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Saco Ranger District
33 Kancamagus Highway
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Submitted electronically via: https://cara.fs2c.usda.gov/Public//CommentInput?Project=57392

Re: Comments of Standing Trees and the Wonalancet Preservation Association Regarding Draft Environmental Assessment and Preliminary Finding of No Significant Impact for Sandwich Vegetation Management Project #57392, Saco Ranger District, White Mountain National Forest

Dear Ranger Innes:

Standing Trees and the Wonalancet Preservation Association respectfully submit these comments regarding the U.S. Forest Service's ("Forest Service") Draft Environmental Assessment and Preliminary Finding of No Significant Impact ("Draft EA") for the Sandwich Vegetation Management Project (the "Project").[1]

Standing Trees is a grassroots membership organization that works to protect and restore New England's forests, with a focus on state and federal public lands in New Hampshire and Vermont. Standing Trees works to ensure New England's public lands are managed using just and equitable policies and practices to support the region's residents and natural ecosystems. This includes managing public lands and waters to maximize carbon storage and protect clean water, clean air, public health, and intact habitat for the region's native biodiversity. Standing Trees has many members who regularly visit and recreate throughout the White Mountain National Forest ("WMNF"), including the area impacted by the Project. The Environmental Advocacy Clinic at Vermont Law and Graduate School submits these comments on behalf of Standing Trees.

[1] U.S. Forest Service, White Mountain National Forest, Saco Ranger District, Sandwich Vegetation Management Project Draft Environmental Assessment and Preliminary Finding of No Significant Impact (July 2023), *available at* https://www.fs.usda.gov/project/?project=57392 ("Draft EA").

The Wonalancet Preservation Association joins in these comments. The Association is a non-profit association of local residents and landowners with a mission to prevent pollution and commercial and other activities detrimental to the natural beauty of the Wonalancet Basin situated in the towns of Tamworth, Sandwich, Waterville and Albany, New Hampshire; to promote the common good and general welfare of the Wonalancet Basin; and to provide facilities and services within the Wonalancet Basin which, due to its remote location, are not provided by the towns, such as civic betterments, recreational facilities for the accommodation of persons within the area and the general public, policing the area and the properties within it, disposing of waste materials, and holding land and interests in land within the Basin so as to preserve its natural beauty.

INTRODUCTION AND SUMMARY OF COMMENTS

The Forest Service is proposing the Sandwich Vegetation Management Project—a substantial logging and prescribed fire project within a Project area of approximately 1,325 acres of the southern WMNF in the shadow of the Sandwich Range Wilderness and iconic Mount Chocorua. According to the Forest Service, the Project is "needed" because existing conditions in the Sandwich Habitat Management Unit ("HMU") do not meet Management Area 2.1 Habitat Composition and age class objectives described in the 2005 WMNF Forest Plan ("Forest Plan" or "WMNF Plan").[2] The Forest Service first proposed the Project in 2020 in the WMNF schedule of proposed actions. After a pre-scoping meeting in January 2020, which was attended by almost 70 people, the Forest Service initiated the scoping process for the Project in June 2022, describing the Project in a Notice of Proposed Action ("NOPA") and offering a 30-day comment period on the proposal and a single virtual meeting on June 23, 2022, to collect public feedback. Standing Trees' Executive Director attended the virtual meeting and submitted extensive comments during the scoping process, expressing numerous concerns about the Project, including its purported purpose and need; the Forest Service's failure to consider alternatives to the Project; the Project's environmental and impacts, including on the proposed-endangered Northern Long-eared Bat ("NLEB"); its effects on the area's treasured scenic and recreational resources; its effects on climate mitigation and resilience, in apparent conflict with Executive Orders 14,072 and 14,008; the recent scientific understandings contradicting the management approaches animating the Project; and the inadequate quality and thoroughness of the supporting documentation provided through the public process.[3] Showing that a Finding of No Significant Impact ("FONSI") would not be justified for the Project, Standing Trees urged the Forest Service to conduct additional analysis on the above issues as well as on other natural, historic, and cultural resources, through an Environmental Impact Statement ("EIS") rather than through an EA.[4]

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[2] White Mountain National Forest Land and Resource Management Plan (Sept. 2005), *available at* https://www.fs.usda.gov/detailfull/whitemountain/landmanagement/planning/?cid=STELPRDB5199941&width=full (cited as "WMNF Plan").

[3] Standing Trees Scoping Comments for Sandwich Vegetation Management Projection (July 1, 2022) (Exhibit 36) (hereinafter "Standing Trees Scoping Comments").

[4] *Id.*

The Project, as proposed and described in the Draft EA, reflects no meaningful changes from the Project described in the NOPA, and Standing Trees remains deeply concerned with the Project, as proposed. Our detailed comments below explain the numerous failures of the Draft EA to comply with the legal requirements for NEPA analysis and describe how the Forest Service must more thoroughly analyze the Project's potential impacts to natural, scenic, and other resources, fully consider the no-action and reasonable alternatives, and reevaluate the purpose and need for the Project in light of the best and most updated science regarding forest and habitat health, climate mitigation and resilience, and water quality. And as proposed, the Project meets the significance factors of the governing NEPA regulations, precluding a FONSI and requiring the preparation of an EIS. We also discuss why the Project's failure to address potential impacts to the endangered NLEB is at odds with the Endangered Species Act ("ESA") and the Forest Plan, and therefore the National Forest Management Act ("NFMA").

The Forest Service should seize the opportunity to return to the drawing board for this Project and, if it pursues the Project at all, prepare a comprehensive and legally compliant EIS, as any decision to proceed with the Project as proposed and to finalize the Draft EA in its current form would run afoul of federal law and would be subject to meritorious administrative objections and legal challenges.

DETAILED COMMENTS

I. The Draft EA Fails to Take a "Hard Look" at the Project's Many, Significant Environmental Impacts.

Under NEPA and the APA, the Forest Service must take a "hard look" at the environmental impacts of the planned action.[5] In the Draft EA for the Project, the Forest Service does not fully discuss relevant issues and fails to make meaningful statements regarding the Project's actual impacts.[6] Throughout the Draft EA, the Forest Service failed to provide more than mere conclusory statements to support its findings. The discussion below highlights some of the key inadequacies with the Draft EA's analysis of Project-area environmental resources.

A. Vegetation and Forest Health

The Draft EA's analysis of the Project's impacts on vegetation and forest health utterly fails to satisfy the requirements of NEPA. The Draft EA does not support its conclusion that forest conditions in the Project area require timber management with, among other pieces of data, detailed information regarding the age and species of stands that the Project seeks to alter, as well as information for the Project area as a whole and the broader landscape. The Forest Service has wholly ignored the significant adverse environmental impacts of logging and the

[5] *Marsh v. Or. Natural Res. Council*, 490 U.S. 360, 374 (1989); *Bark v. U.S. Forest Serv.*, 958 F.3d 865, 869 (9th Cir. 2020).

[6] *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 993 (9th Cir. 2004) ("A proper consideration of the cumulative impacts of a project requires 'some quantified or detailed information; ... [g]eneral 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'" (quoting *Ocean Advocates v. U.S. Army Corps of Eng'rs*, 361 F.3d 1108, 1128 (9th Cir. 2004)).).

substantial scientific evidence that the proposed silvicultural prescriptions will threaten forest health, climate mitigation and resilience, and wildlife habitat. In this regard, the Draft EA also fails to explain how the Project's proposal to log over approximately 1,325 gross acres of the Sandwich Habitat Management Unit ("HMU") will comply with the policies of the Forest Plan and Executive Orders 14,072 and 14,008, which support protecting mature forests like the Project area and disfavor the type of forest management proposed here.[7]

1. Lack of Detailed and Justifiable Information on Stand Age, Habitat Type, and Species Composition

A major threshold problem with the Draft EA is that it fails to take a hard look at stand ages, habitat types, and species composition within the Sandwich HMU—the purported rationale for the Project's logging proposals. This problem persists despite Standing Trees' prior comments on the NOPA's failure to include detailed stand age and species information for the Project[8] and despite requests via email for detailed information during the Draft EA and Scoping[9] comment periods.[10]

The Forest Service states the "existing conditions in the Sandwich Habitat Management Unit do not meet Management 2.1 Area Habitat Composition and age class objectives described in the forest plan."[11] But from the Draft EA and supporting documents, there is no way for the public to determine whether the Forest Service is correct. As stated previously, Standing Trees has requested stand age information on two occasions, during scoping and during the Draft EA comment period, and the Forest Service claims that it does not have the information. This is baffling to Standing Trees, because a) it is common practice for the Forest Service to assign stand ages, and b) an accurate accounting of stand ages is a necessary prerequisite to analyzing the degree to which Forest Plan age class objectives have been met. Without knowing stand ages, it is impossible to classify stands according to the Forest Plan Appendix D: Age Class Definitions by Habitat Type, which characterizes the age ranges of regeneration, young, mature, or old forests.[12] And without knowing the stand ages, there is no way to verify the validity of the Project's purported purpose and need.

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[7] Exec. Order No. 14,072, 87 Fed. Reg. 24,851 (Apr. 22, 2022); Exec. Order No. 14,008, 86 Fed. Reg. 7619 (Jan. 27, 2021).
[8] *See, e.g.*, Standing Trees Scoping Comments at 8-9.
[9] E-mail from Zack Porter, Exec. Dir., Standing Trees, to James Innes, Dist. Ranger, U.S. Forest Serv. and Johnida Dockens, Env't Coordinator (June 16, 2022) (Exhibit 55).
[10] E-mail from Zack Porter, Exec. Dir., Standing Trees, to James Innes, Dist. Ranger, U.S. Forest Serv., Theresa Corless, Forest Planner and Env't Coordinator, U.S. Forest Serv., and Scott Hall, NEPA Coordinator, U.S. Dept. of Agric. (Aug. 8, 2022) (Exhibit 57).
[11] Draft EA at 3. As discussed below, upland forests such as this one would have had only 1-3% of the landscape in early seral conditions. Lorimer and White, *Scale and Frequency of Natural Disturbances in the Northeastern US: Implications for Early Successional Forest Habitats and Regional Age Distributions*, 185 FOREST AND ECOLOGY MANAGEMENT 41(2003), *available at* http://www.maforests.org/Lorimer%20and%20White%20-%20ES%20Habitat.pdf (Exhibit 14) (hereinafter "Lorimer and White").
[12] WMNF Plan Appendix D at D-2.

The Draft EA claims 76% of the HMU is mature forest.[13] However, neither the Draft EA nor its supporting documents—unlike comparable information prepared and released by the Forest Service for Green Mountain National Forest projects—include a table of stand age data or an age class map for the HMU to help the public understand the amount and distribution of forest types and age classes.[14] Thus, the public is unclear whether the Forest Service has complied with the requirements of the Forest Plan, including applicable Standard S-3 or Guideline G-1.[15] Nor does the Draft EA 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 regeneration age-class objectives to be met by year 10 of the Forest Plan.[16] The absence of this information prevents the public from not only checking the Forest Service's conclusions, but also severely hampers the public's ability to suggest reasonable alternatives to the Project, as proposed. For example, if the public wanted to suggest focusing harvest activities in stands classified as regeneration or young instead of mature, in keeping with Executive Order 14,072, there would be no way to determine where these stands are located within the Project area.

The Forest Plan also states, "[n]o harvest will occur in stands identified to provide old forest habitat."[17] The Forest Plan defines old forest habitat as: "[d]esired habitat conditions start with those for mature forest and can include greater size, decadence, structural complexity, etc."[18] Certainly, these attributes could appear in stands that are otherwise classified as "mature" according to the Forest Plan's Appendix D: Age Class Definitions by Habitat Type. Yet there has been no analysis of whether the Project will protect such stands, as required by the Forest Plan[19]—indeed, the Project targets mature forests.

As with other recent WMNF logging projects, the Draft EA for this Project prioritizes "vegetation" and "wildlife habitat" management above all other goals in its description of "Purpose and Need."[20] The Project's Purpose and Need purportedly rest on Forest Plan habitat type and age class objectives. The 2005 Forest Plan Final Environmental Statement ("FEIS") states that "vegetation management is used to achieve multiple objectives, including forest and open habitat that is created and managed to meet the needs of wildlife and plant species."[21] The FEIS also states that "[a]ge class objectives are proposed primarily to provide a variety of habitat

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[13] Draft EA at 3.
[14] Draft EA Appendix B.
[15] Standard S-3 of the Forest Plan provides that "[t]imber harvest is prohibited in old growth forest." WMNF Plan at 2-13. Guideline G-1 of the Forest Plan provides that "[o]utstanding natural communities should be conserved." *Id*.
[16] WMNF Plan at 1-21.
[17] WMNF Plan Abbreviations, Acronyms, and Glossary at 21.
[18] *Id*.
[19] *Id*.
[20] Draft EA at 3.
[21] Final Environmental Impact Statement for the White Mountain National Forest Land and Resource Management Plan at 2-19 (Sept. 2005), *available at* https://www.fs.usda.gov/detailfull/whitemountain/landmanagement/planning/?cid=STELPRDB5199941&width=full (hereinafter "FEIS").

conditions for wildlife."[22] As we show below, the Forest Plan objectives—and thus the Project's Purpose and Need—are arbitrary, erroneous, and not rooted in past or current conditions.

As raised in previous comments, the Forest Service's determination that the natural tendency of the majority of the forest is towards spruce/fir and that hardwoods, including beech, are unnaturally abundant is erroneous and factually baseless. Hardwoods dominated the WMNF prior to European settlement, and beech was the most dominant of the hardwoods.[23] The Forest Plan FEIS states:

> Oak and pine stands were not abundant in most parts of New Hampshire, Vermont, and northern New York prior to European settlement (Cogbill, 2000). They occurred most often in southern and lowland valleys, and were uncommon in the uplands and mountains that now make up the White Mountain National Forest. Currently, oak-pine and hemlock forests are limited, but important, habitats on the Forest (Table 3-11). Oak-pine forest occurs primarily along the southern, eastern, and western edges of the Forest. It is limited to lower elevations in the southern parts of the analysis area, where agriculture altered habitat composition in the past. Oak and pine trees are also components of some hardwood and mixedwood forests in parts of the Forest and the analysis area.[24]

The FEIS continues:

> Historic disturbance regimes indicate that regenerating forest and aspen birch habitats were naturally rare or uncommon (Lorimer and White, 2003, Seymour et al., 2002) in northern New Hampshire and Maine. Limited habitat availability makes it likely that species needing these habitats also would have been limited in the area.[25]

After acknowledging the rarity or absence of oak-pine and aspen-birch habitat types, the Forest Plan sets arbitrarily high objectives for increasing the proportion of these habitats. On page 2-19, the FEIS includes the following table:

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[22] *Id*.
[23] Lorimer and White (Exhibit 14); Thompson et al., *Four Centuries of Change in Northeastern United States Forests* 8 PLOS ONE (2013), *available at* https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0072540&type=printable (Exhibit 50).
[24] FEIS at 3-83.
[25] FEIS at 3-84.

Table 2-03. Habitat Composition Objectives.

Habitat Type	Current Composition (% of MAs 2.1 and 3.1)	Composition Objective (% of MAs 2.1 and 3.1)
Northern Hardwood	53	51
Mixedwood	22	10
Spruce-Fir	12	21
Aspen-Birch[1]	5	8
Wildlife opening	1	3
Other[2]	7	7

[1] Aspen and birch were addressed separately in the 1986 Plan, but will be combined in the new plan. To make tables more comparable between alternatives, the aspen and birch objectives in the 1986 Plan were melded for Alternative 1.
[2] Hemlock forest, oak/pine forest, wetlands, and non-vegetated habitats.

Contrary to available evidence and the FEIS, the Draft EA for this Project suggests that the Forest Service should maintain or expand oak habitat, including through use of prescribed fire. The Draft EA suggests that:

> In the distant past, portions of the proposed project area experienced regular wildfires and intensive logging that provided the disturbance needed for oak-pine to perpetuate. Since the mid-1900s, however, fire has been aggressively suppressed in these oak-pine communities and intervals between timber harvests have increased. As a result, fuel loads (material that will burn) in some of the stands have accumulated to unnaturally high levels. An uncontrolled wildfire in these fuels would likely exhibit a rapid rate of spread and could adversely impact local communities, timber resources, and the soils, wildlife, and air quality in the area. Using prescribed fire and other fuel reduction methods in fire prone stands would reduce the effects and intensity of the next wildfire in these stands.[26]

As with the recently-proposed Hales Location project, the Draft EA here arbitrarily and inexplicably picks a period of extreme disturbance and forest destruction in what is now the WMNF as a reference for desired future conditions.[27] As noted in the Forest Plan FEIS, fire was "extremely rare prior to the logging era."[28] Much of the oak and pine within the WMNF are relics of large-scale logging, agricultural clearing, and subsequent human-caused fires. As today's forests revert back to mature northern hardwoods and mixed-wood stands, the risk of fire diminishes, and the fire regime in the WMNF returns to something closer to what it had been for

[26] Draft EA at 4.
[27] Standing Trees Comment for Hales Location Wildfire Resiliency Project #63301 (April 28, 2023) (Exhibit 58).
[28] FEIS at 3-414.

millennia prior to European settlement.[29] Furthermore, the risk of fire in the WMNF is understood by the Forest Service to be extremely low,[30] and—if anything—the latest scientific evidence points to a dearth of downed woody debris as an ecological deficiency in northern New England forests, not a liability.[31] Such downed woody debris is acknowledged in the Forest Plan EIS as a critical ecosystem component.[32] The Forest Service provides no evidence of elevated fire danger or why a prescribed burn is a necessary or beneficial management action. We incorporate here, by reference, the April 2023 comments submitted by Standing Trees regarding the Hales Location Wildfire Resiliency Project.[33]

The Forest Service's age class analysis is also erroneous. The Project analysis fails to account for the natural patch size and distribution of regeneration and young-aged trees because it only accounts for these conditions at an artificial and arbitrary scale. As admitted by the Forest Plan FEIS:

> In the Northeast, small partial disturbances occur regularly, and large stand replacing disturbances occur at much longer intervals (Lorimer and White, 2003). Wind is the most common natural disturbance type in all [land type associations] and habitats (Lee et al., 1993 ; Leak et al., 1994). It results in both stand-altering events (i.e., broken tops and small areas of blow-down) and stand-replacing events (all trees blown down in a large enough area to be recognized as a 'stand' with a new regenerating forest). Insects and disease are discussed in the Timber Resources subsection. Fire disturbance is discussed in the Wildland Fire section… Most disturbances of all

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[29] Oswald et al., *Conservation Implications of Limited Native American Impacts in Pre-Contact New England*, 3 NATURE SUSTAINABILITY 241, 243 (2020), *available at* https://rex.libraries.wsu.edu/esploro/fulltext/acceptedManuscript/Conservation-implications-of-limited-Native-American/9990058606200184 2?repId=12350928850001842&mId=13362786220001842&institution=01ALLIANCE_WSUAmerican/9990058606200184 2?repId=12350928850001842&mId=13362786220001842&institution=01ALLIANCE_WSU (Exhibit 15) (hereinafter "Oswald et al.").

[30] U.S. Forest Serv., *Forest Service Climate Risk Viewer (Beta 0.2.0)*. (last updated Aug. 10, 2023), *available at* https://storymaps.arcgis.com/collections/87744e6b06c74e82916b9b11da218d28?item=9; *see also* Ager et al., *Development and Application of the Fireshed Registry* 12, 16 (U.S. Forest Serv. 2021) (Exhibit 62).

[31] Ducey et al., *Late-Successional and Old-Growth Forests in the Northeastern United States: Structure, Dynamics, and Prospects for Restoration*, 4 FORESTS 1055, 1069 (2013), *available at* https://www.researchgate.net/publication/260516680_Late-Successional_and_Old-Growth_Forests_in_the_Northeastern_United_States_Structure_Dynamics_and_Prospects_for_Restoration (Exhibit 26).

[32] FEIS at 3-86.

[33] Standing Trees Comment for Hales Location Wildfire Resiliency Project #63301 (April 28, 2023) (Exhibit 58).

