass National Forest in decades.

Wednesday's ruling ends the U.S. Forest Service's plan to open 37.5 square miles of old-growth forest on Prince of Wales Island to commercial logging, CoastAlaska reported.

The ruling by Judge Sharon L. Gleason also stops road construction for the planned 15-year project.

Conservationists had already successfully blocked the federal government's attempt to clear large amounts of timber for sale without identifying specific areas where logging would have occurred.

Gleason allowed the forest service to argue in favor of correcting deficiencies in its review and moving forward without throwing out the entire project, but ultimately ruled against the agency.

Gleason's ruling said the economic harm of invalidating the timber sales did not outweigh "the seriousness of the errors" in the agency's handling of the project.

The method used in the Prince of Wales Landscape Level Analysis was the first time the agency used it for environmental review on an Alaska timber sale.

The forest service, which can appeal the decision, did not return calls seeking comment.

Gleason's decision affects the Prince of Wales Island project and the Central Tongass Project near Petersburg and Wrangell.

The ruling triggers a new environmental review under the National Environmental Policy Act, said Meredith Trainor, executive director of the Southeast Alaska Conservation Council.

The ruling in the lawsuit brought by the council includes a requirement for public input on specific areas proposed for logging, Trainor said.

Tessa Axelson, executive director of the Alaska Forest Association, said in a statement that the ruling "threatens the viability of Southeast Alaska's timber industry."

Please see the following article by the American Bar Association about the use of Condition-Based Management which is what the Forest Service often calls its strategy of violating NEPA.

May 10, 2021

The U.S. Forest Service's Expanding Use of Condition-Based Management: Functional and Legal Problems from Short-Circuiting the Project-Planning and Environmental Impact Statement Process

Andrew Cliburn, Paul Quackenbush, Madison Prokott, Jim Murphy, and Mason Overstreet

https://www.americanbar.org/groups/environment_energy_resources/publications/fr/20210510-the-us-forest-services-expanding-use-of-condition-based-management/

Condition-based management (CBM) is a management approach that the U.S. Forest Service has increasingly used to authorize timber harvests purportedly to increase flexibility, discretion, and efficiency in project planning, analysis, and implementation. The agency believes it needs this flexible approach because sometimes conditions on the ground can change more quickly than decisions can be implemented. In practice, however, CBM operates to circumvent the National Environmental Policy Act (NEPA) review framework by postponing site-specific analysis until the Forest Service implements the project, which effectively excludes the public from site-specific decisions, reduces transparency, and removes incentives for the agency to avoid harming localized resources. The practice should be curtailed by the Biden administration

NEPA requires federal agencies including the Forest Service to provide the public with "notice and an opportunity to be heard" in the analysis of "specific area[s] in which logging will take place and the harvesting methods to be used." Ohio Forestry Ass'n v. Sierra Club, 523 U.S. 726, 729–30 (1998). Site-specific public involvement can significantly improve projects because the agency may be unaware of harmful impacts or resource concerns until the public flags them during the environmental analysis process. Nationally, the Forest Service drops about one out of every five acres it proposes for timber harvest based on information or concerns presented during the NEPA process, often due to public comments regarding site-specific information. Public Lands Advocacy Coalition, Comments on Proposed Rule, National Environmental Policy Act (NEPA) Compliance (June 13, 2019) (analyzing 68 projects that relied on environmental assessments).

The Forest Service appears to be abandoning the site-specific analysis model in favor of CBM. CBM projects use an overarching set of "goal variables"—predetermined management criteria that guide implementation—that Forest Service staff apply to on-the-ground natural resource "conditions" encountered during the course of project implementation, a period that can span years or even decades: essentially, when the Forest Service finds X resource condition on the ground, it applies Y timber harvest prescription. However, basic information regarding the project's details—such as unit location, timing, roadbuilding, harvesting methods, and

site-specific environmental effects—is not provided at the time the Forest Service conducts its NEPA environmental review (when the public can weigh in), nor when it gives its final approval to a project (when the public can seek administrative review). Instead, site-level disclosures are made after NEPA environmental and administrative review is complete, depriving the public of opportunities to comment and influence the decision based on localized conditions.

While CBM is not a new management tool, the Forest Service has employed it for over a decade and it was used sparingly during the Obama administration. However, its use accelerated during the Trump administration and shows no sign of slowing. To date, dozens of Forest Service projects across the country have used CBM. See, e.g., Red Pine Thinning Project, Ottawa National Forest; Medicine Bow Landscape Vegetation Analysis, Medicine Bow-Routt National Forest; Sage Hen Integrated Restoration Project, Boise National Forest.

As the Forest Service's use of CBM continues, questions remain about its legality. Public-lands advocates argue that CBM violates NEPA's mandate that agencies take a hard look at the consequences of their actions before a project commences. This "look before you leap" approach was the primary purpose of NEPA and remains the statute's greatest strength. NEPA works by requiring an agency to consider alternatives and publicly vet its analysis whenever its proposal may have "significant" environmental consequences, 42 U.S.C. § 4332(2)(C), or

implicates "unresolved conflicts" about how the agency should best accomplish its objective. Id. at § 4332(2)(E). However, CBM allows the Forest Service to circumvent the effects analysis process when exercising discretion about where and how to log decisions that often may have "significant" environmental consequences.

Only two federal cases have addressed CBM's legality. In WildEarth Guardians v. Connor, 920 F.3d 1245 (10th Cir. 2019), the Tenth Circuit approved a CBM approach for a logging project in southern Colorado in Canada lynx habitat. The environmental assessment utilized CBM and analyzed three different alternatives, one of which was a worst-case scenario. For the worst-case scenario, the Forest Service assumed that the entire lynx habitat in the project area would be clear-cut. The Forest Service "took the conservative approach" because it "did not know precisely" where it would log in the lynx habitat areas. WildEarth Guardians, 920 F.3d at 1255. Based on this conservative approach, coupled with a comprehensive, region-wide lynx management agreement and its associated environmental impact statement, the court agreed with the Forest Service that its future site-specific choices were "not material" to the effects on lynx—i.e., that no matter where logging occurred, "there would not be a negative effect on the lynx." Id. at 1258–59.

However, a second case addressing CBM found that site-specific analysis was needed to satisfy NEPA's "hard-look" standard. In Southeast Alaska Conservation Council v. U.S. Forest Service, 443 F. Supp. 3d 995 (D.

Ak. 2020), the court held that the Forest Service's Prince of Wales Landscape Level Analysis Project—a 15-year logging project on Prince of Wales Island in the Tongass National Forest—violated NEPA. The project would have authorized the logging of more than 40,000 acres, including nearly 24,000 acres of old growth, along with 643 miles of new and temporary road construction, but it "d[id] not include a determination—or even an estimate —of when and where the harvest activities or road construction . . . w[ould] actually occur." Id. at 1009. The court found that this analysis was not "specific enough" without information about harvest locations, methods, and localized impacts. Id. at 1009–10. The court further held that a worst-case analysis could not save the project, because site-specific differences were consequential. Id. at 1013.

The Forest Service's widespread use of CBM also creates compliance challenges under the Endangered Species Act (ESA). Section 7(a)(2) of the ESA requires federal agencies to consult with the Fish and Wildlife Service and/or National Marine Fisheries Service whenever a proposed action "may affect" listed species or destroy or adversely modify its critical habitat to ensure that the action is "not likely to jeopardize" these species. 16 U.S.C. § 1536. CBM conflicts with that statutory requirement because it does not allow agencies to properly determine whether an action "may affect" or is "likely to jeopardize" a listed species when the consulting agencies do not know the specifics of when or where the action will

be implemented, or what the site-specific impacts of the action may be.

For some projects, the Forest Service has tried to avoid this tension by conducting section 7 consultation prior to each phase of a CBM project, but this approach has run headlong into the general rule against segmenting project consultation duties under the ESA. See, e.g., Conner v. Burford, 848 F.2d 1441, 1457 (9th Cir. 1988). With few exceptions, section 7 consultation must cover the overall effects of the entire project at the initial stage before the project can commence. Thus, regardless of whether agencies choose to consult up front or to consult in stages, the Forest Service is likely to face significant legal hurdles when its CBM project "may affect" listed species.

CBM is not only legally dubious, but also unnecessary. The Forest Service already has NEPA-compliant methods to deal with situations that require a nimble response to the needs of a dynamic landscape. In these cases, the Forest Service can complete a single "programmatic" analysis to which future site-specific decisions will be tiered. This programmatic approach allows the Forest Service to speed the consideration and implementation of site-specific, step-down proposals. Unlike CBM, this approach allows for public review of site-specific decision-making and administrative review of those decisions.

Surveying the regulatory horizon, the future of CBM in the Forest Service system is uncertain. The national forests face a host of complex challenges including

climate-related crises, insect and forest pestilence, protecting and restoring biodiversity, and wildfire management. These challenges are made worse by budget and staff restrictions. Without adequate funding, the Forest Service must rely on imperfect tools like commercial logging, which can cause more harm than good in the wrong places.

But this is not the time to shortchange the most consequential decisions that the agency must make: determining where and how to act. During the final two years of the Trump administration, the Forest Service attempted to explicitly codify CBM provisions in revisions to its NEPA regulations, although those provisions were dropped from the final rule. Simultaneously, other federal land-management agencies like the Bureau of Land Management have started to use CBM analogues in their NEPA-related planning documents. Although it is still early, the Biden administration's newly appointed Council on Environmental Quality team has yet to weigh in on CBM. If use of CBM continues in a manner that undermines public participation and NEPA's "hard look" standard, some of our riskiest land management projects may not receive proper environmental oversight.

The project is not taking a hard look as required by NEPA. Please withdraw the EA until site specific prescriptions and unit boundaries are firmed up, then issue and take comments on an EIS with appropriate prescriptions.

It is a violation of NEPA to not identifying specific areas where logging would have occurred and where roads and how many roads will be built.

Please find attached the Federal District Court of Alaska's ruling on condition-based management.

The project is far too large to provide meaningful information or analysis to the public, and thus prevents agency transparency in management of public lands. It is not clear why the Forest Service believes that such a large project is either needed, or can be meaningfully understood and reviewed by the public.

The project is in violation of NEPA, NFMA, and the APA.

Remedy

Withdraw the draft decision and FONSI until site specific prescriptions, new roads are mapped and unit boundaries are firmed up, then write an EIS and take public comments.

Center for Biological Diversity wrote in their comments on 11/25/22:

II. THE SOUTH OTTER PROJECT EA FAILS TO DISCLOSE THE PROJECT'S IMPACTS ON CLIMATE POLLUTION.

A. The Climate Crisis

The climate crisis is the overriding environmental issue of our time, threatening to drastically modify ecosystems, alter coastlines, worsen extreme weather events, degrade public health, and cause massive human displacement and suffering. Its impacts are already being felt in the United States, and recent studies confirm that time is running out to forestall the catastrophic damage that will result from 1.5 degrees Celsius of warming.[1] Studies have confirmed that climate change is accelerating, making the need to protect carbon stores even more urgent than it was just a few years ago.[2] Climate change is impacting Montana. A 2017 assessment found that temperatures in Montana had risen between 2.0-3.0°F (1.1-1.7°C), and concluded that:

> *Montana is projected to continue to warm in all geographic locations, seasons, and under all emission scenarios throughout the 21st century. By mid-century, Montana temperatures are projected to increase by approximately 4.5-6.0°F (2.5-3.3°C) depending on the emission scenario. By the end-of-century, Montana temperatures are projected to increase 5.6-9.8°F (3.1-5.4°C) depending on the emission scenario. These state-level changes are larger than the average changes projected globally and nationally.[3]*

Information concerning climate change, especially guidance and policy from this administration reinforce

the need for measuring, and acting to reduce, climate pollution.

B. President Biden Requires Prompt Action to Assess and Reduce Climate Pollution.

On the day he was inaugurated, President Biden committed to overturning the prior administration's failure to address, and its outright denial of, the climate emergency.

> ***It is, therefore, the policy of my Administration to listen to the science; to improve public health and protect our environment; to ensure access to clean air and water; to limit exposure to dangerous chemicals and pesticides; to hold polluters accountable, including those who disproportionately harm communities of color and low-income communities; to reduce greenhouse gas emissions; to bolster resilience to the impacts of climate change; to restore and expand our national treasures and monuments; and to prioritize both environmental justice and the creation of the well-paying union jobs necessary to deliver on these goals.***
>
> ***To that end, this order directs all executive departments and agencies (agencies) to immediately review and, as appropriate and***

> ***consistent with applicable law, take action to address the promulgation of Federal regulations and other actions during the last 4 years that conflict with these important national objectives, and to immediately commence work to confront the climate crisis.***[4]

Days later, President Biden further committed to taking swift action to address the climate crisis. Per Executive Order 14,008, he has recognized that "[t]he United States and the world face a profound climate crisis. We have a narrow moment to pursue action at home and abroad in order to avoid the most catastrophic impacts of that crisis and to seize the opportunity that tackling climate change presents."[5] ***President Biden announced that under his administration,***

> ***The Federal Government must drive assessment, disclosure, and mitigation of climate pollution and climate-related risks in every sector of our economy, marshaling the creativity, courage, and capital necessary to make our Nation resilient in the face of this threat. Together, we must combat the climate crisis with bold, progressive action that combines the full capacity of the Federal Government with efforts from every corner of our Nation, every level of government, and every sector of our economy.***[6]

Addressing the need for the accurate assessment of climate costs, President Biden announced on day one that "[i]t is essential that agencies capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account."[7] He noted that an effective way to undertake this essential task was to use the social cost of carbon to quantify and disclose the effects of additional climate pollution:

> *The "social cost of carbon" (SCC), "social cost of nitrous oxide" (SCN), and "social cost of methane" (SCM) are estimates of the monetized damages associated with incremental increases in greenhouse gas emissions. They are intended to include changes in net agricultural productivity, human health, property damage from increased flood risk, and the value of ecosystem services. An accurate social cost is essential for agencies to accurately determine the social benefits of reducing greenhouse gas emissions when conducting cost-benefit analyses of regulatory and other actions.[8]*

The President also re-established the Interagency Working Group on the Social Cost of Greenhouse Gases, and directed the Secretary of Agriculture to serve on it.[9] The President directed the Working Group to publish interim values for the social cost of greenhouse gases (including carbon) by February 19, 2021.[10] The Working

Group that month set that price at $51/ton of CO2 equivalent at a 3% discount rate.[11] We note that the U.S. Department of Agriculture, the Forest Service's parent agency, is part of the Interagency Working Group and participated in, and endorsed, the update to the social cost of carbon.[12] Two U.S. courts of appeals have rejected challenges to the Interagency Working Group's social cost metric.[13]

C. NEPA Requires the Forest Service to Disclose the Climate Impacts of Proposed Actions.

The Forest Service must analyze the direct, indirect, and cumulative impacts of a proposed action. Colo. Envtl. Coal. v. Dombeck, 185 F.3d 1162, 1176 (10th Cir. 1999); see also 40 C.F.R. § 1508.25(c) (1978) (when determining the scope of an EIS, agencies "shall consider" direct, indirect, and cumulative impacts). NEPA and NFMA require the Forest Service to use high quality, accurate, scientific information to assess the effects of a proposed action on the environment. See 40 C.F.R. § 1500.1(b) (1978); 36 C.F.R. § 219.3.

NEPA requires agencies to undertake meaningful consideration of greenhouse gas emissions (GHGs) and carbon sequestration (carbon storage). Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin., 538 F.3d 1172, 1217 (9th Cir. 2008). As the Ninth Circuit has held, in the context of fuel economy standard rules:

> ***The impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct. Any given rule setting a CAFE standard might have an "individually minor" effect on the environment, but these rules are "collectively significant actions taking place over a period of time."***

Id., 538 F.3d at 1216 (quoting 40 C.F.R. § 1508.7 (1978)). See also WildEarth Guardians v. BLM, 870 F.3d 1222, 1237 (10th Cir. 2017) (failure to disclose climate impacts of various alternatives "defeated NEPA's purpose"). Courts have held that a "general discussion of the effects of global climate change" does not satisfy NEPA's hard-look requirement. High Country Conservation Advocates v. U.S. Forest Serv., 52 F. Supp. 3d 1174, 1189-90 (D. Colo. 2014).

Further, courts have ruled that federal agencies must consider indirect GHG emissions resulting from agency policy, regulatory, and fossil fuel leasing decisions. For example, agencies cannot ignore the indirect air quality and climate change impact of decisions that would open up access to coal reserves. See Mid States Coal. For Progress v. Surface Transp. Bd., 345 F.3d 520, 532, 550 (8th Cir. 2003); High Country Conservation Advocates, 52 F. Supp. 3d at 1197-98; Montana Environmental Information Center v. U.S. Office of Surface Mining, 274 F. Supp. 3d 1074 (D. Mont. 2017), amended in part,

adhered to in part, 2017 WL 5047901 (D. Mont. 2017). A NEPA analysis that does not adequately consider the indirect effects of a proposed action, including climate emissions, violates NEPA. Ctr. for Biological Diversity v. Bernhardt, 982 F.3d 723, 2020 U.S. App. LEXIS 38033, *20 (9th Cir. 2020). The disclosure of merely the volume of GHG emissions is insufficient; agencies must also disclose the impacts of those emissions. Utah Physicians For A Healthy Env't v. United States BLM, 2021 U.S. Dist. LEXIS 57756 (D. Utah Mar. 24, 2021).

