Eubanks & Associates, PLLC
LAW FOR THE PUBLIC INTEREST

(b) (6)
By appointment only

June 10, 2024

Via Email
Objection Reviewing Officer,
USDA Forest Service, Eastern Region,
Attn: Administrative Review Staff,
626 E. Wisconsin Avenue
Milwaukee, WI 53202
objections-eastern-region@usda.gov

Re: Formal Objections to Houston South Vegetation Management & Restoration Project, and Accompanying Environmental Analysis[1]

Reviewing Officer,

Pursuant to 36 C.F.R. § 218.8, we hereby submit formal objections to the Houston South Vegetation Management and Restoration Project Supplement ("Project"), including the U.S. Forest Service's ("Service's) environmental analysis of the Project's effects under the National Environmental Policy Act ("NEPA"), 42 U.S.C. §§ 4321-4347. These objections are submitted on behalf of the following commentors, which we refer to collectively as "the Coalition":

Monroe County Board of Commissioners
(b) (6)

Hoosier Environmental Council
(b) (6)

Indiana Forest Alliance
(b) (6)

Friends of Lake Monroe[2]
(b) (6)

[1] The Houston South Vegetation Management & Restoration Project is the "name of the proposed project." 36 C.F.R. § 28.8(d)(4). The "name and title of the responsible official" is Christopher Thornton, District Ranger, and "the name(s) of the national forest(s) and/or ranger district(s) on which the proposed project will be implemented" are the Hoosier National Forest, Brownstown Ranger District.

[2] Each of these objectors submitted timely and detailed comments on the Draft Supplemental EA. Per 36 C.F.R. § 218.8(b)(4), those comments are incorporated here in their entirety by reference.

The Coalition's members and constituents routinely utilize the Hoosier National Forest (and nearby areas, such as Lake Monroe), including the areas affected by the Project for recreational, inspirational, spiritual, scientific, educational, and drinking water purposes. As evidenced by the declarations submitted in litigation over this same Project, those interests will be irreparably harmed if the Project is implemented as currently designed. For this reason, the Coalition is committed to safeguarding the ecological integrity of the areas affected by the Project. To the extent the Service is willing to explore mutually satisfactory solutions for avoiding and/or mitigating the Project's deleterious effects, the Coalition stands ready to discuss a non-adversarial resolution with the agency. If, however, the Service remains committed to forcing through this wrong-headed logging project—and doing so without even preparing an Environmental Impact Statement ("EIS") under NEPA—the Coalition also stands ready to utilize all available tools for enforcing federal law, including further litigation in federal court.

DISCUSSION

I. THE SERVICE ARBITRARILY SUPPRESSED PUBLIC PARTICIPATION DURING THE PROJECT'S PLANNING PERIOD

The Service published the draft Supplemental Environmental Assessment ("Draft SEA" or "Draft") for the Project in October 2023. When it did, the Service invited the public to comment on the Draft, but only allotted 30 days for them to do so. Before the comment period expired, the Service rejected the public's request to extend that time period by an additional 30 days, citing the agency's regulation, 36 C.F.R. § 218.25(a)(1)(iv), which provides that "[t]he time period for the opportunity to comment on a proposed project of activity to be documented with an environmental assessment shall not be extended."

In their comments, the Coalition explained that such a truncated comment period prejudiced them and other members of the public by foreclosing consultation with subject-matter experts regarding affected resources. *See* Comments at 2-4 ("[T]he truncated comment window forced us to prepare these comments quickly and with substantially less capacity to provide a significant volume of peer reviewed literature that rebuts the simplistic assertions and justifications set forth in the Draft SEA.").

Further, the Coalition explained that the Service's reliance on 36 C.F.R. § 218.25(a)(1)(iv) to deny any extension is misplaced because "the statute upon which this regulation was based is no longer in existence . . . ." Comments at 2. This means the "Service's decision not to extend a comment period is discretionary rather than mandated by statute[.]" *Id.* Indeed, as the Coalition pointed out, the Service routinely exercises its discretion to extend comment periods and, therefore, expand opportunities for public involvement and input. *See id.* at 3 & n.3 (collecting examples and guidance demonstrating the Service's discretion to extend public comment periods notwithstanding the agency's regulations).

In April 2024, the Service published the final Supplemental Environmental Assessment for the Project ("Final SEA"), a draft Decision Notice ("Notice"), and a draft Finding of No Significant Impacts ("FONSI"). Along with those documents the Service also prepared a summary of and the agency's responses to public comments concerning the Project. *See* U.S.

Forest Service, *Consideration of Comments: Draft Supplemental Environmental Assessment (SEA) for the Houston South Vegetation Management and Restoration Project* at 1 (Apr. 2024) [hereinafter "Comment Summary"]. There, the Service acknowledged the Coalition's comments about the arbitrarily abridged comment period, but refused to engage with the reasoning of those comments whatsoever. Instead, the Service merely regurgitated the language of 36 C.F.R. § 218.25(a)(1)(iv). *See id.* at 1-2.

That is not enough. Under the Administrative Procedure Act ("APA"), federal agencies exercising their discretionary authority have a duty to "articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made." *Motor Vehicle Mfrs. Assoc. v. State Farm Mut. Auto. Co.*, 463 U.S. 29, 43 (1983) (citations and quotation marks omitted); *see also* 5 U.S.C. § 553(c) (providing the public with "an opportunity to participate in the rule making through submission of written data, views, or arguments," and compelling agencies to "consider[]" those submissions). Here, however, there is no way for a reviewing court to ascertain why the Service refused to foster meaningful public participation. The agency's own past practice demonstrates that the Service does not view 36 C.F.R. § 218.25(a)(1)(iv) as an inviolate bar against such extensions. Thus, its unexplained citation to that provision does *not* "articulate a satisfactory explanation for its action." *State Farm*, 463 U.S. at 43. Without this explanation, the Service's decision cannot be sustained under the APA. *Int'l Snowmobile Mfrs. Ass'n v. Norton*, 304 F. Supp. 2d 1278 1292-93 (D. Wyo. 2004) ("By giving limited comment periods and providing the final implementing regulations the day after the comment period has ended, the [agency] has failed to provide meaningful participation in the rulemaking process to the public under the APA."); *Dubois v. U.S. Dep't of Agric.*, 102 F.3d 1273, 1288 (1st Cir. 1996) (setting aside NEPA analysis in which the Forest Service "did not respond to these comments at all" because "[t]he agency did not in any way explain its reasoning or provide a factual basis for its" decision). The Service's refusal to foster meaningful public comments by insisting upon an arbitrary comment deadline—and refusing reasonable, factually and legally supported requests for extensions—is capricious and unlawful.

II. THE FOREST PLAN IS STALE; IT MUST BE REVISED BEFORE PROJECT IMPLEMENTATION

According to the Service, the Project "is based on" the Hoosier National Forest Land and Resource Management Plan ("Forest Plan"), promulgated in 2006. Final SEA at 4. As such, the Service's analysis of the Project's environmental effects tiers to that document repeatedly to shortcut its analysis of the Project's likely effects. *E.g.*, *id.* at 3.

The Coalition's comments pointed out two related problems with relying on analyses completed nearly twenty years ago. First, the Forest Plan and, by extension, the environmental analysis prepared in support of it, is now expired. *See* 16 U.S.C. § 1604(f)(5) (mandating that "[p]lans developed in accordance with this section shall . . . be revised from time to time when the Secretary finds conditions in a unit have significantly changed, but at least every fifteen years"). Second, the Forest Plan is woefully outdated and based on principles and facts that are no longer accurate or accepted in the scientific community. Comments at 4-5 (discussing advances in ecological science and developments since 2006 relevant to the Project like the Lake

Monroe Watershed Management Plan). For these reasons, the Coalition asked the Service to update the Forest Plan before implementing the Project.

The Service declined to update the Forest Plan, explaining that revision is unlikely to occur until "several years into the future." Comment Summary at 5. Relying on language from an appropriations bill that was not enacted into law, the Service asserts that the Forest Plan "does not expire after any specific time period from when it is adopted," "provided that the Secretary is working in good faith to complete the plan revision." *Id.* at 5-6.

The Service's response misses the point. The Coalition's concern here is with the validity of assumptions underlying the Forest Plan that were made without the benefit of more recent scientific research regarding forest management, not the number of days since the Plan was promulgated. Courts routinely set aside NEPA analyses predicated on outdated or "stale" information. *W. Watersheds Project v. Abbey*, 719 F.3d 1035, 1049-53 (9th Cir. 2013) (setting aside a grazing allotment analysis under NEPA for failure to consider a no grazing option, in part because of stale information relied on by the agency); *see also Blue Mtns. Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1214 (9th Cir. 1998) (tiering not appropriate where programmatic EIS did not address significant new information concerning changes to forest due to fire); *Pit River Tribe v. U.S. Forest Serv.*, 469 F.3d 768, 783 (9th Cir. 2006) (agency may not rely on programmatic EIS that "does not adequately address the potential impacts of" the site-specific action).

The Service should reconsider its decision to forgo revising the Forest Plan before Project implementation. Pressing forward in the absence of current information risks doing far more harm to the ecological integrity of the Forest and leaves the Project vulnerable to legal challenge.

III. THE ALLEGED PURPOSE AND NEED FOR THE PROJECT IS ARBITRARY AND/OR LACKS SUPPORTING RECORD EVIDENCE

Both the Draft and Final SEAs state that the Project's "purpose" is to "promote tree growth, reduce insect and disease levels and move the landscape toward desired conditions. It is also to increase the resiliency and structure of forested areas (stands) by restoring the composition, structure, pattern, and ecological processes necessary to make these ecosystems sustainable." Final SEA at 4. The Service says the Project is needed "to provide a mosaic of forest conditions dominated by hardwoods and restore dry hardwood forest ecosystems that have not experienced periodic disturbance similar to fire or other naturally occurring events." *Id.* at 9.

