Northeastern Minnesotans for Wilderness
MN Division - Izaak Walton League of America
Center for Biological Diversity

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Re: Tofte Landscape Project Draft EA

On behalf of Northeastern Minnesotans for Wilderness, Minnesota Division of the Izaak Walton League of America, and the Center for Biological Diversity, thank you for the opportunity to comment on the Tofte Landscape Vegetation Management Project ("Tofte Project").

Northeastern Minnesotans for Wilderness (NMW) is a 501(c)(3) non-profit corporation founded in Ely by residents of northeastern Minnesota. Since 1996, NMW has worked to protect the Boundary Waters Canoe Area Wilderness and Voyageurs National Park in particular, and to foster broader appreciation and support for the preservation of wilderness and wild places.

The Izaak Walton League is a 501(c)(3) non-profit founded in 1922, and has an almost hundred-year history in supporting sound management in the Superior National Forest and the Boundary Waters Wilderness. We believe in the protection of our soils, air, woods, waters and wildlife through the use of sound scientific principles, applied to well reasoned public policy.

The Center is a 501(c)(3) nonprofit organization based in Tucson, Arizona, with offices across the country including in Duluth, Minnesota. The Center and its more than one million members and online activists are dedicated to protecting and restoring imperiled species and natural ecosystems. The Center uses science, policy, and law to advocate for the conservation and recovery of species on the brink of extinction and the habitats they need to survive. The Center has and continues to actively advocate for increased protections for species and their habitats across the Upper Midwest, including Minnesota.

We thank the Forest Service for modifying its proposed action to clarify that no logging would occur on lands managed pursuant to the Roadless Area Conservation Rule, proposed and designated research natural areas, and within areas designated eligible for wild river protection,

and for reducing the maximum potential mileage for proposed road construction. Draft EA at 14, 18-19, 44.

However, the Tofte Project as currently conceived is massive in scope, long in duration, is filled with jargon and acronyms that can confuse even well-versed citizens, and employs a novel execution strategy. It will involve the logging of up to 315 million board feet of forest, making it probably the largest single logging project on the National Forest System in Minnesota in more than 30 years. *See* Superior National Forest, Draft Environmental Assessment ("Draft EA"), Appendix I, at I-3. It is estimated to lose taxpayers nearly $22 million dollars. *Id*. It will reduce the largest remaining patches of mature and older interior forest in the project area. It will authorize road construction in lynx habitat units where road densities already exceed habitat protection thresholds. Together, these factors demonstrate that, contrary to the Forest Service's apparent conclusion, that the project has the potential for significant impacts and therefore the agency must prepare an EIS.

I. THE TOFTE LANDSCAPE VEGETATION MANAGEMENT PROJECT

The Forest Service states that the purpose of the Tofte Landscape Project is to "move toward achieving Forest Plan vegetation management objectives" across 333,470 acres of Superior National Forest lands. Draft EA at 5, 8. The stated needs for the project include: making progress toward landscape ecosystem objectives for forest type and age; promoting spatial patterns that more closely emulate those that would result from natural disturbance processes; promoting habitat for threatened, endangered, and sensitive species, including moose and lynx; increasing forest resilience to insects, disease, and disturbance processes; managing fire fuels; and providing forest products for local mills. *Id*. at 8-10.

Over 15 years, the project would:

- use clearcutting, or a variety of other logging methods, across up to 25,500 acres (nearly 40 square mile) to "create young forests"; doing so would clear an additional 45 >100-acre patches, nine >300-acre patches, three >500-acre patches, and two >1,000-acre patches, all presumably by clearcut logging;
- log another 38,000 acres, via 12,700 acres of thinning, 5,600 acres of uneven aged management, and 19,450 acres of understory mechanical fuel reduction;
- burn thousands of acres;
- undertake "non-commercial thinning" on 22,500 acres, some of which may overlap with other logging schemes identified above;
- bulldoze up to 150 miles of new "temporary" road;

- eliminate every one of the largest mature-and-older forest patches (those greater than 10,000 acres in size) within Spatial Zone 3, which is the zone most adjacent to the Boundary Waters Canoe Area Wilderness ("Boundary Waters"); and

- require that the Forest Service "deviate" from several Forest Plan guidelines.

Draft EA at 13-14, 17, 32; Draft EA Appx. H, Biological Evaluation for Terrestrial Wildlife (May 2021) at 56, 59 (Figures 13, 16).

In total, the project will remove up to 315 million board feet of timber products, resulting in a loss to the taxpayer of nearly $22 million in net present value. Draft EA, Appendix I, at I-3.

The project will employ "condition-based management," an approach that results in the Forest Service identifying neither the stands it intends to "treat," nor the treatment method it intends to apply on a particular stand until long after the agency decision is made, and in a manner that renders the agency unaccountable to the public. An EA appendix describes a two-year "implementation cycle" which will occur after the project is approved. Draft EA, Appendix D. That cycle begins with selecting the where (stands) and the how (stand treatments) of logging and/or burning activities. *Id*., Appendix D, at D-1 ("Develop proposed list of stands and stand treatments"). The Forest Service will provide for a "30-day public participation period on proposed stand treatment list (published on website) with interactive online map," outside of the NEPA process. *Id*., Appendix D, at D-3. The implementation cycle includes weighing whether the proposed action requires any adjustments from the "estimated implementation plan," which the EA purports to analyze, and which the Forest Service states was "developed to provide a site-specific proposed action based on currently available information." Draft EA at 19. See also *id*., Appendix D, at D-1 - D-2.

II. THE FOREST SERVICE'S CONDITION-BASED MANAGEMENT APPROACH THREATENS TO VIOLATE NEPA.

A. NEPA Requires The Forest Service To Produce A Spatially And Temporally Specific Analysis Because This Is A Project-Level Decision.

NEPA is "'our basic national charter for protection of the environment.'" *Center for Biological Diversity v. United States Forest Serv*., 349 F.3d 1157, 1166 (9th Cir. 2003) (quoting 40 C.F.R. § 1500.1).[1] In enacting NEPA, Congress recognized the "profound impact" of human activities, including "resource exploitation," on the environment and declared a national policy "to create and maintain conditions under which man and nature can exist in productive harmony." 42 U.S.C. § 4331(a).

[1] The Draft EA states that the Tofte project "is analyzed under the 1978 CEQ NEPA regulations because it was initiated in October 2019, prior to the effective date of the final rule of September 14, 2020, per 40 CFR 1506.13 (2020 CEQ Regulations)." Draft EA at 42. Therefore, this letter will cite the 1978 CEQ regulations unless otherwise specified.

The statute has two fundamental goals: "(1) to ensure that the agency will have detailed information on significant environmental impacts when it makes decisions; and (2) to guarantee that this information will be available to a larger audience." *Envtl. Prot. Info. Ctr. v. Blackwell*, 389 F. Supp. 2d 1174, 1184 (N.D. Cal. 2004) (quoting *Neighbors of Cuddy Mt. v. Alexander*, 303 F.3d 1059, 1063 (9th Cir. 2002)); *see also Earth Island v. United States Forest Serv.*, 351 F.3d 1291, 1300 (9th Cir. 2003) ("NEPA requires that a federal agency 'consider every significant aspect of the environmental impact of a proposed action ... [and] inform the public that it has indeed considered environmental concerns in its decision-making process.'"). "NEPA promotes its sweeping commitment to 'prevent or eliminate damage to the environment and biosphere' by focusing Government and public attention on the environmental effects of proposed agency action." *Marsh v. Or. Natural Res. Council*, 490 U.S. 360, 371 (1989) (quoting 42 U.S.C. § 4321). Stated more directly, NEPA's "'action-forcing' procedures ... require the [Forest Service] to take a 'hard look' at environmental consequences" *before* the agency approves an action. *Metcalf v. Daley*, 214 F.3d 1135, 1141 (9th Cir. 2000) (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348 (1989)). "By so focusing agency attention, NEPA ensures that the agency will not act on incomplete information, only to regret its decision after it is too late to correct." *Marsh*, 490 U.S. at 371 (citation omitted). To ensure that the agency has taken the required "hard look," courts hold that the agency must utilize "public comment and the best available scientific information." *Biodiversity Cons. Alliance v. Jiron*, 762 F.3d 1036, 1086 (10th Cir. 2014) (internal citation omitted).

NEPA's review obligations are more stringent and detailed at the project level, or "implementation stage," given the nature of "individual site specific projects." *Ecology Ctr., Inc. v. United States Forest Serv*., 192 F.3d 922, 923 n.2 (9th Cir. 1999); *see also Friends of Yosemite Valley v. Norton*, 348 F.3d 789, 800-01 (9th Cir. 2003); *New Mexico ex rel. Richardson v. Bureau of Land Management*, 565 F.3d 683, 718-19 (10th Cir. 2009) (requiring site-specific NEPA analysis when no future NEPA process would occur); *Colo. Envtl. Coal. v. Ofc. of Legacy Mgmt*., 819 F. Supp. 2d 1193, 1209-10 (D. Colo. 2011) (requiring site-specific NEPA analysis even when future NEPA would occur because "environmental impacts were reasonably foreseeable"). "[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." *Or. Natural Res. Council Fund v. Brong*, 492 F.3d 1120, 1134 (9th Cir. 2007) (citation omitted); *see also Or. Natural Res. Council Fund v. Goodman*, 505 F.3d 884, 892 (9th Cir. 2007) (holding the Forest Service's failure to discuss the importance of maintaining a biological corridor violated NEPA, explaining that "[m]erely disclosing the existence of a biological corridor is inadequate" and that the agency must "meaningfully substantiate [its] finding").

Analyzing and disclosing site-specific impacts is critical because where (and when and how) activities occur on a landscape strongly determines the nature of the impact. As the Tenth Circuit Court of Appeals has explained, the actual "location of development greatly influences the likelihood and extent of habitat preservation. Disturbances on the same total surface area may

produce wildly different impacts on plants and wildlife depending on the amount of contiguous habitat between them." *New Mexico ex rel. Richardson*, 565 F.3d at 706. The Court used the example of "building a dirt road along the edge of an ecosystem" and "building a four-lane highway straight down the middle" to explain how those activities may have similar types of impacts, but the extent of those impacts – in particular on habitat disturbance – is different. *Id*. at 707. Indeed, "location, not merely total surface disturbance, affects habitat fragmentation," and therefore location data is critical to the site-specific analysis NEPA requires. *Id*. Merely disclosing the existence of particular geographic or biological features is inadequate – agencies must discuss their importance and substantiate their findings as to the impacts. *Or. Natural Res. Council Fund v. Goodman*, 505 F.3d 884, 892 (9th Cir. 2007).

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

The district court explained the approach the Forest Service took in the Prince of Wales EIS:

> each alternative considered in the EIS "describe[d] the conditions being targeted for treatments and what conditions cannot be exceeded in an area, or place[d] limits on the intensity of specific activities such as timber harvest." But the EIS provides that "site-specific locations and methods will be determined during implementation based on defined conditions in the alternative selected in the ... ROD ... in conjunction with the ... and Implementation Plan ...." The Forest Service has termed this approach "condition-based analysis."

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

The Court found the Forest Service's approach contradicted Ninth Circuit precedent including *City of Tenakee Springs v. Block*, 778 F.2d 1402 (9th 1995), concerning logging on the Tongass National Forest. In *City of Tenakee Springs*, the appellate court set aside the Forest Service's decision to authorize pre-roading in the Kadashan Watershed, without specifically evaluating where and when on approximately 750,000 acres it intended to authorize logging. The district court evaluating the Prince of Wales project found the Forest Service's approach was equivalent to the deficient analysis set aside in *City of Tenakee Springs.*

> Plaintiffs argue that the Project EIS is similarly deficient and that by engaging in condition-based analysis, the Forest Service impermissibly limited the specificity of its environmental review. The EIS identified which areas within the roughly 1.8-million-acre project area could potentially be harvested over the Project's 15-year period, but expressly left site-specific determinations for the future. For example, the selected alternative allows 23,269 acres of old-growth harvest, but does not specify where this will be located within the 48,140 acres of old growth identified as suitable for harvest in the project area. Similar to the EIS found inadequate in *City of Tenakee Springs*, the EIS here does not include a determination of when and where the 23,269 acres of old-growth harvest will occur. As a result, the EIS also does not provide specific information about the amount and location of actual road construction under each alternative, stating instead that "[t]he total road miles needed will be determined by the specific harvest units offered and the needed transportation network."

Id. at 982 (citations omitted).

The district court concluded that plaintiffs in the case raised "serious questions" about whether the Prince of Wales EIS's condition-based management approach violated NEPA because "the Project EIS does not identify individual harvest units; by only identifying broad areas within which harvest may occur, it does not fully explain to the public how or where actual timber activities will affect localized habitats." *Id*. at 983. After finding the plaintiffs also met the other factors for preliminary injunction, the Court enjoined all logging until a decision on the merits. *Id*. at 986.

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

The district court also concluded that the Forest Service's "worst case analysis" was insufficient, explaining: "This approach, coupled with the lack of site-specific information in the Project EIS, detracts from a decisionmaker's or public participant's ability to conduct a meaningful comparison of the probable environmental impacts among the various alternatives." *Id*. at 1013. Consequently, the court concluded that

> By authorizing an integrated resource management plan but deferring siting decisions to the future with no additional NEPA review, the Project EIS violates NEPA. The Forest Service has not yet taken the requisite hard look at the

> environmental impact of site-specific timber sales on Prince of Wales over the next 15 years. The Forest Service's plan for condition-based analysis may very well streamline management of the Tongass ... however, it does not comply with the procedural requirements of NEPA, which are binding on the agency. NEPA favors coherent and comprehensive up-front environmental analysis to ensure ... that the agency will not act on incomplete information, only to regret its decision after it is too late to correct.

Id. at 1014-15 (internal citations and quotations omitted). The Forest Service should not interpret the Alaska District's decision to somehow endorse the use of condition-based analyses for environmental assessments. Where the exercise of site-specific discretion is material to a project's environmental consequences, NEPA requires consideration of site-specific proposals and alternatives, regardless of whether the effects are "significant." 42 U.S.C. § 4332(2)(C), (E).

The Tofte project is a project-level decision. As a result, any NEPA analysis must include the detailed information and analysis that NEPA and the CEQ regulations require because the Forest Service discloses that there will be no further NEPA review beyond the Final EA. Failure to provide such detailed, site-specific analysis precludes informed agency decision-making and informed public comment, in violation of NEPA.

NEPA further mandates that the agency provide the public "'the underlying environmental data' from which the Forest Service develop[ed] its opinions and arrive[d] at its decisions." *WildEarth Guardians v. Mont. Snowmobile Ass'n*, 790 F.3d 920, 925 (9th Cir. 2015). "The agency must explain the conclusions it has drawn from its chosen methodology, and the reasons it considered the underlying evidence to be reliable." *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1075 (9th Cir. 2011) (citation omitted). In the end, "vague and conclusory statements, without any supporting data, do not constitute a 'hard look' at the environmental consequences of the action as required by NEPA." *Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 973 (9th Cir. 2006); *see also Ocean Advocates v. Army Corps of Engineers*, 402 F.3d 846, 869 (9th Cir. 2004) (finding that a vague and uncertain analysis is insufficient to meet NEPA's mandate).

CEQ's regulations establish specific ways agencies must analyze proposed actions, including project-level decisions, including a detailed discussion of direct, indirect, and cumulative impacts and their significance; and an analysis of reasonable alternatives to the proposed action. Such analysis is required for both environmental assessments and EISs.

B. The Tofte Project Appears To Propose An Unlawful Process That Will Not Disclose The Site-Specific Proposal And Impacts Until After The Agency Has Issued A Decision.

Although NEPA requires that analysis disclose specific information about the specific when, where, and how of any agency action, so that the impacts (and alternatives) can be described and

weighed before the agency makes its decision, the Forest Service anticipates that none of that information will be gathered before the Forest Service makes a decision authorizing logging and burning over a one-third of a million acre landscape. The Forest Service intends to postpone identifying specific stands to be treated, and specific treatments to apply, until *after* the NEPA process is complete. This upends NEPA's central purpose that agencies analyze and disclose such information *before* they leap, as the court held in *Southeast Alaska Conservation Council*.

The Forest Service may argue that the agency discloses these impacts in the Draft EA by purporting to analyze the effects of: (1) an estimated implementation plan (EIP); and (2) a condition-based management approach. But the Draft EA admits that the Forest Service need not follow the EIP in implementing the project, so the actual areas treated may bear little resemblance to those identified in the EIP. Draft EA at 60 ("Implementation of Alternative 2 may differ from the EIP with changing conditions or updated data"). It further admits that the mapped potential treatment units for the EIP identifies "a potential *pool* of stands to conduct treatments," and not a set of stands proposed for treatment. *Id*. at 43 (emphasis added).

