Protecting and restoring forests on New England's public lands
Montpelier, VT

September 6, 2022

Joshua Sjostrom
District Ranger
USDA Forest Service
Androscoggin Ranger District
300 Glen Road
Gorham, NH 03581

Re: Peabody West IRP Draft EA Comments from Standing Trees; submitted electronically via https://cara.fs2c.usda.gov/Public//CommentInput?Project=55659.

Dear Mr. Sjostrom,

Standing Trees submits the following comments regarding the U.S. Forest Service's Draft Environmental Asessment and Finding of No Significant Impact ("DEA") for the Peabody West Integrated Resource Project ("Project" or "PWIRP") located in the White Mountain National Forest in the Androscoggin Ranger District.

Standing Trees is an incorporated nonprofit dedicated to advancing policy and legal solutions that protect and restore New England's native forests. Standing Trees seeks to hold state and federal agencies accountable for their actions that affect forests, and to ensure that land-managers and policymakers follow the latest climate and biodiversity science.

After reviewing the DEA, Standing Trees has concerns regarding the potential impacts of the Project on the character and composition of the White Mountain National Forest. As detailed below, in order to comply with the National Environmental Policy Act ("NEPA"), the National Forest Management Act ("NFMA"), Executive Order 14072, and the Endangered Species Act ("ESA"), an Environmental Impact Statement ("EIS") is required for the proposed project. The Forest Service erred when it completed only a draft Environmental Assessment ("DEA") for the

Project along with the EA's draft Finding of No Significant Impact ("FONSI"). The environmental harms of the Project are significant, or at the very least uncertain, because of the unique nature of the land involved, the intensity of potential impacts, the recent proposal by the U.S. Fish and Wildlife Service ("USFWS") to classify the Northern Long-eared Bat as endangered under the ESA, President Biden's Executive Order to conserve mature and old-growth forests, and the 2022 DEA's failure to adequately analyze Project impacts in sufficient detail, among other things.

The 2022 DEA is inadequate under NEPA and new analysis must be conducted

"Federal agencies shall to the fullest extent possible… [u]se all practicable means, consistent with the requirements of [NEPA] and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment." 40 C.F.R. § 1500.2(f).

The overarching flaw for this "integrated resource project" is the Forest Service's failure to provide more than mere conclusory statements to support its finding of no significant impact. The analysis is sparse, and sometimes non-existent, for a number of impacted resources. As a result, it is nearly impossible for the public to meaningfully engage with agency's data and analysis presumably underlying the 2022 DEA.

The Purpose and Need Statement must be properly defined

To comply with NEPA, federal agencies must provide a statement explaining the purpose and need for the proposed action. *See* 40 CFR § 1501.5(c)(2) (2020); § 1502.13 (2020). It is important that this statement accurately reflects the proposed action's purpose and need because

this statement in turn informs the range of alternatives the agency will consider as part of its NEPA analysis. *See League of Wilderness Defs.-Blue Mountains Biodiversity Proj. v. U.S. Forest Serv.*, 689 F.3d 1060, 1069 (9th Cir. 2012). The Forest Service should take care to not define the purpose and need so narrowly as to eliminate reasonable alternatives from analysis. *City of Carmel–By–The–Sea v. U.S. Dep't of Transp.,* 123 F.3d 1142, 1155 (9th Cir. 1995); *see also Simmons v. U.S. Army Corps of Engineers*, 120 F.3d 664, 667 (7th Cir. 1997) (finding the range of alternatives the Corps considered to be inadequate because the agency too narrowly defined the project's purpose, emphasizing that the evaluation of alternatives is intended to be an evaluation of alternative means to accomplish the *general goal* of the action).

The DEA's stated Purpose and Need "is to advance forest plan goals, objectives, and desired conditions for vegetation, wildlife, and other resources in the Peabody West Habitat Management Unit (HMU)." *See* DEA at 1. These are very distinct objectives, but the Forest Service appears to believe that they can all only be met through various timber harvest prescriptions. Either the Purpose and Need has been drafted too narrowly, or the Forest Service has neglected to conduct a reasonable analysis of alternatives that could meet Forest Plan goals and objectives, and meet the intent of Executive Orders 14008 and 14072. The Forest Service should frame the purpose and need in such a manner that it allows the Forest Service to consider an adequate range of alternatives, as discussed in more detail below.

A properly crafted purpose and need statement would integrate purposes of the Forest Plan with current executive orders (for example, Executive Order 14072[1] and Executive Order

[1] *See* Strengthening the Nation's Forests, Communities, and Local Economies, Executive Order 14072, 87 Fed. Reg. 24,851 (April 22, 2022).

14008[2]) to identify the best management approaches. Instead, the DEA states the purpose of the proposed action is to implement the 17-year old Forest Plan. This inherently structures the DEA to presuppose that the Forest Plan could only be implemented by the proposed action and fails to explain the management context (i.e., is the management needed and is this the most appropriate management for the subject stands?) to demonstrate the need component of the purpose and need statement. In order to demonstrate the need for the action, the Forest Service must do more than simply state a preference for "high-quality timber products[,]" 2022 DEA at 1, but must actually connect stand conditions, best science, and desired future conditions to this supposed need. Without this, the DEA's purpose and need statement is inadequate to satisfy the NEPA requirements because it is too narrow and eliminates reasonable alternatives.

A more accurate purpose and need statement would promote and require exploration of other forest management prescriptions that could better implement the Forest Plan, better avoid significant impacts on scenic and cultural resources and mature forests, better support the full range of biodiversity in its natural abundance and distribution, and meet the intent of Executive Orders. A more accurate purpose and need statement would also promote detailed evaluations of current natural and cultural resources, which appear to be lacking thus far, which would, in turn, illuminate further reasonable alternatives for the Forest Service and the public to consider.

The Forest Service must analyze an adequate range of alternatives

NEPA mandates that an EA describe the environmental impacts of both the proposed action and alternatives to the proposed action. 40 C.F.R. § 1501.5(c)(2). NEPA similarly requires

[2] *See* Tackling the Climate Crisis at Home and Abroad, Executive Order 14008, 86 Fed. Reg. 7619 (February 2, 2021).

an alternatives analysis for Environmental Impact Statements ("EIS"). 40 C.F.R. § 1502.14. The alternatives analysis, in which an agency evaluates "reasonable alternatives," is the heart of the environmental assessment. 40 C.F.R. § 1502.14(a). An agency may consider *only* the proposed action when there are no "unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(E); *see also* 36 C.F.R. § 220.7(b)(2)(i). Unresolved conflicts exist when the agency lacks a consensus about the proposed action based on input from interested parties. National Environmental Policy Act Procedures, 73 Fed. Reg. 43,084, 43,092 (July 24, 2008) (codified at 36 C.F.R. Part 220). Further, agencies "shall not commit resources prejudicing selection of alternatives before making a final decision." 40 CFR § 1502.2(f); § 1506.1.

CEQ regulations mandate that federal agencies shall "inform decision makers and the public of reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment." 40 C.F.R. § 1502.1. It is also incumbent upon federal agencies to "[s]tudy, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources." *Id*. § 1501.2(c); *see also* 42 U.S.C. § 4332(E). Given the many different facets of the proposed action and the current primary purpose articulated in the DEA — "to advance forest plan goals, objectives, and desired conditions for vegetation, wildlife, and other resources in the Peabody West Habitat Management Unit (HMU)" — it is inconceivable that there will be only one way to achieve that purpose. 2022 DEA at 1. This is especially true for the logging portions of the proposed action. The sheer number of different silviculture prescriptions for the proposed action demonstrates that even if logging is needed—which Standing Trees asserts it is not—there is a wide variability in how the logging can achieve desired conditions. This variability

necessarily implies several reasonable alternatives exist that the Forest Service should consider in an EIS.

With these considerations in mind, the Forest Service should include and analyze the following reasonable alternatives as part of its NEPA analysis.

The Forest Service must consider a No Action Alternative.