The Coalition's comments on the Draft outline several dispositive flaws lurking behind the Project's purported purpose and need that are narrowly designed to lead to but one solution—and indeed the only action alternative considered by the Service. Comments at 6-17. Those reasons, as well as the Service's responses (to the extent they exist), are discussed in further detail below.

A. The Service Still Has Not Identified Needs Within the Project Area

As a threshold matter, the Coalition noted that the actual areas of the Hoosier National Forest affected by the Project do not suffer from the conditions the Project is meant to address (i.e., alleged inferior tree-growth rates and outsized "insect and disease levels"). Comments at 6. In fact, the SEA does not provide *any* data or other evidence showing that tree growth is diminished in the Project area, or even identify the insects that the Project is meant to combat. *Id.* Nor does the SEA provide "any specific explanation as to how the Project will address and mitigate these purported problems in a manner that will result in measurable differences from baseline conditions." *Id.*

It is telling that the Service's cannot connect the Project's purpose and need to the actual resource conditions in the affected areas. The SEA itself explains that "[t]he need for the project is determined by comparing the current conditions to the desired conditions in the Forest Plan, and proposing activities that would move the area toward a more sustainable ecosystem." Final SEA at 4. Although the SEA discusses "current conditions," it does *not* indicate that tree growth is somehow declining in the Forest. Nor does the Final SEA "provide *any* information or data on the species of insects or insect activities in the Project area, let alone information or evidence demonstrating harmful activities caused by specific species of insects in the Project Area." Comments at 6.

The Service did not respond substantively to these issues. Instead, it merely states that the "Effects to Vegetation Report thoroughly explains the existing conditions and desired conditions of the Houston South project area." Comment Summary at 2.

B. Each of the "Needs" Identified by the Service Is a Red Herring That Falls Apart Upon Even Cursory Inspection

The "needs" identified by the Service lack *any* record support and/or are legally suspect for myriad reasons. *See* Comments at 7-17 (refuting in detail each of the various needs ostensibly animating the Project's design). Although the Coalition already devoted substantial time and space in their Comments addressing these issues, out of an abundance of caution, the Coalition briefly revisits below the laundry list of needs cited and the Service's subsequent responses (or lack thereof) to Coalition comments.

1. Tree Density, Insects, and Disease

The Coalition's comments questioned whether the massive clear-cutting operation envisioned by the Project is really necessary to "improv[e] forest health" here since thinning occurs naturally and artificial thinning may actually *increase* insect activity in some forests. Comments at 7-8 (quoting Draft SEA at 9). Indeed, the Service did not provide information about what it considers to be a healthy stand-density level such that the Service's assumptions about current forest conditions could be reviewed by ecologists or other experts. Without some objective metric for determining when a stand's density begins to impair "forest health," the Service's decisions about when and where to cut trees would be entirely discretionary ones. This

leaves the public with the perception that the Service is prioritizing the removal of lucrative crop trees over ecological health and forest resilience.

The Service's response in the Final SEA suggests this perception is well founded because the agency again refused to provide the data requested. Instead, it said it did not have to. *See* Comment Summary at 2 ("The Effects to Vegetation Report thoroughly explains the existing conditions and desired conditions of the Houston South project area."). This still leaves the public in the dark about what has necessitated this massive logging operation.

2. Oak Decline

The Coalition also questioned the sincerity of the Service's concern with combatting oak decline, a disease the Service now says affects ~10% of the Project area. *See* Comments at 8-9; Final SEA at 20-21. The Coalition pointed out that even though the Service claims thinning "trees in the infested areas would increase the vigor of the remaining trees," Final SEA at 20, it fails to mention that many of those infected areas will *not* be treated by the Project. *Id.* That is, despite this "new information" about the spread of oak decline, the Service has not changed the proposed treatment areas to respond to the alleged threat, which raises the question of whether fighting oak decline is mere pretext for logging rather than a genuine concern with forest health.

The Service states that oak decline is caused by an interaction between environmental stresses and fungal pests, and that new research (Dow et al. 2024) finds oak decline can be exacerbated by increased competition for resources that occurs in overly dense forest stands. However, this study does not state or conclude that oak decline can be exacerbated by increased competition for resources in dense forest stands. Furthermore, there is no statement as the Forest Service asserts that oak decline "was more often found in areas with higher stand densities," much less a statement that decreasing stand density will reduce the increased chances of mortality from oak decline. Rather, than stand density or fungal pathogens, the major factors we discern from this study that led to the onset of oak decline are the old ages of the trees affected and environmental stresses, in this case alternating dry June and wet March conditions followed by the 2012 drought. The Abstract for the Dow study states,

> We evaluated stand conditions, tested for the presence of *Phytophthora cinnamomi* (the fungal pathogen thought to cause oak decline), and collected tree cores from chestnut oak trees within diseased stands and nearby healthy stands. We found no evidence that *P. cinnamomi* was associated with mortality. Instead, our dendrochronological analysis suggests that a series of dry June conditions followed by wet March conditions weakened vulnerable trees, allowing the exceptional drought in 2012 to incite decline.[3]

The authors also state,

[3] Cameron Dow, James J. Jacobs, Michael R. Saunders, Philip Marshall, Michael A. Jenkins, A dendrochronological examination of a recent decline of chestnut oak across southern Indiana, Forest Ecology and Management, Volume 561, 2024, 121846, ISSN 0378-1127, https://doi.org/10.1016/j.foreco.2024.121846.

> We hypothesized that microsite conditions associated with lower water availability (upper slope positions and southernly aspects) will be associated with greater levels of decline in a species persisting on the most xeric portion of local environmental gradients (Kabrick et al., 2008, Camilo-Alves et al., 2013).

The Coalition is concerned about the environmental stressors of climate change, particularly the erratic weather patterns and drought that "incited" this decline. This is why we object to vegetative treatments of older hardwood stands in this project, that clear entire canopies, thin a third or more of stand densities to open up forests artificially to much more sunlight, and burn off the forest duff and litter layers. Because these actions will create much drier conditions that will exacerbate the climate stressors of drier summers and drought.

Furthermore, the Coalition finds the basis for such treatments in this case to be arbitrary. There is no evidence that suggests that oak decline, endemic to the central hardwood region (CHR) for millenia will not subside as the older oaks in these stands succumb to oak decline or die from other causes. Rather than killing all oaks, oak decline targets vulnerable oaks in the oldest age classes, creating gaps that allow more natural levels of sunlight into the forest and younger oaks and other trees to ascend into the canopy. The Forest Service has presented no evidence refuting this logical scenario. Instead of launching into vegetative treatments, the agency should monitor oak decline in the project area to gain a stronger understanding of how Indiana's chestnut oak uplands are responding to it.

Oaks have been surviving oak decline in unmanaged wild forests in eastern North America for thousands of years. According to Forest Service researchers, oak decline is

> a stress-mediated disease that results from the interactions of physiologically mature trees, abiotic and biotic stressors that alter carbohydrate physiology, and opportunistic fungal pathogens and inner bark-feeding insects. Symptoms include reduced radial growth and slow, progressive crown dieback. Decline occurs over several years or decades, ending in death of vulnerable trees.
>
> . . .
>
> The disease has regulated oak populations since oak species and interacting antagonists first appeared in the CHR, and that role continues to the present. (emphasis added)[4]

[4] Chapter 3 Oak Decline in Central Hardwood Forests: Frequency, Spatial Extent, and Scale, S. W. Oak (*) USDA Forest Service, Southern Region Forest Health Protection (retired), (b) (6) (b) (6) e-mail: (b) (6), M. A. Spetich USDA Forest Service, Southern Research Station , 100 Reserve Street , Hot Springs, AR 71902, USA e-mail: mspetich@fs.fed.us, R. S. Morin USDA Forest Service, Northern Research Station, Forest Inventory and Analysis, 11 Campus Blvd., Ste. 200 , Newtown Square , PA 19073, USA e-mail: rmorin@fs.fed.us, © Springer International Publishing Switzerland 2016 C.H. Greenberg, B.S. Collins (eds.), Natural Disturbances and Historic Range of Variation, Managing Forest Ecosystems 32, DOI 10.1007/978-3-319-21527-3_3

Put simply, the Service has not remotely (let alone convincingly) refuted the arguments set forth in the Coalition's comments calling into serious question the arbitrary, purported need to address oak decline through this Project in the action area.

3. Desired Conditions Prescribed by Forest Plan

Much of the Project will occur in part of the Forest called "Management Area 2.8." Final SEA at 8. The Service has defined a set of "desired future conditions" for this area that includes:

> [L]arge areas of old forests . . . different canopy levels and animal communities associated with vertically diverse, shade tolerant vegetation, as well as different successional stages of vegetation. . . . Habitat in these areas is best suited to hardwood forests. . . . Large trees with continuous canopy characterize much of this area.

2006 Forest Plan at 3-28.

The Coalition's comments pointed out that the Project will have the opposite effect. Comments at 10 ("[R]ather than mimicking natural succession of forests growing older and becoming more vertically diverse and uneven aged, the proposed logging is designed primarily to make the forest younger, less vertically diverse. and more even aged across the Project area."). The Final SEA does not explain why the Service cherry-picked certain "desired conditions" for Management Area 2.8 from the 2006 Forest Plan, while entirely ignoring other, equally (if not more) important "desired conditions" for this management area more conducive to natural forest conditions. Nor has the Service explained how that approach is consistent with the 2006 Forest Plan, NFMA, or the agency's own regulations. The Service should examine this issue and provide an explanation before Project implementation.

4. Early Successional Habitat

In their comments, the Coalition indicated and provided evidence of some three dozen wildlife openings in the Project area. Nevertheless, the Service continues to assert that there are zero acres of early successional habitat in the 0-9–year age class in the Project area. This assertion is a self-serving fiction. The DSEA Comment Response Summary states on page 10 that an inventory using HNF's "Common Stand Exam protocols version 1.1 . . . shows no stands in the 0-9–year age class in Management Area 2.8 of the Project Area" and that "Federal Energy Regulatory guidelines" require "woody vegetation" "to be routinely removed resulting in permanently open condition" in utility corridors. Comment Summary at 10. "Therefore, these rights-of-way are a different habitat type than 0–9-year-old forest." *Id.* The Service also states that "wildlife openings are not meant to contain trees, which is why they are not analyzed as a forest type." *Id.* at 11.