> types are very small in size, usually less than 0.2 acres (Lee et al., 1993).[34]

And yet, the Forest Plan FEIS is clear that the WMNF and the surrounding analysis area already contain more than sufficient habitat for species that benefit from regeneration and young age forest. The FEIS states:

> [R]egeneration forest habitat now typically occurs in small patches, and is primarily in MAs 2.1 and 3.1. In the other MAs, it is usually created by stand-replacing natural disturbance, which is expected on 1 to 6 percent of the Forest (Lorimer and White, 2003). Young forest habitat is distributed similarly to regeneration forest because young forest develops with the aging of regeneration forest habitat. Mature and old forests occur in large blocks across the National Forest.
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> Forest Inventory and Analysis (FIA) data (Northeastern Forest Research Station, 1995; 1997) for the counties encompassing most of the analysis area show that the amount of seedling and sapling habitat (which encompasses the Forest's regeneration age class and some of the young age class) increased across the analysis area between the early 1980s and mid 1990s. This increase ranged from 20 to 88 percent in New Hampshire, Maine, and Vermont, with the greatest increase in northern New Hampshire. After these increases, seedling and sapling habitat represented about 15 percent of existing forestland across the analysis area.[35]

Nevertheless, the Forest Service set arbitrary age class goals in the Forest Plan (see table below) that are grossly out of the natural range of variability. These goals are out of touch with the already-sufficient quantities of regeneration age and young forest within the WMNF boundaries and the excessive quantities of regeneration age forest across the Forest Plan analysis area.[36]

Table 2-04. MA 2.1 and 3.1 Age Class Objectives.

Habitat Type	% in Regen Habitat Age Class	% in Young Habitat Age Class	% in Mature Habitat Age Class	% in Old Habitat Age Class
Northern Hardwood	4-7	20-35	43-61	15
Mixedwood	4-7	20-35	37-55	21
Spruce-Fir	1-2	3-6	64-68	28
Aspen-Birch[1]	12-14	36-45	13-25	27

[34] FEIS at 3-79.
[35] FEIS at 3-86.
[36] FEIS at 2-20.

Despite acknowledging the small patches ("less than 0.2 acres") and relative abundance ("rare or uncommon") of regeneration age forest (especially aspen-birch) that would naturally occur, as well as the unnatural abundance of regeneration age forest that existed across the Forest Plan analysis area and presumably still exists today ("15 percent of existing forestland across the analysis area"), the Forest Plan and Draft EA suggest that significantly more regeneration age and young forest must be created. The Draft EA offers no analysis of how much regeneration age forest exists within the Forest Plan analysis area today, nor how much exists within the Sandwich HMU as a whole.

Compounding these oversights, the Forest Service arbitrarily defines "Regeneration Forest Habitat" in the Forest Plan as:

> Forest in which almost all the trees are 0-9 years old with less than 30 square feet of basal area in a mature overstory. Can be created through natural disturbance (e.g. wind, fire) or the following silvicultural treatments: clearcutting, seed tree harvest, and shelterwood harvest to 30 basal area or less or with removal harvest within 10 years of original harvest..[37]

We note that the definition does not appear to be *exhaustive* of the ways in which regeneration age forest, as defined above, can be created, even though the WMNF has suggested that the list is intended to be exhaustive. The definition merely lists *some* of the ways in which these conditions can be created. However, based on email communication, the WMNF does not count "group selection" harvests towards regeneration age-class objectives,[38] even though these cuts lead to forest regeneration and often resemble small clearcuts. Further, we are not sure whether "patch cuts" or other even-aged management prescriptions *not* included in the above definition count towards regeneration-age forest objectives.

The definition of "Regeneration Forest Habitat" also conflates naturally-created "regeneration forest habitat" with what is created following even-aged management, despite the fact that naturally-created early successional habitat is altogether different in its complexity, scale, and distribution across the forested landscape, as acknowledged by the Forest Plan FEIS. The authors of a recent, prominent study describe how complex early successional habitat differs from what is created through timber harvests:

> After a natural disturbance a forest can be a chaotic jumble of dead and damaged trees, downed wood, and tip-ups—many involving immense old trees and their associated biodiversity above and below ground (Lain et al., 2008; Santoro and D'Amato, 2019). In a natural forest, snags and downed logs and uproot mounds and pits are large and enduring for 100 years or more, there are no large areas of bare

[37] WMNF Plan Abbreviations, Acronyms, and Glossary at 24.
[38] E-mail from Zack Porter, Exec. Dir., Standing Trees, to James Innes, Dist. Ranger, U.S. Forest Serv., Theresa Corless, Forest Planner and Env't Coordinator, U.S. Forest Serv., and Scott Hall, NEPA Coordinator, U.S. Dept. of Agric. (August 24, 2023, 10:59 EST) (Exhibit 59).

> ground or scarified soil, and downed wood and vegetation remains on site (Foster et al., 2003). After an extreme event, such as a hurricane, there may be abundant advance regeneration, understory vegetation, and a mix of damaged and undamaged trees. These building blocks help the forest recover and resist the intrusion of invasive species (Plotkin et al., 2013, D'Amato et al., 2017). Even forests with almost no advance regeneration can regenerate rapidly after a major disturbance (Faison et al., 2016).[39]

In sum, the Forest Service has arbitrarily selected age-class objectives at the Forest Plan and project level with no regard to the scientific literature or the broader landscape context, and—making matters worse—it has arbitrarily determined what conditions on the ground will count towards "regeneration age class" objectives and which harvest prescriptions can achieve these conditions. This forces the public to guess how the Forest Service is (or is not) making progress towards Forest Plan goals and objectives, regardless of their validity. In addition, the amount of regenerating forest across the WMNF, as described in the Forest Plan EIS, may in fact be dramatically higher (in terms of both acreage and percentage of the total forested area) than is acknowledged or reported by the Forest Service. This is because the Forest Service has arbitrarily and unreasonably limited the definition of regeneration age forests and the tools which can create regeneration age forests within the boundaries of the WMNF. There is likely significantly more regeneration occurring across the WMNF than the public is led to believe in Project documents. Moreover, there is a significant and unacknowledged difference between what is created through timber harvests and natural disturbances.

The Forest Service's arbitrary construction of what conditions count towards age class goals, and how such conditions can be created, lead to the agency's habit—common to several, if not all, recent projects on the WMNF—of presupposing that the only way to achieve desired age class goals is to conduct the Project's logging activities, particularly even-aged management, and the Project's prescribed fire activities. This determination biases the agency against other valid management approaches, constraining the development of alternatives.[40] The Forest Service suggests the Project will cultivate a healthy forest with improved biodiversity, yet provides no scientific evidence.[41] The Forest Service states that natural means would create less "[d]iversity of age and structure" and "wildlife habitat diversity would continue to decline,"[42] but provides no analysis of: (a) how much regeneration or young forest habitat is already present on public lands or surrounding private lands; (b) how much would be created naturally with a no-action alternative; (c) how the "diversity of age and structure" that would be created through logging for "regeneration forest habitat" differs from what would occur naturally in the forest; and (d) how "overall wildlife species diversity" would, in fact, differ between naturally and artificially-created early successional habitat. As we have shown, the degree of disturbance that would be

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[39] Kellett et al., *Forest-clearing to Create Early-successional Habitats: Questionable Benefits, Significant Costs*, 5 FRONTIERS FOR GLOB. CHANGE 1 (Jan. 9, 2023) (Exhibit 3) (hereinafter "Kellett et al.").
[40] 40 C.F.R. § 1502.2(f).
[41] Draft EA at 6.
[42] Draft EA at 18.

caused by the Project equates to an extreme or catastrophic event that could never occur under natural conditions. These gaps in analysis illustrate how, on its own terms, the Draft EA fails to comply with NEPA's requirements of reasoned, transparent analysis.

2. Failure to Address Current Scientific Understanding of Forest Health

Indeed, a more far-reaching issue with the Draft EA and its analysis of vegetation and forest conditions is that they are not informed by the latest scientific understanding of the ecology of New England forests, the benefits of protecting mature forests, and the negative environmental impacts of logging. The Draft EA describes the Project's vegetation management goals as promoting tree regeneration, vegetation regeneration, and increases in wildlife habitat diversity.[43] As discussed below, the proposed harvests are neither preferable nor as necessary as the Draft EA claims. The Forest Service also failed to disclose, discuss, and respond to the scientific evidence we raised in our scoping comments.[44]

For example, we explained that old forests historically dominated New Hampshire, and it remained that way for millennia prior to European arrival.[45] 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.[46] Much of New Hampshire's landscape evolved with relatively minor human influence over thousands of years since the last glaciation.

Today, old forests—the forests that once dominated the region—are functionally absent from northern New England.[47] The absence of old forests in New England has led to the elimination or decline of elk, caribou, wolverine, wolves, cougars, pine marten, and salmon.[48] Large swaths of intact forest minimize harmful vectors for the spread of invasive species and ticks and allow for a mix of both early and late successional habitats as required by New

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[43] Draft EA at 3.
[44] Standing Trees Scoping Comments at 21-25, 28-32.
[45] Lorimer and White (Exhibit 14).
[46] Oswald et al. at 243 (Exhibit 15).
[47] Zaino et al., Vt. Fish and Wildlife Dept., Vermont Conservation Design – Natural Community and Habitat Technical Report 16 (March 2018), *available at* https://vtfishandwildlife.com/sites/fishandwildlife/files/documents/Conserve/VT Conservation Landscape-level Design/Vermont Conservation Design--Natural-Community-and-Habitat-Technical-Report-March-2018.pdf (Exhibit 16) (hereinafter "Zaino et al. (2018)").
[48] Evans and Mortelliti, *Effects of Forest Disturbance, Snow Depth, and Intraguild Dynamics on American Marten and Fisher*, 13 ECOSPHERE 1 (Nov. 24, 2021) (Exhibit 17).

England's forest-dependent species. Unlogged forests in New England exhibit the greatest structural complexity, tree species diversity,[49] and the greatest resilience to climate change.[50]

Notably, the Draft EA does not contemplate treatments for non-native invasive species, nor does it report on the current extent of invasives (or lack thereof) within the project area.[51] This is yet another example of the paucity of information provided as context for the Project, and it is a serious oversight that must be corrected with an EIS.

According to the definitive paper on disturbance frequency and intensity in New England, cited in the Forest Plan FEIS, "the proportion of the presettlement landscape in seedling–sapling forest habitat (1–15 years old) ranged from 1 to 3% in northern hardwood forests (Fagus–Betula–Acer–Tsuga) of the interior uplands," and "[t]he current estimates of 9-25% [seedling-sapling habitat] for the northern New England states are probably several times higher than presettlement levels."[52] 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.[53]

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 forested regions of the U.S., 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 in the WMNF.

Recent research led by Dr. Dominick DellaSala provided the first nationwide assessment of present levels of mature forests in the U.S.[54] Today, mature and old-growth forests represent

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[49] Miller et al., *Eastern National Parks Protect Greater Tree Species Diversity than Unprotected Matrix Forests*, 414 FOREST ECOLOGY & MGMT. 74 (April 15, 2018) (Exhibit 18) (hereinafter "Miller et al. (2018)")

[50] Thom et al., *The Climate Sensitivity of Carbon, Timber, and Species Richness Covaries with Forest Age in Boreal-Temperate North America*, GLOB. CHANGE BIOLOGY 1 (2019) (Exhibit 19) (hereinafter "Thom et al.").

[51] Draft EA at 20.

[52] Lorimer and White (Exhibit 14).

[53] *Id; See also* Nowacki and Abrams, *The Demise of Fire and "Mesophication" of Forests in the Eastern United States*, 58 BIOSCIENCE 123 (2008), *available at* https://www.nrs.fs.usda.gov/pubs/jrnl/2008/nrs_2008_nowacki_001.pdf (Exhibit 20) ("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.").

[54] DellaSala et al., *Mature and Old-Growth Forest Contributions to Large-Scale Conservation Targets in the Conterminous USA*, 5 FRONTIERS IN FORESTS AND GLOB. CHANGE 1, 1 (2022) (Exhibit 21).

~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 Forest Service, 9% by the Bureau of Land Management, and 3% by the National Park Service.[55] 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 gigatons of carbon dioxide, are unprotected from logging.[56]

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 U.S., old-growth comprises just 1.6% of South-Central U.S. forests, 1.1% of the Upper Midwest forests, .5% of Southeast U.S. forests, and merely .4% of forests in the Northeast, including the New England states.[57]

Logging is the single greatest influence on the amount and extent of mature forests across the U.S. and is easily the most preventable threat to mature forests when compared to other disturbances. A 2013 study found that "[l]ogging is a larger cause of adult tree mortality in northeastern U.S. forests than all other causes of mortality combined."[58] 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."[59]

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 U.S. South, 86% 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%).[60]

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

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[55] *Id.* (noting that numbers do not sum to 100% due to minor mapping errors).
[56] *Id.*
[57] Mary Davis, EASTERN OLD-GROWTH FORESTS: PROSPECTS FOR REDISCOVERY AND RECOVERY 18-31 (Mary Byrd Davis ed., 2d ed. 1996) (Exhibit 63).
[58] Canham et al., *Regional Variation in Forest Harvest Regimes in the Northeastern United States*, 23 ECOLOGICAL APPLICATIONS 515 (2013), *available at* http://www.uvm.edu/giee/pubpdfs/Canham_2013_Ecological_Applications.pdf (Exhibit 22).
[59] Brown et al., *Timber Harvest as the Predominant Disturbance Regime in Northeastern U.S. Forests: Effects of Harvest Intensification*, 9 ECOSPHERE 1, 1 (2018) (Exhibit 23) (hereinafter "Brown et al. (2018)").
[60] Harris et al., *Attribution of Net Carbon Change by Disturbance Type Across Forest Lands of the Conterminous United States*, 11 CARBON BALANCE AND MANAGEMENT 1, 12 (2016), *available at* https://doi.org/10.1186/s13021-016-0066-5 (Exhibit 24) (hereinafter "Harris et al.").

intensively for timber harvest compared with federal public lands.[61] 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.[62]

Although there is a large amount of maturing forest (80-100 years old) across the landscape, future harvests will target these forests where they occur on private lands.[63] 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.[64] "Even though forests of the Northeast are aging, changes in silviculture and forest policy are necessary to accelerate restoration of old-growth structure."[65] The WMNF, 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. Although passive management is most often all that is required to restore old forest conditions,[66] it takes centuries to develop forest complexity, requiring permanent protection from timber harvest if restoration is to be successful.[67]

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[61] Gunn et al., *Late-Successional and Old-Growth Forest Carbon Temporal Dynamics in the Northern Forest (Northeastern USA)*, FOREST ECOLOGY & MGMT. (2013), available at https://www.manomet.org/wp-content/uploads/old-files/2013%20Gunn%20et%20al%20%20LOSG%20Carbon%201-s2%200-S0378112713006907-main.pdf (Exhibit 45).

[62] Duveneck and Thompson, *Social and Biophysical Determinants of Future Forest Conditions in New England: Effects of a Modern Land-Use Regime*, 55 GLOB. ENVIRONMENTAL CHANGE 115, 122, 124, 125 (March 2019) (Exhibit 25) (hereinafter "Duveneck and Thompson").

[63] *Id.*

[64] Ducey et al., *Late-Successional and Old-Growth Forests in the Northeastern United States: Structure, Dynamics, and Prospects for Restoration*, 4 FORESTS 1055, 1069 (2013), *available at* https://www.researchgate.net/publication/260516680_Late-Successional_and_Old-Growth_Forests_in_the_Northeastern_United_States_Structure_Dynamics_and_Prospects_for_Restoration (Exhibit 26).

[65] *Id*. at 1055-56.

[66] Zaino et al. (2018) at 16 (Exhibit 16).

[67] Watson et al., *The Exceptional Value of Intact Forest Ecosystems,* NATURE ECOLOGY & EVOLUTION (2018), *available at* https://www.researchgate.net/profile/John-Robinson-18/publication/323399911_The_exceptional_value_of_intact_forest_ecosystems/links/5a9b0482aca2721e3f3018b2/The-exceptional-value-of-intact-forest-ecosystems.pdf (Exhibit 27); Di Marco et al., *Wilderness Areas Halve the Extinction Risk of Terrestrial Biodiversity,* 573 NATURE 582 (2019) (Exhibit 28); Dinerstein et al., *A Global Safety Net to Reverse Biodiversity Loss*, 6 SCI. ADVANCES 1 (Sept. 2020) (Exhibit 29) (hereinafter "Dinerstein et al."); Miller et al. (2018) (Exhibit 18); Miller et al., *National Parks in the Eastern United States Harbor Important Older Forest Structure Compared with Matrix Forests*, 7 ECOSPHERE (2016), *available at* https://www.researchgate.net/profile/Aaron_Weed/publication/305484577_National_parks_in_th

The recently released 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."[68] The 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 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.

Despite the clear scientific evidence for increasing 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.[69] Additional science supporting permanent protection and restoration of old forests was recently published, including a new study released in early 2023 identifying the major problems with forest management promoting early successional habitat.[70]

The Forest Service's proposal that providing non-shade conditions for some species of trees to thrive also refutes the leading theory that large trees transfer nutrients to smaller trees through fungal communities in the soil.[71] It is also at odds with how healthy forests mature and support the complex food web and balance in a natural undisturbed forest ecosystem.

The public is left to wonder whether this "need for management" is entirely based on commercial interests for a more profitable forest—as selective and clearcutting extirpate the largest, most profitable trees for timber.

For these reasons, the forest management practices embodied by this Project are increasingly contrary to scientific evidence, and the Draft EA makes no effort to reckon with the growing body of science supporting greater protection of the Project area's mature forests. In conflict with NEPA, the Draft EA fails to address and explain opposing viewpoints and contrary scientific information along with the agency's rationale for choosing one viewpoint over another.[72]

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e_eastern_United_States_harbor_important_older_forest_structure_compared_with_matrix_forests/links/57961bdd08aed51475e542a7/National-parks-in-the-eastern-United-States-harbor-important-older-forest-structure-compared-with-matrix-forests.pdf (Exhibit 30).

[68] U.S. Forest Service Climate Adaptation Plan 13 (July 2022), https://www.usda.gov/sites/default/files/documents/4_NRE_FS_ClimateAdaptationPlan_2022.pdf (Exhibit 31).

[69] Moomaw et al., *Intact Forests in the United States: Proforestation Mitigates Climate Change and Serves the Greatest Good*, 2 FRONTIERS IN FOREST AND GLOB. CHANGE 1, 3 (2019), *available at* https://www.frontiersin.org/articles/10.3389/ffgc.2019.00027/full (Exhibit 32).

[70] Kellett et al. (Exhibit 3).

[71] Simard et al., *Net Transfer of Carbon Between Ectomycorrhizal Tree Species in the Field*, 388 NATURE 579 (1997) (Exhibit 4).

[72] 40 C.F.R. § 1502.9(c) (requiring agencies to disclose, discuss, and respond to "any responsible opposing view"). *See Bark*, 958 F.3d at 871 (9th Cir. 2020) (decision not to prepare EIS held arbitrary and capricious where Forest Service failed to "engage with the considerable contrary scientific and expert opinion" and "instead drew general conclusions").

3. Failure to Address Recent Executive Orders on Forest Protection

As discussed in Standing Trees' prior comments, and above, there is clear scientific evidence that counsels in favor of protecting mature forests. Aggressive measures are necessary to stave off climate and extinction catastrophe.[73] This vision was endorsed by the Administration through Executive Orders 14,072 and 14,008. The Draft EA fails to explain how proposed logging will comply with either Executive Order.