A "No Action Alternative" is the bare minimum alternative analysis an agency should undertake for an EA or EIS. 40 CFR § 1502.14(c). One of the most critical purposes of a No Action Alternative is to establish a baseline against which the proposed action can be measured. The Forest Service should consider a No Action Alternative to establish such a baseline for the proposed action. NEPA requires agencies to consider both the detriments and benefits of proposed projects, which would include considering the benefits of reasonable alternatives as well. There are numerous benefits of not moving ahead with the proposed action (i.e., taking No Action), including, but not limited to: climate benefits of retaining older, mature trees; habitat benefits for the Northern Long-eared Bat and other species that rely on mature, old, or interior forests or are sensitive to harvest impacts; avoiding potential detrimental impacts to water quality due to runoff, sedimentation, and potential herbicide contamination; avoiding loss or damage to historic and cultural resources located within the proposed action area; avoiding introduction of invasive species (which were noted to be essentially non-existent at the 6/23/22 public meeting); protecting values present in the Great Gulf Inventoried Roadless Area; and avoiding visual and noise impacts, among many others. A No Action alternative should also carefully detail how the full range of habitats required by native species can be facilitated within the project area by simply allowing natural processes and forest ageing to create habitat diversity and complexity.

As it stands, the DEA presents two paragraphs briefly outlining the "Consequences of No Action." DEA at 20. The title alone, which suggests that there will only be negative "consequences" from choosing "no action," suggests that the USFS has failed to perform a reasonable, impartial analysis. There is no assessment of any of the positive tradeoffs of leaving the forest as-is. Further, there is no scientific justification provided for claims that "no action" would result in lowered species diversity, ages, and structures. As evidenced in sections below, just the opposite is true: peer-reviewed science shows that older forests exhibit the greatest tree species and habitat diversity, the greatest structural complexity, and the greatest resilience to climate change.[3,4,5,6]

Additional Alternatives

In addition to a No Action Alternative, the WMNF should prepare additional alternatives that explore a reasonable range of options to meet the Purpose and Need while avoiding or minimizing harmful impacts. Additional alternatives should consider:

- Avoiding all roadless area impacts and protecting roadless area values by guiding logging away from Forest Plan Inventoried Roadless Areas that were allocated to Management Area 2.1 in the 2005 Forest Plan. Such an analysis should also consider how roadless area logging and road construction/reconstruction, regardless of whether a roadless area is managed according to the 2001 Roadless

[3] Thom et al., THE CLIMATE SENSITIVITY OF CARBON, TIMBER, AND SPECIES RICHNESS COVARIES WITH FOREST AGE IN BOREAL-TEMPERATE NORTH AMERICA (2019)
[4] Miller et al., EASTERN NATIONAL PARKS PROTECT GREATER TREE SPECIES DIVERSITY THAN UNPROTECTED MATRIX FORESTS (2018)
[5] Miller et al., NATIONAL PARKS IN THE EASTERN UNITED STATES HARBOR IMPORTANT OLDER FOREST STRUCTURE COMPARED WITH MATRIX FORESTS (2016)
[6] Gunn et al 2013. Late-successional and old-growth forest carbon temporal dynamics in the Northern Forest (Northeastern USA). Forest Ecology and Management.

Area Conservation Rule, may change the outcome of future Ch 70 wilderness inventories and evaluations and the potential for Congress to include these lands in the National Wilderness Preservation System, especially since the current forest plan has outlived its 15-year lifespan as dictated by the National Forest Management Act. The analysis should assess not only whether the landscape will still qualify for future Chapter 70 review, but also how the project would impact the WMNF's analysis of the IRA's suitability and potential for wilderness recommendation and designation by Congress;

- Achieve habitat management objectives for early young forest by creating *complex* early successional habitat rather than simplified regeneration-age forest through even-aged management. Such an analysis should evaluate the possibility of beaver reintroduction, girdling trees to create standing snags, "chop-and-drop" to increase woody debris and create canopy gaps, and more;
- Increasing the size of the buffer from watercourses and wetlands;
- Avoiding all mature and old forest as defined in WMNF Forest Plan Appendix D, Age Class Definitions by Habitat Type, and to comply with EO 14072 and to reduce risk of harm to Northern Long-eared Bat habitat.

The DEA fails to provide supporting documentation to allow adequate and meaningful public participation.

Public participation is a critical aspect of the NEPA process. *See* 40 C.F.R. § 1500.1(b) ("The purpose and function of NEPA is satisfied if Federal agencies have considered relevant environmental information, and the public has been informed regarding the decision-making

process."); 40 C.F.R. § 1506.6(a) ("Agencies shall . . . [m]ake diligent efforts to involve the public in preparing and implementing their NEPA procedures.").

Here, public involvement has been impeded by the unavailability of relevant supporting documents, the failure of the DEA to clearly identify other supporting documents, and the failure to include sufficient detail in the DEA to allow the public to engage the necessary substantive analysis underlying the agency's design of the Proposed action and its intended goals.

The Forest Service makes several conclusions that are supported by documents that are not available to the public for review.

Numerous references are made to other unspecified authorities to support conclusions advanced by the Forest Service in the 2022 DEA. For example, the DEA refers to "preliminary assessments of current stand conditions and characteristics," but these documents have not been made publicly available. DEA at 4.

The DEA suggests that "[m]ost of the habitats in the project area are mature, with some younger stands interspersed." DEA at 1. The Peabody West HMU Rationale document shows that 79% of the Project area is in the mature age class, across all forest types. PWIRP HMU Rationale at 9. However, the WMNF has not provided an age class map to help the public understand the amount and distribution of forest types and age classes. The DEA claims there is a "lack of open forest conditions," but does not suggest what conditions this is compared to. Lorimer and White 2003, the definitive paper on New England disturbance types, frequencies, and intensities, indicates that upland forests such as this one would have had only 1-3% of the landscape in early seral conditions.[7]

[7] Lorimer and White, SCALE AND FREQUENCY OF NATURAL DISTURBANCES IN THE NORTHEASTERN US: IMPLICATIONS FOR EARLY SUCCESSIONAL FOREST HABITATS AND REGIONAL AGE DISTRIBUTIONS (2003) (hereinafter "Lorimer and White (2003)").

In addition there has been no analysis of whether the WMNF is protecting "stands identified to provide old forest habitat," as required by the 2005 Forest Plan. WMNF Plan Abbreviations, Acronyms, and Glossary at 21. The WMNF Plan defines Old Forest Habitat as: "Desired habitat conditions start with those for mature forest and can include greater size, decadence, structural complexity, etc." WMNF Plan Abbreviations, Acronyms, and Glossary at 21 Certainly, these attributes could appear in stands that are otherwise classified as "mature" according to 2005 WMNF Forest Plan Appendix D, Age Class Definitions by Habitat Type. Nor is there any analysis showing that the Project does not violate the intent of Executive Order 14072, issued on Earth Day 2022, to conserve mature forests. Thus, the public cannot be certain that mature and old forests are being conserved and protected as required by law.

Similarly, the DEA states that transportation management actions were informed by the Forest-wide Transportation Analysis Process (TAP). The DEA notes:

> *"In 2015, the WMNF completed a Forest-wide transportation analysis process report for long-term administration of the WMNF's transportation system (U.S. Department of Agriculture, Forest Service 2015). The proposed project is needed to complete a site-specific transportation analysis to implement or modify the 2015 travel analysis process recommendations within the project area; to plan and manage for current and future public and Forest Service access to the project area; to meet forest plan standards for desired road operation maintenance levels (MLs); and to meet requirements of the Highway Safety Act..."* DEA at 2.

Standing Trees made inquiries to WMNF staff as to the availability of the analysis that went into the 2015 process, but all that is apparently available is the final map. Without detailed

information, it is impossible to assess why the final map looks the way that it does, and to understand the rationale for transportation-related decisions.

Finally, the DEA admits that "[s]ome system roads have travel analysis process recommendations that differ from the current proposal." DEA at 10. If this is so, additional analysis must show why these changes are necessary, and an amendment must be made to the Forest-wide TAP.