NEPA requires "reasonable forecasting," which includes the consideration of "reasonably foreseeable future actions … even if they are not specific proposals." N. Plains Res. Council, Inc. v. Surface Transp. Bd., 668 F.3d 1067, 1079 (9th Cir. 2011) (citation omitted). That an agency cannot "accurately" calculate the total emissions expected from full development is not a rational basis for cutting off its analysis. "Because speculation is ... implicit in NEPA," agencies may not "shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as crystal ball inquiry." Id. (citations omitted). The D.C. Circuit has echoed this sentiment, rejecting the argument that it is "impossible to know exactly what quantity of greenhouse gases will be emitted" and concluding that "agencies may sometimes need to make educated assumptions about an uncertain future" in order to comply with NEPA's reasonable forecasting requirement. Sierra Club v. Federal Energy Regulatory Commission, 863 F.3d 1357, 1373-74 (D.C. Cir. 2017).

Nor can the Forest Service allege that it need not quantify the project's climate impacts by relying on NEPA regulations concerning "incomplete or unavailable information." Those NEPA provisions require the agency to identify the information as such, to "make clear that such information is lacking," and nonetheless include the information in the NEPA document if the overall costs of obtaining it are not "exorbitant" and the information is "essential to a reasoned choice among alternatives." The EA makes none of these required findings.

The 2016 final CEQ Guidance on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Review provides useful direction on the issue of federal agency review of greenhouse gas emissions as foreseeable direct and indirect effects of a proposed action.[14] The CEQ guidance provides clear direction for agencies to conduct a lifecycle greenhouse gas analysis that quantifies GHG emissions and storage because the modeling and tools to conduct this type of analysis are available:

> *If the direct and indirect GHG emissions can be quantified based on available information, including reasonable projections and assumptions, agencies should consider and disclose the reasonably foreseeable direct and indirect emissions when analyzing the direct and indirect effects of the proposed action. Agencies should disclose the information and any*

> ***assumptions used in the analysis and explain any uncertainties. To compare a project's estimated direct and indirect emissions with GHG emissions from the no-action alternative, agencies should draw on existing, timely, objective, and authoritative analyses, such as those by the Energy Information Administration, the Federal Energy Management Program, or Office of Fossil Energy of the Department of Energy. In the absence of such analyses, agencies should use other available information.***[15]

The guidance further specifies that estimating GHG emissions is appropriate and necessary for actions including federal logging projects like the South Otter Project.

> ***In addressing biogenic GHG emissions, resource management agencies should include a comparison of estimated net GHG emissions and carbon stock changes that are projected to occur with and without implementation of proposed land or resource management actions. This analysis should take into account the GHG emissions, carbon sequestration potential, and the changes in carbon stocks that are relevant to decision making in light of the proposed actions and timeframes under consideration.***[16]

The guidance shows that CEQ expects that agencies will perform such analysis not only at a programmatic or plan level, but at the level of an individual project (such as an individual prescribed burn) as well.

> *Biogenic GHG emissions and carbon stocks from some land or resource management activities, such as a prescribed burn of a forest or grassland conducted to limit loss of ecosystem function through wildfires or insect infestations, may result in short-term GHG emissions and loss of stored carbon, while in the longer term a restored, healthy ecosystem may provide long-term carbon sequestration. Therefore, the short- and long-term effects should be described in comparison to the no action alternative in the NEPA review.*[17]

Although the Trump administration withdrew the 2016 CEQ guidance, President Biden on January 20, 2021 rescinded that Trump Executive Order, and directed CEQ to "review, revise, and update" its 2016 climate guidance. [18] *On February 19, 2021, CEQ effectively reinstated the 2016 GHG guidance:*

> *CEQ will address in a separate notice its review of and any appropriate revisions and updates to the 2016 GHG Guidance. In the interim, agencies should consider all available tools and resources in assessing*

> ***GHG emissions and climate change effects of their proposed actions, including, as appropriate and relevant, the 2016 GHG Guidance.***[19]

Further, whatever the state of federal guidance, the underlying requirement from federal caselaw to consider climate change impacts under NEPA, including indirect and cumulative combustion impacts and loss of sequestration foreseeably resulting from commercial logging decisions, has not changed. See S. Fork Band Council of W. Shoshone v. United States Dept. of Interior, 588 F.3d 718, 725 (9th Cir. 2009); Ctr. for Biological Diversity, 538 F.3d at 1214-15; Mid States Coalition for Progress, 345 F.3d at 550; WildEarth Guardians v. United States Office of Surface Mining, Reclamation & Enf't, 104 F. Supp. 3d 1208, 1230 (D. Colo. 2015) (coal combustion was indirect effect of agency's approval of mining plan modifications that "increased the area of federal land on which mining has occurred" and "led to an increase in the amount of federal coal available for combustion."); Diné Citizens Against Ruining Our Env't v. United States Office of Surface Mining Reclamation & Enf't, 82 F. Supp. 3d 1201, 1213-1218 (D. Colo. 2015); High Country Conservation Advocates, 52 F. Supp. 3d at 1174; Utah Physicians For A Healthy Env't, 2021 U.S. Dist. LEXIS 57756.

The Interagency Social Cost of Carbon was developed specifically to provide agencies with a way to quantify and compare those impacts, and courts and agencies have

regularly required this method to disclose the climate impacts of federal actions. High Country Conservation Advocates, 52 F. Supp. 3d at 1190-93 (finding Forest Service violated NEPA by failing to disclose the climate impacts via the social cost of carbon); Wildearth Guardians v. Bernhardt, 2021 U.S. Dist. LEXIS 20792, CV 17-80-BLG-SPW (D. Mont. Feb. 3, 2021) at *25-*31 (finding Office of Surface Mining violated NEPA by failing to disclose the climate impacts via the social cost of carbon).[20]

D. The Forest Service's Failure to Disclose and Quantify the South Otter Project's Climate Damage Violates NEPA.

The South Otter Project 2022 EA bases its two-sentence rejection of the need for analysis of the project's climate impacts on a five-page, undated "Forest Carbon Cycling Report" in the project record, and on the programmatic analysis on climate prepared for the 2020 Custer Gallatin Forest Plan Revision Final EIS.

None of these documents –the EA, the 2022 Forest Carbon Cycling Report, or the Plan Revision Final EIS – take the hard look at the South Otter Project's climate impacts that NEPA requires. None quantifies the South Otter Project's impacts on the loss of carbon storage or on increased pollution due to project implementation. All continue to rely on questionable science, or ignore contrary science. And all effectively deny the project's

climate impacts. The Forest Service's climate analysis thus violates NEPA's hard look mandate.

1. The Forest Service fails to disclose and quantify the South Otter Project's impact on carbon storage.

a. South Otter Project logging will degrade carbon stores.

The South Otter project will have direct, indirect, and cumulative impacts on climate change because logging and burning forests will impact the ecosystem's ability to store carbon.

Science makes clear that the South Otter project will likely worsen climate emissions by removing trees that are currently fixing carbon, turning them into wood products (which results in a significant loss of that carbon fixed in wood), and leaving a landscape with no trees and (eventually) seedlings that fix far less carbon than mature forests for decades if not centuries.

The South Otter Project will remove some larger trees forest stands, via a variety of logging methods, including "regeneration," also known as clearcutting. The vegetation report supporting the EA explains: "Stands proposed for improvement cutting primarily fall within the medium size class (10-15") and will trend towards the large size class." J. Durkin, South Otter Landscape Restoration and Resiliency Project Effects Analysis (March 1, 2022) at 3 ("Vegetation Report"). The South

Otter Project will involve more than 11,000 acres of timber stand improvement (AKA non-commercial thinning). Neither the EA nor the Vegetation Report explains whether timber stand improvement logging will involve the removal of mature trees more than 80-90 years old (a "hard look" violation), but it is likely that it will because it will log trees nearly 4 feet in circumference. Commercial thinning will occur on another 26,000+ acres, and will "remove[] 20-40 percent of the commercial size trees (nine inches or greater DBH for ponderosa pine)," South Otter Project EA at 14, which again seem certain to remove mature trees, as mature trees are larger and more commercially valuable.

Logging old and mature forests in particular worsens climate change by releasing significant amounts of carbon and by preventing such forests from continuing to sequester carbon. As the Forest Service has admitted regarding mature forests in Alaska, such forests "likely store considerably more carbon compared to younger forests in this area (within the individual trees themselves as well as within the organic soil layer found in mature forests)."[21] This is so because when a forest is cut down, the vast majority of the stored carbon in the forest is released over time as CO2, thereby converting forests from a sink to a "source" or "emitter."[22]

A 2012 review concluded that thinning forests to reduce fire severity likely would have negative impacts on the forests carbon stores, even assuming that a treated area

would burn at lower severity than an untreated area. The report concludes:

> *it appears unlikely that forest fuel-reduction treatments have the additional benefit of increasing terrestrial [carbon] storage simply by reducing future combustive losses and that, more often, treatment would result in a reduction in [carbon] stocks over space and time. Claims that fuel-reduction treatments reduce overall forest [carbon] emissions are generally not supported by first principles, modeling simulations, or empirical observations.*[23]

A 2019 report found that protecting national forests in the American Northwest, including in Montana, would be an effective way to reduce the contribution of land management to climate pollution. The study concludes:

> *If we are to avert our current trajectory toward massive global change, we need to make land stewardship a higher societal priority. Preserving temperate forests in the western United States that have medium to high potential carbon sequestration and low future climate vulnerability could account for approximately 8 yr of regional fossil fuel emissions, or 27–32% of the global mitigation potential previously identified for temperate and boreal forests, while also*

> ***promoting ecosystem resilience and the maintenance of biodiversity.***[24]

This study was funded in part by the USDA. While the coarse-scale map provided with the study indicates that there may be forest stands in the South Otter project area that are rated as "low" for preservation to mitigate climate change, even those forest may store significant amounts of carbon.[25]

Recent studies agree that maintaining forests rather than cutting them down can help reduce the impacts of climate change. "Stakeholders and policy makers need to recognize that the way to maximize carbon storage and sequestration is to grow intact forest ecosystems where possible."[26] ***One report concludes:***

> ***Allowing forests to reach their biological potential for growth and sequestration, maintaining large trees (Lutz et al 2018), reforesting recently cut lands, and afforestation of suitable areas will remove additional CO2 from the atmosphere. Global vegetation stores of carbon are 50% of their potential including western forests because of harvest activities (Erb et al 2017). Clearly, western forests could do more to address climate change through carbon sequestration if allowed to grow longer.***[27]

Further, a June 2020 literature review from leading experts on forest carbon storage reported:

> *There is absolutely no evidence that thinning forests increases biomass stored (Zhou et al. 2013). It takes decades to centuries for carbon to accumulate in forest vegetation and soils (Sun et al. 2004, Hudiburg et al. 2009, Schlesinger 2018), and it takes decades to centuries for dead wood to decompose. We must preserve medium to high biomass (carbon-dense) forest not only because of their carbon potential but also because they have the greatest biodiversity of forest species (Krankina et al. 2014, Buotte et al. 2019, 2020).*[28]

Two experts in the field recently concluded:

> *Recent projections show that to prevent the worst impacts of climate change, governments will have to increase their pledges to reduce carbon emissions by as much as 80%. We see the next 10 to 20 years as a critical window for climate action, and believe that permanent protection for mature and old forests is the greatest opportunity for near-term climate benefits.*[29]

A recent letter to the President signed by dozens of scientists cited peer reviewed studies in support of the following conclusions:

> *As hundreds of climate and forest scientists warned Congress last year, logging in U.S. forests emits 723 million tons of uncounted CO2 into our atmosphere each year—more than 10 times the amount emitted by wildfires and tree mortality from insects combined. Greenhouse gas emissions from logging in U.S. forests are now comparable to the annual CO2 emissions from U.S. coal burning, and annual emissions from the building sector. Most of the carbon in trees removed from forests through logging is emitted almost immediately, as branches and tree tops are burned at biomass energy facilities, and mill residues are burned at the sawmills, typically for energy production—emitting more CO2 than burning coal, for equal energy produced. Logging conducted as commercial "thinning," under the rubric of fire management, emits about three times more CO2 than wildfire alone.*[30]

Further, to address the climate crisis, agencies cannot rely on the re-growth of cleared forests to make up for the carbon removed when mature forest is logged. One prominent researcher explains: "It takes at least 100 to 350+ years to restore carbon in forests degraded by

logging (Law et al. 2018, Hudiburg et al. 2009). If we are to prevent the most serious consequences of climate change, we need to keep carbon in the forests because we don't have time to regain it once the forest is logged (IPCC, 2018).”[31]

The importance of preserving mature forests in staving off the worst impacts of the climate crisis and the extinction crisis led President Biden on Earth Day in 2022 to issue Executive Order 14,072, “Strengthening the Nation’s Forests, Communities, and Local Economies.” [32] *That order notes:*

> *Globally, forests represent some of the most biodiverse parts of our planet and play an irreplaceable role in reaching net-zero greenhouse gas emissions. Terrestrial carbon sinks absorb around 30 percent of the carbon dioxide emitted by human activities each year. Here at home, America’s forests absorb more than 10 percent of annual United States economy-wide greenhouse gas emissions. Conserving old-growth and mature forests on Federal lands while supporting and advancing climate-smart forestry and sustainable forest products is critical to protecting these and other ecosystem services provided by those forests.* [33]

The President directed the Forest Service to "within 1 year of the date of this order, define, identify, and complete an inventory of old-growth and mature forests on Federal lands," and after, that inventory is complete, to "analyze the threats to mature and old-growth forests on Federal lands," and to develop strategies "that address threats to mature and old-growth forests on Federal lands."[34]

Despite the President's directive that the Forest Service respond to the climate crisis by conserving, inventorying, and developing policies to address threats to mature forests, the South Otter Project area may remove mature forest. And despite the importance of responding to the climate crisis to protect forests and the wildlife that inhabit them, the Forest Service declines to quantify the project's climate impacts, makes invalid comparisons contrary to current guidance and caselaw, and provides excuses for why the impacts on carbon storage will be "negligible" or too difficult to determine.

The agency's failure to quantify the climate impacts of the project is arbitrary and capricious.

b. The Forest Service may not dismiss the impacts to carbon stores as "minimal" or "negligible."

The Forest Service's decision to not address the South Otter project's climate impacts, which effectively defers to

the discussion of this issue in the Forest Plan revision's Final EIS, dismisses the impacts of management actions on the Custer Gallatin National Forest as "negligible," and compares them to total global and national emissions.

The EA dismisses the issue of climate impacts from detailed discussion on the grounds that the project will have "a negligible and inconsequential effect on carbon cycling." South Otter Project EA at 10.

The 2022 Forest Carbon Cycling report, which the EA references, states that the proposed action:

> ***will have a negligible and inconsequential effect on carbon sequestration or emissions. This is because the actions under all action alternative does not fall within, and are different from, any of the primary contributors of global greenhouse gas emissions; fossil fuel combustion, deforestation, and agriculture.[35]***

The Forest Carbon Cycling Report also asserts:

> ***In general, management activities (such as timber harvest) would initially directly reduce carbon stocks on the forest, though minimally…. These short-term losses and emissions are small relative to both the total carbon stocks on the forest and national and global emissions.[36]***

The Custer Gallatin Forest Plan Final EIS, upon which the EA also relies, similarly dismisses impacts of management action on climate as "minimal" and "negligible" by comparing those emission to global emissions.[37]

This approach distorts the project's climate impacts, using metrics tailored to make the impacts of logging on carbon storage look small by comparison. Virtually any individual project impacting the climate, except perhaps those on a national scale, will look small when compared to climate emissions from all U.S. forests. CEQ's 2016 NEPA climate guidance specifically recommended against using the type of comparison employed by the South Otter carbon report and the Custer Gallatin Forest Plan Final EIS:

> ***a statement that emissions from a proposed Federal action represent only a small fraction of global emissions is essentially a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether or to what extent to consider climate change impacts under NEPA. Moreover, these comparisons are also not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations because this approach does not reveal anything beyond the nature of the climate change challenge itself….***[38]

The fundamental difficulty at the heart of climate change is that it is the product of thousands of different decisions, yet each one adds to and worsens a problem that threatens trillions of dollars in damage, will impair public health, and will disproportionately burden people of color and those with lower incomes, and worsen the biodiversity crisis, among other impacts. Carbon emitted or not stored today will warm the climate for centuries and have impacts far beyond those in Montana (or the U.S.).

