

**CENTER FOR BIOLOGICAL DIVERSITY
WILDEARTH GUARDIANS
ALLIANCE FOR THE WILD ROCKIES
NATIVE ECOSYSTEMS COUNCIL**

April 23, 2021

Objection Reviewing Officer
USDA Forest Service, Northern Region
26 Fort Missoula Rd.
Missoula, MT 59804
Submitted via email to: appeals-northern-regional-office@usda.gov

**Re: OBJECTIONS Pursuant to 36 C.F.R. § 218.8 to
South Plateau Project Draft Decision Notice and Finding of No Significant Impact,
Custer Gallatin National Forest**

To the Objection Reviewing Officer:

The Center for Biological Diversity and WildEarth Guardians, Alliance for the Wild Rockies, and Native Ecosystems Council submit these timely objections to the U.S. Forest Service’s draft decision notice (“Draft DN”), finding of no significant impact (“FONSI”), and final environmental assessment (“Final EA”) for the South Plateau Area Landscape Treatment Project (“South Plateau Project”) on the Hebgen Lake Ranger District of the Custer Gallatin National Forest.

Project Objected To

Pursuant to 36 C.F.R. § 218.8(d)(4), Center for Biological Diversity *et al.* object to the following project:

Project: South Plateau Area Landscape Treatment Project, Hebgen Lake Ranger District, Custer Gallatin National Forest, Gallatin County, Montana

Responsible Official and Forest/Ranger District: Mary Erickson, Forest Supervisor, Custer Gallatin National Forest

Timeliness

These objections are timely filed. Notice of the Draft DN and FONSI was published in the Bozeman Daily Chronicle (the newspaper of record) on March 9, 2021. The March 9 notice constituted a re-initiation of the opportunity to object and cancellation of the February 23, 2021 notice.

Lead Objector

Per 36 C.F.R. § 218.8(d)(3), the Objectors designate the “Lead Objector” as follows:

Edward B. (Ted) Zukoski, Senior Attorney
Center for Biological Diversity
1536 Wynkoop Street, Suite 421
Denver, CO 80202
(303) 641-3149
tzukoski@biologicaldiversity.org

Interests and Participation of the Objectors

The Center for Biological Diversity is a non-profit environmental organization with more than 1.7 million members and online activists who value wilderness, biodiversity, old growth forests, and the threatened and endangered species which occur on America’s spectacular public lands and waters. Center members and supporters use and enjoy the Custer Gallatin National Forest, and the lands of the South Plateau Project area for recreation, photography, nature study, and spiritual renewal.

WildEarth Guardians is a nonprofit conservation organization with offices in six states throughout the western United States. Guardians has more than 182,000 members and supporters across the United States and the world. WildEarth Guardians’ staff, members, and supporters use and enjoy the Custer Gallatin National Forest and the lands within the South Plateau project area. Guardians protects and restores the wildlife, wild places, wild rivers, and health of the American West. For many years, WildEarth Guardians has advocated for the Forest Service to maintain a balance between access, risks, impacts, and costs when managing its road system. Guardians continue to advocate for that balance here. Guardians is also concerned that the Forest Service demonstrates compliance with all federal laws in analyzing this project.

Alliance for the Wild Rockies is a tax-exempt, non-profit public interest organization dedicated to the protection and preservation of the native biodiversity of the Northern Rockies Bioregion, its native plant, fish, and animal life, and its naturally functioning ecosystems. Its registered office is located in Missoula, Montana. The Alliance has over 2,000 individual members, many of whom are located in Montana. Members of the Alliance observe, enjoy, and appreciate Montana’s native wildlife, water quality, and terrestrial habitat quality, and expect to continue to do so in the future, including in the South Plateau Project area.

Native Ecosystems Council is a non-profit Montana corporation with its principal place of business in Three Forks, Montana. Native Ecosystems Council is dedicated to the conservation of natural resources on public lands in the Northern Rockies. Its members use and will continue to use the Custer Gallatin National Forest for work and for outdoor recreation of all kinds, including fishing, hunting, hiking, horseback riding, and cross-country skiing.

The Center and Guardians submitted timely comments on the South Plateau draft environmental assessment (“Draft EA”) on September 15, 2021. Alliance for the Wild Rockies and Native Ecosystems Council submitted separate comments on that date.

Objectors are gravely concerned about this project because it could result in more than 8,300 acres of thinning and 4,600 acres (more than 7 square miles) or more of 20-40 acre clearcuts, and up to 56 miles of road, across the landscape, although the agency fails to reveal where or when those treatments will occur.

OBJECTIONS

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

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

The South Plateau EA purports to be a project-level analysis. The Final EA does not contemplate additional NEPA analysis once analysis of the project 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

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.”² 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.”³ “NEPA promotes its sweeping commitment to ‘prevent or eliminate damage to the environment and biosphere’ by focusing Government and

¹ This action is governed by the Council on Environmental Quality’s 1978 regulations, as amended, and so all references to the CEQ regulations are to those currently in force as of July 14, 2020, unless otherwise noted. 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 Plateau Project NEPA process began before September 2020; the Custer Gallatin NF’s Schedule of Proposed Actions listed the project in January 2020, and a draft EA was issued in August 2020. The Forest Service nowhere alleges it has chosen to apply the 2020 rules to this project. The Draft DN indicates that the Final EA address cumulative impacts which are not a category of impacts that the 2020 CEQ regulations recognize as requiring analysis, indicating the agency applied the 1978 CEQ rules. Draft DN at 14.

² 42 U.S.C. § 4331(a).

³ *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 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.’”).

public attention on the environmental effects of proposed agency action.”⁴ Stated more directly, NEPA’s “‘action-forcing’ procedures . . . require the [Forest Service] to take a ‘hard look’ at environmental consequences”⁵ before the agency approves an action. “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.”⁶ 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.”⁷

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.⁸ 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.”⁹ 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.”¹⁰ 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.”¹¹ “The agency must explain the conclusions it has drawn from its chosen methodology, and the reasons it considered the underlying evidence to be reliable.”¹²

At the project level, as compared to a programmatic decision, the required level of analysis is stringent.¹³ At the “implementation stage,” the NEPA review is more tailored and detailed

⁴ *Marsh v. Or. Natural Res. Council*, 490 U.S. 360, 371 (1989) (quoting 42 U.S.C. § 4321).

⁵ *Metcalf v. Daley*, 214 F.3d 1135, 1141 (9th Cir. 2000) (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348 (1989)).

⁶ *Marsh*, 490 U.S. at 371 (citation omitted).

⁷ *Biodiversity Cons. Alliance v. Jiron*, 762 F.3d 1036, 1086 (10th Cir. 2014) (internal citation omitted).

⁸ *Natural Res. Def. Council v. U.S. Forest Serv.*, 421 F.3d 797, 812 (9th Cir. 2005).

⁹ *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”).

¹⁰ *WildEarth Guardians v. Mont. Snowmobile Ass’n*, 790 F.3d 920, 925 (9th Cir. 2015).

¹¹ *Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 973 (9th Cir. 2006).

¹² *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1075 (9th Cir. 2011) (citation and internal quotation marks omitted).

¹³ See, e.g., *Friends of Yosemite Valley v. Norton*, 348 F.3d 789, 800-01 (9th Cir. 2003).

because the Forest Service is confronting “individual site specific projects.”¹⁴ 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.¹⁵

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.’”¹⁶ “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.”¹⁷ 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.”¹⁸ 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.”¹⁹ 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.²⁰ Indeed, “location, not merely total surface disturbance,

¹⁴ *Forest Ecology Ctr., Inc. v. U.S. Forest Serv.*, 192 F.3d 922, 923 n.2 (9th Cir. 1999).

¹⁵ *WildEarth Guardians v. Montana Snowmobile Ass’n*, 790 F.3d 920, 927 (9th Cir. 2015).

¹⁶ *Id.* at 928 (quoting Methow Valley Citizens Council, 490 U.S. at 349).

¹⁷ *City of Tenakee Springs v. Block*, 778 F.2d 1402, 1407 (citing *California v. Block*, 690 F.2d 753, 765 (9th Cir. 1982)).

¹⁸ *California v. Block*, 690 F.2d 753, 763 (9th Cir. 1982).

¹⁹ *New Mexico ex rel. Richardson*, 565 F.3d at 706.

²⁰ *Id.* at 707.

affects habitat fragmentation,”²¹ and therefore location data is critical to the site-specific analysis NEPA requires. Merely disclosing the existence of particular geographic or biological features is inadequate—agencies must discuss their importance and substantiate their findings as to the impacts.²²

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.²³ 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.”²⁴

The Prince of Wales EIS made assumptions “in order to consider the ‘maximum effects’ of the Project.”²⁵ 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.”²⁶

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*.

²¹ *Id.*

²² *Or. Natural Res. Council Fund v. Goodman*, 505 F.3d 884, 892 (9th Cir. 2007).

²³ *Southeast Alaska Conservation Council v. U.S. Forest Serv.*, 413 F. Supp. 3d 973 (D. Ak. 2019).

²⁴ *See id.* at 976-77 (citations omitted).

²⁵ *Id.* at 977.

²⁶ *Id.*

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.”²⁷

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.”²⁸

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.²⁹ 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.”³⁰

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.”³¹ 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

²⁷ *Id.* at 982 (citations omitted).

²⁸ *Id.* at 983, 984.

²⁹ *Southeast Alaska Conservation Council v. United States Forest Serv.*, 443 F. Supp. 3d 995 (D. Ak. 2020).

³⁰ *Id.* at 1009 (citations omitted).

³¹ *Id.* at 1013.

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.³²

The South Plateau project is a project-level decision.³³ 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 do so precludes informed agency decisionmaking and informed public comment, in violation of NEPA.

B. The Final EA Fails to Disclose the South Plateau 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 Final EA, like the draft, fails to contain much of this data or analysis. Instead, the Forest Service will apparently 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 concluded in *Southeast Alaska Conservation Council*.³⁴

The Final EA states that “[p]roposed activities are designed to be conducted using a phased approach over approximately 15 years. Treatments would be implemented in phases, as determined by specific on the ground conditions and monitoring results.”³⁵ But the EA acknowledges that the Forest Service does not know where or when any particular treatments will take place, and explicitly states that the agency will use condition-based management.

The exact extent and location of treatments to be applied would be determined through the condition-based management approach. During the implementation

³² *Id.* at 1014-15 (internal citations and quotations omitted). 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).

³³ While the EA envisions further site-specific data collection, monitoring, and project design, it does not anticipate or describe any future NEPA analysis or public involvement consistent with that law.

³⁴ The Center for Biological Diversity and WildEarth Guardians raised this issue in their Sep. 15, 2020 comments on the South Plateau Project EA, at pages 14-20.

³⁵ Final EA at 1.

period of this project, the Interdisciplinary Team would survey areas proposed for treatment to determine existing conditions and the appropriate treatment following the Treatment Matrix (Appendix A). Treatment types and location would adhere to the Design Features and Sideboards (Appendix B) which include acreage caps, temporary road limitations, and other resource protection measures.³⁶

While the Final EA contains a map displaying “[p]otential treatment designations,” the EA admits that “[a]ctual treatment prescriptions *may change* based on field verification.”³⁷ The Final EA then describes the proposed action in vague and conditional terms:

Fuels treatments *may* be implemented as primary treatments on their own, or as secondary treatment combined with commercial harvest. Multiple fuels treatments *may* be needed to meet objectives depending on stand conditions. Potential fuels treatments include: prescribed burning (broadcast, understory, piles, jackpotting, etc.), fireline/fuelbreak construction, mastication, lop and scatter of fuels, machine/grapple piling of large accumulations of fuels, hand piling of fuels, thinning of generally small diameter trees, and removal of conifer encroachment from aspen, willows, meadow, and sage communities. Additional restoration/enhancement activities *may* occur in aspen stands, particularly in the Wildland Urban Interface (WUI) where aspen has been shown to be less prone to high intensity burning than surrounding conifer types. These treatments *may* include regeneration techniques, efforts to deter browsing, and removal of competing vegetation.