Further, the EIP makes no attempt to distinguish between the impacts of different kinds of "young forest" treatments. The "StoryMap" describes three different types of young forest treatment which result in different residual numbers of trees in treated stands, including: clearcut with reserves (which leaves 6-12 trees per acre); seed tree harvest (which leaves 10-15 trees per acre); and shelterwood (which leaves 30-60 residual basal area, and described as leaving "typically more than a seed tree" cut but less than thinning). *See* StoryMap, "Modified Proposed Action" tab, available at https://usfs.maps.arcgis.com/apps/MapSeries/index.html?appid=de2b1ffe27d3436e8050cfc993db4747 (last viewed July 14, 2021). These treatments thus result in differing impacts, something the EIP fails to address or disclose.[2]

The Forest Service process identifying specific stands and treatment types will include a "30-day public participation period," but that period will occur only *after* the NEPA process is complete. This means that the agency need not respond to comments, need not address the best available science, need not consider alternatives, and that the public will have no mechanism to hold the agency accountable if the agency ignores science and input. While this ersatz-NEPA process

[2] The EA also admits that the EIP does not attempt to address the impacts of up to 22,5000 acres of non-commercial timber stand improvement, despite the fact that such treatments will involve vegetation removal (likely via the use of heavy equipment), soil disturbance, noise, etc. Draft EA at 14 ("Because of the minimal potential for effects, non-commercial TSI [timber stand improvement] is not displayed in the EIP.") The Draft EA, at 65, explains why it need not disclose impacts of such logging: "Effects of these [TSI] activities to the greater vegetation community are minor since they do not entirely eradicate other species or change the forest type." Logging actions can have significant environmental impacts even if they do not "entirely eradicate" certain species from an area. The EA's failure to disclose any impacts from timber stand improvement actions violates NEPA's hard look mandate.

might ensure that some information about logging, bulldozing, skidding and the like are available to officials before a site-specific project proceeds, it fails to ensure that "environmental information is available to ... citizens *before decisions are made*," as the law requires. 40 C.F.R. § 1500.1(b) (1978) (emphasis added).

The rationales that the Forest Service provides for using condition-based management rather than complying with NEPA's mandate to disclose site-specific impacts before approving a project ignore NEPA's flexibility and the true nature of the Forest Service's challenge in project implementation. The Draft EA states that forests are changing due to pests, climate change, and wildfire. Draft EA at 19. But pests and wildfire have altered forests since long before Congress passed NEPA, and the Forest Service has at least 50 years of history and experience undertaking the required site-specific analysis of proposed logging and prescribed fire treatments.

The Draft EA also alleges that changes are now outpacing NEPA planning because "[y]ears may pass between the decision and the time of implementation." *Id*. at 19-20. The agency also alleges that the Forest was not making sufficient progress to achieving Forest Plan goals via "traditional planning approaches." *Id*. at 20. The Forest Service fails to explain why these are problems that require the elimination of site-specific NEPA analysis. Instead, the problem the agency identifies appears to be with the Forest Service failing to *promptly implement* projects (which may be related to agency funding), or with the Forest Service choosing to implement projects with implementation schedules so long that they are likely to be overtaken by events. The Forest Service could instead choose to evaluate through NEPA projects that it can implement promptly.

Further, the agency alleges that "[a]pproaches that allow for flexibility to respond to changing ecological conditions and data are necessary to manage for healthy ecosystems." *Id*. at 20. This ignores the fact that since at least 1978, NEPA regulations have explicitly provided that flexibility by authorizing agencies to change a project and/or to account for changed conditions via the use of supplemental NEPA analysis. NEPA also provides for a "phased" approach, wherein the agency can prepare a programmatic analysis (which the Tofte EA arguably approximates, given that it includes broad-scale analysis generally uninformed by localized data concerning specific values or treatments) followed by more concise, site-specific NEPA analysis when site-specific treatments are identified. Forest Service regulations also explicitly provide for "adaptive management." *See* 36 C.F.R. §§ 220.3, 220.5(e)(2). *See also* 73 Fed. Reg. 43,084, 43,090 (July 24, 2008) (preamble to 2008 rule adopting adaptive management provisions, stating that "[w]hen proposing an action[,] the responsible official may identify possible adjustments that may be appropriate during project implementation. Those possible adjustments must be described and their effects analyzed in the EIS.").

The Draft EA also argues that "[a] larger project area with a longer timeframe (15 years) for implementation calls for more flexibility to update treatment design in consideration of changing conditions." Draft EA at 20. Again, this ignores that NEPA is flexible, provides for adaptation

and changes, and that agencies have routinely used programmatic and site-specific NEPA documents to address proposed actions of equal duration and larger size, as the Forest Service has routinely done with 15-year Forest Plans.

We are concerned that the Forest Service's approach is driven by a lack of funding and staff to address the faults in existing baseline stand inventory data, which is admittedly of very low quality, and to properly design a vegetation management project before an action is approved. But a lack of resources cannot justify failure to comply with the bedrock environmental law that gives the American public a right to understand what the government proposes to do before it does it, and that requires federal agencies to look before they leap, not decide first and then determine the impacts.

In sum, the Forest Service provides no rational basis for abandoning site-specific NEPA compliance, which in any event is required by law. We again urge the Forest Service to abandon this unlawful approach.

III. THE FOREST SERVICE MUST PREPARE AN ENVIRONMENTAL IMPACT STATEMENT ON THE TOFTE PROJECT.

A. Agencies Must Prepare EISs When Impacts 'May' Be Significant.

NEPA requires federal agencies to prepare a full environmental impact statement (EIS) before undertaking "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(C). As the appellate courts have explained, "[i]f the agency determines that its proposed action *may* 'significantly affect' the environment, the agency must prepare a detailed statement on the environmental impact of the proposed action in the form of an EIS." *Airport Neighbors Alliance v. U.S.,* 90 F.3d 426, 429 (10th Cir. 1996) (citation omitted) (emphasis added). As the Ninth Circuit has stated:

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

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

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

"Significance" under NEPA requires consideration of the action's context and intensity. 40 C.F.R. § 1508.27. An agency must analyze the significance of the action in several contexts, including short- and long-term effects within the setting of the proposed action (including site-specific, local impacts). *Id.* § 1508.27(a). Intensity refers to the severity of the impact and requires consideration of ten identified factors that may generally lead to a significance determination, including: (1) whether the action is likely to be highly controversial; (2) whether the action may set a precedent for future actions with significant effects; (3) whether the effects on the environment are highly uncertain or involve unique or unknown risks; and (4) whether the action may have cumulative significant impacts. *Id.* § 1508.27(b)(4)-(7). With respect to the degree to which the environmental effects are likely to be highly controversial, the word "controversial" refers to situations where "'substantial dispute exists as to the size, nature, or *effect* of the major federal action.'" *Town of Cave Creek v. FAA,* 325 F.3d 320, 331 (D.C. Cir. 2003) (quoting *North American Wild Sheep v. U.S. Department of Agriculture*, 681 F.2d 1172, 1182 (9th Cir. 1982)) (emphasis in original). *See also Middle Rio Grande Conservancy Dist. v. Norton*, 294 F.3d 1220, 1229 (10th Cir. 2002) (same); *Town of Superior v. U.S. Fish and Wildlife Serv.*, 913 F. Supp. 2d 1087, 1120 (D. Colo. 2012) (same).

B. The Tofte Project May Have Significant Impacts.

By at least three measures of intensity, the Tofte Project is likely to have significant impacts. The Forest Service therefore should therefore abandon the EA and begin preparing a full EIS.

The scale of the project itself is significant. The scale of the project's impacts are significant. The Forest Service predicts this project alone will remove 315 million board feet of timber. That's more than *six times* the total volume of *all* timber cut on the entire Superior National Forest in all of last fiscal year. *See* Forest Service, Cut and Sold spreadsheet, Cumulative FY 2020 Q1 to FY 2020 Q4 (Nov. 2020) (showing 49.8 million board feet cut on Superior NF in FY 2020), available at https://www.fs.fed.us/forestmanagement/documents/sold-harvest/reports/2020/2020_Q1-Q4_CandS_R09.pdf (last viewed July 16, 2021). It is also likely the largest single timber project to be approved on National Forest System lands since the late 1980s or early 1990s. The Tofte Project will require up to 150 miles of new, temporary road construction, though the damage of those "temporary" roads – due to forest fragmentation, continued illegal use, and the spread of non-native invasive plants – will last long after the roads cease being used for logging. Logging may take place on nearly 70 square miles of forest land, and will occur continuously across the project area's 333,470-acre landscape – virtually an entire ranger district – for 15 years. Clearcuts will blow giant holes,

some 1,000 acres in size, and at least 50 of them larger than 100 acres, within the project area. Draft EA Appx. H, Biological Evaluation for Terrestrial Wildlife (May 2021) at 59 (Figure 16). The Draft EA itself notes that this project "is larger than past vegetation management projects" on the ranger district. Draft EA at 205. The whole point of the project is that it will dwarf all prior actions, take longer to implement, and accomplish what multiple prior projects apparently could not. The cost to taxpayers, over $30 million, to subsidize logging values that will return less than $9 million is also significant. *See* Draft EA, Appendix I, at 1-3 (showing $30.8 million as present value, costs, to implement Alternative 2). We note that Superior National Forest prepared a full EIS for the HiLo project in 2018-2019, a project that involved removing one-tenth the amount of timber as the Tofte project, constructing 15 miles of temporary road (as opposed to 150 miles for Tofte), and whose project area was less than 34,000 acres, roughly one-tenth of Tofte's 330,000 acres. See Superior NF, HiLo Project Record of Decision (Mar. 11, 2019), available at https://www.fs.usda.gov/nfs/11558/www/nepa/101921_FSPLT3_4629885.pdf (last viewed July 16, 2021). The Forest Service should explain why an EIS for HiLo was necessary, but not for a project ten times as large by critical measures.

The duration of the project is also significant. This project will outlive the Superior Forest Plan, which the project is intended to implement, by at least 17 years. The Superior National Forest adopted its Forest Plan in 2004. The Plan was only supposed to guide forest management for 10-15 years. *See* Forest Service webpage, Superior National Forest Land and Resource Management Plan (noting Forest Plan was adopted in 2004 and that "[t]he revised plans will guide the management of the Superior National Forest for the next 10 to 15 years."), available at https://www.fs.usda.gov/main/superior/landmanagement/planning (last visited July 16, 2021). *See also* 16 U.S.C. § 1604(f)(5) (Forest Plans shall be revised "at least every fifteen years"). The Tofte project, if adopted, will likely not commence until 2022, and not be completed until 2036 - 33 years after the current plan was issued. The massive scale and duration of the project alone supports a conclusion of significance.[3]

The project appears designed to set a precedent for future actions with significant impacts. The Forest Service repeatedly acknowledges that the Tofte Project is new and different from other actions on the Forest. For that reason, the project is likely to set a precedent for future actions, including those with potentially significant impacts. The agency's scoping report called this "a new and innovative project to manage forest vegetation;" a "new approach;" Letter of E. Bogardus-Szymaniak, Forest Service to Interested Member of the Public (Oct. 4, 2019), says that the "Project proposes a different planning and implementation process than traditional vegetation management projects;" Scoping Report at 2 (emphasis added). *See also id*. at 2 (discussing the Project's "new planning approach"), and asserts that the Project fills the need of taking a "different planning approach . . . to address challenges and opportunities," because of drawbacks with "traditional vegetation management" approaches. Scoping Report at 4. The Draft EA

[3] The fact that the Forest Service must "deviate" from the Superior Forest Plan also supports a finding of significance.

continues to distinguish the proposed action from "traditional planning approach[es]." Draft EA at 20. All of these statements indicate that the Tofte Project is breaking new ground for vegetation management on the Superior National Forest. Therefore, the Forest Service must prepare an EIS.

The impacts of this project are "highly uncertain." The nature of this project, and its impacts, remain highly uncertain. As the Scoping Report and the Draft EA repeatedly acknowledge, the Forest Service is proposing an approach with little precedent on the Superior National Forest, one that abandons a more "traditional" approach. The agency's insistence on the project's novelty cannot be squared with the agency's conclusion that the project cannot have significant impacts.

In addition, the project, purposefully, does not describe or define the what, where, or when of any particular activity, because treatments are meant to depend on forest conditions at the time of implementation, conditions that the Forest Service claims it cannot predict now. In short, the proposal itself is purposefully undefined and uncertain. Specific logging treatments will not be identified for up to a decade or more, but will be approved now. As noted above, even under the "estimated implementation plan" (EIP), specific logging methods for achieving young forests (AKA, clearcut equivalents) will have different impacts, and the agency will not specify which among the three methods of young forest treatment it will apply at any one point until after NEPA compliance is complete. The proposal does not define whether the action will take place in any particular subwatershed, or in any particular forest stand, identifying potential treatment units as a "pool" of timber from which the agency will later choose. Draft EA at 44 ("A pool of stands where adjustments are likely to be made, if needed, is documented in Maps A-D shown on the Supporting Information tab of the project website.")

The project design is meant to permit changes to the location and type logging and burning proposals during the post-NEPA evaluation process. *See id*. (anticipating that the Forest Service will make "adjustments to select different stands and treatments from what is contained in the EIP"). Even with operational standards and guidelines and mitigation measures, the project's impacts are uncertain because the agency will not identify the terrain, aspect, slope, soil type, habitat use or condition of lands that can be impacted, or virtually any other factor that can influence the impacts of logging, burning, and road construction. The Forest Service's decision to review a proposal that is fluid and ill-defined means that the impacts will be uncertain, requiring preparation of an EIS.

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

The CEQ has stated: "While the regulations do not contain page limits for EA's [sic], the Council has generally advised agencies to keep the length of EAs to not more than approximately 10-15 pages …. *In most cases ... a lengthy EA indicates that an EIS is needed*." 46 Fed. Reg. 18,026, 18,037 (1981) (emphasis added).

Courts have concluded that even EAs of less than 100 pages in length provide evidence of the need to complete an EIS. *See National Audubon Society v. Hoffman*, 917 F. Supp. 280, 287 (D. Vt. 1995), *aff'd* 132 F.3d 7 (2nd Cir 1997) (65-page EA); *Curry v. U.S. Forest Service*, 988 F. Supp. 541, 552 (W.D. Pa. 1997) (49-page EA). More than three decades ago, First Circuit Court Judge Stephen Breyer, now a Justice of the U.S. Supreme Court, set aside a lengthy EA and required preparation of an EIS, explaining:

> To announce that these documents – despite their length and complexity – demonstrate no need for an EIS is rather like the mathematics teacher who, after filling three blackboards with equations, announces to the class 'you see, it is obvious.'")

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

Here, the very length and complexity of the Tofte project EA requires the Forest Service to prepare an EIS. The Draft EA itself clocks in at 222 pages long – nearly 15 times as long as the maximum suggested by CEQ regulations, and that's without counting the additional 321 pages of appendices, bringing the total to 543 pages. The EA also relies on more than a dozen maps, the "StoryMap," a "carbon assessment," and other documents to address basic concepts omitted from the EA, such as the definition of logging treatments the agency may implement. Draft EA at 59 (relying on StoryMap to define logging schemes). This EA is longer than many Forest Service EISs.

CEQ regulations state that "[t]he text of final environmental impact statements … shall normally be less than 150 pages and for proposals of unusual scope or complexity shall normally be less than 300 pages," a limit the Tofte Draft EA far exceeds. The fact that it takes the Forest Service more than 200 pages to reach the conclusion that the proposal can't possibly have significant impacts indicates that the opposite conclusion is more likely. The Forest Service must prepare an EIS.

The Forest Service cannot argue that the EA it prepared is the functional equivalent of an EIS and therefore no violation has occurred. Among other things, the Clean Air Act Section 309 requires EPA to review each EIS for comment, a mandate that does not apply to EAs. Further, as now-Justice Breyer noted in *Sierra Club v. Marsh*:

> [U]nder NEPA and its implementing regulations, we cannot accept the EA[s] as a substitute for an EIS -- despite the time, effort, and analysis that went into their

> production -- because an EA and an EIS serve very different purposes. An EA aims simply to identify (and assess the 'significance' of) potential impacts on the environment; it does not balance different kinds of positive and negative environmental effects, one against the other; nor does it weigh negative environmental impacts against a project's other objectives, such as, for example, economic development…. The purpose of an EA is simply to help the agencies decide if an EIS is needed.
>
> To treat an EA as if it were an EIS would confuse these different roles, to the point where neither the agency nor those outside it could be certain that the government fully recognized and took proper account of environmental effects in making a decision with a likely significant impact on the environment.