Threatened and Endangered Species Issues

On March 23, 2022, the U.S. Fish and Wildlife Service ("USFWS") announced a proposed rule to reclassify the northern long-eared bat from threatened to endangered and remove the bat's species-specific 4(d) rule. *Endangered Species Status for Northern Long-Eared Bat*, 87 Fed. Reg. 16,442 (March 23, 2022). The DEA does not address this significant event. The up-listing of the bat, if finalized, will remove its species-specific 4(d) Rule and make all take of the bat unlawful. 87 Fed. Reg. 16,442. While the Forest Service has analyzed impacts of logging on the bat in other projects, it is not clear whether such analysis has been done here. Additionally, in those projects the Forest Service found that at least some bats may be taken, especially under its cumulative impacts analysis, but the Forest Service has never evaluated the impacts of such take on the species in the absence of the 4(d) Rule. The proposed up-listing and removal of the 4(d) rule is thus new information that warrants additional analysis and an EIS, as discussed in more detail below.

The up-listing was, by definition, motivated by an increased likelihood that the Northern Long-eared Bat is in danger of extinction throughout all of its range. *See* 87 Fed. Reg. 16,449. The bat's abundance "has and will continue to decline substantially under current demographic

and stressor conditions;" extant winter colonies have declined range-wide by 81%; and range-wide abundance is projected to decline by 95% from historical conditions by 2030. *Id*. at 16,446. Further, there has been a 96–100% decline in the number of large hibernacula. *Id*. Such low population sizes "exacerbate the effects of current and future declines due to continued exposure to [white nose syndrome], mortality from wind turbines, and impacts associated with habitat loss and climate change." *Id*. at 16,447.

Northern Long-eared Bat habitat requirements are the opposite of the type of habitat that will be generated from the proposed action. According to the USFWS Species Status Assessment Report for the Northern Long-eared Bat[8] ("NLEB Report"), dated March 22, 2022, the bat depends on mature and old forests for roosting and foraging. Preferred roosting habitat is large diameter live or dead trees of a variety of species, with exfoliating bark, cavities, or crevices. Bats change roosts approximately every two days. Preferred foraging habitat is old forest with complex vertical structure on hillsides and ridges.

The WMNF, including the West Peabody IRP area, contains extensive mature forests that are beginning to acquire the characteristics of an old forest, likely providing some of the highest-quality Northern Long-eared Bat habitat in New England. Many of the silviculture treatment prescriptions involve the removal of mature trees. In combination with recently-approved projects (including Bowen Brook Integrated Resource Project, Deer Ridge Integrated Resource Project, Wanosha Integrated Resource Project, and others), and anticipated logging projects (including Sandwich Vegetation Management Project and Tarleton Integrated Resource Project), the WMNF is set to eliminate or degrade thousands of acres of Northern Long-eared Bat habitat

[8] Burkhart, J. et al. "Species Status Assessment Report for the Northern long-eared bat (Myotis septentrionalis)," U.S. Fish and Wildlife Service. (2022) Version 1.1.

across a large region. As discussed in further detail below, the Forest Service should evaluate the cumulative impact of these combined and geographically proximate projects.

What's more, logging is commonplace in private lands surrounding the WMNF and across the region, making mature and old forests a rare element in the New England landscape. Project analysis should assess age classes across the broader landscape to determine how WMNF lands can be best leveraged to restore natural disturbance regimes, native species, and their habitats.

In light of this new information that Northern Long-eared Bat populations have become so decimated that the species is now in danger of extinction throughout all of its range and has thus been proposed for up-listing to endangered status, the Forest Service must initiate formal consultation with USFWS. To the extent that such consultation is already ongoing, it must take this new information regarding the potential up-listing of the Northern Long-eared Bat into consideration. The failure to do so would not only be a violation of the ESA, but of NEPA, which holds an independent obligation that agencies continue to take a "hard look" at project impacts.

The DEA does not adequately address scenery impacts or should require a Forest Plan amendment

The WMNF Plan mandates that "all management activities should meet or exceed Scenic Integrity Objectives established for the Forest through the Scenery Management System ("SMS")[.]" WMNF Plan at 2-26.

The Scenery Management portion of the Forest Plan mandates that "[i]n evaluating cumulative effects for viewed landscapes from established concern level 1, open, higher elevation viewpoints affording expansive or large scale views, no more than 9 percent of the

acreage within the view should be treated with regeneration vegetation management activities within a 30 year period. Total area affected during any one entry period with new regeneration treatment should not exceed 4 percent of the acreage. Assessment may need to be made from multiple viewpoints (that view a common land base). The assessment will apply to each view separately." WMNF Plan at 3-6. Additionally, "VisualFX or similar computer graphics/simulation software should be used to design and evaluate visibility of proposed regeneration cuts, especially when viewed from higher elevation or superior viewpoints." *Id*. For areas with a "High" Scenic Integrity Objective, "most of the project area created openings should be minimally evident from trail, road, or use area vantage points. Maximum observed size should not exceed 4-5 acres. If openings occur, they should appear as natural occurrences and be well-distributed in the viewed landscape." *Id*.

The DEA acknowledges that the proposed timber harvest prescriptions are inconsistent with 2005 WMNF Forest Plan, but does not seek to remedy this deficiency through a Forest Plan amendment, as required by law. According to the DEA:

> "The proposed action includes three relatively large even-aged treatments: a 26-acre clearcut in unit 19, a 9-acre patch cut in unit 20, and the expansion of an existing permanent wildlife opening to about 19 acres. These proposals exceed the forest plan guideline G-3 for MA 2.1 land, which limits maximum observed opening size to 5 acres in areas with a high scenic integrity objective (forest plan, p. 3-6). Although each of these units would exceed this guideline, the larger acreage is intended to better meet project-level objectives for the Peabody West HMU, and to move the forest toward desired conditions consistent with the forest plan." DEA at 21.

In other words, the DEA admits that the project parameters exceed what is allowed by the 2005 Forest Plan. The DEA suggests that that the project-level goals should take precedence over the Forest Plan. If this were approved, it would constitute a violation of NFMA and must be corrected either by modifying the project or amending the Forest Plan.

Recreation proposals are unsupported by the 2005 WMNF Forest Plan

Without any supporting explanation or evidence, the DEA claims that new mountain bike trails and backcountry ski glades are "consistent" with the 2005 WMNF Forest Plan. DEA at 22. Even the Recreation Specialist Report admits that WMNF Forestwide Management Direction for Recreation, Guideline 4, states that:

> *"No additional trails should be constructed or authorized unless clearly needed to: provide public access to the existing system, address resource impacts, resolve public safety issues, meet recreation management or accessibility goals, or best meet the recreation management approaches. New trails should be evaluated and prioritized consistent with supplemental direction in FSH 2309.18"* PWIRP Recreation Effects Analysis at 1.

However, the DEA notes that opportunities for both mountain biking and backcountry skiing in gladed terrain (as opposed to natural terrain) already exist nearby on private land. DEA at 2, 3, 10, and 11. No reasons are offered for why there is a "clear [need]," as required by the Forest Plan, "to provide public access to the existing system, address resource impacts, resolve public safety issues, meet recreation management or accessibility goals, or best meet the recreation management approaches." PWIRP Recreation Effects Analysis at 1. Why should these

recreation opportunities be created on public lands, at public expense? The Forest Service must either modify the project proposal to eliminate these proposals, or it must amend the Forest Plan.

Although the DEA makes several references to recreational opportunities and management, the DEA makes no reference to the Recreation Opportunity Spectrum ("ROS"). The purpose of the ROS is to provide information on what the current status of recreational areas within National Forests are to allow the Forest Service to make informed decisions regarding how projects will impact the current settings of certain recreation areas and how to develop those areas to the desired settings. Additionally, the WMNF Plan requires that projects are developed in accordance with the ROS objectives and goals. For MA 2.1 Forest Management, recreational management "will match the ROS class objectives provided in this management area. Recreational management activities themselves should not derive the ROS Class from a less developed to a more developed class." WMNF Plan at 3-4 to 3-5. It is odd that the Forest Service would develop a DEA to make significant recreational modifications to the Forest without explaining which areas specific to the WPIRP DEA are not yet at the desired usage, in addition to failing to acknowledge what those areas within the DEA are currently qualified as.

