



By Web Submittal and U.S. Mail

December 22, 2017

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Re: Foothills Landscape Project Scoping Comments

Dear Ms. Jewett and Ms. Bell:

Please accept these comments submitted on behalf of Georgia ForestWatch (“GFW”), the Georgia Chapter of the Sierra Club (“GCSC”), and the Southern Environmental Law Center (“SELC”). GFW’s mission is to promote sustainable management that leads to naturally diverse and healthy forests and watersheds within national forest lands in Georgia; to engage and educate the public to join in this effort; and to promote preservation of this legacy for future generations. The Sierra Club’s mission includes exploring, enjoying and protecting the wild places of the earth, and practicing and promoting responsible use of the earth’s ecosystems and resources. GFW’s and GCSC’s members routinely visit the Foothills area to hike, hunt, fish, view wildlife, and botanize among other activities. Management activities on the national forest can, and have in the past, impacted GFW’s and GCSC’s members use and enjoyment of the national forest in both positive and negative ways. The membership of each organization depends on GFW and GCSC, in part, to represent its interests to the Forest Service. We appreciate the opportunity to submit these comments and, as always, remain available to further discuss any of these issues with the Forest Service.

Executive Summary

GFW, GCSC, and SELC have been involved with the Foothills Landscape for over 30 years. Our members routinely hike, hunt, and otherwise recreate on this section of national forest, and many live in the landscape. We are personally committed to seeing successful management of the landscape.

We support the agency's effort at conducting landscape-scale analysis but the lack of specific information in the proposed action has impaired the public's ability to provide constructive feedback on this project, far more so than in previous projects. While this project may be planned on a larger scale it still requires fine-scale, site-specific information and analysis. Without knowing the specific location of treatments, we cannot assess plans for individual stands or the scale of the project. When visiting individual stands in the field, we have not been able to determine which treatment is most likely, only a range of treatments. When considering watersheds and other larger units, we cannot assess cumulative impacts.

Being able to visit stands to be treated is indispensable for constructive public participation in public lands management in the Southern Appalachians. On past projects, stand specific information has led to beneficial public comments on rare and at-risk resources, and the efficacy of proposed treatments. Visiting stands allows the public to check the quality of data supporting plans. Location of treatments, independent of what is being treated, impacts how adjacent resources will hinder or facilitate treatment and how a treatment will interact with nearby treatments. Trying to account for all of these variables in advance is impossible and misses the point that it is often the unforeseen factors that turn out to be the most important.

We support the agency's desire to collaborate and recognize the benefits of having different groups work together for a common goal. But collaboration is not a substitute for National Environmental Policy Act ("NEPA") compliance. More specifically, the promise of future collaboration on site-specific decision making is not a substitute for considering site-specific issues now, during the NEPA process. We are confident that we can work with other forest stakeholders to develop a consensus-based project and ask that the agency facilitate that outcome. As part of that, the agency should focus discussion more on points of common ground rather than contention, which we fear will ultimately undermine efforts at collaboration. We continue to believe that clearly stating the agency's constraints for performing work in the Foothills would channel discussions in a more productive direction. Since the agency's descriptions of "collaboration" have shifted away from "build[ing] and promot[ing] a collective vision," we would appreciate the agency clarifying what it is seeking through collaboration.

We support true restoration, but we remain unsure of how the agency understands "restoration" when describing "[t]he Foothills Landscape project [as] a restoration project." The agency has described the project as both "functional restoration" and "ecological restoration,"

which are not synonymous. Forest Service Manual prerequisites for applying functional restoration have not been satisfied. References to “achievable future conditions” in project documents add further confusion to the agency’s approach to restoration. We continue to believe that the agency should define its restoration goals using applicable guidance from the agency’s 2012 Forest Planning Rule. More clarity on these issues would help the public better understand and evaluate this project.

This project includes over 20 potential silvicultural treatments. We are concerned the scale of treatments, up to 90,000 acres, threatens water quality, wildlife populations, invasive species control, and recreation while contravening the public’s desires for the landscape. Similarly, the extent of herbicide use, potentially over 60,000 acres, presents qualitatively different risks than found in previous, smaller projects.

We are also concerned that in trying to promote a few common desirable species, many desirable but less common species will inadvertently be harmed, such as serviceberry and persimmon. Plans to harvest older mid-successional forests (100-120+ years old) will perpetuate the shortage of truly late successional forests (though the project does preserve some the most important old forests, existing old-growth, which we support). Many treatments in this project make commitments to follow up actions which have been promised in the past but not always fulfilled. The agency should consider the effects of the treatments if follow-ups cannot be implemented due to future budgetary or logistical restrictions. Applying prescribed fire before rather than after timber harvests may increase the effectiveness of treatments for multiple reasons. The experimental treatments, scale of the project, and novel conditions on the landscape make monitoring for this project more important than ever.

We appreciate the agency’s focus on southern yellow pines. They may have expanded some in response to past land use, but there is a shortage of regeneration across the Foothills. Where prescribed fire is available for pine maintenance, we believe that in the long-term, fire alone would produce more effective restoration than the proposed combined fire and timber treatments. Where expanding gaps treatment is used for maintenance, thinning the surrounding stand will interfere with producing the desired stand conditions. We support the southern yellow pine restoration treatments, but we are concerned about the vulnerability of the resulting stands to southern pine beetle. The proposed action appears to omit some of the best opportunities for restoration treatments, in pole aged stands. In the natural regeneration version of the treatment, removing the residual seed trees is completely counterproductive and will harm biodiversity. We support the thinning of pine plantations.

Oaks play many important roles in ecosystems, including as wildlife resources. Their decline also deserves management action. Similar to southern yellow pine maintenance, oak maintenance treatments would benefit from relying on prescribed fire where available and excluding thinning the surrounding stand from the expanding gaps treatment. Our views of the oak restoration treatments also parallel our views on the pine treatments—general support with

concern about locations. We have no specific issues with the crown touch release treatment and believe oak restorations of pine plantations are likely to be some of the most consistently successful treatments.

The woodlands workshop appears to have been productive as the woodlands description in the proposed action is the best we have seen in any scoping document. Unfortunately, without knowing specific locations, we cannot tell if any of the proposed woodland treatments are suitable. To better understand the agency's view of woodlands, we would appreciate knowing more of the original research or accounts that underlie its view.

We recognize that early successional habitat ("ESH") may be departed from natural levels in some parts of the forest. The proposed action appears to omit several important sources of ESH, so the extent of the problem is overestimated. Stands that developed following agricultural abandonment would be good places for ESH on mesic habitats. Care needs to be exercised in producing ESH along existing edges, because the process could establish large non-native invasive species populations. We see no reason to produce new permanent openings. Permanent openings are not restoration and provide inferior habitat. Changing management of right-of-ways also seems unnecessary as they are already in the desired condition. Finally, ESH should not be created in older forest. To the extent ESH is departed from natural levels, older forest is even more highly departed.

As proposed, the canopy gap treatment also does not appear to be restoration. The proposed gaps are larger, as a rule, than those produced by natural events. Literature also suggests the target wildlife species prefer smaller gaps.

The general forest health maintenance treatments cannot be evaluated without additional information. Additional information on location, species, and interaction with other treatments is needed.

Non-native invasive species ("NNIS") are one of the biggest issues facing the Foothills. We realize the agency does not have resources commensurate with the magnitude of the problem, but the landscape scale approach is an ideal opportunity to more effectively deal with the problem. Mapping existing NNIS populations and prioritizing treatments are essential steps that collaborators can help with. More effective monitoring and follow-up of contracted treatment is also needed. Finally, there is a dire need to have plans in place before anticipated non-native pests and pathogens arrive.

We are glad to see efforts to restore wetlands, canebrakes, and American chestnut included in this proposal. We support research efforts on using high-light treatments to facilitate field insectories and predator beetle control of the adelgid, but strongly urge the agency against trying to use high light levels as a stand-alone treatment to save hemlocks. Without other interventions, hemlocks exposed to the hemlock woolly adelgid die regardless of light level. We

believe out-planting hemlocks is premature (unless part of a larger research effort), but support expanding hemlock conservation areas. All rare habitat treatments should include thorough monitoring.

We support the use of prescribed fire to reduce the risk of wildfire *where prescribed fire can be effective*. In general, there is not enough information on the use of prescribed fire to offer constructive feedback. The full fire regime—frequency, intensity, season, size, and location—needs to be supplied, because fire effects depend on these variables.

Climate change will affect every ecosystem, species, and activity in the Foothills. Its impacts on the landscape and proposed treatments need to be carefully considered. The increasing precipitation variability that has been observed in the region suggests that the impact of commercial timber harvests on soils and streams will increase. The impacts of treatments, particularly at the scale proposed, on salamanders will also be more severe.

The proposed road maintenance level changes will help maintain water quality and access to more important areas of the forest. These changes will also help limit illegal dumping on the forest. Felling multiple trees across the road is likely the most effective way to close them. We feel Rock Flats Road (630D) should remain closed as it penetrates an otherwise exceptional block of core habitat.

Throughout our letter we raise concerns about compliance with various legal standards. We emphasize two here. First, the proposal to sign a decision document without knowing where actions will occur on the ground, and what those actions may be, prevents the agency from assessing project impacts and the potential to mitigate those impacts in compliance with NEPA. Second, given the scale of this multifaceted project it is guaranteed to have a significant impact on the human environment. To move forward with the project as planned the agency must prepare an Environmental Impact Statement.

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I. Introduction

GFW, GCSC, and SELC appreciate the agency's efforts during the past year to include public input in the development of the Foothills Landscape Project. We support efforts at collaboration and believe it can bring significant benefits to project development. The transparency of the process has helped us better understand the agency's priorities forest-wide as many of the important ideas and values relevant to this project are relevant to all national forest projects. Combined with details provided in the current version¹ of the Draft Foothills Restoration Plan ("Restoration Plan"), the discussions improved our understanding of why the agency selected particular priorities for the Foothills Project. We do not mean to suggest that we embrace all activities outlined in the Restoration Plan but that the process allowed us to better understand why the agency believes those actions are needed, which is valuable in itself.

If conversations and the Restoration Plan helped answered why, then the proposed action scoping document for the Foothills Landscape Project ("Proposed Action") helps answer how. We appreciate what specifics are included in the proposed action. Knowing basal area targets, herbicide use, and connected actions helps us envision, in a general sense, how the planned treatments could lead to the desired conditions. We particularly appreciate the Forest taking into account whether or not prescribed fire is available in combination with certain proposed treatments.

Despite those details, we have had a difficult time understanding what the project will actually accomplish on the ground and the effects of that effort. We support landscape-scale analysis but not at the expense of site-specific analysis. Before the first machine enters the woods, we try to envision the project in detail and anticipate macro and micro, planned and unplanned, outcomes. We try to identify the unspoken activities that necessarily follow from the plans, *e.g.* the log truck rumbling past a campground to implement a timber harvest. That information is essential for developing project alternatives and comparing the impacts of project alternatives. On that front, this project has presented great difficulties for the public. Project results are intrinsically linked to on-the-ground project locations. Forest stands are not interchangeable.

Each forest stand is the result of a unique mix of history and site conditions. The impact of managing a stand depends not only on stand-specific conditions, but also on surrounding conditions. How a stand differs from or connects to the surrounding landscape is critical information for developing any successful project. In other words, assessing stand-specific conditions is necessary not only to evaluate a treatment's effects on that specific stand but also to

¹ To our knowledge the current version of the Restoration Plan is the version linked to in the proposed action.

evaluate the overall impact of the entire project. Without this information, the public cannot make well-informed comment or alternative suggestions. We cannot overemphasize that point.

As a result, we have tried to offer feedback on the general concepts presented in the agency's proposed action but have been unable to offer our perspective on the most critical issue – what impact (beneficial or adverse) these proposed treatments will have on the ground.

Not knowing where the treatments will take place has also created difficulty by obscuring the scale of the project. All treatment acreages in the proposed action are listed as “up to.” We truly do not know if treatments will total 900, 9,000, or 90,000 acres and it appears the agency does not either. This situation is markedly different from past projects. As discussed elsewhere, this unprecedented scope also affects the agency's NEPA obligations. Past projects identified specific stands that we could compare to other projects to estimate how much of a stand would actually be treated. In other words, using past examples we could approximate the percentage of a stand that would receive a proposed thinning treatment and the percentage of the stand that would be left alone. This allowed us to better understand a project's true scale. We have no precedent for knowing how much of the area that fits the Foothills' preliminary GIS criteria will be chosen for treatment – particularly when even the maps generated as part of that process are explicitly not “treatment location maps.” Proposed Action, 6. At community conversations, agency staff indicated they would like to treat as much of the potential acreage as they can. As of today, we have no information that would rule out treating the full acreage. Consequently, we have no choice but to essentially assume a maximum impact scenario and evaluate the project as if the full acreage will be treated.

As discussed elsewhere, knowing the scale of the project is essential for considering cumulative impacts. Even knowing the total acreage of the project for the landscape would not be sufficient to adequately identify cumulative impacts. Cumulative impacts occur at different scales. Watersheds of all orders may be subject to cumulative impacts. Cumulative impacts that may not raise concerns for a sixth order watershed may still impair a fifth order sub-watershed. Being able to evaluate cumulative impacts at different scales requires knowing not only the total extent of treatments, but also knowledge of the sites proposed for treatments, and how those treatments are spatially distributed across the landscape.

Our basic process for evaluating agency proposals involves examining what proposed treatments will mean for actual stands in the field, not just considering impacts revealed through desktop analysis. This involves going into the forest and looking at actual stands. To submit the most meaningful scoping comments we tried to replicate that process with this project. With descriptions of treatments in hand and a flowchart for determining which treatment would be applied, we visited various areas in the Foothills. Looking at actual stands though, we could not tell what treatment would be applied. For example, we would locate an oak stand that fit the basic requirements for treatment as articulated in the proposed action, but could not determine whether the stand would undergo midstory reduction, thinning, daylighting, or an expanding gap

treatment. In some instances, one or more of the treatments looked like it may be effective while others would put the stand on an undesirable trajectory. In other instances, one treatment appeared most likely, but that treatment would likely produce undesirable results. More pointedly, the impact on other resources (soil, water quality, etc.) often turns on the type of treatment applied; we were largely unable to estimate what those impacts would be. How can the public have an effective voice in the face of such great uncertainty?

For the most part we have organized our comments by focusing on general issues first, moving to more specific issues, and ending with concerns related to compliance with various applicable legal requirements. As the Forest well knows these concerns are all interrelated. Embracing the concept of yellow pine restoration, for instance, does not mean that it is appropriate in all or even most circumstances. We have tried to forthrightly respond to the agency's proposal, but as mentioned throughout, that effort is seriously hampered by lack of specificity in the proposal.

Finally, we note that the Oct. 30, 2017 scoping alert states that “[i]ssues to be raised in objections must be based on previously submitted specific written comments regarding the proposed project and attributed to the objector, unless the issue is based on new information that arose after a designated opportunity to comment.” Oct. 30, 2017 Letter from B. Jewett, 2. We understand the Forest Service will offer a second opportunity for public comment associated with the publication of its environmental analysis document, which we appreciate. But because the agency has included this reference to 36 C.F.R. 218.8(c) as part of this comment period we feel the need to underscore that because many of our concerns are directly related to where specifically a project is sited on the landscape, any information about where the project will occur will constitute “new information” and may raise additional issues we did not have the opportunity to raise here.

II. The Forest Service Must Complete an Environmental Impact Statement

“The National Environmental Policy Act (“NEPA”) is our basic national charter for protection of the environment.” 40 C.F.R. § 1500.1(a). It “contains ‘action-forcing’ provisions to make sure that federal agencies act according to the letter and spirit of the Act.” *Id.* One of those “action-forcing” provisions is the requirement to prepare an Environmental Impact Statement (“EIS”). To continue with the Foothills project as planned, the Forest Service must prepare an EIS.

An EIS must be prepared for all “major Federal actions significantly affecting the quality of the human environment.” 42 U.S.C. § 4332(C). “Affecting” includes actions that “will *or may* have an effect.” 40 C.F.R. § 1508.3(emphasis added); *see Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1149 (9th Cir. 1998), *overruled, in part, on other grounds Lands Council v. McNair*, 537 F.3d 981 (9th Cir. Idaho 2008)(An EIS “*must* be prepared if substantial

questions are raised as to whether a project . . . *may* cause significant degradation of some human environmental factor”)(internal citation omitted) (emphasis in original).

“Human environment” is a “comprehensive[]” term that includes “the natural and physical environment and the relationship of people with that environment.” 40 C.F.R. § 1508.14. Nearly all actions on national forest system lands impact the “human environment” to some degree.

“Major Federal action includes actions with effects that may be major and which are potentially subject to Federal control and responsibility. Major reinforces but does not have a meaning independent of significantly (§ 1508.27).” 40 C.F.R. § 1508.18. The Foothills project is unquestionably a federal action; it is certainly “subject to Federal control and responsibility.” *Id.* Whether the action is considered “major” is determined based on whether the effects will be “significant.” *Id.* In summary, because the Foothills project is 1) a federal action that 2) affects the human environment, an EIS must be prepared if those effects will be “significant.” Indeed, determining “whether a proposed project will ‘significantly affect’ the environment” is the “threshold question” “triggering the requirement for an EIS.” *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212 (9th Cir. 1998).