The facts are that there are more often than not young trees, usually thickets of them, in the 0-9–year age class in the 92 wildlife openings within the Project area. Furthermore, there are at least three 100-plus-foot wide utility corridors (for power and gas lines lines) running through the project area, where thickets of young trees and brush are the norm. FERC guidelines and

Forest Service policy may call for these trees to be bush hogged, or whipped or ground to chips regularly, but that does not keep new seedlings and saplings from emerging and filling in the openings in the interceding years before they are bushhogged, whipped, or ground up again.

This is a biological reality that makes these areas early successional forest habitat as much as any of the habitat that is recognized as such young forest, early successional habitat in Management Area 2.8 by the current Common Stand Exam. Indiana Forest Alliance bird surveys and breeding bird surveys have documented multiple early successional bird species in these early successional areas and occasionally in natural openings within the older forests in the Project area, the existence of which are evidently (and arbitrarily) not recognized by the current Common Stand Exam. In addition, approximately 40 acres of 0-9–year-old age class early successional habitat exists from the 2018 Buffalo Pike timber sale and hundreds of additional acres of such habitat exist on private land in the Project area.

In support of these contentions, the Coalition has attached 14 pictures of early successional habitat from four locations and a map and excel file providing the coordinates for those locations. Three of these locations are within Management Area 2.8 and the Project area. A fourth location is a gas line running through Management Area 2.8 along the Starnes Branch in the Project area. These pictures document abundant trees in the 0-9–year age class at these locations. They are a small representative sample of the many dozens of such locations of early successional habitat on national forest land or adjacent to that land in Management Area 2.8 in the Project area.

For all these reasons, the Coalition objects to the unsupported assertion that there is no early successional habitat in the Project area, and encourages the Service to revisit its findings after reviewing the evidence submitted here.

5. Clearcutting Pine Stands

According to the Service, "[t]here is a need to reduce the amount of pine in the project area to provide more suitable habitat to a wider array of wildlife species." Draft SEA at 9. As such, the Project aims to remove all pines within the Project area through clearcutting. Final SEA at 8. In their comments, the Coalition explained that clear cutting (even non-native pines) of the magnitude proposed by the Service "will likely cause more ecological harm than benefits." Comments at 12-13. For example, clear-cutting pines will inevitably cause deleterious effects on the wildlife species that depend on those trees. *Id.* at 12. The Final SEA, however, does not acknowledge these additional negative impacts. This should be revisited by the Service prior to Project implementation.

6. Fire

The Coalition's comments explain in great detail the reasons that the Service "failed to justify that there is any legitimate need either to burn the Project area to purportedly mimic natural processes and conditions, or to return and restore an oak-hickory dominant forest that in reality is not ideally suited to dominate forested landscapes in Indiana under current climatic conditions." Comments at 13-17.

The Service has not responded to those contentions. Thus, the Coalition renews its objections to this aspect of the purported purpose and need for the Project for the reasons stated in their comments.

IV. THE PROJECT THREATENS TO DESTROY RARE OLD AND/OR MATURE GROWTH FORESTS, DESPITE ADMINISTRATION-WIDE ORDERS TO THE CONTRARY

At present, the Hoosier National Forest is home to some of the oldest, most mature forests in the eastern United States. *See* Draft SEA at 7, Table 1; Comments at 17 (observing that "60% of the forests in the Project area are 80 years or older, 35% of the forests in the Project area are 100 years or older, and 7.4% of the forests in the Project area are 120 years or older"). Not only are these mature stands an outlier in the East, they are also a crucial tool in combatting climate change. According to the Service's own recent research, young trees (0-15 years, in this case) are barely able to remove the carbon dioxide emitted as a result of a prior harvest. *See* Dex Conaway & Tom Zeller, *Column: How the Hoosier National Forest Can Help on Climate Change*, THE HERALD-TIMES (June 5, 2024 4:42 AM).

Safeguarding the carbon-storing capacity of mature trees is precisely why the U.S. Department of Agriculture recently announced its intent "to amend all 128 national forest land management plans to conserve and steward old-growth forest conditions and recruit future old-growth conditions in light of increasing threats due to rapidly changing climate conditions." U.S. Forest Serv., *National Old-Growth Amendment*, http://bit.ly/3Vwt4Ci (last visited June 9, 2024); *see also* Exec. Order No. 14,072, 87 Fed. Reg. 24,851, 24,851-55 (Apr. 27, 2022) (announcing an Administration-wide policy designed to "conserve America's mature and old-growth forests on Federal lands").

Despite all of this, the Draft SEA did not even acknowledge "the age class of the trees it will log," let alone explain how such logging can be consistent with Executive Order 14,072 and/or the impending, old-growth amendments. *See* Comments at 18. To the contrary, the Service brushed off those concerns by distinguishing the trees in the Project area as "low mature/low old growth"—whatever that means. Draft SEA at 17.

Although the Final SEA dispenses with the "low mature/low old growth" distinction, it does not change the Project's scope in any way (e.g., realignment to protect mature stands). Indeed, based on definitions that apply to forests found in a different Service region (Region 8), the Service continues to maintain that no old-growth forests are present in the Project area. Final SEA at 18. It does this while admitting in the same document that it already has a nationally applicable "definition of mature and old-growth forests" and an inventory of the same. Final SEA at 17; *see also* Forest Plan at App'x H (characterizing the 1,190-acre Browning Hill Special Area as "[r]elatively undisturbed and *contains old growth woods* containing trees of a noteworthy size for this area of the state" (emphasis added)).

The Service never explains why it decided to eschew that definition in favor of Region 8's. Nor does it explain how that definition applies here. To date, the Service has not provided

data for the stands to be harvested during this Project or any other information that allows the public to judge whether any of the stands at Houston South meet the definition for old-growth forests as defined by Region 8 in the April 2023 Mature and Old Growth Forest Report of ("MOG Report") and thus to assess the accuracy of the Forest Service claim that there are no old growth stands in the area. For example, the Region 8 definition has criteria for the minimum stand ages, minimum basal area of live trees per acre, minimum number of large trees above a certain size (Diameter at Breast Height or DBH) per acre, and minimum number of standing dead trees per acre that are used to define old growth for each forest community type in Region 8. The Houston South stand data provided by the Forest Service only includes the stand age (from tree cores of codominant trees) and live basal area per acre of live trees and does not provide data on large tree sizes or standing dead trees in forest stands in the project area.

It is notable that a comparison of data from the stands proposed for treatment in the Project area to the Region 8 definitions in the MOG Report indicates that the age and basal area of several stands to be cut readily surpass the Region 8 criteria for stand age and basal area of old growth forest. Table 15 of the MOG Report (pages 43 & 44), indicates that old growth forest of the "dry-mesic oak forest" community type have a stand age (presumably of dominant and/or codominant trees) of 130 years and older and old growth forest of the "mixed mesophytic and western mesophytic forest" community types have a stand age of 140 years and older. Old growth forests of these communities have a minimum live basal area (of trees ≥ 5" DBH) that exceeds 40 square feet per acre.

According to the stand data for the Houston South Project, there are at least 6 tracts collectively comprising 155 acres of these forest community types whose stand ages range from 137 to 217 years old, that are proposed to be logged in this Project. Three of these stands are defined as "Chestnut Oak", one as "White Oak" and two as "Mixed Oak". The live basal area of these stands ranges from 100 to 148.33 square feet per acre.

In addition, there are three more stands comprising 70 more acres to be cut of "mixed upland hardwoods" in the Houston South Project whose stand ages are 101, 115, and 128 years and whose live basal areas range from 110 to 142.5 square feet per acre. here are no "mixed upland hardwood" forest community types identified in the Region 8 definitions for old growth of the MOG report. However, if we assume that the "northern hardwood forest" community identified in this table for Region 8 national forests which are south of the Hoosier National Forest in Region 9, applies to these 70 acres of "mixed upland hardwoods," they readily surpass the criteria for minimum stand age and basal area for old growth forest of this community in Region 8 which are stands of at least 100 years old with live basal areas of 40 square feet per acre.

The SEA also ignores entirely the explicit objective of the Biden initiative to protect mature forest to enable more old growth forest to return to regions where there are little to no old growth forests left. According to the Project stand data, there are some 60 stands of native hardwood forest comprising 1,687 acres in the Houston South Project area that are 100 or more years of age that the Project will log. This is 48% of all stands in the Project area that are ≥ 100 years of age according to Table 1 of the SEA. Thus, within the 10,071-acre silvicultural project management area in which the Forest Service says there is no old growth forest that is itself

within an entire national forest that the Forest Service says has virtually NO old growth forests, this single project will subject nearly half of all forests that are a century or more old to commercial logging or other large scale tree removals that will significantly reduce their stand ages.

Nineteen of those logging operations are shelterwood cuts that will remove all of the forest canopy entirely over a 5-10–year period reducing muti-layered hardwood forest stands on 456 acres that are 101 to 143 years old to stands of saplings and small pole trees less than 10 years old.

Most of this logging in older forests will involve thinning or selective cutting of hardwood stands. One stand of chestnut oak comprising 30 acres with a stand age of 217 years (or "date of origin" of 1807 and arguably old growth forest), will be thinned. Another 31-acre stand of mixed oaks that is 158 years old (also old growth forest) will be thinned. According to pages 13 and 14 of the SEA, approximately one third of the stand density (mostly dominant or codominant larger trees) will be removed in thinning and selective logging operations. Thus, approximately one third of the stand density in 37 tracts comprising 1,088 acres of native hardwood forest equal to or greater than a century in age will be removed by thinning operations and selective logging. Another four tracts spanning 143 acres of hardwood forests between 109 and 139 years old will have all trees that make up midstory layers knocked down and removed, significantly reducing the size classes and structural diversity of these stands.