The agency's decision declining to address the project's impacts because they are allegedly "negligible" in comparison to world's (or nation's) total climate warming emissions is thus not only misleading, it masks the fact that every additional bit of climate pollution, or elimination of carbon sequestration ability, makes the problem worse, and that every bit of sequestration and storage is critical to the solution. This approach is not only contrary to existing guidance, and Biden administration policy, as discussed above, it is contrary to federal court decisions. Montana 350 v. Haaland, 50 F.4th 1254, 1266 (9th Cir. amended Oct. 14, 2022) (setting aside agency's determination that a coal mine expansion would not have significant impacts in part because that determination relied "on the arbitrary and conclusory determination that the … project's emissions will be 'minor'" compared to global and domestic emissions); WildEarth Guardians v. Zinke, 2019 U.S. Dist. LEXIS 30357 (D. Mont. Feb. 11, 2019) at *25 (proposed findings) ("But by only comparing the estimated emissions to total U.S. emissions, OSM potentially diluted the adverse

environmental effects of coal combustion at a local level. The Ninth Circuit has stated that when assessing the effects of an agency action, the appropriate analysis must include consideration of both broad scale and local impacts"); Pac. Coast Fed. of Fisherman's Ass'ns v. Nat'l Marine Fisheries Serv., 265 F.3d 1028, 1036-37 (9th Cir. 2001); Or. Nat. Res. Council Fund v. Brong, 492 F.3d 1120, 1129-30 (9th Cir. 2007) (noting that averaging environmental effects based on a broad scope can lead to misleading results). The Forest Service must provide the public and the decision-maker with a sense of the relevant scale of the climate harm of the proposed action in comparison to the no action alternative so that the impacts may be compared.

Even if the logging permitted in the South Otter Project—when viewed in isolation—may only result in relatively minor climate impacts (whatever that means), NEPA expressly requires agencies to consider whether agency actions are "related to other actions with individually insignificant but cumulatively significant impacts." 40 C.F.R. § 1508.27(b)(7) (1978); see also 40 C.F.R. §. 1508.1(g)(3) ("cumulative effects can result from individually minor but collectively significant actions taking place over a period of time"). Thus, the Forest Service may not blithely dismiss and deny the climate impacts of the South Otter Project without considering the cumulative significance of the project when added to other past, present, and reasonably foreseeable logging projects and Forest Service timber sales in the state, region, and nation. 40 C.F.R. § 1508.7 (1978); WildEarth

Guardians v. Zinke, 368 F. Supp. 3d 41 (D.D.C. 2019) (holding that BLM erred by failing to consider the cumulative climate impacts of oil and gas leases together with "GHG emissions generated by past, present, and reasonably foreseeable BLM lease sales in the region and nation"). The Forest Service failed to address these cumulative effects, violating NEPA.

Despite the applicability of the 2016 CEQ NEPA Guidance, the Forest Plan Revision analysis of climate impacts relies in part on guidance entitled "Climate Change Considerations in Project Level NEPA Analysis" to avoid analyzing and disclosing the South Otter Project's climate change impacts.[39] The Climate Change Consideration guidance is the flawed product of the final week of the George W. Bush administration in January 2009, and it has long been overtaken by both federal case law and CEQ's 2016 guidance, now restored, both of which require robust project level NEPA analysis of project-level climate impacts. The Forest Service cannot continue to rely on this guidance document unless and until it can explain how the 2009 guidance comports with current CEQ guidance, caselaw, and directly contrary Biden administration policy.

The 2009 guidance is flawed and outdated in part because the Federal interagency social cost of carbon estimates were developed after the 2009 guidance, and contradict numerous statements that project-level impacts are too small to estimate, as has the case law setting aside agency (including Forest Service) decisions that failed to use that

metric, or explain why it could not. Further, we understand that the Forest Service FVS tool now includes a "carbon extension" that permits users to "model the effects that management choices may have on carbon stocks."[40]

The Forest Service's dated, superseded 2009 guidance is inconsistent with Presidential direction on its face, and cannot support the Forest Service's failure to utilize the USDA-endorsed social cost of carbon estimates, to provide the public and decision makers information on the project's global scale, long-lasting, irreversible climate-related impacts. The Forest Service's position is also flatly inconsistent with the February 2021 policy to use "all available tools" before CEQ updates its guidance. Further, failing to undertake a robust analysis based on the outdated 2009 guidance borders on insubordination in light of the President's policy requiring a whole-government approach to tackling the climate crisis, including specific policy that "[t]he Federal Government must drive assessment, disclosure, and mitigation of climate pollution and climate-related risks in every sector of our economy."[41] The Forest Service has a critically important role to play in both disclosing climate risks and in taking pro-active measures to limit and mitigate those risks. Here, it has failed to do either.

c. The Forest Service's assertions of the carbon benefits of logging contradict best available science.

The Forest Service bases its dismissal of the South Otter Project's climate impacts as "negligible" in part on the assumption that the approximately 220,000 CCF of wood removed for the project will store carbon for years, that wood products are beneficial because they result in fewer carbon impacts than other construction projects, and because over time, the forest will regrow. South Otter Project EA at 38 (220,000 CCF). Scientific studies, unaddressed by the Forest Service, undercut each of these assumptions. Failing to address such contrary science violates NEPA's "hard look" mandate.

The Forest Carbon Cycling Report states that logging vast mounts of timber will have beneficial carbon storage impacts by, among other things, "sequestering carbon after harvest in wood products." Forest Carbon Cycling Report at 3. The 2022 Forest Plan Revision FEIS (upon which the Forest Carbon Cycling Report relies) further alleges that "avoided fossil fuel emissions can be substantial where harvested wood products are used as a substitute for products that take more energy, and thus, more emissions to produce." [42]

The Forest Service also asserts in the Forest Plan Revision FEIS that if forest stands are at an increased risk of carbon loss through disturbances, such as wildfires and insect epidemics, then there may be a carbon benefit to removing those stands and losing the benefit of the carbon the trees presently store:

> ***Another factor to consider with approaches to maximize carbon storage in the forest system is if there is an increased risk of carbon loss through disturbances, such as wildfires and insect epidemics. This can undercut the goal of maximizing carbon storage on forests. In some cases, reducing forest carbon stocks and moving that carbon embodied in the wood into harvested wood products streams is a more effective way to reduce carbon in the atmosphere.***[43]

The Forest Service makes similar assertions in the South Otter Project Forest Carbon Cycling Report, stating that the project will benefit carbon storage by "increasing abundance and distribution of large-diameter trees of fire-resistant species;" "lowering forest densities and forest fuel conditions;" and "minimizing severe disturbance by fire, insects and disease." Forest Carbon Cycling Report at 3. None of agency's assertions is well founded; all of them are contradicted by science that the agency has failed to acknowledge or rebut.

First, contrary studies unaddressed by the Forest Service (an oversight that violates NEPA) demonstrate that significant volumes – in some cases a majority – of carbon stored in trees are immediately lost when trees are logged and milled, and the rest is likely to be returned to the atmosphere sooner than would occur if the trees were left standing, eliminating any alleged benefits from storing carbon in wood products.

> ***[H]arvesting carbon will increase the losses from the forest itself and to increase the overall forest sector carbon store, the lifespan of wood products carbon (including manufacturing losses) would have to exceed that of the forest. Under current practices this is unlikely to be the case. A substantial fraction (25%– 65%) of harvested carbon is lost to the atmosphere during manufacturing and construction depending on the product type and manufacturing method. The average lifespan of wood buildings is 80 years in the USA, which is determined as the time at which half the wood is no longer in use and either decomposes, burns or, to a lesser extent, is recycled. However, many forest trees have the potential to live hundreds of years ….***[44]

Second, additional studies conclude that the extent to which carbon benefits can be realized from leaving forests standing depends on a variety of factors, virtually none of which the Forest Service evaluated in either the Forest Plan FEIS or the South Otter Project's Forest Carbon Cycling Report:

> ***The climate change mitigation benefit of keeping a forest as a carbon sink or to harvest it depends on several factors, including the inventory and age of standing timber, the growth rate of the forest, the***

> ***dynamics of the carbon fluxes (including the threat of natural disturbance), the time frame being considered, and the context of carbon displacement factors used when wood products replace non-wood products.*** [45]

Peer-reviewed articles indicate that there is little substitution benefit of using wood compared to using other products (e.g., concrete for building), and that industry (and agency) talking points to the contrary vastly overestimate the carbon benefits of using wood. [46] ***Again, the Forest Service's failure to address contrary scientific conclusions violates NEPA.***

Third, to address the climate crisis, agencies cannot rely on the re-growth of cleared forests to make up for the carbon removed when mature forest is logged. Yet the Forest Service does exactly that. See Forest Carbon Cycling Report at 1 ("Over the long-term, through one or more cycles of disturbance and regrowth, net carbon storage is often zero because re-growth of trees recovers the carbon lost in the disturbance and decomposition of vegetation killed by the disturbance"). Absent from the Forest Service's contention is any estimate for how long it will take to undo the carbon damage done by eliminating forests that are now efficiently storing carbon. As one prominent researcher explained:

> ***It takes at least 100 to 350+ years to restore carbon in forests degraded by logging (Law***

> ***et al. 2018, Hudiburg et al. 2009). If we are to prevent the most serious consequences of climate change, we need to keep carbon in the forests because we don't have time to regain it once the forest is logged (IPCC, 2018).”***[47]

The Forest Service ignores the timing aspect of the climate crisis and the fact that we must reduce climate pollution (and continue robust carbon storage) now, not decrease carbon storage and worsen emissions over the next century as the South Otter project would do.

Further, the Custer Gallatin Forest Plan Revisions Final EIS argues that certain destruction of carbon-storing forests now can be offset by the uncertain “increased risk of carbon loss through disturbances.” [48] ***But reducing risk does not store carbon; mature forests do. The Forest Service appears to admit that the likelihood that logging to reduce risk of disturbance trades certain destruction of carbon stores in return for the “relatively rare” potential for climate benefit from forest protection:***

> ***there is an inherent mismatch between placement of the treatments (which lower carbon stocks) and the (relatively rare) occurrence of wildfire on a given acre. This is only problematic or inconsistent with desired conditions if the objective is to maximize carbon stocks on every acre. Again, this is irrelevant because fuels***

> ***treatments are done for many other reasons, but this does not preclude the possibility that there could be a carbon benefit in some instances, even if relatively rare.***[49]

The Forest Service fails to disclose in the South Otter Project EA or in documents upon which that EA relies that its proposal to reduce the risk of harm from severe wildfire is one such treatment where the alleged benefit to carbon stores of increasing "resilience" is unlikely to achieve any carbon benefit. The agency's failure to do so violated NEPA.

d. The Forest Service ignores science and guidance that it can and must quantify carbon storage impacts through life cycle analysis.

The Forest Service declines to quantify the project's impacts on climate stores or climate pollution not only because the impacts are so small, but also, apparently, because it would be difficult to do so. This assertion is meritless because agencies, including federal land management agencies, have indeed estimated the climate impacts of logging proposals. The Forest Service's failure to quantify the climate impacts, or to provide a range of potential impacts, violates NEPA's hard look mandate, and is contrary to federal caselaw requiring agencies to undertake reasonable forecasting in NEPA analysis.

The 2022 Forest Plan EIS (upon which the South Otter Project's climate analysis relies) alleges, among other things, that the fact of climate change makes it difficult to understand the proposal's climate impacts: "disturbance rates are projected to increase with climate change … making it challenging to use past trends to project the effects of disturbance and aging on forest carbon dynamics."[50] The Forest Service further asserts:

> *Even more difficult is the ability to quantify potential carbon consequences of management alternatives in the future due to potential variability in future conditions and the stochastic nature of disturbances. The result of such uncertainty is often a very low signal-to-noise ratio: small differences in carbon impacts among management alternatives, coupled with high uncertainty in carbon stock estimates, make the detection of statistically meaningful differences among alternatives highly unlikely.*[51]

But NEPA does not permit agencies to ignore impacts because understanding them may be "challenging" or "difficult." As noted above, "speculation is ... implicit in NEPA," and so agencies may not "shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as crystal ball inquiry." N. Plains Res. Council, Inc., 668 F.3d at 1079 (citations omitted).

The Forest Service's approach also violates NEPA because methods exist that would allow the agency to quantify climate impacts. For example, a 2018 study concludes that carbon storage impacts can be estimated, accounted for, and factored into a model that calculated the net amount of carbon lost due to forest logging in Oregon over two five-year periods.[52] This is precisely the type of analysis the Forest Service should, and could, have undertaken for South Otter project EA.

Similarly, Dr. DellaSala's 2016 report addressed carbon stores from wood products and concluded that logging old-growth forest under the 2016 Tongass Forest Plan would result in net annual CO2 emissions totaling between 4.2 million tons and 4.4 million tons, depending on the time horizon chosen.[53] The Bureau of Land Management more than a decade ago completed an EIS for its Western Oregon Resource Management Plan in which that agency also predicted the net carbon emissions from its forest and other resource management programs.[54] Because agencies and academics have quantified and compared the carbon emissions of alternative logging proposals, NEPA requires the Forest Service to do so here.

The Forest Service failure to address or acknowledge that there are peer-reviewed scientific approaches to estimating net climate damage caused by logging forests is another independent NEPA violation. NEPA requires agencies to explain opposing viewpoints and their rationale for choosing one viewpoint over the other. 40

C.F.R. § 1502.9(b) (1978) (requiring agencies to disclose, discuss, and respond to "any responsible opposing view"). Courts will set aside a NEPA document where the agency fails to respond to scientific analysis that calls into question the agency's assumptions or conclusions. See Ctr. for Biological Diversity v. U.S. Forest Serv., 349 F.3d 1157, 1168 (9th Cir. 2003) (finding Forest Service's failure to disclose and respond to evidence and opinions challenging EIS's scientific assumptions violated NEPA); Seattle Audubon Soc'y v. Moseley, 798 F. Supp. 1473, 1482 (W.D. Wash. 1992) ("The agency's explanation is insufficient under NEPA – not because experts disagree, but because the FEIS lacks reasoned discussion of major scientific objections."), aff'd sub nom. Seattle Audubon Soc'y v. Espy, 998 F.2d 699, 704 (9th Cir. 1993) ("[i]t would not further NEPA's aims for environmental protection to allow the Forest Service to ignore reputable scientific criticisms that have surfaced").

The CEQ 2016 climate guidance, which CEQ in February 2021 urged agencies to rely on, contains explicit guidance on carbon storage, and notes:

> *Quantification tools [to evaluate climate emissions or storage] are widely available, and are already in broad use in the Federal and private sectors, by state and local governments, and globally. Such quantification tools and methodologies have been developed to assist institutions, organizations, agencies, and companies with*

> ***different levels of technical sophistication, data availability, and GHG source profiles. When data inputs are reasonably available to support calculations, agencies should conduct GHG analysis and disclose quantitative estimates of GHG emissions in their NEPA reviews. These tools can provide estimates of GHG emissions, including emissions from fossil fuel combustion and estimates of GHG emissions and carbon sequestration for many of the sources and sinks potentially affected by proposed resource management actions.***[55]

The guidance further specifies that estimating GHG emissions is appropriate and necessary for actions such as individual federal forest projects.[56]

The Forest Service nowhere explains why it is unable to address climate, carbon storage, and sequestration in a project covering 40,000 acres – which covers thousands of stands – but can do so at the Forest level, particularly here where the Forest Service proposes to entirely remove all trees from an area of nearly 9 square miles. Solely relying on the Forest Plan EIS again contradicts the 2016 CEQ climate guidance which assumes that land management agencies can and should address the climate effects of individual, site-specific projects.

For the South Otter Project, there is no valid, quantified analysis for the Forest Service to tier to or incorporate,

although NEPA, caselaw and guidance require the agency to do just that.

e. The Forest Service carefully discloses the economic costs, and ignores the climate costs, which is arbitrary and capricious.

The Forest Service's failure to provide a quantitative assessment to enable a comparison of the South Otter Project's climate impacts when compared to the no action alternative also violates NEPA. The South Otter Project EA and the incorporated "Economic Effects Analysis" carefully quantify economic benefits of logging – a complex task – while declining to calculate the climate costs. The Economic Effects Analysis tallies the "Average Annual Employment and Labor Income Contributions from all Project Activities," and the project's present net value.[57] Yet the Forest Service fails not only to estimate the volume of climate emissions, it fails to weigh the economic benefits of the project against the costs of climate change, which can be estimated using the Interagency Working Group's global estimate of the social cost of carbon, as recommended by President Biden's Executive Orders. See High Country Conservation Advocates, 52 F. Supp. 3d at 1190-93.