Among other things, Executive Order 14,008 calls on the federal government to "protect America's natural treasures, increase reforestation, improve access to recreation, and increase resilience to wildfires and storms" and commits the Forest Service to measures to help "achieve the goal of conserving at least 30 percent of our lands and waters by 2030."[74]

Executive Order 14,072 provides that the Biden 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."[75] To achieve this policy, the Administration, including the Forest Service, is directed to prepare an inventory of mature and old-growth forests, must analyze threats to mature and old-growth forests on Federal lands, and will implement policies to "institutionalize climate-smart management and conservation strategies that address threats to mature and old-growth forests on Federal lands."[76]

On April 20, 2023, the Forest Service released a report titled "Mature and Old-Growth Forest: Definition, Identification, and Initial Inventory on Lands Managed by the Forest Service and Bureau of Land Management" as required under Executive Order 14,072.[77] Simultaneously, the Forest Service sent a letter to Regional Foresters stating that "[w]e will shortly issue guidance on using this information."[78] On April 21, 2023, the Forest Service published an Advance Notice of Proposed Rulemaking that seeks input on how the agency should "adapt current policies to protect, conserve, and manage the national forests and grasslands for climate resilience," including "concerns about . . . past and current management practices, including inappropriate vegetation management."[79]

The scientific underpinnings of this Executive Order 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,

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[73] Ceballos et al., *Vertebrates on the Brink as Indicators of Biological Annihilation and the Sixth Mass Extinction,* 117 PNAS 13596 (June 2020) (Exhibit 33).
[74] Exec. Order No. 14,008, §§ 214, 216.
[75] Exec. Order No. 14,072, § 2.
[76] *Id.*
[77] Mature and Old-Growth Forests: Definition, Identification, and Initial Inventory on Lands Managed by the Forest Service and Bureau of Land Management 1 (Apr. 2023), https://www.fs.usda.gov/sites/default/files/mature-and-old-growth-forests-tech.pdf (Exhibit 11).
[78] Letter from Chris French, Forest Service Deputy Chief, to Regional Foresters (Apr. 18, 2023) (Exhibit 5).
[79] Letter from Chris French, Forest Service Deputy Chief, re: Advance Notice of Proposed Rulemaking (Apr. 21, 2023) (Exhibit 12).

the New England region, and the globe. 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."[80] On November 12, 2021, the U.S. joined 140 other nations in signing a commitment at the COP 26 United Nations 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."[81]

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.[82] New Hampshire may be a relatively small state, but its temperate deciduous forests are among the planet's most effective carbon sinks. In the United States, 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.

The Draft EA fails to acknowledge Executive Order 14,072 or incorporate the Forest Service's work to implement its directives. Indeed, the Draft EA was released without any reference to the availability of the initial inventory and report, and prior to issuance of guidance to Regional Foresters and completion of proposed rulemaking, foreclosing the opportunity to protect the very mature forest the Executive branch and the national leadership of the Forest Service are now setting out to protect. The public cannot assess this Project's compatibility with Executive Order 14,072. Given this guidance and the presence of mature forest in the Project area, proceeding with this Project without further analysis would irretrievably commit limited resources against Administration policy.

The Forest Service has recognized that current scientific standards and the instruction of Executive Orders 14,072 and 14,008 require it to re-examine projects in the planning process. For example, the Forest Service recently withdrew the Flat Country Project in Oregon because the proposed project was inconsistent with Executive Orders 14,072 and 14,008.[83] Of concern

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[80] CLIMATE CHANGE 2022: IMPACTS, ADAPTATION AND VULNERABILITY – WORKING GROUP II CONTRIBUTION TO THE SIXTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 32 (Pörtner et al., eds., 2022), *available at* https://report.ipcc.ch/ar6/wg2/IPCC_AR6_WGII_FullReport.pdf (Exhibit 34).

[81] Declaration on Forests and Land Use (Feb. 11, 2021), *available at* https://webarchive.nationalarchives.gov.uk/ukgwa/20230418175226/https:/ukcop26.org/glasgow-leaders-declaration-on-forests-and-land-use/ (Exhibit 52) (emphasis added).

[82] Erb et al., *Unexpectedly Large Impact of Forest Management and Grazing on Global Vegetation Biomass*, 553 NATURE 73 (2018), *available at* https://research.vu.nl/ws/files/118980188/Nature25138_Unexpectedly_large_impact_of_forest_management_and_grazing_on_global_vegetation_biomass.pdf (Exhibit 35) (hereinafter, "Erb et al.").

[83] U.S. Forest Serv., *Flat Country Regional Review*, https://www.fs.usda.gov/detail/r6/landmanagement/planning/?cid=fseprd1080564 (last visited Aug. 30, 2023).

was the project's purpose to regenerate younger age classes and the negative impacts the treatments would have on mature forest characteristics.[84]

The Forest Service should similarly withdraw or revise the Project here. This is particularly true because the Forest Plan gives the Forest Service a distinct advantage in meeting its obligations by already clearly defining mature, old, and old-growth forests. The Forest Service has identified extensive mature forests in the Project area. Yet instead of protecting those mature forests, the Project proposes to engage in logging them. Until detailed analysis in the form of an EIS is completed to comply with Forest Plan and Executive Order requirements to conserve mature and old-growth forests, the Project cannot legally proceed under NEPA and NFMA.

4. Failure to Show Compliance with the Forest Plan

The Draft EA fails to show the Project's compliance with the Forest Plan—an essential component of analyzing the Project's impacts on vegetation and forest health in the context of the Forest Plan's standards and guidelines on these issues. Standard S-3 of the Forest Plan's Forest-Wide Management Direction states that "[t]imber harvest is prohibited in old growth forest."[85] Further, Guideline G-1 states that "[o]utstanding natural communities should be conserved."[86] The Forest Plan goes beyond protections for existing old-growth forest, however, clearly looking to how the Forest Service can facilitate recovery of old-growth forest across a larger percentage of the forest in the future. The Forest Plan defines old forest as beginning at 70 years of age in Aspen-birch habitat types, 90 years of age in Spruce-Fir, and 120 years of age in Northern hardwoods, Mixed wood, Oak-Pine, and Hemlock.[87] As previously referenced, the Forest Plan defines old forest habitat as: "[d]esired 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*."[88] From the Draft EA, which denies that the Project affects any old forests, it is impossible to discern whether any portions of the Project area have the potential to provide old forest habitat and to conclude that the Project complies with the Forest Plan's protections for such habitat.

Moreover, in conflict with the Forest Plan's guidelines, the Project proposes extensive even-aged management in mature stands within the Project area, 76% of which is classified as

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[84] FLAT COUNTRY PROJECT REVIEW REPORT, U.S. FOREST SERVICE 1, 12 (Sept. 27, 2022), *available at* https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd1080562.pdf (Exhibit 53).

[85] WMNF Plan 2-13. Old-growth is defined in the Forest Plan as "[u]neven-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.

[86] WMNF Plan 2-13.

[87] WMNF Plan Appendix D.

[88] WMNF Plan Abbreviations, Acronyms, and Glossary at 21 (emphasis added).

Mature.[89] Uneven-aged harvest methods may be appropriate in mature forests in some circumstances, but the Plan does not endorse any even-aged management: "*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."[90] Despite this instruction to avoid even-aged management in mature forest habitat, the Project proposes extensive even-aged management. Notwithstanding numerous indications that even-aged management will have the most adverse environmental impacts of the Project's various silvicultural treatments, the Draft EA never analyzes this conflict. Contrary to the Forest Plan, proposed management activities within the Project area will degrade habitat quality.[91]

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The Forest Service should complete an EIS to fully analyze the Project's impacts to vegetation and forest health, develop an adequate range of alternatives, take into account the analysis required under the Forest Plan and Executive Orders 14,072 and 14,008, and modify the proposed action accordingly.

B. Prescribed Fire Treatments

Although prescribed fire treatment is proposed for 306 acres, the Draft EA lacks a wildfire risk analysis and overall fails to support a need for prescribed fires. The Draft EA asserts the benefits of prescribed fire; however, it fails to include relevant supporting evidence that prescribed fire will benefit these proposed action areas. The evidence provided focuses on Western Forests and habitats, which typically differ in ecosystem needs than Eastern Forests. The Forest Service should document relevant supporting evidence, applicable in Eastern Forests, for its assertions for public review.

The Plan requires that "[w]hen artificial regeneration is prescribed it should be initiated within two years of the harvest cut. Site preparation for planting may include manual, prescribed fire, chemical, or mechanical methods."[92] It is unclear from the Draft EA whether the Project will follow this requirement.

Moreover, the description of prescribed fire treatment units is confusing, frustrating public review of the Forest Service's actual plans. The Appendix B Estimated Acres for

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[89] Draft EA at 3. The Forest Plan defines Mature Forest as "[s]tands 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." 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.

[90] WMNF Plan Abbreviations, Acronyms, and Glossary at 18 (emphasis added).

[91] *See* Draft EA at 21 (referencing a "National Forest Management Act checklist," but failing to provide a location for said checklist, i.e., "The National Forest Management Act checklist in [sic] has been completed . . .").

[92] WMNF Plan at 3-8.

Prescribed Fire Treatment only adds up to 105 acres, despite the proposed total of the estimated acres treated with prescribed fire being 306 acres. It appears that the Draft EA contemplates more overall burning than the NOPA, but does not identify where the additional burning will occur.[93] There is no stated reason behind the changes in acreage.

The Forest Service should give the effects of prescribed fire a "hard look" before prescribing fire treatments in the Sandwich HMU. Therefore, the Forest Service should complete an EIS for data specific to the Sandwich HMU area on the impacts of prescribed fires.

C. Endangered, Threatened, and Other Sensitive Species

The Draft EA and supporting documentation provide virtually no Project-specific analysis of impacts to endangered, threatened, and other sensitive species. The Draft EA references the Biological Evaluation, which states that four federally listed or proposed species and eight Regional Forester Sensitive Species have potential to occur in the analysis area.[94] The information provided suggests that the Project, in fact, will adversely affect listed species in violation of the ESA.

Based on the Biological Evaluation, the Draft EA ultimately determined that the Proposed Action may affect, but is not likely to adversely affect, the endangered northern long-eared bat ("NLEB") and threatened small whorled pogonia; that the Project would have no effect on the threatened Canada Lynx; and that the Project would not jeopardize the continued existence of or adversely modify critical habitat of the tricolored bat, which is proposed to be listed as endangered. The Forest Service's conclusions as to each of these species are without a solid basis in the Project documentation, in violation of NEPA.

In particular, the Forest Service failed to provide Biological Assessments ("BA") for these species as part of the documentation for this Project. As further detailed below in this Comment, a project- and species-specific BA is required to "evaluate the potential effects of an action on listed and proposed species…[to] determine whether any such species or habitat are likely to be adversely affected by the action and is used in determining whether formal consultation or a conference [with the U.S. Fish and Wildlife Service ("USFWS")] is necessary."[95] Without more specific BAs, the public lacks important information related to Federally listed and proposed listed species that might be impacted in the Project area. This information is necessary for the public to make informed comments and objections, including regarding the Project's compliance with the ESA. And as discussed in more detail below, the

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[93] Units 2, 12, 13, 14, 34, and 17 are presumably the prescribed 5 units for prescribed fire treatments, but the Draft EA's Maps 3 *Liberty* and 1 *Guinea Hill* do not reflect prescribed fire treatments on units 2 and 17. Nonetheless, Map 3 *Liberty* indicates prescribed burning will occur along the border of Liberty trail and in the Liberty Snomo, but the Draft EA lacks any mention of prescribed fire impacts on these areas. Map 3 *Liberty* indicates prescribed burns on more units than in the Draft EA, but the Draft EA Map 3 indicates fewer units will receive treatment while stating a larger overall acreage of prescribed burns, *see* Draft EA at 16 ("approximately 306 acres"), than stated in the NOPA, *see* Sandwich Vegetation Management Project Notice of Proposed Action at 8 ("96 acres in select units").

[94] Draft EA at 27.

[95] 50 C.F.R. § 402.12(a).

Forest Service's generic approach to protection of the now-endangered NLEB rather than a site- and Project-specific approach runs afoul of the ESA.

Furthermore, according to the Forest Plan:

> The White Mountain National Forest will provide sufficient habitat and protection to preclude the need for species listing under the Federal Endangered Species Act due to National Forest habitat conditions or effects of activities. For species currently listed under the Federal Endangered Species Act or designated Regional Forester's sensitive species, the Forest Service will contribute to conservation and recovery of species and their habitats.[96]

As discussed in our prior comments, NLEB habitat requirements are the opposite of the type of habitat that will be generated from the Project.[97] According to the USFWS Species Status Assessment Report for the NLEB, dated August 2022, the bat depends on mature and old forests for roosting and foraging.[98] 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,[99] and females often return to the same maternity area over multiple years.[100] Additionally, "mature forests are an important habitat type for foraging NLEBs[,]" and "most foraging occurs . . . under the canopy . . . on forested hillsides and ridges."[101] Furthermore, NLEBs "seem to prefer intact mixed-type forests . . . for forage and travel rather than fragmented habitat or areas that have been clear cut."[102]

The WMNF, including the Project area, contains extensive mature forests that are beginning to acquire the characteristics of an old forest, likely providing some of the highest-quality NLEB habitat in New England. Yet many of the silviculture treatment prescriptions in this Project involve the removal of mature trees.[103]

In fact, the Biological Evaluation for the Project states: "[t]he northern long-eared bat has been documented throughout the White Mountain National Forest. Roosting and foraging habitat does exist within the action area Presence [sic] of the bat is assumed, as suitable roosting habitat is abundant and available." The Biological Evaluation then states the negative effects on bats

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[96] WMNF Plan 1-1, 1-8.
[97] Standing Trees Scoping Comment at 12.
[98] U.S. Fish and Wildlife Serv., Species Status Assessment for the Northern long-eared bat (*Myotis septentrionalis*) Version 1.2, at 18 (Aug. 2022), https://www.fws.gov/media/species-status-assessment-report-northern-long-eared-bat (hereinafter "Species Status Assessment") (Exhibit 1).
[99] *Id*. at 18.
[100] U.S. Forest Service, Sandwich Vegetation Management Project: Biological Evaluation for Federally Listed, Proposed and Candidate Species 11 (July 24, 2023), *available at* https://usfs-public.app.box.com/v/PinyonPublic/file/1267828787110 (hereinafter "Biological Evaluation").
[101] Species Status Assessment at 18 (Exhibit 1).
[102] *Id*. at 18-19 (Exhibit 1).
[103] For example, an estimated 75 acres will be clear-cuts with reserves, which "would result in an immediate change from mature to regeneration age structure." Draft EA at 11.

from the Project activities, admits that "[n]o acoustic surveys were conducted for the Sandwich Vegetation Management Project," and, instead of providing mitigation methods for NLEB viability, states: "with populations reduced from white-nosed syndrome and ample roost trees available (Sease and Prout 2015), the likelihood of a bat being in a tree when it is cut is low."[104] It seems the Forest Service lacks data on whether NLEBs are in the proposed areas and did not survey the area due to low population numbers.[105] This is not defensible under NEPA or the ESA.[106] The Biological Evaluation describes the direct effects from the Project:

> Harvesting trees greater than three inches diameter at breast height with cavities or exfoliating bark occupied by northern long-eared bat could cause individuals to be displaced or killed. Direct effects are possible during the active, or non-hibernation, season (April 15 to October 31) with the greatest potential during the early spring and summer (April 15 to July 31) and especially when bats are pregnant or taking care of non-volant young (June 1 to July 31). A maximum of 253 acres (39 percent of the total) of tree felling could occur during the summer, late summer or fall under the proposed action season of harvest table (table 6 of the environmental assessment).[107]

Despite these conceded impacts and risks, the Forest Service has conducted no Project-specific analysis to characterize the risks to NLEB from Project activities fully, nor are there any site-specific mitigation measures incorporated into the Draft EA, including what would seem to be the easiest mitigation measure of all: avoiding timber harvest activities when bats are active during non-hibernation season (April 15-October 31).

In addition to timber harvesting impacts, the Biological Evaluation states that "[p]rescribed fire would also occur across approximately 96 acres in select units." [108] This conflicts with the acreage provided in the Draft EA designation of 306 acres. The Forest Service needs to take a hard look at their proposed action to determine (1) where the prescribed fire treatments will occur and (2) if those areas contain NLEBs or NLEB habitat. The current Biological Evaluation is thus insufficient.

In combination with recently approved projects and anticipated logging and tree-cutting projects (including the Wanosha Integrated Resource Project, Peabody West Integrated Resource Project, Lake Tarleton Integrated Resource Project, Lost River Integrated Resource Project, and others), WMNF is set to eliminate or degrade several thousand acres of NLEB habitat across a large region. As discussed in further detail below, the Forest Service failed to evaluate the cumulative impact of these combined and geographically proximate projects.

Failing to protect the NLEB is a violation of the ESA and NEPA, which provides an independent obligation that agencies continue to take a "hard look" at project impacts. Where

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[104] Biological Evaluation at 11.
[105] Moreover, "Sease and Prout 2015" is not in the reference section of the Biological Evaluation and could not be verified.
[106] *Kettle Range Conservation Grp. v. U.S. Forest Serv.*, No. 2:21-CV-00161-SAB, 2023 WL 4112930, at *10 (E.D. Wash. June 21, 2023).
[107] Biological Evaluation at 11.
[108] *Id*.

"new circumstances or information" arise that are "relevant to environmental concerns and bear[] on the proposed action or its impacts," and "a major Federal action remains to occur," the agency must prepare supplemental NEPA documentation.[109]

Additionally, one of the objectives listed in the Forest Plan states:

> Within five years of listing, [the Forest Service will] develop conservation approaches for all sensitive species. Biological diversity will be conserved by maintaining viable reproducing populations for all native plant and animal species. For species where the Forest alone cannot support a viable population, species persistence will be maintained, and the Forest Service will contribute to maintaining or improving viability where possible.[110]

To our knowledge, the Forest Service has not developed conservation approaches for all sensitive species within the WMNF that were listed five or more years ago. If it has, these approaches are not apparent in the Biological Evaluation. The Biological Evaluation provides generic information (some of which is controversial and conflicts with more accurate and recent scientific studies)[111] supporting the Forest Service's assertion that federally listed and sensitive species will not be impacted by the Project, but it fails to substantially address any conservation methods and recovery strategies for actually protecting these species. Through additional project-specific consultation with USFWS and the completion of an EIS, the Forest Service would have an opportunity to do an in-depth analysis of the Project's impacts on endangered, threatened, and sensitive species and to ensure their protection.

D. Historic and Cultural Resources

In our comment on the NOPA, we urged additional analysis of historic and cultural resources in an EIS, including resources of the Abenaki people.[112] One of the goals listed in the Forest Plan states that "[t]he White Mountain National Forest will identify, evaluate, preserve, protect, stabilize, interpret, and when necessary, mitigate for loss of heritage resources at a Forest-wide and project level."[113] The Draft EA does not realize this goal, nor does it fulfill NEPA's required "hard look" at impacts to these resources.

In fact, the Draft EA provides virtually no discussion of Project impacts on historic and cultural resources, apparently limiting its analysis to the presence of sites eligible for listing on the National Register of Historic Places—which is salient for compliance with the National Historic Preservation Act but insufficient for NEPA purposes—and concluding none exist.[114] The Draft EA does not disclose whether there is any supporting documentation for this conclusion.

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[109] 40 C.F.R. § 1502.9(d); *see Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 374 (1989) (explaining that an agency must at least take "hard look" at environmental impacts of planned action, even after proposal has received initial approval).
[110] WMNF Plan at 1-8.
[111] *See, e.g.,* Species Status Assessment at 18-19 (Exhibit 1) (describing NLEB preferred habitat, including foraging habitat).
[112] Standing Trees Scoping Comment at 33.
[113] WMNF Plan 1-6.
[114] Draft EA at 27-28.

By completing an EIS, the Forest Service would have an opportunity to complete a full analysis of the historic and cultural resources within the Project area, ensure the protection of these resources, and properly provide this information to the public.

E. Climate Impacts and Resilience

While New Hampshire may be a relatively small state, its temperate deciduous forests are among the planet's most effective carbon sinks. The WMNF contains some of New England's oldest and most carbon-dense ecosystems. The insubstantial climate change analysis in the Draft EA fails to address the unique values of the WMNF and is inconsistent with Council on Environmental Quality ("CEQ") guidance, the Forest Service Climate Adaptation Plan, Executive Order 14,072, and Executive Order 14,008.