The means of any treatment described *may* include commercial or non-commercial removal of material and *may* be conducted by hand or machine.³⁸ Timing of treatments would be dependent on field assessments of specific treatment areas the field season *prior to implementation* by the various affected FS specialists.³⁹

Thus, project design will not occur until years *after* the public comment period is over and years after the Forest Service has issued its decision approving the project.⁴⁰ The Forest Service further admits that it has not identified the stand characteristics of about 80% of the project area, leaving such site-specific analysis to a “walkthrough” that can occur a decade after the project has been

³⁶ Final EA at 6.

³⁷ Final EA at 4 (emphasis added) (referring to Figure 3, Final EA at 7).

³⁸ Final EA at 8 (emphasis added).

³⁹ Final EA at 8.

⁴⁰ Further, while some National Forests have proposed to involve the public in post-decisional project design for condition-based management projects, the Custer Gallatin National Forest here has made no provision for such involvement, effectively eliminating all public involvement at the end of this objection process.

approved.⁴¹ Clearcutting would occur over as many as 4,600 acres – over 7 square miles – or nearly 1,000 acres more than that, apparently out of a potential pool of nearly 9,000 acres, but the Forest Service has not identified the location or shape or extent of any these hundreds of 20-40 acre clearcuts.⁴² The “exact acres of each treatment are not known at this time.”⁴³

In understanding environmental impacts, location matters. Here, the Forest Service does not disclose where the 4,600 acres (or more?) of clearcuts will occur, though it maps a far larger area within which they could occur. It is therefore impossible to tell whether clearcuts will be concentrated around previously logged stands (thus leaving larger blocks of less-disturbed habitat) or whether they will be dispersed (such that more of the forest will be directly fragmented by logging). The Forest Service discloses the location of areas damaged by agency-approved logging over the past 40+ years,⁴⁴ but provides neither the public nor the decision-maker with the specific location of clearcuts proposed by the South Plateau Project. This makes it impossible to understand the project’s cumulative effects. The public does not know, because the Forest Service does not disclose, whether impacts will be focused in a particular sub-watershed.

The Final EA attempts to justify this “leap first, look later” approach on the grounds that the “South Plateau meets condition-based management criteria.”⁴⁵ But the Forest Service never explains what these “criteria” might be, which is arbitrary and capricious. The Forest Service appears to justify condition-based management on the grounds that such an approach is:

particularly well suited for large landscapes over which homogeneous management issues require broadscale analysis, consideration of effects, and treatments to be most effective - in this case, the threat of insect and disease infestation to forest diversity and resilience and the risk of wildfire across the South Plateau landscape. In such cases, applying forest management treatments often requires long time periods (commonly 10-15 years), over which time

⁴¹ See Final EA at 12 (asserting that “[e]very stand in the Proposed Action would have a silvicultural walkthrough conducted prior to treatment. Information on forest stand conditions, including insect and disease impacts, would be collected. This data would inform stand diagnosis to determine the appropriate treatment (including deferment) using the Treatment Matrix,” but that of the 39,900-acre project area, only “7,000 acres of stand-level walkthrough and old growth data” has been collected).

⁴² Final EA at 18 (alleging that windthrow impacts “can be minimized by proper location and shape of cutting boundaries”); *see also id.* (“there is a potential to clearcut up to 4,600 acres and thin an additional 15,096 acres across the project area.”). These numbers are at odds with the “projected maximum acres” identified for clearcutting. *Id.* at 6 (identifying “projected maximum acres” for “clearcut harvest” as 5,551 acres). *See also id.* at 57-58 (“8,787 acres of clearcut harvest ha[ve] been preliminarily identified in the project area”); *id.* at 87 (“there are currently 8,787 acres of clearcut proposed in the LAU”).

⁴³ Final EA at 18.

⁴⁴ Final EA at 283-85.

⁴⁵ Final EA at 6.

conditions ‘on-the-ground’ continue to change (for example, trees grow, die, and are attacked by insects and disease). Thus, flexibility in adjusting treatments in response to evolving conditions ‘on-the-ground’ maximizes the likelihood of treatment success, as well as mitigation of effects to other resource concerns.⁴⁶

This justification ignores three things. First, no landscape is “homogenous,” and the South Plateau area is no exception. It has ridges and valleys, slopes that vary by aspect, vegetation communities that vary by soil type and elevation (among many other factors), etc. No flow chart will capture all of these nuances or guarantee a lack of potentially significant impacts.

Second, neither the NEPA statute nor CEQ nor Forest Service regulations implementing that law permit agencies to fail to disclose site-specific impacts on the grounds that “homogeneous management issues require broadscale analysis.” The Forest Service cites no law, policy, caselaw, guidance or any other directive providing for the removal of the core of the NEPA process because of “homogenous management issues.”

Third, NEPA already provides multiple *legal* mechanisms for addressing the issues the agency discusses. CEQ regulations and guidance permit agencies to prepare programmatic NEPA documents where the agency has a need to determine impacts at a “broad or high-level.”⁴⁷ And where conditions change on the ground over time, the agency may pivot promptly by preparing supplemental NEPA analysis.⁴⁸ The invented “condition-based management” approach is sanctioned by neither law nor policy.

⁴⁶ Final EA at 6.

⁴⁷ See Council on Environmental Quality, Effective Use of Programmatic NEPA Reviews (Dec. 18, 2014) at 7, available at https://www.energy.gov/sites/default/files/2014/12/f19/effective_use_of_programmatic_nepa_reviews_18dec2014.pdf (last viewed Apr. 23, 2021).

⁴⁸ The 1978 NEPA regulations require the preparation of supplemental NEPA documents when, *inter alia*, “[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.” 40 C.F.R. § 1502.9(c)(1)(ii) (1978). The 2020 NEPA regs contain similar language. See 40 C.F.R. § 1502.9(d)(1) (2020). See also *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 371 (1989) (“[i]t would be incongruous with [NEPA’s] approach to environmental protection, and with the Act’s manifest concern with preventing uninformed action, for the blinders to adverse environmental effects, once unequivocally removed, to be restored prior to the completion of agency action simply because the relevant proposal has received initial approval.”); *Tri-Valley CAREs v. United States DOE*, 671 F.3d 1113, 1130 (9th Cir. 2012) (applying supplementation requirement to EAs, stating that “NEPA requires supplementation of any NEPA analysis in response to ‘significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.’”); Forest Service Handbook 1909.15, Ch. 18.03 (June 22, 2012) (applying mandate to prepare supplemental NEPA documentation to environmental assessments as well as EISs), available at https://www.fs.fed.us/im/directives/fsh/1909.15/wo_1909.15_10_Environmental%20Analysis.doc (last viewed Apr. 23, 2021).

The Forest Service assumes that various “sideboards” and the use of flow charts will limit the impacts of the project once the project is “laid out on the ground,” despite failing to identify where the clearcuts and thinning treatments would occur.⁴⁹ For example, the EA quantifies impacts to elk security areas from logging and admits that those impacts “would be relatively large,” but then dismisses the impacts because logging would occur over time and the “actual affected acres is expected to substantially decrease due to sideboards, design measures, and other limitations.”⁵⁰

But this assumption – that predicted impacts will be mitigated by project design sideboards – is dangerous and unsubstantiated because the Forest Service admits that it cannot know where and when logging and road building will occur. And if the agency can’t know where logging will occur, it can’t understand or disclose to the public what those impacts will be.

For example, the Final EA predicts potentially significant impacts to pine marten habitat – the degradation of 40% of marten habitat in the project area – due to the “3,175 acres of regeneration harvest [AKA, clearcuts] proposed in suitable marten habitat.”⁵¹ The EA asserts that impacts to marten habitat will be reduced because:

sideboards and design measures would limit the total acreage of regeneration harvest that could occur in the project area (4,600 acre limit in lynx habitat, whereas 7,737 acres are identified as regeneration harvest in lynx habitat)... As approximately 41% of regeneration harvest in lynx habitat would drop to meet NRLMD [North Rockies Lynx Management Direction] Standard VEG S2, effects to marten habitat would also be *expected to decrease to some degree, perhaps proportional to this reduction.*⁵²

This “analysis” is not based on any review of where logging would occur, and so is mere speculation. It is also possible that because 4,600 acres of clearcuts permissible under lynx management direction could occur, that acreage could encompass all, or the vast majority, of the 3,175 acres of suitable marten habitat, resulting in the maximum destruction of marten habitat. This demonstrates why NEPA’s mandate that agencies disclose *site-specific* impacts is so critical, and why the Final EA violates NEPA.

Similarly, in evaluating the impacts of roads on grizzly bears, the EA states “it is unknown what temporary project roads would be in use at what time” and “it is not likely that operations would occur across the project area all at once.”⁵³ If the Forest Service cannot predict when which

⁴⁹ Final EA at 88; *see also id.* at 135 (“sideboards, design measures, and other requirements would reduce the actual acres treated on the ground (and likely reduce the amount of temporary road used to access the units that are treated)”); *id.* at 355 (stating that flow charts at Figures 4-6 in the EA describe the process for evaluating where certain logging will occur).

⁵⁰ Final EA at 138.

⁵¹ Final EA at 158.

⁵² Final EA at 158 (emphasis added).

⁵³ Final EA at 60, 61.

impacts will occur where, it cannot take the mandated hard look at site-specific impacts, nor can it logically conclude that impacts will not be significant.

The Final EA also describes the potential location of new road construction in grizzly habitat in terms that are comically vague:

Up to 56.8 miles of temporary road would be constructed under the Proposed Action to access all of the proposed treatment units in the current stand pool. *Some* project routes would be constructed in areas that are already considered non-secure due to the presence of roads open to the public or administrative use. *Others* would create additional areas of non-secure habitat during implementation, as they would affect areas outside of the 500 meter buffer zones around existing open and administrative routes.⁵⁴

In sum, some roads could be built here, others there; the Forest Service doesn't know where, and won't say where. But the EA promises that wherever the roads might be built, they are certain that they will not harm grizzlies to a significant extent. Any such conclusion is arbitrary and capricious.

Similarly, to address the potential for the project to violate Forest Plan road density standards meant to protect grizzlies, the EA indicates that the agency has two options. The agency could either: (1) drop areas to be logged and roaded; or (2) "treatment and temporary road construction/use would be done in stages."⁵⁵ Either way, the EA concludes, impacts to road density standards would be less than those predicted.⁵⁶ However, impacts to other resources will differ greatly between the two options – building or not building the road. Because the EA fails to provide specific information about where such treatments and road construction would occur, or would not occur, the agency cannot disclose the project's site-specific impacts, violating NEPA.

The EA fails to explain where, when, and in what sequence and spatial relationship any of the roads will be constructed as well as the nature of those road segments (*i.e.*, length, etc.), and their juxtaposition, frankly admitting that: "it is unknown what temporary project roads would be in use at what time."⁵⁷ The Forest Service's approach makes it impossible for the agency to explain or disclose the site-specific impacts of any given road or *combination* of roads.

The EA also indicates that the agency does not know if its proposals to mitigate impacts to grizzlies will work, or what the agency will do if they don't work. The EA states that "[i]f decommissioning techniques [for temporary roads] are not sufficient to prevent future motorized use the Forest Service will implement additional actions if necessary."⁵⁸ With such vague

⁵⁴ Final EA at 58-59 (emphasis added).

⁵⁵ Final EA at 60.

⁵⁶ *Id.*

⁵⁷ Final EA at 60.

⁵⁸ Final EA at 273.

proposals as this, and no description at all of the “additional actions,” the Forest Service cannot possibly understand, mitigate, or disclose to the public the project’s impacts.

Because the Forest Service has neither identified nor surveyed the areas it intends to log, the agency cannot disclose the project’s impacts with accuracy. For example, the EA asserts: “There is a total of 72 acres of potential treatment in the whitebark pine zone within the project area (Nosal 2020). Additional whitebark, if discovered during recon, may be treated in existing mapped units.”⁵⁹ So 72 acres may be logged in whitebark pine stands, or many more acres may be logged if we find them. The agency simply doesn’t know where it will be logging, and so doesn’t know the characteristics of the stands it will log, and can’t disclose the impacts.