Once an agency chooses to "trumpet" a set of benefits, it also has a duty to disclose the related costs. Sierra Club v. Sigler, 695 F.2d 957, 979 (5th Cir. 1983). "There can be

no hard look at costs and benefits unless all costs are disclosed." Id. The U.S. District Court for the District of Montana reinforced this requirement this year and last when it repeatedly set aside a federal agency NEPA analyses for failing to quantify the social costs of an agency action's climate pollution. In 2022, the Montana court found that a federal agency violated NEPA where it "quantified the benefits of the [federal action] without providing a balanced quantification of the costs," including and especially the climate-related costs. Montana Env't Info. Ctr. v. Haaland, 2022 U.S. Dist. LEXIS 128280, *22-23 (D. Mont. 2022). In the face of the agency's assertion that "there is a difference between discussing economic impacts and discussing economic benefits," the court held that "[t]his is distinction without difference where, as here, the economic benefits of the action were quantified while the costs were not." Id. Other decisions in Montana similarly conclude that where an agency discloses economic impacts, it must disclose climate costs as well. See WildEarth Guardians v. Bernhardt, 2021 U.S. Dist. LEXIS 20792 at *25-*32, 2021 WL 363955, CV 17-80-BLG-SPW (D. Mont. Feb. 3, 2021) (endorsing magistrate judge's determination that the Office of Surface Mining "failed to take a 'hard look' at the costs of greenhouse gas emissions and failed to reasonably justify its reasoning for not quantifying the costs of the mining plan when the Social Cost of Carbon Protocol ... was available to do just that"). A Utah district court in 2021 concluded that an agency's failure to quantify the climate impacts of a coal lease was arbitrary

and capricious where project benefits had been tallied. Utah Physicians For A Healthy Env't, 2021 U.S. Dist. LEXIS 57756 at *16 (finding EIS violated NEPA in part because it contained "income, taxes, royalties, and related economic data" but "says nothing about the socioeconomic costs of GHGs—qualitatively or otherwise.").

As noted above, President Biden already directed that this administration (including the Forest Service) should apply an interim Interagency Working Groups' Social Cost of Carbon using a metric that includes global damage from climate-forcing pollution. Here, the Forest Service provides neither quantitative nor qualitative projections of the project's impacts on climate pollution, other than to erroneously dismiss them as negligible.

f. Conclusion

The Forest Service failure to comply with its duty to disclose the South Otter Project's impacts on climate change and carbon storage contradicts the Custer Gallatin National Forest's recognition that "carbon storage and associated climate regulation has been identified as a key ecosystem service provided by the Custer Gallatin."[58] If carbon storage is a "key ecosystem service," the National Forest should do more than merely wave away the South Otter Project's impacts on that ecosystem service. And under caselaw, agency guidance, and President Biden's directives, it must do more.

2. The Forest Service fails to disclose and quantify the carbon pollution of implementing the South Otter Project.

Logging and burning treatments, and the bulldozing of 168 miles of "temporary" road, and the reconstruction of an additional 31 miles of road, as well as "maintenance" on an additional 153 miles of road, for the 20-30 year life of the project will require the use of heavy equipment, almost certainly exclusively powered by fossil-fueled engines.[59] So will transporting up to 220,000 CCF of logs to mills, a task that will likely involve more than 50,000 loaded truck trips. This activity will result in greenhouse gas pollution that will worsen climate change for centuries, and that pollution will be over and above the pollution that would occur under the no action alternative. Milling and preparing wood products from raw logs, and transporting them to market, will also cause greenhouse gas pollution. Neither the EA, nor the Forest Carbon Cycling Report, nor any other document in the record acknowledges or attempts to disclose these impacts.

This contrasts to the approach taken elsewhere by the Forest Service and by other agencies, such as the Office of Surface Mining, which have disclosed in NEPA documents the estimated pollution from internal combustion engines necessary to mine, process, and ship coal to market.[60]

We do not endorse as sufficient either the OSM or Federal Coal Lease Modifications analyses. But they

demonstrate that agencies (including the Forest Service) can and do attempt to disclose direct climate emissions from construction and transport activities. The Forest Service provides no reasonable basis for failing to do the same for the South Otter Project, and thus violates NEPA.

Federal courts have repeatedly concluded that federal agencies must take a "hard look" at foreseeable downstream impacts of a project, particularly where those impacts are part of the project's purpose. See, e.g., Sierra Club v. FERC, 867 F.3d 1357, 1372 (D.C. Cir. 2017) (holding that a federal agency violated NEPA by failing to take a hard look at the greenhouse gas emissions of burning gas that would be transported by the agency's approval of pipelines, where the burning of that gas was "not just reasonably foreseeable" but "the project's entire purpose"). Here, the Forest Service identifies as a project purpose the "need" to "[p]rovide wood products to contribute to employment and industry in local communities and help support the sustainable supply of timber from National Forest System lands." South Otter Project EA at 3. The Forest Service therefore must disclose the climate impacts of producing and shipping those timber products. [61]

[1] See IPCC, Summary for Policymakers, Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial

levels and related global greenhouse gas emission pathways (2018), attached as Ex. 2.

[2] See, e.g., H. Fountain, Climate Change Is Accelerating, Bringing World 'Dangerously Close' to Irreversible Change, The New York Times (Dec. 4, 2019), attached as Ex. 3.

[3] Whitlock C., Cross W., Maxwell B., Silverman N., Wade A.A. 2017. Executive Summary. Montana Climate Assessment. Bozeman and Missoula MT: Montana State University and University of Montana, Montana Institute on Ecosystems. doi:10.15788/m2ww8w. At pp. 8-9. Available at http://montanaclimate.org/sites/default/files/thumbnails/image/2017-Montana-Climate-Assessment-Executive-Summary-lr.pdf, and attached as Ex. 4.

[4] Executive Order 13,990, 86 Fed. Reg. 7037 (Jan. 20, 2021) at Sec. 1 (emphasis added), attached as Ex. 5.

[5] Executive Order 14,008, 86 Fed. Reg. 7619 (Jan. 27, 2021), attached as Ex. 6.

[6] Id. at 7622 (Sec. 201) (emphasis added).

[7] Executive Order 13,990 (Ex. 5), 86 Fed. Reg. at 7040, Sec. 5(a) (emphasis added).

[8] Id. (emphasis added).

[9] Id., Sec. 5(b).

[10] Id., Sec. 5(b)(ii)(A).

[11] Interagency Working Group on Social Cost of Greenhouse Gases, Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim

Estimates under Executive Order 13990 (Feb. 2021), available at https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf (last viewed Nov. 25, 2022) and attached as Ex. 7.

[12] Id. at cover page, 14.

[13] See Missouri v. Biden, 2022 U.S. App. LEXIS 29324 (8th Cir. Oct. 21, 2022) (rejecting challenge to social cost of greenhouse gases metric because state plaintiffs lacked standing); State of Louisiana v. Biden, 2022 U.S. App. LEXIS 7589 (5th Cir. Mar. 16, 2022) (granting United States' request to stay the district court's preliminary injunction of federal agencies' use of the social cost of greenhouse gases pending appeal because the plaintiff states' lacked standing).

[14] Notice available at 81 Fed. Reg. 51,866 (Aug. 5, 2016); full guidance attached as Ex. 8, and available at https://ceq.doe.gov/docs/ceq-regulations-and-guidance/nepa_final_ghg_guidance.pdf (last viewed Nov. 25, 2022).

[15] Id. at 16 (citations omitted).

[16] Id. at 26 (citations omitted).

[17] Id. at 18.

[18] Executive Order 13,990 (Ex. 5), Sec. 7(e), 86 Fed. Reg. at 7042.

[19] Council on Environmental Quality, National Environmental Policy Act, Guidance on Consideration of

Greenhouse Gas Emissions, 86 Fed. Reg. 10,252 (Feb. 19, 2021), attached as Ex. 9, and available at https://www.govinfo.gov/content/pkg/FR-2021-02-19/pdf/2021-03355.pdf (last viewed Nov. 25, 2022).

[20] See also CEQ, 2016 NEPA Climate Guidance (Ex. 8) at 32-33 (noting the appropriateness of monetizing climate impacts).

[21] Forest Service, Tongass Land and Resource Management Plan, Final EIS (2016) at 3-14, excerpts attached as Ex. 10.

[22] See, e.g., D. DellaSala, The Tongass Rainforest as Alaska's First Line of Climate Change Defense and Importance to the Paris Climate Change Agreements (2016) at 5, attached as Ex. 11.

[23] J.L. Campbell et al., Can fuel-reduction treatments really increase forest carbon storage in the western US by reducing future fire emissions? Frontiers in Ecology and the Environment, 2012; 10(2): 83–90, doi:10.1890/110057 (published online 15 Dec. 2011), available at https://ir.library.oregonstate.edu/concern/articles/vd66w041v and attached as Ex. 12.

[24] P. Buotte et al., Carbon sequestration and biodiversity co-benefits of preserving forests in the western United States, Ecological Applications, Article e02039 (Oct. 2019) at 8, available at https://esajournals.onlinelibrary.wiley.com/doi/pdf/10.1002/eap.2039 (last viewed Nov. 25, 2022), and attached as Ex. 13.

[25] Buotte, Carbon sequestration and biodiversity co-benefits (Ex. 13) at 4 (Figure 1); id. at 5 (Table 1).

[26] Moomaw, et al., Intact Forests in the United States: Proforestation Mitigates Climate Change and Serves the Greatest Good, Frontiers in Forests and Global Change (June 11, 2019) at 7 (emphasis added), attached as Ex. 14.

[27] T. Hudiburg et al., Meeting GHG reduction targets requires accounting for all forest sector emissions, Environ. Res. Lett. 14 (2019) (emphasis added), attached as Ex. 15.

[28] B. Law, et al., The Status of Science on Forest Carbon Management to Mitigate Climate Change (June 1, 2020), attached as Ex. 16.

[29] B. Law & W. Moomaw, Keeping trees in the ground where they are already growing is an effective low-tech way to slow climate change, The Conversation (Feb. 23, 2021) (emphasis added), attached as Ex. 17, and available at https://theconversation.com/keeping-trees-in-the-ground-where-they-are-already-growing-is-an-effective-low-tech-way-to-slow-climate-change-154618 (last viewed Nov. 25, 2022).

[30] B. Moomaw et al., Open Letter to President Biden and Members of Congress from Scientists: It is essential to Remove Climate-Harming Logging and Fossil Fuel Provisions from Reconciliation and Infrastructure Bills (Nov. 4, 2021) (citations omitted), attached as Ex. 18.

[31] B. Law, et al., The Status of Science on Forest Carbon Management (Ex. 16) (emphasis added).

[32] E.O. 14,072, 81 Fed. Reg. 24851 (Apr. 27, 2022), available at https://www.govinfo.gov/content/pkg/FR-2022-04-27/pdf/2022-09138.pdf and attached as Ex. 19.

[33] E.O. 14,072, 81 Fed. Reg. at 24851 (emphasis added).

[34] E.O. 14,072, Sec. 2, 81 Fed. Reg. at 24852. We note that while the South Otter Project EA and supporting documents summarize and catalogue law and guidance directing management of the National Forests, including Executive Orders, the EA nowhere mentions Executive Order 14,072. The Forest Service must correct this oversight in any subsequently prepared NEPA document.

[35] Forest Carbon Cycling Report (no date) at 4. See also id. at 1 ("the South Otter project has a negligible and inconsequential effect on carbon cycling").

[36] Forest Carbon Cycling Report (no date) at 2-3.

[37] Custer Gallatin Plan Revision FEIS, Vol. 1 (Jan. 2022) at 311 (Plan "alternatives would have a minimal direct effect on carbon emissions and carbon stocks…. All plan alternatives are projected to contribute negligibly to overall greenhouse gas emissions." (emphasis added)); id. at 307-08 ("Even the maximum potential management levels described by the plan alternatives would have a negligible impact on national and global emissions and on forest carbon stocks" (emphasis added)).

[38] CEQ, 2016 NEPA Climate Guidance (Ex. 8) at 11.

[39] See Custer Gallatin Plan Revision FEIS, Vol. 1 (Jan. 2022) at 308, citing Forest Service, Climate Change

Considerations in Project Level NEPA Analysis (Jan. 13, 2009), attached as Ex. 20, and available at https://www.fs.usda.gov/emc/nepa/climate_change/includes/cc_nepa_guidance.pdf (last viewed Nov. 25, 2022).

[40] See https://www.fs.usda.gov/ccrc/tool/forest-vegetation-simulator-fvs (last viewed Nov. 25, 2022).

[41] Executive Order 14,008 (Ex. 6) (emphasis added).

[42] Custer Gallatin Plan Revision FEIS, Vol. 4 (Jan. 2022) at 20.

[43] Custer Gallatin Plan Revision FEIS, Vol. 4 (Jan. 2022) at 21.

[44] B. Law & M.E. Harmon, Forest sector carbon management, measurement and verification, and discussion of policy related to mitigation and adaptation of forests to climate change. Carbon Management (2011) 2(1), attached as Ex. 21, and available at https://www.researchgate.net/publication/235591616_Forest_sector_carbon_management_measurement_and_verification_and_discussion_of_policy_related_to_climate_change (last viewed Nov. 25, 2022).

[45] C. Howard et al., Wood product carbon substitution benefits: a critical review of assumptions, Carbon Balance & Management (2021) 16:9, at 2, attached as Ex. 22, available at https://www.researchgate.net/publication/350511044_Wood_product_carbon_substitution_benefits_a_critical_review_of_assumptions (last viewed Nov. 25, 2022). We note that the Forest Cycling Carbon report is like a time-capsule; it cites only studies published before

2012 with the exception of a 2019 report support the Custer Gallatin Forest Plan revision.

[46] See M. Harmon, Have product substitution carbon benefits been overestimated? A sensitivity analysis of key assumptions, Environmental Research Letters (2019), attached as Ex. 23, and available at https://iopscience.iop.org/article/10.1088/1748-9326/ab1e95/pdf (last viewed Nov. 25, 2022) ("Substitution of wood for more fossil carbon intensive building materials has been projected to result in major climate mitigation benefits often exceeding those of the forests themselves. A reexamination of the fundamental assumptions underlying these projections indicates long-term mitigation benefits related to product substitution may have been overestimated 2- to 100-fold.").

[47] B. Law, et al., The Status of Science on Forest Carbon Management (Ex. 16) (emphasis added).

[48] Custer Gallatin Plan Revision FEIS, Vol. 4 (Jan. 2022) at 21.

[49] Custer Gallatin Plan Revision FEIS, Vol. 4 (Jan. 2022) at 21 (emphasis added).

[50] Custer Gallatin Plan Revision FEIS, Vol. 1 (Jan. 2022) at 307.

[51] Custer Gallatin Plan Revision FEIS, Vol. 1 (Jan. 2022) at 308.

[52] See Law et al., Land use strategies (Ex. 23) at 3664 ("Our LCA [life-cycle assessment] showed that in 2001–2005, Oregon's net wood product emissions were 32.61

million tCO2e [tons of carbon dioxide equivalent in net GHG emissions] (Table S3), and 3.7- fold wildfire emissions in the period that included the record fire year (15) (Fig. 2). In 2011–2015, net wood product emissions were 34.45 million tCO2e and almost 10-fold fire emissions, mostly due to lower fire emissions.").

[53] *DellaSala (Ex. 11) at 14.*

[54] *See Bureau of Land Management, Western Oregon Proposed RMP Final EIS (2009) at 165-181, excerpts attached as Ex. 24.*

[55] *CEQ, 2016 NEPA Climate Guidance (Ex. 8) at 12 (emphasis added).*

[56] *Id. at 25.*

[57] *C. Sorenson, South Otter: Economic Effects Analysis (Oct. 20, 2022) at 3-4.*

[58] *Custer Gallatin Plan Revision FEIS, Vol. 1 (Jan. 2022) at 303.*

[59] *South Otter Project EA at 51 (20-30-year implementation); id. at 19 (road construction and reconstruction mileage).*

[60] *See, e.g., Office of Surface Mining & Bureau of Land Management, Environmental Assessment, Colowyo Coal Mine Collom Permit Expansion Area Project (Jan. 2016) at 4-15 – 4-18 (including table assessing "direct GHG emissions" from "drills," "dozers," "graders," "haul trucks," etc., for the proposed action), excerpts attached as Ex. 25; U.S. Forest Service, Supplemental Final*

Environmental Impact Statement, Federal Coal Lease Modifications COC-1362 & COC-67232 (Aug. 2017) at 102-113 (publishing tables estimating emissions of air pollutants, including greenhouse gases CO2 and CH4 (methane) for activities including road and well pad construction, heavy equipment use, and commuter vehicle trips for the no action and proposed action alternatives), excerpts attached as Ex. 26.

[61] ***On this point, we again agree with the Environmental Protection Agency: "We recommend the Forest conduct a quantitative project-level carbon storage and sequestration analysis for the South Otter project for inclusion in the NEPA documentation. This analysis should consider the direct and indirect GHG emissions associated with the proposed action, including logging truck trips and downstream GHG emissions associated with transportation and milling of timber." Letter of L. McCoy, EPA Region 8 (Ex. 1) at 7.***

The Forest Service did not respond to the part of my question: ***What evidence do you have that this logging will make the forest healthier for fish and wildlife?***
This is a violation of NEPA, NFMA, the APA and the ESA.

The project will harm habitat for fish and wildlife and is therefore not meeting the purpose and need of the Gallatin Forest Plan.