For example, the Draft EA and the 9-page Project-Level Carbon Assessment it summarizes cursorily claim that the Project will have negligible climate impacts and incorrectly imply that the prescribed treatments will enhance the WMNF's ability to withstand climate change. NEPA requires agencies to address and explain opposing viewpoints and contrary scientific information along with their rationale for choosing one viewpoint over another.[115] The Forest Service's analysis provides virtually no references to any material in opposition to its conclusions, despite voluminous references provided by Standing Trees on multiple occasions with reference to this Project and elsewhere.[116]

As discussed in Standing Trees's prior comments and above in this comment, New England's carbon storage levels remain artificially low due to timber harvest frequency and intensity. Timber harvest accounts for 86% of annual forest carbon loss across the Northeast. Despite this evidence, the Forest Service incorrectly implies that the prescribed treatments will enhance the forest's ability to absorb carbon.[117] The Forest Service concludes carbon initially emitted from the proposed action would have only a temporary influence on emission concentrations because as the forest regrows, carbon will be removed from the atmosphere.[118] This is based on a common misconception that young forests are better than old at removing carbon, and ignores strong scientific evidence that carbon storage and sequestration is maximized in un-logged stands in northern New England.[119] Old forests store more carbon than young forests, and they continue to accumulate carbon over time.[120] The rate of carbon

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[115] 40 C.F.R. § 1502.9(b); *Bark*, 958 F.3d at 871.
[116] *See Ctr. for Biological Diversity v. U.S. Forest Serv.*, 444 F. Supp. 3d 832, 858-59 (2020) (explaining that agency conclusions must be supported by publicly available information to allow for informed public comment).
[117] Harris et al. (Exhibit 24).
[118] Draft EA at 25.
[119] *See, e.g.*, Keeton et al., *Late-Successional Biomass Development in Northern Hardwood-Conifer Forests of the Northeastern United States*, 57 FOREST SCIENCE 489 (2011) (Exhibit 37).
[120] *See, e.g.*, Keith et al., *Re-Evaluation of Forest Biomass Carbon Stocks and Lessons from the World's Most Carbon-Dense Forests*, 106 PNAS 11,635 (2009) (Exhibit 38); Luyssaert et al., *Old-Growth Forests as Global Carbon Sinks*, 455 NATURE 213 (2008) (Exhibit 39); Leverett et al., *Older Eastern White Pine Trees and Stands Sequester Carbon for Many Decades and Maximize Cumulative Carbon*, FRONTIERS, May 2021 (Exhibit 40); Thom et al. (Exhibit 19).

sequestration actually increases as trees age.[121] As raised in our comment, recent studies show that among land uses in New England, timber harvest is the leading cause of tree mortality[122] and has the greatest impact on aboveground carbon storage.[123] Forests in New Hampshire are still recovering from extensive clearing in the eighteenth and nineteenth centuries. Timber harvesting in New England has been found to have a larger effect than forest conversion to non-forest uses on aboveground carbon storage.[124]

On January 9, 2023, CEQ released Interim Guidance for agencies to "make use of immediately" when considering greenhouse gas emissions and climate change under NEPA.[125] This guidance had yet to be released upon the submission of our comment on the NOPA. Section VII of the CEQ guidance states, "agencies should consider applying this guidance to actions in the EIS or EA preparation stage if this would inform the consideration of alternatives or help address comments raised through the public comment process."[126] Our comments raised the issue of the Forest Service's failure to adequately consider climate change impacts. Yet the CEQ guidance—which is now in effect and applies directly to these concerns—is entirely absent from the climate change analysis section of the Draft EA.

The CEQ guidance requires agencies to "quantify proposed actions' GHG emissions, place GHG emissions in appropriate context and disclose relevant GHG emissions and relevant climate impacts, and identify alternatives and mitigation measures to avoid or reduce GHG emissions."[127] Agency decisions should be based on the best available science and account for the urgency of the climate crisis.[128] The guidance clarifies that "NEPA requires more than a statement that emissions from a proposed Federal action or its alternatives represent only a small fraction of global or domestic emissions."[129] Yet the Draft EA here explicitly states: "[p]roposed project activities affect a relatively small amount of forest land and carbon and, in the short-term, might contribute an extremely small quantity of greenhouse gas emissions relative to national and global emissions."[130] This blatantly violates CEQ guidance: as CEQ has concluded, such an approach "is not a useful basis for deciding whether or to what extent to consider climate change effects under NEPA."[131] In addition, no mitigation measures were considered. We cannot foresee all the ways in which the Forest Service fails to comply with the CEQ guidance because the Service made no attempt to abide by it.

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[121] Stephenson et al., *Rate of Tree Carbon Accumulation Increases Continuously with Tree Size*, 507 NATURE 90 (2014) (Exhibit 41).
[122] *See* Brown et al. (Exhibit 23).
[123] *See* Duveneck & Thompson (Exhibit 25).
[124] *Id*.
[125] National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change, 88 Fed. Reg. 1196 (Jan. 9, 2023) (Exhibit 2).
[126] *Id.*
[127] *Id*.
[128] *Id*.
[129] *Id*. at 1201.
[130] Draft EA at 25.
[131] 88 Fed. Reg. at 1,202.

Moreover, the Forest Service's approach to assessing climate impacts of the Project is not in compliance with Executive Orders 14,072 and 14,008. Both expressly direct the Forest Service to take much more extensive action than the insubstantial effort reflected in the Draft EA. The Forest Service responded (in part) to Executive Order 14,008 with the publication of its Climate Change Adaptation Plan, which explicitly acknowledged that:

> [o]ld-growth and mature forests, and other forests with similar characteristics, are an ecologically and culturally important part of the National Forest System. They reside within a continuum of forest age classes and vegetation types that provides for a wide diversity of ecosystem values. Many forests with old-growth characteristics have a combination of higher carbon density and biodiversity that contributes to both carbon storage and climate resilience.[132]

Executive Order 14,072 aims to "enhance carbon storage" and the "climate resilience" of our mature and old-growth forests.[133] The Forest Service Climate Adaptation Plan recognized the importance of areas protected from logging as it relates to climate-informed stewardship of mature and old-growth forests on federal lands.[134] The Forest Service itself identifies carbon uptake and storage as "a major goal for the Forest Service" in helping ecosystems adapt to a changing climate.[135] This vision was further supported by Executive Order 14,008, which aimed to "conserve and restore public lands. . . increase reforestation . . . and address the changing climate" through the adoption of climate-smart forestry practices. The climate change analysis for the Project, however, fails to mention Executive Orders 14,072 or 14,008 or the Forest Service's own goals. Despite supposed policy alignment on the issue across the executive branch, the Forest Service failed to ensure the Project is consistent with Executive Orders 14,072 and 14,008.

Furthermore, there is no such thing as an "extremely small quantity of greenhouse gas emissions" or effect on a "relatively small amount of forest land" when those figures are extrapolated globally.[136] At that scale, forest protection represents approximately half or more of the climate change mitigation needed to hold temperature rise to 1.5 degrees Celsius.[137] The current climate change analysis ignores our remarkable forest ecosystems here in northeastern North America and their unique potential to contribute on a global scale to climate stabilization and resilience. The WMNF is an insurance policy against a changing climate and increasing extinction rates. It is irresponsible not to consider the immense capacity for carbon storage and sequestration of forests in the eastern U.S. The Draft EA does not once mention the WMNF's remarkable and unique capacity to contribute to climate stabilization and resilience at a global

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[132] Forest Service Climate Adaptation Plan at 13 (Exhibit 31).
[133] Exec. Order No. 14,072, 87 Fed. Reg. 24,851 (Apr. 22, 2022).
[134] Forest Service Climate Adaptation Plan at 13 (Exhibit 31).
[135] *Id*. at 42.
[136] Draft EA at 25.
[137] Erb et al. (Exhibit 35).

scale.[138] Research published since the NOPA further supports the climate resilience value of mature forests in the Northeast, like those in the Sandwich HMU.[139]

A federal court decision from earlier this month illustrates why the Forest Service's climate change analysis here runs afoul of NEPA. As here, in approving a Montana logging project the Forest Service had concluded that the project's carbon impacts would be minor in comparison with global emissions. The reviewing court concluded that the agency's analysis violated NEPA:

> [B]y relying almost entirely on the cookie-cutter and boilerplate Project Climate Report to analyze the carbon impact of the project, the USFS did not utilize high quality and accurate information which NEPA requires. *See* 40 C.F.R § 1500.1.
>
> [And] even though the USFS posited that the short-term loss of carbon from logging would be outweighed by the net increase in carbon sequestration resulting from a healthier forest, this assertion is not backed up by a scientific explanation. Rather, the USFS generally concludes that carbon as a result of the Project's activities make up "only a tiny percentage of forest carbon stocks of the Kootenai National Forest, and an infinitesimal amount of total forest carbon stocks of the United States." Under this logic, the USFS could always skirt "hard look" analysis when doing a carbon impacts review by breaking up a project into small pieces and comparing them to huge carbon stocks such as those contained within the over two million acres of land in the Kootenai National Forest . . .
>
> While the USFS did address climate change in the EA through the Forest and Project Carbon Plans, merely discussing carbon impacts and concluding that they will be minor does not equate to a "hard look." NEPA requires more than a statement of platitudes, it requires appraisal to the public of the actual impacts of an individual project. With all in agreement that climate change as a result of carbon emissions is an increasingly serious national and global problem, the USFS has the responsibility to give the public an accurate picture of what impacts a project may have, no matter how "infinitesimal" they believe they may be. They did not do so here. Accordingly, the

[138] *See, e.g.*, Dinerstein et al. (Exhibit 29); *see also* Jung et al., *Areas of Global Importance for Conserving Terrestrial Biodiversity, Carbon and Water*, 5 NATURE ECOLOGY & EVOLUTION 1499 (2021) (Exhibit 47).

[139] Faison et al., *Adaptation and Mitigation Capacity of Wildland Forests in the Northeastern United States*, 544 FOREST ECOLOGY & MGMT. (forthcoming Sep. 2023) (Exhibit 48); Faison et al., *The Importance of Natural Forest Stewardship in Adaptation Planning in the United States*, CONSERVATION SCI. & PRAC., Apr. 24, 2023, *available at* https://conbio.onlinelibrary.wiley.com/doi/10.1111/csp2.12935 (Exhibit 49).

> agency failed to take a "hard look" at the Project's carbon emissions, violating NEPA.[140]

The same analysis applies with equal force to the Forest Service's cursory climate change analysis in the Draft EA and accompanying documents. In order to comply with the applicable Executive Orders and with NEPA, the Forest Service should abandon the legally flawed approach of the Draft EA and address the Project's carbon impacts in an EIS.

On this issue of climate resilience, the Forest Service failed to acknowledge or consider the science that Standing Trees has provided in its Scoping Comments and on multiple other occasions. Federal courts have set aside NEPA analysis when an agency fails to respond to scientific analysis that calls into question the agency's assumptions or conclusions.[141] The Forest Service cherry-picked the science it wished to use and failed to respond in a meaningful way to comments regarding climate change impacts. Ultimately, the Forest Service failed to take a hard look at climate change under relevant authorities. Therefore, the Forest Service should complete an EIS and additional analysis to address the unique climate resilience values of the WMNF and ensure compliance with relevant authorities, including CEQ guidance, the Forest Service Climate Adaptation Plan, Executive Order 14,072, and Executive Order 14,008.

F. Water Quality Impacts

Notwithstanding the Draft EA's discussion of the Clean Water Act ("CWA") and hydrology impacts in the Project area, and despite Standing Trees's request for further water quality impacts analysis, the Draft EA still fails to take a hard look at impacts to water quality and the affected watersheds. As part of an EIS, the Forest Service should perform a thorough stratigraphic and hydrological analysis of the entire proposed treatment area and the adjoining forest area to fully grasp the Project's impacts on water quality, including the impacts of road reconstruction as part of the Project and whether those impacts comply with the CWA.

From the Draft EA, further analysis is warranted for watershed effects, as the Project exceeds the 20% basal area removal limit to prevent negative effects on water quality. One watershed has a proposed basal area reduction of 35.8%, which results in "a decrease in pH making the water more acidic, or an increase in aluminum."[142] Without making a baseline

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[140] *Ctr. for Biological Diversity v. U.S. Forest Serv.*, No. CV 22-114-M-DWM, 2023 WL 5310633, at *10-11 (D. Mont. Aug. 17, 2023) (cleaned up).

[141] *See, e.g., Bark*, 958 F.3d at 871; *see High Country Conservation Advocates. v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174 (D. Colo. 2014) (concluding the Forest Service violated NEPA by failing to mention or respond to an expert report on climate impacts); *Ctr. for Biological Diversity v. U.S. Forest Serv.,* 349 F.3d 1157, 1168 (9th Cir. 2003) (concluding that the Forest Service's failure to disclose and respond to evidence and opinions challenging scientific assumptions in an EIS violated NEPA); *Seattle Audubon Soc'y v. Espy*, 998 F.2d 699, 704 (9th Cir. 1993) ("It would not further NEPA's aims for environmental protection to allow the Forest Service to ignore reputable scientific criticisms that have surfaced.").

[142] Draft EA at 24. Further, the Forest Plan's forest-wide guideline for vegetation management G-1 requires that "[n]o more than 15 percent of the area of watersheds of first and second order perennial streams should be treated with even-age regeneration methods in a five-year period."

analysis, the Forest Service then asserts that the impacts from these treatments would not be irreversible or irretrievable such that they would interfere with potential designation.[143] Instead of providing potential mitigation techniques or using a buffer zone to protect the perennial stream, the Draft EA claims the effects will be reduced by the inherent qualities of that stream:

> First, the perennial stream in this watershed is not a fish-bearing stream as the channel is quite small. Second, the slope of the watershed is lower than most, which leads to increased infiltration and slower water movement through the watershed. This allows more time for water to pick up ions along its path to the stream, making the stream better buffered against acidification and aluminum toxicity risks. Third, beaver activity in this watershed further slows down water and stores water, further reducing acidification and aluminum toxicity risks.[144]

However, there is no supporting documentation that indicates the effectiveness of these methods, or of the "quite small" stream's capacity to detoxify itself. The stream's natural de-acidification capacity may be entirely overwhelmed by the Project, thus polluting the larger wetland and decreasing the Cold River's water quality.[145] Although the Draft EA acknowledges that the Cold River is "an eligible wild and scenic river with a 'scenic' classification within Management Area 2.1 (3.3 miles),"[146] it does not provide any mitigation methods for protecting the Cold River's water quality and the prescribed treatments for the area are clearcuts and other even-aged prescriptions.[147]

Pursuant to NEPA's "hard look" mandate, an agency must rely on adequate baseline data that enables the agency to carefully consider information about direct environmental impacts and may not rely on outdated data to do so.[148] Indeed, "establishing appropriate baseline conditions is critical to any NEPA analysis," because without establishing a baseline, "there is simply no way

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WMNF Plan 2-1, 2-29. The Draft EA makes no mention of this standard, or whether the Project complies with it.

[143] The Forest Plan's forest-wide guideline G-1 for Riparian and Aquatic Habitats states that "[t]ree cutting and harvest should not occur within 25 feet of the bank of mapped perennial streams[.]" WMNF Plan at 2-24. To our knowledge, no map of the project area was provided that shows the location of perennial streams alongside the harvest unit boundaries. The Draft EA does not mention this guideline, nor does it make clear that these 25-foot buffers are integrated into the project design. Without this information, it is impossible to tell if this WMNF Plan guideline is being met, and further demonstrates the failure of the Forest Service to take a hard look at whether and how the Project's timber harvesting activities might impact water quality.

[144] Draft EA at 24.

[145] *Id*.; *see also* WMNF Plan 2-31, Floodplains and Wetlands.

[146] Draft EA at 28.

[147] *Id.* at 23.

[148] *See, e.g*., *N. Plains Res. Council v. Surface Transp. Bd.*, 668 F.3d 1067, 1083–87 (9th Cir. 2011); *Cascade Forest Conservancy v. Heppler*, 2021 WL 641614, at *17-20 (D. Or. Feb. 15, 2021).

to determine what effect the [project] will have on the environment and, consequently, no way to comply with NEPA."[149] It is unclear if baseline data was even gathered for use in the Draft EA's analysis because no analysis was presented. It is impossible for the public to evaluate or weigh in on the adequacy of the agency's analysis without a baseline based on current water quality data from the Project area. It is especially important that the treatment unit boundaries be defined prior to any implementation because of the potential for boundaries to stray into protected riparian areas.

Additionally, the Draft EA states that there will be field visits prior to project implementation aimed at "further refin[ing] treatment units based on site conditions," including potentially "reduc[ing acres] to meet visual and water quality objectives, to incorporate reserve patches of uncut trees in final harvest stands, or incorporate protective buffers around features such as vernal pools, cultural resources, nest trees, and riparian zones."[150] For the resources mentioned, these on-site baseline conditions should be identified prior to completing the NEPA analysis. The Forest Service should have used that information to describe the impacted environment, provide analysis of how these resources may be impacted, and describe how the agency might propose to address those impacts.

The lack of current site-specific data and sources to support the Forest Service's conclusory assessment of water quality impacts makes it impossible for the public to provide informed opinions about the Project and its potential implications on water quality. The Draft EA fails to meet the NEPA "hard look" standard as it relates to hydrology and water quality in the project area. Consequently, the Forest Service should complete an EIS and additional NEPA analysis to determine the impacts of the Project on hydrology and water quality.

G. Scenic and Recreational Impacts

The Draft EA also fails to undertake a "hard look" at scenic and recreational impacts, despite the Project's location in the gateway to the White Mountains, its visibility from the iconic and popular Mount Chocorua summit, and its potential effects on the communities and recreational activities in the Project area.

Despite the Forest Service's assurance that the Project will be "minimally evident from trail, road, or use area vantage points," with openings "appear[ing] as natural occurrences" and "well-distributed in the viewed landscape," the Draft EA and accompanying documentation do not support these assertions.[151] Unit 06—which the Forest Service admits will be highly visible from Mount Chocorua and no doubt many other viewpoints in the area—has a high Scenic Integrity Objective, yet is proposed to undergo clearcutting with 4.14 visible acres, which exceeds the low end of the threshold for determining scenic resource impacts. The Draft Scenery Resources Effects Analysis ("Scenery Report"), however, claims the Project's effects do not approach a resource threshold.[152] There is no explanation for the discrepancy.

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[149] *Great Basin Res. Watch v. Bureau of Land Mgmt.*, 844 F.3d 1095, 1101 (9th Cir. 2016).
[150] Draft EA at 7.
[151] WMNF Plan at 3-6.
[152] Scenery Report at 1.

With respect to the logging and burning elements of the Project, the Draft EA contains no analysis of their impacts on existing recreational resources within the Project area. The Project proposes either logging, burning, or both near several popular trails into the Sandwich Range Wilderness and Mount Chocorua Scenic Area, including the Old Mast Road, Kelly Trail, Cabin Trail, Big Rock Cave Trail, Old Paugus Trail, Brook Trail, and Liberty Trail. The Draft EA gives virtually no attention to the potential impacts of logging several hundred acres of mature forest on these recreational activities, other than to note and then dismiss them as minor and temporary.[153] In addition, despite 65 acres of prescribed burn treatment area, there is no mention of impacts from prescribed burns for the users of abutting Liberty Trail and other hiking trails, nor the proximity of Cold River to the proposed logging area.

The Forest Service must provide adequate analysis of project impacts and cumulative impacts on recreation. This should be evaluated within the context of the local project planning area and at the forest level because surrounding recreation areas will be felt most acutely at the local level. In addition, the Forest Plan itself requires that such "projects must be evaluated in terms of their effects on both the individual sites and on Forest-wide development levels."[154]

The Project's long-lasting eyesores will negatively impact the surrounding community, through-hikers, and other users of the Old Mast Road, Kelly Trail, Cabin Trail, Big Rock Cave Trail, Old Paugus Trail, Brook Trail, and Liberty Trail. In addition, views will be impacted from the summit of Mount Israel, a popular hiking destination near the Project area, but this viewshed has gone unanalyzed. The level of analysis in the Draft EA and the Scenery Report falls short of providing a meaningful assessment of the Project's effects on this region's treasured scenic and recreational resources, and the Forest Service should conduct an EIS to complete this assessment.