Such baseline data is critical for the public to understand fully the potential recreational impacts of the proposed action. The Forest Service should provide more information explaining the current settings[9] of the recreational opportunities in the proposed action area and the positive and negative consequences the proposed action will have on those recreational opportunities.

The DEA does not sufficiently address how the proposed action impacts Inventoried Roadless Areas.

[9] Settings is a word used by the Forest Service to describe the status or designation of areas on the ROS.

The DEA acknowledges that 600 acres are proposed for logging within the 17,000-acre Great Gulf Inventoried Roadless Area. PWIRP Roadless Effects Summary at 1 and 2. Because the portion of the Great Gulf IRA proposed for logging was not inventoried prior to promulgation of the 2001 Roadless Area Conservation Rule, the WMNF claims that it had the discretion to allocate these lands to the General Forest Management (2.1) category in the 2005 Forest Plan revision. The Roadless Effects Summary suggests that the proposed logging will not disqualify the area from future consideration in a Chapter 70 Wilderness Inventory and Evaluation when the WMNF Forest Plan is revised. However, this merely addresses the *eligibility* of the lands for Chapter 70 review; it does not account for how logging will impact the landscape's suitability or potential for a wilderness recommendation or designation by Congress, nor how the proposed logging will degrade those values associated with roadless areas, including clean water, intact forest habitats, and more.[10,11]

The Forest Service must comply with MA 2.1 standards and guidelines

The proposed action must comply with all of the standards and guidelines contained in the WMNF for the MA 2.1 ("General Forest Management") designation. There are some standards and guidelines that Standing Trees would like to draw specific attention to, which may be particularly relevant to the proposed action. First, project-related motorized administrative use may be allowed but the Forest Service should "consider potential impacts to social conditions and ecological resources in the area," resulting from such motorized use. WMNF Plan at 3-5. Additionally, regarding general vegetation management, "[h]arvest restrictions, such as time of

[10] Dietz et al 2021. The importance of U.S. national forest roadless areas for vulnerable wildlife species. Global Ecology and Conservation.
[11] Talty et al 2021. Conservation value of national forest roadless areas. Conservation Science and Practice.

day, day of the week, or season, should be considered in high-use recreation areas or other sensitive areas, such as private residences, on a case-by-case basis." WMNF Plan at 3-8. Several of these guidelines are likely to be implicated due to the proposed action design; and therefore, must be considered and analyzed by the Forest Service as part of its NEPA evaluation.

The Forest Service must comply with Forest-Wide Management Direction

Standard S-3 in WMNF Plan Ch 2-Forest-Wide Management Direction states that "Timber harvest is prohibited in old growth forest." WMNF Plan 2-13. Further, Guideline G-1 states that "Outstanding natural communities should be conserved." *Id*. Old-growth is defined in the WMNF Plan as "Uneven-aged (three or more age classes) forest with an abundance of trees at least 200 years old, multiple canopy layers, large diameter snags and down logs, and a forest floor exhibiting pit-and-mound topography. There should be little or no evidence of past timber harvest or agriculture. Northern hardwood old growth consists primarily of sugar maple and American beech; softwood old growth is largely made up of spruce and hemlock. Stands need to be at least 10 acres in size to be identified as old growth. Anything smaller is a patch of old trees within a younger stand, not a habitat type in its own right." WMNF Plan Abbreviations, Acronyms, and Glossary at 21.

The WMNF Plan goes beyond protections for *existing* old-growth forest, however, clearly looking to how the WMNF can facilitate recovery of old-growth forest across a larger percentage of the forest in the future. The WMNF Plan defines old forest as beginning at 70 years of age in Aspen-birch habitat types, 90 years of age in Spruce-Fir, 120 years of age in Northern hardwoods, Mixed wood, Oak-Pine, and Hemlock. WMNF Plan Appendix D-2. The WMNF Plan defines Old Forest Habitat as: "Desired habitat conditions start with those for mature forest and can include greater size, decadence, structural complexity, etc. *No harvest will*

occur in stands identified to provide old forest habitat" (emphasis added). WMNF Plan Abbreviations, Acronyms, and Glossary at 21. The Environmental Assessment must analyze whether there are any portions of the project area that provide old forest habitat.

The WMNF Plan advises against even-aged management in Mature Forest Habitat, and yet the West Peabody IRP proposes extensive even-aged management in mature stands (79% of the project area is classified as Mature. PWIRP Habitat Rationale at 9. The 2005 WMNF Forest Plan defines Mature Forest as "Stands in which the overstory is in the mature age class. Mature forest habitat is typically made up of trees that are eight inches or more in diameter. Mortality is just beginning in these stands, resulting in a few scattered canopy gaps and a small number of snags and cavities in the overstory. Most snags and down logs are small in diameter and within the intermediate or understory layers. *Depending on site conditions, thinning and uneven-aged harvest methods can be used in this habitat without negatively impacting habitat quality.* Some uneven-aged harvest may enhance vegetative and structural diversity" (emphasis added). WMNF Plan Abbreviations, Acronyms, and Glossary at 18. The mature age class ranges from 40-89 years for Spruce-Fir habitat types, 60-119 years for Mixed wood and Northern hardwood, 40-69 years for Aspen-birch, and 70-119 years for Oak-Pine and Hemlock. WMNF Plan Appendix D-2. The Forest Plan is clearly implying that even-aged management in mature forest negatively impacts habitat quality. Despite this instruction to avoid even-aged management in mature forest habitat, the PWIRP DEA proposes extensive even-aged management. DEA at 5. Based on the Forest Plan, proposed management activities within the PWIRP will certainly degrade habitat quality.

The DEA makes references to potential alterations in the proposed action without opportunity for public comment

The DEA acknowledges several parts of the proposed action that are subject to change dependent upon several conditions. However, the Forest Service does not include an opportunity for the public to participate in the changes in the proposed action and does not explain when such changes would be implemented. The Forest Service in the DEA allows for "[f]inal locations of log landings [to] be *modified* during project layout subject to applicable forest plan standards and guidelines, best management practices, and other site specific requirements." DEA at 5 and 6 (emphasis added). Additionally, the DEA notes that "[s]ome system roads have travel analysis process recommendations that differ from the current proposal. The differences are the result of a project-level transportation analysis of long-term Forest Service plans and objectives in this area." DEA at 10.

In order to truly facilitate opportunities for public participation, the Forest Service must include more detail of these instances of deviation in order to allow for sufficient public comment on those deviations. Additionally, the Forest Service should narrow the opportunities to stray from a publicly reviewed proposed action deviation without further opportunity for public participation. If the Transportation Analysis Process (TAP) involved a signed record of decision, then any deviations from the TAP would require an amendment with NEPA review. As it stands, the TAP was unavailable for review on the WMNF website at the time that the DEA was posted, and to date the WMNF has only provided a TAP map with no supporting analysis.

The aforementioned omissions impede public participation in violation of NEPA

The public is not able to properly scrutinize agency decisions and analysis when relevant documentation is not made available or when available documents do not actually contain the analysis necessary to support the Forest Service's conclusory statements. The overall effect is to impede public participation, in violation of NEPA's clear mandate to "[m]ake diligent efforts to

involve the public in preparing and implementing their NEPA procedures." 40 C.F.R. § 1506.6(a). In addition, the failure to provide clear analysis, or sometimes any analysis, violates NEPA's mandate that NEPA documents "shall be written in plain language . . . so that decisionmakers and the public can readily understand them." *Id*. § 1502.8. The public cannot understand what it is not told.