There is no discussion of the destruction of native herbaceous communities that are well developed in multilayered, older hardwood forests exceeding a century in age or the impacts of the disruption of forest litter and soil compaction from the heavy logging operations proposed in these older forests. The SEA barely acknowledges the potentially significant emergence in nonnative invasive plants that will have to be controlled with broadcast herbicides as a result of this logging.

The Coalition believes this level of logging in native stands of hardwood forest plainly contradicts the animating policies of Executive Order 14,072 to protect and restore mature and old growth forests across the national forest system. The Service, however, takes the position in the Final SEA that it need not adhere to Executive Order 14,072 until the Forest Plan is amended next year (2025). *See* Comment Summary at 6 ("After the inventory [of old-growth forests in the Hoosier] was completed in 2023, the Department of Agriculture proposed amending all Land Management Plans which is scheduled to be completed in January of 2025. Current Forest Plan direction remains in in effect until this time."). In other words, the Service knows there is mature and old-growth stands in the Project area (based on the national definitions of the same), and knows that cutting them down will very likely be prohibited or at least under increased scrutiny next year, so it is trying to force through this Project before time runs out. This is hardly the kind of behavior we should expect from those entrusted to care for some of our most cherished natural resources.

Before implementing the Project, it is imperative that the Service explain how it determined there are no old-growth stands in the Project area so that its findings may be reviewed by subject-matter experts, including those in the Coalition. To do so, the Service

specifically must provide the age class of the forested acres proposed for logging and burning in the Project area. It should also explain how its sudden zeal to complete the Project comports with the policy animating Executive Order 14,072 and the forthcoming National Old-Growth Amendments.

V. THE FINAL SEA DOES NOT EVALUATE STORAGE OF CARBON OR ESTIMATE THE RELEASE OF CARBON THAT WILL RESULT FROM PROJECT ACTIVITIES

In its discussion of the release of carbon by Project activities, the Service focuses on forest carbon sequestration and storage rates but not on the amount of storage that has already occurred. This is important because 49% of the forest stands to be logged in the Project (2,125 out of the 4,375 acres) are hardwood stands that are 100 years or older. These are forests with many large trees that have stored a lot of carbon. Protecting mature and old growth forests such as these is crucial because half of the world's forest carbon is stored in the largest 1% of trees.

On page 58, the 2019 EA states, "Forests in the HNF are maintaining a carbon sink. Forest carbon stocks have increased by 34% between 1990 and 2013 (USDA FS, 2015) and negative impacts on carbon stocks caused by disturbances and climate conditions have been modest and exceeded by forest growth." The Coalition is justifiably concerned that the major disturbances in Houston South Project will reverse that trend significantly reducing carbon stocks over the 7% of HNF acres comprising the Project. The Coalition is also justifiably concerned that the Houston South Project is part of a policy to reverse the trend throughout most of the HNF turning the forest into a source for carbon emissions at the very time it is imperative to maintain and enhance the HNF's function as a sink.

In the 2019 EA discussion of Issues 1, 11 and 12, the Forest Service asserts that carbon released in the Houston South project from the removal of trees, burning of the understory and forest floor, and forest soils will be negligible and temporary. The discussion adds, "Carbon emissions during the implementation of the proposed action would have only a temporary influence on atmospheric carbon concentrations, because carbon will be removed from the atmosphere with time as the forest regrows, further minimizing or mitigating any potential cumulative effects."

Yet there is no attempt anywhere in these documents, their appendices or elsewhere in the project record (Houston South project files on the HNF's web page) to estimate the stored carbon that will be released by project activities. Not even a rough approximation.

The Forest Service should have been able to provide this estimate. On page 58, the 2019 EA explains that "[a] complete and quantitative assessment of forest carbon stocks and the factors that have influenced carbon trends (management activities, disturbances, and environmental factors) for the Hoosier National Forest is available in the project record (Dugan et al. 2019)."

The Forest Service knows the densities and ages of every stand it is proposing vegetative treatments in, and, with the possible exception of 170 acres of crop tree release, knows

approximately how much of the densities and proportions of size classes it will be removing in each of the vegetative treatments. It knows that it is planning to burn on average 1,500 acres of forest each year. It knows it will be spot treating forests with herbicides to kill trees competing with oak in TSI activities in 1970 acres of the stands it will treat. HNF staff inventoried those stands and thus can estimate (approximately) the number of additional stems that will be taken out of the stands with herbicides and other TSI activities. Yet there is not even a rough approximation of the carbon release that will result from any of these activities.

Part of the reason that the Forest Service may not be providing estimates of carbon release from project activities is that a lot of forest carbon is stored in roots, biomass, and organic material in the soils.

The 2019 EA (and Final SEA) states there is more forest carbon above ground (45 %) than in the soils (33%). The Forest Service further contends that the carbon in "mineral soils" (which presumably characterize the bedrock derived soils in the Houston South Project area) is part of "a very stable and long-lived carbon pool" and that, "Timber harvesting generally results in a negligible amount of carbon loss from the mineral soils typically found in the United States, particularly when operations are designed in a way that minimizes soil disturbance (Nave et al. 2010, McKinley et al. 2011)." (2019 EA, page 61)

These contentions do not comport with the judgments of tree and forest soil experts at Indiana University. They believe generally that at least as much if not more forest carbon is stored in the soil than above ground and that there are complexities about carbon below ground that have not been figured out, which bear directly on how much of that carbon will be released by this Project's activities.

Rather than being stable, i.e., sorbed to minerals or otherwise protected from enzymatic activity, much of the carbon in the soils of Houston South is in tree roots, mycorrhizal fungal biomass, and organic litter in the soil. It is "unprotected" and vulnerable to release from the activities of this Project. How much of this carbon will be released will depend on how much the soil is disturbed and eroded by logging, the extent of tree root systems killed by vegetative treatments and how fast they decay and how exposed the soil is to sunlight which will heat the ground increasing decomposition and release of the carbon (as CO2).

The disturbance and erosion of soils by logging will be considerable given the felling and skidding of large trees and movements of heavy machinery over nearly seven square miles of forests to be logged, most of which is on moderate to very steep slopes.

Nearly all canopy and subcanopy trees will be removed with most of their root systems killed on more than 1,100 acres to be clearcut or shelterwood cut. The root systems of thousands of other larger trees in more than 3,200 acres of thinning and selective cutting operations will be killed when stand densities are reduced by one third and in 234 other acres where all midstory trees will be removed. In addition, the root systems of tens of thousands of other mesic trees and understory saplings and bushes will be killed by the spot treatment of herbicides over 1,970 acres and repeated prescribed burns on as much as 13,500 acres. Overall, there will be an abundance of

tree roots decaying from the project's activities throughout the Project area. Fungi and microbe systems dependent on living tree root systems, will die and decay as well.

There will also be a substantial increase in sunlight reaching the forest floor on the 1,100 acres of clearcuts and shelterwood cuts and in numerous group tree openings which can be as large as 3 acres each in the 462 acres of selective cuts. And there will be a moderate increase in sunlight reaching the forest floor in the 234 acres that will have all midstory trees removed.

These considerations suggest here will be a major release of carbon from soils in the project area because of Project activities. There is no recognition, modeling, rough estimate, or accounting for this release in the 2019 EA, Final SEA, or any other project documents

There is also no modeling, rough estimate, or accounting in the Project documents for the amount of carbon that will be released by burning the forest understory and litter and duff layers on the forest floor repeatedly over as much as 13,500 acres. While the FSEA repeated the 2019 EA contention that release of carbon from the forest understory and floor layer "will be minimal given it is not stable or long lived and would be replaced within months to years," no source has been provided to support this contention.

We believe that the stored carbon released to the atmosphere from Project activities will not be quickly replaced by forest regrowth. The Forest Service's own research in New Hampshire concluded that for the first 15 years after harvest, the new carbon stored in young trees was almost equal to the release of carbon from the soil. It will take decades more before fast growing young trees in a clearcut or other major harvest opening have stored the carbon equivalent to the amount released from the harvest. Most climate scientists believe we do not have the luxury to undertake forest management practices now that release major quantities of carbon to the atmosphere which will take forests at least a half century to recoup.

If the Forest continues this aging trajectory, more stands will reach a slower growth stage in coming years and decades, potentially causing the rate (of) carbon accumulation to decline and the Forest may eventually transition to a steady state or to a carbon source.

This conclusion is based on outdated science (Odum, 1969) from a time when there was little data on carbon cycling and storage collected from mature temperate hardwood (aka deciduous) forests and is not borne out by recent data from such forests. In a report on that data being collected from North American hardwood forests that are part of an international network of forest carbon measurement stations, scientists from Ohio State University and Virginia Commonwealth University state the following:

Summary

Ecosystem development theory predicts a steady decline in annual carbon storage as forests age, but newly available, direct measurements of forest net CO2 exchange challenge that prediction. In temperate deciduous forests, where moderate severity disturbance regimes now often prevail, there is little evidence for any marked decline in carbon storage rate during mid-succession.

III. Successional trends of NEP in northern deciduous forests

To evaluate whether empirical evidence points to declining NEP in temperate deciduous forests during mid-succession, we examined published data from 39 temperate deciduous forests on three continents (Gough et al., 2016). All stands older than 2 yr were net carbon sinks, including 12 forests > 100 yr old, and we found little evidence of declining carbon storage during mid-succession (100- 200 yr) and more gradual declines than expected in late succession (> 200 yr, Fig. 3). On average, NEP was lower in very old forests, but the decline from peak annual carbon storage was gradual, falling to half the maximum value at 315 yr, well within late succession.

Through FLUXNET's published data, multi-decadal records are now available for three temperate North American deciduous forests approaching or exceeding the century mark (http://fluxnet.fluxdata.org/data/fluxnet2015-datase t/). Consistent with our cross-continent analysis, we found no evidence for declining NEP in these aging forests as they near the century mark. Instead, decadal carbon storage of a Michigan forest was trending upward and, in Massachusetts and Indiana, annual carbon storage exhibited no long-term trend (Fig. 3).