Significance, as used in NEPA, is determined based on “context” and “intensity.” 40 C.F.R. § 1508.27. The Council on Environmental Quality’s (“CEQ”) NEPA regulations provide a list of factors to consider when evaluating “context” and “intensity.” Substantial risk of a significant effect can be determined based on just one of those factors. *See Ocean Advocates v. U.S. Army Core of Eng’rs*, 402 F.3d 846, 865 (9th Cir. 2004). The Foothills project triggers many of them.

To evaluate “context” “the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality.” 40 C.F.R. § 1508.27. “Both short- and long-term effects are relevant.” *Id.* “Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole.” *Id.* In other words, “[c]ontext refers to the scope of the agency’s action, including the interests affected.” *Montana Wilderness Ass’n v. Fry*, 310 F. Supp. 2d 1127, 1144 (D. Mont. 2004). The context of this project is addressed throughout these comments but this is undoubtedly a significant project in the affected region, across various affected interests, and in the locality. In many ways the Forest Service has promoted the project by highlighting its significance and unprecedented nature. The project is the first of its kind on the Chattahoochee National Forest “developed with collaborative input” over the course of a year. Proposed Action, 4. The project is the largest that we are aware of in the history of the Chattahoochee National Forest, aiming to conduct “restoration activities within [a] 143,000 acre project area.” *Id.* For perspective, the project area is nearly three times larger than the entire Uwharrie National Forest in North Carolina. The project touches every ranger district on the forest and is

spread across eight counties. *Id.* The project proposes to utilize a new “toolbox approach” during implementation; a significant departure from past practice. *Id.* at 6. The project purposefully impacts nearly every “interest” on the national forest with recreational, logging, road building, wildlife, conservation, and restoration aspects to name a few. And the project is intended to identify forest management activities to be completed over the course of a decade or more. In the context of the Chattahoochee National Forest, it is difficult to imagine a more “significant” action.

“Intensity” “refers to the severity of impact.” 40 C.F.R. § 1508.27(b). The CEQ provided 10 factors to consider when analyzing the “intensity” of an action. *Id.* “The presence of one such factor may be sufficient to deem the action significant.” *Klamath-Siskiyou Wildlands Ctr. v. U.S. Forest Serv.*, 373 F. Supp. 2d 1069, 1079 (E.D. Cal. 2004). Nearly all of the CEQ’s ten factors are triggered by this project but at least seven are especially relevant.

First, a project may be significant based on the intensity of “impacts” including both “beneficial and adverse” impacts. 40 C.F.R. § 1508.27(b)(1). While many impacts of the Foothills project have not been disclosed, the sheer scope of the project makes significant impacts unavoidable. The project contemplates as much as 90,000² acres of vegetation management, including possibly 51,000³ acres of high-impact industrial logging. The project contemplates as much as 50,000 acres of prescribed burning and associated impacts. Proposed Action, 19. The project will make on-the-ground changes to the forest road system (Proposed Action, 30, 40), recreational facilities (Proposed Action, 31-36), and anticipates application of large quantities of herbicide and pesticide (Proposed Action, 40). This work will occur across a range of (yet undisclosed) ecosystems significantly impacting forest ecology, terrestrial and aquatic species likely including threatened, endangered, and rare species (collectively “TES”), and soil and water resources, as examples. With past projects, the agency has frequently concluded that impacts will not be significant because they will be mitigated. As discussed elsewhere in this letter and in Attachment A, the agency cannot reach that conclusion with the Foothills project, because the agency will not know where project activities will occur and what the “on-the-ground conditions” are in those areas until project “implementation.” Proposed Action, 6. The agency cannot reasonably conclude that mitigation will be effective if it does not even know where activities will occur.

² This was calculated by adding the proposed acreage for all treatments but excluding 1) the acreage proposed for oak restoration which we understand to be the same as the acreage proposed for southern yellow pine restoration, and 2) the acreage proposed for woodland restoration which we understand to be included in the acreage proposed for oak and/or pine restoration. This does not include any acreage under the category of “general forest health maintenance.”

³ We expect this number to underestimate what is actually set forth in the proposed action. The estimate includes the southern yellow pine restoration treatments, oak maintenance treatments without advance regeneration, pine plantation treatments, and young forest treatments. We understand woodland and canopy gap treatments would also likely be commercial but that acreage is not included here.

Finally, we note that impacts⁴ are significant “even if the Federal agency believes that on balance the effect[s] will be beneficial.” 40 C.F.R. § 1508.27(b)(1). We support the agency’s effort to conduct landscape-scale analysis in concept but pursuing such a large suite of management activities across an expansive area necessitates preparation of an EIS. Even if every impact of the project was beneficial (which is not the case) an EIS would be necessary due to the sheer size of this project.

Second, projects can also be significant based on “[u]nique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.” 40 C.F.R. § 1508.27(b)(3). The Foothills area has many unique characteristics including but not limited to the wild and scenic Chattooga River corridor, historical and cultural resources, old growth forest, rare habitats and ecosystem, suitable habitat for TES, and potential wilderness areas. Given the proposed scope of the Foothills project, several of these unique characteristics are likely to be impacted.

Related to unique areas, Forest Service NEPA regulations explain that included in the classes of actions “normally requiring environmental impact statements” are timber and road building projects that impact potential wilderness areas. 36 C.F.R. § 220.5(a)(2). Potential wilderness areas are those areas that “may have wilderness characteristics as defined in the Wilderness Act” and meet the wilderness inventory criteria in Forest Service Handbook § 1909.12, Chapter 70. There are several potential wilderness areas in the Foothills project area as discussed *infra* Section XV(b)(2). Given those areas’ special qualities, impacting them creates the presumption that an EIS is necessary.

Third, evaluation of intensity requires consideration of the “degree to which the effects on the quality of the human environment are likely to be highly controversial.” 40 C.F.R. § 1508.27(b)(4). “The term ‘controversial’ refers to cases where a substantial dispute exists as to the size, nature, or effect of the major Federal action rather than to the existence of opposition to a use.” *Sierra Club v. U.S. Forest Serv.*, 843 F.2d 1190, 1193 (9th Cir. 1988). We are not opposed to landscape-scale projects and embrace more of an “all lands” approach to project planning, but do not believe the size of this project is ecologically appropriate for the Chattahoochee National Forest.

The dispute over size is directly related to a dispute over the effects of the action. We have minimal information about this project, including no information on where highly impactful activities such as industrial-scale logging and road building will occur on the ground. But based on what the agency anticipates in its proposed action it does not seem possible for these activities to be carried out without causing highly significant effects. The agency does not appear to share this perspective, otherwise it should already be moving forward with preparing an EIS.

⁴ NEPA uses impacts and effects interchangeably as we do throughout this comment. 40 C.F.R. § 1508.8.

Finally, there is a substantial dispute over the “nature” of the project as reflected in the nearly 400 comments embedded in the Restoration Plan debating various aspects of the proposal. Many of those comments dispute whether portions of the project are necessary at all, and question whether the recommended actions will have the desired effect. Indeed, according to the proposed action the very purpose of the yearlong process of seeking collaborative input was to “*debate* the restoration needs on the landscape and the potential tools to improve ecosystem’s resilience to disturbance and sustainability.” Proposed Action, 4 (emphasis added). While inciting debate is not necessarily problematic for NEPA purposes, it suggests that the agency realizes the project is controversial, necessitating substantial analysis of the project in an EIS.

Fourth, a project may trigger the need for an EIS if it “may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.” 40 C.F.R. § 1508.27(b)(6). This project does both. The new “toolbox approach,” enhanced adaptive management techniques, and delay in assessing “on-the-ground conditions” (and related impacts) until “implementation” are all significant new approaches to forest management on the Chattahoochee that may establish a precedent for future actions. The decisions made in the Foothills NEPA documents also purport to make decisions in principle (e.g., that commercial logging will occur) about future considerations (where the logging will occur).

Fifth, as discussed elsewhere in this letter the Foothills project is likely to result in cumulatively significant impacts. 40 C.F.R. § 1508.27(b)(7). Sixth, while it is unclear because the locations of proposed management activities have not been determined, given the scale of the project, it seems likely that “the action may adversely affect an endangered or threatened species.” 40 C.F.R. § 1508.27(b)(8). And seventh, the project may “threaten” a violation of other laws including but not limited to the Clean Water Act, Endangered Species Act, National Historic Preservation Act, and Georgia Erosion and Sedimentation Control laws. 40 C.F.R. § 1508.27(b)(10).

Currently, the agency plans to prepare an Environmental Assessment (“EA”) as part of this project. Proposed Action, 1. Of course preparing an EA is not a bar to subsequently preparing an EIS. Preparation of an EA can lead to one of two outcomes: a Finding of No Significant Impact (“FONSI”) or preparation of an EIS. A FONSI can only issue if the project “will not have a significant effect on the human environment.” 40 C.F.R. § 1508.13. Unless the agency substantially changes this project it *will have* a significant effect on the human environment barring issuance of a FONSI and requiring the subsequent preparation of an EIS. Rather than spend time on the EA now only to have to prepare an EIS later, the more prudent approach is to begin preparing the EIS now. A decision not to prepare an EIS is unreasonable “[i]f substantial questions are raised regarding whether the proposed action may have a significant effect upon the human environment.” *Save the Yaak Committee v. Block*, 840 F.2d 714, 717 (9th Cir. 1988) (internal citations omitted).

III. Support for Adaptive Management

We support efforts at adaptive management and note that the Forest Plan “represents an adaptive management approach for the Chattahoochee-Oconee National Forests.” Forest Plan, 1-1. The proposed action describes adaptive management as a way of tailoring treatments to site conditions. We agree that adapting management to site conditions is an integral part of adaptive management necessary for good results. Indeed, issues of mismatch between treatments and site conditions have been the core of most of our comments on past projects on the Forest. That pattern of concern convinces us that the public needs site-specific information about treatments to be able to understand the project and comment effectively. Stated differently, the public needs that information to evaluate whether the “adapted management” can be successful. The public’s ability to comment is hamstrung if it is not provided with the information that has proven the most useful in evaluating projects including their adaptive proposals.

But from our perspective, what the agency has proposed as an adaptive management technique goes significantly beyond that concept. The agency is essentially asking for a blank check – it hopes to sign a decision document authorizing unchosen treatments in unspecified locations across an unspecified acreage. Proposed Action, 6. Unbounded management opportunities are not necessary to implement adaptive management. The agency can easily design a smaller subset of projects in the Foothills area, complete landscape-scale and site-specific analysis on those projects impacts, implement the projects, monitor them, and then adapt future projects based on the monitoring results. Moreover, any adaptive management approach will take time to implement. Implementing a treatment in one location, then replicating it elsewhere a year later is not adaptive management – enough time has not passed for the agency to meaningfully evaluate and learn from the initial treatment. Because adaptive management takes time there is no need to authorize a project across the entire landscape at once.

This is concerning, in part, because the agency does not appear to be embracing the concept of adaptive management even in its initial proposed action and Restoration Plan. The Forest Service Handbook presents several questions relevant to evaluating adaptive management techniques, including: 1) Are the actions being taken having the desired effect?; 2) Are conditions moving in the desired direction?; 3) Is there progress towards achieving desired conditions?; and 4) How can management be improved so that it is more effective? *See* FSH 1909.12. § 06.2. But the agency does not appear to be asking these questions about its past management efforts. For example, the Brawley Mountain Project used herbicides to control woody vegetation with the goal of promoting grass and forb dominance to create a woodland ecosystem. That treatment did not work. Woody sprouts remain dominant at Brawley despite herbicide use and the additional stress provided by prescribed fire. The Foothills proposed action uses similar language to describe herbicide application to control woody sprouts to create woodlands across as much as 7,400 acres. What lessons learned from the Brawley Mountain Project will be used to ensure that herbicides will be more effective in this project? A more

prudent approach would be to proceed with smaller projects and provide the public the opportunity to analyze the effects and make informed comments on future proposals. If the agency wants to pursue adaptive management it should start by assessing its past actions across the forest and evaluating how it can better achieve its objectives, not by asking the public to endorse a management proposal with no specifics or concrete commitments under the justification that the agency will use that authority to pursue adaptive management in the future.

IV. Support for Collaboration and Ways to Improve the Process

Collaboration is a challenging process. Gathering stakeholders with different viewpoints, getting them to have open discussions on sometimes difficult subjects, collecting and synthesizing ideas discussed, and incorporating new ideas into existing approaches and constraints all takes time and effort. The agency obviously committed substantial resources to this process, and facilitated conversations by sponsoring a number of different, inclusive public participation formats. The agency also has made a concerted effort to keep the conversation and process transparent. We appreciate these and other efforts by the agency and participating stakeholders that have gone into this collaborative.

For how different the process was, the outcome—the proposed action—seems surprisingly familiar. The scale of the project is different, but many of the assumptions and approaches are indistinguishable from other recent projects. The meetings spent considerable time discussing values, but we have trouble recognizing how those are reflected in the proposed action. Instead, priorities and treatment approaches seem similar to past projects. We know many staff members were listening, because we had good, deep conversations with them. But we are struggling to see these conversations incorporated into the project development. The proposed action reflects a Forest Service-developed project as much as most projects, not a collaboratively-developed project.

As an example, one meeting in Clayton put forth the question “should commercial treatments be considered in ‘unsuitable’ prescriptions?” As much as any issue in these meetings, there was consensus around this question. The reaction was that it made no sense to treat in unsuitable prescriptions when there was so much other acreage available. Why risk conflict when there was so little to be gained? In the proposed action, we do not see a commitment to honor the collaborative group’s wishes on this and other topics. Unsuitable prescriptions seem to be on the table just as much as suitable prescriptions leaving us to wonder what was gained from the discussion in Clayton.

Nevertheless, as we have tried to articulate by letter and in person since the beginning of this process, we believe there is much to be gained from collaboratively developing projects on the Chattahoochee. We also understand that this is a learning process. In that spirit, we continue to offer suggestions on how to improve the collaborative process and remain available to discuss with the agency ways to achieve truly collaborative outcomes. From our perspective, the

Foothills process has not fully achieved all of the benefits of collaboration though some are within reach.

Our thoughts on collaboration are influenced by two overarching concepts which may be obvious but we restate them here for clarity. First, collaboration is not a replacement for the NEPA process. To the contrary we think collaboration can improve NEPA analysis and forthright impacts and alternatives consideration. Second, increased transparency, trust building, and discussion with various stakeholders and the agency are valuable pursuits, but those actions are not – in and of themselves – collaboration. In other words, just because trust has been built between various groups does not mean they have collaborated. The main objective of collaboration must be to achieve a common end by working together, and we are willing to engage in that process. Trust building is important, but from our perspective, if at the end of this process all we have to show is accumulated trust, and not a shared project objective, we will not have successfully collaborated.

One of the main benefits of collaboration is that it can help us move beyond the status quo of sorting out project controversies relatively late in the agency's project planning process. In the past, the agency generally sought public comment after investing substantial resources in developing a project proposal. Sometimes disagreements would be inefficiently resolved by changing or abandoning aspects of projects after agency resources had been invested. True collaboration lets us avoid these late-in-the-game disagreements (and resulting need to change projects) by designing a project that all parties can embrace from the beginning. Certainly collaboration is not a fix for ideological disagreement, but it allows stakeholders and the agency to recognize those disagreements, identify common ground, and design projects where each party feels their priorities are supported and the greatest potential conflicts are avoided.

There are many opportunities for this type of agreement in the Foothills area and we do not fully understand why the agency has not pursued that outcome. Some of these opportunities could be embraced relatively quickly. For instance, the Forest has preliminarily identified approximately 13,800 acres of pine plantations that may be suitable for commercial timber harvest. Proposed Action, 20. There is widespread support for manipulating plantations (assuming other conditions do not prohibit harvest), which are highly departed from natural conditions, to improve their ecological integrity and create a variety of wildlife habitats. If harvests can be completed commercially as the agency predicts, they will produce income for local loggers. This scenario seems like a win-win-win outcome. At the current pace of logging on the Chattahoochee, 13,800 acres could provide nearly a decade of timber sales. Embracing this type of action would allow the Forest to start implementing a project on the ground quickly, giving the collaborative community the time necessary to discuss other, more difficult issues.

We continue to believe that additional time to discuss issues in the collaborative setting could lead to more shared understanding and less controversy. The agency has referenced the Four Forest Initiative project multiple times as embodying the NEPA process the agency is

replicating here. But it took approximately four years to collaboratively develop that project in a less complex, less diverse ecosystem. We have some sense that the Foothills project has proceeded on a faster pace because of agency time and personnel constraints, which may indicate that such a large project is not an ideal first collaborative project on the Forest.

Aside from additional time, reaching agreement on other issues will depend on how the agency structures conversations amongst diverse interests. We now understand that the purpose of the community conversations over the past year was, in part, to “debate the restoration needs on the landscape and the potential tools to improve the ecosystem’s resilience.” Proposed Action, 4. Some debate may naturally occur, but it should not be an agency objective as debates tend to focus discussions on areas of disagreement rather than overlapping interests. It seems unlikely that approach will lead to a shared understanding between groups with ideological differences. It also seems unnecessary in many instances as diverse stakeholders do not have to reach agreement on all issues to develop a collaboratively-supported project. Just as we believe there is common ground between all forest stakeholders, we recognize that there are some issues we will likely never agree on. Moving forward in the collaborative process, we ask that the agency focus conversations on shared objectives between groups, and how to best reach those objectives, not debates.