Without providing actual analysis, it is impossible to gauge the actual anticipated impact to proposed action-area resources, the significance of those impacts, and whether they may violate the Forest Plan standards and guidelines. "[T]he public should not be required to parse the agency's statements to determine how an area will be impacted[.]" *League of Wilderness Defs./Blue Mountains Biodiversity Project v. Connaughton*, 752 F.3d 755, 761 (9th Cir. 2014). Instances of this persistent defect are identified throughout these comments. Given the gaps in data available for public scrutiny, the Forest Service should reconsider its stance from the June 23, 2022 public meeting that it does not intend to provide another 30-day comment period on its draft EA. Reconsideration of that decision is also good public policy.

The Forest Service's proposed action fails to meet current scientific standards and demands

Despite the clear scientific evidence for increased amounts of old, wild forest, only 3% of New Hampshire (and a similar amount across New England) is managed to permanently protect or restore old forest conditions, with a primary emphasis on supporting native biodiversity, natural processes, and climate stabilization.[12]

[12] *See* Moomaw et al., INTACT FORESTS IN THE UNITED STATES: PROFORESTATION MITIGATES CLIMATE CHANGE AND SERVES THE GREATEST GOOD (2019) (hereinafter "Moomaw et al. (2019)").

New Hampshire was historically dominated by old forests, and it remained that way for millennia prior to European arrival.[13] Although the Abenaki people and other indigenous communities developed a sophisticated culture and cleared and managed some of the New England landscape with fire, recent science demonstrates that their impacts were highly concentrated, with the majority of historic New England forests primarily impacted by forces such as wind, ice, and beavers.[14] Much of New Hampshire's landscape evolved with relatively minor human influence over thousands of years since the last glaciation.

With these considerations in mind, the Forest Service should reconsider its stance in regard to the Age Class goals and implementation of Executive Order 14072.

The Age Class goals do not match the latest scientific understanding of the ecology of New England forests, making the Forest Plan scientifically unsound

Today, old forests – the forests that once dominated the region – are functionally absent from northern New England.[15] Elk, caribou, wolverine, wolves, cougars, and pine marten have been extirpated for more than a century. Salmon, once common in many rivers, have either been entirely eliminated or – where they are present – hang on primarily due to fish stocking and assisted migration. By any objective measure of ecosystem health, New Hampshire's ecosystems remain in the intensive care unit.

According to the definitive paper on disturbance frequency and intensity in New England, "the proportion of the presettlement landscape in seedling–sapling forest habitat (1–15

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[13] Lorimer and White, SCALE AND FREQUENCY OF NATURAL DISTURBANCES IN THE NORTHEASTERN US: IMPLICATIONS FOR EARLY SUCCESSIONAL FOREST HABITATS AND REGIONAL AGE DISTRIBUTIONS (2003) (hereinafter "Lorimer and White (2003)").

[14] Oswald et al., CONSERVATION IMPLICATIONS OF LIMITED NATIVE AMERICAN IMPACTS IN PRE-CONTACT NEW ENGLAND (2020).

[15] Zaino et al., VERMONT CONSERVATION DESIGN – NATURAL COMMUNITY AND HABITAT TECHNICAL REPORT (2018) (hereinafter "Zaino et al. (2018)").

years old) ranged from 1 to 3% in northern hardwood forests (Fagus–Betula–Acer–Tsuga) of the interior uplands." "The current estimates of 9-25% [seedling-sapling habitat] for the northern New England states are probably several times higher than presettlement levels." Gap size in Hemlock-Northern Hardwood forests averaged less than .75 acres. Beech was the dominant species among Northern Hardwoods, comprising perhaps 30% of the forest. Stand replacing events occurred, on average, only every 1,000 to 7,500 years.[16]

A 2008 paper builds on these themes: "Although humans have a long history (about 12,000 years) on the North American continent, the magnitude of change wrought by European settlement has no parallel since the last glaciation... In New England, rates of landscape change have been far greater in the past 300 years than in the previous 1000 years as a result of forest cutting, agricultural conversion, urban development, altered fire regimes and herbivore populations, nonnative species introductions, and atmospheric pollution… There has been no return to presettlement conditions because of continuing low-level disturbance and perhaps insufficient recovery time."[17]

We can measure New Hampshire's progress towards forest ecosystem restoration against several large landscape conservation visions that have gained traction in the past fifteen years. In 2006, Wildlands and Woodlands, a program of Harvard Forest and Highstead Foundation, produced a widely supported vision for New England that included a goal for 10% of all regional forestlands to be conserved as wildlands. Fifteen years later, only 3% of New England is in wildlands, and relatively little progress has been made toward the 10% goal, despite excellent progress towards conserving forests for extraction of wood products.

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[16] (Lorimer and White (2003)).

[17] Nowacki and Abrams, THE DEMISE OF FIRE AND "MESOPHICATION" OF FORESTS IN THE EASTERN UNITED STATES (2008)

More recently, based on the rapid decline of wildlife populations[18] and the rapid degradation of the climate,[19] scientists have suggested that much more aggressive measures must be taken to stave off climate and extinction catastrophe. The 2019 Global Deal for Nature (the inspiration for "30x30") calls for 30% of lands and waters to be permanently protected in GAP 1 and 2[20] protected areas[21] by 2030 to maintain and restore biodiversity, with an additional 20% percent conserved to stabilize the climate.[22] This vision was partially endorsed by the Biden Administration in Executive Order 14008, "Tackling the Climate Crisis at Home and Abroad."[23] To date, the Forest Service, including the White Mountain National Forest, has not revealed how it intends to implement EO 14008.

Large blocks of intact forest minimize harmful vectors for the spread of invasive species and allow natural disturbances to play out across a sufficiently large landscape to ensure that there is a mix of early and late successional habitats required by the full spectrum of New England's forest-dependent species. Although passive management is most often all that's required to restore old forest conditions,[24] it takes centuries to develop forest complexity, requiring permanent protection from timber harvest if restoration is to be successful.[25,26,27,28,29]

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[18] Ceballos et al., VERTEBRATES ON THE BRINK AS INDICATES OF BIOLOGICAL ANNIHILATION AND THE SIXTH MASS EXTINCTION (2020)
[19] "Climate Change 2021: The Physical Science Basis" (Working Group I contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change)
[20] The US Geological Survey maintains the nation's protected area database and has created a "GAP Status Code Assignment" to categorize types of conservation across all land ownerships, public and private.
[21] Dreiss and Malcom, GETTING TO 30X30: GUIDELINES FOR DECISION-MAKERS (2020)
[22] Dinerstein et al., A GLOBAL DEAL FOR NATURE: GUIDING PRINCIPLES, MILESTONES, AND TARGETS (2019)
[23] Executive Order 14008, "Tackling the Climate Crisis at Home and Abroad." (Jan 27, 2021)
[24] *See* (Zaino et al. (2018)).
[25] Watson et al., THE EXCEPTIONAL VALUE OF INTACT FOREST ECOSYSTEMS (2019)
[26] DiMarco et al., WILDERNESS AREAS HALVE THE EXTINCTION RISK OF TERRESTRIAL BIODIVERSITY (2019)
[27] (Dinerstein et al. (2020)).
[28] Miller et al., EASTERN NATIONAL PARKS PROTECT GREATER TREE SPECIES DIVERSITY THAN UNPROTECTED MATRIX FORESTS (2018)
[29] Miller et al., NATIONAL PARKS IN THE EASTERN UNITED STATES HARBOR IMPORTANT OLDER FOREST STRUCTURE COMPARED WITH MATRIX FORESTS (2016)

The DEA states that its vegetation management goals are focused on creating forest openings and regeneration-age forest. DEA at 1 and 2. The DEA suggests that "[a]n analysis of the current habitat conditions indicates that the the Peabody West HMU is not meeting MA 2.1 habitat composition and age class objectives" outlined in the 2005 Forest Plan. DEA at 1. However, the DEA fails to include any description of this purported analysis, and the WMNF has not produced an age-class map for the Peabody West IRP project area. Nor does the DEA contain an analysis of whether the age class objectives for regeneration and young age classes have already been met, forest-wide, in the 17 years since the signing of the Forest Plan. Indeed, the Forest Plan expects that regeneration age-class objectives will be met by year 10 of the Forest Plan. WMNF Plan at 1-21.