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

IV. THE FOREST SERVICE MUST TAKE A HARD LOOK AT THE PROJECT'S IMPACTS TO A VARIETY OF IMPORTANT RESOURCES.

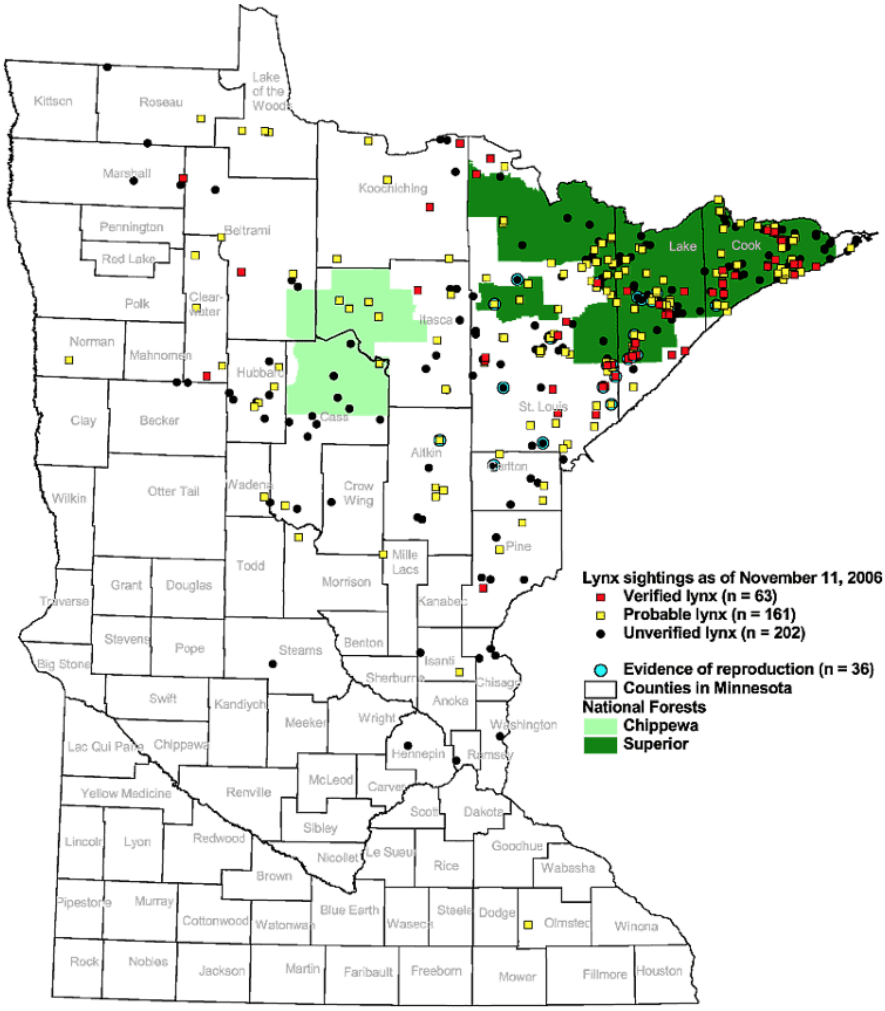
A. The EA Fails to Adequately Address Impacts to Sensitive Habitats and Imperiled Wildlife.

1. Canada Lynx

The Tofte Landscape Project has the potential to negatively affect lynx and lynx critical habitat, and therefore should initiate formal consultation with the U.S. Fish & Wildlife Service. Extremely intense forest management is proposed in high-lynx-occupancy areas of the project area, which is the entire Tofte Ranger District. Forty-two percent (42%) of all the lynx individuals detected on the Superior National Forest since 2002 have been detected on the Tofte Ranger District. Lynx reproduction on the District has been confirmed since the early 2000s. In short, the existing condition of the lynx habitat can be said to be conducive to lynx occupancy, reproduction, dispersion, and recruitment. Management proposed on the Tofte Ranger District would convert significant percentages of suitable lynx habitat in areas of high lynx usage into an unsuitable condition over a short period of time, and yet the Draft EA fails to address the likelihood of additional natural disturbance which, in conjunction with management, may convert far more suitable habitat into an unsuitable condition. The Draft EA also fails to specify the placement and timing, or to analyze the effects, of salvage logging and mechanical site preparation on lynx habitat. Acres to be subjected to salvage logging and mechanical site preparation are not shown on the Draft EA maps or in the project story map. *See* Draft EA Estimated Implementation Plan map, All Treatments (Dec. 2020). In short, the proposed project has the potential to cause significant impacts, which the EA does not fully address. The proposed project also fails to reduce road densities in LAUs already exceeding road density limits expressed in G-WL-8, impermissibly increases road densities for the life of the project, and fails

to address or analyze the effects of the known failure rate in road closures and obliterations. An EIS should be prepared, and formal consultation with the U.S. Fish & Wildlife Service should be initiated to ensure that all aspects of the proposed project and their impact on lynx and lynx critical habitat are fully analyzed.

The western half of the Tofte ranger district, and specifically an area north of Highway 1 and west of an arcing line running from Isabella through Dumbbell, Wilson, Windy, and Elbow Lakes, is singled out for an intense assemblage of timber harvest and associated management activities. This same area is consistently occupied by lynx, and therefore presumably affords high-quality lynx habitat. This is known from the results of a Minnesota Department of Natural Resources database of probable and verified reported lynx sightings as of late 2006 (see below); from non-invasive genetic data collection conducted during lynx snowtracking surveys conducted since 2012 (see below); and from field surveys of radio and GPS-collared lynx conducted beginning in the early 2000s (see below). Lynx are present more widely than the map of lynx sightings suggests; sightings require a person's presence as well as the lynx's, so most sightings occur along roads. *See* MN DNR's map, Lynx sightings as of November 11, 2006, below.



Minnesota DNR map of lynx sightings, March, 2000 to November 11, 2006. *See* https://www.dnr.state.mn.us/nhnrp/lynx_sightings.html

People observe lynx only where both lynx and people are co-located, which generally means that people tend to observe lynx within line-of-sight of regularly traveled roads, as the people drive past. Thus lynx sightings maps may skew perceptions of where lynx are toward the places where they have been found, giving the appearance of lynx-free areas, when in fact those are more likely to be areas un- or less-traveled by people.

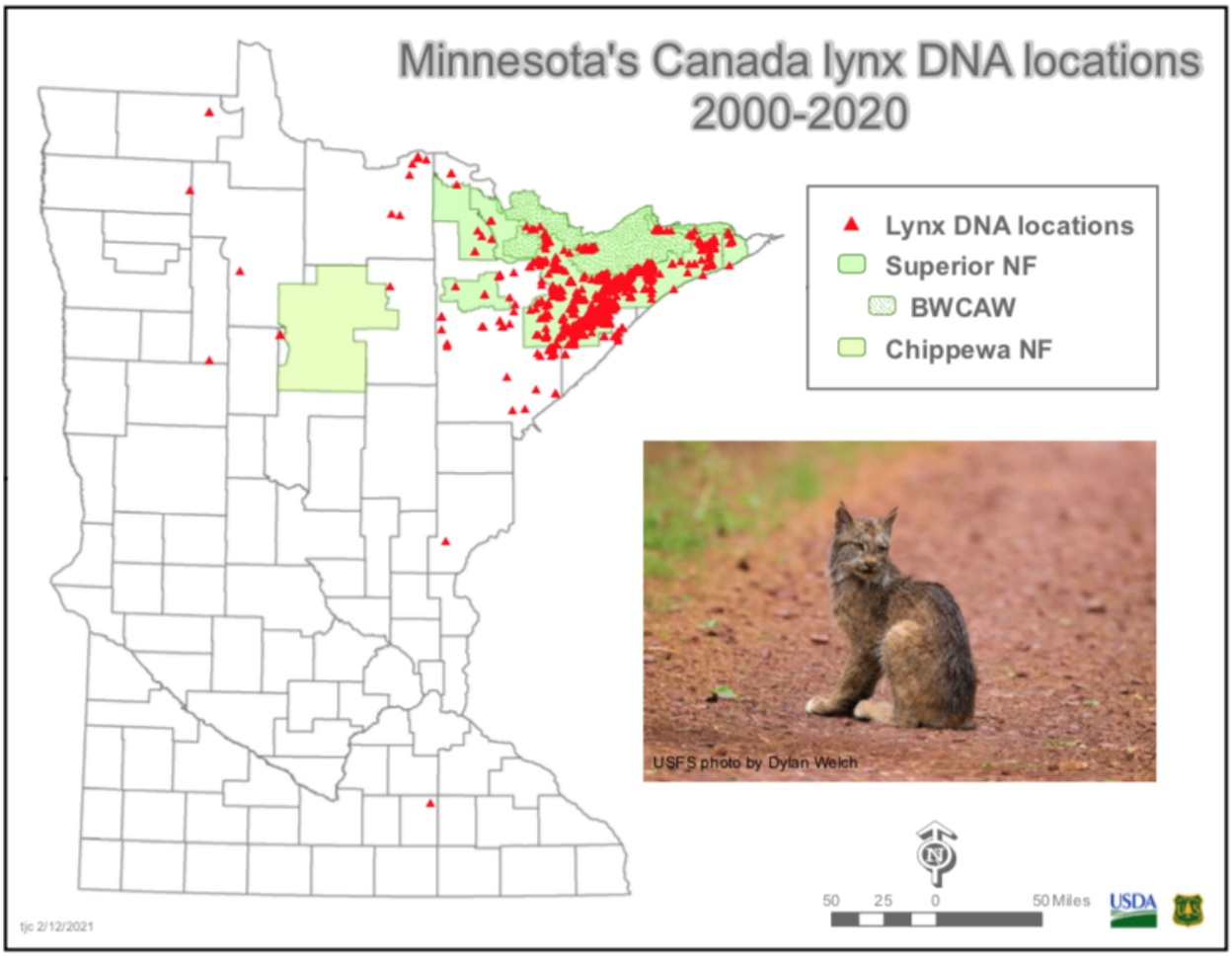


Figure from Catton, T.J., et al., 2021. Summary of the Superior National Forest's Canada lynx DNA database & population monitoring 2020, p. 15

DNA evidence of lynx presence is only subject to being found where a search for that evidence is conducted. Ad hoc snow track surveys for lynx have been conducted on the forest since 2000. Survey routes (selected roads accessible in winter) are driven until the route intersects lynx tracks, at which point surveyors follow the track in the direction the lynx came from, to search for and collect scat and other possible lynx DNA-bearing material.

Figure 3. VHF and GPS telemetry locations of lynx captured in this study as of 12/31/05. Each animal is color coded with a different symbol. Many locations are obscured by other locations at this map scale. Brown areas indicate Superior National Forest, and the green area is the Boundary Waters Canoe Area Wilderness within the Superior National Forest.

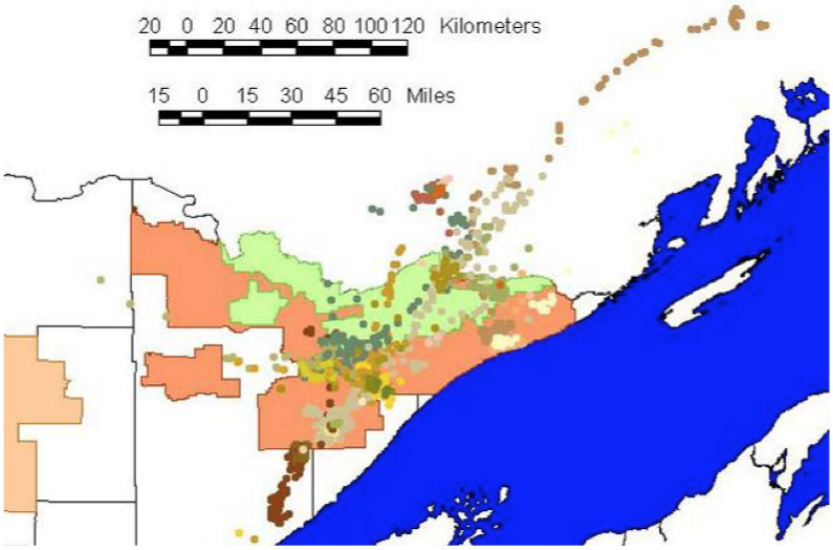


Fig. 3, *from* Moen, R., Niemi, G., Burdett, C.L. Canada Lynx in the Great Lakes Region 2005 Annual Report to the USFS, Minnesota Cooperative Fish & Wildlife Research Unit, and Minnesota DNR.

These data establish that lynx heavily use the area of the Tofte ranger district that the Tofte Landscape Project proposes to subject to the most intense timber harvest and herbaceous layer removing treatments, including Lynx Analysis Units 18, 19, 20, 25, 26, 28, and 30. *See* Draft EA Appendix G - Draft BA, Figure 2, below. Even so, lynx densities in Minnesota, including the Superior National Forest, are extremely low compared with densities of lynx in Canada and Alaska, to the extent that lynx densities may be one-tenth that of lynx densities at the cyclical lows found farther north. At these low numbers and densities, even an occasional lynx mortality should be considered a significant environmental effect. Wildlife biologists think of mortality as being either compensatory or additive, and they tend to be the latter when the population and recruitment numbers are low, such as at lows in the lynx-hare cycle. *See* Brand, C.J., Keith, L.B. 1979. Lynx demography during a snowshoe hare decline in Alberta. Journal of Wildlife Management. 43: 827-849. For a population as small as that of lynx in Minnesota, any direct or indirect lynx mortality is significant.

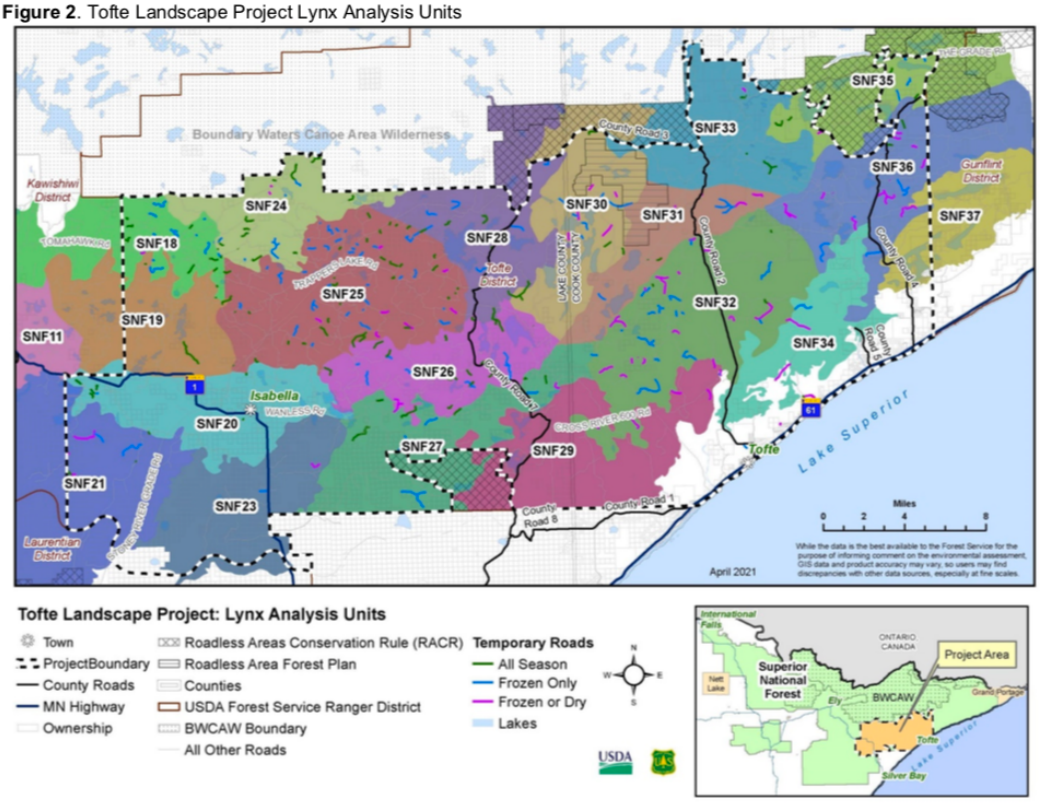
Lynx foraging habitat needs revolve around the preferred habitat for snowshoe hare, which like conifer stands of all ages with access to plentiful herbaceous layer vegetation. This may include young forest with dense conifer regeneration or retention/inclusions, though it is important to note that lynx currently are doing very well as it is in the western area of the Tofte ranger district, where there is very little young forest and significant amounts of large and very large older forest

patches; some of the highest densities of confirmed lynx presence and use are found in this western and large-old forest patch zone. Lynx also benefit from deep snows and a cap on road densities and compacted snow route miles, conditions to which lynx (but not bobcat, the lynx's primary niche competitor) are adapted. Lynx further require denning habitat, particularly downed mature trees, singly or jumbled together, with significant herbaceous structure and low visibility/short sight distances.