NEP is Net Ecosystem Production. An NEP of zero means that net carbon sequestration for a forest is neither increasing or decreasing. Increasing NEPs are being measured for temperate hardwood forests that are as old as 400 years in this network. The report concludes,

Our current knowledge suggests that the conservation of these aging forests into late stages of ecosystem development is likely to result in nominal reductions in the land carbon sink, whilst maintaining an immense store of terrestrial carbon, and restoring the many ecosystem services afforded by the resurgence of biologically and physically complex forest ecosystems in eastern North America.

In conclusion, without providing any data or even the roughest of approximations, the 2019 EA and FSEA assert that the carbon release from project activities will be negligible and temporary. Emissions from the project are framed as "extremely small" compared to the 13,336 teragrams of estimated carbon emissions globally and 1,881 teragrams estimated nationally and "minor" relative to the amount of carbon stored and sequestered by the HNF. "Because carbon would be removed from the atmosphere with time as the forest regrows, any potential cumulative effects would be minimal or mitigated." (2019 EA, pages 56-60, discussion of Issues 11 & 12).

Aside from the woeful lack of substantiation, these assertions are completely missing the mark of any credible analysis of cumulative effects. An analogy to such assertions about cumulative effects would be to point out that allowing one or two reckless drivers to speed without any infraction in Indianapolis will not make its streets unsafe for the city's one million residents. After all, they are only two drivers and their speeding will only be temporary. It should be correct therefore to assert that the cumulative effects of their driving on public safety in Indianapolis are minimal. Nevertheless, if the police keep allowing one or two reckless drivers to drive at speeds well beyond the speed limit in Indianapolis, it will not be long before the streets of the city will not be safe.

The Houston South Project is one of the three latest vegetative treatment projects proposed or underway in the HNF. Collectively, these projects will burn more than 32,000 acres repeatedly over the next 25 years, log 13,000 of those acres in the next 10-15 years, and apply herbicides to many of those acres to kill thousands of additional trees that compete with oak. Most of these treatments are targeting hardwood forest stands in the mature to early old growth stages with ages from 90-200 years old, whose high and usually increasing volumes of stored carbon will likely be significantly reduced, if not liquidated from the treatments. HNF staff have stated in public forums that their intention is to undertake such vegetative treatment projects on all lands that comprise Management Area 2.8 in the HNF. The 2006 HNF LRMP allows even more aggressive vegetative treatment projects, including clearcuts of up to 40 acres in size, to occur on Management Area 3.3 lands. Collectively, Management Areas 2.8 and 3.3 comprise more than 51% of the HNF's total acres.

We request that the analysis of effects of the carbon released by the logging, burning, and herbicide application in the Houston South Project—combined with the cumulative effects of other ongoing and reasonably foreseeable logging, burning, and herbicide application projects in other parts of the Hoosier National Forest (including, for example, the Buffalo Springs Project)—estimate the quantity of that carbon and frame its release in the context of the carbon stocks believed by the Forest Service to be contained in the HNF above, on and below ground. The release should be assessed in terms of its impacts as part of a program to undertake vegetative treatments that may release this much carbon over 51% of the HNF. The carbon release policy of the Forest Service being carried out under the Houston South Project matters cumulatively because if that policy is carried out over the rest of the national forest system or a significant proportion of it, this would likely have a significant adverse cumulative effect on the carbon stocks that the US is urgently seeking to keep in the ground as part of a nationwide effort to confront and ameliorate the international climate crisis mandated by Executive Order 14072. Furthermore, if the Forest Service believes as it states in the 2019 EA and FSEA that the climate crisis is creating unprecedented environmental stresses on the forests of the HNF, it has an obligation to credibly examine the cumulative impacts of its carbon release policy being chartered by the Houston South Project.

Unlike the insinuation in Issue 12 of the 2019 EA and FSEA that commenters were concerned that "Harvesting timber could decrease the rate of carbon sequestration," we have never disputed the fact that younger forests generally sequester carbon at a higher rate than old growth forests. Furthermore, we wholeheartedly support efforts by the Forest Service to acquire and reforest more lands in the HNF to sequester carbon at a rapid rate. The issue is whether to pursue a management policy to release the considerable carbon that the older forests of Houston South have stored. Anderson-Teixeira et al. (2021) present a fairly complete picture of carbon uptake in mature forests globally, the conclusion of which sheds light on this question:

Notably, the fact that tropical forests tend to have both the highest rates of C sequestration in young stands (figure 8, Cook-Patton et al 2020), fueled by their generally high C flux rates (table 1; figure 7), and the highest mean biomass (figure 8, table 1, Hu et al 2016, Jian et al 2020) reinforces the idea that conservation and restoration of these forests is a priority for climate change mitigation, along with high-biomass old-growth temperate stands (Grassi et al 2017, Goldstein et al 2020). It is also important to note the trade-off in climate mitigation

potential of restoration of young forests, with high rates of CO2 sequestration (NEP, Cook-Patton et al 2020), versus conservation and management of mature forests, with low NEP but high C stocks that, if lost through disturbance, could not be recovered on time scales most relevant to avoiding dangerous climate change (i.e. Goldstein et al 2020). Generally speaking, the conservation of mature forests will yield greater climate benefits (Anderson-Teixeira and DeLucia 2011), but both approaches are critical to avoiding catastrophic climate change (IPCC 2018).

VI. THE SERVICE'S ALTERNATIVE ANALYSIS IS DEFICIENT UNDER NEPA

The Draft SEA evaluated only one action alternative—the Project—alongside a no-action alternative. The Coalition's comments provide multiple reasons why such a myopic alternatives analysis violates NEPA. *See* Comments at 18-21. The Coalition also urged the Service to consider a mid-range alternative whereby logging, burning, and herbicide treatment would occur only in the 479-acre non-native pine forest. Comments at 20; *see also* Draft SEA at 5, 8, 9, 12. Such an alternative, the Coalition explained, "would both achieve the stated purpose and need—i.e., 'move the landscape toward desired conditions' as identified in the 2006 Forest Plan, by 'reduc[ing] the amount of pine in the project area' and thus increasing 'the amount of forested habitat that is between 0 and 9 years of age,' Draft SEA at 8-9—while promoting beneficial ecosystem effects or at least limiting harmful effects compared to the Proposed Action." Comments at 20 (citing Draft SEA at 8-9).

The Final SEA's alternatives analysis remains the same as the Draft. In fact, the Service did not respond at all to the Coalition's comments about the scope of alternatives, or even pretend to consider the mid-range alternative proposed by the Coalition. Therefore, the Coalition renews its objections to the Service's alternatives analysis for the same reasons stated in the Coalition's November 17, 2023 comments. *See* Comments 18-21.

VII. THE FINAL SEA FAILS TO TAKE A HARD LOOK AT SIGNIFICANT IMPACTS STEMMING FROM THE PROJECT

The Coalition's comments describe myriad impacts the Service either overlooked entirely, or arbitrarily minimized via flawed rationales. Below, the Coalition revisits those issues in turn and, where appropriate, discusses the Service's subsequent response to comments.

A. Water Quality & Relying on Best Management Practices

In their comments, the Coalition voiced grave concerns about the Project's likely effects on Lake Monroe, which is the source of drinking water for over 150,000 residents in Bloomington (including the Indiana University). *See* Comments at 21-31. The Coalition explained that much of this concern stems from the Service's misplaced faith in the effectiveness of "best management practices" ("BMPs") to mitigate the Project's likely impacts. In the Service's view, those BMPs will eliminate any effects to water quality in Lake Monroe because "BMPs have been found to be 96.5% effective on federal lands even when terrain is steep." Final SEA at 25.

The Coalition, however, pointed out at least two problems with this assertion. The first is that this particular National Forest has thus far been unable to demonstrate consistent and effective implementation of BMPs due to staffing and budgetary constraints. Comments at 24 & n.21 (collecting examples of the Hoosier's inability to implement BMPs, and observing that, "in many instances," the Forest "is achieving no to marginal implementation of BMPs"). Given the Service's track record with BMPs in this Forest, it is not reasonable to assume that implementation will be the panacea the Service claims. Absent some assurances/explanation about how *this time* will be different than any other, it is arbitrary to discount the majority of Project effects by relying on BMPs.

The second problem is the Service's 96.5%-effectiveness claim is directly undermined by research conducted on BMPs in eastern hardwood forests and provided to the Service in the Coalition's comments. Comments at 24-26 & n.22. The study compared water quality from an uncut control site to water quality from a clearcut using BMPs and one not using BMPs in the Robinson Forest of Kentucky. It found that in the 17-month period after the harvests, statistically significant increases in nutrient concentrations also occurred in the stream draining the BMP-cut watershed compared to concentrations in the stream draining the uncut watershed. Comments at 25.

Rather than tackle the merits of this study, the Service decided to write it off as inapplicable to the Project area. *See* Comment Summary at 4 (claiming the study concerned only "complete clearcuts on very steep slopes that averaged 45% incline," which "is not comparable to Houston South where clearcuts are proposed on lesser-sloped ground and is only a small portion of the project area")

To be sure, the slopes in that study were steep; however, the study does NOT say that the main slopes in the clearcuts averaged 45% incline. Rather it says, "Sideslopes in the study area were steep, averaging approximately 45%." While most of the clearcuts planned at Houston South are on more moderate slopes, a 45% incline is comparable to many of the slopes in the Project area according to the Soil and Water Specialist Report for the Houston South project. In fact, that Report shows that many of the slopes in the Project area, including slopes on tracts where selection cutting, thinning, and shelterwood cutting will occur, appear to be equal to if not exceeding a 45% incline and maybe as steep as a 55% incline. For shelterwood cuts, the practical effect of removing the entire canopy with heavy machinery over a couple of treatments will be similar to clearcutting. Some of the shelterwood cuts, for example, the cut of 24 acres on the south side of Fork Ridge with Stand ID 09120200043053, the cut of 55 acres adjacent to the Starnes Branch with Stand ID 09120200049005, and the cut of 16 acres adjacent to the southwest boundary of the Maumee Boy Scout Camp with Stand ID 09120200042047 appear to have slopes at least equal to 45% according to Figure 3 on page 15 of the Specialist Report.