Also as we have articulated before, we continue to believe that more transparency regarding the agency and public’s decision space could lead to better, more collaborative outcomes. This is particularly true of agency financial limitations. Between 2004 and 2015 the highest annual commercial timber harvest acreage was 1,415 acres. *See* Attachment B. A conservative estimate of the amount of commercial timber harvest contemplated in the Foothills project is 40,000 acres.⁵ At a 1,400-acre-per-year pace, the Foothills project would provide approximately 28 years of timber harvests. Assuming the project does not last longer than 10 years, the agency would have to increase the scale of logging to nearly three times the highest acreage it achieved over the course of a decade, and cease logging on the rest of the Forest. Does the agency have the financial and logistical capability to harvest that much timber? If not, why is it being considered? It will be easier for diverse interests to come to collaborative agreement on a plan to log 1,400 acres per year (if that is a more accurate estimate) rather than 4,000 acres.

Finally, it is critical that the agency fully define what it means by “collaborate.” When we began this process we assumed “collaborate” meant working toward some sort of consensus-based outcome. Indeed, documents distributed in the initial community conversation meetings described “the goal of collaboration [as] build[ing] and promot[ing] a *collective vision* for how to manage the land. Through collaboration, groups that may disagree are able to explore their differences, identify common interests, and *seek common-ground solutions*.”⁶ Those

⁵ The actual number appears to exceed 50,000 acres. *See supra* footnote 3.

⁶ https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5388734.pdf (emphasis added).

explanations are similar to Forest Service regulations defining collaboration as a “structured manner in which a collection of people with diverse interests share knowledge, ideas, and resources while working together in an inclusive and cooperative manner *toward a common purpose*.” 36 C.F.R. § 219.19. It is now abundantly clear, as was stressed during the October 2017 community conversations, that the Forest Service is not seeking any sort of consensus, common purpose, collective vision, or common-ground solution. Yet seeking those outcomes appears to be the foundation of collaboration. If that is no longer the agency’s goal, what is it seeking through collaboration?

We raised this question in our September 28, 2017 comments on the Draft Restoration Plan and were referred to the CEQ’s “Collaboration in NEPA: A Handbook for NEPA Practitioners” (October 2007). Restoration Plan, Comment CONF47.⁷ The Handbook underscores our point. It outlines four levels of public engagement in NEPA processes ranging from “inform” as the least engaging to “collaborate” as the most engaging. *Id.* at 11. Collaboration involves “working together towards agreement” on most issues, which is explicitly not what the Chattahoochee is pursuing. Instead, the public appears to be playing more of a consulting role where the agency “keeps parties informed and consider[s] their concerns and suggestions.” *Id.* at 13. Of course, there is nothing inherently wrong with the public playing a consulting role, it is just not collaboration. Pointedly, “[t]he mistrust created by promising collaboration and only delivering information . . . can ruin an agency’s relationships with parties and potentially undermine the agency’s credibility.” *Id.* at 12. We ask that the agency fully and finally explain what it envisions when it discusses public collaboration.

V. The Forest Service Needs to Clearly Define Restoration and Related Objectives

Also unclear is how the Forest Service understands “restoration” when describing “[t]he Foothills Landscape project [as] a restoration project.” Proposed Action, 1. The agency should more accurately define that term which will allow the public to better understand the underlying purpose of the project and alternative methods to achieve that purpose.

We submitted two sets of comments on the Draft Restoration Plan: one on June 9, 2017, and another on September 28, 2017. At the agencies request, our comments for the latter submission were articulated in Word Doc “comment bubbles.” Both letters are attached (Attachments C and D) and incorporated herein.

In each letter we asked the agency to more clearly define “restoration” to allow us to better understand its proposed actions. To be transparent, we support restorative activities on national forest system lands, but do not support activities that are restorative in name only; *i.e.* that do not have actual restorative impacts on ecosystems. Because of the potential for

⁷ Hereafter we reference comments in the Draft Restoration Plan as CONF__ or GFW__.

misunderstanding about what is and is not “restorative” we renew our request for clarity in how the agency understands that term and what it believes its actions will achieve. We recognize the restorative aspects of parts of the Foothills proposal, but there are several aspects that appear to have little restorative impact. We are trying to reconcile that difference.

We continue to believe that the agency should define its restoration goals using applicable guidance from the agency’s 2012 Forest Planning Rule (36 C.F.R. § 219 *et. seq.*). *See* June 9, 2017 Letter 7-9, Attachment C. The agency has thus far refused our request, most recently by stating that: “36 CFR Section 219 is the regulation regarding National Forest System Land Management Planning. The Foothills Landscape project is not a Forest Plan revision process, it is a restoration project. We are working under the definition of restoration from the Forest Service Handbook 2020.5.” Comment CONF52. Whether the definition is pulled from the regulation or the Handbook is beside the point. Forest Service Manual 2020.5 incorporates “[t]he definitions at the Land Management Planning Handbook, FSH 1909.12, zero code chapter, section 05.” *Id.* That section defines ecological restoration by citing to and repeating the definition of “restoration” from the 2012 Forest Planning Rule. FSH 1909.12, § 05. The Planning Rule is relevant if for no other reason than the definition in the Handbook is copied from the regulation. Moreover, the proposed action makes plain that the “Foothills Landscape project is a restoration project intended to assist in the *‘recovery of an ecosystem that has been degraded, damaged, or destroyed. Ecological restoration focuses on reestablishing the composition, structure, pattern, and ecological process necessary to facilitate terrestrial and aquatic ecosystems sustainability, resilience, and health under current and future conditions.’*” Proposed Action, 4 (emphasis added). The italicized text is also quoting the 2012 Forest Planning Rule as replicated in the Forest Service Handbook. According to the proposed action, this is an ecological restoration project as defined in the 2012 Planning Rule incorporated in the Forest Service Manual and Handbook – that guidance should guide evaluation of the project.

The agency suggests its restoration objectives are “framed” by Forest Service goals to protect watersheds found in the Forest Service Manual 2520. Proposed Action, 4. We are confused by that reference. Forest Service Manual 2520 is about watershed conditions, not ecological restoration. Restoration is defined in that chapter but only in connection to emergency stabilization of burned areas. *See* FSM 2523.05. Please clarify how the agency understands the interaction between Forest Service Manual chapters 2520 and 2020.5 as applied to restoration.

More problematically, in the Restoration Plan the agency explains that it is relying on the definition of “functional restoration,” not “ecological restoration” from the Forest Service Handbook even though “ecological restoration” is what is presented in the proposed action. *Compare* Comments CONF 58 and CONF 60 *with* Proposed Action, 4. Per agency guidance, functional restoration and ecological restoration are not the same. The agency must decide and clearly explain whether it is pursuing functional or ecological restoration and how its proposed activities meet either definition.

Functional restoration is the “[r]estoration of abiotic and biotic processes in degraded ecosystems.” FSH 1909.12, § 05; *see* FSM 2020.5. In other words, “[f]unctional restoration aims to restore functions.” *Id.* Functions are the “[e]cological processes that sustain composition and structure, such as energy flow, nutrient cycling and retention, soil development and retention, predation and herbivory, and natural disturbances such as wind, fire, and floods.” *Id.* Aside from use of prescribed fire and potential reintroduction of predators and herbivores, there is little connection linking many of the Foothills project’s proposed actions to functional restoration. At the very least, the agency has not articulated a connection. Much of the timber activity appears to be aimed at, for instance, “encourage[ing] [] diversity in the age” of trees. Proposed Action, 7. But manipulating forest age classes is related to forest structure which is an element of ecological restoration, not functional restoration. *See* FSH 1909.12, § 05. Restated, whereas ecological restoration may provide a basis for manipulating forest structure (e.g., age diversity), functional restoration reestablishes the *processes* that sustain that structure.

Importantly, the Forest Service Manual only allows functional restoration “[w]hen ecosystems have been altered to such an extent that reestablishing key ecosystem characteristics within the NRV *may not be ecologically or economically possible.*” FSM 2020.3(6)(emphasis added). In other words, functional restoration is available to only the most degraded ecosystems that cannot be ecologically restored. To pursue functional restoration the agency must explain why “reestablishing key ecosystem characteristics within the NRV” (i.e., ecological restoration) is not “ecologically or economically possible.” This is a multistep process including at least these steps: 1) determining the ecological reference condition, 2) assessing potential to restore to that condition, 3) instead of implementing restoration to that condition explaining why it is not ecologically or economically possible, and 4) determining and explaining functions to be restored instead.

Both ecological and functional restoration require identification and restoration to a reference condition. That condition must be justified in light of the requirements above. The Forest Service should clearly explain what reference condition it is using.

While unclear, the Forest may be seeking to restore to an “achievable future condition.” *See, e.g.,* Proposed Action, 7. We are not familiar with that terminology and cannot find it defined in the Forest Plan or agency’s regulations and directives. Further explanation of that term is necessary to understand what is being proposed, the best methods for meeting that end, if the project impacts are justified by achieving the “achievable future condition,” and to evaluate project success. Any “achievable future condition” should be one that is self-sustaining. In other words, it is questionable how “achievable” a condition is if it requires continuous manipulation to maintain a certain condition. If the agency is attempting to use “achievable future condition” as a reference condition for restoration purposes it must ensure identification of the “achievable future condition” meets the requirements for identifying reference conditions from applicable sections of the 2012 Planning Rule, Forest Service Handbook, and Manual. The

“applicable sections” may depend on whether the Forest Service is pursuing ecological or functional restoration.

The term “achievable future conditions” may have come from a recent paper in *Forest Ecology and Management* titled “Achievable future conditions as a framework for guiding forest conservation and management.”⁸ See S.W. Golladay *et al.* 2016, Attachment E. Our understanding is the approach set forth in that article: 1) compares current conditions to conditions that are likely to occur in the future as a result of climate change and land use changes, 2) identifies ecosystem services that may be lost as a result of those changes, and 3) sets management goals intended to protect those ecosystem services. But that process has not occurred here so it does not appear the concepts discussed in the paper can be applied. Please provide further explanation of what the agency means by “achievable future condition” and how that term comports with applicable agency guidance.

These differences are more than semantics; they matter legally and practically. As explained in the Restoration Plan linked to in the proposed action, the Forest Service is relying on its Manual and Handbook to justify and explain this project. In relying on those documents, the agency must explain how its actions comply with them. Additionally, we cannot understand: 1) what this project is intended to accomplish, 2) how the proposed activities will further that goal, 3) if project impacts are justified by the objective, and 4) how project success is determined if it is not clear what the agency means by “restoration.”

Related, the proposed action also relies on the definition of biologic integrity that states communities should “reflect, as best as possible, natural processes.” Proposed Action, 7. We believe that is an appropriate goal for this project and evaluate the treatments proposed through that lens.

VI. General Issues with Timber Treatments

By our count, this project includes over 20 distinct timber treatments. While they vary greatly in post-treatment stand structure, several themes cross all of the treatments. Probably most obviously, the treatments primarily aim to maintain currently dominant species that are declining in abundance, specifically oaks and pines. We agree that the decline of these species is one of the major issues facing this forest, and should be a management priority. We also see a role for timber harvests in managing those species.

The proposed treatments also take into account a number of critical factors that will shape how stands respond to timber harvests. Modifying treatments to account for prescribed fire,

⁸ Golladay SW, KL Martin, JM Vose, DN Wear, AP Covich, RJ Hobbs, Kier Klepzig, GE Likens, RJ Naiman, & AW Shearer. 2016 Achievable future conditions as a framework for guiding forest conservation and management. *Forest Ecology and Management* 360: 80-96.

varying levels of site productivity, and the presence or absence of advance regeneration of desired species will result in both more effective treatments and a more diverse landscape. We believe accounting for these factors is necessary for effective management, and are glad to see this positive step included in this project.

Despite these positive elements, other patterns in the treatments raise concerns. As we have discussed previously, we are troubled that the tailoring of treatments to stand conditions will not occur until after the public's options for recourse are closed. Additionally, treatments that are beneficial in isolation may cause problems in aggregate.

a. Scale

We are deeply concerned by the sheer extent of the treatments proposed. For decades, timber harvests on Forest have been scattered across a watershed at a time. The proportion harvested was often around 10%. Local areas of more intense harvest were sometimes problematic. This project not only applies that more intense approach across a broad area, but in several adjacent areas simultaneously, all of which could have negative impacts on sensitive watersheds. We recognize benefits of landscape-scale analysis and management decisions, but the risks associated with landscape-sized activities are significantly heightened. Timber harvests, when limited in extent, produce a number of negative effects that systems can sometimes absorb, or the effects can be mitigated when they are minor. However, when clustered, those negative effects can overwhelm ecosystem resistance and response capacity.

Correctly functioning best management practices (“BMPs”) reduce erosion and sedimentation from ground-based timber operations. Critically, BMPs do not eliminate erosion or sedimentation. And their effectiveness changes with site conditions. Soils are still degraded and sediment still enters streams, despite BMPs. When many stands in the same area are cut, a sediment-laden stream does not flow into a clear stream, but instead frequently meets another sediment-laden stream. Streams can only move so much sediment. Sediment on the stream bed, instead of being flushed by storm events, gets covered with more sediment from the next tributary. Larger and larger spaces between cobbles are filled, and animals gradually lose their habitat. That scenario plays out even where BMPs work as designed.

But when a rain event occurs that exceeds the design standard, BMPs can be overwhelmed. Those events lead to excessive sediment in not only one stream but in many streams, because BMPs for different stands frequently do not fail independently. As an example, Hurricane Irma severely impacted two-thirds of the Foothills at once. Spreading harvests across 10 years will help with this issue, but it will not eliminate it. Spreading out harvests also creates other risks— increased vulnerability over a longer time period (i.e. ten years) instead of shorter (five years).

Timber harvests also have direct negative impacts on many wildlife populations, particularly soil-dwelling organisms and species with small home ranges and limited dispersal capacity, such as salamanders⁹ and frogs¹⁰. See Semlitsch *et al.* 2009, Attachment F; Connette & Semlitsch 2013, Attachment G. Their limited physiological mechanisms to prevent water loss necessitate the use of relatively cool, moist forested habitats, in conjunction with the use of underground refuges or coarse woody debris to maintain high moisture. Not surprisingly, mortality is highest in clearcuts because of higher ground temperatures and desiccation. Partial canopy retention (leaving 50% or more) increases chances of survival in the short-term, as does leaving slash and coarse woody debris for cover and migration. Having adjacent undisturbed areas nearby allows for migration and re-establishment of populations, but recovery of some populations can still take decades or even over a century. Harvesting too much of the landscape at once disrupts this recovery process and can lead to species-impoverished stands.

Habitat fragmentation presents a related problem. Many species avoid crossing disturbed areas. In a more limited project, species could use undisturbed areas to simply go around a disturbed area. However, the scale of this project removes that option, and migration becomes much more difficult. Treated areas aligned along a road could act as a wall and separate habitats and populations on either side of the road.

At the same time, timber harvests help non-native invasive species spread. Disturbance is often the prime reason for the spread of NNIS. In that light, all the proposed treatments should be vetted as to the possibility for NNIS spread. Since the location of all non-native invasive species populations are not mapped or known, the failure of the agency to identify precise areas to be treated makes more specific comments impossible.

Treating all possible areas at once also seems like a risky approach just in terms of ensuring the desired outcomes. What options will be left if treatments do not have the desired effect? We have observed in some recently treated areas and on roadsides that red oak advance regeneration is common, but white oak saplings are rare, despite being common in the overstory. That raises the potential of not having white oak regeneration, while having all the best sites for regenerating white oaks already occupied by regenerating red oaks. A similar scenario could occur with Virginia pine regenerating rather than other southern yellow pines. Even if these specific scenarios do not occur, using a truly adaptive management approach calls for the agency to conduct treatments slowly and purposefully, ensuring its actions will have the desired effect

⁹ Connette GM & RS Semlitsch. 2013 Life history as a predictor of salamander recovery rate from timber harvest in Southern Appalachian forests. *Conservation Biology* 27(6): 1399-1409,

¹⁰ Semlitsch, RD, BD Todd, SM Blomquist, AJK Calhoun, JW Gibbons, JP Gibbs, GJ Graeter, EB Harper, DJ Hocking, ML Hunter, Jr, DA Patrick, TAG Rittenhouse, & BB Rothermel. 2009 Effects of timber harvest on amphibian populations: Understanding mechanisms from forest experiments. *BioScience* 59: 853-862.

and not unintended effects. Because the project is focused on vegetation management, results of certain actions will not be apparent for years.

Conducting tens of thousands of acres of timber treatments also threatens to interfere with recreation in ways that past treatments have not. In the past, campers at a particular campground might have had to contend with log trucks rumbling past for a couple of years. Now that scenario threatens to play out at all the campgrounds and popular recreation spots in the Foothills. Encountering tractor trailers on Forest Service roads can be an unnerving and difficult experience, particularly for infrequent visitors. People may forego going to a favorite area only to find the same intrusions at their alternative destination. Confining activities to non-holiday weekdays will lessen, but not eliminate the issue. And timing restrictions will do nothing to help visual impacts. Piles of slash and active timber operations are not visually appealing to most people. These factors may impact recreation and tourism which are the biggest industries in the Foothills.

On a more basic level, is extensive logging what people want done with their national forests? The agency went to great lengths to let the public know about and have their say about this project. Despite that commendable effort, we did not see the average forest user at the community conversations. While there is obviously a wide range of desires among the public, we still do not see a reason to believe they want this much timber management. We understand timber harvests will be used as part of this project, but the current proposal seems excessive.

b. Herbicide use

Using herbicides is risky. Sometimes they do only what they are intended to do. However, other times they have unintended consequences. Using herbicides on hundreds of acres is risky, but using them on an entire landscape represents a fundamentally different risk. If unintended consequences do occur, entire forest types will be degraded; entire watersheds may be compromised. How much herbicide an organism is exposed to can depend on more than just how much is applied to a particular acre. Animals as diverse as bears and bees increase their exposure as more of the landscape is treated.