Management activities that create large patches of young forest, create/maintain uneven-aged forest, or involve underburn, fuel reduction, and mechanical site preparation all would create unsuitable habitat for lynx in the short run. Management activities that result in future conifer plantations would create less desirable habitat, as well. Management that prompts a naturally spaced conifer regeneration or retention of conifer inclusions with branches to the ground would be more likely to create suitable future hare habitat.

The Forest Plan requires that, "[m]anagement activities on NFS land shall not change more than 15% of lynx habitat on NFS land within a LAU [lynx analysis unit] into an unsuitable condition within a 10-year period." *See* Forest Plan, S-WL-1. *See* map of LAUs on the Tofte Ranger District, below.

Figure 2. Tofte Landscape Project Lynx Analysis Units



The Tofte Landscape Plan makes clear that its proposed timber harvest and other management activities on lynx habitat on federal land risk violating the S-WL-1 standard on three LAUs (LAUs 18, 24, and 25), but fails to note that LAU 26 would also be pushed to the limit of unsuitable habitat. *See* Draft EA Appendix G, Draft BA, pp. 13-14, and Fig. 5. The Draft EA asserts that deferring management to 2029 in LAU 18, and to 2026 or later in LAUs 24 and 25, will ensure compliance with the Forest Plan. The Draft EA fails to analyze probability and consequences for lynx habitat LAUs 18, 24, 25, and 26 if natural disturbances such as drought, fire, or blowdown were to occur during or shortly following the management activities.

Moreover, there is no site-specific indication of where salvage logging or mechanical site preparation would occur, which prevents an assessment of whether the numbers provided in the Draft EA account for those activities, and where they would occur. Some LAUs have higher levels of documented usage by lynx, and these LAUs currently tend to be dominated by larger, older forest patterns. The lack of site-specificity regarding these management practices prevents the required analysis of impacts to lynx and lynx habitat required to ensure compliance with the Forest Plan, and as required to satisfy NEPA direction to take a hard look at the potential effects of the agency's proposed action. Furthermore, the fact that actual implementation may diverge significantly or even drastically from the estimated implementation plan (EIP), without any further opportunity for NEPA review and comment, prevents the commenters and the public generally from understanding the project's management actions and contesting, through NEPA processes, the agency's assumptions and assertions regarding existing baseline conditions and proposed project's impacts on the environment.

The Draft EA also violates Forest Plan direction with respect to road densities in LAUs. The Forest Plan, Chapter 2, pp. 2-30 to -31, includes this guideline:

> G-WL-8 Within LAUs generally maintain road and snow-compacting trail densities below 2 miles per square mile to maintain the natural competitive advantage of lynx in deep snow. Where total road and regularly-used snow-compacting trail densities are greater than 2 miles per square mile and coincide with lynx habitat, prioritize roads for seasonal restrictions or reclamation in those areas, where practical or feasible. In this guideline "roads" include all ownerships of classified and unclassified roads and "regularly-used trails" are those that are used most years for most of the snow- season.

The Draft EA acknowledges that there are five LAUs that already violate the road density restriction above, those being LAUs 18, 19, 20, 34, and 37, but it does not acknowledge that proposed additional roads would, at least temporarily, raise the road density of LAU 25 above two miles per square mile, to 2.29 mi./mi^2. *See* Draft EA Appendix G - Draft BA, pp. 14, 19 (Table 4 inserted below).

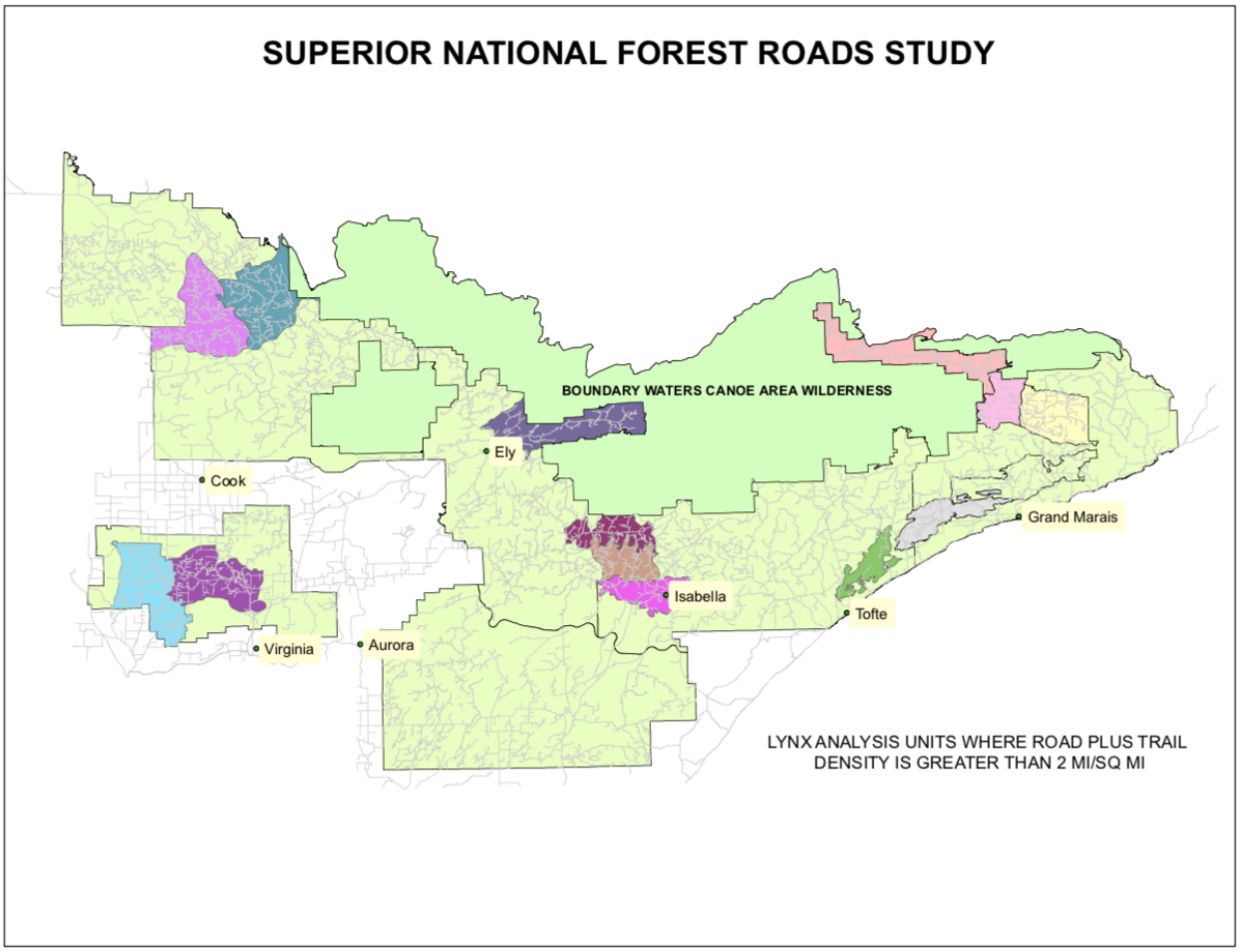
Table 4. Existing road/trail density by LAU and miles of temporary road under Alternative 2: Estimated Implementation Plan

LAU	Land Area-square miles	Routes-miles	Density-miles per square mile	Alternative 2 Temporary Roads-miles
11	87	151	1.73	0
18	36	80	2.22	8.5
19	37	109	2.93	2.5
20	39	82	2.09	2.0
21	111	93	0.84	4.9
23	43	37	0.88	1.1
24	27	33	1.19	8.1
25	65	124	1.91	24.6
26	33	54	1.65	13.0
27	47	57	1.22	9.4
28	39	41	1.06	7.6
29	49	68	1.39	1.4
30	39	32	0.83	9.0
31	25	32	1.31	5.7
32	65	73	1.13	21.4
33	40	62	1.54	1.9
34	28	65	2.34	2.6
35	50	44	0.89	4.7
36	52	69	1.34	13.2
37	40	106	2.64	0.3

Note that road/trail density includes all ownerships of classified and unclassified roads and "regularly-used trails" (G-WL-8). Road/trail density under Alternative 2 would not change so is the same as the existing road/trail density in the project area.

It is not expressly stated that the Draft EA included compacted snow trail miles in the tabulation above, so considering the extensive snowmobile route miles that cross the Ranger District, the road and snow-compacting trail densities could be higher than shown in Table 4, above.

Though the violation of G-WL-8 with respect to LAUs 18, 19, 20, 34, and 37 on the Tofte Ranger District has been known to the District and the Forest since 2008, when the Forest completed its Travel Management Project. *See* USFS map, Superior National Forest Road Study - Lynx Analysis Units Where Road Plus Trail Density Is Greater Than 2 mi/sq. mi. (below).



Though the Travel Management Project proposed road closures in all five of those LAUs in order to come into compliance with G-WL-8, the Draft EA, which presents an immediate opportunity to accomplish that requirement, not only fails to do so but proposes to make the violation substantially worse. The Draft EA says that temporary roads will be closed, when they should (if temporary, rather than restricted) be obliterated and revegetated. Even if that correction were made, however, the Draft EA fails to address or analyze the significance of the fact that road closures and even decommissionings in the Forest fail up to 20% of the time. *See* SNF Monitoring Report. N.D. Snap Shot of Forest Wide Road Decommissioning Projects Monitoring. The Draft EA also fails to address or analyze how that failure rate may increase due to the designation and marketing of the Border-to-Border 4x4 Off-Road Vehicle truck route through the project area.

Forest management projects are not described with sufficient specificity, could be changed or moved without opportunity for subsequent NEPA review and comment, have the capacity alone and in conjunction with natural disturbance to convert suitable lynx habitat on the Ranger District into unsuitable condition in a short period of time, and not only fail to decrease road and snow-compacting trail densities below the guideline, but would increase densities further during

the term of the Tofte Landscape Project. Considering the failure rate of road decommissioning on the Forest, road densities likely would remain increased above current densities, which on five LAUs are already beyond the acceptable limit. The Tofte Landscape Project has the potential to cause significant environmental effects on lynx and designated lynx critical habitat. An EIS for the project must be prepared, and the Forest Service should initiate formal scoping with the U.S. Fish & Wildlife Service.

2. Moose

Moose are a species in decline across much of their range in the lower-48 States, and have markedly declined in Minnesota over the past three decades. The northeastern Minnesota population is approximately half of what it was in the decade leading up to the 2004 Forest Plan. While the population in northeastern Minnesota today appears stable (no aerial survey work was completed in 2021 due to COVID protocols), the future of the moose population is uncertain due to pressures on several fronts.

First, the quality and quantity of forest habitat suitable for moose has been in steady decline since the 1970s. This EA states "harvests during this period have been relatively small and low intensity." *See* Draft EA Appendix F-Cumulative Actions, p. F-4. Less logging, with smaller cuts have favored deer over moose, resulting in a shortage of large young hardwood/mix-hardwood and conifer forest. Combined with a loss of large-scale natural fire outside the Wilderness or adequate prescribed fire that closely replicates the area's fire regime, have both combined to result in poor quality moose habitat across much of the Forest, particularly outside the Wilderness.

In 2015, the Center for Biological Diversity recognized that the moose population was in a dire position, and petitioned the USFWS to list the U.S. population of northwest moose as a threatened or endangered Distinct Population Segment (DPS) under the Endangered Species Act. The USFWS denied the petition last year on the grounds that the population did not meet the criteria discreteness as a DPS. 85 Fed. Reg. 57816 (Sep. 16, 2020). That denial does not make the moose's population situation in Minnesota any less dire. Further population declines will impact not only any future recreational hunting opportunities, but will significantly harm Tribal hunting and gathering rights, as discussed below.

To reverse this trend, it is incumbent upon the Forest Service to completely rethink and prioritize moose management during this planning period. In reviewing the maps (DEA Map 5 - Harvest to create young forest and temporary roads, DEA Map A- Stand pool Clearcuts, and DEA Map D - "Fire Benefits" Areas) all point to habitat development potential, but not for maximizing moose habitat. To do that, the Forest Service should consider far bigger treatment blocks on the order of a magnitude larger than proposed. The proposed action alternative will benefit deer, at the expense of moose.

Deer are definitive hosts for the giant liver fluke, *Fascioloides magna* (*see* Giant Liver Fluke. Cornell Wildlife Health Laboratory. Fact Sheet), and brainworm (*see* Hoffman, Steve. Researchers tackle brainworm epidemic in northern Minnesota moose population. Duluth News Tribune, 2019-06-21), and a major contributing host for ticks, including the winter tick, for which white-tail deer are the normal host. *See* Terry, Juliann. 2015. The habitat of winter ticks (Dermacentor albipictus) in the moose range of northeast Minnesota. Master's Thesis, UMN. Collectively, brainworm, winter ticks, and liver flukes caused nearly as much mortality in adult moose from February 2013 to February 2018 as wolf predation (16 mortalities vs. 18 mortalities, respectively), meaning the white-tail deer is nearly as effective as the wolf in contributing to adult moose mortality. *See* Carstensen, M., et al. Causes of non-hunting mortality of adult moose in Minnesota, 2013-2017. MNDNR, Wildlife Restoration. While the relationships between timber harvest, increased habitat suitability for deer, and moose mortality due from increased brainworm presence and transmission is mentioned on one page (Appendix H, Draft BE Wildlife, p. 36), the Draft EA fails to account for or consider the magnification of this effect due to deer as a vector for giant liver flukes and winter ticks. This is a significant omission considering the precariousness of the moose population and the project area's importance as an area that in the existing condition supports good moose densities.

Young patches of mixed aspen, birch, spruce/fir need to be far larger, on the order of 3000-5000 acres or larger, to be of the size thought to benefit moose. This can be done using a management pattern that better replicates large wildfire disturbances, by, for example, using combinations of timber harvest and natural or prescribed fire. At 3000-5000 acres, these would be considered small fires in a historical context on this landscape, and actually could be another magnitudes larger. The historic fire patterns of the past included fires of 100,000 to 200,000 acres or larger. This would be ideal, but may not be practical today. Settling for 3000-5000 acre patches of young timber will have to be considered sufficiently large. But by placing these large patches in clusters in the same vicinity, it would better emulate the larger wildfire disturbances that historically benefitted moose in this ecosystem. The method too-often relied upon by land managers to create forest patches, logging, fails to adequately replicate the main stand-replacing disturbance in the Quetico-Superior ecosystem of which the Superior National Forest is a part.

There is extensive Forest Service science, going back to the great Bud Heinselman, who was a Forest Service ecologist from 1948 until 1974, that this is a fire-adapted forest and landscape. The Draft EA does not dispute this, as the relevant map, titled "Tofte Landscape Project: Area of likely prescribed burning modification to benefit the ecosystem," represents that area as covering significantly more than half of the ranger district. But there is little consistency between proposed treatments and what the science shows to be the natural disturbance pattern. Heinselman's work, as summarized by Professor Lee Frelich, found that as a rule 3% of the fires historically were responsible for burning in aggregate 97% of the acres burned. The maps that Heinselman assembled over his career (e.g., the Kawishiwi Lake area) shows the Forest's history of fire disturbance, later replaced by wholesale logging of desirable stands.

For the past five or more decades, however, the trend has been to make lots of little clearcuts scattered across the landscape like confetti, and little clearcuts do not replicate large fire disturbance, because the resulting patches are far too small, too scattered, and they result in vegetation and soil conditions that differ totally from post-fire conditions, whether stand-replacing or understory burns.

Several recent large-patch areas have been created by wildfire on the landscape in the last 15 years, but those have not been nearly enough to make up for the effects of >100 years of fire suppression, or even to replicate historic large burn frequencies. One large patch, for example, was created in 2011 with the Pagami Creek Fire, and another could be created north of the Tofte Project Area and east of Snowbank Lake in the next few days depending on fire weather. The Pagami Creek Fire created great moose habitat. The Minnesota DNR and the 1854 Treaty Authority conduct annual aerial surveys for moose, and their reports show that the Pagami Creek Fire area became excellent moose habitat starting between five and eight years post-fire, and it continues to do so. *See also* Schrage, Mike. 2019 Moose Habitat Survey. Fond du Lac Resource Management Division. Moose will exploit large areas with excellent moose-high fresh green deciduous forage, and will have improved fitness and reproductive vigor from doing so. And moose benefit from the relative absence of ticks, since fire sanitizes the landscape of most ticks.

New suitably-sized large patches could be created by logging alone, but they will lack the natural life and vigor of post-fire patches, and they will not be sanitized of ticks, or for that matter the snails that harbor giant liver fluke larvae and brainworm. Logging-created patches that are too small, even if treated with post-logging prescribed fire, will increase the area's habitat suitability for deer, again harming moose. For this reason, large patches should be both large enough to be relevant and not harmful to moose, and should be created, or at least treated, with fire.