The Forest Service responded:

Response: The climate change/carbon analysis complied with guidance at FSM 2020.3, which states that the Forest Service, in projects and activity goals and objectives, should consider the recovery, maintenance, and enhancement of carbon stocks. Currently the Forest Service does not have legal obligations to address the full carbon life cycle disclosures requested by the commenters. While there are recommendations for consideration of greenhouse gas emissions (Executive Order 13990,

Executive Order 14072, CEQ guidance at 81 Federal Register 151 and 86 Federal Register 32) there are currently no requirements for this quantification at the project level analysis. The South Otter Carbon Cycling analysis uses the most current and relevant science available. Additionally, the air quality analysis discloses that the no action alternative would produce more emissions, due to wildfire, than the proposed action activities that are under permit from the State of Montana for meeting air quality goals. The proposed treatments would create short-term impacts from prescribed burning as opposed to long durations of smoke from severe wildfire events under the no action. Prescribed fire treatments from the proposed action may result in an increase of nuisance smoke; however, we do not believe they will result in a NAAQS violation.

Remedy: Choose the No Action alternative or pull the draft decision and write an EIS that follow all laws and requirements in the Forest Plan.

The EA does not analyze or disclose the body of science that implicates logging activities as a contributor to reduced carbon stocks in forests and increases in greenhouse gas emissions. The EA fails to provide estimates of the total amount of carbon dioxide (CO_2) or other greenhouse gas emissions caused by FS management actions and policies —forest-wide, regionally, or nationally. maintaining a position that they need not take any leadership on this issue, and obfuscate via this EA to justify their failures.

The best scientific information strongly suggests that management that involves removal of trees and other biomass increases atmospheric CO_2. Unsurprisingly the EA doesn't state that simple fact.

The Custer Gallatin National Forest has not yet accepted that the effects of climate risk represent a significant issue, and eminent loss of forest resilience already, and a significant and growing risk into the "foreseeable future?"

It is now time to speak honestly about unrealistic expectations relat- ing to desired future condition. Forest managers have failed to dis- close that at least five common tree species, including aspens and four conifers, are at great risk unless atmospheric greenhouse gases and associated temperatures can be contained at today's levels of concentration in the atmosphere. This cumulative ("reasonably foreseeable") risk must not continue to be ignored at the project-level, or at the programmatic (Forest Plan) level.

Global warming and its consequences may also be effectively irreversible which implicates certain legal consequences under NEPA and NFMA and ESA (e.g., 40 CFR § 1502.16; 16 USC §1604(g); 36 CFR §219.12; ESA Section 7; 50 CFR §§402.9, 402.14). All net car- bon emissions from logging represent "irretrievable and irreversible commitments of resources."

It is clear that the management of the planet's forests is a nexus for addressing this largest crisis ever facing humanity. Yet the EA and Draft Decision Notice fails to even provide a minimal quantitative analysis of agency/ project caused CO_2 emissions or consider the best available science on the topic. This is immensely unethical and

immoral. The lack of detailed scientific discussions in the EA and Draft Decision Notice concerning climate change is far more troubling than the document's failures on other topics, because the consequences of unchecked climate change will be disastrous for food production, sea level rise, and water supplies, resulting in complete turmoil for all human societies. This is an issue as serious a nuclear annihilation (although at least with the latter we're not already pressing the button).

The EA provided a pittance of information on climate change effects on project area vegetation. The EA provides no analysis as to the veracity of the project's Purpose and Need, the project's objectives, goals, or desired conditions. The FS has the responsibility to inform the public that climate change is and will be bringing forest change. For the Galton project, this did not happen, in violation of NEPA.

The EA fails to consider that the effects of climate change on the project area, including that the "desired" vegetation conditions will

likely not be achievable or sustainable. The EA fails to provide any credible analysis as to how realistic and

achievable its desired condi- tions are in the context of a rapidly changing climate, along an un- predictable but changing trajectory.

The Forest Plan does not provide meaningful direction on climate change. Nor does the EA acknowledge pertinent and highly relevant best available science on climate change. This project is in violation of NEPA.

The best scientific information strongly suggests that management that involves removal of trees and other biomass increases atmospheric CO_2. Unsurprisingly the FSEIS doesn't state that simple fact.

The EA fails to present any modeling of forest stands under different management scenarios. The FS should model the carbon flux over time for its proposed stand management scenarios and for the vari- ous types of vegetation cover found on the CGNF.

The EA also ignores CO_2 and other greenhouse gas emissions from other common human activities related to forest management and recreational uses. These include emissions associated with machines used for logging and associated activities, vehicle use for administrative actions, and recreational motor vehicles. The FS is simply ignoring

the climate impacts of these management and other authorized activities.

The Committee of Scientists, 1999 recognize the importance of forests for their contribution to global climate regulation. Also, the 2012 Planning Rule recognizes, in its definition of Ecosystem services, the "Benefits people obtain from ecosystems, including: (2) Regulating services, such as long term storage of carbon; climate regulation..."

We have no more time to prevaricate, and it's not a battle we can afford to lose. We each have a choice: submit to status quo for the profits of the greediest 1%, or empower ourselves to limit greenhouse gas emissions so not just a couple more generations might survive.

The District Court of Montana ruled in Case 4:17-cv-00030- BMM that the Federal government did have to evaluate the climate change impacts of the federal government coal pro- gram.

In March 2019, U.S. District Judge Rudolph Contreras in Washington, D.C., ruled that when the U.S. Bureau of Land Management (BLM) auctions public lands for oil and gas leas- ing, officials must consider emissions from past, present and foreseeable future oil and gas leases

nationwide. The case was brought by WildEarth Guardians and Physicians for Social Responsibility.

In March of 2018 the Federal District Court of Montana found the Miles City (Montana) and Buffalo (Wyoming) Field Office's Resource Management Plans unlawfully overlooked climate impacts of coal mining and oil and gas drilling. The case was brought by Western Organization of Resource Councils, Mon- tana Environmental Information Center, Powder River Basin

Resource Council, Northern Plains Resource Council, the Sierra Club, and the Natural Resources Defense Council.

The project is in violation of NEPA, NFMA, the APA, the ESA for not examining the impacts of the project on climate change. The project will eliminate the forest in the project area. Forests absorb carbon. The project will destroy soils in the project area. Soils are carbon sinks.

Please see the following article that ran in the Missoulian on March 11, 2019.

Fire study shows landscapes such as Bitterroot's Sapphire Range too hot, dry to restore trees

ROB CHANEY rchaney@missoulian.com Mar 11, 2019

Burned landscapes like this drainage in the Sapphire Mountains hasn't been able to grow new trees since the Valley Complex fire of 2000, due to lack of soil moisture, humidity and seed trees, as well as excess heat during the growing season. University of Montana students Erika Berglund and Lacey Hankin helped gather samples for a study showing tree stands are getting replaced by grass and shrubs after fire across the western United States due to climate change.

Courtesy Kim Davis

Fire-scarred forests like the Sapphire Range of the Bitterroot Valley may become grasslands because the growing seasons have become

too hot and dry, according to new research from the University of Montana.

“The drier aspects aren’t coming back, especially on north-facing slopes,” said Kim Davis, a UM landscape ecologist and lead inves- tigator on the study. “It’s not soil sterilization. Other vegetation like grasses are re-sprouting. It’s too warm. There’s not enough moisture for the trees.”

Davis worked with landscape ecologist Solomon Dobrowski, fire pa- leoecologist Philip Higuera, biologist Anna Sala and geoscientist Marco Maneta at UM along with colleagues at the U.S. Forest Ser- vice and University of Colorado-Boulder to produce the study, which was released Monday in the Proceedings of the National Academy of Sciences journal.

“What’s striking is if you asked scientists two decades ago how cli- mate warming would play out, this is what they expected we’d see,” Higuera said. “And now we’re starting to see those predictions on the impact to ecosystems play out.”

The study concentrated on regrowth of Ponderosa pine and Douglas fir seedlings in Montana, Idaho, Colorado, New Mexico,

Arizona and northern California. Field workers collected trees from 90 sites, including 40 in the northern Rocky Mountains, scattered within 33 wildfires that had occurred within the past 20 years.

"We did over 4,000 miles of road-tripping across the West, as well as lots of miles hiking and backpacking," Davis said. The survey crews brought back everything from dead seedlings to 4-inch-diameter tree rings; nearly 3,000 samples in total. Then they analyzed how long

each tree had been growing and what conditions had been when it sprouted.

Before the 1990s, the test sites had enough soil moisture, humidity and other factors to recruit new seedlings after forest fires, Do- browski said.

"There used to be enough variability in seasonal conditions that seedlings could make it across these fixed thresholds," Dobrowski said. "After the mid-'90s, those windows have been closing more of- ten. We're worried

we'll lose these low-elevation forests to shrubs or grasslands. That's what the evidence points to."

After a fire, all kinds of grasses, shrubs and trees have a blank slate to recover. But trees, especially low-elevation species, need more soil moisture and humidity than their smaller plant cousins. Before the mid-90s, those good growing seasons rolled around every three to five years. The study shows such conditions have evaporated on virtually all sites since 2000.

"The six sites we looked at in the Bitterroots haven't been above the summer humidity threshold since 1997," Higuera said. "Soil moisture hasn't crossed the threshold since 2009."

The study overturns some common assumptions of post-fire recovery. Many historic analyses of mountain forests show the hillsides used to hold far fewer trees a century ago, and have become overstocked due to the efforts humans put at controlling fire in the woods. Higuera explained that some higher elevation forests are returning to their more sparse historical look due to increased fires.

"But at the lower fringes, those burn areas may transition to non- forest types," Higuera said, "especially where climate conditions at the end of this century are different than what we had in the early 20th Century."

The study also found that soil sterilization wasn't a factor in tree re-growth, even in the most severely burned areas. For example, the 2000 Sula Complex of fires stripped forest cover in the southern end of the Bitterroot Valley. While the lodgepole pine stands near Lost Trail Pass have recovered, the lower- elevation Ponderosa pine and Douglas firs haven't.

Another factor driving regeneration is the availability of surviving seed trees that can repopulate a burn zone. If one remains within 100 meters of the burned landscape, the area can at least start the process of reseeding. Unfortunately, the trend toward high-severity fires has reduced the once-common mosaic patterns that left some undamaged groves mixed into the burned areas.

Higuera said he hoped land managers could use small or prescribed fires to make landscapes more resilient, as well as restructure tree- planting efforts to boost the chances of heavily burned places.

Rob Chaney

Natural Resources & Environment Reporter

Natural Resources Reporter for The Missoulian.

Remedy: Choose the No Action Alternative. Revise the Forest Plan to take a hard look at the science of climate change. Alternatively, draft a new EIS for this project if the FS still wants to pursue it, which includes an analysis that examines climate change in the context of project activities and Desired

Conditions. Better yet, it's time to prepare an EIS on the entire range of U.S. Government climate policies.

The NFMA requires in the face of increasing climate risk, growing impacts of wildfire and insect activity, plus scientific research find- ings, the FS must disclose the significant trend in post-fire regeneration failure. The forest has already experienced considerable difficulty restocking on areas that have been subjected to prescribed fire, clear-cut logging, post- fire salvage logging and other even-aged management "systems."

NFMA (1982) regulation 36CFR 219.27(C)(3) implements the NFMA statute, which requires restocking in five years.

Forest managers must analyze and disclose the fact that the Custer Gallatin National Forest can no longer "insure that timber will be harvested from the National Forest system lands only where...there is assurance that such lands can be restocked within five years of harvest?" (NFMA§6(g)(3)(E)(ii)).

The project goals and expectations are not consistent with NFMA's "adequate restocking" requirement. Scientific research can no longer be ignored.

"At dry sites across our study region, seasonal to annual climate conditions over the past 20 years have crossed these thresholds, such that conditions have become increasingly unsuitable for regeneration. High fire severity and low seed availability further reduced the probability of post-fire regeneration. Together, our results demonstrate that climate change combined with high severity fire is leading to increasingly fewer opportunities for seedlings to establish after wildfires and may lead to ecosystem transitions in low-elevation ponderosa pine and Douglas-fir forests across the western United States." Wildfires and climate change push low-elevation forests across a critical

climate threshold for tree regeneration, PNAS (2018), Kimberley T. Davis, et al. (Please, find attached)

Forests are already experiencing emissions-driven deforestation on both the post-fire and post-logging acreage. Areas where the cumula- tive effects of wildfire, followed by salvage logging on the same piece of ground are error upon error, with decades of a routine that can rightfully be described as willful ignorance and coverup.

Where is the reference to restocking? Monitoring data and analysis? If monitoring has been done there is no disclosure documenting the scope and probability of post-fire regeneration failures in the project area. NFMA requires documentation and analysis that accurately estimates climate risks driving regeneration failure and deforestation – all characteristic of a less “resilient” forest.

“In the US Rocky Mountains, we documented a significant trend of post-fire tree regeneration, even over the relatively short period of 23 years covered in this analysis. Our findings are consistent with the expectation of reduced resilience of forest ecosystems to the combined impacts of climate warming and wildfire activity. Our results suggest that predicted shifts from forest to non-forested

vegetation.” Evidence for declining forest resilience to wildfires under climate change, Ecology Letters, (2018) 21: 243–252, Stevens-Rumens et al. (2018). (Please find attached)

The Forest Plan is based on assumptions largely drawn from our past that no longer hold true. These assumptions, made decades ago, must be challenged, and amended, where overwhelming evidence demon- strates a change of course is critical. It is time to take a step back, as- sess the present and future and make the necessary adjustments, all in full public disclosure to the Congress and the American people. Many acres of (conifers) In many areas, conifers haven’t shown “re- silience” enough to spring back from disturbance. Regeneration is already a big problem. (Emphasis added).

Both RPA and NFMA mandate long-range planning which impose numerous limitations on commodity production, including grazing, timber harvesting practices and the amount of timber sold annually.

These long-range plans are based on assumptions, which are based on data, expert opinion, public participation and other factors that all, well almost all, view from a historical

perspective. Assumptions that drove forest planning guidance decades ago, when climate risk was not known as it is today, are obsolete today.

Present and future climate risk realities demand new assumptions and new guidance.

A proper reexamination of the assumptions relating to resilience and sustainability contained in the Forest Plan is necessary. Scientific research supporting our comments focus on important data and analysis. A full discussion and disclosure of the following is required: 1) trends in wildfires, insect activity and tree mortality, 2) past regeneration success/failure in the project area, and 3) climate-risk science – some of which is cited below. Our comments, and supporting scientific re- search clearly "demonstrates connection between prior specific written comments on the particu- lar proposed project or activity and the content of the objection..."

The project is in violation of NEPA, NFMA, the Forest Plan and the APA.

Sec. 6. of the National Forest Management Act states:

(g) As soon as practicable, ... the Secretary shall ... promulgate regulations, under the principles of the Multiple-Use, Sustained-Yield Act of 1960...

The regulations shall include, but not be limited to-

(3) specifying guidelines for land management plans developed to achieve the goals of the Program which-

(E) insure that timber will be harvested from National Forest System lands only where-

(i) soil, slope, or other watershed conditions will not be irreversibly damaged;

NFMA regulations at 36 C.F.R. § 219.27 (Management requirements) state:

(a) Resource protection. All management prescriptions shall—

(1) Conserve soil and water resources and not allow significant or permanent impairment of the productivity of the land;

(b) Vegetative manipulation. Management prescriptions that involve vegetative manipulation of tree cover for any purpose shall--

(5) Avoid permanent impairment of site productivity and ensure conservation of soil and water resources;

The project-level, and programmatic-level (Forest Plan) fail to pub- licly disclose the current and future impacts of climate risk to our national forests. NEPA requires cumulative effects analysis at the programmatic level, and at the project-level. The failure to assess and disclose all risks associated with vegetative-manipulation (slash and burn) units in the project area in the proper climate-risk context/scenario violates the NFMA, NEPA and the APA.

In the face of increasing climate risk, growing impacts of wildfire and insect activity, plus scientific research findings, NEPA analysis and disclosure must address the well-documented trend in post-fire regeneration failure. The project has already experienced difficulty restocking on areas that burned in the 1988 wildfire. NFMA (1982) regulation 36 CFR 219.27(c)(3) implements the NFMA statute, which requires adequate restocking in five years.

Given the forest's poor history of restocking success and its failure to employ the best available science, the adequacy of the site-specific and programmatic NEPA/NFMA process begs for further analysis and disclosure of the

reality of worsening climate conditions which threaten – directly and cumulatively – to turn forest into non-forested vegetation, or worse. The desired future condition described in the Purpose and Need, or in the Forest Plan is not deforestation.

The Forest Plan is based on assumptions largely drawn from our past. These assumptions must be challenged, and amended, where overwhelming evidence demonstrates a change of course is critically important. It is time to take a step back, assess the future and make the necessary adjustments, all in full public disclosure to the Congress and the American people.