We used to take some comfort in knowing that most herbicides used on the Forest are plant hormone mimics. The ecosystem, we reasoned, should be able to handle compounds similar to those that are already ubiquitous. History undermines that logic. As one of many examples, *trans*-fats were once commonly added to processed foods. They are compositionally identical to the *cis*-fats found in natural foods. However, *trans*-fats act differently in the human body and were found to have significant health risks. As a result, they have largely been removed from foods. As another example, thalidomide is infamous for causing birth defects. What is not always appreciated is thalidomide comes in right- and left-handed versions. The two versions have identical chemical formulas and are simple mirror images of each other. One is a

medicine for morning sickness while the other causes birth defects. Chemical similarity to a benign compound is no guarantee of a chemical being harmless.

History is replete with examples of herbicides and pesticides that were used for decades and considered to be safe only to be banned or restricted when problems were identified. For example, glyphosate has been used for decades, and was considered safe. However, current research from the World Health Organization identifies the herbicide as a likely carcinogen.

Even if the active ingredient in an herbicide turns out to be safe, that finding does not mean the herbicide is safe. Other chemicals are added to herbicides to make the active ingredient disperse or for other physical effects. These secondary chemicals are trade secrets. Consequently, we do not know what is being sprayed on thousands of acres of forest. The overall point is that there is risk inherent in using herbicides whether those herbicides are perceived to be well understood or not. That risk drastically increases when herbicides are applied over a large area, which counsels against applying herbicide on a landscape scale as is proposed here.

Additionally, some stands may not allow use of herbicides for even their intended purpose. Stands with very dense evergreen understories, either white pine or heath shrubs, are common in the Foothills. Prescribed fire can help control them, but they will still present fierce competition for desired species in other areas. The proposed action implies herbicides would be used to control these dense understories. The leaf area and stem density is so high in these stands that it seems unlikely that these competitors could be controlled without exceeding the gallons/acre limit on herbicide application. Assuming herbicide labels are followed, we do not see how treatments in these stands could be effective without prescribed fire.

Finally, different herbicides pose different concerns. The proposed action does not identify the herbicides to be used in association with American chestnut orchard, mechanical fuel reduction, or right-of-way maintenance. The primary herbicide identified for silvicultural use, triclopyr, does not adsorb to sediment and may contaminate surface waters (particularly considering the mass quantities proposed to be administered as part of the project). The ester formulation has been found to affect plant species in semi-aquatic areas at all application rates suggesting its use should be completely avoided in some areas.

c. Importance of focusing on ecological processes

This project appears to treat the symptoms of poor forest health, but do little to address the root causes. For instance, the project plans to foster oak regeneration by harvesting timber to increase light levels and by using herbicides to control competition. However, those actions do not address why light levels are low or why competition was limiting. They will not help the next generation of oaks.

As we brought up in regards to the Restoration Plan, we believe the long term benefits of this project would be much greater if more attention were paid to forest processes. Thus far, analysis of the Foothills has been overly focused on current physical conditions. Stand structure and species composition are certainly important, but they are not the greatest influences on future forest conditions. Important processes that appear to have received only minimal attention include soil formation, canopy gap formation, beaver activity, and nutrient cycling (including components such as flowering dogwood acting as a calcium pump).

Prescribed fire is an important exception. By using prescribed, the Agency has begun to address the root cause of several different issues facing the Foothills. Prescribed fire likely fosters oak regeneration, but at the same time promotes grasses and aster family wildflowers. To have the most beneficial effects and avoid unintended negative effects, prescribed fire use still needs to be modeled on the conditions that Foothills species evolved under.

d. Picking winners and losers

The combined effect of all the treatments seems to pick winners and losers across the landscape. The individual trees to remain in the overstory will be chosen during timber harvests. The individual plants to remain in the understory and midstory will be chosen during herbicide application or directly planted. To some extent, this happens with any timber harvest, but the scale of the Foothills project makes these decisions more consequential. Across tens of thousands of acres, the only woody plants remaining will be those that have specifically been chosen. As the agency points out in comments on the Restoration Plan, conditions are changing; invasive species are spreading, climate is changing, and ecosystems are reshuffling. Is now the time to conclude that we know, on a grand scale, which plants should be where? Moreover, the agency should explain how these decisions comport with restoration objectives.

We also worry that many desirable species will be lost by accident. We know oaks, hickories, and pines will be slated for retention and red maple, sweetgum, and black gum targeted for removal. What will happen, though, to serviceberry, hornbeam, dogwood, southern crab apple, persimmon, red bud, mulberry, black cherry and sprouts of American chestnut? What about elderberry, witch hazel, and hazelnut? Will the crews applying herbicide be able to identify all of these species? Will they be able to tell red maple from maple-leaved viburnum? Will we lose these species, valuable for wildlife and biodiversity, from a landscape?

Special consideration should be given to flowering dogwood. If declines in species like white oak, shortleaf pine, and Kentucky warbler drive management decisions, then flowering dogwood should drive management decisions as well. The species has recently undergone a precipitous decline due to dogwood anthracnose. Dogwood has a number of attributes that make them important for “the health and ecological integrity of forest ecosystems throughout the

eastern U.S.”¹¹. The high-fat fruits are particularly well suited for fueling migratory flights, and they ripen just as migratory birds arrive. Unlike most other trees and plants, dogwoods have the ability to “mine” calcium from soil and rocks, and their decomposing leaves, fruits and roots then make calcium more available to other plants. Their abundance in ornamental settings and appearance as the state tree of two states also attests to their popularity. Dogwoods grow scattered in the understory rather than forming a continuous canopy layer, so retaining them will not interfere with regenerating other species.

e. Old forest

Models of the natural range of variability of forests have indicated that watersheds on the CONF have a shortage of old forests (*see* Upper Warwoman Landscape Management Project Environmental Assessment and Cooper Creek Watershed Project Environmental Assessment). The models overestimate the impact of disturbance (by ignoring the understory among other factors), so that finding is all the more striking. The proposed action indicates the agency plans to protect the most important of the existing old forests by designating existing old-growth for old-growth management (see below). We wholeheartedly support that decision.

But we have a remaining concern: how will the gap be closed between the current proportion of older forest and the proportion indicated by the natural range of variability? Closing that gap requires most of the forests that are currently over 100 years old not to be harvested. That will allow them to continue aging into a *true* late successional phase, including the fine scale patchiness, species composition, and ecosystem processes characteristic of late succession. Most of the Foothills’ treatments target “mid to late successional” forest. While some treatments, like the midstory reduction, would not interfere with stands aging into older age classes, many other treatments would functionally convert stands to much younger ages—old trees would not dominate the stand. To prevent that outcome more intensive treatments should generally avoid older stands. Attempts to address a shortage of young stands should not perpetuate the shortage of old stands.

Beyond stand age, this project’s effects on habitat resources associated with older forests should also be kept in mind. Cavity trees, snags, and coarse woody debris all provide habitat for a wide variety of animals and are concentrated in old forests. Coarse woody debris is critical cover for soil dwelling organisms during prescribed burns.¹² *See* O’Donnell *et al.* 2015 in Attachment I. These old forest habitats are artificially scarce in the Foothills, since the vast majority of stands are only old enough to produce them at diminished rates. Even partial harvests reduce the future abundance of these wildlife resources. For instance, harvesting an

¹¹ Holzmueller EJ, S Jose, & MA Jenkins. 2010 Ecological consequences of an exotic fungal disease in Eastern U.S. hardwood forests. *Forest Ecology & Management* 259(8): 1347-53, Attachment H.

¹² O’Donnell KM, FR Thompson III, & RD Semlitsch. 2015 Prescribed fire and timber harvest effects on terrestrial salamander abundance, detectability, and microhabitat use. *Journal of Wildlife Management* 79(5):766–775.

acre with 100 trees averaging 13.5 inches diameter (1 ft² basal area) to 50 ft²/acre basal area, will reduce by half the number of trees present to make gaps, make cavities, and make coarse woody debris. Snags can be retained during harvest, but once they fall, there will on average be half as many snags as in an unharvested stand with the same attributes. The rate of cavity tree, snag, and coarse woody debris will be reduced, on average, since the processes that create those resources have less raw material to act on. This reduction happens in a landscape that is already depleted in these resources. Moreover, older stands naturally create fine scale early successional habitat through gap-phase dynamics more readily than middle-aged or younger forest, such that allowing stands to age also leads to more naturally-created ESH. Again, the effects of harvest can be minimized by focusing treatments on younger stands that are common in the Foothills Landscape and far from producing these resources at a substantial rate.

f. Back-loading obligations

In some ways, we understand the agency's reluctance to get into the fine details of its logistical constraints at public meetings. However, logistical constraints are likely to influence how treatments are carried out, and hence their ultimate effects. Put another way, logistical constraints may cause proposed treatments to differ from the treatments that are actually applied. We cannot provide realistic feedback on the planned treatments without considering logistical constraints. Not knowing the location of stands adds additional uncertainty to the logistical constraints and further hinders the public's ability to provide meaningful feedback.

Many of the treatments included in the proposed action include long-term obligations. These include herbicide and manual release treatments, and pre-commercial thinning. Those treatments represent a financial liability. The effectiveness of the proposed treatments will be compromised if future agency personnel decide they do not want to, or cannot, spend resources on follow-up treatments. We note that roughly half of the pine plantations in the Foothills are considered inoperable. Those plantations have not and are not receiving the follow-up treatments that were planned when the original plantation-establishing project was implemented. As another example, the prescribed burns associated with woodland creation in the Brawley Mountain Project were not completed on schedule which may have given stands an additional growing season making them more resistant to fire. The reasons for failing to implement treatments varies over time—*e.g.* instead of steep slope restrictions, road conditions may be limiting—but the agency should consider the full range of possible outcomes in planning these treatments. In other words, what effect will a treatment have if the agency cannot implement follow-up treatments used to justify the action originally? In accordance with its adaptive management approach, that question should be answered considering the outcome of past projects that failed to implement planned follow-up treatments.

g. Relative timing of prescribed fire and timber harvest

The proposed action does not appear to make a definitive statement, but the plans for treatments in new prescribed burn units seem to be to harvest timber before beginning burning. Burning before harvesting has a number of advantages, and it would be helpful for the agency to clarify its position.

Controlling woody sprouts of undesirable species is often challenging. If burns occur first, overstory shade will create a stressful environment for sprouts to recover. Sprouts will have less energy available to use for recovery. Conversely, if harvests occur first, the high light conditions will provide sprouts more energy to recover. Larger sprouts will also require more herbicide and may be more difficult to ultimately control with herbicide.

Burning first allows harvests to be planned taking into account actual burn capabilities. Burn unit boundaries often require tweaking after the initial burn to produce safer and more manageable fire lines. Those changes may result in harvest stands moving in or out of the burn unit. As the proposed action shows, whether a stand can be burned or not changes the appropriateness of proposed treatments. Burning first, and knowing for certain which areas can be managed with prescribed fire, allows the agency to better evaluate if it should move forward with the rest of the planned treatment despite the lack of burning. Some treatments in the proposed action also specifically plan on growing season burns. When we have discussed growing season burns with the agency, wildland firefighters being deployed for the western fire season and the scarcity of days with suitable burn conditions have been mentioned as factors limiting growing season burn capacity. To make sure the plans for growing season burning match capacity, the full round of burns should be completed first. If all stands cannot be burned in the growing season, treatments can be adjusted appropriately.

Related, just because a stand is in a prescribed burn unit does not mean the stand will actually burn. Completing a prescribed burn first allows silvicultural treatments to be planned around parts of the unit that actually burned. While some variation is expected from one burn to the next due to weather, the initial burn can reveal areas that are surprisingly inherently fire prone or fire resistant.

Finally, this project is largely about maintaining the status quo. The goal is to roughly keep the proportion of oaks and pines on the landscape that regenerated 100 years ago. Logging after repeated burning, in the era prior to fire suppression, produced the modern oak and pine forests.

h. Monitoring

In several places the proposed action mentions the need for monitoring. Monitoring is even more important in this project than it has been in past projects. First, the scale is bigger.

There is simply more at stake. But there is also greater opportunity given the adaptive management approach. Issues caught early can be acted upon, and the improvements will play out over a large area.

Second, this project involves many new treatments. Even the most carefully researched and thought out plans can go awry in such a complex environment. The only way to tell for certain whether a treatment will work is to record what happens when it is implemented. As such, experimental treatments should be a manageable size to ensure that monitoring can be completed.

Third, every treatment in this project is occurring in a changed environment. Climate change is the most obvious factor, but NNIS are also fundamentally altering ecosystems. These ecosystems are at a unique point in their history. They have never had fire reintroduced after so long without it, and each subsequent burn is a novel treatment. These new factors are also interacting with each other. Due to all this change, treatments that worked in the past may no longer work. Monitoring is necessary to make sure treatments still have the desired effects.

VII. Specific Timber Treatments

Concerns outlined in this section are general in nature, assuming an “average” stand within the class targeted by each treatment. In other words, the concerns are focused on the conceptual treatments, but we are unable to offer thoughts on whether they are appropriate on specific areas or what the direct, indirect, and cumulative impact of the treatments may be. Particular stand conditions will dictate whether these treatments appropriate or inappropriate. Nevertheless, we offer our thoughts on ways to modify and improve the general conceptual proposals.

a. Southern yellow pine maintenance

Like the agency, we have noticed a lack of shortleaf, pitch, and table mountain pine regeneration in the Foothills. These species appear in need of help, and creating the conditions that allow those species to regenerate will produce immediate benefits for the landscape. We question whether timber harvest is necessary in that process though. Yellow pine can be maintained relying on prescribed fire without including timber harvests. Prescribed fire gradually thins the duff layer and eliminates the midstory. As an example, in the Buffalo Range burn unit, a site in the Foothills that has been burned 13 times, shortleaf pine seedlings are common and Virginia pine is not regenerating. Occasional shortleaf saplings at the site indicate prescribed fire and naturally occurring gaps are sufficient to regenerate shortleaf pine. As a result, thinning to 40-60 ft²/acre basal area is unnecessary for yellow pine maintenance in prescribed burn units. The restoration plan also notes that maintenance “is not a regeneration treatment,” so there is no impetus for immediate results.

Thinning in prescribed fire stands will likely also have negative impacts on biodiversity. While the Restoration Plan describes harvesting “Virginia pine, white pine, and other less desirable species,” many yellow pine stands have oaks as associates or have basal areas greater than 60 ft²/acre. Hence, thinning is likely to remove desirable species now without increasing desirable species in the future. We understand thinning would be conducted to increase seed production and remove undesirable species. But seed production in these species is already sufficient to perpetuate stands. The threat of “undesirable” species is not their presence, but their potential to take over these stands. Fire will keep them in check, and create conditions for southern yellow pine to regenerate. By definition, less desirable species are a minority of the overstory of these pine stands. In that role, they increase the diversity of wildlife resources.

Changing wildlife habitat to benefit particular species also does not justify the thinning component of this treatment. We are not aware of any severely declining species that are specifically associated with or dependent on the type of habitat that including thinning would produce. Species either have robust enough populations that the slower thinning produced by prescribed fire should meet their needs, or are dependent on other kinds of habitat. Other treatments described in the proposed action do a better job of addressing wildlife habitat concerns.

We appreciate that the description of the treatment includes some description of the fire regime, rather than just stating that prescribed fire will be used. Knowing how “appropriate burning season” will be determined would help us better understand the treatment. The long-term planning implicit in applying fire treatments “less frequently” “upon achievement of the desired conditions” is also encouraging. We believe that step is critical in long-term ecosystem maintenance.

Openness to new ideas creates opportunities for improvement. Hence, we are glad the agency is collaborating with Southern Research Station scientists and conducting field trials on new treatments. While we support trying the expanded gaps treatment, we believe it should be attempted on a much more limited basis for two reasons.

First, the treatment is experimental with no record of success in the Southern Appalachians. Between the oak and pine versions, expanding gaps appears to be the largest treatment in the entire project, possibly exceeding 20,000 acres. That scale hardly seems like an initial trial. Treating such a large area should be reserved for approaches that have a proven track record based on scientific studies in this region. A recent review of gap-based silviculture in the journal *Forestry*¹³ cautions that regeneration outcome of management are often inconsistent with theoretical predictions. See Kern *et al.* 2017 in Attachment J. These

¹³ Kern CC, JI Burton, P Raymond, AW D’Amato, WS. Keeton, AA Royo5, MB Walters, CR Webster, & JL Willis. 2017. Challenges facing gap-based silviculture and possible solutions for mesic northern forests in North America. *Forestry* 90: 4-17.

inconsistencies could be due to other gap characteristics (*e.g.* shape, aspect¹⁴) or forest conditions (*e.g.* seed bed, seed source, advance regeneration, competing vegetation, herbivores). This review reinforces the need for conducting research trials on a smaller, more manageable scale in the Foothills.

Second, the conditions in the Foothills make us question whether this treatment is likely to work here. The stands we observed had few to no young pines to place the gaps around, and we would not anticipate pine regeneration in those stands. The stands often had a dense understory. Even if the treatments were successful in the initial gap area, the surrounding thinning seems certain to release an abundance of white pine or red maple. That release would lead to a stand with little yellow pine. Herbicides would likely be overwhelmed in the face of so much existing advanced regeneration of competitors. Proceeding at a more modest pace, which would allow both the public and the agency to examine completed projects, would be more productive.