The bottom line is that this study is very relevant to the Project. It was carried out in hilly central hardwood forest very similar to the forest in Houston South. It showed that when BMPs that are more stringent than the BMPs proposed for the Project were used in a clearcut far smaller than the clearcuts and shelterwood cuts planned for the Houston South Project, that statistically significant increases in flux (mass moving past a point) and concentrations of sediment and nutrients were measured in the stream draining that clearcut that were several to

many times higher than fluxes and concentrations of sediments and nutrients in the stream draining the uncut control site nearby.

It also showed that those increases were still occurring a year and half after the clearcut. For example, during the logging, sediment flux levels draining the BMP-cut watershed were 14 times higher than those draining the uncut watershed. In the 17 months after the cut, sediment flux was 4 times higher from the BMP-cut watershed than from the uncut watershed. The difference in flux would spike from storms. More than three years after the logging concluded, a 7.5-centimeter rain event in November 1987 produced a flux of 733 kg/ha of suspended sediment draining the BMP-cut watershed. This was more than 75 times higher than the 9.7 kg/ha of sediment flux draining the uncut watershed.

Nutrient increases tracked the sediment increases. The mass of nitrate exiting the BMP-cut watershed was 8 times higher than the mass of nitrate exiting the uncut watershed during the 17 months after logging.

The Kentucky study is also important because there are relatively few studies that actually compare the effectiveness of BMPs at logging sites to control sites and sites where BMPs are not used. No one argues that BMPs are not at least somewhat effective at reducing sediment runoff from logging sites. The question is will BMPs be effective enough to reduce the pollution from more than 4,300 acres of logging in the Project area that is virtually all on slopes, many of which are extremely steep, to negligible levels (as the Service asserts without support). An exhaustive literature search found only three paired forested watershed studies in the eastern United States that permitted the calculation of BMP efficiencies—the percent reduction in sediment or nutrients achieved by using BMPs as opposed to not using them at harvest sites. For sediment, BMP efficiencies ranged from 53 to 94% during harvest and up to 1 year after harvesting. In short, the BMPs used at Houston South will *not eliminate* sediment pollution from timber harvests or reduce it to negligible levels. Significant levels of sediment pollution will reach water that drains into Lake Monroe. The Service should revisit this issue before Project implementation, including by reevaluating the relevance of the Kentucky study to this Project.

B. Water Quality Impacts from Prescribed Burns

Next, the Coalition encouraged the Service to examine the potential for increased sediment and nutrient runoff caused by the fires prescribed by the Project. As the Service is well aware (or should be), the entire Project is located within the Lake Monroe watershed, meaning that bare soils (and the nutrients found therein) exposed by fire will no doubt end up in Lake Monroe. Comments at 26-28. Despite this, both the Draft and Final SEAs fail to examine this highly relevant issue.

Once again, the Service did not grapple with the substance of the Coalition's comments or the studies provided. As it did in the Draft SEA, the Service once again failed in the Final SEA to "provide any data from prescribed burns that have been carried out in the Hoosier National Forest that could be used to assess the water quality impacts that will occur from the unprecedented levels of prescribed burning proposed as part of this Project." Comments at 28. Nor does the Final SEA attempt to analyze or assess the scope of those potential impacts that are

documented in peer reviewed research from many sources. The Draft SEA also fails to identify steps that will be taken and monitoring that will be undertaken to ensure that adverse impacts specifically from prescribed burning do not occur. All of these issues should be rectified before Project implementation.

C. Water Quality Monitoring

The Coalition's comments also expressed sincere concerns over the Service's plan to monitor water quality. As explained, "the meager monitoring proposed by the Forest Service is unlikely to capture most (or any) of the water quality effects stemming from the Project." Comments at 29. In the Final SEA there continues to be a dearth of legitimate evidence to support the Forest Service's assertion that extensive logging and burning of steep, highly erodible slopes in the Project area will result in no impacts to water quality in the Lake Monroe watershed, but the Forest Service has compounded its bald assertion by designing its paltry monitoring regime in such a manner that it will fail to detect many of the foreseeable water quality effects of the Project. The Coalition's comments explain that this is due both to basic methodological flaws in measuring any effects and a lack of well-placed monitoring sites to capture a representative sample of such impacts that can provide meaningful data to inform future, corrective action. Comments at 29-30.

Here too, the Service refused to engage with the substance of the Coalition's comments. Indeed, the Service has not answered any of the questions about conditions would be necessary to trigger the "further investigation and remediation" called for by the Final SEA, or even what that would entail. *See* Final SEA at 44 ("If turbidity is found to increase relative to the pre-treatment levels during project activities, further investigation and remediation would occur to ensure proper BMP usage."). For these reasons, the Coalition renews their objections to the Service's analysis and reliance on the vague water quality monitoring regime prescribed in the Final SEA for the reasons stated in their comments. Comments at 29-30. This issue should be examined further, and the Coalition's questions answered, before Project implementation.

D. Duff Layer During Prescribed Burns

The Coalition's comments on the Draft SEA also asked the Service to rectify a contradiction between the Project's stated goal of restoring oak and hickory dominant forests and its claim that prescribed burns will preserve the existing soil. *See* Comments at 31; Draft SEA at 21 ("Post-burn monitoring shows that prescribed burns on the Hoosier National Forest are generally low intensity with no effects to soil and water resources, nutrients, or organic matter. Additionally, post-burn monitoring has found no differences in some soil characteristics between burned and unburned areas.").

The Service recently completed research (Callaham, 2023, Taylor et al 2023) indicating that "to accomplish a shift from the current mesophysic condition to the desired oak-hickory forest would require elimination of the duff layer along with more aggressive treatments." Comments at 31 (citing Callaham, 2023). In other words, to achieve the desired oak-hickory forest, the Service must destroy the duff layer (in the Project's soil).

This means either: (1) the Project's prescribed burns will not affect the duff layer and thus the Project fails to accomplish its stated purpose and need of transitioning the Project area to an oak-hickory forest; or, (2) the Project's prescribed burns eliminate the duff layer and therefore achieve the purpose and need, but in the process the Service has eliminated the specific mitigation measure that the agency has said will protect streams that feed into Lake Monroe. Comments at 31.

As far as the Coalition can ascertain, the Service has not responded to their request to clarify this contradiction. Consequently, the Service renews its objection and encourages the Service to explain how it plans to move the forest to the desired oak-hickory conditions while preserving the duff layer in the area's soil.

E. Air Quality & Respiratory Impacts

The Coalition also observed that the Draft SEA does not include "*any* examination of air pollution that will foreseeably result from prescribed burns and the resulting smoke from those burns. Comments at 31-32.

Neither the Final SEA nor the FONSI respond to the Coalition's concerns. Thus, the Coalition renews their objection to the Service's failure to take a hard look at the effects of prescribed burns on air quality for the reasons stated in the Coalition's comments.

F. Herbicide Impacts

The Coalition's comments brought up the need to address newly researched threats to pregnant women and babies from the weedkiller Glyphosate. A study of 187 pregnant women in the Midwest published in 2022 found Glyphosate in the urine of all but one of them and correlated higher levels of Glyphosate in their urine with lower fetal birth weights and higher risk of preterm births. (see pages 32-33). A subsequent IU School of Medicine study published in 2024 has found nearly all of 150 pregnant Indiana women studied have two other weed killers, Dicamba and 2,4-D, in their urine that have been marketed as replacements to kill growing numbers of Glyphosate-resistant weeds. A follow up study is looking at routes and health impacts of this exposure. Attached to these comments are three news media articles discussing these studies. What is clear is that weed killers that are potentially dangerous to people are pervasive in our environment and being ingested by people.

The Service acknowledges that Glyphosate is one of three pesticides that will be used to kill trees and woody plants that compete with oak on 1,970 acres in the Project area. It also notes that there are abundant populations of nonnative invasive plants such as Japanese stiltgrass and garlic mustard and acknowledge that prescribed fires and "roadwork, harvest, and fire line activities have the potential to contribute to the expansion of these populations." Final SEA at 33. The 2019 EA repeatedly states that herbicides will likely be used before and after vegetative treatments to prevent infestations of these and other nonnative species from spreading due to project activities (e.g. see pages 51, 52 and 54).

The Coalition raised concerns about widespread application of herbicides by the Project to control NNIS problems that project activities will create in our comments on the 2019 EA. For example, in its Predecision Objection to the Draft Decision and FONSI prepared for the 2019 EA, Indiana Forest Alliance wrote,

> We are also concerned about the project's proposed widespread use of Glyphosate and other herbicides. Canopy openings can foster the emergence of invasive species if seeds are present in the soil or brought in by logging equipment. With many canopy openings proposed from logging, the "management activity" will continually increase the need for more management of invasive species, e.g. more herbicide use, and that may further contribute to pollutant load in the watershed. Glyphosate and triclopyr, commonly used in Indiana, have moderate acute toxicity in humans, but they are water soluble and undesirable in a drinking water supply. The toxicity of breakdown products is less well-known, including proprietary formulations that enhance effectiveness. Other herbicide formulations likely to be used by the Forest Service to achieve adequate control of invasives may have toxicity greater than glyphosate.

Road building is another disruptive component of today's logging practices and a major component of the Houston South project that can easily produce degraded runoff to streams draining to Lake Monroe. Roads that are sufficiently wide to accommodate heavy equipment and logging trucks damage interior forest tracts by providing edges and pathways for non-native species to invade forest interiors.

The 2019 EA, Draft SEA, and Final SEA emphasize that, "Herbicide would be applied specifically to the trunks and stumps of targeted woody vegetation, and not sprayed over the forest as the comment indicates. This treatment results in a relatively small area of application compared to a broadcast spray where an entire area is treated." Comment Summary at 14.

What the Service did *not* acknowledge is that controlling infestations of weeds like Japanese stiltgrass and garlic mustard will require weedkillers like Glyphosate to be broadcast sprayed on the ground instead of applied to individual stems to kill trees and shrubs that compete with oak.