H. Soils

The Draft EA fails to provide any analysis, discussion, or clarity surrounding localized impacts on soil resources, let alone a "hard look" at the Project's effects. In Standing Trees's prior comments, we urged additional analysis of impacts to Project area soils from road reconstruction and logging. The Draft EA provides no baseline measurement of soil content to determine whether soil conditions are suitable for harvesting, instead choosing to harvest without a baseline measurement for comparison; this amounts to guessing at the area's soil quality.[155] Moreover, the Draft EA poses the need for skid trails outside the guidance of vegetation management standard G-5[156] but does not provide any mitigation methods to compensate.[157] There is no baseline localized data for the monitoring report to measure against, so effects may be noticed after irreparable harm is done. Thus, the Draft EA lacks thorough soil analysis, instead referring to the Project's planned adherence to "[best management practices] and Forest Plan

[153] Draft EA at 21, 32.
[154] WMNF Plan at 2-17.
[155] Sandwich Soils Report at 1.
[156] USDA Forest Service 2005a at 2-30.
[157] Sandwich Soils Report at 3.

standards and guidelines" to "ensure impacts to soils are minimized" without mention of site-specific plans.[158]

The Draft EA states that "[t]he proposed action will not have significant impacts to soil resources," but also acknowledges that "[s]hort-term negative effects including soil displacement and soil compaction are anticipated from the proposed action."[159] However, the Forest Service does not describe how it defines "short-term," and the agency contradicts itself in the same paragraph by suggesting that "no detrimental impacts to soil productivity as measured by soil displacement (erosion) or soil compaction are anticipated."[160] Contrary to the Forest Service's claims, ample evidence is available from local studies that have investigated logging's impacts on soil and soil carbon. For example, a 2014 study from New England that looked specifically at sites near the Project area "found a significant negative relationship between time since forest harvest and the size of mineral soil C pools, which suggested a gradual decline in C pools across the region after harvesting."[161] Clearly, more analysis is needed to ascertain both short- and long-term impacts of logging on soils. The Forest Service should complete an EIS to fully characterize the impacts that Project will have on soil resources.

I. Roadless Areas and Wilderness

Within the Draft EA, the Forest Service makes the unsupported assertion that "[n]o project activities are proposed in designated wilderness areas or roadless areas (inventoried and roadless area conservation rule designated areas)."[162] Standing Trees disputed this fact, and first requested shapefiles of all Forest Plan Inventoried Roadless Areas during the scoping period, at which time the Forest Service failed to produce the requested information.[163] Standing Trees requested the information again during the Draft EA comment period,[164] and shapefiles were finally provided on August 25, 2023. After the WMNF provided the shapefiles, a staff person acknowledged that the Forest Service had made an error related to its analysis of roadless area impacts. Although the Forest Service has not yet disclosed its error, Standing Trees believes at least one Forest Plan Inventoried Roadless Area occurs within the project area, namely the 10,368-acre Chocorua Inventoried Roadless Area #2270. Significant logging and burning is proposed within this area. The Forest Service suggests that this oversight will be corrected in the Final EA,[165] but by this time the public will have a much more limited opportunity to learn and ask questions about this proposed management. The Chocorua Inventoried Roadless Area is

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[158] Draft EA at 19. The "Soils Report" is included in the supporting documents for the Draft EA, but it includes no Project-specific analysis, instead discussing soil-related conditions on a Forest-wide basis and offering guidance for conducting project-based analysis.
[159] Draft EA at 33.
[160] *Id.*
[161] Petrenko & Friedland, *Mineral Soil Carbon Pool Responses to Forest Clearing in Northeastern Hardwood Forests*, 7 GCB BIOENERGY 1283, 1283 (2014) (Exhibit 54).
[162] Draft EA at 28.
[163] E-mail from Zack Porter, Exec. Dir., Standing Trees, to James Innes, Dist. Ranger, U.S. Forest Serv. and Johnida Dockens, Env't Coordinator (June 16, 2022, 12:53 EST) (Exhibit 55).
[164] E-mail from Theresa Corless, Forest Planner and Env't Coordinator, U.S. Forest Serv., to Zack Porter, Exec. Dir., Standing Trees (August 25, 2023, 12:26 EST) (Exhibit 56).
[165] *Id*.

noted for its high scenic integrity,[166] complete absence of non-native species,[167] and immense popularity for backcountry recreation,[168] all of which will be negatively impacted by proposed logging and burning. In addition, the proposed logging in Harvest Unit 39, and perhaps other units, could have direct and indirect impacts on the Sandwich Range Wilderness. Harvest Unit 39 directly abuts the Sandwich Range Wilderness to the south. Further, there is no contemplation or analysis of how harvesting activities might impact the four qualities of wilderness character that qualify an area for protection under the 1964 Wilderness Act, namely (1) naturalness; (2) sufficient size; (3) opportunities for solitude or primitive, unconfined recreation; and (4) the presence of ecological, geological, or other value.[169]

The WMNF has so far brushed aside Standing Trees's requests for Project maps to display roadless area, wilderness, and management area boundaries, along with topographical features and contour lines that make it easier to determine the location of proposed harvests. Such detailed maps are routinely produced by the Green Mountain National Forest in support of projects. This latest failure by the WMNF to identify and analyze important consequences of their proposed action on inventoried roadless areas and congressionally designated wilderness is yet another reason why Project maps should provide greater detail.

Given the deficiencies of the Draft EA, the public is left to guess how the proposed action will impact areas that were previously considered for wilderness designation in WMNF Forest Plan Appendix C, including the Chocorua Inventoried Roadless Area, and that should be considered again when the Forest Plan is revised.

As Standing Trees argued in response to the NOPA, the Forest Service should analyze impacts to roadless area values and propose alternatives that avoid roadless area impacts, regardless of whether those roadless areas are managed according to the 2001 Roadless Area Conservation Rule ("RACR"). The RACR was promulgated in 2001 to recognize the inherent value of roadless areas' water, biodiversity, and other elements, regardless of whether an area is ever designated as "wilderness" by Congress.[170] Instead of protecting these values, the Forest Service is proposing to degrade them. Rather than abdicating this obligation, the Forest Service should avoid all impacts to roadless areas and their values by guiding logging away from Forest Plan Inventoried Roadless Areas unwisely allocated to Management Area 2.1 by the 2005 Forest Plan. Such an analysis should also consider the potential effects of roadless area logging and road reconstruction on both future Ch. 70 wilderness inventories and evaluations and the potential for Congress to include these lands in the National Wilderness Preservation System, regardless of whether a roadless area is managed according to the RACR. These considerations are especially important because the current forest plan has outlived its 15-year lifespan as dictated by the NFMA.[171] This is especially important because the Project is geographically close to the Sandwich Wilderness area, and any road reconstruction may prevent future designations.

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[166] FEIS at C-47.
[167] *Id.*
[168] FEIS at C-46.
[169] 16 U.S.C. § 1131(c).
[170] 36 C.F.R. § 294.
[171] Standing Trees Scoping Comment at 7.

The Forest Service should conduct a full analysis of the roadless area values affected by this Project, and it should do so in an EIS.

J. Wildlife

The Draft EA fails to acknowledge the Project's impacts on wildlife and the important role that mature and old-growth forests play in this delicate ecosystem. The importance of old forests is acknowledged in the FEIS, as discussed previously in this comment letter. The 2018 Vermont Conservation Design Natural Community and Habitat Technical Report is instructive for the State of New Hampshire and the WMNF:

> The state's native flora and fauna that have been here prior to European settlement are adapted to this landscape of old, structurally complex forest punctuated by natural disturbance gaps and occasional natural openings such as wetlands or rock outcrops. The complex physical structure of old forests creates diverse habitats, many of which are absent or much less abundant in younger forests.[172]

What the WMNF calls "old forests"—the forests that the Sandwich VMP's "mature forests" are poised to become—are northern New England's natural forests. As such, much of New Hampshire's community of life evolved over millennia within these remarkable original forests. A combination of overhunting and habitat loss following European settlement led to the disappearance of wide-ranging carnivores such as cougars, wolves, and wolverines. Elk and caribou met a similar fate. Some species we might take for granted today, such as bear, moose, beaver, and loons, were on the brink of extirpation only a short while ago. Lynx, NLEB, and pine marten currently teeter on the edge. Many of New Hampshire's imperiled bird species are adapted to interior forests and reliant upon complex forest structure for their survival, including standing snags and large living trees.

Indeed, the availability of dead and dying trees and downed wood is critical for the health of many species, from bats to pine marten to invertebrates.[173] Mature, unfragmented interior forests make ideal habitat for a variety of native and imperiled species. However, this type of forest is rare in New England overall. Thus, the WMNF is an important concentration of such habitat within New England. When this habitat is fragmented or degraded through activities such as logging, these species experience increased threats from interactions with humans, predation, changes in microclimates, the spread of invasive species and ticks, and other fragmentation and edge effects.

The Draft EA utterly fails to reckon with this evidence, instead asserting that the Project will benefit wildlife diversity by promoting younger forests through logging. Yet one of the

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[172] Zaino et al. (Exhibit 16).

[173] *See, e.g.*, Thorn et al., *The Living Dead: Acknowledging Life After Tree Death to Stop Forest Degradation*, 18 FRONTIERS ECOL. & ENV'T 505 (2020) (Exhibit 42); *see also* Evans & Mortelliti, *Effects of Forest Disturbance, Snow Depth, and Intraguild Dynamics on American Marten and Fisher*, ECOSPHERE (Nov. 24, 2021) (Exhibit 17).

Wildlife Objectives listed in the Forest Plan is to "[m]aintain high quality mature forest and old forest habitats on a majority of the Forest," as there is good reason for leaving mature forests intact.[174] Our native ecosystems preserve—and present the opportunity to restore—the greatest levels of wildlife and biodiversity. The Forest Service cannot ignore the vast amount of scientific data showing how mature and old-growth forests support a wide range of wildlife. The Draft EA's discussion of wildlife is inadequate, and the completion of an EIS is necessary to determine the true impacts that the Project would have on wildlife in the area.

K. Impacts of Road Construction and Reconstruction

Although "Transportation" and the need for a transportation analysis is included as one of the "needs" for the project, there is no detailed analysis of transportation or the impacts of road reconstruction in the Environmental Impacts discussion.[175] There is also no analysis of how proposed transportation-related activities compare to what is expected or permitted in the Forest Plan. Finally, the Draft EA does not indicate how many units proposed for timber harvest will be accessed, suggesting that the Forest Service has failed to account for the access that will be needed for proposed activities or is instead failing to disclose those access needs.

The Draft EA does not provide a detailed analysis of the potential for roads and skid trails to contribute to water quality issues and flooding through increased erosion and sedimentation, soil compaction resulting from the use of heavy machinery used to achieve the proposed road activities, and renewed fragmentation of wildlife habitat, among other things.

Though technically not constructing new roads according to its own statements, the Project proposes the "reconstruction" of several "unauthorized roads,"[176] and the project proposes what amounts to new road construction in several locations where evidence of an existing road, even if "unauthorized," is limited or absent. Some of these roads cross perennial streams, making their change in status at odds with the Forest Plan, which states:

> Existing roads, facilities, campsites, or trails within 100 feet of perennial streams or ponds should be considered for relocation as part of normal project planning, except when doing so would result in greater overall impact to the land or water resource. [177]

The Forest Plan also states that existing roads should be considered for decommissioning (a) when there is no longer any need for the road; (b) when alternative routes may be available; or (c) to protect natural and cultural resources or to meet other resource needs.[178]

The Draft EA's summary of the routes affected by the Project describes the stream crossings as follows:

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[174] *See* WMNF Plan at 1-20.
[175] Draft EA at 3, 17.
[176] Draft EA Appendix C.
[177] *See* WMNF Plan at 2-25, G-7.
[178] *Id.*

> Eight of the 18 unauthorized routes proposed for conversion to maintenance level 1 have stream (intermittent and perennial) crossings. Unauthorized Route 5230 crosses Paugus Brook and its relatively broad floodplain. The use of this road in the future would require a bridge to be constructed. If a bridge were to be constructed, sustainability would be questionable because abutments would be in the floodplain. Unauthorized Route 4061.2 (as mapped) goes through wetlands and a pond, impacts to these wetlands from the use of this road are likely if mapping matches the on-the-ground location. This project does not propose use of this road, rather the White Mountain National Forest Travel Analysis Report recommends adding it to the system for potential future use.[179]

Yet the Draft EA does not describe any potential impacts on the perennial streams, nor does it provide information for the public to evaluate. For example, despite the substantial effects and difficulties of using Unauthorized Routes 5230 and 4061.2, instead of decommissioning and revegetating them, as directed in the Forest Plan, the Forest Service recommends adding them to the USFS Road System as Maintenance Level 1 Roads.[180]

Leaving wetlands, riparian areas, and other land and water resources free from the risks of reconstructed roads would promote the roadless and wilderness characteristics of the area and would help to support important habitat benefits and ecosystem services. The Draft EA lacks a justification for reconstructing these roads, vaguely stating only that the "White Mountain National Forest Travel Analysis Report recommends adding it to the system for potential future use," without a citation or other evidence.[181] This indicates that the Forest Service failed to take a "hard look" at the impacts of road reconstruction or designation in the project area as required by NEPA.

The Draft EA seems to completely ignore a significant amount of infrastructure that will be necessary to access and remove timber removed through harvests, and their associated impacts. For example:

- Project maps fail to depict the ten proposed log landings,[182] which are significant in terms of their local and cumulative impact.
- Project maps and analysis fail to indicate how many of the proposed Harvest Units will be accessed. For example, in the Guinea Hill area (see Map 1, Draft EA at 8), there is no indication of how timber would be accessed in Units 15, 16, 19, 22, 23, 24, 25, 26, 27, 28, 29, 32, 48, and 49. If the Project intends to make use of what is depicted as a snowmobile trail along a powerline corridor, what additional roadwork or modifications will be necessary? What will the impacts be? What sort of access will be created or used, including skid trails, to remove timber from Units that do not abut existing roads or roads

[179] Draft EA at 24.
[180] Draft EA Appendix C at 24-25.
[181] Draft EA at 25.
[182] Draft EA at 7.

proposed for maintenance on the Project maps? Standing Trees observed no existing road along the "Sidehill Powerline Snomo" corridor during a site visit on August 12, 2023.

Similarly, it is unclear how other Harvest Units will be accessed in the Ferncroft portion of the Project area (especially Units 39, 40, and 46), and the Liberty portion of the Project area (especially Units 3, 4, 5, 6, 9, 10, 11, 33, 34, and 47). Of special note, the Liberty portion of the Project area is entirely (or almost entirely) located within the Chocorua Inventoried Roadless Area. The public is left to guess whether the Forest Service has either failed to report and assess anticipated impacts, or whether it has completely failed to anticipate the amount and type of impacts that will be necessary to complete project activities.

- Standing Trees's site visits on August 12 and 14, 2023 revealed that a number of "roads" proposed for reconstruction are, in fact, not roads in any recognizable or meaningful sense. This roadwork is tantamount to "new road construction," and should be reported and analyzed as such to accurately reflect the impact that this proposed activity would have and to ensure compliance with the Forest Plan, which anticipates just one mile of new road construction per decade of implementation for the selected Alternative #2.[183]. For example, in the Guinea Hill portion of the Project area, there is an unidentified road segment that branches off FS Road 373, which we believe is depicted as road 5460 in the WMNF "Transportation Management Rule Subpart A, Minimum Road System" map (dated August 29, 2015). This "road" is likely a relic of long-ago agriculture and logging activities, and today is nearly unnoticeable and completely unusable as a road, having re-naturalized and reforested. Based on the size of the trees growing out of the road, it appears that it has been many decades if not longer since this was a road in any meaningful sense. In fact, in some areas there is no discernible road at all. The photos below, taken August 12, 2023, are in order of ascending elevation, and depict what we believe is considered FS Road 5460:

[183] WMNF Plan FEIS at 2-29.

The situation is similar in what is depicted as FS Road 337A on the same map, "Transportation Management Rule Subpart A, Minimum Road System." Although the first portion of this road is an established logging road, the map incorrectly and misleadingly lumps the entire road together as needing similar improvements, when in fact the final third of the road as depicted on the map, following a substantial creek crossing, is not a road in any meaningful sense. The photos below show how this road deteriorates following the creek crossing:

The Forest Service should complete a thorough evaluation of current HMU conditions to determine the impact of road reconstruction and construction and should accurately account for and depict all transportation needs. An EIS is necessary to determine the full impacts of road reconstruction in the Project area.

L. Cumulative Impacts

The Forest Service not only fails to provide virtually any details in the Draft EA's cumulative impacts analysis, but effectively denies that there will be any such impacts. When considered together, the Project's combined resource impacts—past, present, and future—are both significantly impactful to the human environment and deeply troublesome.

The Forest Service is required by NEPA to consider the cumulative impacts of the Project.[184] Cumulative impacts are defined as "effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or persons undertakes such other actions."[185] Notably, "[c]umulative effects can result from *individually* minor but *collectively* significant actions taking place over a period of time."[186] Cumulative effects analysis requires the agency to define and apply a consistent geographic scope in which to analyze cumulative effects.[187] The geographic scope determines which nearby projects will be included in its analysis, and an agency "must provide support for its choice of analysis area[.]"[188]

The Draft EA ignores other ongoing or upcoming Forest Service projects that involve logging and other tree-cutting in the WMNF, including the Wanosha Integrated Resource Project, Peabody West Integrated Resource Project, Lake Tarleton Integrated Resource Project, Lost River Integrated Resource Project, and Hales Location Wildfire Resiliency Project.[189] All of these projects involve substantial logging, carbon emissions, and/or habitat alteration or destruction. It is unclear whether the Forest Service has assessed the cumulative impacts of these anticipated future logging operations, as that information is absent from the Draft EA and project record. It is also unclear whether the Forest Service has accounted for the amount of early successional habitat located on private lands near the project area and throughout the WMNF region.

The Draft EA fails to identify or explain the temporal and geographic scopes of its cumulative impacts analysis for a majority of the resources. Although it acknowledges that such analysis must address activities "overlap[ping] in space and time with effects of the proposed

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[184] 40 C.F.R. § 1508.7.
[185] 40 C.F.R. § 1508.1(g)(3).
[186] *Id.* (emphasis added).
[187] *See League of Wilderness Defs./Blue Mountains Biodiversity Project v. Connaughton*, 2014 WL 6977611, at *9-11 (D. Or. Dec. 9, 2014).
[188] *Id*. at *9 (citing *Native Ecosystems Council v. Dombeck*, 304 F.3d 886, 902 (9th Cir. 2002); *Kleppe v. Sierra Club*, 427 U.S. 390, 414 (1976)).
[189] *See, e.g.,* U.S. Forest Serv., *White Mountain National Forest: Projects,* https://www.fs.usda.gov/projects/whitemountain/landmanagement/projects (last visited Aug. 30, 2023); *see also* WMNF U.S. Forest Service Logging Projects Map (Exhibit 6).

project[,]"[190] it does not actually define that "space" or analysis area. As noted, it vaguely states that "these analysis boundaries vary by resource" and are "documented in the project record."[191]

In addition to its failure to define the geographic scope of the cumulative impacts analysis, the Draft EA's cumulative impacts analysis contains no actual analysis and does not state whether the Project is expected to contribute cumulatively to resource impacts within the analysis area. The Forest Service cannot just make a blanket statement about impacts without providing analysis that supports that conclusion. As is, the public has no way of evaluating the cumulative impacts of the Project because the public is not given any detail to look into the matter themselves.

The Forest Service did create a Biological Evaluation for the Project, which includes a brief discussion of the NLEB. The Biological Evaluation indicates "the analysis area for cumulative effects for threatened, endangered, and sensitive species resulting from the activities included under the proposed action encompasses National Forest System lands located within the Sandwich [HMU]."[192] When taken into consideration with all the other Forest Service projects within the WMNF discussed above ,[193] the cumulative impact is significant. Because these projects may result in logging of mature trees that the bats use for roosting and foraging, the Forest Service must analyze the cumulative effects this Project will have on bat habitat *alongside* "other past, present, and reasonably foreseeable future actions . . . ."[194]

To be certain, the cumulative effects of Forest Service projects on the NLEB will be substantial and consequential, not just within the WMNF but also throughout the bat's national habitat range. This is because U.S. Fish and Wildlife Service has issued a batched (and botched) Biological Opinion, allowing 2,408 planned and ongoing Forest Service actions in the Eastern and Southern Regions to continue.[195] The action area contains 22,542,298 acres of forested National Forest System lands.[196] Due to the dire state of the NLEB, every individual bat and every activity contributing to the destruction of its habitat—including logging—are of utmost importance. Failure to protect this species is a violation of the ESA.

For all the reasons set forth above, the Forest Service significantly fails NEPA's requirement to consider all cumulative impacts under NEPA's implementing regulation, and the Forest Service should complete an EIS and additional NEPA analysis to ensure that all cumulative impacts of the Project are analyzed, addressed, and made clear to the public.