Taking the aforementioned science into account, the public is also left to wonder what science the White Mountain National Forest is grounding forest management decisions in. Which species does the West Peabody IRP stand to benefit most? Why does the WPIRP seem to favor game species, which already exist in abundance elsewhere in New Hampshire? Why are interior and mature forest species devalued in the proposed action area? Why does the DEA propose to reduce the beech population, despite the fact that it is a critical wildlife food source and that it was historically the dominant species on this site? By targeting beech, how can we identify strains that are resistant to beech bark disease? How should the public reconcile extensive areas of even-age management with the fact that such areas bear little resemblance to the natural disturbance regime of a Northern Hardwood forest?

The Forest Service has failed to implement Executive Order 14072

The DEA fails to explain how proposed logging will comply with the Forest Plan standards and prohibitions for mature and old forests, as well as President Biden's Executive

Order 14072, Strengthening the Nation's Forests, Communities, and Local Economies. The EO reads:

"Sec. 2. Restoring and Conserving the Nation's Forests, Including Mature and Old-Growth Forests. My Administration will manage forests on Federal lands, which include many mature and old-growth forests, to promote their continued health and resilience; retain and enhance carbon storage; conserve biodiversity; mitigate the risk of wildfires; enhance climate resilience; enable subsistence and cultural uses; provide outdoor recreational opportunities; and promote sustainable local economic development."[30]

The EO continues:

"(b) The Secretary of the Interior, with respect to public lands managed by the Bureau of Land Management, and the Secretary of Agriculture, with respect to National Forest System lands, shall, within 1 year of the date of this order, define, identify, and complete an inventory of old-growth and mature forests on Federal lands, accounting for regional and ecological variations, as appropriate, and shall make such inventory publicly available.

(c) Following completion of the inventory, the Secretaries shall:

(i) coordinate conservation and wildfire risk reduction activities, including consideration of climate-smart stewardship of mature and old-growth forests, with other executive departments and agencies (agencies), States, Tribal Nations, and any private landowners who volunteer to participate;

(ii) analyze the threats to mature and old-growth forests on Federal lands, including from wildfires and climate change; and

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[30] *See* Strengthening the Nation's Forests, Communities, and Local Economies, Executive Order 14072, 87 Fed. Reg. 24,851 (April 22, 2022).

(iii) develop policies, with robust opportunity for public comment, to institutionalize climate-smart management and conservation strategies that address threats to mature and old-growth forests on Federal lands."[31]

The WMNF Plan gives the forest a distinct advantage in meeting its NFMA and EO obligations by already clearly defining mature, old, and old-growth forests. The WMNF has identified extensive mature forests in the West Peabody IRP project area, much of which it is planning to log in a clear violation of EO 14072. Until detailed analysis is completed and mature forests are conserved, the West Peabody IRP must not proceed.

The scientific underpinnings of EO 14072 are rooted in recent peer-reviewed studies that investigate climate change mitigation and the intersection of forest ecology and forest carbon. Climate change is driving and exacerbating a range of threats to New Hampshire, the New England region, and the globe. The 2009 New Hampshire Climate Action Plan notes that climate change is already "[i]ncreasing the frequency and severity of heavy, damaging precipitation events and the associated major economic impacts of cleanup, repair, and lost productivity and economic activity." In addition, climate change is "[i]ncreasing the frequency of short-term (i.e., one to three month) summer droughts from every two to three years to annually, resulting in increased water costs, and agricultural and forestry stress." Exhibit 19. Although perhaps not a primary driver of the spread of invasive species, ticks, and disease, climate change can amplify these threats.

The Intergovernmental Panel on Climate Change Report released in February 2022 found, "[s]afeguarding biodiversity and ecosystems is fundamental to climate resilient development … and to [climate] mitigation and adaptation." Exhibit 20. On November 12th,

[31] Ibid.

2021, the US joined 140 other nations in signing a commitment at the COP 26 UN Climate Change Conference in Glasgow, Scotland. The "Glasgow Leaders' Declaration on Forests and Land Use" promised to "to halt and reverse forest loss and *land degradation* by 2030" (emphasis added). Exhibit 21.

On the global scale, forest protection represents approximately *half or more* of the climate change mitigation needed to hold temperature rise to 1.5 degrees Celsius.[32] New Hampshire may be a relatively small state, but its temperate deciduous forests are among the planet's most effective carbon sinks. In the US, New England's in-situ carbon storage potential is second only to that of the Pacific Northwest, but carbon storage levels remain artificially low due to timber harvest frequency and intensity. Across the Northeast US and Upper Midwest, timber harvest accounts for 86% of annual forest carbon loss. In comparison only 9% of forest carbon in the same geographic area is lost annually from insect damage, and 3% from conversion to other land uses.[33] Other recent studies show that among land uses in New England, timber harvest is the leading cause of tree mortality[34] and has the greatest impact on aboveground carbon storage.[35]

The exceptional values of mature and old-growth forests

(a) Forest Carbon

There is a common misconception that young forests are better than old when it comes to removing carbon in the atmosphere. First of all, old forests store much more carbon than young

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[32] Erb et al., UNEXPECTEDLY LARGE IMPACT OF FOREST MANAGEMENT AND GRAZING ON GLOBAL VEGETATION BIOMASS (2018)
[33] Harris et al., ATTRIBUTION OF NET CARBON CHANGE BY DISTURBANCE TYPE ACROSS FOREST LANDS OF THE COTERMINOUS UNITED STATES (2016)
[34] Brown et al., TIMBER HARVEST AS THE PREDOMINANT DISTURBANCE REGIME IN NORTHEASTERN U.S. FORESTS: EFFECTS OF HARVEST INTENSIFICATION (2018)
[35] Duveneck and Thompson, SOCIAL AND BIOPHYSICAL DETERMINATIONS OF FUTURE FOREST CONDITIONS IN NEW ENGLAND: EFFECTS OF A MODERN LAND-USE REGIME (2019) (hereinafter "Duveneck and Thompson (2019)").

forests, and they continue to accumulate carbon over time.[36,37,38] What's more, the rate of carbon sequestration also increases as trees age.[39] It can take up to 30 years after a regeneration cut for a young forest to become a carbon sink instead of a carbon source.[40]

Today, despite tree cover across the vast majority of the northern New-England landscape, the region's forests do not produce high levels of ecosystem services due to current management practices, including harvest frequency and intensity, and are still recovering from extensive clearing in the eighteenth and nineteenth centuries. A 2019 paper by Harvard Forest researchers found that:

> *"Among land uses, timber harvesting [has] a larger effect on [aboveground carbon] storage and changes in tree composition than did forest conversion to non-forest uses… Our results demonstrate a large difference between the landscape's potential to store carbon and the landscape's current trajectory."*[41]

Northeast secondary forests have the potential to increase biological carbon sequestration 2.3–4.2-fold.[42] A 2011 paper by UVM Professor Bill Keeton found that:

> *"…There is a significant potential to increase total carbon storage in the Northeast's northern hardwood-conifer forests. Young to mature secondary forests in the northeastern United States today have aboveground biomass (live and dead) levels of 107 Mg/ha on average (Turner et al. 1995, Birdsey and Lewis 2003). Thus, assuming a*

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[36] Keith et al., RE-EVALUATION OF FOREST BIOMASS CARBON STOCKS AND LESSONS FROM THE WORLD'S MOST CARBON-DENSE FORESTS (2009).
[37] Luyssaert et al., OLD-GROWTH FORESTS AS GLOBAL CARBON SINKS (2008).
[38] Masino et al., OLDER EASTERN WHITE PINE TREES AND STANDS SEQUESTER CARBON FOR MANY DECADES AND MAXIMIZE CUMULATIVE CARBON (2021).
[39] Stephenson et al., RATE OF TREE CARBON ACCUMULATION INCREASES CONTINUOUSLY WITH TREE SIZE (2014).
[40] Law et al, CHANGES IN CARBON STORAGE AND FLUXES IN A CHRONOSEQUENCE OF PONDEROSA PINE (2003)
[41] Duveneck and Thompson (2019)
[42] Keeton et al., Late-successional Biomass Development in Northern Hardwood-Conifer Forests of the Northeastern United States (2011)

maximum potential aboveground biomass range for old-growth of approximately 250–450 Mg/ha, a range consistent with upper thresholds in our data set and the lower threshold observed at Hubbard Brook, our results suggest a potential to increase in situ forest carbon storage by a factor of 2.3–4.2, depending on site-specific variability. This would sequester an additional 72–172 Mg/ha of carbon."[43]