The 2019 EA was silent however on the threats posed by the broadcast spraying of Glyphosate or any other herbicides on roads, harvest areas, skidder trails and fire lanes throughout the project area to the Lake Monroe drinking water supply, and the subsequent Supplemental Environmental Assessments have remained silent on this concern even though it has been raised by multiple commenters. Furthermore, the Draft SEA does not acknowledge the recent studies demonstrating the pervasive ingestion of Glyphosate and other potentially harmful weed killers from the environment into the urine and blood of pregnant women in Indiana and in particular the harm that ingestion of Glyphosate appears to be causing to pregnant women and their fetuses in Indiana and the Midwest. This despite our comments on the Draft SEA specifically presenting the study on Glyphosate as a concern.

How will the Project prevent Glyphosate or other herbicides that have been sprayed on the ground to treat NNIS throughout the project area from getting into the drinking water of 150,000 people? The Service's continued failure to acknowledge and address this concern is egregious and must be corrected.

G. Endangered Bats

Five species of bats that are federally endangered, proposed endangered, or under species status assessment by the U.S. Fish and Wildlife Service ("FWS") have been confirmed to be present in the Houston South project area by acoustic monitoring surveys in 2020 and acoustic monitoring and mist net surveys in 2023 undertaken by Environmental Solutions and Innovations, Inc. (ESI) for IFA. These bats are the Indiana Bat, northern long-eared bat, gray bat, tricolored bat and little brown bat. In the 2023 survey, in addition to acoustic detections again of all of these bats, one team of a scientist, technician and volunteers caught 54 bats in two weeks of netting. Through telemetry efforts, the team also located a maternity roost for tricolored bats and five roosts for Indiana bats in the project area. The team also caught two evening bats, state endangered animals that depend on forested riparian corridors, along the Starnes Branch in the heart of the project area. Despite the timely reporting of these survey results to the Forest Service and their discussion in comments to the Forest Service including extensive discussion in comments submitted by the co-plaintiffs on the DSEA, no mention has been made of these surveys or their results in the DSEA, the Consideration of Comments on the DSEA by the Forest Service, or the FSEA.

Instead, the FSEA continues to downplay the existence of these bats in the Project area or importance of the area's unmanaged, old forest habitat to these bats. For example, the FSEA states, "There are no known occurrences for northern long eared bats in the project area," which is contradicted by the Forest Service's Biological Evaluation of the project's impacts on this animal which states, "In June 2011, three northern long-eared bats were captured inside the action area east of the Maumee Boy Scout Camp (McClanahan 2011)."[5] This presence is reinforced by IFA surveys which confirmed the presence of northern long eared bats in 2020 and 2023 in the same northwest quadrant of the project area where these bats were captured.

Rather than acknowledging that other rare and imperiled bats that live in deep hardwood forest such as the tricolored bat, little brown bat and evening bat, are in fact present in the Houston Area, the FSEA states they are wide-ranging and could utilize this area for feeding, roosting, and corridors, or have been located in the HNF during 2010 mist net surveys. All three of these bat species are listed as state endangered and are HNF Regional Forester Sensitive Species.

Furthermore, while the FSEA makes one statement on page 17 acknowledging the proposed federal endangered listing for the tricolored bat in September 2022, it lacks any

[5] Hoosier National Forest Biological Evaluation for Threatened and Endangered Species Houston South Project June 13, 2019, USDA, Forest Service, Hoosier National Forest, p. 17 of 31.

discussion of steps that will be taken to protect this species given the proposed listing. Furthermore, despite the IFA survey finding five roosts of federally endangered Indiana bats in the Project area in 2023, there is no discussion of whether precautions such as avoiding tree removals and prescribed fires during the summer roosting season might be warranted to avoid harming this population of Indiana bats given the devastating impacts of White Nose Syndrome on this animal. In fact, there is no discussion or reference to current research or data on population numbers of the Indiana bat or management needed as a result of the impacts of WNS on this animal anywhere in the FSEA, the June, 2019 Biological Evaluation on Threatened and Endangered Species affected by the Houston South Project, or the Biological Opinion and Incidental Take Statement issued for the Indiana bat which the Forest Service is relying on to proceed forward with the Project.

Nevertheless, the FSEA concedes at least that all of these bats are likely present in the Project area. In addition, the Biological Evaluations for Threatened and Endangered Species and Regional Forester Sensitive Species produced by the Forest Service for the Houston South Project on June 13 and June 18, 2019 respectively, state that the project will cause short term harm to the Indiana, northern long-eared, little brown and tricolored bats due to "potential timber operation accidents, prescribed fire during the bats active period and the removal of potential roost trees without seasonal restrictions." Furthermore, the Biological Evaluation for Threatened and Endangered Species states, "*The proposed project is "**likely to adversely affect**" the Indiana bat.*" and, "*The proposed project is "**likely to adversely affect**" the northern long-eared bat."* (page 23 of 31)

Indeed, last year the Forest Service was attempting to burn the exact locations where the northern long -eared bat was confirmed to be present in both 2020 and 2023 surveys and where three of the five Indiana bat roosts were found in 2023, when a preliminary injunction halted the Houston South Project. The agency came with 48 hours of igniting the entire 2,600 acres of deep forest in the northwestern corner of the project area throughout the month of April when pregnant Indiana and northern long eared bats, quite possibly energy-starved and weak from WNS, would be returning to that habitat looking for their maternity roosts, frantic and disoriented amidst the smoke and flames.

On its last page, the SEA states US Fish and Wildlife Service (USFWS) issued a Biological Opinion (BO) and Incidental Take Statement (ITS) for the northern long eared bat on March 31, 2023. In the BO, the Service determined that the level of anticipated take from Houston South and other ongoing or proposed Forest Service projects in Regions 8 and 9 is not likely to jeopardize the continued existence of the northern long-eared bat, whose status was upgraded from threatened to endangered in 2023, provided the Forest Service complies with the terms and conditions of the ITS. On page 54, one of the "CONSERVATION RECOMMENDATIONS" outlined in the BO and ITS as a step the Forest Service should take under Section 7(a) (1) of the ESA to benefit the NLEB, states,

> Northern long-eared bats would benefit from minimizing activities with adverse effects during the period of summer occupancy. Bats cannot be directly injured or killed if they are not present when the activities are in progress. If an activity with

> potential adverse effects cannot avoid the summer occupancy period, consideration should be made for implementation outside of the important maternity periods when pregnant females are more susceptible to disturbance and when NLEB pups are born to the time the pups are flying. Once bats are capable of flight, their ability to flush and evade injury and mortality from certain USFS actions is enhanced. Adverse effects to NLEB would be minimized by following these timing restrictions.

The FSEA is turning a blind eye towards steps that should be taken in this project to benefit not only the northern long-eared bat (NLEB) but also the tricolored bat (TCB) and the Indiana bat. Those steps outlined as "**Minimum Conservation Measures**" in Draft Guidance issued on April 2, 2024 by the USFWS entitled ***Northern Long-eared Bat and Tricolored Bat Voluntary Environmental Review Process for Development Projects Version 1.0*** are for proposed federal projects that are "**likely to adversely affect NLEB or TCB**" to comply with Section 7(a(1) of the ESA (See pages 7 & 8 of this Guidance which is attached to these Objections).

Those steps include:

> 4 – Avoid removing known roost trees and suitable roost trees within 0.25-mile of a known NLEB and/or TCB maternity roost during the pup season. When feasible, avoid removing known roost trees (regardless of the season).
>
> 5 – Avoid removing suitable roost trees within 1.5-miles of a NLEB and/or TCB capture/acoustic record location during the pup season.
>
> 6 – If the project is located within an area where NLEB and/or TCB may be present, avoid removing suitable roost trees during the pup season (unless a presence/absence survey has been completed indicating probable absence).

There is no recognition or discussion of these steps in the FEAS or the Response to Comments on the DSEA.

The Coalition thus renews its objections as to the failure to take a hard look at the impacts of this project on federally endangered and proposed endangered bats, bats under species status assessment for endangered listing, and state endangered bats. We object to the SEA's failure to examine steps that can be taken to lessen those impacts. We also object to the SEA's failure to examine an alternative that will avoid any vegetative treatments or prescribed burning during critically important active times for these animals. These times extend from the spring emergence and migration period for myotis and perimyotis bats beginning in mid-March until July 31, the end of the nonvolant period for young myotis and perimyotis bats

H. Other Wildlife Affected by the Project

The cerulean warbler is a state endangered bird that nests in large tracts of mature undisturbed hardwood forest in eastern North America. Comprehensive management guidelines

issued by the American Bird Conservancy state that a decline in the total population of this bird of 70% since the mid-1960s has resulted in its designation as a species of national conservation concern by the USFWS and as a Continental Watch List species by Partners in Flight. These guidelines state, “In mature forest stands that have high cerulean densities and high nest success, the no-harvest option is most favorable for sustaining cerulean populations.” (Attached).

After receiving a listing petition from the Southern Environmental Law Center in 2000 to list the cerulean as threatened and designate critical habitat for the species, the USFWS conducted an assessment of the cerulean warbler’s status to help determine whether to list it as an endangered species under the ESA. The assessment found that the warbler's population was declining at a rate similar to the most rapid decline ever recorded for a North American bird. Accordingly, in 2002, FWS found the SELC petition to be substantial. Despite its current designation of the cerulean as a species of national conservation concern, on December 6, 2006, FWS issued a 12-month finding on the petition which determined that listing the warbler as endangered or threatened was not warranted.