It's critically important that these large patches provide moose with high quality browse species. The Forest Service must resist converting these sites to pine plantations. These sort of plantations soon become "biological deserts" devoid of flora and fauna diversity. Moose prefer and thrive in large patches of young hardwood stems, but not so in pine or spruce plantations after canopy closure.

To achieve young patches of this size will require that the Forest Service rethink this plan. Consider combining timber harvest, underburning and stand replacement fires (where logging is not feasible/practical), and encourage these areas to regenerate in ways that favor moose.

In addition to the habitat problems that are plaguing moose, they are also being stressed by climate change. There's clear evidence that winters are steadily warming, and to a lesser degree, so are the non-winter months. Research suggests this has led to heat stress for moose over large parts of the year. Having medium sized blocks of thermal cover near these large young patches is seen as critically important to relieving stress and keeping moose as healthy as possible. Fire, particularly stand-replacing fires in fire-adapted forests containing some component of pole,

mature, or old pine, especially jack pine, helps to ensure interspersion of natural regeneration of conifer (see below), while mosaic burns help ensure retention of conifer stands in the fire area.

Figure 21. A January, 2019 view across the Pagami Creek Fire .

Fig. 21 from Schrage, Mike. 2019 Moose Habitat Survey. Fond du Lac Resource Management Division

Finally, the habitat problems plaguing moose have connected indirect contributions to moose mortality. There's growing evidence that periodic fires, whether wildfire or prescribed fire, may indirectly aid moose by reducing the abundance and distribution of all species of ticks, not just winter ticks (Dermacentor albipictus) that moose encounter across the landscape, and which, as noted above, are known to contribute to moose mortality. *See* Carstensen, M., et al. Causes of non-hunting mortality of adult moose in Minnesota, 2013-2017. MNDNR, Wildlife Restoration. A cooperative moose researchers team including the MN DNR, and natural resource staff from the Fond du Lac and Grand Portage Bands, have detected a host of tickborne diseases in the blood samples of moose from throughout northeastern Minnesota. What part these diseases play on the overall health of the moose is uncertain. But the abundance of winter ticks is a well documented cause of moose mortality. And fire might play an important role in controlling tick abundance and distribution.

By encouraging more natural fire, prescribed fire on the landscape as underburns, site prep burns following harvest (most effective on conifer sites), broadcast slash disposal as a wildfire

prevention tool, or burning areas too difficult to log where the objective is stand replacement/renewal, all would likely benefit moose, and should be exercised as an available management tool to the fullest extent possible. More underburning could be included in the plan than the 4,700 acres currently proposed over the 15-year period in the EIP. Additionally, allowing wildfires to burn in the Wilderness, in Semi-Primitive Motorized Recreational Areas, in other roadless areas, and other remote sites across the District, will greatly benefit moose by reducing tick abundance, and by periodically refreshing landscape vegetation that provides high quality moose browse habitat.

The Forest Service can incorporate these concepts into the plan now, or wait for the moose population to degrade further, and possibly be forced to address moose management if/when they become a listed species (T/E).

Like the canary in the coal mine, we should now view moose as one of the sentinel species for this landscape. The continued decline or loss of moose would have to be viewed as a neglect of the resource, and a collective failure in the management of an iconic public trust asset. Such a decline could have negative consequences on Tribal hunting and gathering rights, where moose are an intricate part of their spiritual/cultural wellbeing, and a nutritional staple. Band members have for some time expressed their concerns over the decline in the moose population and the persistent low numbers across northeastern Minnesota. Further declines may lead to reduced opportunities for Tribal members to conduct moose hunts as they've done for centuries, and in this instance, curtailing their ability to exercise the usufructuary Treaty rights affirmed by the US Supreme Court that establishes their guaranteed right to hunt and gather.

3. Goshawks, Warblers & Large Interior Mature-and-Older Forest Blocks

The Forest is a globally important birding area. The list of bird species that may be found on the SNF (whether migrating through, winter or summer residents, or year-round residents) includes 225 species expected to occur in the forest each year, and an additional 45 casual species that occur irregularly. At least 163 bird species are known to breed on the SNF, or 74% of the bird species that regularly breed in Minnesota, among them bald eagles, ospreys, loons, and a host of wood warblers. *See* Annotated Checklist of BIRDS OF THE SUPERIOR NATIONAL FOREST Compiled by Janet C. Green, 2006 KEY TO THE CHECKLIST List of species; Audubon, http://www.audubon.org/important-bird-areas/superior-national-forest. The American Bird Conservancy lists the Superior National Forest as one of 100 "globally important bird areas." Thirteen of the 86 bird species identified as of significant "continental concern" by North America's two premier bird conservation consortia (Partners In Flight and the North American Bird Conservation Initiative), are hosted by the Forest. The Forest also supports the highest diversity of breeding wood warbler species anywhere in the world – 24 species, which also represents 2/3 of the wood warbler species breeding anywhere east of the Great Plains. *See*

Fitzpatrick, J. W., 2017. Birds of Minnesota's BWCA and Adjacent Upstream Regions, with Comments on Conservation Implications of New Copper Mining Under Consideration.

Once they have become established, management to reduce the numbers of habitat generalists and nest parasites and predators such as brown-headed cowbirds, crows, and blue jays "is difficult to do; the defense is to maintain forested blocks as large as possible." *See* Green, Janet C. 1995. Birds and Forests - A management and conservation guide. Minnesota DNR, at p. 103. While brown-headed cowbirds, blue jays, and crows are less common on the Superior National Forest than elsewhere in Minnesota, climate change may be changing that, as species range shift north, and the intense timber harvest and increased fragmentation of contiguous forest proposed in the Tofte Landscape Project would improve suitability for these nest parasites and avian predators.

The 2004 Forest Plan (Chapter 2, pp. 2-26 to 2-27, O-VG-24 and O-VG-25) states with regard to maintenance of "Large Mature and Older Upland Forest Patches":

> O-VG-24: In Spatial Zone 3 strive to minimize the decrease in acres and numbers of patches of mature or older upland forest in patches ≥ 300 acres. Age and composition objectives will be considered the primary drivers of forest condition in this Zone. When determining which large upland forest patches will be retained, take into consideration the contribution of BWCAW acres and other unmanaged lands within the same ecological setting and proximity.
>
> O-VG-25: In Spatial Zone 3 strive to minimize the decrease in interior forest habitat in a variety of upland and lowland vegetation communities.

The 2017 monitoring report, showing that there are fewer but larger, large interior forest patches, covering more acres than in past monitoring. *See* Superior National Forest Monitoring and Evaluation Report 2009-2017 (July 2019). While this is being accomplished faster than predicted, the consolidation of formerly highly fragmented forest patches on the Forest, including the Tofte Ranger District, is positive for moose and for most of the bird diversity on the forest, including goshawk. Species requiring large patches of younger forest are provided for partly by naturally-ignited recent fires, such as the 2011 Pagami Creek Fire, and by the natural mosaic of habitat types on the ranger district.

Measuring acres of large mature and older forest patches is straightforward, but minimizing the decrease of interior forest habitat requires first buffering into the existing forest patches to remove forest edge. Whereas a 10,000-acre forest patch is likely to have very substantial interior forest habitat, a 100-acre or 300-acre forest patch, depending on its shape, may offer little to no interior habitat. Thus the creation of more forest patches >300 acres may nonetheless result in the elimination or halving of interior forest habitat acres, depending on whether the additional

patches come from slicing and dicing existing large forest patches, or consolidating existing smaller forest patches.

Unfortunately, it is apparent from the Draft EA that the Tofte Landscape Project increases the number of patches >300 acres by fragmenting the largest existing forest blocks. The proposed project is most strikingly destructive of the largest upland mature and older forest patches >10,000 acres; whereas the current condition shows that in Zone 3, closest to the Boundary Waters there are four such patches covering more than 63,000 acres, the proposed action's EIP eliminates all four, leaving zero (0) acres in the largest mature-and-older upland forest patch category. The proposed action's EIP also reduces by more than a third (a reduction of 67,000 acres, or more than 104 square miles) the existing acres of mature-and-older large forest patches >1,000 acres. The proposed action's EIP also reduces by more than 100 square miles the existing mature-and-older forest patches >300 acres. *See* Draft EA Appendix H - Draft BE Wildlife. Pp. 54-56.

These are extreme changes on a landscape that already provides excellent moose, lynx, goshawk, and wood warbler species habitat. The proposed action has the potential for significant environmental effects on the existing sensitive habitats and imperiled wildlife, and therefore requires preparation of an EIS.

4. Trout streams

The Project Area includes a large number of cold-water streams designated by the Minnesota DNR as trout streams and trout stream tributaries. A number of those designated streams and tributaries are located in the western portion of the project area, where streams and rivers flow into the Boundary Waters. These designated trout streams and tributaries are shown in passing in one slide of the project's story map, but are omitted in the supporting materials, such as the map titled, Watersheds in Tofte Landscape Project - HUC 12," and the analytical materials such as Appendix H - Draft BE Aquatics. The Draft EA addresses the sensitivity of trout streams in only one location, *see* Draft EA Appendix C - Operational Standards & Guidelines, p. C-4.

The Draft EA does not address the sensitivity of trout streams and tributaries to thermal pollution, i.e., warmer stream temperatures, as a result of reductions in shading caused by vegetation management practices, or the increases in stream temperatures caused by increased insolation. There is also no reference to the likelihood that global warming in conjunction with the proposed action's EIP may significantly degrade the conditions in designated trout streams and tributaries. This is a surprising omission, considering the Forest Plan's recognition of the enormous share of Minnesota's designated trout streams that the SNF hosts; the fact that many of those are located on the Tofte ranger district; the ecological, social, and economic importance of the cold-water streams designated as trout streams and tributaries; and the increased demand which the 2004 Forest Plan projected for high-quality riparian goods and services, including

ecological and recreational services. *See*, 2004 Superior National Forest Forest Plan, Appendix A, Summary Analysis of the Management Situation, pp. 17-19, 32.

The Draft EA fails to address whether flexible basal area retention measures of 60 ft^2 per acre would be sufficient to avoid environmental impacts to trout streams (temperatures or seasonal flows), or whether the maintenance of complete canopy closure is more appropriate for trout stream RMZs to ensure that management activities in and adjacent to the RMZ do not contribute -- alone or in conjunction with global warming -- to increased stream temperatures, which would degrade the cold-water aquatic resources in the Project Area. Any subsequent NEPA document should address the proposed project EIP's potential for cumulatively significant negative effects on cold-water resources, including trout streams.

B. The EA Fails to Adequately Address Impacts To Climate Change, And Impacts To Climate Connectivity For Species Moving Through The Tofte Ranger District.

1. The Climate Crisis

The climate crisis is the overriding environmental issue of our time, threatening to drastically modify ecosystems, alter coastlines, worsen extreme weather events, degrade public health, and cause massive human displacement and suffering. Its impacts are already being felt in the United States, and recent studies confirm that time is running out to forestall the catastrophic damage that will result from 1.5 degrees Celsius of warming. *See* IPCC, Summary for Policymakers, Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways (2018), attached as Ex. 1. More recent studies have confirmed that climate change is accelerating, making the need to protect carbon stores even more urgent than it was just a few years ago. See, e.g., H. Fountain, Climate Change Is Accelerating, Bringing World 'Dangerously Close' to Irreversible Change, The New York Times (Dec. 4, 2019), attached as Ex. 2. Climate change is impacting Minnesota.

a. President Biden requires prompt action to assess and reduce climate pollution.

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

> It is, therefore, the policy of my Administration to listen to the science; to improve public health and protect our environment; to ensure access to clean air and water; to limit exposure to dangerous chemicals and pesticides; to hold polluters accountable, including those who disproportionately harm communities of color and low-income communities; *to reduce greenhouse gas emissions; to*

> *bolster resilience to the impacts of climate change*; to restore and expand our national treasures and monuments; and to prioritize both environmental justice and the creation of the well-paying union jobs necessary to deliver on these goals.
>
> To that end, this order directs all executive departments and agencies (agencies) to immediately review and, as appropriate and consistent with applicable law, take action to address the promulgation of Federal regulations and other actions during the last 4 years that conflict with these important national objectives, and *to immediately commence work to confront the climate crisis.*

Executive Order 13,990, 86 Fed. Reg. 7037 (Jan. 20, 2021) at Sec. 1 (emphasis added), attached as Ex. 3.

Days later, President Biden further committed to taking swift action to address the climate crisis. Per Executive Order 14,008, he has recognized that "[t]he United States and the world face a profound climate crisis. We have a narrow moment to pursue action at home and abroad in order to avoid the most catastrophic impacts of that crisis and to seize the opportunity that tackling climate change presents." Executive Order 14,008, 86 Fed. Reg. 7619 (Jan. 27, 2021), attached as Ex. 4. Pres. Biden announced that under his administration,

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

Id. at 7622 (Sec. 201).

Addressing the need for the accurate assessment of climate costs, Pres. Biden announced on day one that "[i]t is *essential* that agencies capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account." Executive Order 13,990 (Ex. 3), 86 Fed. Reg. at 7040, Sec. 5(a) (emphasis added). He noted that an effective way to undertake this essential task was to use the social cost of carbon to quantify and disclose the effects of additional climate pollution:

> The "social cost of carbon" (SCC), "social cost of nitrous oxide" (SCN), and "social cost of methane" (SCM) are estimates of the monetized damages associated with incremental increases in greenhouse gas emissions. They are intended to include changes in net agricultural productivity, human health, property damage from increased flood risk, and the value of *ecosystem services*.

> An accurate social cost is essential for agencies to accurately determine the social benefits of reducing greenhouse gas emissions when conducting cost-benefit analyses of regulatory *and other actions*.

Id. (emphasis added). The President also re-established Interagency Working Group on the Social Cost of Greenhouse Gases, on which the Secretary of Agriculture will serve. *Id*., Sec. 5(b). The President directed the Working Group to publish interim values for the social cost of carbon by February 19, 2021. *Id*., Sec. 5(b)(ii)(A). The Working Group that month set that price at $51/ton at a 3% discount rate. Interagency Working Group on Social Cost of Greenhouse Gases, Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990 (Feb. 2021), available at https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf (last viewed July 16, 2021) and attached as Ex. 5. We note that the U.S. Department of Agriculture, the Forest Service's parent agency, is part of the Interagency Working Group and participated in and endorsed the update to the social cost of carbon. *Id*. at cover page, 14.

2. NEPA requires the Forest Service to disclose and quantify the climate impacts of proposed actions.

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

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

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

Id., 538 F.3d at 1216 (quoting 40 C.F.R. § 1508.7 (1978)). *See also WildEarth Guardians v. BLM*, 870 F.3d 1222, 1237 (10th Cir. 2017) (failure to disclose climate impacts of various alternatives "defeated NEPA's purpose"). Courts have held that a "general discussion of the

effects of global climate change" does not satisfy NEPA's hard-look requirement. *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1189-90 (D. Colo. 2014).

Further, courts have ruled that federal agencies must consider indirect GHG emissions resulting from agency policy, regulatory, and fossil fuel leasing decisions. For example, agencies cannot ignore the indirect air quality and climate change impact of decisions that would open up access to coal reserves. *See Mid States Coal. For Progress v. Surface Transp. Bd.*, 345 F.3d 520, 532, 550 (8th Cir. 2003); *High Country Conservation Advocates*, 52 F. Supp. 3d at 1197-98; *Montana Environmental Information Center v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074 (D. Mont. 2017), *amended in part, adhered to in part*, 2017 WL 5047901 (D. Mont. 2017). A NEPA analysis that does not adequately consider the indirect effects of a proposed action, including climate emissions, violates NEPA. *Ctr. for Biological Diversity v. Bernhardt*, 982 F.3d 723, 2020 U.S. App. LEXIS 38033, *20 (9th Cir. 2020).

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

The 2016 final CEQ *Guidance on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Review* provides useful direction on the issue of federal agency review of greenhouse gas emissions as foreseeable direct and indirect effects of a proposed action. Notice available at 81 Fed. Reg. 51,866 (Aug. 5, 2016); full guidance attached as Ex. 6, and available at https://ceq.doe.gov/docs/ceq-regulations-and-guidance/nepa_final_ghg_guidance.pdf (last viewed July 16, 2021). The CEQ guidance provides clear direction for agencies to conduct a lifecycle greenhouse gas analysis that quantifies GHG emissions and storage because the modeling and tools to conduct this type of analysis are available:

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

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

Id. at 16 (citations omitted). The guidance further specifies that estimating GHG emissions is appropriate and necessary for actions such as federal logging projects.

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

Id. at 26 (citations omitted).