The EA’s condition-based management approach fails to provide any sense of the scale or location of logging along sensitive streams. The EA asserts:

A no treatment buffer of 100’ would be applied to perennial fish and perennial non-fish bearing streams in the project area; if treatment would benefit or not negatively impact the riparian area (based on the professional judgment of the fisheries biologist and hydrologist, and in coordination with Montana Trout unlimited), treatment could occur within this buffer. If treatment were to occur, the structure and function of the riparian area (including shade and large woody material inputs) would be maintained.⁶⁰

Thus, logging will be barred within 100 feet of streams, or logging will be allowed right up to the edge of streams, depending on “professional judgment,” a standard that has no sideboards whatsoever. The agency will not disclose in advance which course it will take, or even which streams may be potentially impacted, and the public must simply take the agency’s word that there is no difference in terms of stream (or other resource) impacts between the two options. The Forest Service will consult with a single non-governmental organization and exclude the rest of the public from whatever decision it makes.

The EA also admits that the scale of the project may be modest or many times greater than that, without explaining why or what “conditions” might account for the difference. The Final EA states that it “is estimated that 35,000 – 162,000 CCF of sawtimber would be removed over the course of implementation.”⁶¹ Thus the project could remove 35,000 CCF or it could remove *more than four times that much*.⁶² In short, the Forest Service has little idea not only where or when logging will occur, but how much will occur:

As the project is using a condition-based management approach, the actual volume of timber is estimated at this time. The 35,000+ ccf estimate used is the very lower, conservative end of estimated volume that would be removed under

⁵⁹ Final EA at 55-56.

⁶⁰ Final EA at 56-57.

⁶¹ Final EA at 19-20.

⁶² Final EA at 237, 320.

this analysis. The “+” sign signifies that the actual volume *could* be higher and closer to the 162,418 ccf noted in the Economics section of the analysis.⁶³

The fact that the scale of timber removal is unknown and varies hugely further demonstrates that the Forest Service does not know, and has failed to disclose, the project’s likely impacts.

We agree with the comments of the Montana Department of Natural Resources and Conservation that

to understand the benefits, effectiveness, and impacts of the proposed treatments more details are needed about the size, location, and dispersal of treatments within targeted condition areas. The implementation information in the appendices [to the Draft EA] does not include enough detail to evaluate alternatives and support a decision.⁶⁴

In response to the Department’s comments, the Forest Service flatly refused to provide the requested information, saying that agency wouldn’t know or disclose the size, location, or dispersal of treatments until after the project was approved, and the public eliminated from the process:

The South Plateau Area Landscape Project is using a Condition-Based Management approach; therefore, the exact locations of treatments fuel breaks will be determined during the implementation phase of the project.⁶⁵

Because the Final EA fails to disclose site-specific impacts by identifying where, when, how, and how much, the agency proposes to log forest stands, the Forest Service violates NEPA.

Suggested Remedy. The Custer Gallatin NF should either prepare a new environmental analysis that discloses the project’s site-specific impacts, or confirm that the South Plateau Project EA is a programmatic analysis that will bar any activities implementing the project until the Forest Service completes a subsequent, site-specific NEPA analysis informed by additional public comment.

⁶³ Final EA at 320 (emphasis added).

⁶⁴ Letter of H. Richards, Montana Dep’t of Natural Resources and Conservation to J. Brey, U.S. Forest Service at 1-2 (Sep. 16, 2020), available at https://cara.ecosystem-management.org/Public/DownloadCommentFile?dmdId=FSPLT3_5351990 (last viewed Apr. 23, 2021) (in South Plateau project file).

⁶⁵ Final EA at 329.

II. THE SOUTH PLATEAU PROJECT FAILS TO COMPLY WITH PLAN STANDARDS AND THE EA FAILS TO DISCLOSE THE PROJECT'S IMPACTS ON GRIZZLIES.

The South Plateau Project lies within the Madison #2, Henry's #2, and Plateau #1 Bear Management Unit subunits.⁶⁶ The entire project area provides suitable habitat for and is well-used by grizzly bears, including grizzly bears of both sexes and all age classes.⁶⁷ The EA admits that the project may have negative impacts on grizzly bears, including that it may: reduce denning habitat; reduce secure habitat; reduce thermal, resting and security cover for bears; cause a temporary increase in total motorized access route density ("TMARD"); permanently increase open motorized access route density ("OMARD"); and increase the risk in displacement and mortality, largely due to an increase in roads and associated human presence.⁶⁸

A. The Project Does Not Comply with Forest Plan Standards for Grizzly Bear.

In implementing the South Plateau Project, the Forest Service must comply with the National Forest Management Act ("NFMA") and its implementing regulations. NFMA requires the Forest Service to ensure that site-specific management projects are consistent with the applicable forest plan.⁶⁹ Thus, the Forest Service must ensure that all aspects of the proposed action comply with the Gallatin National Forest Land Management Plan ("Forest Plan").

The 2015 Gallatin Forest Plan contains numerous standards regarding how forest management activities may impact grizzly bears and grizzly bear habitat. For example, the Forest Plan provides that "the total acreage of secure habitat affected within a given Bear Management Unit will not exceed 1 percent of the acreage in the largest subunit within that Bear Management Unit."⁷⁰ The Forest Service alleges that it will comply with this standard by coordinating with adjacent Forests and taking one of several options laid out, determining which option it will follow at some later date in time.⁷¹ In response to comments on this issue, the Forest Service merely states that impacts would be limited due to the requirement to impact no greater than 1% of secure habitat below baseline.⁷² As written, the EA provides no substantial evidence by which the public can determine whether the Forest Service's approval of the South Plateau Project would comply with this Forest Plan mandatory standard. Thus, the approval of this Project must be set aside as arbitrary and capricious.

The Forest Plan also provides the following standard:

⁶⁶ Final EA at 47.

⁶⁷ Final EA at 49.

⁶⁸ See FINAL EA at 45-47, Table 15; *id.* at 51.

⁶⁹ 16 U.S.C. § 1604(i).

⁷⁰ Forest Plan at G-3.

⁷¹ Final EA at 59-60.

⁷² Final EA at 340.

Use of project roads will be limited to administrative purposes associated with project activities. Project implementation shall not reduce secure habitat below baseline levels for more than 4 consecutive years. The collective set of project roads that affect secure habitat below baseline levels shall be closed to all motorized travel after 3 years. Project roads shall be decommissioned such that secure habitat is restored within 1 year after road closure.⁷³

The Final EA states that “[a]ll temporary project roads that would impact secure habitat below baseline in the Henry’s Lake #2 and Madison #2 Subunits would be in compliance with this standard.”⁷⁴ However, the Final EA admits that “it is unknown what temporary project roads would be in use at what time,” and alleges that if all temporary roads were constructed and used at the same time, the total motorized access route density—one measure for determining secure habitat—would temporarily be 0.9% above the 1998 level 3.5% above the baseline level from 2019 in the Plateau #1 Subunit.⁷⁵

In fact, according to the Final EA, vegetative treatments will raise baseline levels by 6.8% in the Henry’s Lake #2 Subunit, by 0.6% in the Madison #2 Subunit, and by 3.5% in the Plateau #1 Subunit from 2019 levels.⁷⁶ Contradictorily, the Final EA states that:

Table 39 [sic] below shows the project impacts on TMARD in the three affected Subunit. TMARD would increase from 0.6% to 6.8% in the affected Subunits, assuming that all of the proposed temporary project roads would be constructed and used at the same time. This would not be the case in the Henry’s Lake #2 Subunit, as the Forest Plan and Conservation Strategy Application Rules for temporary impacts to secure habitat below baseline limit the temporary impacts to secure to one percent of the acreage of the largest Subunit in the Bear Management Unit. As either treatment (and associated temporary project roads) would be dropped, or treatment and temporary road construction/use would be done in stages, impacts to TMARD are expected to be less than displayed in Table 23.⁷⁷

The Forest Service essentially shows that the TMARD in the Henry’s Lake #2 Subunit could increase by 6.8% from 2019 levels depending on how the project is implemented, then says because that would violate the law, the public can rest assured the Forest Service will be mindful of the law during implementation. This is precisely why NEPA requires the Forest Service to disclose all site-specific impacts *before* project approval. Finally, the Final EA not only fails to

⁷³ Forest Plan at G-3.

⁷⁴ Final EA at 60.

⁷⁵ Final EA at 60-61. The Final EA states that “[t]here is no baseline level for TMARD; the 1998 level is provided for context.” Final EA at 61, Table 23. It is unclear that there is no baseline level for TMARD. If this is because the 2006 Travel Plan has not been fully implemented, then the Forest Service must use the current (2019) baseline to assess compliance.

⁷⁶ Final EA at 61, Table 23.

⁷⁷ Final EA 60.

provide substantial evidence that temporary project roads in the Plateau #1 Subunit would comply with this Forest Plan standard, but never even asserts anticipated compliance. This fails to comply with NFMA.

Comments on the draft EA asserted that because Henry's Lake #2 and Madison #2 were identified as in need of improvement, these subunits must be maintained at or above levels attained from full implementation of the 2006 Gallatin National Forest Travel Management Plan.⁷⁸ While this may be true, the EA fails to disclose what the baseline was at full implementation of the travel management plan, and thus there is no way to assess whether these subunits are in compliance with that agreement. Moreover, because these subunits were identified as "in need of improvement," projects such as the South Plateau project that contemplates 56.8 miles of temporary roads should not be on the table.

The Forest Plan also provides that "[o]nly one project affecting secure habitat may be active within any Bear Management Subunit at any one time."⁷⁹ The Final EA notes that a portion of the South Plateau project and a portion of the North Hebgen project both lie within the Madison #2 Subunit.⁸⁰ The Forest Service assures the public that "[a]ctivities on this project will be coordinated to ensure that impacts to secure habitat below baseline on the North Hebgen Project are complete and temporary roads affecting secure [sic] effectively decommissioned prior to activities affecting secure habitat below baseline in the Madison #2 Subunit within the South Plateau project area being implemented."⁸¹ But with no specifics as to when and where the South Plateau project will be implemented, it is impossible for the public to determine whether and how the Forest Service will comply with this standard. Commenters noted that the North Hebgen project was approved in 2017 and scheduled to be implemented over an 8-12 year period, while the South Plateau Project may be implemented over a 15-year period.⁸² Thus, without substantial evidence, the Forest Service cannot rationally assume project implementation of the South Plateau and the North Hebgen projects in the Madison #2 Subunit may not overlap.

In response, the Forest Service wrongly asserts that "[t]he commenter is assuming that all activities that are proposed are occurring in Secure habitat and that secure habitat would be temporarily reduced below the baseline for the life of the project."⁸³ This is simply untrue. But it is true that neither the public nor the Forest Service can predict what proposed activities will occur in secure habitat because the Forest Service provides no site-specific information on the project. The Forest Service goes on to state that "[c]onceivably, the projects may overlap spatially (within the same Subunit) for up to 8 years (up to 4 years for each project, non-concurrently), but activities affecting secure habitat below the baseline would have no temporal

⁷⁸ See NPCA comments (Sep. 15) at page 7.

⁷⁹ Forest Plan at G-3.

⁸⁰ Final EA at 59.

⁸¹ *Id.*

⁸² See comments of Center for Biological Diversity and WildEarth Guardians (Sep. 15, 2020) at 27-28.

⁸³ EA at 333.

overlap.”⁸⁴ However, aside from the Forest Service’s “trust us we will comply” approach and the vague repetition of legal requirements in Appendix B, the Final EA contains nothing to support the agency’s assertion that the project will in fact comply with this Forest Plan standard.

B. The Forest Service Fails to Take a Hard Look at Impacts to Grizzly Bears, Violating NEPA.

As the Final EA admits, the South Plateau project is likely to negatively impact grizzly bears in and around the project area. However, the Forest Service fails to take a hard look at numerous impacts from this project on grizzly bears and grizzly bear habitat.