The EA fails to acknowledge the likelihood that "...high seedling and sapling mortality rates due to water stress, competing vegetation, and repeat fires that burn young stands," which will likely lead to a dramatic increase in non- forest land acres. Many acres of (conifers) trees already fail to regenerate. (Emphasis added). A map of these areas is required. In many areas, conifers haven't shown "resilience" enough to spring back from disturbance.

Looking to the Future and Learning from the Past in our Na- tional Forests: Posted by Randy Johnson, U.S. Forest

Service Research and Development Program, on November 1, 2016 at 11:00 AM http://blogs.usda.gov/2016/11/01/looking-to-the- future-and-learning-from-the-past-in-our-national-forests/

Excerpt:

"Forests are changing in ways they've never experienced before because today's growing conditions are different from anything in the past. The climate is changing at an unprecedented rate, exotic diseases and pests are present, and landscapes are fragmented by human activity often occurring at the same time and place.

When replanting a forest after disturbances, does it make sense to try to reestablish what was there before? Or, should we find re-plant material that might be more appropriate to current and future conditions of a changing environment?

Restoration efforts on U.S. Forest Service managed lands call for the use of locally adapted and appropriate native seed sources. The science-based process for selecting these seeds varies, but in the past, managers based deci-

sions on the assumption that present site conditions are similar to those of the past."

"This may no longer be the case."

REMEDY

Suggested remedies: Choose the No Action Alternative or Forest Plan Amendments are needed to establish standards and guidelines which acknowledge the significance of cli- mate risk to other multiple-uses. Amendments must not only analyze forest-wide impacts, but the regional, national and global scope of expected environmental changes. Based on scientific research, the existing and projected irretrievable losses must be estimated. Impacts caused by gathering cli- mate risk (heat, drought, wind) and its symptoms, including wildfire, insect activity, and regeneration failure and mature tree mortality must be analyzed cumulatively.

The selected scientific research presented above is only a sampling of the growing body of evidence that supports the need to disclose the consequences of the proposed action in a proper context – a hotter forest environment, with more frequent drought cycles. This evidence brings into question

the Purpose and Need for the project. It also requires the FS to reconsider the assumptions, goals and expected desired future condition expressed in the existing Forest Plan. Plan expectations must be amended at the programmatic level before proceeding with proposed project-level action(s). According to best available science, implementing the project will most likely accomplish the opposite of the desired future condition. We can adjust as we monitor and find out more. However, to willfully ignore what we do know and fail to disclose it to the public is a serious breach of public trust and an unconscionable act. Climate risk is upon us. A viable alternative to the proposal is not only reasonable and prudent, but it is the right thing to do.

The draft decision is in violation of NEPA, NFMA, the ESA and the APA because the project will adversely affect biological diversity, is not following the best available since and the purpose and need will not work.

Remedy: Choose the No Action Alternative or write an EIS that fully complies with the law.

The NEPA requires a “hard look” at climate issues, including cumulative effects of the “treatments” in the proposed project when added to the heat, drought, wind and other impacts associated with in- creased climate risk. Regeneration/Restocking failure following wildfire, prescribed fire and/or mechanical tree-killing has not been analyzed or disclosed. There is a considerable body of science that suggests that regeneration following fire is increasingly problematic.

NEPA requires disclosure of impact on “the human environment.” Climate risk presents important adverse impacts on cultural, economic, environmental, and social aspects of the human environment. – people, jobs, and the economy – adjacent to and near the project area. “Challenges in predicting responses of individual tree species to climate are a result of species competing under a never-before- seen climate regime – one forests may not have experienced before either.

In an uncertain future of rapid change and abrupt, unforeseen transitions, adjustments in management approaches will be necessary and some actions will fail. However, it is increasingly evident that the greatest risk is posed by continuing to implement strategies inconsistent

with and not informed by current understanding of our novel future....

Achievable future conditions as a framework for guiding forest conservation and management, Forest Ecology and Management 360 (2016) 80–96, S.W. Golladay et al. (Please, find attached)

Stands are at risk of going from forest to non-forest, even without the added risk of "management" as proposed in the project area. The project is currently is violation of NEPA, NFMA, and the APA.

Remedy: Choose the No Action Alternative or write an EIS that fully complies with the law.

The Center for Biological Diversity wrote in their 11/25/22 comments:

III. THE EA FAILS TO ADDRESS SCIENTIFIC STUDIES THAT UNDERMINE KEY ASSUMPTIONS UNDERPINNING THE ALLEGED NEED FOR, AND IMPACTS OF, THE ACTION.

Information contained in a NEPA analysis "must be of high quality. Accurate scientific analysis … [is] essential

to implementing NEPA."[1] An agency's "[h]ard look" analysis should utilize "the best available scientific information."[2] NEPA also requires agencies to explain opposing viewpoints and their rationale for choosing one viewpoint over the other.[3] Courts will set aside a NEPA document where the agency fails to respond to scientific analysis that calls into question the agency's assumptions or conclusions.[4]

Here, the Forest Service's failure to address or acknowledge that there are peer-reviewed scientific studies concluding that the proposed logging treatments will be ineffective at best, and damaging at worst, violates NEPA.

The Forest Service assumes that hundreds of clearcuts of five acres or less and tens of thousands of acres of commercial and non-commercial thinning will improve the project area by, among other things "reduc[ing] fuel loads." South Otter Project EA at 3. The EA justifies this approach by alleging that the area is at risk of a beetle outbreak and at risk of a high-intensity and stand-replacement fire. Id. at 56.

The Forest Service fails to address or meaningfully engage numerous peer-reviewed studies that contradict the EA's assumptions and that question the effectiveness of the agency's prescriptions.

First, studies demonstrate that land managers have shown little ability to target treatments where fires later

occur.[5] *This means that any effort to "improve resilience" to fire may be wasted and unnecessary because fire is unlikely to occur in any given treated area. This undermines the project's purpose and need.*

The Forest Service may allege that its treatments will nonetheless "increase forest resilience." But this ignores the fact that the alternative of no action may result in an equally protected forest if no fire or pest outbreak ever occurs where logging takes place, as is a likely scenario. The Forest Service's failure to recognize this fact is arbitrary and capricious.

Second, scientific studies demonstrate that thinning may do more harm than good, and may actually make treated stands more susceptible to pathogens. As one study concluded,

> *While thinning has the potential to reduce tree stress, which can reduce susceptibility to insect attack, it also has the potential to bring about other conditions that can increase susceptibility. For example, thinning may injure surviving trees and their roots, which can provide entry points for pathogens and ultimately reduce tree resistance to other organisms (Hagle and Schmitz 1993; Paine and Baker 1993; Goyer et al. 1998). Although thinning can be effective in maintaining adequate growing space and resources, there is accumulating*

> ***evidence to suggest that tree injury, soil compaction, and temporary stress due to changed environmental conditions caused by thinning may increase susceptibility of trees to bark beetles and pathogens (Hagle and Schmitz 1993).[6]***

An evaluation of scientific data on thinning concluded that while some studies found thinning effective at limiting beetle outbreaks, other studies found the opposite. Further, because land managers often failed to report failures, the incidences of "successful" treatments was likely over-reported by comparison. The study found that there were few, if any, long-term studies that addressed beetle impacts to thinned forests before, during and after an outbreak:

> ***While we may not have a complete understanding of how thinning works, it is clear that this practice can have a significant effect on mountain pine beetle infestations. Several studies have reported striking differences in mortality to trees caused by beetles in thinned vs. un-thinned forests (reviewed in [120,121]). In contrast, only a small number of studies have reported failures. However, the disparity in numbers of successes and failures must be placed within a broader context. Many studies assessing the efficacy of thinning have been conducted under non-outbreak conditions.***

Their results do not reflect how stands perform during an outbreak. Additionally, failures are often not reported, dismissed as a result of poor management 'next door' or targeted for management without evaluation. This is unfortunate because thinned stands that fail may have particular characteristics that could inform a better understanding and application of this approach.

Studies conducted during outbreaks indicate that thinning can fail to protect stands. In Colorado, thinning treatments in lodgepole pine implemented in response to the outbreak that began in the 90s often only slowed the spread. Klenner and Arsenault [122] reported high levels of mortality due to the mountain pine beetle across a wide range of stands densities in lodgepole pine in British Columbia during the same outbreak. They noted that silvicultural treatments were largely ineffective in reducing damage to the beetle. Preisler and Mitchell [123] found that once beetles invaded a thinned stand the probability of trees being killed there can be greater than in unthinned stands and that larger spacings between trees in thinned stands did not reduce the likelihood of more trees being attacked. Whitehead and Russo [107] reported on the performance of 'beetle-proofed' (stands thinned to an even spacing

of about 4–5 m between mature trees) and un-thinned stands in five areas in western Canada during approximately the same time period. These treatments were successful in protecting stands when they were combined with intensive direct control measures (removal of infested trees) in the areas surrounding the thinned units, but failed if units were exposed to beetle pressure from the neighboring area—a situation most thinned stands experience during an outbreak.

Unfortunately, long-term replicated studies monitoring beetle responses to thinned forests from non-outbreak to outbreak to post-outbreak phase are virtually non-existent. One large fully-replicated long-term study was initiated in 1999 under non-outbreak conditions and continues to track beetle activity [113]. In this study, mountain pine beetle was low in all treatments in the period leading up to the outbreak, but increased in some controls and burn treatment replicates as the outbreak developed. Although more trees were killed overall in control units during the outbreak, all controls still retained a greater number of residual mature trees than did thinned stands as they entered the post-outbreak phase [124].[7]

In sum, the scientific basis supporting thinning as a method for reducing the risk of, and damage to forests from, a beetle outbreak, is weak. And one of the few long-term studies to track stands before, during, and after a beetle epidemic found more trees were killed via thinning than were by the epidemic itself.

In weighing the project's costs and benefits, the Forest Service fails to acknowledge the scientific evidence that its proposed thinning treatments may be ineffective, or may result in fewer trees on the landscape even after an epidemic than would be left if the Forest Service does nothing. In part, this is because the Forest Service fails to fairly compare the impacts of the proposed action to the "no action" alternative. This failure to acknowledge contrary evidence violates NEPA, and, as discussed below, the existence of a scientific controversy supports the need for the agency to prepare an EIS rather than a mere EA.

Third, thinning or clearcutting may result in destroying the very trees that are most resilient to beetle attack, and those with an ability to pass on that resilience to seedlings.

> ***For both whitebark and lodgepole pine, survivors and general population trees mostly segregated independently indicating a genetic basis for survivorship. Exceptions were a few general population trees that segregated with survivors in proportions roughly reflecting the proportion of***

> ***survivors versus beetle-killed trees. Our results indicate that during outbreaks, beetle choice may result in strong selection for trees with greater resistance to attack. Our findings suggest that survivorship is genetically based and, thus, heritable. Therefore, retaining survivors after outbreaks to act as primary seed sources could act to promote adaptation.***[8]

The best way to ensure future resilience to a beetle outbreak thus may be to allow the beetles to identify the most genetically fit survivors, who will then provide the seedstock for future survivors. Neither the South Otter Project EA nor the "Forest Vegetation Effects Analysis" addresses this study or acknowledges that logging may destroy the best hope for improved resilience, in violation of NEPA.

Fourth, published data shows a significant decline in the suitability of harvested forests that subsequently burn years later for the most fire-dependent bird species in mixed-conifer forests of the West.[9] ***In other words, an unharvested mature forest that burns is much more valuable to fire-dependent species than is a previously harvested forest that burns. The Forest Service does not address studies showing that the proposed action will degrade habitat for fire dependent species across the 37,500+ acres that would be logged under the project.***

The Forest Service must disclose and address all of these scientific studies and their data that undermine the South Otter Project EA's assumptions and conclusions in order to take the hard look that NEPA requires.

The Forest Service responded:

Response: The Custer Gallatin Forest Plan defines resilience as the ability of an ecosystem and its component parts to absorb, or recover from the effects of disturbances through preservation, restoration, or improvement of its essential structures and functions and redundancy of ecological patterns across the landscape. Resilience is met if a forested stand does not experience stand-replacing fire, or if insects and disease do not create a level of mortality in trees such that the stand loses its structural integrity. This is not a precise measurement or a specific number of trees expected to survive a disturbance. If and when a disturbance happens, it is indeed possible to measure the effectiveness of treatments, considering the vegetative and climatic conditions under which the disturbance occurs. We do not claim to be able to "fire-proof" any forested area. Extreme weather events can produce conditions for stand-replacing fire even in treated areas.

Response: The proposed action does not purport to "protect" the forest. Fire and forestry sciencesupport that thinning forested stands reduces the likelihood of severe fire behavior, and that increasing stand diversity and increasing the spacing between trees increases stand

resilience to insect outbreaks. Expected conditions for vegetation and fuels under the no-action alternative are described on EA pages 49 and 52.

Please see the attached paper by Dr. William Baker titled: "Are High-Severity Fires Burning at Much Higher Rates Recently than Historically in Dry-Forest Landscapes of the Western USA?"

Dr. Baker writes: "Programs to generally reduce fire severity in dry forests are not supported and have significant adverse ecological impacts, including reducing habitat for native species dependent on early-suc- cessional burned patches and decreasing landscape heterogeneity that confers resilience to climatic change."

Dr. Baker concluded: "Dry forests were historically renewed, and will continue to be renewed, by sudden, dramatic, high-intensity fires after centuries of stability and lower-intensity fires."

The purpose of this project is to improve big game and grouse habitat and to make the forest more resilient and plan for a more historic fire regime. Based on Dr. Baker's paper, the proposed action will not meet the purpose and need of the project.

Dr. Baker's paper is the best available science. Please explain why this project is not following the best available science.

Please find Schoennagel et al (2004) attached.

Schoenagel states: “we are concerned that the model of historical fire effects and 20th-century fire suppression in dry ponderosa pine forests is being applied uncritically across all Rocky Mountain forests, including where it is inappropriate.

Schoennagel et al (2004) states: “High-elevation subalpine forests in the Rocky Mountains typify ecosystems that experience infrequent, high-severity crown fires []. . . The most extensive subalpine forest types are composed of Engelmann spruce (Picea engelmannii), subalpine fir (Abies lasiocarpa), and lodgepole pine (Pinus contorta), all thin- barked trees ea- sily killed by fire. Extensive stand-replacing fires occurred historically at long intervals (i.e., one to many centuries) in subalpine forests, typically in association

with infrequent high-pressure blocking systems that promote extremely dry regional climate patterns."

Schoennagel et al (2004) states: "it is unlikely that the short period of fire exclusion has significantly altered the long fire intervals in subalpine forests. Furthermore, large, intense fi- res burning under dry conditions are very difficult, if not impossible, to suppress, and such fires account for the majority of area burned in subalpine forests.

Schoennagel et al (2004) states: "Moreover, there is no consistent relationship between time elapsed since the last fire and fuel abundance in subalpine forests, further undermining the idea that years of fire suppression have caused unnatural fuel buildup in this forest zone."

Schoennagel et al (2004) states: "No evidence suggests that spruce–fir or lodgepole pine forests have

experienced sub- stantial shifts in stand structure over recent decades as a re- sult of fire suppression. Overall, variation in climate rather than in fuels appears to exert the largest influence on the size, timing, and severity of fires in subalpine forests []. We conclude that large, infrequent stand replacing fires are ‘business as usual’ in this forest type, not an artifact of fire suppression.”.

Schoennagel et al (2004) states: “Contrary to popular opinion, previous fire suppression, which was consistently effective from about 1950 through 1972, had only a minimal effect on the large fire event in 1988 []. Reconstruction of historical fires indicates that similar large, high-severity fires also occurred in the early 1700s []. Given the historical range of variability of fire regimes in high-elevation subalpine forests, fire behavior in Yellow-stone during 1988, although severe, was neither unusual nor surprising.”

Schoennagel et al (2004) states: “Mechanical fuel reduction in sub- alpine forests would not represent a restoration treatment but rather a departure from the natural range of variability in stand structure.”

Schoennagel et al (2004) states: “Given the behavior of fire in Yellowstone in 1988, fuel reduction projects probably will not substantially reduce the frequency, size, or severity of wildfires under extreme weather conditions.”

Schoennagel et al (2004) states: “The Yellowstone fires in 1988 revealed that variation in fuel conditions, as measured by stand age and density, had only minimal influence on fire behavior. Therefore, we expect fuel-reduction treatments in high-elevation forests to be generally unsuccessful in reducing fire frequency, severity, and size, given the overriding importance of extreme climate in controlling fire regimes in this zone.

Thinning also will not restore subalpine forests, because they were dense historically and have not changed significantly in re- sponse to fire suppression. Thus, fuel- reduction efforts in most Rocky Mountain sub- alpine forests probably would not effectively mitigate the fire hazard, and these efforts may create new ecological problems by moving the forest structure outside the historic range of variability."