We also do not understand why the surrounding stand would be thinned to 50-70 ft²/acre basal area. A gap is an area without trees surrounded by areas with trees. This level of thinning would remove half the trees from many stands. Hence, this is a different use of the word “gap” than commonly found in the scientific literature. The expanded gap could also cover up to seven acres, many times larger than typical gaps in this region.

Related, the agency should explain how the “need for structural diversity” (Proposed Action, 8, 10) would be determined, and where southern yellow pine regeneration is anticipated that it does not currently exist. In our field visits, most areas did not have advanced yellow pine regeneration, so we could not tell where expanding gaps would be placed. Assessing how the treatment would affect individual stands was difficult (or impossible) without being able to estimate where gaps would be placed.

As an alternative to the large acreage proposed for this treatment, we recommend allotting approximately 600 acres for experimental trials of this treatment. That is enough acreage to include three to five stands on each ranger district. An experiment is only as good as the quality of the data collected from it, and data quality is limited by the resources available to collect it. Monitoring results on a larger area as proposed is unrealistic based on past monitoring on this forest. If there is a specific need for more canopy gaps, we suggest they be modeled on the distribution of canopy gap sizes found after natural disturbances.

¹⁴ Prévost M & P Raymond. 2012 Effect of gap size, aspect and slope on available light and soil temperature after patch-selection cutting in yellow birch–conifer stands, Quebec, Canada. *Forest Ecology & Management* 274: 210–221.

b. Southern yellow pine restoration

Southern yellow pine communities are in clear need of restoration in the Foothills and we are glad to see this concept included in the project. Past land use has left many of these communities heavily altered. As such, they should be among the highest priorities for management in the Foothills. We agree with the general view of the kind of sites that should be targeted for restoration. The targets should be further refined, though, to ensure that all treatments are in fact restoration, and that the sites most in need of restoration are not omitted.

Pole age (10 to 40 years old) Virginia and white pine should be included. Concentrated in the Blue Ridge but present on all districts, stands in this age range appear to be among the most departed from natural conditions. They typically have low species and structural diversity and contrast sharply to adjacent older stands in species composition. Omitting them would mean passing over many of the areas where this treatment could do the most good.

Older (greater than 80 years old) white pine stands should be closely examined before concluding that they were once yellow pine or yellow pine-oak stands. Hardwood stands on this Forest with dense white pine understories typically have some white pine in the overstory suggesting that white pine is dispersal limited. There needs to be mature white pine nearby, within a few hundred feet to provide adequate seed for white pine to colonize a disturbed area or an understory. Areas of dense older white pine likely had some white pine in the canopy prior to fire suppression. In the Foothills, we have seen these sites associated with large streams that would have acted as natural fire breaks.

The value of the artificial regeneration treatments appears to depend not only on the sites chosen, but also the follow-through after the initial treatments. We are concerned about the effect of this treatment if connected actions, such as noncommercial or potentially commercial thinnings, are not carried out as planned. Will that put these stands on a trajectory towards poor health that requires intervention to save them? Decade-old paperwork gets buried and budgets shrink, but southern pine beetle will still be here. Failure to follow through with future treatments may make these stands more susceptible to outbreaks.

We also question how the biodiversity of artificially regenerated stands will be encouraged. We understand restoring yellow pine stands requires walking a fine line. If the agency fails to foster the pines enough it will wind up without a pine stand. If it fosters the pines too much, it will end up with a plantation. While encouraged by the flexibility in the planting layout, we remain concerned that the current plans will shift the stands too much towards the plantation end of the spectrum. Given the emphasis on adaptive management, restoration, and lessons from past practices, the agency cannot justify creating plantations, intentionally or unintentionally.

In the natural regeneration version of yellow pine restoration, “a follow up harvest to remove the residual seed trees” appears completely counter-productive. To begin with, the seed trees are by definition the desired species. Removing them in no way restores the site. Perhaps more importantly, the seed trees are critical for the diversity of the stand. Without them, where will cavity nesters live? Without them, where will snags come from? Without them, where will bats find loose bark to roost under? Without them, where will coarse woody debris come from? If a wildfire sweeps through the stand killing the young pines, where will the next generation of pines come from? Treatments should add, not remove, complexity, including structural complexity. Removing the residual seed trees is not good for the forest.

We support thinning pine plantations to reduce southern pine beetle infestation risk. Since these stands are likely the most departed from the natural range of variability of all stands in the Foothills, they should be restored wherever feasible. Where adjacent areas lie outside of prescribed fire units, care should be taken that treatment of adjacent stands does not promote the recruitment of off-site loblolly pines.

Finally, we find it odd that southern yellow pine restoration is separated from oak restoration. Southern yellow pines typically occur mixed with oaks in the Foothills. That co-occurrence reflects broad overlap in their tolerance for drought, tolerance of fire, associated mycorrhizae, and need for light. The similarities suggest they could be restored together. Doing so would increase the landscape diversity of restored stands, produce more natural restored stands, decrease the risk of southern pine beetle attack, and provide the diversity necessary to adapt to a changing climate on a finer scale. We are not suggesting that all restoration should include both genera, but including mixed restoration would improve the overall project.

c. Oak and oak-pine maintenance

As we have pointed out on other projects, oaks play an out-sized role in providing resources for wildlife. A multitude of different wildlife species feed on acorns, and acorns often make up a large portion of their diet, especially in winter. In that role, they have become only more important with the decline of chestnut. We have also seen the scientific literature document the scarcity of oak regeneration across the eastern United States. Our own observations in the Foothills and rest of the forest generally match those findings. We are glad to see the agency taking oaks seriously.

All of our concerns about midstory reduction to maintain oaks on moderate to productive sites relate to broader issues. Please see our comments on herbicide use and retaining desirable species in the midstory and understory.

The agency proposes to regenerate, by a commercial harvest to 15-20 ft²/acre basal area, sites with “an adequate population of oak seedlings.” But those sites appear to already be in good condition and meeting the stated goals of the treatment. Both the overstory and the

understory are in the desired condition. Avoiding the soil erosion, stream sedimentation, water flow disruption, extensive herbicide use, and other impacts associated with such an intensive logging treatment should take precedence over conducting these unnecessary treatments.

Most of our concerns on maintaining southern yellow pines with fire treatments also apply to the maintenance of oaks with fire treatments. Again, commercial thinning and midstory reduction are not needed when prescribed fire will increase light levels. Most low to moderate productivity oak stands are strongly dominated by oak and other desirable species. Thinning these stands would remove desirable trees for no long-term gain. Midstory reduction would be a financial cost for no additional benefit in stand condition.

The specifics of the burn plans have multiple positive elements. Initial dormant-season burns should allow trees to redistribute their root systems lower so that no burn causes excess root mortality. Later shifts to growing season burns should be more effective at controlling competing vegetation and more closely match the burn regime that the ecosystem is adapted to, driven by summer lighting. Finally, we agree that building in some longer fire return intervals is essential for some trees growing large enough to withstand fire and perpetuate the canopy.

Our concerns about using the expanding gap treatment to maintain southern yellow pines, as described above, also apply to using this treatment to maintain oaks. On the Blue Ridge Ranger District in particular, stands that appeared to be candidates for this treatment had understories dominated by white pine. Even if the gaps in these stands were successful at regenerating oak, the thinning would release the pine understory and allow white pine to dominate the surrounding stand. At a stand level, this treatment appears unlikely to be successful on such sites.

Finally, we recognize the benefits of crown-touch release in immature oak stands. We remain concerned, however, about the excessive use of herbicide as outlined earlier, and recommend mechanical/manual treatments where possible.

d. Oak and oak-pine restoration

As we noted in our comments on the draft Restoration Plan, we understand how creating young oak stands would increase age class diversity on the landscape. It is true that if some pest or pathogen wiped out the roughly 100-year-old oak forests, having some young oak stands would keep oaks on the landscape. Young, even-aged, stands are one way to address this issue. But these stands have other problems that outweigh this perceived strategic benefit. Even-aged young oak stands are structurally simple, providing a relatively limited variety of wildlife habitat. It is also difficult for us to understand how creating these conditions could be restorative. Quite the opposite, it runs the risk of creating the need for restoration.

The better option is to foster advance oak regeneration across the landscape. That objective leads to all aged stands that provide more complex and diverse habitat. All aged stands are the historic condition of oak forests in the region. The Abrams studies that helped established lack of oak regeneration as a cause for concern were completed in old-growth, oak dominated forests, and those studies show stands dominated by oaks of many different ages. That the Foothills is currently dominated by even aged oaks stands is an artifact of past land use.

Focusing on advance regeneration also addresses the landscape-scale age distribution issues. Whenever disturbances, such as Hurricane Irma, impact the landscape, a new generation of oaks would be released across the landscape in naturally-created openings. If some pest or pathogen spread across the Foothills affected only one age class it would wipe out entire stands in the even-aged model. But all-aged stands would only lose scattered trees. Those trees would fall, continuing the gap-phase dynamic process. In that scenario the pest or pathogen would actually perpetuate, not diminish, oaks by facilitating the release of a new generation of oaks. Why settle for even-aged stands when we can have all-aged stands?

Our concerns with restoring oaks in Virginia and white pine stands match those described above for restoring southern yellow pine in these stands. We believe oak restoration in pine plantations is likely to be a very successful treatment, and are glad to see it included in this project. We have observed that where southern pine beetle or intense fires have killed the overstory in pine plantations, oaks often dominate the regeneration.

e. Woodland restoration

The description of woodlands in the Foothills proposed action is perhaps the best we have seen conceptually in any scoping document on the Chattahoochee-Oconee National Forest. The description lays out the relevant information without overstating points. The workshop on this topic seems to have been productive and brought us closer to a mutual understanding of the role of woodlands in the Foothills.

Description of how the treatment is carried out also generally appears straight-forward, though earlier comments on herbicides and the order of timber harvests and prescribed fire are still applicable here. But perhaps more than any other treatment whether this treatment is appropriate, and can be successful, or not, comes down to the sites selected. Converting all 7,400 acres preliminarily identified as potential woodland sites seems unrealistic, and could do more harm than good, such as draining financial and other resources, and ultimately failing. Success requires choosing sites that were historically woodland and that naturally tend toward woodland rather than forest. However, based on the information in the proposed action, particularly the lack of site-specific information, it is impossible for us to predict whether these treatments will be beneficial or not.

Our main quibble with the methods presented in the proposed action is related to the issue of characteristics of degraded woodlands on the CONF and the viability of commercial timber harvest. Woodland treatments should be planned under the assumption that they will be noncommercial. We are not necessarily opposed to commercial harvests—if the infrastructure supports commercial harvest and commercially valuable trees are present. But tall, straight trees, the kind that are commercially valuable, reflect at least a minimal level of site productivity. Stands with many of these trees indicate higher levels of site productivity which in turn suggests the site is naturally forest rather than woodland. There will be exceptions, such as where extreme soil conditions limit tree regeneration, but an abundance of commercially-valuable trees should be a red flag for woodland treatments. Creating excessive fuels through noncommercial harvest should also not be a concern in these stands. Only the exterior of boles are consumed in prescribed fires, and boles do not drive fire behavior. The slash produced in a commercial harvest would present essentially the same fire concern as the slash produced in a noncommercial treatment.

Since the woodland scoping discussion explicitly links to the Restoration Plan woodland discussion, we feel the need to clarify some points we made there. In our comments on the Restoration Plan, we asked “what is the [considerable evidence] for ‘extensive’ woodlands in the southern Appalachians”. Our focus here really is on the “evidence” question. In other words, what in the physical world supports the claim that extensive woodlands were present in the Southern Appalachians, and by extension on the Chattahoochee?

The agency put forth Delcourt and Delcourt 1997, Van Lear and Waldrop 1989, Rankin and Herbert 2014, and Wear and Greis 2002 as evidence in response to our question. Three of those four - Van Lear and Waldrop 1989, Rankin and Herbert 2014, and Wear and Greis 2002 - are summaries. They do not contain original research or put forth any new evidence themselves. With regards to woodlands, citing these articles is an appeal to authority. Those authorities are knowledgeable, and their conclusions certainly warrant serious consideration. What we want to do is seriously consider their conclusions. Does the evidence bear them out?

Delcourt and Delcourt 1997 is the only authority cited by the agency that presents actual evidence—the authors went into the field, collected data, and analyzed that data. That type of research certainly provides a foundation for evaluating the agency’s claims.

That said, the claim that there were extensive woodlands in the southern Appalachians is an extraordinary claim. The proposition asks us to believe that the landscape and dominate ecosystems we see today were completely different in the recent past. Such a bold claim requires strong evidence that, from our perspective, Delcourt and Delcourt 1997 does not provide.

For starters, the findings are based on *a single peat core from a single site*. All the usual caveats about small sample sizes apply. Randomness plays a large role in small samples, and

often leads to them not reflecting the broader population they are intended to represent. According to the agency's response in the Restoration Plan, the key supportive findings are the abundance of grass and oak pollen going back thousands of years. Grass accounted for less than 10% of the pollen for most of the core, but spiked to 30% at one point. But 30% pollen in one peat core does not mean that 30% of an entire landscape was grass - not even as an oversimplification. Grass, like all other vegetation, is spread unevenly over the landscape. The amount of pollen in the bog the Delcourts sampled is highly dependent on the proximity of concentrations of grass to the bog. A small amount of grass nearby or a lot of grass far away could produce the same pollen record.

Additionally, assuming that the pollen proportions the Delcourts found are representative of the landscape leads to other contradictions. For instance, the Delcourts also found an abundance of chestnut pollen, even after the chestnut blight. Rather than make the claim that a high number of chestnuts withstood the blight, the Delcourts attributed the abundance of chestnut pollen to an abundance of another species in the same genus with indistinguishable pollen, Allegheny chinquapin. If a significant amount of grass pollen suggests that grass was dominant on the landscape then a significant amount of Allegheny chinquapin pollen should suggest it was also dominant on the landscape. To the contrary, Allegheny chinquapin is a shrubby species that does not form dense stands and does not dominate individual stands, much less large portions of the landscape. Thus, there is good reason to question whether an abundance of grass pollen necessarily means grass was abundant on the landscape.

Overall, the evidence for widespread woodlands in the Southern Appalachians is weak. Several other lines of information—historical accounts, historical photographs, differences in climate relative to other regions with woodland, lack of physical legacies, etc.—support the conclusion that forests have dominated the southern Appalachians for millennia and woodlands were scarce.

To be clear, we are not arguing that there were no woodlands, only that woodlands were rare. That does not mean woodlands are not valuable. They certainly can provide valuable habitat. We go to such lengths in this discussion 1) in an attempt to be clear about our position, and 2) because of the focus on “achievable” conditions throughout the description of the Foothills Project. We worry that an overly enthusiastic view of woodlands will lead to overly ambitious woodland creation attempts on sites that were not woodlands and that will fight to be forests. We have previously identified to the agency sites that we believe were historically woodlands that we would like to see restored to that condition. We hope these sites will be prioritized.

f. Pine plantations

We support the pine plantation thinning treatments. Plantations are often the most departed stands on the forest and where restorative treatments can accomplish the most good.

They are also often most at risk for disease and pest outbreaks. For off-site plantations, most likely loblolly, we suggest taking precautions against regenerating the species. Prescribed fire is one likely option, but some sites may need to retain enough basal area to keep light levels below seedling requirements. Taking these steps should make the process of moving these stands closer to their natural condition (i.e., restoring them) more successful.

g. Early Successional Habitat

We recognize both the value of ESH and its departure from natural levels on some parts of the landscape. Many natural processes that produce early successional habitat, such as fire and beavers, have been greatly reduced on the landscape. We favor the restoration of those processes to the extent possible. However, we recognize that ESH dependent species have immediate needs, and that timber harvests can produce ESH.

The first step in planning young forest and ESH creation should be assessing the types and quantities of ESH on the landscape. Since plants, birds, small mammals, and other wildlife are all notoriously bad at recognizing property boundaries, ESH assessment should take an all lands approach. We recognize that ESH on private land is often qualitatively different from ESH produced by agency projects, but it still provides good habitat for some species. ESH on private land should be assessed as part of a diverse spectrum of ESH. There is also some ESH on private land that resembles agency produced ESH which should be considered, such as abandoned fields on the Etowah River just downstream of the project.

As we noted in comments on the Restoration Plan, the initial tally of ESH on agency land left out several important sources. Recent projects, particularly along Water Gauge Road, have produced extensive early successional habitat. Powerlines, due to their length, accrue a surprising amount of ESH. Both the Upper Warwoman and Cooper Creek projects noted that prescribed burning has produced ESH. In the Foothills, the Hickory Ridge Burn Unit appears to have on the order of 200 acres of ESH. Existing burn units will periodically provide ESH and new burn units will provide additional ESH. These sources should be accounted for in calculating ESH on the landscape. Naturally-occurring ESH should be accounted for as well.

Even accounting for these sources of ESH, some prescriptions will fall short of their maximum-level ESH limits. At a base level, timber harvests for ESH favor the existing understory over the existing overstory. Hence, we recommend producing ESH in areas where the understory has a more desirable species composition than the overstory. The southern yellow pine and oak regeneration treatments outlined in the proposed action generally meet that criterion.

Creating ESH in mesic stands could also meet that criterion, depending on the stands chosen. Old field stands would be a good choice for this treatment. They tend to have

overstories with both low species and low structural diversity. In the Foothills, we have seen tuliptree stands of that type on the Blue Ridge and white pine stands on the Chattooga River.