Courts and guidance have also repeatedly concluded that disclosing the volume of GHG emissions increased (or decreased) by a specific alternative is not, by itself, sufficient to comply with NEPA because agencies must also disclose the *effects* of those emissions. Such effects can last centuries and occur world-wide. The Interagency Social Cost of Carbon was developed specifically to provide agencies with a way to quantify and compare those impacts, and courts and agencies have regularly required this method to disclose the climate impacts of federal actions. *High Country Conservation Advocates*, 52 F. Supp. 3d at 1190-93 (finding Forest Service violated NEPA by failing to disclose the climate impacts via the social cost of carbon); *Wildearth Guardians v. Bernhardt*, 2021 U.S. Dist. LEXIS 20792, CV 17-80-BLG-SPW (D. Mont. Feb. 3, 2021) at *25-*31 (finding Office of Surface Mining violated NEPA by failing to disclose the climate impacts via the social cost of carbon). *See also* CEQ, 2016 NEPA Climate Guidance (Ex. 6) at 32-33 (noting the appropriateness of monetizing climate impacts).

Although the Trump administration withdrew the 2016 CEQ guidance, President Biden on January 20, 2021 rescinded that Trump Executive Order, and directed CEQ to "review, revise, and update" its 2016 climate guidance. Executive Order 13,990 (Ex. 3), Sec. 7(e), 86 Fed. Reg. at 7042. On February 19, 2021, CEQ effectively reinstated the 2016 GHG guidance:

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

effects of their proposed actions, including, as appropriate and relevant, the 2016 GHG Guidance.

Council on Environmental Quality, National Environmental Policy Act, Guidance on Consideration of Greenhouse Gas Emissions, 86 Fed. Reg. 10,252 (Feb. 19, 2021), attached as Ex. 7, and available at https://www.govinfo.gov/content/pkg/FR-2021-02-19/pdf/2021-03355.pdf (last viewed July 16, 2021).

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

3. The Forest Service's failure to disclose and quantify the Tofte project's climate damage violates NEPA.

The Forest Service's analysis of the Tofte project failed to comply with NEPA because it does not quantify the impacts on climate pollution and carbon storage of logging, burning, and trucking trees from the forest.

The EA itself contains less than a page addressing the project's impacts on carbon storage and climate pollution, alleging that the proposed action "would increase resilience to climate change by increasing diversity of age class, forest type and within-stand diversity." Draft EA at 33. The EA concludes that while the no action alternative would result in "a minimal increase in carbon storage," implementing the project would cause "[a] minimal decrease in carbon storage." *Id*. The EA fails to disclose "minimal" compared to what, nor does it attempt to estimate the amount of carbon that would decrease relevant to the status quo.

The EA apparently relies on two other documents to support its climate analysis: Appendix F, to the EA which addresses climate change and cumulative impacts, and the "Forest Carbon Assessment for the Superior National Forest in the Forest Service's Eastern Region," prepared in 2020.

Appendix F concludes that "any timber harvest occurring within the Tofte Landscape Project will … have nominal negative effects on carbon storage. Further, harvested stands would be regenerated with young forest and would add to the Forest's capacity to increase carbon uptake and sequestration, continuing to promote the Forest as a carbon sink." Draft EA, Appendix F, at F-4.

The Forest Carbon Assessment addresses the state of carbon storage on the Superior National Forest compared to others, and does not address the Tofte project specifically.

a. The Forest Service fails to disclose and quantify the Tofte project's impact on carbon storage.

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

Science makes clear, and the Draft EA generally admits, that the Tofte project will likely worsen climate emissions by removing trees that are currently fixing carbon, turning them into wood products (which results in a significant loss of that carbon fixed in wood), and leaving a landscape with no trees and (eventually) seedlings that, for years. will fix far less carbon than mature forests.

Logging old forests in particular worsens climate change by releasing significant amounts of carbon and by preventing such forests from continuing to sequester carbon. As the Forest Service has admitted regarding mature forests in Alaska, such forests "likely store considerably more carbon compared to younger forests in this area (within the individual trees themselves as well as within the organic soil layer found in mature forests)." Forest Service, Tongass Land and Resource Management Plan, Final EIS (2016) at 3-14, excerpts attached as Ex. 8. This is so because when a forest is cut down, the vast majority of the stored carbon in the forest is released over time as CO2, thereby converting forests from a sink to a "source" or "emitter." *See, e.g.*, D. DellaSala, The Tongass Rainforest as Alaska's First Line of Climate Change Defense and Importance to the Paris Climate Change Agreements (2016) at 5, attached as Ex. 9.

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

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

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

P. Buotte *et al*., *Carbon sequestration and biodiversity co-benefits of preserving forests in the western United States*, Ecological Applications, Article e02039 (Oct. 2019) at 8, available at https://esajournals.onlinelibrary.wiley.com/doi/pdf/10.1002/eap.2039 (last viewed July 16, 2021), and attached as Ex. 10. This study was funded in part by the USDA.

Recent studies agree that maintaining forests rather than cutting them can help reduce the impacts of climate change. "Stakeholders and policy makers need to recognize that the way to maximize carbon storage and sequestration is to grow intact forest ecosystems where possible." Moomaw, *et al*., Intact Forests in the United States: Proforestation Mitigates Climate Change and Serves the Greatest Good, Frontiers in Forests and Global Change (June 11, 2019) at 7), attached as Ex. 11 (emphasis added). One report concludes:

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

T. Hudiburg *et al*., Meeting GHG reduction targets requires accounting for all forest sector emissions, Environ. Res. Lett. 14 (2019) (emphasis added), attached as Ex. 12.

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

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

B. Law, et al., The Status of Science on Forest Carbon Management to Mitigate Climate Change (June 1, 2020), attached as Ex. 13.

Two experts in the field recently concluded in 2021:

> Recent projections show that to prevent the worst impacts of climate change, governments will have to increase their pledges to reduce carbon emissions by as

> much as 80%. We see the next 10 to 20 years as a critical window for climate action, and believe that *permanent protection for mature and old forests is the greatest opportunity for near-term climate benefits*.

B. Law & W. Moomaw, Keeping trees in the ground where they are already growing is an effective low-tech way to slow climate change, *The Conversation* (Feb. 23, 2021) (emphasis added), attached as Ex. 14, and available at https://theconversation.com/keeping-trees-in-the-ground-where-they-are-already-growing-is-an-effective-low-tech-way-to-slow-climate-change-154618 (last viewed July 16, 2021).

Further, to address the climate crisis, agencies cannot rely on the re-growth of cleared forests to make up for the carbon removed when mature forest is logged, as the Draft EA's Appendix F appears to do. One prominent researcher explains: "It takes at least 100 to 350+ years to restore carbon in forests degraded by logging (Law et al. 2018, Hudiburg et al. 2009). If we are to prevent the most serious consequences of climate change, *we need to keep carbon in the forests because we don't have time to regain it once the forest is logged* (IPCC, 2018)." B. Law, *et al*., The Status of Science on Forest Carbon Management (Ex. 13) (emphasis added).

Studies also demonstrate that significant volumes – in some cases a majority – of carbon stored in trees are *immediately* lost when trees are logged and milled, and the rest is likely to be returned to the atmosphere sooner than would occur if the trees were left standing.

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

Law & M.E. Harmon, Forest sector carbon management, measurement and verification, and discussion of policy related to mitigation and adaptation of forests to climate change. Carbon Management (2011) 2(1), attached as Ex. 15, and available at https://www.researchgate.net/publication/235591616_Forest_sector_carbon_management_measurement_and_verification_and_discussion_of_policy_related_to_climate_change (last viewed July 16, 2021). Other studies indicate that there is little substitution benefit of using wood compared to using other products (e.g., concrete for building), and that industry talking points to the contrary vastly overestimate the carbon benefits of using wood. *See* M. Harmon, Have product substitution carbon benefits been overestimated? A sensitivity analysis of key

assumptions, Environmental Research Letters (2019), attached as Ex. 16, and available at https://iopscience.iop.org/article/10.1088/1748-9326/ab1e95/pdf (last viewed July 16, 2021) ("Substitution of wood for more fossil carbon intensive building materials has been projected to result in major climate mitigation benefits often exceeding those of the forests themselves. A reexamination of the fundamental assumptions underlying these projections indicates long-term mitigation benefits related to product substitution may have been overestimated 2- to 100-fold.").

These studies undermine assumptions in the Superior National Forest's carbon analysis. The Forest Service should acknowledge and address this information and these studies in any subsequently prepared NEPA document.

While the EA concludes that the impacts of the Tofte project's 15 years of logging and burning, and the creation of 40 square miles of clearcuts will have only "minimal" climate impacts, the Forest Service fails to *quantify* the changes in carbon storage that the project will cause. Methods exist that would have allowed the agency to quantify those impacts. For example, a 2018 study concludes that carbon storage impacts can be estimated, accounted for, and factored into a model that calculated the net amount of carbon lost due to forest logging in Oregon over two five-year periods. *See* B. Law et al., Land use strategies to mitigate climate change in carbon dense temperate forests, Proceedings of the Nat'l Academy of Sciences, vol. 115, no. 14 (Apr. 3, 2018) at 3664 ("Our LCA [life-cycle assessment] showed that in 2001–2005, Oregon's net wood product emissions were 32.61 million tCO2e [tons of carbon dioxide equivalent in net GHG emissions] (Table S3), and 3.7- fold wildfire emissions in the period that included the record fire year (15) (Fig. 2). In 2011–2015, net wood product emissions were 34.45 million tCO2e and almost 10-fold fire emissions, mostly due to lower fire emissions."), available at https://www.pnas.org/content/115/14/3663 (last viewed July 16, 2021). This is precisely the type of analysis the Forest Service should, and could, have undertaken for Tofte EA.

Similarly, Dr. DellaSala's 2016 report addressed carbon stores from wood products and concluded that logging Tongass old-growth forest under the 2016 Forest Plan would result in net annual CO2 emissions totaling between 4.2 million tons and 4.4 million tons, depending on the time horizon chosen. DellaSala (Ex. 9) at 14. The Bureau of Land Management more than a decade ago completed an EIS for its Western Oregon Resource Management Plan in which that agency also predicted the net carbon emissions from its forest and other resource management programs. *See* Bureau of Land Management, Western Oregon Proposed RMP Final EIS (2009) at 165-181, excerpts attached as Ex. 17. Because agencies and academics have quantified and compared the carbon emissions of alternative logging proposals, NEPA requires the Forest Service to do that here.

The EA's failure to provide a quantitative assessment to enable a comparison with the no action alternative violates NEPA. The EA and exhibits quantify the economic benefits (and costs) of logging while declining to calculate the climate costs. For example, the EA tallies the project's

present net value. Draft EA, Appendix I, at I-3. Yet the Forest Service fails not only to estimate the volume of climate emissions, the agency fails to weigh any alleged economic benefits of the project against the costs of climate change, which can be estimated using the Interagency Working Group's global estimate of the social cost of carbon, as recommended by President Biden's Executive Orders. *See High Country Conservation Advocates*, 52 F. Supp. 3d at 1190-93. Once an agency chooses to "trumpet" a set of benefits, it also has a duty to disclose the related costs. *Sierra Club v. Sigler*, 695 F.2d 957, 979 (5th Cir. 1983). "There can be no hard look at costs and benefits unless all costs are disclosed." *Id*. The U.S. District Court for the District of Montana reinforced this requirement earlier this year when it set aside a federal agency NEPA analysis for failing to quantify the social costs of agency action's climate pollution. *WildEarth Guardians v. Bernhardt*, 2021 U.S. Dist. LEXIS 20792 at *25-*32, 2021 WL 363955, CV 17-80-BLG-SPW (D. Mont. Feb. 3, 2021) (endorsing magistrate judge's determination that the Office of Surface Mining "failed to take a 'hard look' at the costs of greenhouse gas emissions and failed to reasonably justify its reasoning for not quantifying the costs of the mining plan when the Social Cost of Carbon Protocol ... was available to do just that").

As noted above, President Biden has already announced that his administration would reinstate the Interagency Working Groups' Social Cost of Carbon using a metric that includes global damage from climate-forcing pollution.

The CEQ 2016 climate guidance, which CEQ this year urged agencies to rely on, contains explicit guidance on carbon storage, and notes:

Quantification tools [to evaluate climate emissions or storage] are widely available, and are already in broad use in the Federal and private sectors, by state and local governments, and globally. Such quantification tools and methodologies have been developed to assist institutions, organizations, agencies, and companies with different levels of technical sophistication, data availability, and GHG source profiles. When data inputs are reasonably available to support calculations, agencies should conduct GHG analysis and disclose quantitative estimates of GHG emissions in their NEPA reviews. These tools can provide estimates of GHG emissions, including emissions from fossil fuel combustion and *estimates of GHG emissions and carbon sequestration for many of the sources and sinks potentially affected by proposed resource management actions*.

CEQ, 2016 NEPA Climate Guidance (Ex. 6) at 12. As noted above, the guidance further specifies that estimating GHG emissions is appropriate and necessary for actions such as federal logging projects. *Id*. at 25. We urge the Forest Service to do so here.

b. The Forest Service fails to disclose and quantify the carbon pollution of implementing the Tofte project.

Logging and burning treatments, and the scores of miles road construction, reconstruction, and maintenance necessary to access the cutting units, for the 15-year life of the project will require the use of heavy equipment, almost certainly exclusively powered by fossil-fueled engines. So will transporting the logs to mills. In addition, the operation and movement of logging equipment from sale to sale serves as vectors that rapidly expand and multiply NNIS earthworm infestations. See Hale, C.M. Prevention and Early Detection of Asian Earthworms and Reducing the Spread of European Earthworms. Project Abstract, 2012. The increase in numbers and spread of NNIS earthworm infestations results in significant losses of forest soil carbon. Earthworms, which were extirpated from northern Minnesota during the last ice age, and have been dispersing naturally northward only at a rate of about 1 m/year, consume the forest duff layer and in so doing mineralize much of the soil organic carbon, i.e., convert solid carbon into CO^2.

This activity will result in greenhouse gas pollution that will worsen climate change for centuries, and that pollution will be over and above the pollution that would occur under the no action alternative. We could locate no document in the record that acknowledges or attempts to disclose such impacts.

This contrasts to the approach taken elsewhere by the Forest Service and by other agencies, such as the Office of Surface Mining, which have disclosed in NEPA documents the estimated pollution from internal combustion engines necessary to mine, process, and ship coal to market. *See, e.g.*, Office of Surface Mining & Bureau of Land Management, Environmental Assessment, Colowyo Coal Mine Collom Permit Expansion Area Project (Jan. 2016) at 4-15 – 4-18 (including table assessing "direct GHG emissions" from "drills," "dozers," "graders," "haul trucks," etc., for the proposed action), excerpts attached as Ex. 18; U.S. Forest Service, Supplemental Final Environmental Impact Statement, Federal Coal Lease Modifications COC-1362 & COC-67232 (Aug. 2017) at 102-113 (publishing tables estimating emissions of air pollutants, including greenhouse gases CO2 and Ch4 (methane) for activities including road and well pad construction, heavy equipment use, and commuter vehicle trips for the no action and proposed action alternatives), excerpts attached as Ex. 19.

We do not endorse as sufficient either the OSM or Federal Coal Lease Modifications analyses, but they demonstrate that agencies (including the Forest Service itself) can and do attempt to disclose direct climate emissions from construction and transport activities. The Forest Service provides no reasonable basis for failing to do the same for the Tofte project, and thus violates NEPA.

Finally, in reviewing Appendix 19 - USFS Forest Carbon Assessment it appears filled with uncertainty. Uncertainty over the models used and the many assumptions that drive the results; uncertainty over the impacts of climate change on the forests within this landscape; and the uncertainty just how the rising level of various GHG emission in conjunction with changing

weather patterns (chiefly temperatures and rainfall patterns) might impact the ability of the forest to store carbon. Fair enough, that is the inherent world of modeling.

c. The Forest Service fails to consider the carbon impacts of other projects reasonably foreseeable across the broader region.

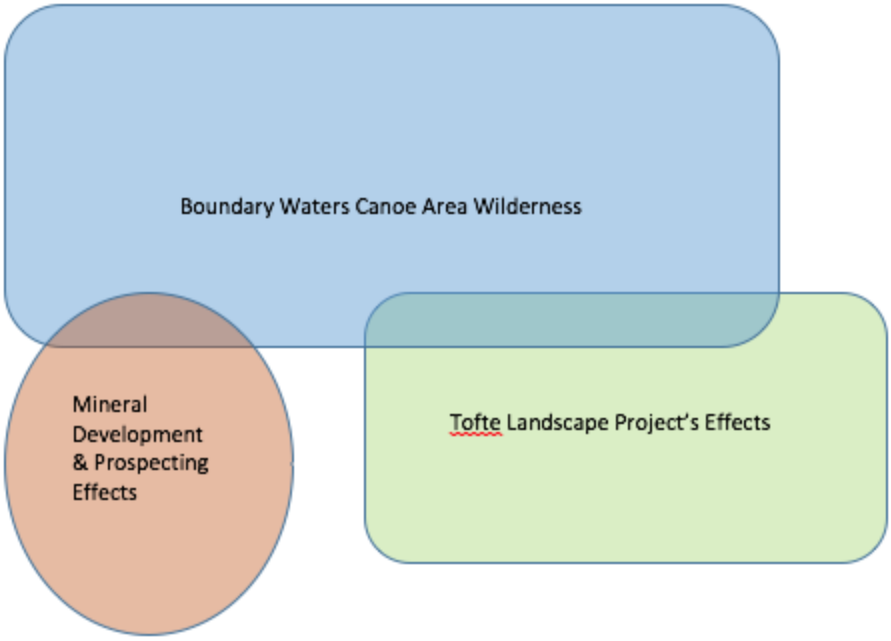
But among the more definitive statements in this Appendix was "Across the broader region, land conversion for development on private ownerships is a concern (Shifley & Moser, 2016) and this activity can cause substantial carbon losses (FAOSTAT, 2013; USDA Forest Service, 2016)."