First, the Forest Service’s failure to acknowledge and analyze the project area as an important connectivity corridor for grizzly bears is a particularly glaring omission. Commenters noted that the EA failed to address the importance of the Henry’s Lake area as a connectivity corridor for bears and other wildlife, violating NEPA’s hard look requirements.⁸⁵ In response, the Forest Service feigns ignorance, essentially denying that this area has been identified as an important connectivity corridor for grizzly bears to potentially move from the Greater Yellowstone Ecosystem to the Selway-Bitterroot Recovery Zone, which currently has no resident bear population.⁸⁶ But the Henry’s Fork area *does* provide a clear connection to the Centennials and into the Selway-Bitterroot Recovery Zone from the Greater Yellowstone Ecosystem. Numerous scientific reports confirm the long-standing importance of the Henry’s Fork corridor, and the Forest Service’s failure to review such reports demonstrates its failure to take a hard look at the project’s impacts.⁸⁷ The fact that the Forest Service manages these lands and attempts to argue that it has no knowledge of the area being an important migration corridor for grizzly bears and other wildlife is ignorant at best, a blatant misrepresentation at worst. Whatever the Forest Service’s motives, the agency has not taken the hard look required by NEPA as to the South Plateau Project’s impacts on this important connectivity corridor.

⁸⁴ *Id.*

⁸⁵ The Center for Biological Diversity and WildEarth Guardians raised this issue in their Sep. 15, 2020 comments on the South Plateau Project EA, at page 27.

⁸⁶ Final EA at 332.

⁸⁷ See Carroll, Carlos, Reed F. Noss & Paul C. Paquet. 2001. Carnivores as Focal Species for Conservation Planning in the Rocky Mountains. *Ecological Applications* 11(4): 961-980, attached as Ex. 1; Carroll, Carlos, Reed F. Noss, Paul C. Paquet & Nathan H. Schumaker. 2003. Use of Population Viability Analysis and Reserve Selection Algorithms in Regional Conservation Plans. *Ecological Applications* 13(6): 1773-1789, attached as Ex. 2; Merrill, Troy & David Mattson. 2003. The Extent and Location of Habitat Biophysically Suitable for Grizzly Bears in the Yellowstone Region. *Ursus* 14(2): 171-187, attached as Ex. 3; Schwartz, Charles C., Mark A. Haroldson & Gary C. White. 2010. Hazards Affecting Grizzly Bear Survival in the Greater Yellowstone Ecosystem. *Journal of Wildlife Management* 74(4): 654-667, attached as Ex. 4; Walker, Richard & Lance Craighead. 1997. Analyzing Wildlife Movement Corridors in Montana Using GIS, attached as Ex. 5.

Second, the EA fails to disclose how increasing route densities above the current on-the-ground baseline will impact grizzly bears and grizzly bear habitat. The Ninth Circuit has recognized that “[e]stablishing appropriate baseline conditions is critical to any NEPA analysis.” *Great Basin Res. Watch v. Bureau of Land Mgmt.*, 844 F.3d 1095, 1101 (9th Cir. 2016). Indeed, “[w]ithout establishing *the* baseline conditions which exist before a project begins, there is simply no way to determine what effect the project will have on the environment and, consequently, no way to comply with NEPA.” *Id.* (quoting *Half Moon Bay Fishermans’ Mktg. Ass’n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988)). Here, the Final EA provides the 2019 condition but provides no analysis as to the impacts of increasing route densities above the 2019 conditions. This does not comply with NEPA’s hard-look mandate.

Additionally, the Final EA does not clarify whether road closures during and especially after project implementation will be effective to prevent illegal motorized use. While the Forest Service plans to use gates, barricades, or earthen barriers to close temporary roads during project implementation, it appears that after project implementation the agency plans to solely recounter the roads and seed the areas, though of course it may take years for those seeds to germinate and properly cover the roads in vegetation. The Forest Service seems to admit that such closure mechanisms may not be effective, stating that “[i]f decommissioning techniques are not sufficient to prevent future motorized use the Forest Service will implement additional actions if necessary.”⁸⁸ It is difficult for the public to understand the potential impacts of potentially ineffective road closures because without the required site-specific information, the public has no information as to where the roads will be.

In response to comments raising this issue, the Forest Service noted that during the project, the roads would be signed and barricaded when not in use, which seems to suggest that they will only be barricaded once the Forest Service has finished using them.⁸⁹ A sign is likely to be ineffective in preventing illegal use. Moreover, the Forest Service stated that after project implementation, roads would be closed and rehabilitated, and obliterated if needed.⁹⁰ The Final EA does not explain how the Forest Service will determine if obliteration is needed.

The Forest Service has not provided substantial evidence to demonstrate that simply signing temporary roads during project implementation will prevent illegal use, and if roads are only recontoured and seeded following project implementation, it is unlikely such closures would be effective to prevent illegal use into the future. Having failed to consider the likelihood that illegal use would occur during and after project implementation, the Forest Service failed to take the hard look that NEPA requires.

The Forest Service has also failed to adequately analyze the cumulative impacts of the South Plateau project together with the North Hebgen project, which may overlap in some areas. In response to comments raising this issue, the Forest Service simply states that the Hebgen Lake Ranger District has been in communication with adjacent Forest Service units to ensure that

⁸⁸ Final EA at 273.

⁸⁹ Final EA at 337.

⁹⁰ Final EA at 337.

activities within these units are consistent with Forest Plan standards and ESA obligations.⁹¹ This is not a cumulative impacts analysis; NEPA requires more to satisfy its hard-look standard. For example, the Forest Service should consider how grizzly displacement and mortality may be impacted by the North Hebgen project on top of the South Plateau project. Additionally, the Forest Service should consider how the removal of cover from both projects may cumulatively impact bear suitable habitat, including bedding and denning habitat. The mere fact of coordination with another Ranger District does not apprise the public of these projects' cumulative impacts, and thus does not satisfy NEPA.

Finally, the Forest Service's conclusion that the project's impacts on grizzly bears will not be significant is not supported by the record. The EA acknowledges that the project is likely to negatively impact grizzly bears, including a reduction in denning habitat; a reduction in secure habitat; a reduction in thermal, resting and security cover for bears; a temporary increase in TMARD; a permanent increase in OMARD; and an increased risk in displacement and mortality, largely due to an increase in roads and associated human presence.⁹² In fact, the Forest Service concludes that the project is "likely to adversely affect" grizzly bears "because there would be disturbance and displacement of individuals and an increased mortality risk associated with increased human presence in the area."⁹³ In response to comments raised regarding the potential significant impacts to grizzly bears, the Final EA simply directs readers to read the analysis of effects in the Wildlife Report and EA.⁹⁴ But, as demonstrated, these documents do not support a finding of no significance, and an EIS is therefore required.

Suggested Remedy. The Custer Gallatin NF must provide substantial evidence, based on site-specific analysis, to demonstrate that the Project complies with all relevant Forest Plan standards. The Forest Service should also complete additional NEPA analysis in an EIS to take a hard look at the project's impacts on grizzly bears, including its impact on connectivity corridors, the effectiveness of route closures, and the cumulative effects of the South Plateau Project together with the North Hebgen project.

III. THE FINAL 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

⁹¹ Final EA at 341-42.

⁹² See Final EA at 45-47, Table 15; *id.* at 51.

⁹³ Final EA at 336.

⁹⁴ Final EA at 331.

that will result from 1.5 degrees Celsius of warming.⁹⁵ More recent 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.⁹⁶ 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.⁹⁷

Objectors raised the issue of the EA's climate change analysis in our letter on the draft environmental assessment.⁹⁸ Further, new information concerning climate change, especially guidance and new administration policy from the last four months, has arisen since the close of the EA comment period.

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.

⁹⁵ 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. 6.

⁹⁶ 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. 7.

⁹⁷ 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. 8.

⁹⁸ See Center for Biological Diversity and WildEarth Guardians' Sep. 15, 2020 comments on the South Plateau Project EA, at pages 28-33.

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.*⁹⁹

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.”¹⁰⁰ Pres. 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.¹⁰¹

Addressing the need for the accurate assessment of climate costs, Pres. 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.”¹⁰² 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.*¹⁰³

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.¹⁰⁴ The President

⁹⁹ Executive Order 13,990, 86 Fed. Reg. 7037 (Jan. 20, 2021) at Sec. 1 (emphasis added), attached as Ex. 9.

¹⁰⁰ Executive Order 14,008, 86 Fed. Reg. 7619 (Jan. 27, 2021), attached as Ex. 10.

¹⁰¹ *Id.* at 7622 (Sec. 201) (emphasis added).

¹⁰² Executive Order 13,990 (Ex. 9), 86 Fed. Reg. at 7040, Sec. 5(a) (emphasis added).

¹⁰³ *Id.* (emphasis added).

¹⁰⁴ *Id.*, Sec. 5(b).

directed the Working Group to publish interim values for the social cost of carbon by February 19, 2021.¹⁰⁵ The Working Group that month set that price at \$51/ton at a 3% discount rate.¹⁰⁶ 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.¹⁰⁷

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*

¹⁰⁵ *Id.*, Sec. 5(b)(ii)(A).

¹⁰⁶ 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 Apr. 23, 2021) and attached as Ex. 11.

¹⁰⁷ *Id.* at cover page, 14.

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.¹⁰⁸ 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

¹⁰⁸ Notice available at 81 Fed. Reg. 51,866 (Aug. 5, 2016); full guidance attached as Ex. 12, and available at https://ceq.doe.gov/docs/ceq-regulations-and-guidance/nepa_final_ghg_guidance.pdf (last viewed Apr. 23, 2021).

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.¹⁰⁹

The guidance further specifies that estimating GHG emissions is appropriate and necessary for actions such as federal logging projects.

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.¹¹⁰

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.¹¹¹

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.¹¹² 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.¹¹³

¹⁰⁹ *Id.* at 16 (citations omitted).

¹¹⁰ *Id.* at 26 (citations omitted).

¹¹¹ *Id.* at 18.

¹¹² Executive Order 13,990 (Ex. 9), Sec. 7(e), 86 Fed. Reg. at 7042.

¹¹³ 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

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 & Enft*, 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 & Enft*, 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).¹¹⁴

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

The South Plateau Project Draft EA based its analysis of the project’s climate impacts on a “carbon report” prepared for another forest in the Northern Region that addressed no scientific studies since 2013. In response to comments criticizing that analysis, the Final EA abandons the old carbon reports, relies on a new report completed in 2021, and, for the first time, purports to rely on the programmatic analysis on climate prepared for the 2020 Custer Gallatin Forest Plan Revision Final EIS.

None of these documents –the Final EA, the 2021 Climate Change Report, or the Plan Revision Final EIS – take the hard look at the South Plateau Project’s climate impacts that NEPA requires. None quantifies the South Plateau 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.

Ex. 13, and available at <https://www.govinfo.gov/content/pkg/FR-2021-02-19/pdf/2021-03355.pdf> (last viewed Apr. 23, 2021).

¹¹⁴ *See also* CEQ, 2016 NEPA Climate Guidance (Ex. 12) at 32-33 (noting the appropriateness of monetizing climate impacts).

1. The Forest Service fails to disclose and quantify the South Plateau Project’s impact on carbon storage.
 - a. The Forest Service ignores applicable guidance.

Both the 2021 Climate Change Report and the Final EA assert that “[t]here are no applicable legal or regulatory requirements or established thresholds concerning management of forest carbon or greenhouse gas emissions.”¹¹⁵ This ignores that CEQ effectively reinstated the 2016 GHG guidance in February 2021.¹¹⁶ In light of the guidance’s reinstatement, the agency’s statement that there are no applicable regulatory requirements concerning management of forest carbon is misleading at best.

As described above, the 2016 CEQ guidance contains specific direction concerning how agencies should analyze climate impacts from site-specific forest management projects (using the example of “a prescribed burn”) that the agency ignored.

- b. South Plateau Project logging will degrade carbon stores.

The South Plateau 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.

The Forest Service acknowledges that the project area’s forests “are currently acting as carbon sinks,” meaning they are storing more carbon than they are emitting.¹¹⁷ Science makes clear that the South Plateau 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 Plateau Project targets larger and older lodgepole pine for clearcutting. The project is aimed at removing mature lodgepole because the project assumes that such trees are susceptible to mountain pine beetle, rendering the area at high risk of infestation.¹¹⁸ Project prescriptions call for the clearcutting of lodgepole over 80-90 years old and 6 inches diameter at breast height (dbh) whether in the wildland urban interface or outside of it.¹¹⁹ Further, the EA admits that between 3,500 and nearly 5,900 acres of stands 10 inches dbh or greater – the largest, oldest trees

¹¹⁵ Final EA at 253; 2021 Climate Change Report at 2. See also Custer Gallatin NF Forest Plan Revision FEIS (2020) at 299.