Treating edges of permanent openings (*e.g.*, wildlife openings, roads, etc.) to create ESH has the advantage of leaving undisturbed areas intact and concentrating disturbances in already disturbed areas. However, the treatment also has the potential to make NNIS problems worse. Invasive species should be removed from edges before the area is treated. The invasives should not simply be treated first, but completely eliminated, with elimination confirmed by monitoring. Initial treatments often leave residual populations of invasives, which are still fully capable of colonizing the new ESH area.

We still see no reason why new permanent openings are needed in the Foothills. Despite much emphasis on establishing clover and numerous attempts over the decades, nearly all openings consist of non-native low value fescue. It is difficult to see what would change in the future and the agency does not appear to have considered how to prevent this recurring outcome despite the emphasis on adaptive management. As we pointed out repeatedly and in different ways in our comments on the Restoration Plan, the bigger concern is that permanent openings provide the worst form of ESH available. They provide the least habitat value to wildlife, even though providing habitat to wildlife is the whole point of wildlife openings. Permanent openings do not resemble natural habitats, and thus no species are specifically adapted to them. As such, they cannot be justified as restoration. They are also the most similar to the ESH that is provided abundantly on surrounding private land.

While the agency's mandate "to contribute to the viability of native and other desirable wildlife species" may explain producing some form of ESH, there is no reason it needs to be the worst option – permanent openings. This is particularly true given that the proposed action provides other, better options for creating ESH, such as oak and yellow pine restoration. These options provide more complex habitats, better habitats for declining species like prairie warbler, and habitats that are less likely to be found on private lands. Our wildlife deserve these better options.

At the very least, the agency should ensure that existing wildlife openings are functioning properly and beneficially before new permanent openings are created. Autumn olive, an NNIS commonly planted in wildlife openings in decades past, still infests many openings. In many cases, the species has spread into adjacent areas and has completely taken over some abandoned openings. The invasive should be eliminated from these areas before new openings are created.

We appreciate the agency examining already disturbed areas, such as right-of-ways, and considering ways they could be managed to provide higher quality wildlife habitat. That approach seems to be the most likely to actually improve overall wildlife habitat rather than merely trade one type of habitat (older forests for instance) for another (younger forests).

However, we are also surprised and somewhat confused by the plans for right-of-ways. For years, the agency has told us about the value of early successional *forest* habitat and how it provides benefits not found in other forms of ESH. We have been told that while there is an abundance of ESH on the landscape, such as fields, there is a shortage of early successional forest habitat. On the Watergauge field trip, we stood in a recently harvested stand dominated by woody regeneration and heard it described as high-quality ESH. The discussion of right-of-ways seems to take the exact opposite approach. Now tree saplings are the enemy and entirely herbaceous areas are the goal.

We agree with the position the agency has held elsewhere, that woody early successional communities provide valuable habitat, and we believe it unwise to eliminate them from areas where they are maintained by default, such as right-of-ways. Even the report cited in this section of the Restoration Plan argues for the value of woody vegetation in right-of-ways. The report contains a photo labeled “ROW with *minimum* shrub cover for golden-winged warbler” (emphasis added).

Perhaps more important, the existing conditions in Foothills right-of-ways are the desired conditions as described in the proposed action. We examined a mile of power line right-of-way south of Macks Mountain and a quarter mile of power line right-of-way north of Stonewall Falls. Grasses and forbs dominate the Macks Mountain right-of-way and grasses, forbs, and low bush blueberry dominate at Stonewall Falls (low bush blueberry provides habitat similar to a forb since it is low-growing and flowers and fruits within the maintenance cycle of a right-of-way). Pine seedlings were also common at Macks Mountain, but they were scattered within the matrix of grass and forbs and are suppressed as easily by herbicides as by mowing. There were patches dominated by tree saplings, but these were largely restricted to very steep slopes (>60%), likely because close mowing was impractical in those areas. Invasive species were restricted to scattered individuals except for two patches of honeysuckle and a patch of shrub *lespedeza* associated with a road crossing.

Overall, managing right-of-ways with herbicides appears unlikely to improve wildlife habitat. In fact, the proposal would homogenize habitat and eliminate a valuable form of ESH. As discussed elsewhere in this document, herbicides pose a significant risk to ecosystems and should be avoided where possible. We see the right-of-way herbicide treatment as offering no gain while creating a significant risk.

h. Canopy gap creation

We are glad the agency recognizes the importance of gap dynamics but we are having trouble understanding the justification for this treatment and where it will occur. In response to our comments on the Restoration Plan, the agency listed three declining species as targets: cerulean, Kentucky, and hooded warblers. As far as we know, cerulean warbler does not occur in the Foothills, and has not been recently extirpated from the area. Attempts on this Forest to

create habitat for cerulean warblers using gap based silviculture were successful in areas that already had a population but not in areas where the bird was not already present. The Foothills does not seem like an appropriate area for cerulean-based treatments. Kentucky warblers are declining. According to the North American breeding bird survey, hooded warblers are common and increasing. We routinely hear them in areas with dense heath understories.

The proposed half acre to two acre gaps appear too large when compared to gap sizes documented in several scientific studies, particularly for cerulean warbler. Researchers from various agencies and institutions, including the Forest Service, found that cerulean warblers typically breed in “landscapes that are primarily forested (e.g. >75% forest cover within ~6 miles of the project area). ... Nests are typically in the largest trees available at the site. ... [They] favor the complex canopy structure characteristic of uneven-aged stands and old growth and prefer canopy gaps ~400-1,000 ft² in size,” with vegetative growth within them.¹⁵ See Wood *et al.* 2013 in Attachment K. Another study found that “cerulean warblers preferred bottomland forests containing tall (> 95 ft), large diameter, well-spaced (> 117 ft²/acre) deciduous trees with greater canopy cover (≥ 90%), closer (< 65 ft) canopy gaps, fewer snags (≤ 10/acre), and a moderately complex canopy structure.”¹⁶ See Carpenter *et al.* 2011 in Attachment L. “They are known to associate with small canopy gaps and small internal forest openings.”¹⁷ See Wood *et al.* 2006 in Attachment M.

The smallest canopy openings proposed in the Foothills Project (0.5 acres or 21,780 ft²) are **22-54 times larger** than preferred canopy gap size, and reduction of basal area to < 60 ft²/acre may be too great. That mismatch between the proposed treatment and the natural range of variability makes us question the effectiveness of the treatment not only for ceruleans, but for a broad range of species. The treatment description also does not discuss the current structure of targeted stands. Some stands on the landscape have a relatively simple and uniform structure, while others already have many gaps in them. This proposed treatment will impact those areas differently, making site-specific knowledge of the area where the treatment will be applied necessary to providing informed comments.

It is also unclear exactly what the treatment entails. The proposed action describes “retaining variable tree densities” but that sounds more like a thinning than a gap treatment. If gaps are placed too close together, they will not function as gaps.

¹⁵ Wood *et al.* 2013. Management guidelines for enhancing Cerulean Warbler breeding habitat in Appalachian hardwood forests. American Bird Conservancy. The Plains, Virginia. 28 pp.

¹⁶ Carpenter *et al.* 2011. Avian Community and Microhabitat Associations of Cerulean Warblers in Alabama. The Wilson Journal of Ornithology. Vol.123, pp. 206-217.

¹⁷ Wood *et al.* 2006. Cerulean Warbler Abundance and Occurrence Relative to Large-Scale Edge and Habitat Characteristics. The Condor Vol. 108, pp. 154-165.

The proposed action and Restoration Plan also do not explain why the treatment is better than the alternative of letting gaps form naturally. That should be addressed in the agency's environmental analysis. Gaps are inevitable in these forests as trees die and fall. Naturally formed gaps will provide a greater variety of habitats. Some will include standing dead trees while others will be produced by falling trees. Some of the falling trees will uproot, which is not the case with cut trees. Some gap makers will survive after falling and provide particularly dense cover near the ground. Artificially produced gaps only simulate the scenario where a tree snaps and dies immediately. Without more details on what the treatment entails and what stands will be targeted, we cannot support this treatment even in concept.

i. General forest health maintenance

This proposed treatment is particularly unclear. As far as we can tell, the general forest health maintenance treatment seems targeted at regenerating oaks and pines. Whether cutting down or herbiciding the midstory is beneficial overall, or not, depends on many factors such as what species are in the overstory and midstory, whether there a dense evergreen understory, whether trails or fires would be affected by the dead midstory, etc. The proposed action provides even less information on treatments that would occur after natural disturbances. What are the desirable species and why? What species would be planted? Would the treatment differ if it were in a prescribed fire unit? Without this missing information, information on where this treatment would occur, and total acreages treated, there is no way to evaluate this proposal.

VIII. Old-growth designation

We appreciate the agency taking its old-growth obligations seriously and following applicable guidance. We also appreciate the agency specifically highlighting old-growth in the community conversations and workshops. We hope those conversations gave other stakeholders a clearer view of what old-growth in the Foothills looks like and helps people understand the requirements for the agency to designate old-growth.

The agency's openness to considering all available information concerning old-growth in the Foothills is commendable. We know it would have been faster for the agency to consider only data from FS Veg. By including information from local surveys targeted at locating old-growth, we believe the designations better meet the intent of the Region Eight old-growth guidance and the desires of the public. The Carlson study of old-growth in the Chattooga Watershed is currently being digitized, and we urge the agency to also designate stands identified in that study when the information becomes readily available. Finally, as discussed below, we believe that agency is still obligated to conduct old-growth surveys in areas slated for timber management.

IX. Non-native invasive species

Globally and in the Foothills, non-native invasive species are one of the biggest threats facing natural ecosystems. They have the capacity to completely eliminate entire species from the landscape and destroy existing ecosystems. NNIS also threaten many of the other treatments in this project. What good is prescribed fire if it just allows the area to be taken over by princess tree? The same question can be asked for canopy gap treatments that fill with oriental bittersweet and thinning treatments that become dominated by Chinese silvergrass; and those are just examples.

We understand that resources for dealing with NNIS are limited. We also know that many people within the agency care deeply about NNIS. We have seen the agency keep hemlocks on the landscape in the face of a fast moving and uniformly lethal NNIS. We have seen the agency do yeoman's work in protecting rare habitats. And we know that we will simply have to live with some invasive species.

However, we feel this project represents a unique opportunity to confront invasive species, and time is precious in addressing NNIS. They represent an inherently landscape scale threat. They do not respect boundaries and many are highly mobile. To deal with them effectively, they must be controlled across the landscape.

In our discussions with the agency about specific NNIS populations, we are often told the agency cannot respond or cannot respond quickly because it does not know exactly where to treat NNIS. Forest stakeholders can help with that. The Foothills (and the rest of the forest) is a big area to record NNIS, but every day people traverse the places most likely to support NNIS. Digital applications and databases for documenting NNIS locations are provided by the Center for Invasive Species & Ecosystem Health at the University of Georgia. Although our understanding is that the agency compiles a separate database, University of Georgia staff in Tifton provide public training on how to identify NNIS and load that information into relevant databases and applications. Agency staff and contractors also repeatedly visit treatment sites and can help identify invaded areas. The Foothills Project is an ideal opportunity to use a landscape-scale approach to monitor the spread of NNIS and to coordinate with state-wide partners like UGA to control their spread. We are more than happy to help facilitate that process.

We were glad to see in the Restoration Plan that the agency is contemplating how to prioritize NNIS. That still needs to be coupled with an assessment of what NNIS can realistically be removed. The efficiency of controlling individual populations also needs to be accounted for. On a Foothills field trip, we saw a small population of Japanese spirea along a Forest Service road on the way in to the site. The particular district previously used timber receipts to treat a larger roadside Japanese spirea population elsewhere in the district. We support the decision to treat the larger population but note that while treating smaller populations

may seem like doing less, it is generally much more cost efficient. Small populations turn into large and difficult to control ones quickly.

Related, we noticed that some NNIS contract work does not appear to be effective in the long term, because portions of the NNIS population are missed. In these cases, the NNIS just spreads from the remnant population, and in a few years things are back where they started. In other areas where the initial treatment was thorough, a few individuals are inevitably missed or come back from the seed bank. We realize that the agency already follows up after treatments, but that follow up period needs to be extended, which will require more careful data tracking. Failing to complete adequate follow-up treatments risks invalidating the initial treatment entirely.

By gathering stakeholders, the Foothills also presents a good opportunity to look for creative solutions to particularly challenging NNIS. Hog damage last year was the worst in recent memory. Hogs' intelligence, broad diet, and wide roaming make them a challenge to control. Many different stakeholders are upset and focused on them right now. Bringing those stakeholders together to brainstorm about how to control hogs may generate a novel solution. It also may not, but the cost to ask people is very low and a solution would be extremely valuable.

The proposed action barely mentions the impending arrival of several tree pests. Thousand canker disease is on the forest's doorstep and emerald ash borer is likely already here. Laurel wilt is also impending, and others like sudden oak death and Asian long horn beetle may still wreak havoc. The time to plan for these species is before they get here. Relying on general tree health to combat these species is an ineffective strategy as many non-native invasive pests and pathogens attack even healthy trees. The agency's response to hemlock wooly adelgid is a good model to follow in combination with applying the best available science for each species. Note that no hemlocks were saved on the upper Chattooga River because the adelgid hit that area before a plan was in place to save trees. Some of the other non-native invasive pests and pathogens will be even more difficult to combat, but some trees can be saved. The Nantahala-Pisgah National Forest is already treating ash along the Appalachian Trail to protect them from emerald ash borer.

We recognize that we do not have all, even many, answers on NNIS. But collectively, given the risks NNIS pose for the forest, the agency and stakeholders must come together to attempt to develop a plan to combat these pests. The Foothills project seems like too good of an opportunity to pass up to get that conversation started in earnest.

X. Rare habitats

We appreciate the efforts described in the proposed action to maintain or restore rare communities and ecosystems. They contribute to landscape level biodiversity far out of proportion to their limited spatial extent. They also harbor rare species with no other options for

survival and enjoy broad public support. As such, they are great opportunities for maximizing limited resources through partnerships and volunteer labor.

Monitoring should be integrated into all of these restoration activities but particularly for rare habitats. Due to the rarity of these areas, techniques for their restoration are often experimental. Lessons learned from these restoration efforts may also help save these communities in other regions. Careful records of what was done and the outcomes would facilitate that sharing of information. Monitoring could also help identify problems in these habitats before they become irreversible.

We support efforts to restore bog (fen) and other wetland communities. Restoration of hydrology should be a top priority. Many other issues, including woody encroachment and NNIS invasion are facilitated by altered hydrology. Ongoing work to maintain these sites such as brushing back woody growth should be continued.

Beavers should be reintroduced or promoted wherever possible. Beavers are ecosystem engineers with profound effects on both aquatic and terrestrial habitats. The shortage of ESH on mesic sites probably reflects the decline of beavers more than any other factor. Where they interfere with other resources, creative solutions should be sought. For instance, stand pipes may be able to lower water levels without disturbing the beavers. Beavers have already undergone dramatic population declines and only a fraction of their original habitat is now available to them.

The plans for canebrake restoration appear to have multiple positive features. Focusing on areas that already have some cane present suggests the projects are restorative and makes them more likely to succeed. Using a variety of different treatments also makes it much more likely that some successful method will be found. As mentioned above, regular monitoring should be part of this process. We also support making the cane available to the Revitalization of Traditional Cherokee Artisan Resources.

Installing a chestnut orchard is a necessary step towards restoring chestnut in the Southern Appalachians. The loss of chestnut continues to dramatically impact both wildlife and other plant species in the Foothills. The proposed actions are a reasonable contribution towards restoring this species.

We support efforts to find ways to improve small whorled pogonia habitat. We note that prescribed fire is suggested as a way reduce canopy. The population bottleneck could be seedling establishment, with duff character a critical factor. We suggest monitoring duff thickness and considering the way different prescribed fire regimes would interact with the duff.

We recommend any milkweed planting in canopy gaps be limited and carefully monitored. Forbs are typically common in canopy gaps that can support them. Milkweeds in

canopy gaps may not add appreciably to pollinator resources or may be outcompeted by other plants.

We commend the Forest Service and its partners for all they have done to combat hemlock woolly adelgid (“HWA”). HWA has been a catastrophe for this forest. We appreciate that the agency did not sit back and idly watch the destruction unfold, but instead aggressively fought to preserve hemlocks where possible. Healthy hemlocks on the forest, invariably with tags on them, remind us of the coordinated efforts of the Forest Service, Georgia Forestry Commission, researchers, beetle labs, and the community volunteers who provide both labor and financial resources to help with these efforts.

We also appreciate that the agency is not resting on these successes, but is looking for new ways to conserve hemlocks. Continuously striving for improvement, combining resources through partnerships, and open discussion of results will generate the best outcome for hemlocks, and ultimately, for the people who use the forest. That approach requires considering the latest research, taking a hard look at what is working and what is not working, and trying new approaches.

However, “looking to pursue many alternatives to [hemlock] conservation” does not guarantee that those alternatives will be successful or beneficial. Additionally, approaches that work in some contexts (environments) may not work in other contexts. We particularly caution against assuming that high light environments alone will save hemlocks.