The FSEA does not acknowledge the abundant population of cerulean warblers that was found and studied in the forested hillsides and riparian lands on both sides of the floodplain of the South Fork of Salt Creek in the spring and summer of 2020 in the heart of the Houston South area by ornithologist, David Rupp. IFA submitted a Report from this study to the Forest Service in 2020. The Report is attached. Rather than recognize the results of this study, the FSEA continues to push the illusion presented by the 2019 EA that cerulean warblers are not present in the project area by stating only that, “Cerulean warblers were not detected in 2017 surveys.” (FSEA, page 30)

The many miles of new edge that will be created from the extensive cutting in the Houston South Project and building of roads to accommodate the cutting will open up rare, productive nesting habitat for the cerulean warbler like swiss cheese to the harmful effects of nest parasitization and predation. The cerulean warbler’s reproductive nesting habitat is limited to the mature forests of the Brown County Hills of south central Indiana (that encompass the Houston South Project area). For decades, nesting studies have not found forests anywhere else in the state to be anything more than population sinks for this bird. Contrary to the superficial discussion in the Biological Evaluation for RFSS, by degrading a significant chunk of the productive nesting habitat remaining for cerulean warblers in Indiana, this project will moving this beleaguered bird closer to extirpation in the state and a federal threatened or endangered listing.

Other forest songbirds such as worm eating, hooded, and black and white warblers which are state species of special concern and largely range limited to the Brown County Hills, as well as wood thrush, scarlet tanager, arcadian flycatcher, ovenbird and many others were identified in the Houston South area in the 2020 cerulean study, many in abundant numbers and several on nests. A list of all birds identified in this survey in the Houston South area and their abundance is attached

IFA presented extensive comments about the adverse effects of edge from proposed timber harvests of the Project on the nesting success of these forest song birds in the comment

period on the Draft EA in 2019. Yet, with the exception of a few sentences dismissing these concerns as not relevant in the public comment response document to the Draft EA issued with the 2019 EA, there is no discussion in the Biological Evaluation for Regional Foresters Sensitive Species or in any other document for the Houston South Project about this issue.

Rather than being irrelevant, the substantial adverse impacts on nesting success from human created edge have been documented in the largest study ever done on the effects of cowbird parasitism on forest songbirds in Indiana. We have presented that study three times in IFA's comments on the Houston South Project but it also has yet to be recognized in any project document. The study monitored 1,293 nests in six different forest landscapes in Yellowwood State Forest and the Hoosier National Forest in the Brown County Hills during four breeding seasons in the early 1990s.[6] Given the study took place in the Hoosier National Forest less than 10 miles from the Houston South Project area, it is highly relevant to any environmental analysis of this Project.

Nest parasitism normally results in the death of the host bird's chicks who cannot compete with the larger cowbird nestlings for food. The study showed that nests of forest song birds closer to both exterior and interior edges from timber harvests were more subject to parasitism by cowbirds, than nests of these birds in unlogged interior forest. For example, the parasitism of worm-eating warbler and ovenbird nests increased from 12% and 8% respectively of nests in unlogged interior forest to 33% of their nests near interior forest edges. Parasitism of red-eyed vireo and wood thrush nests increased from 10% and 8% in unlogged forest to 20% and 50% respectively of their nests near forest interior edges created from logging. The authors concluded,

> When combined with other deleterious effects of forest fragmentation such as reduced habitat availability and increased nest predation, brood parasitism may seriously threaten neotropical migrant populations. . .. Management **activities presently occurring in state and national forests, such as timber harvests and the creation and maintenance of forest openings, increase the area of internal edge habitat. Such habitat alteration may reduce nesting success and thus detract from this landscape's value as a source for populations of neotropical migrant birds.** (emphasis added)

IFA also pointed out the detrimental effects to cerulean warblers nesting closer to the edges of roads in Morgan-Monroe State Forest studied in the state's Hardwood Ecosystem Experiment in the last three comments we have submitted on the Houston South Project but alas

[6] Winslow, D. E., D. R. Whitehead et al, Within-landscape variation on patterns of cowbird parasitism in the forests of south-central Indiana. Chapt. 34. In: JNM Smith et al [eds] 2000. *The Ecology and Management of Cowbirds and Their Hosts*, University of Texas Press, Austin, pp. 298-310.

this study also has yet to be recognized in a project document.[7] And we pointed out in our comments on the November 2023 DSEA the documented nature of ceruleans to colonize relatively small areas of deep forest where hillsides interface with riparian forest corridors, while steadfastly leaving thousands of other acres of surrounding deep forest alone. We documented the colonies of clustered cerulean territories only in certain areas within the Houston South area in the 2020 Report and presented our concern that this tendency could result in the ceruleans leaving the area including surrounding forest entirely in response to planned logging and burning in and near the clustered territories rather than just picking up and moving to the "abundant adjacent habitat" as the Forest Service maintains in its 2019 Biological Evaluation of RFSS. Needless to say, there is not a word on these concerns in the FSEA.

We strongly object to the complete failure of the Forest Services to recognize these studies or the 2020 study of cerulean warblers in the Houston South area or their implications.

We also strongly object to the unaddressed substantial damage that this Project will do cerulean warblers and other forest songbirds.

Similarly, we object to harm that the Project's prescribed burning will do to the state endangered timber rattlesnake who is range limited to the deep forests of the Brown County Hils as well as the rough green snake and Eastern box turtle who are state species of special concern and a host of mole salamander species who are abundant in the Brown County Hills but uncommon elsewhere in the state. We request that the Forest Service conduct inventories for flora and fauna that seek to identify uncommon, rare, threatened and endangered species and their habitats in project areas prior to logging or burning in those areas to modify those activities where and when necessary to protect these species.

Planners of project activities should follow guidance from the Midwest Partners in Amphibian and Reptile Conservation to inventory areas to be burned or subjected to timber harvests well in advance of these activities. The objective will be not only to identify and protect key denning and hibernacula sites for the timber rattlesnake but also to time burning and timber harvest activities to avoid killing these animals and large numbers of other amphibians and reptiles during their periods of active movement across the forest floor as well as follow burning procedures that will harm as few of these species as possible that are hibernating in the forest litter layers. These guidance sources include: "Prescribed Fire Use and Important Management Considerations for Amphibians and Reptiles within the Midwest", https://www.mwparc.org/products/fire/PARC_Prescribed_Burning_Guidelines_Final_Edition_10-11-09.pdf and "Habitat Management Guidelines For Amphibians and Reptiles of the Midwestern United States" Technical Publication HMG-1 2nd Edition, https://www.mwparc.org/products/habitat/MWHMG-Full.pdf This latter document identifies the Charles Deam Wilderness and surrounding lands as an important stronghold for timber rattlesnakes in Indiana and warns of catastrophic impacts on the numbers of this population from the destruction of the animal's overwintering sites.

[7] Nemes, Claire E., Islam, Kamal. "Breeding season microhabitat use by Cerulean Warbler (Setophaga cerulea) in an experimentally-managed forest." *Forest Ecology and Management*, November 2016. We quoted from pages 52-63 in previous comments on the project.

VIII. THE PROJECT REQUIRES AN EIS

The Project entails significant environmental effects that must be evaluated in an EIS. The Project calls for repeat logging, burning, and herbicide application in *thousands* of acres of the Forest, including in "some of the oldest, most mature hardwood forests in the eastern United States." Comments at 46; *see also id.* at 17-18; Final SEA at 12-13 (prescribing repetitive burning in 13,500 acres, logging in 4,375 acres, and herbicide application in 1,970 acres). It is the largest and most expensive logging project undertaken by the Hoosier National Forest, and it is not even close; the Project is *double* the size of the next largest treatment undertaken by the Hoosier. All of these considerations weigh in favor giving this Project the serious consideration it deserves in an EIS, especially in light of the cumulative effects of this Project in combination with ongoing and reasonably foreseeable logging, burning, and herbicide application projects in the Hoosier National Forest (such as the Buffalo Springs Project).

The Coalition's comments go into great detail explaining why the Project implicates each of the ten "intensity" factors that help federal agencies determine an action's significance as that term is used in NEPA. *See* Comments 46-53. The Coalition also noted that the Service has completed EISs for much *smaller* forest "restoration" projects, including at least one implemented by the Hoosier National Forest. *Id.* at 47 (discussing the German Ridge Restoration Project, which involved logging a mere 432 acres (355 acres of pine removal and 77 acres of shelterwood cuts) and 2,170 acres of prescribed burns).

In response, the Service states that it need not prepare an EIS because the "District Court did not order the Forest Service to" do so. Comment Summary at 1. In the Service's view, the "potential effect to Lake Monroe was the only portion of the decision remanded to the Forest Service for further analysis . . . ." *Id.*

Neither the Final SEA nor the FONSI grapples with the issues raised by the Coalition's comments as applied to the intensity factors. The FONSI, for example, makes summary findings with respect to each of the factors without responding to any of the Coalition's concerns. *Compare, e.g.*, Comments at 50 (outlining the highly uncertain effects threatened by the Project due to the lack of information provided about baseline conditions and "the actual extent of sedimentation, erosion, and pollutant contribution" that will be caused by the "logging, burning, and herbicide application in the Project area"), *with* FONSI at 6 (rejecting this factor with a single sentence: "I do not know of any effects on the human environment from this project that are highly uncertain or involve unique or unknown risks."). As such, the Coalition renews their objections to the lack of an EIS, as well as the lack of any coherent explanation as to why this Project will not result in significant environmental impacts given its magnitude, duration, and substantial effect to various resources in and near the Hoosier National Forest, only exacerbated by the cumulative effect of other ongoing and reasonably foreseeable projects that will affect the same resources in the Hoosier National Forest.

CONCLUSION

The Service's Final SEA restates the same unsupported (and insupportable) assertions about the Project as the agency's now-invalidated EA and Supplemental Information Report. This is neither a serious NEPA exercise by the Forest Service nor a good-faith attempt to respond to the concerns raised by a federal judge, leading hydrologists, and other experts on the resources that will be affected by the Project.

As a suggested remedy, the Coalition urges the Forest Service to reconsider its decision in light of these objections, or, at minimum, to conduct additional NEPA analysis to consider and mitigate the magnitude and significance of this Project. If it does not, the Coalition stands ready to utilize all available tools for enforcing federal law, including further litigation in federal court.

That is an avoidable outcome. The Coalition welcomes the opportunity to discuss these objections with you in a meeting or conference call at your convenience.

Respectfully,

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