Forests in temperate zones such as in the Eastern U.S. have a particularly high untapped capacity for carbon storage and sequestration because of high growth and low decay rates, along with exceptionally long periods between stand replacing disturbance events, similar to the moist coastal forests of the Pacific Northwest. Further, because of recent recovery from an extensive history of timber harvesting and land conversion for agriculture in the 18th, 19th, and early 20th centuries, median forest age is about 75 years,[44] which is only about 25–35% of the lifespan of many of the common tree species in these forests.[45] Because of our remarkable forest ecosystems here in Northeastern North America, several global studies have highlighted the unique potential of our temperate deciduous forests to contribute on the global stage to climate stabilization and resilience.[46,47]

A 2013 study provides proof that protecting forests from logging is as close to a guarantee as there is for securing long-term carbon sequestration and storage. Strict protected areas prohibiting logging (i.e. GAP 1, IUCN Category 1, or equivalent classification) cover just 5% of the total land area of the mid-Atlantic and Northeast US (VA, PA, DE, NJ, NY, CT, RI,

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[43] *Id.*
[44] Moomaw et al (2019). Intact Forests in the United States: Proforestation Mitigates Climate Change and Serves the Greatest Good.
[45] *Id.*
[46] Dinerstein et al., A GLOBAL SAFETY NET TO REVERSE BIODIVERSITY LOSS (2020).
[47] Jung et al., AREAS OF GLOBAL IMPORTANCE FOR TERRESTRIAL BIODIVERSITY, CARBON, AND WATER (2020).

MA, VT, NH, ME). However, these protected areas account for "30% of the carbon stored in all forests in the region."[48]

(b) Climate Resilience and Water Quality

Old forests are also the most resilient to changes in the climate, producing the highest outputs of ecosystem services like clean water, and reducing the impacts of droughts and floods. These ecosystem services protect downstream communities from flooding, purify drinking water at low cost, and maintain base flows and low temperatures in rivers during hot summers for the benefit of fish and wildlife.

In New England, frequent flooding and nutrient-driven water quality degradation are two of our most costly environmental crises, and both are compounded by climate change. Mature and old forests naturally mitigate against flooding and drought by slowing, sinking, and storing water that would otherwise rapidly flow into our streams, rivers, and lakes.[49] Scientists have also shown that old forests are exceptional at removing nutrients that drive harmful algae blooms, like phosphorus.[50]

After Tropical Storm Irene ravaged New England in 2011, Vermont's Department of Forests, Parks, and Recreation commissioned a report entitled "Enhancing Flood Resiliency of Vermont State Lands." According to the report:

> *"There may be a tendency to assume that lands in forest cover are resilient to the effects of flooding simply by virtue of their forested status. However, forest cover does not necessarily equate to forest health and forest flood resilience. Headwater forests of*

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[48] Lu et al 2013 - A Contemporary Carbon Balance for the Northeast Region of the United States
[49] Underwood and Brynn, ENHANCING FLOOD RESILIENCY OF VERMONT STATE LANDS (2015)
[50] Warren et al., FOREST STREAM INTERACTIONS IN EASTERN OLD-GROWTH FORESTS (2018).

Vermont include a legacy of human modifications that have left certain land areas with a heightened propensity to generate runoff, accelerate soil erosion, and sediment streams. These legacy impacts affect forest lands across the state... The quality of [today's] forests is not the same as the pre-Settlement old growth forests. The legacy of early landscape development and a history of channel and floodplain modifications continue to impact water and sediment routing from the land."[51]

A 2019 study led by the University of Vermont looked into the climate resilience of older compared to younger forests. The research found that:

"[Older forests] simultaneously support high levels of carbon storage, timber growth, and species richness. Older forests also exhibit low climate sensitivity…compared to younger forests… Strategies aimed at enhancing the representation of older forest conditions at landscape scales will help sustain [ecosystem services and biodiversity] in a changing world… Although our analysis suggests that old forests exhibit the highest combined [ecosystem services and biodiversity (ESB)] performance, less than 0.2% of the investigated sites are currently occupied by forests older than 200 years. This suggests a large potential to improve joint ESB outcomes in temperate and boreal forests of eastern North America by enhancing the representation of late-successional and older forest stand structures…" [52]

Because of the overwhelming science in support of recovering America's old-growth forests, a recent peer-reviewed paper calls for the establishment of Strategic Carbon Reserves, with an emphasis on roadless, maturing forests. The paper finds that:

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[51] Underwood and Brynn (2015)

[52] Thom et al., THE CLIMATE SENSITIVITY OF CARBON, TIMBER, AND SPECIES RICHNESS COVARIES WITH FOREST AGE IN BOREAL-TEMPERATE NORTH AMERICA (2019)

- *"Many of the current and proposed forest management actions in the United States are not consistent with climate goals... [P]reserving 30 to 50% of lands for their carbon, biodiversity and water is feasible, effective, and necessary for achieving them."*
- *"Instead of regularly harvesting on all of the 70% of US forest land designated as 'timberlands' by the US Forest Service, setting aside sufficient areas as Strategic Reserves would significantly increase the amount of carbon accumulated between now, 2050 and 2100, and reestablish greater ecosystem integrity, helping to slow climate change and restore biodiversity."*
- *"Preserving and protecting mature and old forests would not only increase carbon stocks and growing carbon accumulation, they would slow and potentially reverse accelerating species loss and ecosystem deterioration, and provide greater resilience to increasingly severe weather events such as intense precipitation and flooding."*[53]

(c) Biodiversity

Many of New England's native fish and wildlife species, including those that are often most imperiled, such as the Northern Long-eared Bat, pine marten, brook trout, Blackburnian and Cerulean Warblers, Scarlet Tanagers, and Wood Thrush, depend on large, unfragmented landscapes and structurally-complex old forests for suitable habitat.[54,55] Mature, unfragmented, interior forests are rare in New England overall, making the Green and White Mountain National Forests important concentrations of such habitat within New England. When this habitat is

[53] Law et al., CREATING STRATEGIC RESERVES TO PROTECT FOREST CARBON AND REDUCE BIODIVERSITY LOSSES IN THE UNITED STATES (2022)
[54] Zaino et al 2018
[55] "The Critical Importance of Large Expanses of Continuous Forest for Bird Conservation" (Askins 2015)

fragmented or degraded, such as through road construction and logging projects, these species experience increased threats from interactions with humans, predation, changes in microclimates, the spread of invasive species, and other fragmentation and edge effects.

Pine marten are on the State of Vermont Endangered Species List, and one of only two viable populations in the state is located within the Green Mountain National Forest. A 2022 study analyzing marten populations in Maine found that "even partial harvest activities can diminish the canopy cover, structural complexity and overall basal area [that marten] require[.]"[56] The same study found that "Marten…showed lower initial occupancy probability in areas of increasingly disturbed forest and had both higher extinction rates and lower colonization rates in these areas."[57]

Northern long-eared bats are federally listed as threatened and the US Fish and Wildlife Service has proposed to uplist the bat to endangered, with a decision due in the fall of 2023. The Northern long-eared bat depends on mature and old forests for roosting and foraging.[58] Its preferred roosting habitat is large-diameter live or dead trees of a variety of species, with exfoliating bark, cavities, or crevices. And its preferred foraging habitat is old forest with complex vertical structure on hillsides and ridges.[59]

Logging is the greatest threat to mature and old forests in the WMNF and New England

Due primarily to human-driven forest conversion (i.e. development, agriculture) and degradation (i.e. logging, fragmentation), mature and old-growth forests, once common in the

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[56] Evans, B. E. and A. Mortelliti, "Effects of forest disturbance, snow depth, and intraguild dynamics on American marten and fisher occupancy in Maine, USA." Ecosphere (2022) Vol. 13, Iss. 4.
[57] *Id.*
[58] Burkhart, J. et al. "Species Status Assessment Report for the Northern long-eared bat (Myotis septentrionalis)," U.S. Fish and Wildlife Service. (2022) Version 1.1.
[59] *Id.*

forested regions of the US, are today underrepresented compared to historical levels. As explained previously, prior to European settlement, old-growth forests were the dominant land cover of northern New England, including the locations of the White and Green Mountain National Forests.