¹¹⁶ CEQ, NEPA Guidance on Consideration of Greenhouse Gas Emissions (Feb. 19, 2021) (Ex. 13).

¹¹⁷ Final EA at 254.

¹¹⁸ Final EA at 14 (alleging that one factor making a lodgepole stand at “high hazard” for beetle infestation is “when dbh [diameter at breast height] is 8 or more inches,” that is when a tree is more than 2 feet in diameter).

¹¹⁹ Final EA at 258 (Appendix A).

– are likely to be clearcut.¹²⁰ The project will also remove all “overstory” trees – the tallest and thus likely the oldest – other than Douglas fir in certain mixed conifer stands.¹²¹ Up to 14,000 acres of forest (nearly 22 square miles) will be subject to commercial thinning, non-commercial thinning, or clearcutting.¹²²

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).”¹²³ 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.”¹²⁴ According to a 2019 IPCC report, deforestation causes climate pollution, and avoiding deforestation will reduce climate pollution.¹²⁵

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

¹²⁰ Final EA at 154.

¹²¹ Final EA at 259 (Appendix A).

¹²² Final EA at 6.

¹²³ Forest Service, Tongass Land and Resource Management Plan, Final EIS (2016) at 3-14, excerpts attached as Ex. 14.

¹²⁴ 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. 15.

¹²⁵ Intergovernmental Panel on Climate Change, *Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse gas fluxes in Terrestrial Ecosystems, Summary for Policymakers* (Aug. 2019) at 7, 23, attached as Ex. 16. See also B. Law et al., *Land use strategies to mitigate climate change in carbon dense temperate forests*, *Proceedings of the Nat’l Academy of Sciences*, vol. 115, no. 14 (Apr. 3, 2018) at 3663 (“Proven strategies immediately available to mitigate carbon emissions from forest activities include ... reducing emissions from deforestation and degradation.”), attached as Ex. 17.

previously identified for temperate and boreal forests, while also promoting ecosystem resilience and the maintenance of biodiversity.¹²⁶

This study was funded in part by the USDA. The coarse-scale map provided with the study indicates that there may be forest stands in the South Plateau Project area that are rated as “medium” for preservation to mitigate climate change.¹²⁷ Even those forests ranked as “low” for carbon storage sequester significant amounts of carbon.¹²⁸

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.”¹²⁹ 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.*¹³⁰

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

¹²⁶ 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 Apr. 23, 2021), and attached as Ex. 18. The Final EA, at 299, attempts to discredit the relevance of this study by arguing that it “indicates forests in Montana to be ranked in low carbon priority due to lower carbon sequestration potential. ‘Climate suitability for tree mortality from mountain pine beetles is projected to increase in some high-elevation whitebark pine forests which we ranked with low carbon priority due to lower carbon sequestration potential, or medium to high vulnerability to future drought or fire’ (page 8).” The vast majority of stands the South Plateau Project proposes to log are lodgepole, not whitebark pine. The Buotte study does not mention lodgepole pine. The map in Buotte, at 4, shows there may be stands in the project area ranked medium or high for carbon priority. And simply because the forests are ranked as a “low” priority does not mean they have zero value for carbon storage.

¹²⁷ *Id.* at 4 (Figure 1).

¹²⁸ *Id.* at 5 (Table 1).

¹²⁹ 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. 19.

¹³⁰ 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. 20.

*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).*¹³¹

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.*¹³²

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).”¹³³

Despite the fact that logging within the South Plateau Project area will remove vast swaths of forest, the Forest Service declines to quantify the climate impacts, makes invalid comparisons contrary to current guidance and caselaw, and comes up with a variety of excuses for why the impacts on carbon storage will be “minimal,” “negligible,” or too difficult to determine. The agency’s failure to quantify the climate impacts of the project is arbitrary and capricious.

- c. The Forest Service may not dismiss the impacts to carbon stores as “minimal” or “negligible.”

The Forest Service’s discussion of the South Plateau Project’s climate impacts repeatedly dismisses them as “negligible,” “minimal,” or “infinitesimal,” and compares them to total global emissions. For example, the Final EA states:

¹³¹ B. Law, et al., The Status of Science on Forest Carbon Management to Mitigate Climate Change (June 1, 2020), attached as Ex. 21.

¹³² 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. 22, 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 Apr. 23, 2021).

¹³³ B. Law, et al., The Status of Science on Forest Carbon Management (Ex. 21) (emphasis added).

In the context of *global atmospheric carbon dioxide (CO₂)*, even the maximum potential forest management levels described by the Forest Plan alternatives *would have a negligible effect on global emissions and climate* (FEIS for the 2020 Land Management Plan Custer Gallatin National Forest).¹³⁴

The Final EA also avers that “[t]he action alternatives would *not have a discernable impact* on atmospheric concentrations of greenhouse gases or global warming, considering the limited changes in both rate and timing of carbon flux.”¹³⁵ Any changes to carbon storage, the EA alleges, “would be localized and *infinitesimal* in relation to the role the world’s forests play in climate change and indistinguishable from the effects of not taking the action.”¹³⁶

Even at the Forest Plan level, the Forest Service’s EIS (upon which the South Project EA relies) dismisses impacts of management action on climate as “negligible” by comparing them to global emissions.¹³⁷

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 Plateau Project EA and the Custer Gallatin Forest Plan:

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....¹³⁸

¹³⁴ Final EA at 253. *See also id.* at 255 (“Because the potential direct and indirect effects of alternatives would be *negligible*, the contribution of the proposed actions to cumulative effects on global atmospheric greenhouse gas concentrations and climate change would also be *negligible*.” (emphasis added)).

¹³⁵ Final EA at 255 (emphasis added).

¹³⁶ Final EA at 300 (emphasis added).

¹³⁷ Custer Gallatin NF Forest Plan Revision FEIS (2020) at 306 (“All plan alternatives are projected to contribute *negligibly* to overall greenhouse gas emissions.” (emphasis added)); *id.* at 303 (“[E]ven 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)).

¹³⁸ CEQ, 2016 NEPA Climate Guidance (Ex. 12) at 11.

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, 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" or "minimal" in comparison to "the role the world's forests play in climate change" 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 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. *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 Plateau Project—when viewed in isolation—may only result in a relatively minor climate impacts, 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). Thus, the Forest Service may not blithely dismiss and deny the climate impacts of the South Plateau 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, and the Final EA's statement declaiming that any guidance exists concerning GHG emissions from management of forest carbon, the Forest Plan Revision analysis of climate impacts appears to rely in part on guidance entitled "Climate Change Considerations in Project Level NEPA Analysis" to avoid analyzing and disclosing the South Plateau Project's climate change impacts.¹³⁹ The Climate Change

¹³⁹ See Custer Gallatin NF Forest Plan Revision FEIS (2020) at 303, citing Forest Service, Climate Change Considerations in Project Level NEPA Analysis (January 13, 2009), attached as Ex. 23, and available at

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 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. 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.”¹⁴⁰

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 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.*”¹⁴¹ 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.

- d. The Forest Service’s assertions of the carbon benefits of logging contradict best available science.

The Forest Service bases its dismissal of the South Plateau Project’s climate impacts as “negligible” in part on the assumption that the up-to 180,000 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. 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 Final EA states that “[c]arbon can also be transferred and stored outside of the forest ecosystem in the form of wood products, further influencing the amount of carbon entering the

https://www.fs.fed.us/emc/nepa/climate_change/includes/cc_nepa_guidance.pdf (last viewed Apr. 23, 2021).

¹⁴⁰ See <https://www.fs.usda.gov/ccrc/tool/forest-vegetation-simulator-fvs> (last viewed Apr. 23, 2021).

¹⁴¹ Executive Order 14,008 (Ex. 10) (emphasis added).

atmosphere,” citing studies completed before 2015.¹⁴² The Forest Plan Revision FEIS (upon which the Final EA relies) further alleges that “there is a *potential* substitution effect, whereby wood can effectively offset additional emissions by being used in place of more emissions-intensive materials, such as concrete and steel.”¹⁴³

The Forest Service also asserts 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.¹⁴⁴

None of these assertions is well founded.

First, contrary studies unaddressed by the Forest Service (in violation of 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

¹⁴² Final EA at 254; South Plateau Climate Change Report at 2-3 (same). *See also* Final EA at 302 (“A portion of the carbon removed would remain stored for a period of time in wood product,” citing two studies more than a decade old); Custer Gallatin NF Forest Plan Revision FEIS (2020) at 305 (all alternatives will “[u]se harvested wood for valuable and renewable products to store carbon over the long-term and substitute for energy-intensive materials or fuels, reducing the net carbon emissions into the atmosphere,” citing studies a decade old or older); Custer Gallatin NF Forest Plan FEIS, Appendix F (2020) at 18 (“harvesting and use of harvested wood products can play an important role in reducing carbon emissions.”).

¹⁴³ Custer Gallatin NF Forest Plan FEIS, Appendix F (2020) at 17 (emphasis added). *See also id.* at 18 (“Also, 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. For example, when a wood beam is used in place of a steel beam, which requires much more energy to produce.”).

¹⁴⁴ Custer Gallatin NF Forest Plan FEIS, Appendix F (2020) at 18.

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 years¹⁴⁵

Second, additional studies conclude that the extent to which carbon benefits can be realized from leaving forests standing depends on a variety of factors, none of which the Forest Service evaluated here:

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.¹⁴⁶

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 talking points to the contrary vastly overestimate the carbon benefits of using wood.¹⁴⁷ 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. 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*

¹⁴⁵ 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. 24, 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 Apr. 23, 2021).

¹⁴⁶ 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. 25, available at https://www.researchgate.net/publication/350511044_Wood_product_carbon_substitution_benefits_a_critical_review_of_assumptions (last viewed Apr. 23, 2021).

¹⁴⁷ See M. Harmon, Have product substitution carbon benefits been overestimated? A sensitivity analysis of key assumptions, *Environmental Research Letters* (2019), attached as Ex. 26, and available at <https://iopscience.iop.org/article/10.1088/1748-9326/ab1e95/pdf> (last viewed Apr. 23, 2021) ("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.").

once the forest is logged (IPCC, 2018).¹⁴⁸ 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 increase carbon emissions over the next century as the South Plateau 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.”¹⁴⁹ 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*.¹⁵⁰

The Forest Service fails to disclose in the South Plateau Final EA that its proposal to reduce the risk of beetle infestation 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.

- e. 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 South Plateau Project EA 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 (Vose et al. 2018), making it challenging to use past trends to

¹⁴⁸ B. Law, *et al.*, The Status of Science on Forest Carbon Management (Ex. 21) (emphasis added).

¹⁴⁹ Custer Gallatin NF Forest Plan FEIS, Appendix F (2020) at 18.

¹⁵⁰ Custer Gallatin NF Forest Plan Revision FEIS, Appendix F (2020) at 19 (emphasis added).

project the effects of disturbance and aging on forest carbon dynamics.”¹⁵¹ 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.¹⁵²

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.¹⁵³ This is precisely the type of analysis the Forest Service should, and could, have undertaken for South Plateau Project EA.

Similarly, Dr. DellaSala’s 2016 report addressed carbon stores from wood products and concluded that logging Tongass old-growth forest under the 2016 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.¹⁵⁴ 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.¹⁵⁵ Because agencies and academics have quantified and compared the carbon emissions of alternative logging proposals, NEPA requires the Forest Service to do so here.

¹⁵¹ Final EA at 255.

¹⁵² Final EA at 356. *See also* Custer Gallatin NF Forest Plan FEIS at 303 (same).

¹⁵³ *See Law et al., Land use strategies* (Ex. 17) 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.”).

¹⁵⁴ DellaSala (Ex. 15) at 14.

¹⁵⁵ *See* Bureau of Land Management, Western Oregon Proposed RMP Final EIS (2009) at 165-181, excerpts attached as Ex. 27.

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 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.*¹⁵⁶

The guidance further specifies that estimating GHG emissions is appropriate and necessary for actions such as individual federal forest projects.¹⁵⁷

The Forest Service tries another tactic to avoid quantifying the project’s impact on climate stores and pollution, alleging that the Custer Gallatin Forest Plan Revision did the job. The Forest asserts:

The Custer Gallatin National Forest is the most appropriate scale for analyzing carbon cycling, carbon emissions, carbon storage, and their associated effects. Analysis at a smaller scale can result in inaccurate results because the carbon balance of an individual stand fluctuates cyclically over time between carbon

¹⁵⁶ CEQ, 2016 NEPA Climate Guidance (Ex. 12) at 12 (emphasis added).