While the Forest states that its role in land (forest) conversion to other uses is negligible, this statement goes to the heart of the impact of mining development on the Superior National Forest lands, where all carbon stocks at these currently forested and wetland sites, from the forest soils and peat beds, the standing timber, dead and down timber, and other forest biomass materials, would inevitably be removed during site development at these mining projects, releasing these carbon stores into the atmosphere. Mining has nothing in common with a timber clearcut, where the forest's carbon sequestration is temporarily interrupted and the forests will slowly re-establish themselves; mining sites last for many decades, centuries, or longer as industrial legacies, impacted to the point they never recover to sequester the level of carbon the original forested site had held.

C. The EA Fails to Adequately Address Impacts To The Boundary Waters Canoe Area Wilderness.

1. Noise

The Draft EA fails to adequately address the project's potential for cumulatively significant impacts on the Boundary Waters as a result of increased industrial noise, and increased numbers and spread of non-native invasive species (NNIS) infestations. The Draft EA errs in its treatment of the cumulative impacts from these noise and NNIS as a result of the project's proposed activities in conjunction with proposed mineral development and prospecting. The Draft EA, *see*, Draft EA, Appendix F, pp. F-7-8, asserts that because mineral activity would occur at a distance of approximately 10 miles from the project area, therefore noise and NNIS from mineral development and prospecting would be unlikely to reach inside the project area. This ignores the third area that should have been part of the cumulative impacts analysis, i.e., the Boundary Waters, as a resource that will receive negative impacts from both the Tofte Landscape Project and proposed mineral activities. See below.



The Tofte Landscape Project would generate significant noise, i.e., unwanted sound. Timber harvest noise is generated in heavy equipment operation for road construction and obliteration, mechanical thinning, mechanical site preparation, understory fuels reduction, and management related to use and control of prescribed fire. Mining and mineral prospecting activities also generate significant noise, due to heavy equipment operation, detonations of explosives which can be heard dozens of miles away, road building, leveling of the native ground surface for establishment of lay-down areas and mine processing and tailings disposal areas, drill rig operation, and the operation of rock crushers, conveyors, processing facilities and, in the case of underground mines, the operation of exhaust and intake ventilation ran raises. *See* Acuna, Enrique I. 2017. Results of the return air raise silencer system upgrade at Totten Mine. These activities commonly produce sound levels greater than 90, 100, and 110 dB [A]. Noise levels of 95 dB approximate the sound of a motorcycle to the operator. In general, a sound level raised by 10 dB is perceived as twice as loud. *See, e.g.*, drill rig noise levels in, Ingram, D.K. 2005. Development and Development and Assessment of Controls Assessment of Controls Session Session - Surface Drill Rigs. Mining Hearing Loss Prevention Workshop June 21-22, 2005. CDC, NIOSH; *and see* Noise database - Noise Nav 1.8 - Pointed to by Centers for Disease Control and Prevention web page titled, What Noises Cause Hearing Loss? for A-weighted sound levels associated with certain logging and mining equipment.

These activities are not only extremely loud, but also generate significant low-frequency noise. Low-frequency noises stand out in wilderness settings such as the Boundary Waters, where the dominant sounds, such as wind in the trees, bird song, and water action, tend to be high-frequency in nature (exceptions include the booming of lake ice, and the rumble of thunder,

both of which are highly note-worthy to the human ear). Low-frequency noises also stand out because they lose less energy, or suffer less attenuation over long distances than high-frequency sounds, i.e., they can be heard at greater distances, which is another way of saying that low-frequency sounds are louder than high-frequency sounds when measured at the same distance. *See* Schmidt, W.B. The analysis and protection of the natural soundscape in National Parks.

Humans are fairly good at detecting low-frequency sounds, which compounds with low-frequency sounds' rarity in nature and their lower attenuation rate, to mean that they have extremely significant yet often underappreciated implications for assessing the significance of such sounds on the wilderness environment and people's use and enjoyment of it for recreation and relaxation. Furthermore, the typical assessment of the significance of noise relies solely on comparison with background noise levels in dB[A], or A-weighted sound measurement. The A-weighting results in measured dB at 20 Hz being reduced by 50.5 dB; at 25 Hz the measured dB is reduced by 44.7. In short dB[A] filters out - i.e., does not register or measure - low-frequency but still human-audible range noise, particularly in the frequency range of 20 to 63 Hz. In comparison, C-weighted measurement of sound levels filters out less of the low-frequency sound. *See* Schmidt, W.B. at p. 13.

The Draft EA relies upon sound measurements and comparisons in dB[A] as the "commonly used unit" for measuring sound. *See* Draft EA at p. 155. Assessing low-frequency sound and its negative impacts on wilderness character and people's enjoyment of it for recreation and relaxation, however, is not a common practice, and using the A-weighted scale improperly understates the volume, distinctiveness, and unnatural character of low-frequency industrial sounds in a wilderness setting.

The Draft EA fails to consider that noise effects from timber harvest and mineral development and prospecting would have significant negative cumulative impacts on the Boundary Waters and the experience of its wilderness character by humans. In addition, we could find no consideration given to the additional noise effects from additional truck traffic from the designation and marketing of phase I of the Border-to-Border Off-Road Truck touring route, or of phase II (establishments of loops extending outward from the trunk route) of the Border-to-Border trail, on noise in the project area and in the Boundary Waters. *See* Minnesota DNR. Border-to-Border Touring Route Final Preferred Draft Alignment Map #7. Due to the inadequate cumulative effects analysis, the reliance upon A-weighted sound comparisons which understate the potential of actions to have audible low-frequency noise impacts on wilderness character, and the omission of significant traffic noise-producing projects in and around the project area, the Draft EA's assessment of the potential for significant environmental effects from noise is deeply flawed. Because the potential for significant environmental effects from noise is clear, the Forest Service should prepare an EIS on the Tofte project that discloses the cumulative impacts of this project, together with others, on the Boundary Waters.

The Draft EA fails to disclose that measures that purport to protect the Boundary Waters from noise and scenic degradation will not do so. For example, the EA states that "The potential for illegal motorized intrusion into the Wilderness is minimized with landscape filters and operational standards and guidelines which limit construction of temporary roads within one-quarter mile of the BWCAW." Draft EA at 161. We could locate no operational standard or guideline that limited road construction near wilderness. And the only "limit" in a landscape filter reads: "Minimize construction of temporary roads within one-quarter mile of BWCAW boundary." Draft EA, Appendix B, at B-7. "Minimize" does not mean "eliminate." It is unclear how a recommendation that the Forest Service "minimize" construction -- without any guidance for how to do so, or what the baseline against which minimization will be weighed -- will prevent or lower illegal motorized vehicle use, or even reduce construction. The development and designation of an ORV truck touring route through the project area should have heightened concerns and led to more thorough analysis and specific, effective guidance.

2. Non-Native Invasive Species Introductions, Infestations, and Spread

As with noise, the Tofte Landscape Project, proposed mineral development and prospecting, and the designation and marketing of new ORV routes through the Superior National Forest and the project area will lead to the establishment and spread of new infestations of non-native invasive species (NNIS) such as European and Asian earthworms and any on a long list of NNIS plants. Invasive non-native earthworms can have indirect effects on Regional Forester Sensitive Species (RFSS) by causing the rapid disappearance of the soil O (duff) layer, in which many native trees and herbaceous layer plants are adapted to germinate. Accordingly, earthworm invasion can indirectly lead to the decline and extirpation of some RFSS plant species. In areas with many lakes, earthworms may already be present, but logging equipment and ORVs/ATVs are high-risk vectors for spreading invasive non-native earthworms into areas of forest far from lakes, as earthworm eggs or cocoons hitch rides on vehicle tires and underbodies. *See* Hale, C.M. PERSPECTIVE Evidence for human-mediated dispersal of exotic earthworms- support for exploring strategies to limit further spread. Molecular Ecology. 2008-17, 1165-1169; Hale, C.M. Prevention and Early Detection of Asian Earthworms and Reducing the Spread of European Earthworms. Project Abstract, 2012-12-30. Unlike NNIS plant infestations, non-native earthworm infestations are progressive and essentially impossible to eradicate. Both the project area and areas proposed for mineral development and prospecting abut the Boundary Waters wilderness border. *See* Frelich, L.E., et al. Earthworm invasion into previously earthworm-free temperate and boreal forests. J. Biol. Invasions. 2006 8, 1235-1245; Wagner, W.H., Minnesota DNR Rare Species Guide, *Botrychium mormo*.

Whether plants or earthworms or both, NNIS infestations created and spread due to the Tofte Landscape Plan, proposed designation and marketing of the Border-to-Border OHV touring route, and the proposed mineral development and prospecting activities just to the west of the project area present an additive and cumulative increased risk of spread directly into the

wilderness. Seeds of NNIS plants, and the eggs of earthworms, are prone to being picked up along roadways and carried by vehicles to Boundary Waters entry points and parking areas, where Boundary Waters visitors, or northward-flowing streams, or the movement of wildlife will further spread the NNIS into the wilderness. The spread of NNIS to and across the southern wilderness border from proposed mineral prospecting and development, and from the proposed action's EIP, would have cumulative and negative significant effects on the Boundary Waters.

3. Designated Trout Streams and Tributaries in the Rainy River-Headwaters

Degradation of cold-water aquatic resources in the project area as a result of the proposed action's EIP would also degrade those resources downstream, where they flow into the Boundary Waters. Any degradation of waters flowing into the Boundary Waters would be a significant effect, and conflict with Congressional direction to the USFS to maintain high water quality in the Boundary Waters. *See* Boundary Waters Canoe Area Wilderness Act of 1978, Public Law 95-495, Sec. 2. Any subsequently prepared NEPA document should address this omission. Because timber harvest and other vegetation management practices have the potential to cause significant environmental effects, alone or in conjunction with the effects of global warming, an EIS must be prepared. One alternative analyzed in the EIS should include specific requirements for wider riparian buffers and the prohibition on reduction of canopy closure within the RMZ, in order to insulate cold-water streams including MN DNR-designated trout streams and their tributaries, from increased insolation, and from warmer stream temperatures.

D. The Forest Service Must Take a Hard Look at the Impacts of "Temporary" Roads, including the Potential for Illegal Motor Vehicle Use on "Decommissioned" Routes.

The Tofte project will include the construction of up to 150 miles of temporary road. The EA labels the impacts from road construction and use as "temporary" because "all of these activities would be temporary and temporary roads would be decommissioned upon the completion of management." Draft EA at 95. For example, the EA states that "changes in density from temporary roads as a result of the [proposed action] would be temporary because the roads would be decommissioned after management is complete." *Id*. at 112. *See also id*. at 113 ("By placing temporary roads in areas where they minimize resource damage … and ensuring they are stabilized and decommissioned post-management ..., effects from temporary roads to water resources would be minimized."); *id*. at 143 (alleging that impacts of road construction in semi-primitive non-motorized areas would be temporary, and there would be no change in recreation opportunity spectrum because "[t]emporary roads would be decommissioned").

The EA states that "[m]onitoring ... indicates temporary roads can be successfully decommissioned," citing a "Forest-wide road decommissioning summary report." Draft EA at 113; *see also id*. at 161 ("The Forest-wide road decommissioning summary report ... shows that within ... eight years after decommissioning, temporary roads are grown in and access is very

difficult."). But that report is more nuanced, indicating instead that "[o]ver 80% of the projects have been successful in preventing motorized recreation travel." Superior NF, Snap Shot of Forest Wide Road Decommissioning Projects Monitoring (no date), at 1, attached as Ex. 20. This indicates, conversely, that up to 20% of projects have *failed* to prevent illegal and damaging motor vehicle travel on supposedly closed routes. For the Tofte project, that could mean ineffective closures on up to 30 miles (of 150 miles) of "temporary" roads, with long-term impacts due to increased road density, noise, damage to soil and hydrology, and continued spread of non-native invasive plant species. The Draft EA fails to address these impacts, violating NEPA's "hard look" mandate.

The EA and the monitoring report also conflict concerning the potential impacts of temporary road construction on non-native invasive species. The EA states that "[n]on-native invasive plant species would be likely to spread along the sides of *some* of the new upland road construction in the analysis area." Draft EA at 128 (emphasis added). The word "some" appears to be a misrepresentation because the monitoring report concludes that such noxious weeds "have become established during the initial ground disturbance stages of reclamation work (75% of the roads in recent contract)." Snap Shot of Forest Wide Road Decommissioning Projects Monitoring (Ex. 20), at 1. The spread of non-native invasives on three-quarters of routes is far more than "some." Any subsequent NEPA document must address the fact that non-native invasives are likely to gain a foothold along the vast majority of 150 miles of temporary routes constructed for the project.

E. The Forest Service Must Take a Hard Look at Cumulative Impacts.

NEPA's implementing regulations require that agencies consider the cumulative impacts of the action under consideration, and define cumulative impacts as "the incremental impact[s] of the action when added to other past, present, and reasonably foreseeable future actions." 40 C.F.R. § 1508.7.

Federal case law and agency guidance require the Forest Service to consider a proposal's cumulative effect, even if the agency has not approved that action, because agencies must review impacts when they are "reasonably foreseeable," not when they are "absolutely certain." "[P]rojects need not be finalized before they are reasonably foreseeable." *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1078-79 (9th Cir. 2011). "NEPA requires that an EIS engage in reasonable forecasting. Because speculation is . . . implicit in NEPA, [ ] we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as crystal ball inquiry." *Selkirk Conservation Alliance v. Forsgren*, 336 F.3d 944, 962 (9th Cir. 2003) (internal quotation marks and citation omitted).

As the Environmental Protection Agency also has concluded, "reasonably foreseeable future actions need to be considered even if they are not specific proposals." EPA, *Consideration of Cumulative Impact Analysis in EPA Review of NEPA Documents*, Office of Federal Activities,

12-13 (May 1999), available at https://www.epa.gov/sites/production/files/2014-08/documents/cumulative.pdf (last viewed July 16, 2021). "It is not appropriate to defer consideration of cumulative impacts to a future date when meaningful consideration can be given now." *Envtl. Prot. Info. Ctr. v. U.S. Forest Serv.*, 451 F.3d 1005, 1014 (9th Cir. 2006) (internal quotation marks and citation omitted)."

The Tofte Project will occur directly adjacent to, and have impacts on, the Boundary Waters Canoe Area Wilderness and the watersheds that feed the area. For example, as noted above in IV. A., the western end of the Tofte Ranger District is within the Rainy-River Headwaters, and dozens, if not scores, of streams and rivers flow into the Boundary Waters Wilderness. Some of those are designated by the Minnesota DNR as trout streams, or designated trout stream tributaries. *See* Save the Boundary Waters, Map, Selected Water Features within Proposed Federal Withdrawal Boundary (July 2017), attached as Ex. 21.

The Boundary Waters Wilderness currently faces unprecedented harm from several proposed sulfide-ore copper mine development and prospecting, which threatens the Boundary Waters and its watershed with pollution, and the effects of conversion of natural landscapes to industrial mining, including increased traffic, increased and cumulatively significant noise disturbance in the wilderness, increased and significant NNIS infestation and spread, and other impacts. As discussed in more detail above in IV. C., mineral development and prospecting activities are proposed immediately adjacent to the Boundary Waters and within a dozen miles or so of the western boundary of the Tofte Project. *See* Save the Boundary Waters, Map, Active Metallic Mineral Interests in the Rainy River Drainage Basin (Dec. 2014) (displaying, among other things, metallic mineral prospecting permits impacting lands within the Tofte Ranger District), attached as Ex. 22. Because of the potential for traffic, noise, and air and water pollution from the Tofte Project to impact the Boundary Waters Wilderness, any subsequently proposed NEPA document must address the potential for cumulative impacts of the mines and mineral prospecting together with the Tofte project.