We have seen hemlocks growing in high light conditions in the Foothills, for instance in the 2011 tornado path, that look surprisingly healthy. The thick upper crowns and rapidly growing leaders give the impression that those trees could mature and survive. But we have also seen that response before. In the Smokies, in the upper Chattooga River watershed, and elsewhere in north Georgia nature has already run the experiment to see if untreated hemlocks growing in high light environments would survive the adelgid. In those areas, hemlocks grew in natural canopy gaps, next to streams with full light on one side of the crown, and in large openings left by Hurricane Opal, but in each instance the hemlocks ultimately succumbed to the adelgid despite these high light environments.

The research of Brantley *et al.* (2017)¹⁸ with hemlock seedlings assessed the question of whether high light could reduce HWA infestation and improve carbon balance of infested eastern hemlock seedlings. Leaf-level physiology and tissue nonstructural carbohydrate measurements are strongly affected by season, time of day, and light level, and growth is strongly affected by light level. Without a “no HWA” control at all light levels to tease out the interaction of HWA

¹⁸ Brantley ST, Mayfield III AE, Jetton RM, Miniati CF, Zietlow DR, Brown CL, & JR Rhea. 2017 Elevated light levels reduce hemlock woolly adelgid infestation and improve carbon balance of infested eastern hemlock seedlings. *Forest Ecology and Management*. Vol. 385: 150-160.

density and low light effects on these parameters, one needs to be cautious in interpreting their results.

Caution must also be exercised in extrapolating seedling responses under highly-controlled situations to field conditions. The hemlocks seedlings in the Brantley study were grown without below ground competition and were watered regularly. Perhaps more importantly, the seedlings were infested with adelgid for only 14 months. In the wild, adelgid populations build up over years, and often take several years to kill hemlocks. Finally, not all adaptive traits or responses in seedlings are good predictors of how mature trees will respond to the same stress in the field; consequently, these responses need to be tested on mature trees.

While a high light environment is not enough to save hemlocks, the improved health and slower adelgid growth in that environment raises the possibility that other treatments will be more effective in combination. The obvious place to start is to combine high light with predator beetle releases. Predator beetles may be able to keep up with the adelgid in that environment. Monitoring would be a crucial component to determine the impact combining these treatments. Identifying situations where existing biocontrol can be successful in keeping hemlocks alive would be an important step for hemlock conservation.

The other application of increasing light on hemlocks is field insectories, as identified in the proposed action. This treatment could not only make research more financially efficient, it could accelerate the process. Monitoring should also be fairly easy in this situation since people would already be going to the trees to collect beetles. We support treatments combining beetles with high light, but do not support high light treatments alone.

Areas where the adelgid killed hemlock forests are clear candidates for restoring hemlock. We hope hemlock is restored to those areas. The questions are “when” and “how”. As we stated in response to the Restoration Plan, we do not believe the answer to “when” is “now.” There is no urgency for restoring these areas. The hemlocks that have been saved should survive for decades or centuries. At the other end of the spectrum, we are aware of no recent development that makes outplanted trees likely to survive on their own. Any hemlock planted would be on life support and a resource drain. And as we discuss elsewhere in this document, those same resources could go to protecting individuals of other threatened species, species without any protected individuals.

It is not our intent to quell research, but to offer our feedback on a topic of great interest to us. We support the agency working with research institutions to implement well designed studies—where sites are carefully chosen so that inferences can be made about where results apply and where they may not, where appropriate controls are included to evaluate treatments against, and where metrics are regularly tracked to quantify the impact of treatments. That is the right approach and should be a high priority. Our concern is that the proposals for thinning around hemlocks and outplanting hemlocks do not sound like they are confined to such

meaningful studies. We caution against simply implementing treatments anywhere that look good, assuming positive results, and not monitoring.

Finally, we support the plans to expand existing hemlock conservation areas. The existing areas have worked well, and provide a unique benefit.

XI. Prescribed fire

Having a safe and effective prescribed fire program is one of the most important management challenges facing the Foothills. Fire poses an obvious threat to life and property, and fire is one of the most widespread causes of disturbance on the landscape. Fire is not an on-or-off phenomenon. The effects depend not simply on whether or not there is fire, but on the fire *regime*. The ecological effects of fire depend on the season, intensity, scale, location, and frequency of the burns. This basic information is missing from the proposed action. Some of the silvicultural descriptions contain pieces, but the complete information is not provided for any burn units. This information has been provided, at least in general, by past scoping notices. Without this information, neither we nor other stakeholders can evaluate the prescribed fire plans.

We are left to suggest some general best practices for prescribed fire in the Foothills. We confine these suggestions to the variables list above, since we have generally found the burns to be implemented in a highly professional manner with good mechanisms for error correction.

The first burn in a unit should be during the dormant season. This minimizes the stress from the first burn and allows fine roots to be redistributed deeper in the soil profile so that future burns will produce less stress. In general, we recommend low intensity burns unless the goal is to produce ESH or regenerate species adapted to high intensity burns, like table mountain pine. We have noticed moderate to high intensity burns used after some timber treatments. These burns may kill residual overstory trees, but do little to control woody sprouts. Even in pine beetle killed table mountain pine stands that burned in the Gatlinburg Fire, mountain laurel sprouted back after the fire. We recommend modeling frequency on the fire regime most species in this region evolved under. The fire return interval in this regime, which would be dominated by lightning fires, is poorly known, but would likely have been on the order of 20 years on many southern Appalachian sites. The first few burns may need to be more frequent while duff thickness and sensitive understory species like white pine are reduced. Scale and location will likely depend on the location of fire breaks.

The additional information regarding how prescribed burn units will be placed to reduce wildfire risk to structures is reassuring. Using SouthWrap and targeting areas like “National Forest Lands located down slope of developed private lands” sound like effective steps in reducing risk. The Protecting Communities from Wildfire section generally sounds well thought out, but still, we lack information necessary to fully evaluate these proposals. We suggest the

prescribed fire planning be further strengthened by more careful consideration of the role of fuel mitigation in different vegetation types. Pine fuels can build up and increase in vertical spread over several years. Dense evergreen heath understories create ladder fuels that can lead to intense crown fires. Prescribed fires in these areas can alter fire behavior for several years. Hardwoods develop continuous fuels very quickly. Hardwood litter also quickly decays into fuels that do not promote high intensity fires. Hence, the effects of prescribed fire in hardwood forests on wildfire behavior largely last only until the next fall.

Researchers in northern Mississippi mixed hardwood pine forests—the study in the ecosystems most similar to the Foothills—found that prescribed fire did not reduce wildfire extent or intensity. We do not have hard data, but our observations from last fall’s wildfires seem to support that finding. The Rough Ridge Fire, burning largely through hardwood forests, showed small areas of higher intensity associated with yellow pines. In the Rock Mountain Fire, larger high intensity areas were associated with exceptionally steep slopes and dense mountain laurel understories. In the Gatlinburg Fire, which had the most extreme weather conditions, fire intensity high enough to kill canopy trees was largely restricted to southern yellow pine stands and their immediate vicinity. Intense fires were associated with specific vegetation types. Leaf fall has already restored fuel continuity for lower intensity fire.

Our point is not that prescribed fire in hardwood forests is pointless. We still support prescribed fire in hardwood forests for ecological reasons. Rather, resources are limited and the stakes are high, so for wildfire mitigation prescribed fire should be used in the areas where it has the greatest effect. Prescribed fire can do more to reduce wildfire risk in yellow pine and/or mountain laurel than it can in open-understory hardwood forests.

XII. Climate change

Climate change is one of the biggest problems facing the ecosystems of the Foothills. It will affect terrestrial and aquatic communities and every species in them. We are glad to see the agency identify many of the processes and specific components of the ecosystem that climate change will affect. We also are eager to see the agency’s analysis of the climate impacts of the various proposed timber treatments and prescribed burning.

Impacts may be even more severe than described in the proposed action. Precipitation records from Coweeta show that precipitation in this area has become more erratic over the past 75 years (Laseter et al. 2012)¹⁹. See Laseter *et al.* 2012 in Attachment N. Annual precipitation totals are becoming more variable over time, with wetter wet years and drier dry years. Drought severity and frequency have increased with time, and rain events have become more intense.

¹⁹ Laseter SH, Ford CR, Vose JM, & LW Swift Jr. 2012. Long-term temperature and precipitation trends at the Coweeta Hydrologic Laboratory, Otto, NC, USA. *Hydrology Research* Vol. 43.6: 890-901.

This Forest has witnessed such events in the deluges experienced in December of 2015 that swept away parts of several roads on the Conasauga District.

These risks counsel that less ground disturbance is better. The Foothills Landscape Project, however, proposes timber harvesting over tens of thousands of acres. Timber harvesting requires temporary roads, skid trails, log landings and heavy truck traffic. All of this ground disturbance leaves areas vulnerable to landslides and erosion during major rain events. Since the exact areas to be harvested are not identified, it is difficult to comment precisely as to the extent of this danger.

The question of carbon storage as a result of this project may be explored later, but the fact of the matter is that timber harvests decrease aboveground long-term carbon storage. Smaller branches and other woody debris left on the forest floor decompose and the regenerating forest does not sequester the same amount of carbon as the mature stand that was removed. This deficit can last for decades. Timber harvesting with skidders and truck traffic adds more carbon to the atmosphere.

The proposed action also perpetuates a common misconception about carbon sequestration. Increases in carbon sequestration by individual trees are not meaningful on their own. The important variable is ecosystem level carbon uptake or carbon sequestered per unit area. If trees take up carbon twice as fast, but there are half as many trees, then there is no change to the amount of carbon sequestered in that stand.

The proposed action also points out that climate change may be a particular challenge for amphibians. What are the impacts of this proposal on amphibians? Both timber harvests and prescribed fire appear to promise drier forest floors and a reduction in leaf litter. Recovery of amphibian populations from timber harvests in the Southern Appalachians can take up to a century²⁰. The Connette and Semlitsch study also found that estimated abundance of stream-breeding salamanders in young forest stands was negatively associated with distance to adjacent forests—a result suggesting immigration has a role in recovery of these species. The extent of the harvests in this project, leaving parts of the landscape with little undisturbed area, will only make salamander recovery more difficult. This diverse and abundant group of species should not have to bear so many stresses at once.

As we discuss above, the uncertainty associated with climate change and other novel conditions makes monitoring even more important. The climate change section of the proposed action mentions the need to monitor for new NNIS. The NNIS section of the proposed action, however, makes no plans for how to deal with invasive species whose arrival is imminent. To mitigate the impacts of NNIS, monitoring for new NNIS needs to be coupled with a response.

²⁰ Connette GM & RD Semlitsch. 2013. Life history as a predictor of salamander recovery rate from timber harvest in Southern Appalachians. *Conservation Biology* Vol. 27(6): 1399-1409.

XIII. Recreation

As recreational use of the forest continues to become increasingly important, we are pleased to see the agency seriously consider feedback from the many recreational users who participated in the Foothills Collaborative. In general, we agree with the suggested changes to the various trail systems and camping areas, including the decommissioning of low use trails and campgrounds. These plans to improve the recreational experience while simultaneously focusing on maintaining sustainability are a move in the right direction. We appreciate the efforts made to find local partners to assist the Forest Service in maintaining and protecting some of these areas. We appreciate the systematic, objective, and transparent process outlined in Table 3 to evaluate recreation areas for reduction in services or decommissioning. We suggest that the accessibility of some of the recreation sites be considered in the site assessments. For example, a site like Warwoman Dell is easily accessible for the public and requires only a very short distance on a gravel road. It is close to a large mountain city (Clayton), provides quick access to 3 waterfalls within a short hiking distance on a historic trail (Bartram), has significant historic structures (CCC shelter and fish hatchery), and is known as hallowed ground to Native Americans. These kinds of factors need to be considered when making decisions regarding reductions in services or decommissioning. As recreational pressures on this forest steadily increase we continue to suggest that, particularly in some of these high use areas, it makes more sense to find ways to increase the presence of Law Enforcement Officers, than to try to decommission areas that the public obviously loves to visit. The steady decline of LEO's around the forest is negatively impacting the public's ability to access the forest. The mere presence of LEOs is a deterrent to illegal acts, such as trash dumping, that degrade these areas. We would like to see the Forest Service push for more LEO funding.

Finally, we believe fostering sustainable recreation on the forest is the best way to encourage public investment in public lands. In other words, recreating on the national forest is the way most people connect to these lands. Recreation also provides the highest economic impact for local counties and communities and should remain a priority for the Forest Service.

XIV. Roads

The road closures, decommissioning, and maintenance level changes proposed in the project are a huge step in the right direction, and we appreciate the agency's efforts to implement the recommendations in its Transportation Analysis Process Report. A large part of the current road system was created in the 1970s and 1980s to harvest timber and paid for with timber receipts. It is unclear how the agency, at the time, anticipated maintaining these roads, but it is clear now that the Forest does not have the funds to do it adequately. Scarce funds must be used to maintain major arteries such as FS 64, 42 and 28, leaving secondary roads with unfunded maintenance needs to be either decommissioned or reserved for administrative use.

Decommissioning and maintenance level changes will have direct, immediate benefits. Many of the roads proposed for closure now act as literal dumping grounds. It is hard to think of a worse use for national forest land. Many of the roads are also in bad condition. They contribute tons of sediment to nearby streams, impairing both wildlife and recreation.

The decision to close roads raises the question of how to close them in an efficient and effective fashion. Gates are expensive and the Forest is experiencing a rash of torn down and cut gates. The rise of light-weight battery powered metal cutting tools has exasperated the problem. Discussions with staff indicate that there is not enough money to even purchase the necessary gates. Boulders are expensive and require moving a piece of heavy equipment to set in place. Berms also require heavy equipment. The best and least expensive solution is cut timber barriers. As the Conasauga District has learned in Cashes Valley, timber barriers need to be robust. Violators will cut up a few downed trees but not a dozen felled one atop of another. If the agency is serious about closing roads either permanently or for administrative reasons, it is hard to see any other way. Of course, full-scale decommissioning is always the best option where funding allows.

We ask that the agency reconsider plans to improve the Rocky Flats road 630 D. The road currently is impassable because of a sinkhole and was formerly primarily used as an ATV area. Why convert what is now a trail back to a road and risk the danger of illegal ATV use and consume scarce funds? We realize that the road is located in a Wildlife Management Area but it could be promoted as a walk-in hunting trail. This roadway also lies adjacent to the most pristine part of the Foothills. This area represents a unique opportunity to preserve core habitat, which would be disturbed by using Rocky Flats as a road.

XV. National Environmental Policy Act Compliance

a. The Forest Service Should Clarify the Purpose and Need for the Project

NEPA documents must include a statement of purpose and need which “shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.” 40 C.F.R. § 1502.13; *see* FSH 1909.15 § 11.21. Purpose and need statements play a critical role because “the available reasonable alternatives are dictated by the underlying purpose of the proposed action.” *Wilderness Soc. v. U.S. Forest Serv.*, 850 F. Supp. 2d 1144, 1163 (D. Idaho 2012). “[A] purpose can [] be unreasonable if the agency draws it so broadly that an infinite number of alternatives would accomplish [it] and the project would collapse under the weight of the possibilities.” *Webster v. U.S. Dep't of Agric.*, 685 F.3d 411, 422 (4th Cir. 2012)(citation omitted). Purpose and need statements are also necessary to inform the public exactly what the agency intends to do. “NEPA forces agencies to explain what it is they seek to do, why they seek to do it, what the environmental impacts may be of their proposed action, and what alternatives might be available to the agency that might lessen environmental impact. Without a clear ‘what and why’ statement, the public is kept in the dark.”

Soda Mountain Wilderness Council v. Norton, 424 F. Supp. 2d 1241, 1262 (E.D. Cal. 2006). Here, because the “what and why” statement provided by the agency is vague, unexplained, and extremely broad it is unclear exactly what exactly the agency is proposing to do. Put another way, based on the purpose and need statement it is unclear what the agency *does not* intend to do as part of this project.²¹

The agency’s proposed action suggests the project is intended to meet “four primary needs” but we are unable to find articulation of what those four needs are. Proposed Action, 5. The notice also provides that the “proposed action for the Foothills Landscape project is organized to first describe the overall need of the project.” *Id.* But it is also unclear exactly what that is referencing. As best we can tell, the project purpose was identified “incorporate[ing] the objectives from the Forest Plan, the U.S. Forest Service Watershed Condition Framework, Georgia’s State Water Regional Plans, the Georgia State Wildlife Action Plan, Community Wildfire Protection Plan, Georgia’s Forest Action Plan, Shortleaf Pine Restoration Plan, Recovery Plans for Threatened and Endangered Species in the project area and information provided through collaborative effort.” *Id.* That list is so broad as to make the project purpose virtually anything. Are all of the objectives of those documents incorporated as a purpose of this project? Such an expansive purpose makes it difficult for the public to offer helpful feedback to the agency about alternative ways to achieve the agency’s goals. And because alternative consideration is tied to the purpose and need statement, the agency will be required to assess a significant number of alternatives that may meet this very broad purpose. As defined by the purpose and need, the scope of this project is unprecedented as will be the agency’s obligation to consider reasonable alternatives. “[A]n infinite number of alternatives would accomplish” the project purpose which may cause the analysis to “collapse under the weight of the possibilities.” *Webster*, 684 F.3d at 422. The agency should revise, clarify, and narrow its statement of purpose and need.

b. The Forest Service Must Complete Adequate Impacts Analysis

1) The Forest Service Must Assess Direct, Indirect, and Cumulative Impacts

As articulated in our October 16, 2017 letter, the process set forth by the agency, as we understand it, cannot comply with NEPA’s requirements to adequately consider direct, indirect, and cumulative project impacts. *See* Attachment A. We will refrain from rehashing our concerns in detail here but our opinions have not changed and we incorporate our October 16 letter herein. In short, NEPA requires the agency to take a hard look at the direct impacts of a project. *See* 40 C.F.R. § 1508.8. Particularly in an environment as complex and diverse as the Chattahoochee National Forest the agency cannot adequately assess direct impacts without knowing where project activities will occur. Direct impacts analysis requires site-specific

²¹ We note that we are responding to this project as best we can in good faith despite the lack of clarity in the overall project purpose.

knowledge considering the impact of a specific activity on a specific place. Here, the agency plans to conclude its NEPA responsibilities before knowing not only *where* project activities will occur, but even *what* those activities (i.e., types of treatments) will be. The “what” and the “where” of the action will be undecided and unassessed at the time the agency proposes to reach a final decision. The agency’s own analysis demonstrates that this is insufficient to understand the effects of the project: “We acknowledge that the data is dated and may not be totally accurate . . . This inaccuracy in the data is one of the reasons . . . to treat according to on the ground conditions rather than the existing data alone.” CONF5. We agree. NEPA requires that the agency consider and disclose that information “*before* decisions are made and *before* actions are taken.” 40 C.F.R. § 1500.1(b)(emphasis added).