The recently-released USDA Forest Service Climate Adaptation Plan notes that mature and old-growth forests are "often viewed as ideal candidates for increased conservation efforts, and are frequently found within areas designated as wilderness or roadless or other management areas where timber harvest is precluded." The USDA Forest Service Climate Adaptation Plan is wise to highlight the inverse relationship between timber harvest levels and amounts of mature and old-growth forests. As implied by the USDA Forest Service Climate Adaptation Plan, there is no greater threat to the extent of mature and old-growth forests on federal public lands than logging.

Logging is the single greatest influence on the amount and extent of mature forests across the US, and is easily the most preventable threat to mature forests when compared to fire, insects, disease, and other disturbances. A 2013 study found that "Logging is a larger cause of adult tree mortality in northeastern U.S. forests than all other causes of mortality combined."[60] This finding was reinforced in another study from 2018: "[Logging] comprises more than half of all mortality (on a volume basis), making logging the predominant disturbance—natural or anthropogenic— affecting forest ecosystems in the region."[61]

This level of timber harvest has a significant impact on forest carbon – far greater than any other factor. Timber harvest drives 92% of annual forest carbon losses in the US South, 86%

[60] Canham et al 2013 - Regional variation in forest harvest regimes in the northeastern United States
[61] See Brown et al. 2018

in the North, and 66% in the West. For comparison, the second greatest impacts on forest carbon in each region are as follows: West: fire (15%); North: insect damage (9%); South: wind damage (5%).[62]

Forthcoming research led by Dr. Dominick DellaSala provides the first nationwide assessment of present levels of mature forests in the US. Today, mature and old-growth forests represent ~36% of all forest age classes across the nation, with the greatest amount in a single ownership (35%) located on federal lands. Of the mature forests on federal lands, 92% are managed by the US Forest Service, 9% by the Bureau of Land Management, and 3% by the National Park Service. These forests simultaneously support the highest concentrations of drinking water source areas, at-risk ecosystems, and aboveground living biomass. Despite their exceptional value, the vast majority of mature forests on federal lands (76%), storing approximately 10.64 Gt of CO_2, are unprotected from logging.[63]

Of the mature forests identified by Dr. Dellasala's study, old-growth represents a tiny fraction in each region of the United States outside of Alaska, demonstrating the need for policies that put a greater percentage of forests on a path to recover late successional forests. In the Eastern US, old-growth comprises just 1.6% of South-Central US forests, 1.1% of the Upper Midwest forests, .5% of Southeast US forests, and .4% of forests in the Northeast.[64]

As evidenced above, the Northeast US has lost a greater percentage of its old-growth forests than perhaps any other region of the US. Private lands across New England are managed

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[62] Harris et al 2016. Attribution of net carbon change by disturbance type across forest lands of the conterminous United States. Carbon Balance and Management.

[63] Dellasala et al 2022 (forthcoming). Mature and Old-Growth Forest Contributions to Large-Scale Conservation Targets in the Conterminous USA. Frontiers in Science.

[64] Davis, M.B. (ed.). (1996). Eastern old-growth forests. Prospects for rediscovery and recovery. Island Press: Washington, D.C.

more intensively for timber harvest compared with federal public lands.[65] This is especially pronounced in the northern New England states of Maine, New Hampshire and Vermont, where the vast majority of forests are privately owned (~94% of Maine). Recent modeling suggests that logging, not forest conversion, will continue to be the greatest factor in regional aboveground forest carbon over at least the next 50 years.[66]

Although there is a large amount of maturing forest (80-100) across the landscape, future harvests will target these forests where they occur on private lands.[67] Despite widespread forest maturation, rates of timber harvest in New England are such that trends in regional amounts of late successional forest structure are static, and the amount of large diameter standing snags is declining.[68] "Even though forests of the Northeast are aging, changes in silviculture and forest policy are necessary to accelerate restoration of old-growth structure."[69] The White Mountain National Forest, containing a relatively high percentage of mature forests compared to private lands, is an especially important location to protect intact mature forests so that New England can recover regionally-significant amounts of late successional forest.

The Forest Service should conduct additional analysis

In addition, an Environmental Impact Statement should analyze and minimize:

- Water quality impacts, including from road construction/reconstruction and logging;

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[65] Gunn et al 2013. Late-successional and old-growth forest carbon temporal dynamics in the Northern Forest (Northeastern USA). Forest Ecology and Management.
[66] Duveneck and Thompson 2019. Social and biophysical determinants of future forest conditions in New England: Effects of a modern land-use regime. Global Environmental Change.
[67] Ibid.
[68] Ducey et al 2013. Late-Successional and Old-Growth Forests in the Northeastern United States: Structure, Dynamics, and Prospects for Restoration.
[69] Ibid.

- Impacts to historic and cultural resources, including those of the Abenaki community;
- Soil quality impacts, including from road construction/reconstruction and logging.

The Project, as proposed, is "significant" and requires an EIS

NEPA requires that federal agencies prepare an Environmental Impact Statement ("EIS") for projects that are likely to have significant effects. 40 CFR § 1501.3(a)(3). In determining whether the effects of the proposed action are likely to be significant, agencies are to consider (1) both short- *and long-term effects*; (2) Both beneficial and *adverse effects*; (3) Effects on public health and safety, and (4) effects that would violate Federal, State, Tribal, or local law protecting the environment. *Id*. § 1501.3(b)(2) (emphasis added). In making the significance determination, agencies are also to consider connected actions. *Id*. § 1501.3(b). Moreover, "significance varies with the setting of the proposed action" and "in the case of a site-specific action, significance would usually depend only upon the effects in the local area." *Id*. § 1501.3(b)(1).

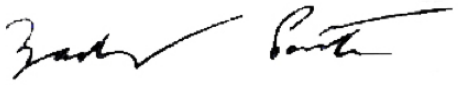
Standing Trees believes that an EA is not adequate for a project of this size, and requests that the Forest Service prepare an EIS. This is a multi-phase, multi-year project that is significantly affecting the environment, regardless of whether those effects are considered beneficial or detrimental. The proposed action is likely to have both short and long-term effects because of its expansive scope and size. Logging will harm the Northern Long-eared Bat as well as other species that depend on mature, interior forests. The proposed action will contribute to the loss of climate benefits of retaining mature and old stands, violating EO 14072. The proposed action will significantly impact the Great Gulf Roadless Area, its possibility for future wilderness designation, and its values for habitat, clean water, and recreation. Logging will cause

detrimental impacts to water quality due to runoff, sedimentation, and potential herbicide contamination. The proposed action may cause loss or damage to historic and cultural resources located within the proposed action area. Finally, the DEA may violate NFMA, NEPA, and the ESA, as described previously. For the above reasons, the size, scope, and significance of the Forest Service's proposed action indicates the need for the Forest Service to prepare an EIS instead of an EA.

Conclusion

NEPA requires that agencies fully evaluate and understand the potential environmental impacts of proposed actions before committing to a specific course of action. In order to fulfill this duty, Standing Trees asks that the Forest Service thoroughly analyze all concerns and recommendations raised above in an EIS. Standing Trees looks forward to the opportunity to review and comment upon the Forest Service's forthcoming NEPA analysis to ensure that this duty was faithfully performed.

Sincerely,



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