V. THE FOREST SERVICE MUST ANALYZE A RANGE OF REASONABLE ALTERNATIVES.

In taking the "hard look" at impacts that NEPA requires, an EA must "study, develop, and describe" reasonable alternatives to the proposed action. 42 U.S.C. § 4332(2)(C) & (E); 40 C.F.R. § 1508.9(b) (an EA "[s]hall include brief discussions ... of alternatives"). This mandate extends to EAs as well as EISs. "A properly-drafted EA must include a discussion of appropriate alternatives to the proposed project." *Davis v. Mineta*, 302 F.3d 1104, 1120 (10th Cir. 2002) (granting injunction where EA failed to consider reasonable alternatives). This alternatives analysis "is at the heart of the NEPA process, and is 'operative even if the agency finds no significant environmental impact.'" *Diné Citizens Against Ruining Our Env't v. Klein*, 747 F. Supp. 2d 1234, 1254 (D. Colo. 2010) (quoting *Greater Yellowstone Coal. v. Flowers*, 359 F.3d

1257, 1277 (10th Cir. 2004)). *See also W. Watersheds Project v. Abbey*, 719 F.3d 1035, 1050 (9th Cir. 2013) (in preparing EA, "an agency must still give full and meaningful consideration to *all* reasonable alternatives" (emphasis added) (internal quotation and citation omitted)); 40 C.F.R. § 1502.14 (describing alternatives analysis as the "heart of the environmental impact statement"). Reasonable alternatives must be analyzed for an EA even where a FONSI is issued because "nonsignificant impact does not equal no impact. Thus, if an even less harmful alternative is feasible, it ought to be considered." *Ayers v. Espy*, 873 F. Supp. 455, 473 (D. Colo. 1994) (internal citation omitted). When an agency considers reasonable alternatives, it "ensures that it has considered all possible approaches to, and potential environmental impacts of, a particular project; as a result, NEPA ensures that the most intelligent, optimally beneficial decision will ultimately be made." *Wilderness Soc'y v. Wisely*, 524 F. Supp. 2d 1285, 1309 (D. Colo. 2007) (quotations & citation omitted).

In determining whether an alternative is "reasonable," and thus requires detailed analysis, courts look to two guideposts: "First, when considering agency actions taken pursuant to a statute, an alternative is reasonable only if it falls within the agency's statutory mandate. Second, reasonableness is judged with reference to an agency's objectives for a particular project." *Diné Citizens Against Ruining Our Env't*, 747 F. Supp. 2d at 1255 (quoting *New Mexico ex rel. Richardson*, 565 F.3d at 709). Any alternative that is unreasonably excluded will invalidate the NEPA analysis. "The existence of a viable but unexamined alternative renders an alternatives analysis, and the EA which relies upon it, inadequate." *Id.* at 1256. The agency's obligation to consider reasonable alternatives applies to citizen-proposed alternatives. *See Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin*., 538 F.3d 1172, 1217-19 (9th Cir. 2008) (finding EA deficient, in part, for failing to evaluate a specific proposal submitted by petitioner); *Colo. Envtl. Coal. v. Dombeck*, 185 F.3d 1162, 1171 (10th Cir. 1999) (agency's "[h]ard look" analysis should utilize "*public comment* and the best available scientific information") (emphasis added).

Courts hold that an alternative may not be disregarded merely because it does not offer a complete solution to the problem. *Natural Resources Defense Council, Inc. v. Morton*, 458 F.2d 827, 836 (D.C. Cir. 1972). Even if additional alternatives would not fully achieve the project's purpose and need, NEPA "does not permit the agency to eliminate from discussion or consideration a whole range of alternatives, merely because they would achieve only some of the purposes of a multipurpose project." *Town of Matthews v. U.S. Dep't. of Transp.*, 527 F. Supp. 1055 (W.D. N.C. 1981). If a different action alternative "would only partly meet the goals of the project, this may allow the decision maker to conclude that meeting part of the goal with less environmental impact may be worth the tradeoff with a preferred alternative that has greater environmental impact." *North Buckhead Civic Ass'n v. Skinner*, 903 F.2d 1533, 1542 (11th Cir. 1990).

The courts also require that an agency adequately and explicitly explain in the EA any decision to eliminate an alternative from further study. *See Wilderness Soc'y*, 524 F. Supp. 2d at 1309 (holding EA for agency decision to offer oil and gas leases violated NEPA because it failed to discuss the reasons for eliminating a "no surface occupancy" alternative); *Ayers*, 873 F. Supp. at 468, 473.

As an initial matter, we find it inconceivable that the approach proposed by the Forest Service, despite its flexibility and inchoate nature, is the *only* reasonable way to address the stated purpose and need. The Forest Service must analyze in detail *all* reasonable alternatives.

A. The Forest Service Should Consider Alternatives That Limit The Duration, Scope, and Intensity Of The Proposal.

The Tofte Project uses a novel approach to planning. Condition-based analysis is intended to allow the Forest Service to retain maximum flexibility to change its intended forest management activities on a biennial, annual or shorter timeframe, based on field visits to the targeted stands shortly before they are meant to be treated. The approach is to provide constant edits to site-specific locations and methods for activities such as timber harvest, road construction and fire management, and to allow final management to be determined during implementation over the 15-year lifespan of the Project. The Forest Service has stated that the traditional approach has failed to improve many of the desired forest conditions.

We believe this new approach will fail on several grounds. This is due in part to the fact that the traditional approach has suffered from more than 20 years of staff reductions, beginning at least with the shift to roving teams of specialists, called enterprise teams, which must serve multiple National Forests, and therefore are based remotely from most or all of those Forests. The change to enterprise teams allowed some Forests and Ranger Districts to continue a semblance of full operations despite growing vacancies in many of the staff positions formerly located on the Forests and Districts. The reduction in staff corresponds with and accounts for some of the observed reduction in availability of staff time to conduct the traditional practices such as on-the-ground stand inventories to update stand inventory databases kept by each Forest. The remainder of reduction in staff time can be chalked up to the dominating influence of fighting fires across the National Forest System. Now, the forest stand inventories are filled with data of poor and declining quality. The core problem with the "Landscape Project" concept is that it will not alleviate the need for staff, staff time, and resources to react and apply the filters, and adjust the EIP, to all the instances in which it will be discovered, upon reaching Stand X, Y, or Z, that conditions there are not as they were expected to be. Expecting the same deficient Forest staffing levels and time to be more capable of appropriately managing the Forest, once equipped with maximum flexibility, is unwarranted and unwise.

Most importantly, the new approach fails to fully inform the public during the initial review process, by providing them with little more than broad landscape level goals and objectives,

rather than providing the "hard look" analysis of cumulative impacts, all prudent alternatives, and reasonable mitigation strategies.

In looking at the geographic scope (the entire Tofte Ranger District) and duration of the planning period (15 years), one can imagine the adjustments to the project, due to changes foreseen and unforeseen (wildfires, windstorms, insect and disease losses, and the revelation of faulty data) in the forest, that will inevitably occur. If however, the project area were greatly reduced in scope, and the planning period were shortened to perhaps 7 or 8 years, the level of change would be significantly reduced, and the Forest Service could offer the public and cooperators a more detailed and precise list of stands, more solid data as to the composition and condition of those stands, and how they would be treated during the planning period. This would provide everyone with more confidence that the prescriptions being considered would be appropriate for the stand conditions, would meet landscape level needs, and be within the capabilities of the Forest and its current complement of excellent but overly busy staff.

In essence, the longer the timeline horizon, the larger the project area, the greater the risk of change and uncertainty. We encourage the Forest to consider alternatives that limit the duration, scope, and intensity of the Tofte Project. Such an approach will achieve part of the project purpose and need while better informing the public and the decisionmaker about project impacts.

B. The Forest Service Should Consider An Alternative That Limits Logging And Road Construction Near The Boundary Waters Canoe Area Wilderness, And Within Areas Managed For Semi-Primitive Motorized Recreation.

Areas designated as Wilderness or Semi-Primitive Recreational areas come with certain public recreational user expectations. One being seclusion - being relatively free from the intrusions of the outside world. There are two areas within the project area that are within the Management Area (MA) Semi-Primitive Motorized Recreation. These areas are among those which the Forest has designated in accordance with Section 18(a) of the Boundary Waters Canoe Area Wilderness Act. Section 18(a) directed the Secretary of Agriculture "to expedite and intensify the program of dispersed outdoor recreation development on the Superior National Forest outside the [Boundary Waters]" to meet the need for "remote campsites on lightly developed lakes" to replace the sizeable amount of dispersed camping in a scenic setting on lakes open to motorized recreation, recreational opportunity which was greatly reduced inside of the Boundary Waters by the 1978 Act. *See* Boundary Waters Canoe Area Wilderness Act of 1978, Public Law 95-495, Sec. 18.

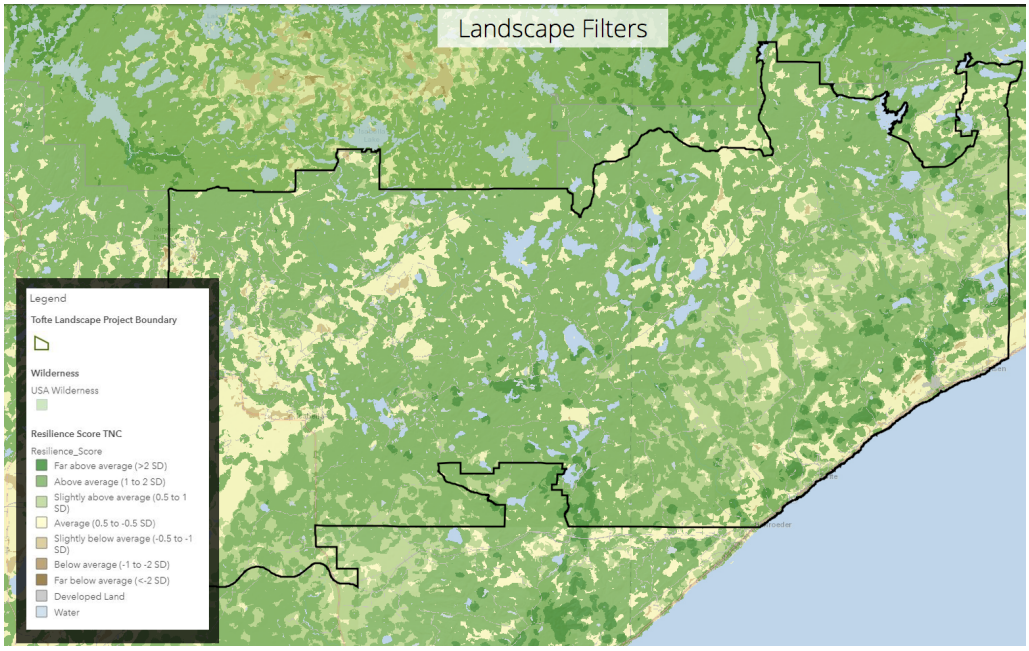
The heavy timber harvest proposed in Tofte Landscape Project in the Lost-Frear-Timber-Elbow-Finger Lakes area would significantly degrade the remoteness and the lightly-developed and existing scenic aspects of the area's existing semi-primitive motorized water-access camping and recreational assets. The proposed heavy timber harvest would also greatly reduce the acreage of and fragment the most compact of the two existing largest upland

forest patches remaining on the forest. In addition, the entirety of the Lost-Frear-Timber-Elbow-Finger Lakes area proposed to have harvest along the shorelines is located in T61 R6 and T61 R5; both townships are entirely within area defined by the Shipstead-Newton-Nolan Act, and therefore the shorelines of those lakes within 400 feet of water is withdrawn from timber harvest in order to preserve the scenic views of those boating and on the shoreline. *See* 2004 Superior National Forest Forest Plan, Appendix D, p. 1. We suggest that the Forest Service consider an alternative that drops all proposed timber harvest in the Lost-Frear-Timber-Elbow-Finger Lakes area in order to comply with the Shipstead-Newton-Nolan Act and the direction in the 2004 Forest Plan regarding classification of forest for timber production, and to avoid the negative environmental effects detailed above.

We suggest that the Forest Service establish strict boundaries around the Wilderness, intended to buffer visitors from the sights and sounds of mechanical logging operations, and other similar activities that might detract from the recreational experience. This might also include a seasonal restriction, where logging or similar activities are restricted to winter-only, when user numbers are lower, in an effort to limit the number of Wilderness users that might be exposed to the intrusion of loud noises and other disturbances.

Similar considerations should be applied to road construction/decommissioning. Every effort should be made to limit heavy equipment operation to periods of time when visitor use is at its height. This can be stated in the planning process, and incorporated into select timber sale and roads construction/decommissioning contracts, for projects that might foreseeably intrude on the solitude within the Wilderness and Semi-Primitive Motorized Recreation areas.

In addition, the Forest Service should consider an alternative that removes from the list and map of stands to be treated, all those stands in and adjacent to the nascent corridors shown in The Nature Conservancy's modeling of climate resiliency. See below, from the Tofte Project story map.



Specifically, all stands modeled to have far above average climate resiliency, as well as the "above average" stands that connect and buffer them.

C. The Forest Service Should Consider an Alternative that Imposes Wider Riparian Management Zones and Bars Timber Harvest in Those Zones, As Well As Within 400 Feet of the Shoreline of Lakes and Both Banks of All Navigable Rivers and Streams Within the Area Defined by the Shipstead-Newton-Nolan Act

One alternative that should be analyzed in any subsequently prepared NEPA document should include specific requirements for 200-foot wide riparian buffers and RMZs and the prohibition of all timber harvest within those RMZs, in order to better insulate cold-water resources, including MN DNR-designated trout streams and their tributaries, from increased insolation, and from warmer stream temperatures. This alternative also should include the firm prohibition within the zone identified by Congress in the Shipstead-Newton-Nolan Act, i.e., within 400-feet of all banks and shoreline of navigable waters found in and north of the line extending westward from Lake Superior, and running between the Townships designated with T61N, and those designated T60N. See NMW. Map, Shipstead-Newton-Nolan Act (Feb. 2018), attached as Ex. 23.

D. The Forest Service Should Consider an Alternative that Bars for the Duration of the Project All Timber Harvest Intended to Create Young Forest Within Mature-and-Older Forest Blocks >1,000 Acres and, Similarly, Bars Timber Harvest Adjacent to Large Mature-and-Older Forest Blocks >1,000 Acres, Which Would Serve to Maintain the Gerrymandered Character of Those Forest Blocks.

Barring the fragmentation of existing large forest blocks on the Tofte Ranger District, and instead focusing timber harvest on the consolidation of existing fragmented areas, would better serve the objective of creating new large young forest patches (future mature-and-older large forest patches), because it would accomplish that objective without damaging the habitat of goshawk and other interior forest species. Combining all large such harvests with subsequent prescribed fire would better serve to create high-quality moose habitat by creating larger areas of young forest with improved sanitization and lower densities of white-tailed deer, ticks, brainworm, and giant liver fluke within the term of the Tofte Project.

CONCLUSION

Because of the scale, duration, and novelty of the Tofte Project, and its impacts to large intact forest patches, lynx, and moose, the Forest Service should immediately begin preparation of an EIS. Any EIS should address an analysis of site specific and cumulative impacts, a hard look at all reasonable alternatives.

Thank you for your attention to this matter. We look forward to reviewing any subsequently prepared NEPA document.

Sincerely,

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TABLE OF EXHIBITS

Exhibit 14. B. Law & W. Moomaw, Keeping trees in the ground where they are already growing is an effective low-tech way to slow climate change, The Conversation (Feb. 23, 2021)

Exhibit 15. Law & M.E. Harmon, Forest sector carbon management, measurement and verification, and discussion of policy related to mitigation and adaptation of forests to climate change. Carbon Management (2011) 2(1)

Exhibit 16. M. Harmon, Have product substitution carbon benefits been overestimated? A sensitivity analysis of key assumptions, Environmental Research Letters (2019)

Exhibit 17. Bureau of Land Management, Western Oregon Proposed RMP Final EIS (2009) (excerpts)

Exhibit 18. Office of Surface Mining & Bureau of Land Management, Environmental Assessment, Colowyo Coal Mine Collom Permit Expansion Area Project (Jan. 2016) (excerpts)

Exhibit 19. U.S. Forest Service, Supplemental Final Environmental Impact Statement, Federal Coal Lease Modifications COC-1362 & COC-67232 (Aug. 2017) (excerpts)

Exhibit 20. Superior NF, Snap Shot of Forest Wide Road Decommissioning Projects Monitoring (no date)

Exhibit 21. Save the Boundary Waters, Map, Selected Water Features within Proposed Federal Withdrawal Boundary (July 2017)

Exhibit 22. Save the Boundary Waters, Map, Active Metallic Mineral Interests in the Rainy River Drainage Basin (Dec. 2014)

Exhibit 23. NMW. Map, Shipstead-Newton-Nolan Act (Feb. 2018)