¹⁵⁷ *Id.* at 25.

emitter and carbon sink, depending on when natural or human disturbances have occurred.¹⁵⁸

This explanation is arbitrary and capricious. The Forest Service does not explain why it is unable to address climate in a project covering 40,000 acres – which covers thousands of stands – but can do so at the Forest level. This statement 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.

The Forest Service nonetheless alleges that CEQ’s guidance support a forest-wide-only approach to analysis, quoting a section of the guidance which states:

When larger scale analyses have considered climate change impacts and greenhouse gas emissions, calculating greenhouse gas emissions and carbon stocks for a specific action may provide only limited information beyond the information already collected and considered in the larger scale analyses. The NEPA reviews for a specific action can incorporate by reference earlier programmatic studies or information such as management plans, inventories, assessments, and research that consider potential changes in carbon stocks, as well as any relevant programmatic NEPA reviews.¹⁵⁹

Here the Forest Service cannot incorporate by reference the Forest Plan Revision FEIS evaluation of climate impacts because that analysis suffers from almost all of the defects of the South Plateau Project EA and Climate Change Report. The Plan Revision FEIS relies on outdated and contradicted science, comes up with numerous improper excuses for declining to undertake an analysis, and relies on outdated, superseded 2009 agency guidance. The Plan Revision FEIS concludes that potential management actions over the 15-year life of the plan “would affect up to less than 0.25 percent of the forested area and much less than 1 ter[r]agrams [1 million tons] of carbon annually.”¹⁶⁰ Even the scale of “much less than” 1 million tons is imprecise. For the South Plateau Project, there is simply no valid, quantified analysis for the Forest Service to tier to or incorporate.

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

The Final EA’s (and Climate Change Report’s, and Forest Plan Revision FEIS’s) studied ignorance on climate change, and the Forest Service’s failure to provide a quantitative assessment to enable a comparison with the no action alternative also violates NEPA. The Final EA carefully quantifies economic benefits of logging – a complex task – while declining to calculate the climate costs. The EA tallies the “Average Annual Employment and Labor Income Contributions from all Project Activities,” and the project’s present net value.¹⁶¹ Yet the Forest

¹⁵⁸ South Plateau Climate Change and Carbon Storage Report (Jan. 2021) at 1.

¹⁵⁹ *See id.* at 1 (quoting 2016 CEQ climate guidance (Ex. 12) at 29).

¹⁶⁰ Custer Gallatin Forest Plan Revision FEIS at 305.

¹⁶¹ Final EA at 239, 241.

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 in February month when it set aside a federal agency NEPA analysis for failing to quantify the social costs of an agency action's climate pollution. *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 last month 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 has already announced that his administration would reinstate the 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 minimal.

In response to comments raising this issue, the Forest Service responds that it need not monetize all costs and benefits, and repeats its non-analysis that in any event, the climate impacts of the project are “not ... discernable.”¹⁶² This is tantamount to climate denial, ignores that mechanisms exist to disclose climate impacts, and ignores the asymmetry of disclosing job and income benefits but failing to disclose countervailing costs. This is not a hard look at climate impacts, it is turning a blind eye.

g. Conclusion

The Forest Service failure to comply with its duty to disclose the South Plateau 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.”¹⁶³ If carbon storage is a “key ecosystem service,” the National Forest should do more than merely wave away the South Plateau Project's

¹⁶² Final EA at 304.

¹⁶³ Custer Gallatin NF Forest Plan Revision FEIS (2020) at 298.

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 Plateau Project.

Logging and burning treatments, and the nearly 60 miles of temporary road construction, as well as miles of reconstruction and maintenance necessary to access the cutting units, for the 15-year life of the project will require the use of heavy equipment, almost certainly exclusively powered by fossil-fueled engines.¹⁶⁴ So will transporting up to 162,000 CCF of logs to mills, a task that will involve up to 40,000 loaded truck trips.¹⁶⁵ 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. Neither the Final EA, nor the Climate Change 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.¹⁶⁶

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 Plateau Project, and thus violates NEPA.

Suggested Remedy: The Custer Gallatin National Forest should prepare an EIS that quantifies and discloses the carbon emissions and carbon sequestration impacts of the South Plateau Project, including impacts due to: (1) removal of carbon stores via logging, analyzed with a life-cycle carbon analysis; and (2) the construction, logging, and log transport the project will require. The Custer Gallatin National Forest should employ the

¹⁶⁴ Final EA at 1 (15-year implementation); *id.* at 6-7 (maximum of 56.8 miles of temp road required).

¹⁶⁵ Final EA at 250 (stating that 50% of all project truck traffic may cross a specific bridge, resulting in 20,000 loaded truck crossings).

¹⁶⁶ *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. 28; 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. 29.

social cost of carbon to disclose climate impacts, or explain in a non-arbitrary manner why it need not do so.

IV. 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.”¹⁶⁷ An agency’s “[h]ard look” analysis should utilize “the best available scientific information.”¹⁶⁸ NEPA also requires agencies to explain opposing viewpoints and their rationale for choosing one viewpoint over the other.¹⁶⁹ 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.¹⁷⁰

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.¹⁷¹

The Forest Service assumes that hundreds of 20-40 acres clearcuts totaling up to 4,600 acres (or more), and more than 15,000 acres of thinning will “improve” the project area by, among other things “[r]educ[ing] hazardous fuels to increase fire suppression effectiveness and reduce risk to the public and first responders,” and reducing fuels in the wildland-urban interface (WUI).¹⁷² Clearcuts, “thinning conifer stands, reducing heavy fuel loadings, and prescribed fire” are purportedly “needed to reduce the threat and anticipated effects from recurring large-scale disturbances to natural and social resources within the project area.”¹⁷³ In particular, the Final EA justifies 20-40 acre clearcuts on the grounds that they will “[r]educ[e] the risk or extent of, or increase the resilience to, insect or disease infestation” by “harvesting susceptible stands to gain

¹⁶⁷ 40 C.F.R. § 1500.1(b) (1978).

¹⁶⁸ *Colo. Envtl. Coal. v. Dombeck*, 185 F.3d 1162, 1171 (10th Cir. 1999).

¹⁶⁹ 40 C.F.R. § 1502.9(b) (1978) (requiring agencies to disclose, discuss, and respond to “any responsible opposing view”).

¹⁷⁰ *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”).

¹⁷¹ The Center for Biological Diversity and WildEarth Guardians raised this issue in their Sep. 15, 2020 comments on the South Plateau Project EA, at pages 4-9.

¹⁷² Final EA at 5, 24.

¹⁷³ Final EA at 1.

diversity in age and size at a landscape scale.”¹⁷⁴ Thus, the project is based on the assumption that thousands of acres of clearcuts will create patches of young forest that will be less susceptible to beetle outbreaks. The EA further justifies this approach by alleging that the majority of the area is at risk of a beetle outbreak and at risk of a stand-replacement fire.

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

First, studies demonstrate that land managers have shown little ability to target treatments where fires later occur.¹⁷⁵ This means that any effort to “improve resilience” to fire may be wasted and unnecessary because fire is unlikely to ever occur in the area. This undermines the project’s purpose and need.

The Final EA addresses this fact by arguing that its goal is to “increase forest resilience.”¹⁷⁶ 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, studies show that forests impacted by mountain pine beetles are only weakly (if at all) correlated with increased fire risk, because forest fires are driven more by climate and weather than other factors. For example, studies investigating the correlation between beetle epidemics in the Western U.S. and fire concluded that beetle infestations have little impact on the extent of fire, and recommended that management efforts focus on adapting to fire, not limiting beetle outbreaks to reduce fire risk.

Although MPB infestation and fire activity both independently increased in conjunction with recent warming, our results demonstrate that the annual area burned in the western United States has not increased in direct response to bark beetle activity. Therefore, policy discussions should focus on societal adaptation to the effects of recent increases in wildfire activity related to increased drought severity.¹⁷⁷

At a moderate spatiotemporal scale, both daily fire growth (DAB) and observed fire behavior, as recorded in ICS-209 reports, were driven by fire weather, not MPB [mountain pine beetle] outbreak in 56 large wildfire events that burned across the West during the 2003–2012 period. Given the relative rarity of wildfire burning in MPB-affected forests and negligible effects on daily fire activity, post-

¹⁷⁴ Final EA at 11.

¹⁷⁵ 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. 30.

¹⁷⁶ Final EA at 317.

¹⁷⁷ Hart, S.J., T. Schoennagel, T.T. Veblen, and T.B. Chapman. 2015. Area burned in the western United States is unaffected by recent mountain pine beetle outbreaks. *Proceedings of the National Academy of Sciences*. Vol. 112, No. 14. Attached as Ex. 31.

outbreak management strategies should emphasize mitigation of other negative effects on socioecological systems, including diminished tourism, tree-fall hazards, and effects on wildlife habitat (Morris et al 2018). In general, efforts to reduce the risk of extreme fire behavior should focus on societal adaption to future warming and extreme weather events.¹⁷⁸

The best available science indicates that outbreaks of bark beetles in lodgepole pine may have little or no effect on subsequent fires and may in some cases actually reduce the risk of fire. In contrast, there is strong scientific evidence linking severe forest fires in lodgepole pine to drought conditions (Bessie and Johnson, 1995; Sibold and Veblen, 2006; Schoennagel et al., 2004). Thus, the occurrence of severe fires in lodgepole pine forests is primarily influenced by climatic conditions rather than changes in fuels caused by bark beetle outbreaks.¹⁷⁹

These studies thus call into question the EA's assumption that its proposed actions will achieve the project's purpose.

Another study noted that “[p]olicy and management approaches to wildfire have focused primarily on resisting wildfire through fire suppression and on protecting forests through fuels reduction on federal lands,”¹⁸⁰ as the South Plateau Project proposes to do here. “However, these approaches alone are inadequate to rectify past management practices or to address a new era of heightened wildfire activity in the West.”¹⁸¹

The Forest Service failed to respond to any of these studies, and simply repeated that it had other studies that reached differing conclusions. The agency never acknowledges the controversy that calls its conclusions into question, which violates NEPA.

Third, 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

¹⁷⁸ Hart, S.J., and D.L. Preston. 2020. Fire weather drives daily area burned and observations of fire behavior in mountain pine beetle affected landscapes. *Environ. Res. Lett.* 15 054007. Attached as Ex. 32.

¹⁷⁹ Black, S. H., D. Kulakowski, B.R. Noon, and D. DellaSala. 2010. Insects and Roadless Forests: A Scientific Review of Causes, Consequences and Management Alternatives. National Center for Conservation Science & Policy, Ashland OR. Attached as Ex. 33.

¹⁸⁰ Schoennagel, T. et al. 2016 Adapt to more wildfire in western North American forests as climate changes. *Proceedings of the National Academy of Sciences*. Vol. 114, No. 18. Attached as Ex. 34.

¹⁸¹ *Id.*

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).¹⁸²

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

¹⁸² 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. 35. Emphasis added.

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].¹⁸³

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 in the body of the EA, 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 have been left had the Forest Service did nothing. In part, this is because the Forest Service fails to compare the impacts of the proposed action to the “no action” alternative. Instead, the Forest Service relegates its retort to the “Responses to Comments” appendix, where the agency relies on a non-peer-reviewed “white paper” drafted by Forest Service staff (not researchers).¹⁸⁴ 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.

Fourth, 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

¹⁸³ 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. 36.

¹⁸⁴ Final EA at 318-20.

survivors after outbreaks to act as primary seed sources could act to promote adaptation.¹⁸⁵

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. The EA neither addresses this study nor acknowledges that logging may destroy the best hope for improved resilience, in violation of NEPA.

The Forest Service responds that “Allowing the landscape to experience large-scale mortality with some survivors would not meet the purpose and need element of reducing insect impacts and the extent of those impacts.”¹⁸⁶ This ignores, again, those studies showing that no action may better meet the purpose and need because doing so will not cut more trees than would survive without thinning, and thinning and clearcuts will not kill those trees that would most likely survive a beetle attack.