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[190] Draft EA at 29.
[191] *Id.* at 20.
[192] Biological Evaluation at 8.
[193] *See* WMNF U.S. Forest Serv. Logging Projects Map (Exhibit 6).
[194] 40 C.F.R. § 1508.7.
[195] Letter from Karen Herrington, Acting Asst. Reg'l Dir. for Ecological Servs., USFWS Region 3, to Gina Owens, Reg'l Forester of Eastern Region, U.S. Forest Serv. (Mar. 31, 2023) (*in re* Northern Long-Eared Bat Biological Opinion) (on file with Peabody West IRP project at "Biological Opinion NLEB Reinitiation" > "Forest Service Region 8 and Region 9 Final.pdf") (hereinafter "BiOp") (Exhibit 46).
[196] BiOp at 6.

II. With its Deficient Purpose-and-Need Statement, the Draft EA Fails to Frame and Inform the NEPA Analysis.

NEPA directs the Forest Service to "specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action."[197] The statement must accurately reflect the proposed action's purpose and need because it will inform the range of alternatives the agency considers as part of its NEPA analysis.[198] The Forest Service's purpose-and-need statement here fails to meet this standard. The Draft EA states the purpose of the Project is "to advance Forest Plan goals, objectives, and desired conditions for vegetation, wildlife, and other resources in the Sandwich Habitat Management Unit (HMU)" and that the Project is specifically needed to "provide a sustained yield of high-quality timber products; provide a balanced mix of habitats for wildlife; provide a variety of recreation opportunities; and manage high-use or highly developed recreation areas to acceptable social and ecological standards while retaining some low-use and less developed areas (USDA Forest Service 2005a)."[199] As Standing Trees commented on the identical purpose and need statement in the NOPA, the Draft EA's purpose-and-need statement is uninformative and fails to contextualize the Project's purpose and rationale in a manner that promotes consideration of reasonable alternatives, including alternative forest management prescriptions.[200] Indeed, the statement is too vague to adequately connect the Project's purpose and need to stand conditions, best science, and desired future conditions in the Project area.

Moreover, the purpose-and-need statement fails to incorporate recent governing authorities that must inform it. A properly crafted purpose-and-need statement would integrate an accurate account of Forest Plan objectives and several current Executive Orders. The purpose-and-need statement for the Project fails on both accounts. Although the Draft EA repeatedly cites the Forest Plan, that Plan is over 17 years old, conflicting with NFMA's intent that forest plans be updated on a regular basis to reflect updated science, management objectives, and community needs.[201] The Draft EA further fails to reconcile the purpose and need statement with current Executive Orders 14,072[202] and 14,008,[203] which aim to foster forest conservation, enhance forest resilience, and assess mature forests.The Draft EA does not mention either Executive Order; as a result, the Final EA fails to incorporate their policies within the Plan's goals in the context of this Project.

As Standing Trees emphasized in its prior comments, 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

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[197] *Id.* § 1502.13.
[198] *See League of Wilderness Defs.-Blue Mountains Biodiversity Project v. U.S. Forest Serv.*, 689 F.3d 1060, 1069 (9th Cir. 2012)
[199] Draft EA at 3.
[200] Standing Trees Scoping Comment at 2-4.
[201] 16 U.S.C. § 1604(f)(5).
[202] Exec. Order No. 14,072, 87 Fed. Reg. 24,851 (Apr. 22, 2022).
[203] Exec. Order No. 14,008, 86 Fed. Reg. 7619 (Jan. 27, 2021).

resources and mature forests, better support the full range of biodiversity in its natural abundance and distribution, and meet the intent of the applicable Executive Orders.

In light of the failings identified above, the Draft EA's purpose-and-need statement is unlawful under NEPA. The Forest Service should prepare an EIS with a more accurate purpose-and-need statement that promotes exploration of reasonable alternatives that comply with the Forest Plan and Executive Orders 14,072 and 14,008. The Forest Service should update the Forest Plan as required under NFMA.

III. The Draft EA's discussion of "No Action" Failed to Consider a True No Action Alternative or Any Reasonable Alternatives.

Part of the policy governing the NEPA mandates that "federal agencies shall to the fullest extent possible . . . emphasize real environmental issues and alternatives . . . [and] use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment."[204]

A. The Draft EA Fails to Include a No-Action Alternative.

A "No-Action Alternative" is the bare minimum alternative analysis an agency should undertake for an EA or EIS, and the Draft EA does not adequately address this.[205] 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. The NEPA requires agencies to consider both the detriments *and benefits* of proposed projects, which requires the agency to consider 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 NLEB 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 June 2022 public meeting for this Project); 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.

B. The Draft EA Fails to Analyze Reasonable Alternatives.

NEPA mandates that an EA describe the environmental impacts of both the proposed action and alternatives to the proposed action.[206] Similarly, NEPA requires an alternatives

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[204] 40 C.F.R. § 1500.2(b), (e).
[205] 40 C.F.R. § 1502.12(c).
[206] 40 C.F.R. § 1508.9(b) ("Environmental assessment . . . [s]hall include brief discussions . . . of alternatives as required by section 102(2)(e), [and] of the environmental impacts of the proposed action and alternatives . . . .").

analysis for EISs.[207] The alternatives analysis is "the heart of the environmental impact statement," and this is where the agency must "sharply [define]" key issues that are "actual[ly] . . . ripe for decision at each level of environmental review."[208] An agency may consider *only* the proposed action when there are no "unresolved conflicts concerning alternative uses of available resources."[209] Unresolved conflicts exist when the agency lacks consensus about the proposed action based on input from interested parties.[210] Furthermore, agencies "shall not commit resources prejudicing selection of alternatives before making a final decision,"[211] nor shall they "limit the choice of reasonable alternatives."[212]

CEQ regulations mandate that federal agencies shall "inform decisionmakers and the public of reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment."[213] 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."[214]

Given the many different facets of the proposed action and the current primary purpose articulated in the Draft EA— to "advance Forest Plan goals, objectives, and desired conditions for vegetation, wildlife, and other resources in the Sandwich HMU"—it is inconceivable that there will be only one way to achieve that purpose.[215] 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, which the Forest Service should necessarily consider in its EIS. Otherwise, the Forest Service will be running headlong into NEPA violations.

A recent case in federal district court in New Hampshire is instructive on this issue. In *Conservation Law Foundation v. U.S. Army Corps of Engineers*, a recent preliminary injunction

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[207] 40 C.F.R. § 1502.14 ("[The EIS] should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public . . . . [A]gencies shall . . . [r]igorously explore and objectively evaluate all reasonable alternatives[, i]nclude reasonable alternatives not within the jurisdiction of the lead agency[, and] include the alternatives of no action.").
[208] *Id.*; s*ee also* 40 C.F.R. § 1502.20 ("Agencies are encouraged to tier their [EISs] to eliminate repetitive discussions of the same issues and to focus on the actual issues ripe for decision at each level of environmental review.").
[209] 42 U.S.C. § 4332(E); *see also* 36 C.F.R. § 220.7(b)(2)(i) ("When there are no unresolved conflicts concerning alternative uses of available resources . . . the EA need only analyze the proposed action and proceed without consideration of additional alternatives.").
[210] National Environmental Policy Act Procedures, 73 Fed. Reg. 43,084, 43,092 (July 24, 2008) (codified at 36 C.F.R. Part 220).
[211] 40 C.F.R. § 1502.2(f).
[212] 40 C.F.R. § 1506.1(a)(2).
[213] 40 C.F.R. § 1502.1.
[214] *Id*. § 1501.2(c); *see also* 42 U.S.C. § 4332(E).
[215] Draft EA at 3.

opinion regarding the range of alternatives considered in an EA, the Court emphasized 40 C.F.R. § 1502.14, quoting from the regulation that agencies must:

> (a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
>
> (b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.[216]

The Court went on to hold that the agency was likely to succeed on the merits because, unlike here, "the EA provided reasonable, common-sense explanations for rejecting alternatives."[217] In that case, the agency considered five alternatives, including a true No-Action Alternative.[218] The agency assessed the alternatives in quantitative terms, and for each alternative, the agency provided a rationale for why it was rejecting it in favor of the proposed action.[219]

By contrast, here, the Forest Service has failed to include analyses of any reasonable alternatives to the Project, much less to provide any rationale, quantitative or otherwise, for why it rejected those presented by Standing Trees. To be sure, numerous reasonable alternatives exist—alternatives apparent to the agency and the public alike[220]—and the Forest Service could have analyzed any of them, but it failed to do so. This choice violates NEPA.

Furthermore, in another recent and instructive case, the Ninth Circuit Court of Appeals held that the Bureau of Ocean Energy Management ("BOEM") inadequately considered alternatives in its EA, thereby violating NEPA.[221] In *Environment Defense Center v. Bureau of Ocean Energy Management*, the court concluded that, although the Bureau considered three alternatives, the alternatives were not sufficiently distinct.[222] Additionally, the court held that BOEM's Final EA needed to include "full and meaningful consideration [of] all viable alternatives 'in [the] environmental assessment,'" such as those proposed by commenters.[223] Here, the Forest Service failed to consider any alternatives beyond its conclusory assessment of the consequences of no action, let alone consider the viable alternatives proposed by commenters at any stage in the NEPA process. And, unlike the agency in *Environment Defense Center*, the Forest Service failed to consider *any* viable alternatives to its proposed silviculture treatment plans. This is a violation of NEPA.[224]

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[216] 457 F. Supp. 3d 33, 56 (D.N.H. 2019) (citing 40 C.F.R. § 1502.14).
[217] *Id*.
[218] *Id*. at 57.
[219] *Id*. at 57-58.
[220] *See* Standing Tree Scoping Comment at 6-7.
[221] *Env't Def. Ctr. v. Bureau of Ocean Energy Mgmt.*, 36 F.4th 850, 877 (9th Cir. 2022).
[222] *Id*. at 878.
[223] *Id*.
[224] 42 U.S.C. § 4332(C)(iii).

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

- 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 RACR, 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 under the NFMA;
- Increasing the size of the buffer from watercourses and wetlands;
- Increasing the size of the buffer from the boundaries of the Sandwich Range Wilderness and Mount Chocorua Scenic Area. Such an analysis should also consider how logging may degrade scenery management objectives, desired future conditions for WMNF Scenic Areas, the wilderness character of the Sandwich Range Wilderness, and other values that are emphasized in the Forest Plan or by statute;
- Avoiding logging of all mature and old forest as defined in WMNF Forest Plan Appendix D, Age Class Definitions by Habitat Type, in order to both comply with Executive Order 14,072 and reduce the risk of harm to NLEB habitat.

IV. The Project, as Proposed, Will Have "Significant" Impacts and Requires an EIS.

The NEPA requires that federal agencies prepare an EIS for projects that are likely to have significant effects.[225] In determining whether the effects of the proposed action are likely to be significant, agencies must consider (1) context and (2) intensity.[226] In making the significance determination, agencies are also to consider connected actions.[227] 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."[228]

Standing Trees believes that an EA is not adequate for a proposed action of this size and requests that the Forest Service prepare an EIS. This is a multi-phase, 5- to 10-year proposed action that is significantly affecting the environment, regardless of whether those effects are considered beneficial or detrimental. First, the proposed action is likely to have both short- and long-term effects because of its expansive scope and size. To take just one critical example, logging will have a severe negative impact on the northern long-eared bat if that species and/or its habitat are found in the Project area. Second, the proposed action is likely to contribute to the loss of climate benefits of retaining older, mature trees due to the proposed logging. Third, the Project has the potential to catalyze detrimental impacts to water quality due to runoff, sedimentation, and potential (and unanalyzed) threat of herbicide contamination due to the focus on reducing beech regeneration and proposed whole tree removal. Fourth, the proposed action is likely to cause loss or damage to historic and cultural resources located within the proposed

[225] 40 CFR § 1501.3(e).
[226] *Id*. § 1508.27 (a), (b).
[227] *Id.* § 1508.25(a)(1).
[228] *Id*. § 15081.27(a).

action area. 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 and Preliminary FONSI.

A. The Preliminary FONSI Is Conclusory and Lacks Factual Support

As expounded upon in this comment, the Project, in myriad ways, threatens the outstanding natural resources of the affected area with a range of significant impacts. Yet the Forest Service issued a Preliminary FONSI in its Draft EA and decided that this project will not require an EIS under the NEPA.[229]

Findings of no significant impact should include "discussion to show why more study is not warranted."[230] Environmental assessments are expected to "briefly provide *sufficient* evidence *and* analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact."[231] A FONSI must "present the reasons why an action . . . will not have a significant effect."[232]

An agency FONSI will be held to the following standard: first, "the agency must have accurately identified the relevant environmental concern"; second, once the agency has identified the problem, "it must have taken a hard look at the problem in preparing the EA"; third, "if a finding of no significant impact is made, the agency must be able to make a convincing case for its finding"; and fourth, "if the agency does find an impact of true significance, preparation of an EIS can be avoided only if the agency finds that changes or safeguards in the project sufficiently reduce the impact to a minimum."[233] As described in Standing Tree's prior scoping comment and expanded upon here, the Forest Service has to adequately describe the impacted environment and take a hard look at impacts to those resources. Despite this, the Forest Service has advanced a finding of no significant impact without providing convincing reasoning to support this finding.

The Preliminary FONSI is grounded in the flawed analysis of the Draft EA. The Preliminary FONSI and the Draft EA rely on the unsupported finding that the "potential environmental effects would be site-specific, localized to the project area, and would not be measurable at a regional or larger scale."[234] Further, the Forest Service fails to provide up-to-date environmental information for itself, public officials, or residents, eschewing its statutory obligation.[235]

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[229] Draft EA at 31-35.
[230] 40 C.F.R. § 1502.2(b).
[231] *Id*. § 1508.9(a)(1) (emphasis added).
[232] *Id*. § 1508.13.
[233] *Nw. Bypass Grp. v. U.S. Army Corps of Eng'rs*, 470 F. Supp. 2d 30, 61 (D.N.H. 2007) (quoting *Sierra Club v. U.S. Dept. of Transp.*, 753 F.2d 120, 127 (D.D.C. 1985)).
[234] Draft EA at 31; *see also* Section V, *infra* (explaining how the Forest Service relies on data that is either not provided for the public to review or non-existent).
[235] 40 C.F.R. § 1500.1(b) ("NEPA procedures must insure [sic] that environmental information is available to public officials and citizens *before* decisions are made and *before* actions are taken" (emphasis added)); *see also Env't. Def. Ctr.*, 36 F.4th 850, 873 (explaining that the agency cannot rely on inaccurate, incomplete data to "formulate an estimate for evaluating environmental impacts under NEPA.").

Here, as discussed in detail above, the Forest Service fails to provide complete environmental information. To underscore two examples, first, the Forest Service does not have up-to-date environmental information regarding the presence of the NLEB in the proposed project area, including where NLEB hibernacula or roosts may exist. Although the New Hampshire Fish and Game Department attempted to catch NLEBs during a two-night excursion in July of 2019, this excursion produced no results.[236] Without complete data, the Forest Service cannot properly abide by NEPA.[237] Second, the Forest Service relies on the EIS compiled for the Forest Plan in 2005. This document is now many years out of date.[238] The Forest Service must compile a complete set of data before it can effectively take the requisite hard look at the potential environmental effects of this proposed action.

The FONSI must "[present] the reasons why an action . . . will not have a significant effect[.]"[239] It is inadequate to state that because other actions did not have a significant impact, thus this Project will also have no significant impact. Similarly, it is inappropriate to issue a draft EA without compiling and then considering a complete account of environmental information. The Draft EA's failure to support its FONSI is alone sufficient to require additional or supplemental NEPA analysis in the form of an EIS.[240]

B. The Draft EA Fails to Adequately or Correctly Define the Context or Discuss the Intensity of Project Impacts, Which Weighs in Favor of a Finding of Significance.

The Draft EA not only fails to adequately discuss the context and intensity of project impacts, but it also fails to do so correctly, according to NEPA procedure.[241]

1. Context

Context means "the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend on the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant."[242]

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[236] *Contrast Native Ecosystems Council v. U.S. Forest Serv.*, 428 F.3d 1233, 1250 (9th Cir. 2005) (finding accurate data to determine species viability where the Forest Service had monitored goshawks in the Helena National Forest for more than eight years).
[237] *See also WildEarth Guardians v. Jeffries*, 370 F. Supp. 3d 1208, 1235 (D. Or. 2019) ("The problem is that, without data identifying the location of calving sites and wallows, the Forest Service cannot meet its obligation to protect those sites or minimize disturbance to [elk]."); *Sierra Club v. Martin*, 71 F. Supp 2d 1268, 1319 (N.D. Ga. 1996) (finding that, because there was no population data, quantitative data, or other adequate information, the Forest Service did not have sufficient facts or evidence regarding sensitive and endangered species to support its finding of no significant impact).
[238] 36 C.F.R. § 219.7(a).
[239] 40 C.F.R. § 1508.13.
[240] *Ctr. for Biological Diversity v. U.S. Forest Serv.*, 444 F. Supp. 3d at 859.
[241] *See* 40 C.F.R. § 1508.27(b)(1)-(10) (listing the factors of intensity to be considered in evaluating significance).
[242] 40 C.F.R. § 1508.27(a).

Here, the Forest Service fails to appropriately identify the context within which to evaluate impacts of the proposed project is a critical failure. Without first establishing the proper context within which to conduct its analysis, it is impossible for the Forest Service to properly evaluate the intensity of project impacts. While a single housefire may be inconsequential on the scale of the city, the impacts on the affected home are devastating. Context is the key to determining the significance of an impact, and that is why context must be properly defined and supported for each resource being evaluated.

Establishing the proper setting and scale ("context") within which to evaluate the impact of an action is critical, yet the Preliminary FONSI's discussion of "context" does not establish the context for the analysis of resources impacted by the project at all. The Context section of the Preliminary FONSI does not indicate whether the project qualifies as a major federal action significantly affecting the quality of the human environment, nor does it provide discussion or detail about what the context for the Project is. The only analysis addressing the matter of context states the "proposed project includes about 1,325 of the more than 800,000 acres of lands administered by the White Mountain National Forest," and the "potential environmental effects . . . would not be measurable at a regional or larger scale."[243]

The Forest Service's resort to simple numeric measurement of the size of the Project and the size of the WMNF improperly minimizes and obfuscates localized impacts from Project activities. The Forest Service is not allowed to sweep significant impacts under the rug by pointing to the vastness of the forest surrounding the Project.[244] This is equivalent to the Forest Service proposing to burn the house down and telling the family that impacts would be minimal because the rest of the city would still be there. With greater consideration of the context of this Project, the Forest Service would find that the Project is a major federal action significantly affecting the quality of the human environment.

2. Intensity

Although the Forest Service conducted this environmental analysis according to the Council on Environmental Quality's 1978 regulations, it failed to properly consider the intensity factors set forth in those regulations.[245]

Intensity refers to the "severity of impact."[246] NEPA provides a list of ten non-exclusive factors to consider when evaluating intensity.[247] Because the Forest Service failed to define the context of its analysis for most project-area resources, its analysis of intensity, which is intrinsically linked to the context within which it is evaluated, is also necessarily inadequate. There is no discussion of the ten consideration factors. The presence of even just "one of [the intensity] factors may be sufficient to require an EIS in appropriate circumstances."[248] The Draft EA poses serious inadequacies regarding the following factors:

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[243] Draft EA at 31.
[244] *Pac. Coast Fed'n of Fisherman's Ass'ns v. Nat'l Marine Fisheries Serv.*, 265 F.3d 1028, 1035-37 (9th Cir. 2001) (agency cannot minimize impact of activity by adopting scale of analysis so broad that it trivializes site-level impact).
[245] Draft EA at 5.
[246] 40 C.F.R. § 1508.27(b).
[247] 40 C.F.R. § 1508.27(b)(1)-(10).
[248] *Ocean Advocates v. U.S. Army Corps of Eng'rs*, 402 F.3d 846, 865 (9th Cir. 2005).

a) The degree to which the proposed action affects public health or safety

The Draft EA states the Forest Service "has implemented this type of project and similar proposed activities many times on National Forest System lands locally and in the region without substantial impacts to public health or safety."[249] Repeated reliance on the fact that similar projects have occurred in the past ignores the fact that each project location is unique and therefore requires its own analysis of potential impacts. In addition, no evidence has been presented to support the claim that there have not been "substantial impacts to public health or safety" from past projects. It would undermine the entire purpose of NEPA to allow for general types of past actions to justify future actions. NEPA analysis is done on a project-specific basis.