Likewise, Brown et al (2004) states: "At higher elevations, forests of subalpine fir, Engelmann spruce, mountain hem- lock, and lodgepole or whitebark pine predominate. These forests also have long fire return intervals and contain a high proportion of fire sensitive trees. At periods averaging a few hundred years, extreme drought conditions would prime the- se forests for large, severe fires that would tend to set the forest back to an early successional stage, with a large carry-

over of dead trees as a legacy of snags and logs in the regenerating forest . . . . natural ecological dynamics are largely preserved be- cause fire suppression has been effective for less than one natural fire cycle. Thinning for restoration does not appear to be appropriate in these forests. Efforts to manipulate stand structures to reduce fire hazard will not only be of limited effectiveness but may also move systems away from pre-1850 conditions to the detriment of wildlife and water- sheds." "Fuel levels may suggest a high fire 'hazard' under conventional assessments, but wildfire risk is typically low in these settings."

Likewise, Graham et al (2004) states: "Most important, the fire behavior characteristics are strikingly different for cold (for example, lodgepole pine, Engelmann spruce, subalpine fir), moist (for example, western hemlock, western redcedar, western white pine), and

dry forests. Cold and moist forests tend to have long fire- return intervals, but fires that do occur tend to be high- intensity, stand-replacing fires. Dry forests historically had short intervals between fi- res, but most important, the fires had low to moderate severity."

According to Graham et al (2004), thinning may also increase the likelihood of wildfire ignition in the type of forests in this Project area: "The probability of ignition is strongly rela- ted to fine fuel moisture content, air temperature, the amount of shading of surface fuels, and the occurrence of an ignition source (human or lightning caused) . . . . There is generally a warmer, dryer microclimate in more open stands (fig. 9) compared to denser stands. Dense stands (canopy cover) tend to provide more shading of fuels, keep- ing relative humidity higher and air and fuel temperature

lower than in more open stands. Thus, dense stands tend to maintain higher surface fuel moisture contents com- pared to more open stands. More open stands also tend to allow higher wind speeds that tend to dry fuels compared to dense stands. These factors may in- crease probability of ignition in some open canopy stands compared to dense canopy stands."

Please see the attached paper by the John Muir Project that logging makes wildfires spread faster and puts nearby communities at greater risk.

Please see the attached report titled: "Have western USA fire suppression and megafire active management approaches become a contemporary Sisyphus?" By

Dominick A. DellaSala[a,*], Bryant C. Baker[b,c], Chad T. Hanson[d], Luke Ruediger[e,f], William Baker [g]

The abstract of the paper states:

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

biodiversity and climate crises. We urge land managers and decision makers to address the root cause of recent fire increases by reducing greenhouse gas emissions across all sectors, reforming industrial forestry and fire suppression practices, protecting carbon stores in large trees and recently burned forests, working with wildfire for ecosystem benefits using minimum suppression tactics when fire is not threatening towns, and surgical application of thinning and prescribed fire nearest homes.

This conclusion of this paper is that the purpose and need of the project will not be met by your proposed management activities. This paper is now the best available science. Why does the South Otter proposal not follow the best available science?

Please see the column below by Dr. Chad Hanson.

https://thehill.com/blogs/congress-blog/energy-environment/590415-logging-makes-forests-and-homes-more-vulnerable-to

Logging makes forests and homes more vulnerable to wildfires

The West has seen some really big forest fires recently, particularly in California's Sierra Nevada and the Cascade Mountains of Oregon. Naturally, everyone is concerned and elected officials are eager to be seen as advancing solutions. The U.S. Senate is negotiating over the Build

Back Better bill, which currently contains nearly $20 billion in logging subsidies for “hazardous fuel reduction” in forests. This term contains no clear definition but is typically employed as a euphemism for “thinning”, which usually includes commercial logging of mature and old-growth trees on public lands. It often includes clearcut logging that harms forests and streams and intensifies wildfires.

Logging interests stand poised to profit, as they tell the public and Congress that our forests are overgrown from years of neglect. Chainsaws and bulldozers are their remedy. Among these interests are agencies like the U.S. Forest Service that financially benefits from selling public timber to private logging companies.

In this fraught context, filled with a swirling admixture of panic, confusion, and opportunism, the truth and scientific evidence are all too often casualties. This, unfortunately, can lead to regressive policies that will only exacerbate the climate crisis and increase threats to communities from wildfire. We can no longer afford either outcome.

Many of the nation’s top climate scientists and ecologists recently urged Congress to remove the logging subsidies from the Build Back Better bill. Scientists noted that logging now emits about as much carbon dioxide each year as does burning coal. They also noted that logging conducted under the guise of “forest thinning” does not stop large wildfires that are driven mainly by extreme fire-weather caused primarily by climate change. In fact, it can

often make fires burn faster and more intensely toward vulnerable homes. Unprepared towns like Paradise and Grizzly Flats, Calif., unfortunately burned to the ground as fires raced through heavily logged surroundings.

Nature prepares older forests and large trees for wildfires. As trees age, they develop thick impenetrable bark and drop their lower limbs, making it difficult for fire to climb into the tree crowns. Older, dense forests used by the imperiled spotted owl burn in mixed intensities that is good for the owl and hundreds of species that depend on these forests for survival. Our national parks and wilderness areas also burn in lower fire intensities compared to heavily logged areas.

Occasionally even some of the largest trees will succumb to a severe fire but their progeny are born again to rapidly colonize the largest and most severe burn patches. Dozens of cavity-nesting birds and small mammals make their homes in the fire-killed trees. Soon after fire in these forests, nature regenerates, reminiscent of the mythical phoenix, aided by scores of pollinating insects and seed carrying birds and mammals.

Wildfires are highly variable, often depending on what a gust of wind does at a given moment, and even the biggest fires are primarily comprised of lightly and moderately-burned areas where most mature trees survive. By chance, in any large fire there will always be some areas that were thinned by loggers that burned less intense compared to unthinned areas. Before the smoke fully clears, logging

interests find those locations and take journalists and politicians to promote their agenda. What they fail to disclose are the many examples where managed forests burned hotter while older, unmanaged forests did the opposite.

This sort of self-serving show boating occurred after the 2020 Creek Fire in the Sierra National Forest in California, as news stories echoed the logging industry's "overgrown forests" narrative based on a single low-intensity burn area. When all of the data across the entire fire were analyzed, it turned out that logged forests, including commercial "thinning" areas, actually burned the most intensely.

In Oregon, The Nature Conservancy has been conducting intensive commercial thinning on its Sycan Marsh Preserve. Based on satellite imagery, the northern portion of the 414,000-acre Bootleg Fire of 2021 swept through these lands. Within days, TNC began promoting its logging program, focusing on a single location around Coyote Creek, where a "thinned" unit burned lightly. They failed to mention that nearly all of the dense, unmanaged forests burned lightly too in that area. Well-intentioned environmental reporters were misled by a carefully picked example.

Billions of dollars are being wasted to further this false logging industry narrative—funds that instead should be used to prepare communities for more climate-driven wildfires. Congress can instead redirect much needed support to damaged communities so they can build back

better and adopt proven fire safety measures that harden homes and clear flammable vegetation nearest structures.

The path forward is simple, with two proven remedies that work. Protect forests from logging so they can absorb more carbon dioxide from the atmosphere and moderate fire behavior, and adapt communities to the new climate-driven wildfire era.

Chad Hanson, Ph.D., is a research ecologist with the John Muir Project and is the author of the 2021 book, "Smokescreen: Debunking Wildfire Myths to Save Our Forests and Our Climate." Dominick DellaSala, Ph.D., is chief scientist with Wild Heritage and the author of Conservation Science and Advocacy for a Planet in Peril: Speaking Truth to Power.

Please see the column below by Chad Hanson and myself.

Opinion by Chad Hanson and
Mike Garrity
https://www.washingtonpost.com/opinions/no-we-cant--and-shouldnt--stop-forest-fires/2017/09/26/64ff718c-9fbf-11e7-9c8d-cf053ff30921_story.html
September 26, 2017

Chad Hanson is a research ecologist with the John Muir Project and is co-editor and co-author of "The Ecological Importance of Mixed-Severity Fires: Nature's Phoenix."

Mike Garrity is executive director of the Alliance for the Wild Rockies.

The American West is burning, Sen. Steve Daines (R-Mont.) tells us in his recent Post op-ed. He and officials in the Trump administration have described Western forest fires as catastrophes, promoting congressional action ostensibly to save our National Forests from fire by allowing widespread commercial logging on public lands. This, they claim, will reduce forest density and the fuel for wildfires.

But this position is out of step with current science and is based on several myths promoted by commercial interests.

The first myth is the notion that fire destroys our forests and that we currently have an unnatural excess of fire. Nothing could be further from the truth. There is a broad consensus among scientists that we have considerably less fire of all intensities in our Western U.S. forests compared with natural, historical levels, when lightning-caused fires burned without humans trying to put them out.

There is an equally strong consensus among scientists that fire is essential to maintain ecologically healthy forests and native biodiversity. This includes large fires and patches of intense fire, which create an abundance of biologically essential standing dead trees (known as snags) and naturally stimulate regeneration of vigorous new stands of forest. These areas of "snag forest habitat" are ecological treasures, not catastrophes, and many native wildlife

species, such as the rare black-backed woodpecker, depend on this habitat to survive.

Fire or drought kills trees, which attracts native beetle species that depend on dead or dying trees. Woodpeckers eat the larvae of the beetles and then create nest cavities in the dead trees, because snags are softer than live trees. The male woodpecker creates two or three nest cavities each year, and the female picks the one she likes the best, which creates homes for dozens of other forest wildlife species that need cavities to survive but cannot create their own, such as bluebirds, chickadees, chipmunks, flying squirrels and many others.

More than 260 scientists wrote to Congress in 2015 opposing legislative proposals that would weaken environmental laws and increase logging on National Forests under the guise of curbing wildfires, noting that snag forests are "quite simply some of the best wildlife habitat in forests."

The FS must disclose its transparent, well thought-out long-term strategy for old-growth associated wildlife species viability in a properly-defined cumulative effects analysis area.

“The purpose of the Greenhorn Vegetation Project is to promote resiliency and ecological function by helping to

restore and maintain the structure, function, composition and connectivity of Forest terrestrial systems." EA p. 1.

Since Ecological restoration is the project's priority, the NEPA document must at least identify all the existing ecological liabilities caused by past management actions. This includes poorly located or poorly maintained roads, high-risk fuel situations caused by earlier vegetation manipulation projects, wildlife security problems by open motorized roads and trails plus those that are closed but violated—and include all those impacts in the analyses.

Any desire to keep a road in the project area WUI must be in harmony with the alleged priority goals (again, to reduce the chances that fire will destroy private structures and harm people), not driven by timber production goals. The analysis must show how all roads will in fact be in harmony with the priority goals.

Proposed activities could artificialize the forest ecosystem. Lodgepole pine is particularly subject to blowdown, once thinned. And any forest condition that is maintained through mechanical manipulation is not maintaining ecosystem function. The proposed management activities would not be integrated well with the processes that naturally shaped the ecosystem and resulted in a range of natural structural conditions. Thus, the need for standards guiding both the delineation of zones where artificializing fuel reduction actions may take place, and that also set snag and down woody debris retention amounts.

That brings us to myth No. 2: that eliminating or weakening environmental laws — and increasing logging — will somehow curb or halt forest fires. In 2016, in the largest analysis ever on this question, scientists found that forests with the fewest environmental protections and the most logging had the highest — not the lowest — levels of fire intensity. Logging removes relatively noncombustible tree trunks and leaves behind flammable "slash debris," consisting of kindling-like branches and treetops.

This is closely related to myth No. 3: that dead trees, usually removed during logging projects, increase fire intensity in our forests. A comprehensive study published in the Proceedings of the National Academy of Sciences thoroughly debunked this notion by showing that outbreaks of pine beetles, which can create patches of snag forest habitat, didn't lead to more intense fires in the area. A more recent study found that forests with high levels of snags actually burn less intensely. This is because flames spread primarily through pine needles and small twigs, which fall to the ground and soon decay into soil shortly after trees die.

Finally, myth No. 4: that we can stop weather-driven forest fires. We can no more suppress forest fires during extreme fire weather than we can stand on a ridgetop and fight the wind. It is hubris and folly to even try. Fires slow and stop when the weather changes. It makes far more sense to focus our resources on protecting rural homes and other structures from fire by creating “defensible space” of about

100 feet between houses and forests. This allows fire to serve its essential ecological role while keeping it away from our communities.

Lawmakers in Congress are promoting legislation based on the mythology of catastrophic wildfires that would largely eliminate environmental analysis and public participation for logging projects in our National Forests. This would include removing all or most trees in both mature forests and in ecologically vital post-wildfire habitats — all of which is cynically packaged as "fuel reduction" measures.

The logging industry's political allies have fully embraced the deceptive "catastrophic wildfire" narrative to promote this giveaway of our National Forests to timber corporations. But this narrative is a scientifically bankrupt smoke screen for rampant commercial logging on our public lands. The American people should not fall for it.

Please see the letter from the 260 scientist to Congress which is mentioned in the column above, below.

Open Letter to U.S. Senators and President Obama from Scientists Concerned about Post-fire Logging and Clearcutting on National Forests

As professional scientists with backgrounds in ecological sciences and natural resources management, we are greatly concerned that legislation which passed the House in July 2015, H.R. 2647, would suspend federal environmental protections to expedite logging of both post- fire wildlife habitat and unburned old forests on national forest lands.

This legislation would also effectively eliminate most analysis of adverse environmental impacts, and prevent enforcement of environmental laws by the courts.

A similar measure, S. 1691, currently proposed in the U.S. Senate, would override federal environmental laws to dramatically increase post-fire logging, increase logging and clearcutting of mature forests, eliminate analysis of environmental impacts for most logging projects, and effectively preclude enforcement of environmental laws. The bills propose these measures under the guise of "ecosystem restoration," ostensibly to protect national forests from fire.

Not only do these legislative proposals misrepresent scientific evidence on the importance of post-fire wildlife habitat and mature forests to the nation, they also ignore the current state of scientific knowledge about how such practices would degrade the ecological integrity of forest ecosystems on federal lands. We urge you to vote against this legislation, and urge President Obama to veto these bills if they are passed in some form by Congress.

National Forests were established for the public good and include most of the nation's remaining examples of intact forests. Our national forests are a wellspring of clean water for millions of Americans, a legacy for wildlife, sequester vast quantities of carbon important in climate change mitigation, and provide recreation and economic opportunities to rural communities if responsibly managed. Though it may seem at first glance that a post-fire

landscape is a catastrophe, numerous scientific studies tell us that even in the patches where forest fires burn most intensely, the resulting wildlife habitats are among the most ecologically diverse on western forestlands and are essential to support the full richness of forest biodiversity.1

Post-fire conditions also serve as a refuge for rare and imperiled wildlife species that depend upon the unique habitat features created by intense fire. These include an abundance of standing dead trees, or “snags,” which provide nesting and foraging habitat for woodpeckers and many other plant and wildlife species responsible for the rejuvenation of a forest after fire.

The post-fire environment is rich in patches of native flowering shrubs that replenish soil nitrogen and attract a diverse bounty of beneficial insects that aid in pollination after fire. Small mammals find excellent habitat in the shrubs and downed logs, providing food for foraging spotted owls. Deer and elk browse on post-fire shrubs and natural conifer regeneration. Bears eat and disperse berries and conifer seeds often found in substantial quantities after intense fire, and morel mushrooms, prized by many Americans, spring from ashes in the most severely burned forest patches.

1 See http://store.elsevier.com/The-Ecological-Importance-of-Mixed-Severity-Fires/Dominick-DellaSala/isbn-9780128027493/.

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This post-fire renewal, known as “complex early seral forest,” or “snag forest,” is quite simply some of the best wildlife habitat in forests, and is an essential stage of natural processes that eventually become old-growth forests over time. This unique habitat is not mimicked by clearcutting, as the legislation incorrectly suggests. Moreover, it is the least protected of all forest habitat types, and is often as rare, or rarer, than old-growth forest, due to extensive fire suppression and damaging forest management practices such as those encouraged by this legislation. Much of the current scientific information on the ecological importance of post-fire habitat can be found in several excellent videos, including ways for the public to co-exist with fires burning safely in the backcountry.1,2

After a fire, the new forest is particularly vulnerable to logging disturbances that can set back the forest renewal process for decades. Post-fire logging has been shown to eliminate habitat for many bird species that depend on snags, compact soils, remove biological legacies (snags and downed logs) that are essential in supporting new forest growth, and spread invasive species that outcompete native vegetation and, in some cases, increase the flammability of the new forest.

While it is often claimed that such logging is needed to restore conifer growth and lower fuel hazards after a fire, many studies have shown that logging tractors often kill most conifer seedlings and other important re-establishing vegetation and actually increases flammable logging slash left on site. Increased chronic sedimentation to streams due

to the extensive road network and runoff from logging on steep slopes degrades aquatic organisms and water quality.3

We urge you to consider what the science is telling us: that post-fire habitats created by fire, including patches of severe fire, are ecological treasures rather than ecological catastrophes, and that post-fire logging does far more harm than good to public forests. We urge Senators to vote against any legislation that weakens or overrides environmental laws to increase post-fire logging or clearcutting of mature forest as degrading to the nation's forest legacy. And, we urge President Obama to veto any such legislation that reaches his desk as inconsistent with science- based forest and climate change planning.