Fifth, large-scale thinning will likely create forest structure that is unlike those found historically in the area, which some evidence suggests may be an effective way of retaining resilient forests. For example, Lundquist and Reich (2014) make the case, citing Hughes and Drever, that maintaining forests with their historic range of variability (HRV) is the most sensible approach to managing for beetle outbreaks.¹⁸⁷ In and near Yellowstone National Park, that would counsel against the Forest Service creating low-density stands or clearcuts in an attempt to make those stands resistant to beetles. Schoennagel et al. (2006) show that under the HRV, lodgepole pine stands in the Yellowstone area would have varied from about 20,000-90,000 trees/ha, a very high density.¹⁸⁸ A typical open, low-density lodgepole pine stand after thinning, especially at levels anticipated by the EA (which prescribes a basal area for many treatments as low as 40 ft²/acre),¹⁸⁹ might have only 100-200 trees/ha, which is far outside the HRV, thus violating the principle explained by Hughes and Drever. Clearcutting is also unlikely to mimic any natural process because both fires and beetle outbreaks result in patches of mortality, and rarely remove every tree in a 40-acre area. Clearcutting also produces a vast monoculture that has a structure that gives it the highest susceptibility to insects and disease.

¹⁸⁵ 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. 37.

¹⁸⁶ Final EA at 320.

¹⁸⁷ Lundquist, J.E. and R. Reich. 2014. Landscape Dynamics of Mountain Pine Beetles. *For. Sci.* 60(3):464–475. Attached as Ex. 38.

¹⁸⁸ Schoennagel, T., M.G. Turner, D.M. Kashian, A. Fall. 2006. Influence of fire regimes on lodgepole pine stand age and density across the Yellowstone National Park (USA). *Landscape Ecol.* 21:1281–1296. Attached as Ex. 39. *See, e.g., id.* at 1289, Figure 1 (HRV panels).

¹⁸⁹ Final EA at 258-59 (identifying basal area targets as low as 40 ft²/acre for thinning prescriptions for lodgepole pine and mixed conifer stands).

We found no response to these scientific studies in the Final EA, nor any basis for creating what amounts to an artificial forest untethered to the historic ecosystem that thrived before Forest Service mismanagement of fire began in the early 20th Century.

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

Suggested Remedy. The Custer Gallatin NF must prepare a revised NEPA document, preferably an EIS, that: acknowledges contrary science; discloses that that science indicates that the South Plateau Project may not achieve its goals; and discloses that compared to the “no action” alternative, the South Plateau Project may result in more damaging impacts than the proposed action.

V. THE FOREST SERVICE MUST PREPARE AN EIS.

A. An Agency Must Prepare an EIS If There Are Questions as to Whether Impacts May Be Significant.

NEPA requires federal agencies to prepare a full environmental impact statement (EIS) before undertaking “major Federal actions significantly affecting the quality of the human environment.”¹⁹⁰ The Ninth Circuit affirms this approach.

We have held that an EIS must be prepared if ‘substantial questions are raised as to whether a project ... may cause significant degradation to some human environmental factor.’ To trigger this requirement a ‘plaintiff need not show that significant effects will in fact occur,’ [but instead] raising ‘substantial questions whether a project may have a significant effect’ is sufficient.¹⁹¹

The Tenth Circuit agrees. “If the agency determines that its proposed action may ‘significantly affect’ the environment, the agency must prepare a detailed statement on the environmental impact of the proposed action in the form of an EIS.”¹⁹²

If an agency “decides not to prepare an EIS, ‘it must put forth a convincing statement of reasons’ that explains why the project will impact the environment no more than insignificantly. This account proves crucial to evaluating whether the [agency] took the requisite ‘hard look.’”¹⁹³

¹⁹⁰ 42 U.S.C. § 4332(C).

¹⁹¹ *Idaho Sporting Cong. v. Thomas*, 137 F.3d 1146, 1149-50 (9th Cir. 1998) (citations omitted) (emphasis original). See also *Ocean Advocates v. U.S. Army Corps of Eng’rs*, 402 F.3d 846, 864-65 (9th Cir. 2005) (“To trigger this [EIS] requirement a plaintiff need not show that significant effects will in fact occur, but raising substantial questions whether a project may have a significant effect is sufficient.” (internal quotations, citations, and alterations omitted)).

¹⁹² *Airport Neighbors Alliance v. U.S.*, 90 F.3d 426, 429 (10th Cir. 1996) (citation omitted) (emphasis added).

¹⁹³ *Ocean Advoc.*, 402 F.3d at 864.

“Significance” under NEPA requires consideration of the action’s context and intensity.¹⁹⁴ An agency must analyze the significance of the action in several contexts, including short- and long-term effects within the setting of the proposed action (including site-specific, local impacts).¹⁹⁵ Intensity refers to the severity of the impact and requires consideration of ten identified factors that may generally lead to a significance determination, including:

- (1) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas;
- (2) whether the action is likely to be highly controversial;
- (3) whether the effects on the environment are highly uncertain or involve unique or unknown risks;
- (4) whether the action may have cumulative significant impacts;
- (5) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973; and
- (6) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.¹⁹⁶

With respect to the degree to which the environmental effects are likely to be highly controversial, the word “controversial” refers to situations where “substantial dispute exists as to the size, nature, or effect of the major federal action.”¹⁹⁷

B. Because the South Plateau Project Is Likely to Have Significant Impacts, the Forest Service Should Prepare an EIS.

The South Plateau Project meets numerous standards for “significance.”¹⁹⁸

The South Plateau Project area has unique characteristics including its adjacency to Yellowstone National Park, its habitat for wolves, grizzlies, lynx and pine marten, and the fact that it is

¹⁹⁴ 40 C.F.R. § 1508.27 (1978).

¹⁹⁵ *Id.* § 1508.27(a) (1978).

¹⁹⁶ *Id.* § 1508.27(b)(3)-(5), (7), (9)-(10) (1978).

¹⁹⁷ *Town of Cave Creek v. FAA*, 325 F.3d 320, 331 (D.C. Cir. 2003) (quoting *North American Wild Sheep v. U.S. Department of Agriculture*, 681 F.2d 1172, 1182 (9th Cir. 1982)) (emphasis in original). *See also Middle Rio Grande Conservancy Dist. v. Norton*, 294 F.3d 1220, 1229 (10th Cir. 2002) (same); *Town of Superior v. U.S. Fish and Wildlife Serv.*, 913 F. Supp. 2d 1087, 1120 (D. Colo. 2012) (same).

¹⁹⁸ The Center for Biological Diversity and WildEarth Guardians raised this issue in their Sep. 15, 2020 comments on the South Plateau Project EA, at pages 33-42.

traversed by a national scenic trail. These unique and sensitive values are at risk from logging, road building, road maintenance, road use, and fire. The project area includes:

- The Continental Divide National Scenic Trail (CDNST) runs through the project area, and the project would degrade the experience along the trail. Note that logging, bulldozing, and other disturbance would be concentrated during the period for concentrated trail use, with logging activities being restricted to the peak hiking period between April 15 and November 1.¹⁹⁹ Slash piles would be permitted adjacent to the trail as long as they are “as small as possible.”²⁰⁰ We note that an objection has been filed focusing exclusively on the damage the project will cause to the Trail, and the Final EA’s failure to ensure any impacts to the trail are mitigated, and failure to ensure that the Forest protects the Trail’s purposes.
- Threatened and endangered species, and critical habitat. Habitat for numerous imperiled wildlife, including grizzly bears, lynx, marten, and wolf will be degraded by the proposed action, and habitat for the proposed wolverine is also present.

As noted above, the project is likely to result in the death of grizzly bears, and is “likely to adversely affect” grizzlies.²⁰¹

The Final EA also concludes that “[a]t the landscape and regional scale, the South Plateau project would *appreciably* impact [that is, damage] overall habitat quality or reduce connectivity of lynx habitat” and that “the Proposed Action ... is likely to adversely affect the Canada lynx.”²⁰²

The proposed action will destroy up to 40% of pine marten suitable habitat in the project area.²⁰³

The proposed action “could result in disturbance to wolverines, including interruptions in dispersal, foraging, and ... denning.”²⁰⁴

Any one of these impacts reaches the threshold that the project “may affect” these rare species; together they demonstrate the need to prepare an EIS.

- Other special areas. The project area directly abuts Yellowstone National Park, meaning that the project will take place in the Greater Yellowstone Ecosystem, a unique area and one deeply cherished for its tremendous wildlife values. Yet there is no evidence that the

¹⁹⁹ Final EA at 198.

²⁰⁰ Final EA at 276.

²⁰¹ Final EA at 42.

²⁰² Final EA at 100.

²⁰³ Final EA at 159 (“This treatment type would result in unsuitable conditions in up to 40% of suitable marten habitat, based on the current stand pool”).

²⁰⁴ Final EA at 106.

Forest Service has coordinated with the National Park Service on this project, and the EA does not highlight the Park's resources, which overlap with, and (as, for example, with wildlife) move from the adjacent forest land into the Park. Nor does the EA address the fact that the proposed action will continue the Forest Service's history of creating a landscape pock-marked with clearcuts on the very doorstep of the iconic national park.

The Forest Service did not respond to this criticism concerning the adjacent National Park, an independent NEPA violation. The only arguable response states that the Forest Service has been "in communication" with the "Park Services [sic]" and that the "Park Service has been included on all project mailings and notices."²⁰⁵ That response does not address the impacts to resources shared with the Park.

All of these values may be impacted by the proposed action, and the Final EA itself admits damage and potential for damage to numerous values. The fact that this special area is ground zero for a significant logging project should, of itself, require the Forest Service to prepare an EIS.

The South Plateau Project's effects on the environment are also highly uncertain or involve unique or unknown risks. The Final EA is based on the critical assumption that logging and burning now will improve the forest's "resilience" in comparison to the "no action" alternative because it will forestall damaging impacts (e.g., from fire or bugs). But the Final EA admits that while logging will immediately degrade mature forests, bear habitat and other values, the threat such logging attempts to forestall may never occur.

Further, the project's impacts are highly uncertain because the Forest Service does not disclose, and has not yet identified, the location of up to 56 miles of temporary road, or even the precise location or total acreage of lands to be clearcut, which could be 4,600 acres, or 5,551 acres, or maybe 8,787 acres, or some other figure, and no indication as to the precise location of those areas.²⁰⁶ The Forest Service cannot have it both ways: it cannot both conclude that this huge project will have no significant effects, while simultaneously refusing to disclose the site-specific impacts of hundreds of clearcuts and dozens of miles of roads.

C. The Proposed Action Is Highly Controversial Because the Science Upon Which It Is Based Is Questionable.

The effects of this project meet the definition of "highly controversial."²⁰⁷ In this context, the term "controversial" refers to "cases where a substantial dispute exists as to the size, nature, or effect of the major Federal action rather than to the existence of opposition to a use."²⁰⁸ Courts explain:

²⁰⁵ Final EA at 330.

²⁰⁶ See note 42, above.

²⁰⁷ 40 C.F.R. § 1508.27(b)(4) (1978).

²⁰⁸ *Sierra Club v. United States Forest Serv.*, 843 F.2d 1190, 1193 (9th Cir. 1988) (finding that where Sierra Club presented evidence from experts showing the EA's inadequacies and casting

A substantial dispute exists when “evidence, raised prior to the preparation of an EIS or FONSI, casts serious doubt upon the reasonableness of the agency’s conclusions.” *Nat’l Parks [& Conservation Ass’n v. Babbitt*, 241 F.3d 722, 736 (9th Cir. 2001)] (internal citation omitted). Such evidence generally challenges the scope of the scientific analysis, the methodology used, or the data presented by the agency. *See Blue Mountain [Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212-13 (9th Cir. 1998)] (citing the Forest Service’s failure to consider the recommendations and data of an independent scientific report that ran contrary to the proposed action as evidence of controversy).²⁰⁹

Here, the Forest Service assumes that thinning and clearcutting will enhance landscape “resilience” to beetle outbreaks and lower fire risk. There is thus a genuine controversy as to whether the project will meet the stated purpose and need, or will have the impacts predicted, given the scientific studies cited above that undercut, or refute, those conclusions. This is precisely the type of “controversy” that courts find sufficient to require preparation of an EIS.²¹⁰ The dispute is heightened here because the Forest Service has so far ignored and failed to acknowledge many of these contrary studies.