The Forest Service fails to describe the "effects on public health and safety" or to ensure that these are minimized or avoided.[250] For example, in light of recent, catastrophic flooding in New England—and around the world—the Forest Service should consider how old forests can mitigate the catastrophic effects of climate change. In fact, 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 damage caused by flooding and drought by slowing, sinking, and storing water that would otherwise rapidly flow into our streams, rivers, and lakes.[251] Scientists have also shown that old forests are exceptional at removing nutrients that drive harmful algae blooms, like phosphorus.[252]

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 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

[249] Draft EA at 35.
[250] *Id*.
[251] Underwood and Brynn, ENHANCING FLOOD RESILIENCY OF VERMONT STATE LANDS, 8-10, 13 (Vt. Forests, Parks & Recreation 2015) (Exhibit 60) (hereinafter "Underwood and Brynn (2015)").
[252] Warren et al., ECOLOGY AND RECOVERY OF EASTERN OLD-GROWTH FORESTS 161 (Island Press 2018) (Exhibit 61).

> landscape development and a history of channel and floodplain modifications continue to impact water and sediment routing from the land."[253]

Similarly, 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…[254]

Another public health concern relates to water quality. The Forest Service has suggested that it will focus on reducing beech regeneration. Application of herbicides has been proposed by the Forest Service for beech "control" in projects such as the Tarleton Integrated Resource Project,[255] but it is unmentioned in the Draft EA here. Does the Forest Service intend to use herbicides to control beech? If so, it should acknowledge its planned use of herbicides and analyze potential impacts to water quality.

Lastly, the Draft EA makes scant mention of impacts to quality of life and public safety from logging. Impacts from logging could include noise and air pollution, damage to local roads, interruptions to emergency services, and others. The Draft EA simply dismisses the impacts as "limited."[256]

Given the impacts of the Project on mature forests' contributions to public health and safety, this factor weighs in favor of requiring a finding of significance and the preparation of an EIS.

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[253] Underwood and Brynn at 8 (Exhibit 60).
[254] Thom et al. at 1, 9 (Exhibit 19).
[255] U.S. Forest Serv., White Mountain National Forest, Tarleton Integrated Resource Project, Final Environmental Assessment at 18.
[256] Draft EA at 20.

b) 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

The Draft EA makes little reference to unique characteristics of the geographic area, despite its proximity to the Sandwich Wilderness Area, Mount Chocorua, and the outstanding natural resources of the southern White Mountains.

The Draft EA makes an inadequate, conclusory mention of the Whiteface and Cold Rivers, which are eligible for scenic classification within the Sandwich project area. The Draft EA states that "the measure used to assess the impacts of timber harvesting on water quality in the White Mountain National Forest is the percent basal area removed in a watershed that contains a perennial stream. When basal area removed in a watershed does not exceed 20 percent, there is high confidence of measurable effect on water quality or water quantity resulting from timber harvest."[257]

However, despite this, the Sandwich Project's proposed Unit 23, a watershed that feeds into the Cold River, will have a percent basal area removal that exceeds 20 percent. In fact, it will be a removal of 35.8%, almost double that of the threshold.[258] The Draft EA attributes a few characteristics to the watershed that the Service alleges will reduce water quality concerns, but it fails to reference the data that it draws on to support this conclusion.[259] This major exceedance of the significance threshold for water quality impacts to the affected watershed weighs in a favor of a finding of significance under NEPA.

Nor does the Draft EA adequately explain its choice to prioritize the Project over the concerns of the recently-uplisted NLEB. The Project area is ecologically critical, especially in light of the NLEB's listing as an Endangered Species. NLEBs are known to occur in the Project area, and yet the Forest Service fails to recognize the importance of mature forest for the species. In fact, the Forest Service states that "forest management resulting in a heterogeneous forest (in terms of forest type, age, and structural characteristics) may benefit the northern long-eared bat."[260] Although the Forest Service impedes public participation by failing to provide the citations to the data that the Forest Service draws their conclusions from, there is mention of the possible "benefits" to the NLEB in the Biological Evaluation for the Sandwich Project.[261] There, the Forest Service states the same proposition and provides an unpaginated cite to a 169-page document.[262] Not only does the Forest Service conclude there will be little to no impact to ecologically critical areas *without* access to up-to-date NLEB location data, but the Service draws broad conclusions that are contradicted by credible scientific information.[263] The potential for impacts on the NLEB similarly weighs in favor of requiring a finding of significance.

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[257] Draft EA at 24.
[258] *Id*.
[259] *Id*.
[260] Draft EA at 34.
[261] Biological Evaluation at 12.
[262] Draft EA at 34 (citing Species Status Assessment).
[263] *See, e.g.,* Species Status Assessment at 18-19 (Exhibit 1) (describing NLEB preferred habitat).

c) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks

The Forest Service attempts to justify its decision based on the existence of past projects implemented in the Forest and the region and the "routine nature of the actions, coupled with the relatively long safe history [of timber sales] . . .".[264] Absent is any supporting information or authorities for the public to validate this claim. The possible effects on the human environment are highly uncertain and involve unique or unknown risks because the Project is predicated on "similar proposed activities" implemented in the WMNF.[265] This reasoning ignores the heart of NEPA: project-specific analysis. The Forest Service denied the public due consideration of this specific Project's impacts, foreclosing the opportunity to assess unique or unknown risks. This flawed analysis weighs in favor of requiring a finding of significance and the preparation of an EIS.

d) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

Above, we discuss the Draft EA's lack of analysis regarding cumulative impacts. As previously explained, there are several potential cumulative impacts that the Draft EA patently refuses to acknowledge.[266] This factor also weighs in favor of requiring a finding of significance and the preparation of an EIS.

e) 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.

We expand above and below on the Draft EA's inadequate consideration of the endangered NLEB.[267] The recent uplisting of the species and absence of transparency from both the Forest Service and the USFWS weigh heavily in favor of requiring a finding of significance, necessitating a full analysis of the impacts to the NLEB, tricolored bat, and other endangered and threatened species in an EIS.

[264] Draft EA at 35.
[265] *Id*.
[266] Draft EA at 30 ("[N]o measurable cumulative impacts are expected with the proposed action and this project area are [sic] not expected to contribute cumulatively to resource impacts within the analysis area.").
[267] *See* Section VI, *infra*.

f) Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.

The Forest Service fails to conform to a single set of NEPA regulations, citing contradictory regulations throughout the Draft EA.[268] This totally inhibits the public from contributing meaningfully, and it creates uncertainty regarding which NEPA regulations are applicable here.

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The Preliminary FONSI is conclusory and unsupported by the facts, and under the NEPA regulations' significance factors, the Project is and should be analyzed as a major federal action that will significantly impact the quality of the human environment. The Forest Service should prepare an EIS for this Project.

V. The Public Involvement Process Was Burdened in Violation of NEPA.

Public participation is a critical aspect of the NEPA process. However, the Forest Service thwarts public involvement in the Project's environmental review by failing to (1) avail the public of supporting documents, (2) provide sufficient detail, and (3) adequately engage the public in project development.

The public is unable 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 conclusory statements. Agency conclusions in an EA "must be supported by some quantified or detailed information, and the underlying environmental data relied upon . . . must be made available to the public to allow for informed public comment on the project."[269] The Draft EA contains "simple, conclusory statements" made without carefully analyzing environmental impacts.[270] It is notably deficient in that it lacks analysis of public feedback on the Project.[271] Agencies must make genuine efforts to involve the public in their NEPA procedures.[272] The Forest Service fell short of this mark in the NEPA process for this Project to date.

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[268] *Compare* Draft EA at 5 (explaining that this "environmental analysis is conducted according to the Council on Environmental Quality's 1978 regulations . . .") *with* Draft EA at 35 (explaining that "this environmental analysis has been prepared using the current, 2020 Council of Environmental Quality (CEQ) regulations for National Environmental Policy Act compliance").

[269] *Ctr. for Biological Diversity v. U.S. Forest Serv.*, 444 F. Supp. 3d at 858-59.

[270] *See Touret v. NASA*, 485 F. Supp. 2d 38, 45 (D.R.I. 2007).

[271] *See id*.

[272] 40 C.F.R. § 1506.6(a).

A. The Forest Service Unfairly References, and Makes Several Conclusions that are Supported by, Documents that the Public Cannot Access or Review.

The Forest Service draws conclusions from documents that are unavailable to the public for review. This is a fundamental violation of NEPA.[273] For example, the Draft EA states that "[s]ite assessments and other data indicate that existing conditions in the Sandwich Habitat Management Unit do not meet Management Area 2.1 Habitat Composition and age class objectives described in the Forest Plan."[274] Although the Service references the section of the Forest Plan that contains the habitat composition and age class objectives, the Service fails to provide any reference or citation to the "site assessments and other data." The public is left to wonder if this analysis is contained within one of the other documents provided on the Forest Service proposed action webpage, but this does not appear to be the case. For the public to meaningfully participate, the Forest Service must provide the appropriate supporting documentation. Moreover, by failing to provide complete information to the public regarding the stand age classes affected by the Project, the Forest Service arbitrarily constrains the public's ability to contribute to the NEPA process *and* limits the potential range of alternatives considered during the NEPA process.

Not only is this information not publicly available, but it appears that it may not exist at all, calling into question the validity of the Forest Service's analysis here. The Forest Service failed to provide appropriate supporting documentation within the Draft EA, on the Sandwich Project webpage, *or* at the explicit request of Standing Tree's Executive Director. For example, on June 16, 2022, and again on August 8, 2023, Standing Tree's Executive Director requested a stand age class map (or merely a table of stand ages) for the areas proposed for harvest with overlays of the 2001 Roadless Area Conservation Rule boundaries and WMNF 2005 Forest Plan Inventoried Roadless Area boundaries.[275] On August 9, 2023, the Forest Service admitted that it does not have a stand age table or map for the project area, nor does it have a map that displays the management area and Inventoried Roadless Areas and the 2001 Roadless Area Conservation Rule.[276]

In relation to stand ages, Standing Trees requested clarification on whether there are any stands that qualify as old forest as defined by Appendix D of the Forest Plan.[277] Although the Forest Service responded to some of Standing Tree's questions, it failed to provide all requested information. Not to mention, in relation to the northern long-eared bat, the Forest Service failed

[273] 40 C.F.R. § 1500.1(b) ("NEPA procedures must insure [sic] that environmental information is available to public officials and citizens before decisions are made and before actions are taken.").
[274] Draft EA at 3.
[275] Exhibit 55 and Exhibit 57.
[276] *Id*.
[277] Exhibit 55.

to provide an up-to-date Biological Assessment, as it is required to.[278] This is information that the Forest Service is obligated to provide according to NEPA.[279]

Additionally, Standing Tree's Executive Director requested the 2015 Transportation Analysis Process document referenced in the Notice of Proposed Action. The Draft EA states that transportation management actions were informed by the Forest-wide Transportation Analysis Process. The Draft EA notes:

> In 2015, the White Mountain National Forest completed a forest-wide transportation analysis process (USDA Forest Service 2015) for long-term administration of the national forest's transportation system. As part of the current project, we completed a site-specific analysis of routes in the project area and identified actions for implementing or revising the transportation analysis process recommendations, as appropriate. These actions are needed to provide for public and administrative access to the project area and to meet standards for desired road operation maintenance levels and requirements of the Highway Safety Act of 1970.[280]

Neither the Draft EA nor the other public project documentation provide the analysis that went into the 2015 process, making it impossible to understand the rationale for the Project's transportation-related proposals in their full context. This is especially true given that the Draft EA admits that ". . . proposed travel management actions may differ from transportation process recommendations for some National Forest System roads (system roads). These differences are the result of a project-specific analysis of transportation needs based on management goals and objectives for the project area."[281] This apparent conflict cannot be understood without transparency regarding the 2015 and referenced project-specific analyses, which the Forest Service failed to provide.

The Forest Service's lack of transparency seriously impedes public participation in the project development process, which is a violation of NEPA.[282]

B. The Draft EA Makes Several References to Potential Alterations in the Proposed Action Without Opportunity for Public Comment.

The Forest Service further impedes public involvement in this NEPA process by leaving several parts of the proposed action subject to change dependent upon several conditions. However, the Forest Service does not (1) include an opportunity for the public to participate in the conditional changes or (2) explain when such changes would be implemented. The Forest Service allows for "treatment units . . . [to] be reduced or modified to meet visual and water

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[278] *See* Section VI(a), *infra* (explaining that the Endangered Species Act requires the Forest Service to complete a Biological Assessment evaluating the potential effects of the action on the listed species.).
[279] 40 C.F.R. § 1506.6(a) ("Agencies shall make diligent efforts to involve the public in preparing and implementing their NEPA procedures.").
[280] Draft EA at 4.
[281] Draft EA at 16.
[282] 40 C.F.R. § 1506.6(a).

quality objectives[.]"[283] The Draft EA, like the Notice of Proposed Action, fails to explain what the visual or water quality objectives are, when there would need to be reserve patches of uncut trees or protective buffers, or whether there will be an opportunity for the public to participate in this determination. This theme prevails throughout the Draft EA. The Forest Service similarly 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."[284] Additionally, the Draft EA allows for "proposed travel management actions [to] differ from TAP recommendations for some National Forest System roads (system roads). These differences are the result of a project-specific analysis of transportation needs based on management goals and objectives for the project area."[285]

To truly facilitate opportunities for public participation, the Forest Service must include more detail of these instances of deviation from the proposed action 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. As it stands, the TAP was not provided to the publicfor review with the Project documents, and to date the WMNF has only provided a TAP map with no supporting analysis.

Without providing actual analysis, it is impossible to gauge the actual anticipated impact to Project-area resources, the significance of those impacts, and whether they may violate the Forest Plan standards and guidelines. 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. 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."[286] The public cannot understand what it is not told. Instances of this persistent defect are identified throughout this comment.

The overall effect of the described inadequacies is the impediment of public participation in violation of NEPA's clear mandate to "encourage and facilitate public involvement in decisions which affect the quality of the human environment" and to "[m]ake diligent efforts to involve the public in preparing and implementing their NEPA procedures."[287] The Forest Service's decisions to impede public participation are in violation of NEPA's mandate, as the public should not have to "parse the agency's statements to determine" project impacts.[288] To remedy these failings, the Forest Service should return to the drawing board and complete an EIS for the Project with all required public participation opportunities that are part of that process.

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[283] Draft EA at 7 (emphasis added).
[284] *Id* (emphasis added).
[285] Draft EA at 16.
[286] 40 C.F.R. § 1502.8.
[287] 40 C.F.R. § 1506.6(a).
[288] *League of Wilderness Defs./Blue Mountains Biodiversity Project v. Connaughton*, 752 F.3d 755, 761 (9th Cir. 2014).

VI. The Analyses and Protections for the Endangered Northern Long-eared Bat Are Deficient.

In Standing Tree's scoping comment on the Notice of Proposed Action, we expressed substantial concern that the Forest Service had not adequately addressed the need for the Project to protect the NLEB, which was listed as an endangered species on March 23, 2022. Considering the Project's potential impacts on the NLEB, both the ESA and the NFMA require the Forest Service to substantially alter the proposed Project. Such a revision of the Project should only be undertaken with the benefit of an EIS that will fully address the Project's impacts on sensitive species, including the NLEB, as well as the many other impacts discussed above.

A. The Sandwich Vegetation Management Project Fails to Comply with the ESA.

Congress passed the ESA in 1973 for the purpose of conserving endangered and threatened species and the ecosystems upon which they rely.[289] According to the Supreme Court, the "plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, whatever the cost."[290] On November 30, 2022, USFWS published a final rule reclassifying the NLEB, uplisting the bat from threatened to endangered under the ESA.[291] The NLEB's endangered status is now in place, with part of its known habitat range within the Project area. Federal agencies, including the Forest Service, are required to comply with the ESA as it relates to the endangered status of the NLEB.

Section 9 of the ESA broadly prohibits the "take" of any listed species.[292] "Take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."[293] Section 7 of the ESA requires every federal agency to consult with the USFWS to "insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species."[294] To assist in the completion of this statutory requirement, the agency undertaking the action ("action agency") must complete a Biological Assessment ("BA").[295] The purpose of the BA is to "evaluate the potential effects of the action on listed and proposed species and designated and proposed critical habitat."[296] USFWS reviews the BA, and if the agency determines that the proposed action may affect listed species or critical habitat, USFWS must formally consult with the action agency.[297] USFWS then produces a Biological Opinion ("BiOp") to determine whether the agency action is likely to jeopardize the continued existence

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[289] 16 U.S.C. § 1531(b).
[290] *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 184 (1978).
[291] Endangered and Threatened Wildlife and Plants; Endangered Species Status for Northern Long-Eared Bat, 87 Fed. Reg. 73,488 (Nov. 30, 2022) (Exhibit 7).
[292] 16 U.S.C. § 1538(a).
[293] *Id.* § 1532(19).
[294] *Id.* § 1536(a)(2).
[295] *Id.* § 1536(c)(1).
[296] 50 C.F.R. § 402.12(a).
[297] *Id*. § 402.14(a).

of a listed species.[298] If the action is likely to jeopardize listed species, the BiOp must include reasonable and prudent alternatives to the action as proposed.[299]

The Forest Service is required to complete a BA evaluating the potential effects of the action (the Project) on listed species because, as explained above, this project is "significant" within the meaning of NEPA.[300] Accordingly, a species-specific BA should have been conducted for the NLEB (and the Tricolored bat). On May 1, 2023, Standing Trees received a copy of a potentially applicable BA for the NLEB in response to a FOIA request, although that BA is not included in the Project documents that have been provided to the public.

First, contrary to Section 7 of the ESA, the Biological Opinion (and the apparent BA) for the NLEB makes no site- or Project-specific determination whatsoever, as the Draft EA implies. The Biological Opinion provides a blanket assessment of nearly 3,000 Forest Service projects, of which the Project is only one: "[d]ue to the number of planned and ongoing projects and the similarity of effects, the projects will be combined and collectively evaluated to determine the projects' effects on NLEB."[301] The Biological Opinion goes on to estimate that the NLEB is apparently gravely endangered in the White Mountain National Forest, with as few as 25 maternity colonies and fewer than a thousand NLEB individuals in all of New Hampshire; to state that there are a litany of potential harms to NLEB and their habitat from projects like this one; and to highlight the lack of reliable data on where NLEB colonies persist and the likelihood of impacts from Forest Service projects.[302] Incoherently, the Biological Opinion—with the same sweeping disregard as the Forest Service's own blanket analyses—authorizes projects like the Sandwich Vegetation Management Project without any study, analysis, or concern for the potential for NLEBs to be harmed by the Project in its particular setting. In other words, based on available science, NLEBs are assumed to exist in the Project area, but nothing will change about the Project to protect them following their endangered listing. This decision is in blatant derogation of the purpose and procedures of the ESA. The Forest Service cannot lawfully rely on this approach here.[303]

Second, even using the Biological Opinion's own terms and methodology—and accompanying USFWS's NLEB tools—the Project fails to comply with those requirements. The Forest Service's Biological Evaluation indicates that the Forest Service used the USFWS Information for Planning and Conservation ("IPaC") website to determine which federally-listed

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[298] *Id.* § 402.14(h).
[299] *Id.* § 402.12(h)(2).
[300] 16 U.S.C. § 1536(c)(1); *see* Section IV (explaining "context" and "intensity" factors).
[301] BiOp at 4.
[302] BiOp at 18, 30-35 ("[I]t is reasonable to conclude there will be some impacts to some individual NLEBs in areas where they have yet to be documented (i.e., specific areas where they are not reasonably certain to occur). Given the nature of forest management and overlap with suitable habitat, the best available science indicates that forest management practices are anticipated to have at least some negative impact on some individual NLEBs in unknown locations, as opposed to the assumption that forest management will have a large impact on all of the or most NLEBs.").
[303] *See Ctr. for Biological Diversity v. U.S. Forest Serv.*, No. CV 22-114-M-DWM, 2023 WL 5310633, at *7 (D. Mont. Aug. 17, 2023) ("[A]n agency violates the ESA if it relies on a legally flawed BiOp.").

species may occur within the action area.[304] However, neither the Draft EA nor any other Project documentation discusses whether the Forest Service completed the Determination Key review process ("DKey") under IPaC to evaluate the effects of the project on the NLEB. According to the Standing Analysis and Implementation Plan for the NLEB, "[t]ree removal could affect NLEBs by the loss and/or fragmentation of foraging and commuting habitat and the removal and loss of roost trees. Actions that implement the conservation measures for NLEBs will not result in a gap in forested habitat of greater than 1,000 feet or isolate habitat."[305] Additionally, "[t]ree removal projects proposed within the 3.0 miles of NLEB captures or detections, within 1.5 miles of known roosts, and within 5.0 miles of hibernacula will not be eligible for a predetermination of NLAA [Not Likely to Adversely Affect]."[306]

Attempting to apply this standard here illustrates how the Forest Service has not supported its assertion of compliance with the ESA. The Biological Evaluation indicates that "[t]here are no known hibernacula within the action area."[307] Without any supporting data, studies, or evidence, this appears to be a conclusory statement of, in essence, see-no-evil, hear-no-evil, leaving the public wondering how the Forest Service came to this determination. It is unclear what field studies or actions—if any—the Forest Service actually undertook to reach this conclusion. The Forest Service must also consider roosts, hibernacula, or bat presence directly outside of the activity area that might fall within the USFWS DKey range requirements.