Sincerely (affiliations are listed for identification purposes only),

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2http://www.fs.usda.gov/detail/r5/news-events/audiovisual/?cid=stelprdb5431394;

https://vimeo.com/75533376; http://vimeo.com/groups/future/videos/8627070; http://www.youtube.com/watch?

v=iTl-naywNyY&list=PL7F70F134E853F520&index=15; http://www.youtube.com/watch?v=1BmTq8vGAVo&feature=youtu.be; http://vimeo.com/3428311

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Veblen (2003) questions the premises the FS often puts forth to justify “uncharacteristic vegetation patterns” discussions, that being to take management activities to alter vegetation patterns in response to fire suppression:

> The premise behind many projects aimed at wildfire hazard reduction and ecological restoration in forests of the western United States is the idea that unnatural fuel buildup has resulted from suppression of formerly frequent fires. This premise and its implications need to be critically evaluated by conducting area-specific research in the forest ecosystems targeted for fuels or ecological restoration projects. Fire regime researchers need to acknowledge the limitations of fire history methodology and avoid over-reliance on

summary fire statistics such as mean fire interval and rotation period. While fire regime research is vitally important for informing decisions in the areas of wildfire hazard mitigation and ecological restoration, there is much need for improving the way researchers communicate their results to managers and the way managers use this information.

Since disruption of fire cycles is identified, the BDNF needs to take a hard look at its fire policies. The development of approved fire management plans in compliance with the Federal Wildland Fire Policy was the number one policy objective intended for immediate implementation in the Implementation Action Plan Report for the Federal Wildland Fire Management Policy and Program Review. In general, the FS lags far behind other federal land management agencies that have already invested considerable amounts of time, money, and resources to implement the Fire Policy. Continued mismanagement of national forest lands and FS refusal to fully implement the Fire Policy puts wildland firefighters at risk if and when they are dispatched to wildfires. This is a programmatic issue, one that the current Forest Plan does

not adequately consider. Please see Ament (1997) as comments on this proposal, in terms of fire policy and Forest Planning.

Many adverse consequences to soil, ecological processes, wildlife, and other elements of the natural environment are associated with thinning. (Ercelawn, 1999; Ercelawn, 2000.)

The South Otter project purpose and need is based on false assumptions in violation of NEPA, NFMA and the APA.

Remedy

Withdraw the draft decision and choose the No Action Alternative or write an EIS that fully complies with the law.

Old Growth

Native Ecosystems Council and Alliance wrote in their comments:

> ***20. The report at 9 claims that the project will promote wildlife by creating a diversity of forest age classes; yet there are only 32,000 acres of older, dense forests (40-60% canopy cover) in the project area (Table 2); this is only 11% of the project area; yet there will be commercial thinning of 26,350 acres; this is almost all of what remains of denser older forest habitat; older dense forest habitat will be reduced to less than 2% of the project area, and***

only 3.6% of potential forest vegetation; it is unclear why almost total elimination of this type of habitat represents an increase in habitat diversity for wildlife or as well, an indicator of landscape health; why is the almost total lack of older, more dense forests habitat an indicator of good forest health?

21. Figure 5 of this report shows what is clearly an old growth ponderosa pine forest; this stand is proposed for thinning and burning to protect it from insects and disease and fire; this will also increase the vigor of remaining trees; logging this old growth will be to promote timber production.

22. Figure 6 of this report also shows an old growth ponderosa pine forest which is proposed for thinning; this thinning will supposedly "re-introduce disturbance and contribute to the structure and function desired on these sites;" this is a good example of the CG LMP direction for old growth, in that it can be logged to achieve objectives other than wildlife, which means it is not actually being provided for wildlife; this lack of any requirements to provide wildlife old growth in the CG LMP is not identified to the public, not were the impacts of this strategy ever evaluated in the CG LMP FEIS; thus the effects of the CG LMP on old growth habitats, and associated wildlife species, remains unknown, and undisclosed to the public; any treatments in old growth stands are thus illegal

until this lack of analysis and disclosure to the public is rectified via a Forest Plan amendment.

The Forest Service responded:

Response: Old growth trees are not targeted within the South Otter silvicultural prescriptions. As stated on page 14 in the Large Trees and Old Growth section of the Vegetation Analysis Report; "often thought of as interchangeable, large trees (those greater than 15" dbh) across the northern Region are often not as old as they appear. Certain characteristics are usually present in young large trees such as tightly furrowed bark, small diameter branches and a pointed bullet shaped crown. Once conifers and especially ponderosa pine exceed the 150-year-old threshold, they often have reached their maximum height growth and begin to have a flat top due to their inability to continue to increase in height growth.

Additional characteristics of old ponderosa pine is the overly platy bark when compared to younger trees as well as a more "wolfy" appearance in branch structure. Experienced timber markers and quality control by a silviculturist can reduce the likelihood that old trees will be mistaken by the crews.

Pictures within the marking guidelines also help crews get calibrated as well as randomly aging trees throughout implementation using an increment borer. Ultimately, stands with large or old trees would experience an increase in overall resilience through increased sunlight,

nutrient availability and most importantly water availability."

The Project will violate the NEPA if there are no valid snag surveys done for the project area both within and outside proposed harvest units.

The project will violate the NEPA if there are no valid surveys for old growth habitat within each project area, as identified by Green et al. 1992; old growth types need to be defined and quantified by timber types, such as lodgepole pine,

Douglas-fir, mixed conifer, spruce, subalpine fir, and limber pine.

The project will likely violate the NEPA if the mitigation measures for MIS, sensitive species, and Montana Species of Concern (birds, mammals including bats) are not clearly de- fined, and demonstrated to be effective as per the current best science.

The Project will violate the NEPA if there are no valid snag surveys done for the project area both within and outside proposed harvest units.

The project will violate the NEPA if there are no valid surveys for old growth habitat within each project area. Old growth types need to be defined and quantified by timber types, such as lodgepole pine, Douglas-fir, mixed conifer, spruce, subalpine fir, and limber pine.

The Forest Service's failure to use the Forest Plan definition of old growth, and consequent failures to demonstrate compliance with Forest Plan old growth standards for retention and viability, violates NFMA, NEPA, the Gallatin Forest Plan, the ESA, and the APA.

The Forest Plan has no old growth standards or definition for lodgepole pine. This is allowing the Forest Service to log old growth in violation of NEPA, NFMA and the APA.

Please see the attached paper by Kellett et al. titled, "Forest-clearing to create early-successional habitats:

Questionable benefits, significant costs." They conclude that public land forest and wildlife management programs must be reevaluated to balance the prioritization and funding of early-successional habitat with strong and lasting protection for old-growth and mature forests, and, going forward, must ensure far more robust, unbiased, and ongoing monitoring and evaluation.

Remedy

Withdraw the draft decision and choose the No Action Alternative or write an EIS that fully complies with the law.

Center for Biological Diversity wrote in their comments:

IV. THE FOREST SERVICE ANALYSIS OF WATER QUALITY VIOLATES NEPA.

A. The Forest Service's Reliance on BMPs or Design Features Fails to Comply with NEPA.

The EA dismisses any analysis of the project's impacts on water quality, stating: "The water quality assessment (project record) found that the primary pollutant expected to be produced by project activities (sediment) would have no measurable effect on stream morphology, beneficial uses of surface water, aquatic organisms, or aquatic habitat. Due to effective project design features (Appendix A) the proposed actions would be in compliance with Montana requirements for protection of 303(d) listed impaired water bodies." South Otter Project EA at 8.

The agency's assertion does not absolve its responsibilities under NEPA or other applicable laws such as the Clean Water Act. In other words, use of watershed design features does not automatically equate to minor effects, and the agency's analysis fails to consider or disclose the harmful environmental consequences of both improper implementation of its design features, as well as the potential lack of effectiveness in mitigating resource effects. That is particularly so here given that the project could result in the bulldozing of 168 miles of "temporary" road, reconstruction of an additional 31 miles of road, and the additional 153 miles of motorized trails that would be upgraded. Because the Forest Service fails to demonstrate a history of both proper implementation and effectiveness, it cannot assume that sediment yields cannot possibly have environmental impacts.

When considering how effective best management practices (BMPs) or design features are at controlling nonpoint pollution on roads, both the rate of

implementation, and their effectiveness should both be considered. The Forest Service tracks the rate of implementation and the relative effectiveness of BMPs from in-house audits. This information is summarized in the National BMP Monitoring Summary Report with the most recent data being the fiscal years 2013-2014.[10] The rating categories for implementation are "fully implemented," "mostly implemented," "marginally implemented," "not implemented," and "no BMPs." "No BMPs" represents a failure to consider BMPs in the planning process. More than a hundred evaluations on roads were conducted in FY2014. Of these evaluations, only about one third of the road BMPs were found to be "fully implemented."[11]

The monitoring audit also rated the relative effectiveness of each BMP. The rating categories for effectiveness are "effective," "mostly effective," "marginally effective," and "not effective." "Effective" indicates no adverse impacts to water from projects or activities were evident. When treated roads were evaluated for effectiveness, almost half of the road BMPs were scored as either "marginally effective" or "not effective."[12]

Further, a technical report by the Forest Service entitled, "Effectiveness of Best Management Practices that Have Application to Forest Roads: A Literature Synthesis," summarized research and monitoring on the effectiveness of different BMP treatments for road construction, presence and use.[13] The report found that while several studies have concluded that some road BMPs are effective

at reducing delivery of sediment to streams, the degree of each treatment has not been rigorously evaluated. Few road BMPs have been evaluated under a variety of conditions, and much more research is needed to determine the site-specific suitability of different BMPs. [14] ***Edwards et al. (2016) cites several reasons why BMPs may not be as effective as commonly thought. Most watershed-scale studies are short-term and do not account for variation over time, sediment measurements taken at the mouth of a watershed do not account for in-channel sediment storage and lag times, and it is impossible to measure the impact of individual BMPs when taken at the watershed scale. When individual BMPs are examined, there is rarely broad-scale testing in different geologic, topographic, physiological, and climatic conditions. Further, Edwards et al. (2016) observe: "The similarity of forest road BMPs used in many different states' forestry BMP manuals and handbooks suggests a degree of confidence validation that may not be justified," because they rely on just a single study.*** [15] ***Therefore, ensuring BMP effectiveness would require matching the site conditions found in that single study, a factor land managers rarely consider.***

We also note that many of the BMPs are vague or unenforceable and so unlikely to be 100% effective, if effective at all. For example, BMPs include:

- ***"transportation infrastructure should be designed to maintain natural hydrologic flow paths to the***

extent practicable," South Otter Project EA, Appx. A at 18 (emphasis added), a vague standard;

- *"Care should be taken when plowing snow so as not to include road soil," id., vague and unenforceable;*

- *"Road and trail construction or reconstruction should utilize new technologies to enhance functionality, improve efficiency, reduce resource impacts and reduce costs," id., vague and impossible to understand what impacts it will have because the technologies are nowhere defined; and*

- *"Temporary roads would not enter RMZ's except where necessary," id., Appx. A, at 20, making it impossible to understand the number, location, or concentration of such entries into riparian management zones.*

Climate change will further put into question the effectiveness of many road BMPs.[16] While the impacts of climate will vary from region to region, more extreme weather is expected across the country which will increase the frequency of flooding, soil erosion, stream channel erosion, and variability of streamflow.[17] BMPs designed to limit erosion and stream sediment for current weather conditions may not be effective in the future. Edwards et al. (2016) states, "[m]ore-intense events, more frequent events, and longer duration events that accompany climate change may demonstrate that BMPs perform even

more poorly in these situations. Research is urgently needed to identify BMP weaknesses under extreme events so that refinements, modifications, and development of BMPs do not lag behind the need."[18]

Significant uncertainties persist about BMP or design feature effectiveness as a result of climate change, which compound the inconsistencies revealed by BMP evaluations and demonstrate that the Forest Service cannot simply rely on them to mitigate project-level activities. This is especially relevant where the Forest Service cites use of BMPs or design features, and assumes their success instead of fully analyzing potentially harmful environmental consequences from road design, construction, maintenance or use, in studies and/or programmatic and site-specific NEPA analyses. Moreso, the Forest Service must demonstrate how BMP effectiveness will be maintained in the long term, especially given the lack of adequate road maintenance capacity.

At a minimum, the Forest Service must adjust its analysis to account for the potential failure of its design features as it relates to sedimentation, and must run any modeling without assuming 100% effectiveness. In order to take the requisite hard look NEPA requires, the Forest Service should run the model without BMPs, and then effectiveness at 25%, 50%, 75% and 90% to fully capture the potential for sedimentation. The Forest Service should never assume a 100% effectiveness rate for BMPs or

design features. Doing so violates the hard look NEPA requires.

[1] *40 C.F.R. § 1500.1(b) (1978).*

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

[3] *40 C.F.R. § 1502.9(b) (1978) (requiring agencies to disclose, discuss, and respond to "any responsible opposing view").*

[4] *See Ctr. for Biological Diversity v. U.S. Forest Serv., 349 F.3d 1157, 1168 (9th Cir. 2003) (finding Forest Service's failure to disclose and respond to evidence and opinions challenging EIS's scientific assumptions violated NEPA); Seattle Audubon Soc'y v. Moseley, 798 F. Supp. 1473, 1482 (W.D. Wash. 1992) ("The agency's explanation is insufficient under NEPA – not because experts disagree, but because the FEIS lacks reasoned discussion of major scientific objections."), aff'd sub nom. Seattle Audubon Soc'y v. Espy, 998 F.2d 699, 704 (9th Cir. 1993) ("[i]t would not further NEPA's aims for environmental protection to allow the Forest Service to ignore reputable scientific criticisms that have surfaced").*

[5] *Barnett, K., S.A. Parks, C. Miller, H.T. Naughton. 2016. Beyond Fuel Treatment Effectiveness: Characterizing Interactions between Fire and Treatments in the US. Forests, 7, 237. Attached as Ex. 27.*

[6] Black, S. H., D. Kulakowski, B.R. Noon, and D. DellaSala. 2013. Do Bark Beetle Outbreaks Increase Wildfire Risks in the Central U.S. Rocky Mountains? Implications from Recent Research. Natural Areas Journal, 33(1): 59-65. Attached as Ex. 28. Emphasis added.

[7] Six, D.L., E. Biber, E. Long. 2014. Management for Mountain Pine Beetle Outbreak Suppression: Does Relevant Science Support Current Policy? Forests, 5. Attached as Ex. 29.

[8] Six, D.L., C. Vergobbi, and M. Cutter. 2018. Are Survivors Different? Genetic-Based Selection of Trees by Mountain Pine Beetle During a Climate Change-Driven Outbreak in a High-Elevation Pine Forest. Frontiers in Plant Science, Vol. 9, Article 993. Attached as Ex. 30.

[9] R. Hutto, The Ecological Importance of Severe Wildfires: Some Like It Hot, Ecological Applications, 18(8), 2008, pp. 1827–1834, attached as Ex. 31.

[10] Carlson, J. P. Edwards, T. Ellsworth, and M. Eberle. 2015. National best management practices monitoring summary report. Program Phase-In Period Fiscal Years 2013-2014. USDA Forest Service. Washington, D.C. Attached as Ex. 32.

[11] Id. at 12.

[12] Id. at 13.

[13] Edwards, P.J., F. Wood, and R. L. Quinlivan. 2016. Effectiveness of best management practices that have application to forest roads: a literature synthesis.

General Technical Report NRS-163. Parsons, WV: U.S. Department of Agriculture, Forest Service, Northern Research Station. 171 p. Attached as Ex. 33.

[14] Edwards et al. 2016 (Ex. 33); see also Anderson, C.J.; Lockaby, B.G. 2011. Research gaps related to forest management and stream sediment in the United States. Environmental Management. 47: 303-313. Attached as Ex. 34.

[15] Edwards et al. 2016 (Ex. 33) at 133.

[16] See Edwards et al. 2016 (Ex. 33).

[17] M.J. Furniss et al. (2013). Assessing the vulnerability of watersheds to climate change: Results of national forest watershed vulnerability pilot assessments. USDA PNW Research Station. General Technical Report PNW-GTR-884. Attached as Ex. 35.

[18] Edwards et al. (Ex. 33) at 136.

The Forest Service responded:

The responsible official deemed that the environmental assessment briefly provides sufficient evidence and analysis for determining whether to prepare an environmental impact statement (South Otter EA, Section 3 Analysis Measures and Environmental Effects; Section 5 Finding of No Significant Impact) and has aided in agency's compliance with NEPA.

We disagree and believe the project is in violation of the Clean Water Act, Montana Water Quality Laws and Regulations, the Montana Constitution's requirement to ensure a clean and healthful environment, NEPA, NFMA, and the APA.

Remedy
Withdraw the draft decision and choose the No Action Alternative or write an EIS that fully complies with the law.

Thank you for your time and consideration of our concerns.

Sincerely yours,
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/s/
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