D. Where, as Here, an Agency Prepares a Long EA, It Should Prepare an EIS.

The CEQ has stated: “While the regulations do not contain page limits for EA’s [sic], the Council has generally advised agencies to keep the length of EAs to not more than approximately 10-15 pages In most cases ... a lengthy EA indicates that an EIS is needed.”²¹¹

Courts have concluded that even EAs of less than 100 pages in length provide evidence of the need to complete an EIS.²¹² More than three decades ago, First Circuit Court Judge Stephen Breyer, now a Justice of the U.S. Supreme Court, set aside a lengthy EA and required preparation of an EIS, explaining:

To announce that these documents – despite their length and complexity – demonstrate no need for an EIS is rather like the mathematics teacher who, after

doubt on the agency’s conclusions, “this is precisely the type of ‘controversial’ action for which an EIS must be prepared.”)

²⁰⁹ *Anglers of the Au Sable v. United States Forest Serv.*, 565 F. Supp. 2d 812, 827-828 (E.D. Mich. 2008).

²¹⁰ *See id.*

²¹¹ 46 Fed. Reg. 18,026, 18,037 (1981) (emphasis added).

²¹² *See National Audubon Society v. Hoffman*, 917 F. Supp. 280, 287 (D. Vt. 1995), *aff’d* 132 F.3d 7 (2nd Cir 1997) (65-page EA); *Curry v. U.S. Forest Service*, 988 F. Supp. 541, 552 (W.D. Pa. 1997) (49-page EA).

filling three blackboards with equations, announces to the class “you see, it is obvious.”²¹³

Here, the very length and complexity of the South Plateau EA require the Forest Service to prepare an EIS. The Final EA itself weighs in at 257 pages with an additional 125+ pages of appendices, totaling 385 pages. That’s more than 25 times as long as the maximum suggested by CEQ regulations. This EA is longer than some Forest Service EISs. CEQ regulations state that “[t]he text of final environmental impact statements ... shall normally be less than 150 pages,” a limit the South Plateau EA far exceeds, “and for proposals of unusual scope or complexity shall normally be less than 300 pages,” which again the EA approaches, and, counting appendices, exceeds.²¹⁴ The fact that it takes the Forest Service 385 pages to reach the conclusion that the proposal can’t possibly have significant impacts indicates that the opposite conclusion is more likely. The Forest Service must prepare an EIS.

The Forest Service cannot argue that the EA it prepared is the functional equivalent of an EIS and therefore no violation has occurred. Among other things, agencies must allow 45 days for public comment on an EIS, 40 C.F.R. § 1506.10(d) (which the Forest Service did not provide here), and Clean Air Act Section 309 requires EPA to review each EIS for comment, a mandate that does not apply to EAs. Further, as now-Justice Breyer noted in *Sierra Club v. Marsh*:

[U]nder NEPA and its implementing regulations, we cannot accept the EA[s] as a substitute for an EIS -- despite the time, effort, and analysis that went into their production -- because an EA and an EIS serve very different purposes. An EA aims simply to identify (and assess the ‘significance’ of) potential impacts on the environment; it does not balance different kinds of positive and negative environmental effects, one against the other; nor does it weigh negative environmental impacts against a project’s other objectives, such as, for example, economic development.... The purpose of an EA is simply to help the agencies decide if an EIS is needed.

To treat an EA as if it were an EIS would confuse these different roles, to the point where neither the agency nor those outside it could be certain that the government fully recognized and took proper account of environmental effects in making a decision with a likely significant impact on the environment.²¹⁵

²¹³ *Sierra Club v. Marsh*, 769 F.2d 868, 874 (1st Cir. 1985). See also *Evans v. Anderson*, 314 F.3d 1006, 1023 (9th Cir. 2002) (“No matter how thorough, an EA can never substitute for preparation of an EIS, if the proposed action could significantly affect the environment.”) (requiring agency prepare EIS rather than EA); *Puerto Rico Conservation Foundation v Larson*, 797 F. Supp. 1066, 1069 n.3 (D. Puerto Rico 1992) (enjoining road construction in national forest because agency relied on EA rather than preparing EIS).

²¹⁴ 40 C.F.R. § 1502.7 (1978).

²¹⁵ *Sierra Club v. Marsh*, 769 F.2d at 875.

Despite the EA's 385-page length, the Forest Service failed to account for all impacts, resulting in yet another NEPA violation.

In response to comments concerning the EA's length, the Forest Service packed on an additional 100+ pages to the EA and appendices, and then argued that the EA's length was a virtue.²¹⁶ The agency further asserted that "[t]he effects analysis in the EA clearly documents the direct, indirect and cumulative effects to resources in the South Plateau project," despite the fact that the agency has no idea of the location of roads it will build, and only a dim idea of the location or shape of logging units, or when or in what sequence they will be logged.²¹⁷ The agency's conclusion that the proposed action cannot have significant impacts is arbitrary and capricious.

Suggested Remedy. The Custer Gallatin NF should prepare an environmental impact statement on the South Plateau Project.

CONCLUSION

The Center for Biological Diversity, WildEarth Guardians, Alliance for the Wild Rockies, and Native Ecosystems Council appreciate your consideration of the information and concerns raised in our comments and highlighted in this objection.

We request a meeting to discuss potential resolution of issues raised in this objection, pursuant to 36 C.F.R. § 218.11(a). We hope that the Forest Service will use the objection process and such a meeting as opportunities to engage with stakeholders, including the objectors here, to develop a project that is legally and ecologically sound.

Sincerely,



Edward B. Zukoski, Senior Attorney
Center for Biological Diversity
1536 Wynkoop Street, Suite 421
Denver, CO 80202
(303) 641-3149
tzukoski@biologicaldiversity.org

Adam Rissien, ReWilding Advocate
WildEarth Guardians
PO Box 7516
Missoula, MT 59807
(406) 370-3147
arissien@wildearthguardians.org

Michael Garrity, Director,
Alliance for the Wild Rockies
PO Box 505
Helena, MT 59624
(406) 459-5936
wildrockies@gmail.com

Sara Johnson
Native Ecosystems Council
PO Box 125
Willow Creek, MT 59760.
(406) 579-3286
sjohnsonkoa@yahoo.com

²¹⁶ Final EA at 357.

²¹⁷ Final EA at 358.

TABLE OF EXHIBITS

- Exhibit 1. Carroll, Carlos, Reed F. Noss & Paul C. Paquet. 2001. Carnivores as Focal Species for Conservation Planning in the Rocky Mountains. *Ecological Applications* 11(4): 961-980
- Exhibit 2. Carroll, Carlos, Reed F. Noss, Paul C. Paquet & Nathan H. Schumaker. 2003. Use of Population Viability Analysis and Reserve Selection Algorithms in Regional Conservation Plans. *Ecological Applications* 13(6): 1773-1789
- Exhibit 3. Merrill, Troy & David Mattson. 2003. The Extent and Location of Habitat Biophysically Suitable for Grizzly Bears in the Yellowstone Region. *Ursus* 14(2): 171-187
- Exhibit 4. Schwartz, Charles C., Mark A. Haroldson & Gary C. White. 2010. Hazards Affecting Grizzly Bear Survival in the Greater Yellowstone Ecosystem. *Journal of Wildlife Management* 74(4): 654-667
- Exhibit 5. Walker, Richard & Lance Craighead. 1997. Analyzing Wildlife Movement Corridors in Montana Using GIS
- Exhibit 6. 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)
- Exhibit 7. H. Fountain, Climate Change Is Accelerating, Bringing World ‘Dangerously Close’ to Irreversible Change, *The New York Times* (Dec. 4, 2019)
- Exhibit 8. 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.
- Exhibit 9. Executive Order 13,990, 86 Fed. Reg. 7037 (Jan. 20, 2021)
- Exhibit 10. Executive Order 14,008, 86 Fed. Reg. 7619 (Jan. 27, 2021)
- Exhibit 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)
- Exhibit 12. Council on Environmental Quality, Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews (Aug. 1, 2016)
- Exhibit 13. Council on Environmental Quality, National Environmental Policy Act, Guidance on Consideration of Greenhouse Gas Emissions, 86 Fed. Reg. 10,252 (Feb. 19, 2021)

- Exhibit 14. Forest Service, Tongass Land and Resource Management Plan, Final EIS (2016) (excerpts)
- Exhibit 15. D. DellaSala, The Tongass Rainforest as Alaska’s First Line of Climate Change Defense and Importance to the Paris Climate Change Agreements (2016)
- Exhibit 16. Intergovernmental Panel on Climate Change, Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse gas fluxes in Terrestrial Ecosystems, Summary for Policymakers (Aug. 2019)
- Exhibit 17. B. Law et al., Land use strategies to mitigate climate change in carbon dense temperate forests, Proceedings of the Nat’l Academy of Sciences, vol. 115, no. 14 (Apr. 3, 2018)
- Exhibit 18. P. Buotte *et al.*, *Carbon sequestration and biodiversity co-benefits of preserving forests in the western United States*, Ecological Applications, Article e02039 (Oct. 2019)
- Exhibit 19. 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)
- Exhibit 20. T. Hudiburg *et al.*, Meeting GHG reduction targets requires accounting for all forest sector emissions, Environ. Res. Lett. 14 (2019)
- Exhibit 21. B. Law, et al., The Status of Science on Forest Carbon Management to Mitigate Climate Change (June 1, 2020)
- Exhibit 22. 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)
- Exhibit 23. Forest Service, Climate Change Considerations in Project Level NEPA Analysis (January 13, 2009)
- Exhibit 24. 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)
- Exhibit 25. C. Howard *et al.*, Wood product carbon substitution benefits: a critical review of assumptions, *Carbon Balance & Management* (2021) 16:9
- Exhibit 26. M. Harmon, Have product substitution carbon benefits been overestimated? A sensitivity analysis of key assumptions, *Environmental Research Letters* (2019)
- Exhibit 27. Bureau of Land Management, Western Oregon Proposed RMP Final EIS (2009) (excerpts)

- Exhibit 28. Office of Surface Mining & Bureau of Land Management, Environmental Assessment, Colowyo Coal Mine Collom Permit Expansion Area Project (Jan. 2016) (excerpts)
- Exhibit 29. U.S. Forest Service, Supplemental Final Environmental Impact Statement, Federal Coal Lease Modifications COC-1362 & COC-67232 (Aug. 2017) (excerpts)
- Exhibit 30. 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
- Exhibit 31. Hart, S.J., T. Schoennagel, T.T. Veblen, and T.B. Chapman. 2015. Area burned in the western United States is unaffected by recent mountain pine beetle outbreaks. *Proceedings of the National Academy of Sciences*. Vol. 112, No. 14
- Exhibit 32. Hart, S.J., and D.L. Preston. 2020. Fire weather drives daily area burned and observations of fire behavior in mountain pine beetle affected landscapes. *Environ. Res. Lett.* 15 054007
- Exhibit 33. Black, S. H., D. Kulakowski, B.R. Noon, and D. DellaSala. 2010. Insects and Roadless Forests: A Scientific Review of Causes, Consequences and Management Alternatives. National Center for Conservation Science & Policy, Ashland OR
- Exhibit 34. Schoennagel, T. et al. 2016 Adapt to more wildfire in western North American forests as climate changes. *Proceedings of the National Academy of Sciences*. Vol. 114, No. 18
- Exhibit 35. 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
- Exhibit 36. Six, D.L., E. Biber, E. Long. 2014. Management for Mountain Pine Beetle Outbreak Suppression: Does Relevant Science Support Current Policy? *Forests*, 5
- Exhibit 37. 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
- Exhibit 38. Lundquist, J.E. and R. Reich. 2014. Landscape Dynamics of Mountain Pine Beetles. *For. Sci.* 60(3):464–475
- Exhibit 39. Schoennagel, T., M.G. Turner, D.M. Kashian, A. Fall. 2006. Influence of fire regimes on lodgepole pine stand age and density across the Yellowstone National Park (USA). *Landscape Ecol.* 21:1281–1296