As a federal court recently found in similar circumstances for another bat species, which would be potentially affected by a Forest Service project in Washington State, the Forest Service must do more to understand the prevalence of NLEB in and around the Project area. In that case:

> The agency's analysis on the viability of sensitive bat species was deficient. The agency reasoned that the Sanpoil Project was not likely to lead to a loss of viability of sensitive bat species, because activities would either be far enough removed from known bat roost sites to have no effect on species or would be timed to avoid periods that the sites would be occupied. The agency need not have a complete census of where bats live in the forest; however, it is unclear how the agency can ensure that the Sanpoil Project activities will not affect bat viability by avoiding roosting sites, when it admits it does not have sufficient information about those sites to map the species' habitat. The agency's conclusion that the Sanpoil Project would not lead to a loss of viability for bat species depends on the agency's ability to avoid bat roosting sites, which it admits it is unable to locate. The record indicates the agency did not make a reasoned decision on viability based on the evidence it had. In failing to provide a reasoned explanation of the conclusions it drew

[304] Biological Evaluation at 5.
[305] U.S. Fish and Wildlife Serv., Standing Analysis and Implementation Plan – Northern Long-Eared Bat Assisted Determination Key, Version 1.1, 19 (Apr. 2023) (hereinafter "DKey"), https://www.fws.gov/sites/default/files/documents/Standing%20Analysis%20Version%201.1%20April%202023.pdf (Exhibit 13).
[306] DKey at 22 (Exhibit 13).
[307] Biological Evaluation at 8.

> from the data available, the agency violated the NEPA and NFMA.[308]

The same is true here: the Forest Service cannot claim to be having a minimal impact on the NLEB in compliance with the ESA without sufficient information to map the species' habitat.

Even more directly, the Project's proposed clearcuts directly run afoul of USFWS standards. USFWS indicates that only tree clearing projects up to 10 acres are eligible for a predetermined outcome of Not Likely to Adversely Affect the NLEB, a standard that does not appear to have informed the Draft EA whatsoever.[309] Currently, the Biological Evaluation indicates the action "may affect, but is not likely to adversely affect" the NLEB[310]; however, the Draft EA asserts that clearcuts in the project area where all trees are removed in a stand will "create large openings (greater than 10 acres but no more than 30 acres)."[311] The Draft EA estimates that a total of approximately 75 acres will undergo clearcut treatment in the Project area.[312] This proposed action clearly does not support a finding of Not Likely to Adversely Affect the NLEB as the Forest Service indicated in the Draft EA and Biological Evaluation. The determination of Not Likely to Adversely Affect is inconsistent with the USFWS DKey requirements, and the Forest Service is required "to coordinate with the local USFWS Ecological Services Field Office and/or follow a supplemental consultation process."[313]

Third, USFWS also provides an NLEB State-Specific Information Sources document and advises government agencies to consult with the appropriate office to determine whether rare or listed species are located within a project area and may be affected by a proposed action.[314] The Forest Service should consult with the New Hampshire Division of Forests & Lands to ensure that the proposed activities do not overlap with the required distances from NLEB hibernacula, staging or swarming areas, recorded captures or acoustic detection locations, and roosts.[315] In fact, the Forest Service should consult with the New Hampshire Division of Forests and Lands for all federally listed, proposed listed, and regional forester sensitive species within the project area. A consultation would provide additional species support assistance to the Forest Service and help ensure compliance with various statutes.

Fourth, the Forest Service's own analysis—as deficient as it is—suggests harms to NLEBs from the Project, and the ESA does not countenance such a result. As indicated in Section 7 of the ESA, agencies may not engage in activity that results in the destruction or

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[308] *Kettle Range Conservation Grp. v. U.S. Forest Serv.*, No. 2:21-CV-00161-SAB, 2023 WL 4112930, at *10 (E.D. Wash. June 21, 2023).
[309] DKey at 11, 22 (Exhibit 13).
[310] Biological Evaluation at 13.
[311] Draft EA at 11.
[312] Draft EA at 6, 43-44.
[313] DKey at 5 (Exhibit 13).
[314] U.S. Fish and Wildlife Serv., *Northern Long-Eared Bat: State-Specific Information Sources*, https://www.fws.gov/sites/default/files/documents/Roost%20Tree%20and%20Hibernacula%20-%20State-Specific%20Data%20Links_2.pdf (last visited Aug. 30, 2023) (Exhibit 9).
[315] *See, e.g.*, N.H. Div. of Forests & Lands, *NHB DataCheck Tool*, https://www4.des.state.nh.us/NHB-DataCheck (last modified Feb. 28, 2022) (Exhibit 10).

adverse modification of endangered and threatened species' habitat.[316] The 2023 Biological Evaluation for the Project indicates that the NLEB was documented throughout the WMNF and roosting and foraging habitat exists within the action area..[317] The Forest Service has not attempted to conduct any surveys.[318] Furthermore, the Forest Service's evaluation of direct effects haphazardly concludes that, because white-nose syndrome has reduced populations, "the likelihood of a bat being in a tree [during active, non-hibernation season] when it is cut is low."[319] For these reasons, information on the activity of NLEB in the Project area is not only scarce and inadequate, but also outdated. The Biological Evaluation concedes that, in the Project area, NLEB roosts may be removed during project activities.[320] Therefore, the Project as-is would violate the ESA through destruction and adverse modification of endangered bat habitat.

Finally, the Draft EA reports that "a key need of this project is to diversify the forest in part to improve wildlife habitat."[321] In fact, the Forest Service claims that "forest management resulting in heterogeneous forest (in terms of forest type, age, and structural characteristics) may benefit the northern long-eared bat."[322] Although the Draft EA does not create transparency or facilitate public involvement by citing the Project's Biological Evaluation, that is where this claim comes from. And, in the Biological Evaluation, the Forest Service cites the USFWS's NLEB Assessment Report, but provides no exact page for the claim in what is a dense, academic, 169-page document.[323] Not to mention, the Forest Service cites to a USFWS report that was conducted in 2016 regarding the effect to NLEB of all "non-federal and federal timber harvest, prescribed fire, forest conversion, and wind turbine operations within the State."[324] Not only does this report date from *before* the NLEB was listed as endangered, but its age indicates a failure to provide an up-to-date report on the bat populations.

Due to the recent and severe impacts on the species from threats such as white-nose syndrome, climate change, and habitat loss, the Forest Service should conduct additional studies to determine the current status of the NLEB in the Project area before taking any action.[325]

B. The Forest Service Fails to Meet NFMA Requirements.

The Forest Plan requires that "[a]ll project sites must be investigated for the presence of [threatened, endangered, and sensitive] species and/or habitat prior to beginning any authorized ground-disturbing activity at the site. TES plant surveys must be completed for all new ground-disturbing projects, unless biologists/botanists determine TES species occurrence is unlikely (e.g., no habitat exists)."[326] The Biological Evaluation, which the Draft EA incorporates by reference, states that "the northern long-eared bat has been documented throughout the White Mountain National Forest. Roosting and foraging habitat does exist within the action area.

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[316] 16 U.S.C. § 1536(a)(2).
[317] Biological Evaluation at 10.
[318] *Id*. at 11.
[319] *Id*.
[320] *Id*.
[321] Draft EA at 34.
[322] *Id*.
[323] Biological Evaluation at 12.
[324] Draft EA at 34.
[325] BiOp at 19.
[326] WMNF Plan at 2-13.

Presence of the bat is assumed, as suitable roosting habitat is abundant and available. There are no known hibernacula within the action area."[327] Yet, the Biological Evaluation admits that "no acoustic surveys were conducted for the Sandwich Vegetation Management Project."[328] The Forest Service cannot claim that it is in compliance with its own outdated Forest Plan (and thereby with NFMA) if it has made no effort to determine the location of NLEB hibernaculum, maternity roost sites, or individuals.

The Forest Service further fails to meet its obligations under NFMA as they relate to the NLEB and other sensitive species. The Forest Service's NFMA implementing regulations outline forest plan ecosystem diversity and species protection requirements.[329] The regulations state:

> The plan must include plan components, including standards or guidelines, to maintain or restore the diversity of ecosystems and habitat types throughout the plan area. In doing so, the plan must include plan components to maintain or restore . . . [r]are aquatic and terrestrial plant and animal communities[.][330]

Additional, species-specific NFMA plan components indicate that:

> The responsible official shall determine whether or not the plan components . . . provide the ecological conditions necessary to: contribute to the recovery[331] of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern within the plan area. If the responsible official determines that the plan components . . . are insufficient to provide such ecological conditions, then additional, species-specific plan components, including standards or guidelines, must be included in the plan to provide such ecological conditions in the plan area.[332]

The Forest Service's Biological Evaluation and the Project fail to meet these requirements for several reasons. First, the Biological Evaluation provides an incomplete project effects analysis on the species because it fails to include any discussion of how the Forest Service plans to maintain or restore the NLEB or other sensitive species in the project area.[333] The Forest Service admits to some negative short-term project effects on the NLEB, but then references conflicting scientific evidence to assert long-term benefits. For example, the Biological Evaluation suggests that some of the project activity outcomes (such as open habitat

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[327] Biological Evaluation at 10.
[328] *Id*. at 11.
[329] 36 C.F.R. § 219.9.
[330] *Id.* § 219.9(a)(2).
[331] NFMA defines "recovery" as follows: "For the purposes of this subpart, and with respect to threatened or endangered species: The improvement in the status of a listed species to the point at which listing as federally endangered or threatened is no longer appropriate." *Id.* § 219.19.
[332] *Id.* § 219.9(b)(1).
[333] *See generally*, Biological Evaluation at 6-10.

for foraging) may yield long-term benefits to the NLEB.[334] This suggestion is in direct conflict with other studies that describe preferred habitats for the NLEB.[335] Second, the Biological Evaluation fails to explain how the Project will contribute to the recovery of the NLEB to the point at which its listing as endangered is no longer necessary. Finally, the Biological Evaluation indicates the Project activities may indirectly impact the NLEB, but it does not include discussion of species-specific plan components to provide the required ecological conditions necessary for the bat's recovery. For these reasons, the Forest Service fails to meet its obligations under NFMA as they relate to the NLEB and other sensitive species.

VII. The Project Violates the NFMA and the Forest Plan.

As previously discussed, NFMA requires the Forest Service to develop and implement a Forest Plan for each unit of the National Forest System.[336] Projects in each forest must be consistent with their relevant Forest Plan.[337] Reviewing courts must be able to reasonably ascertain the Forest Service's compliance with that Forest Plan.[338] Although Standing Trees believes that it is long past due for the WMNF to undertake a wholesale review and revision of its 2005 Forest Plan (NFMA requires plans to be revised at least every 15 years), the Project must still comply with, and yet fails to meet, the Plan's goals and objectives to comply with NFMA in the following respects.[339]

Scientific knowledge and ecosystem viability. The Forest Plan requires the use of "the latest scientific knowledge to restore the land and forest where needed" and emphasizes a focus on "ecosystem viability within the context of New England."[340] NFMA constrains the Forest Service timber harvest in the National Forest System to situations where "cuts are consistent with the protection of soil and the regeneration of the timber resources."[341] As discussed in Standing Trees' Scoping Comment, and in this comment at great length, the Project fails to use the latest scientific knowledge to restore the land.

The Project ignores relevant scientific knowledge of healthy forests and their importance to building climate resilience. The proposed treatments are not appropriate methods to meet the objectives and requirements of the Forest Plan, considering the best available science. NFMA empowers responsible officials to "document how the best available scientific information was used" and "explain the basis for that determination," as high quality scientific analysis and public scrutiny are essential to NEPA implementation.[342] The Project does not use the best available

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[334] *Id*. at 7.
[335] *See*, *e.g*., Species Status Assessment at 18-19 (Exhibit 1) (explaining that "most foraging occurs . . . under the canopy . . . on forested hillsides and ridges," which "coincides with data indicating that mature forests are an important habitat type for foraging NLEBs."). Furthermore, NLEBs "seem to prefer intact mixed-type forests . . . for forage and travel rather than fragmented habitat or areas that have been clear cut." *Id.*
[336] 16 U.S.C. §§ 1600–1614.
[337] *Neighbors of Cuddy Mountain v. Alexander*, 303 F.3d 1059, 1062 (9th Cir. 2002); *see also* 16 U.S.C. § 1604(i); *Great Old Broads for Wilderness v. Kimbell*, 709 F.3d 836, 850 (9th Cir. 2013).
[338] *Native Ecosystems Council v. U.S. Forest Serv.*, 418 F.3d 953, 963 (9th Cir. 2005).
[339] 36 C.F.R. § 219.7(a).
[340] WMNF Plan at 1-3.
[341] 16 U.S.C. §§ 1604(g)(3)(E)(i), (F)(v).
[342] 36 C.F.R § 219.3; 40 C.F.R. § 1500.1(b).

science based on its failure to analyze and incorporate the conclusions of numerous recent studies on forest ecology, biodiversity, forest carbon, water quality, and more.

Species protection. The Forest Service also fails to consider the project within the greater context of New England and the importance of the Project area's habitat, which provides for species protection and interconnectivity. As discussed in more detail above, the Project fails to contribute to the "conservation and recovery" of the NLEB and its habitat, as required by the Forest Plan.[343]

Public participation. In the Forest Plan, the Forest Service asserted that "[p]ublic participation will be an important part of the process we use for making site-specific management decisions."[344] With no evidence that public participation provided any meaningful direction to the Project, and evidence of impediment to public participation discussed elsewhere in this comment, the Project reflects an abdication of this commitment.

VIII. Conclusion

For the foregoing reasons, Standing Trees requests the Forest Service drop the Project altogether or address the manifest errors in its Draft EA for the Sandwich Vegetation Management Project. To cure these errors, and given the significance of this Project, the Forest Service should prepare an EIS to adequately evaluate the significant impacts posed by the Project and develop revisions to the Project to ensure compliance with the ESA and NFMA.

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[343] WMNF Plan at 1-8.
[344] WMNF Plan Appendix A at A-235.

Respectfully submitted,

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Table of Exhibits

Number	Exhibit Title
1	U.S. Fish and Wildlife Serv., Species Status Assessment for the Northern long-eared bat (*Myotis septentrionalis*) Version 1.2, at 18 (Aug. 2022), https://www.fws.gov/media/species-status-assessment-report-northern-long-eared-bat
2	National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change, 88 Fed. Reg. 1196 (Jan 9, 2023)
3	Kellett et al., *Forest-clearing to Create Early-successional Habitats: Questionable Benefits, Significant Costs*, 5 FRONTIERS FOR GLOB. CHANGE 1 (Jan. 9, 2023)
4	Simard et al., *Net Transfer of Carbon Between Ectomycorrhizal Tree Species in the Field*, 388 NATURE 579 (1997)
5	Letter from Chris French, Forest Service Deputy Chief, to Regional Foresters (Apr. 18, 2023)
6	WMNF U.S. Forest Service Logging Projects Map
7	Endangered and Threatened Wildlife and Plants; Endangered Species Status for Northern Long-Eared Bat, 87 Fed. Reg. 73,488 (Nov. 30, 2022)
8	*Intentionally omitted*
9	U.S. Fish and Wildlife Serv., *Northern Long-Eared Bat: State-Specific Information Sources*, https://www.fws.gov/sites/default/files/documents/Roost%20Tree%20and%20Hibernacula%20-%20State-Specific%20Data%20Links_2.pdf
10	N.H. Div. of Forests & Lands, *NHB DataCheck Tool*, https://www4.des.state.nh.us/NHB-DataCheck (last modified Feb. 28, 2022) (last modified Feb. 28, 2022)
11	Mature and Old-Growth Forests: Definition, Identification, and Initial Inventory on Lands Managed by the Forest Service and Bureau of Land Management 1 (Apr. 2023), https://www.fs.usda.gov/sites/default/files/mature-and-old-growth-forests-tech.pdf
12	Letter from Chris French, Forest Service Deputy Chief, re: Advance Notice of Proposed Rulemaking (Apr. 21, 2023)
13	U.S. Fish and Wildlife Serv., Standing Analysis and Implementation Plan – Northern Long-Eared Bat Assisted Determination Key, Version 1.1, 19 (Apr. 2023), https://www.fws.gov/sites/default/files/documents/Standing%20Analysis%20Version%201.1%20April%202023.pdf
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15	Oswald et al., *Conservation Implications of Limited Native American Impacts in Pre-Contact New England*, 3 NATURE SUSTAINABILITY 241 (2020), *available at* https://rex.libraries.wsu.edu/esploro/fulltext/acceptedManuscript/Conservation-

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16	Zaino et al., Vt. Fish and Wildlife Dept., Vermont Conservation Design – Natural Community and Habitat Technical Report 15 (March 2018), *available at* https://vtfishandwildlife.com/sites/fishandwildlife/files/documents/Conserve/VT%20Conservation%20Landscape-level%20Design/Vermont%20Conservation%20Design--Natural-Community-and-Habitat-Technical-Report-March-2018.pdf
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18	Miller et al., *Eastern National Parks Protect Greater Tree Species Diversity than Unprotected Matrix Forests*, 414 FOREST ECOLOGY AND MGMT. 74 (April 15, 2018)
19	Thom et al., *The Climate Sensitivity of Carbon, Timber, and Species Richness Covaries with Forest Age in Boreal-Temperate North America*, GLOB. CHANGE BIOLOGY 1 (2019)
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21	DellaSala et al., *Mature and Old-Growth Forest Contributions to Large-Scale Conservation Targets in the Conterminous USA*, 5 FRONTIERS IN FORESTS AND GLOB. CHANGE 1 (2022)
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24	Harris et al., *Attribution of Net Carbon Change by Disturbance Type Across Forest Lands of the Conterminous United States*, 11 CARBON BALANCE AND MANAGEMENT 1 (2016), *available at* https://doi.org/10.1186/s13021-016-0066-5
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	18/publication/323399911_The_exceptional_value_of_intact_forest_ecosystems/links/5a9b0482aca2721e3f3018b2/The-exceptional-value-of-intact-forest-ecosystems.pdf
28	Di Marco et al., *Wilderness Areas Halve the Extinction Risk of Terrestrial Biodiversity*, 573 NATURE 582 (2019)
29	Dinerstein et al., *A Global Safety Net to Reverse Biodiversity Loss*, 6 SCI. ADVANCES 1 (Sept. 2020).
30	Miller et al., *National Parks in the Eastern United States Harbor Important Older Forest Structure Compared with Matrix Forests*, 7 ECOSPHERE (2016), *available at* https://www.researchgate.net/profile/Aaron_Weed/publication/305484577_National_parks_in_the_eastern_United_States_harbor_important_older_forest_structure_compared_with_matrix_forests/links/57961bdd08aed51475e542a7/National-parks-in-the-eastern-United-States-harbor-important-older-forest-structure-compared-with-matrix-forests.pdf
31	Forest Service Climate Adaptation Plan (July 2022), https://www.usda.gov/sites/default/files/documents/4_NRE_FS_ClimateAdaptationPlan_2022.pdf
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56	E-mail from Theresa Corless, Forest Planner and Env't Coordinator, U.S. Forest Serv., to Zack Porter, Exec. Dir., Standing Trees (August 25, 2023, 12:26 EST).
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