Guidance in the agency’s Forest Service Handbook is also instructive here. Projects are to identify (among other things): 1) “WHAT is the action being proposed?” 2) ‘HOW will the action be accomplished?’ and 3) “WHERE is the action being proposed?”. FSH 1909.15 § 11.2 (emphasis in original). “In stating the ‘what’ of the proposed action, [the agency is to] focus as specifically as practicable on describing the activities.” *Id.* The “how” is “an integral part of the ‘what.’” *Id.* “The ‘where’ refers to the geographic location of the project” which should be described “as specifically as possible.” *Id.*

Site-specific information is necessary not just for legal compliance reasons, but because it can reveal a wide variety of relevant issues. We provide examples of the different ways this information has impacted our comments on past projects in the enclosed “Why site specific matters.” *See* Attachment O. These impacts fall into a few broad categories. Most directly, site specific features determine direct and indirect effects which in turn determine cumulative effects. For example, sensitive features may be found during site surveys that suggest a specific treatment is better suited elsewhere. Assessing that tradeoff requires knowing where treatments are proposed. Many issues we have encountered, however, stem not simply from what is in the individual stand, but rather from the interaction between the stand and its context. Adjacent resources may be impacted by treatments, or change how large of an impact a treatment will have. The values a particular stand provides depend on broader landscape context. As described elsewhere, assessing cumulative impacts requires knowing the spatial arrangement of all treatments.

The agency has suggested that sideboards will fix these issues, but sideboards by themselves are insufficient. For one, sideboards cannot compensate for use of inaccurate data that must be checked at the stand level. For example, the 2011 Forest Health Stewardship Project proposed to thin over 6,000 acres of overstocked pine stands, but public review (by ForestWatch) found the stands to contain little to no pine. Similarly, stands preliminarily proposed for old-growth designation in the Cooper Creek Watershed Project were identified as over 100 years old, but some had in fact been clear-cut after 1960. Even the Restoration Plan admits as much: “although Forest mapping data shows an abundance of young shortleaf pine stands in the Foothills Landscape, many are void or contain only a minor component of shortleaf

pine.” Assessment of impacts (beneficial and adverse) depends on site conditions; assessing impacts using inaccurate data will lead to inaccurate impacts considerations. These problems can only be solved by field checking the data not merely by providing sideboards (which will be irrelevant if based on incorrect data).

Assessment of indirect and cumulative impacts relies on adequate assessment of direct impacts. *See* 36 C.F.R. § 220.4(f). Without adequate consideration of direct impacts the agency has no basis to evaluate indirect or cumulative impacts.

Additionally, the agency must consider the cumulative impact of the many activities proposed as part of the Foothills project when added to impacts from past projects. *See* 40 C.F.R. § 1508.7. There have been a number of projects completed in the Foothills area since 2007 as reflected in maps distributed during the collaborative discussions.²² The agency must consider the cumulative impact of the Foothills project in combination with these past projects.

The agency must also consider the cumulative impact of the Foothills project in addition to reasonably foreseeable future actions. 40 C.F.R. § 1508.7. Our understanding is the Forest Service intends to replicate the Foothills process across seven additional “landscapes” over the next few years.²³ Those activities are reasonably foreseeable as the agency has stated its intention to begin pursuing similar projects in those areas. What is the cumulative impact of the Foothills project in combination with those projects? If those projects resemble the Foothills project then upwards of half of the entire Chattahoochee National Forest may see active management over the next decade. That is a highly significant cumulative impact that must be disclosed and assessed.

Finally, we reiterate that the agency cannot issue a “Finding of No Significant Impact” if it does not know what the project impacts will be. Nor can the agency reasonably assure the public that impacts will be mitigated, and therefore a FONSI is warranted, if impacts are unknown. We remain available to discuss ways to resolve these concerns with the agency.

2) The Forest Service Must Consider Impacts to Georgia’s Mountain Treasures

Under NEPA, the Forest Service must disclose the presence of roadless areas when making project-level decisions and must consider and disclose the effects of logging and road additions or improvements on roadless areas’ characteristics, regardless of whether the areas are currently “inventoried” by the agency. *See The Lands Council v. Martin*, 529 F.3d 1219 (9th Cir. June 25, 2008) and *Smith v. U.S. Forest Service*, 33 F.3d 1072, 1077-79 (9th Cir. 1994) (both requiring consideration of impacts of timber sales on un-inventoried roadless areas).

²² https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd515005.pdf.

²³ *See* https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd501294.pdf.

Roadless areas have “many social and ecological benefits,” including the following: high-quality soil, water, and air resources; healthy watersheds that help maintain abundant and diverse populations of fish and other aquatic species; diverse native plant and animal communities and species; biological strongholds for threatened, endangered, and other rare species; large, relatively undisturbed landscapes important to biological diversity and long-term survival of many species; outstanding opportunities for dispersed outdoor recreation; bulwarks against the spread of non-native invasive species; and natural appearing landscapes with high scenic quality. Special Areas, Roadless Area Conservation, 66 Fed. Reg. 3244,3245 (Jan. 12, 2001) (summarizing findings of the Roadless Area Conservation Final Environmental Impact Statement).

There are several Georgia Mountain Treasures within the Foothills project area including: Grassy Mountain, Emery Creek, Five Falls, Thrifts Ferry, Big Shoals, and portions of the Mountaintown, Raven Cliff, Long Mountain, Lance Creek, Horse Gap, and Ken Mountain areas. These areas each qualify as “potential wilderness areas” under the FSH 1909.12 Chapter 70 wilderness inventory directives which replaced the roadless inventory directives. Because of their outstanding qualities mentioned above, these areas deserve special consideration and the environmental analysis for the project should fully analyze, disclose and consider the project’s effects on these and other roadless characteristics, including effects on each area’s naturalness, remoteness, generally unroaded and undeveloped condition, roadless status, and recreation opportunities and use (including any changes in actual or assigned recreation opportunity spectrum classes). While it is not currently clear if these areas will be impacted by the project, a reasonable alternative the agency should consider is developing a project that avoids these areas entirely.

3) The Forest Service Must Consider Impacts to Old Growth Under NEPA

In accordance with NEPA’s “hard look” requirement, the Forest Service must consider impacts to existing old growth. *See Nat’l Audubon Soc’y v. Dep’t of the Navy*, 422 F.3d 174, 184 (4th Cir. 2005). Old growth forest is “a valuable natural resource worthy of protection, restoration, and management.” Guidance for Conserving and Restoring Old-Growth Forest Communities on National Forests in the Southern Region, Report of the Region 8 Old-Growth Team (June 1997), 1. Existing old growth forest is exceedingly limited in the Southern Appalachian forests. The Region 8 Old Growth Guidance estimates that “[e]xisting old-growth communities may represent around 0.5 percent (approximately 676,000 acres) of the total forest acreage (approximately 109,400,000 acres) in the Southeast.” *Id.*

Failing to properly assess old growth and account for impacts has been recognized as a NEPA violation. *See Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1378 (9th Cir. 1998) (holding cumulative impact analysis of combined effect on depleting existing old growth habitat inadequate); *Bair v. Cal. Dep’t. of Transp.*, C 10-04360 WHA, 2011 WL 2650896

(N.D. Cal. July 6, 2011) (issuing injunction for road widening through old-growth redwood area for issuing a FONSI instead of producing an EIS); *Alliance for the Wild Rockies v. Wood*, CIV 07-452-EJL, 2008 WL 2152237 (D. Idaho May 21, 2008) (enjoining timber sale where method of calculating old growth scientifically flawed). In part because lost old growth forest takes hundreds of years to replace. *Neighbors of Cuddy Mountain*, 137 F.3d at 1382; *Idaho Sporting Congress v. Alexander*, 222 F.3d 562, 569 (9th Cir. 2000) *overruled on other grounds by Lands Council v. McNair*, 537 F.3d 981, 997 (9th Cir. 2008). We ask that the Forest Service conduct thorough old-growth field surveys, as required by the Region 8 guidance and the Forest Plan (Forest Plan at 2-17), and avoid any stands which meet or border on old-growth eligibility.

c. The Forest Service Must Consider Ways to Mitigate Impacts

As also articulated in our October 16 letter, the Forest Service's approach to meetings its NEPA obligations does not allow for adequate consideration of ways to mitigate impacts. See Attachment A. "[O]mission of a reasonably complete discussion of possible mitigation measures [] undermine[s] the action-forcing function of NEPA." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351 (1989). Discussion of mitigation measures shall include an estimate of the effectiveness of the proposed mitigation measures which in turns requires knowledge of where those measures will be applied. See *National Audubon Soc'y v. Hoffman*, 132 F.3d 7, 17 (2nd Cir. 1997); CEQ, 40 Most Asked Questions, 46 Fed. Reg. 18026; FSH 1909.15, Ch.10(15) (estimate the effectiveness of proposed mitigation measures). Consequently, "[a]n agency cannot [] avoid a detailed mitigation analysis simply by postponing it on the basis that the feasibility and success of mitigation would depend on site specific conditions" that will not be assessed until a later time. *High Sierra Hikers Ass'n v. U.S. Dep't of Interior*, 848 F. Supp. 2d 1036, 1053-54 (internal quotations omitted) *citing S. Fork Band Council of W. Shoshone of Nevada v. United States Dep't of Interior*, 588 F.3d 718 (9th Cir.2009) (concluding that EIS did not sufficiently address mitigation measures related to groundwater removal). That appears to be exactly what the agency is proposing here.

Again, the agency's Restoration Plan admits that site-specific information is necessary to adequately assess mitigation techniques: "site specific attributes would be used to quantify exact mitigation measures taken based on aspect, slope, soil type, amount and type of volatile mid-story fuels (rhododendron and mountain laurel), community attributes such as ingress/egress accessibility, existing housing materials and defensible space, probability of success from treatment, and opportunities to treat both federal and nonfederal lands." Restoration Plan, 88-89. The quoted text is in relation to prescribed fire but the same is true of timber harvests which in many ways have more significant on-the-ground impacts than fire. And while NEPA may not require preliminary identification of "exact" mitigation measures, it requires consideration of mitigation measures' effectiveness, which as explained in the Restoration Plan depends on site-specific attributes such as aspect, slope, and soil type (to name a few). The agency cannot know those site specific attributes (which are extremely varied across the Foothills) if it does not know where its proposed activities will occur; as a result it cannot adequately consider mitigation

measures. At most the agency can present a general list of mitigation techniques which it may or may not employ. This violates NEPA. Environmental analysis under NEPA “cannot merely assert a perfunctory description of mitigating measures.” *Neighbors of Cuddy Mountain*, 137 F.3d 1372, 1380 (9th Cir. 1998). “A mere listing of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA.” *Id.* Rather, mitigation must be detailed with enough specificity to “ensure that environmental consequences have been fairly evaluated.” *Carmel–By–the–Sea v. U.S. Dep’t of Transp.*, 123 F.3d 1142, 1154 (9th Cir.1997).

d. The Forest Service Must Consider All Reasonable Alternatives

NEPA requires federal agencies to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” 42 U.S.C. § 4332(2)(E). Agencies must “[u]se the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment.” 40 C.F.R. § 1500.2(e); *see also* 40 C.F.R. § 1508.9(b) (EAs must discuss alternatives); *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1229 (9th Cir. 1988)(federal action involving unresolved conflicts as to proper use of resources triggers NEPA's alternatives requirement, whether or not an EIS is also required). Accordingly, “[a]n agency must look at every reasonable alternative, with the range dictated by the nature and scope of the proposed action, and sufficient to permit a reasoned choice.” *Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1520 (9th Cir. 1992) (internal citations omitted); *see also Methow Valley Citizens Council v. Regional Forester*, 833 F.2d 810, 816 (9th Cir. 1988), *rev'd on other grounds*, 490 U.S. 332 (1989) (reasonable range of alternatives framed by purposes of project). The failure to consider a “viable but unexamined alternative” will render the analysis inadequate. *Dubois v USDA*, 102 F.3d 1273, 1289 (1st Cir. 1996), *cert. denied sub nom. Loon Mt. Rec. Corp. v. Dubois*, 521 U.S. 1119 (U.S. 1997) (quoting *Resources Ltd. v. Robertson*, 35 F.3d 1300, 1307 (9th Cir. 1994)).

Given the expansive purpose and need for this project the Forest Service is obligated to consider a wide range of alternatives which avoid or minimize adverse environmental impacts. Accordingly, at a minimum we recommend that the Forest Service:

- Develop an alternative that discloses where site-specific activities will occur and assess the impacts of those activities in its environmental analysis;
- Develop an alternative using consensus-based treatments with widespread support (of which we think there are many) developed during collaborative discussions;
- Develop an alternative that focuses heavily on connecting people to the land through outdoor recreation opportunities which is the main way the public uses the national forest;

- Develop an alternative that will be implemented over a shorter time frame (*e.g.*, five years) particularly since the Forest Service believes that on-the-ground conditions are likely to change over the course of the next decade, and is in line with current budgetary expectations and restraints;
- Develop an alternative which avoids timber management activities in all prescriptions considered unsuitable under the National Forest Management Act and all potential wilderness areas;

e. The Forest Service Must Use High Quality Information

NEPA requires use of “high quality” information and “accurate scientific analysis.” 40 C.F.R. § 1500.1(b). Our understanding is much of the project so far has been built using FS Veg stand data. The agency’s preliminary analysis reveals that this information is not “high quality” or “accurate”: “We acknowledge that the data is dated and may not be totally accurate.” Comment CONF5. According to the agency “[t]his inaccuracy in the data is one of the reasons . . . to treat according to on the ground conditions rather than the existing data alone.” *Id.* In other words, the agency’s analysis underscores the need for collecting and assessing high-quality, accurate, site-specific data based on recent on-the-ground surveys before signing a project decision document.

Some proposed treatments also appear to be justified by inaccurate or missing data. For instance, in response to the suggestion that oak decline is “normal tree mortality” and thus there was no need to combat oak decline, the agency responded: “Give them a few more seasons of drought and combined with their age and we will see if elevated mortality doesn’t show up . . .” Comment CONF156. That justification does not present any data to support the treatment, only that “we will see” if some data points are available in “a few more seasons.” NEPA demands more of federal agencies. Projects require accurate, data-driven scientific analysis and justification.

Finally, it is unclear what “high quality data” and “accurate scientific analysis” the agency relies on when determining “desired conditions.” Proposed Action, 6. What are those “desired conditions,” how were they determined, and what data indicates that they are “desired”? There is a plethora of high quality data available to the agency to assess current conditions and departure from expected conditions including but not limited to: Steve Simon’s Ecological Zones in the Southern Appalachians, LiDAR data, departure and core forest analysis from The Nature Conservancy, information on the natural range of variation, USGS and NRCS soil data, USGS topographic and geologic data, and Southern Appalachian Man and the Biosphere report. The agency should incorporate that data into this project or at the very least explain why it refuses to do so.

XVI. Compliance with the National Forest Management Act

Without knowing where specific activities will occur it is difficult to assess compliance with the National Forest Management Act's ("NFMA") substantive requirements (*see* 16 U.S.C. § 1604(g); FSM 1921.12a), and whether the project is consistent with the Forest Plan, as required by 16 U.S.C. § 1604(i). The environmental analysis must meaningfully assess consistency with NFMA, not only offer blanket assurance of compliance, demonstrate that consistency, and consider reasonable alternatives that would fulfill its goals with less harmful impacts. *See Lands Council v. McNair*, 537 F.3d 981, 994 (9th Cir. 2008) (Forest Service must support its conclusions that a project meets the requirements of the NFMA and relevant Forest Plan); *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1377 (9th Cir. 1998) ("Forest Service must demonstrate that a site-specific project would be consistent with the land resource management plan"). Given the scale of the Foothills project the Forest Service should pay particular attention to the following issues.

a. Soil and Water Protection

The agency should ensure it does not run afoul of NFMA's substantive protections for soil and water resources and the productivity of the land. Under NFMA, the Forest Service must "insure that timber will be harvested from National Forest System lands only where . . . soil, slope, or other watershed conditions will not be irreversibly damaged." 16 U.S.C. § 1604(g)(3)(E); *see also Sierra Club v. Martin*, 992 F. Supp. 1448 (N.D. Ga. 1998), *rev'd on other grounds* 168 F.3d 1 (11th Cir. 1999); *Sierra Club v. Espy*, 38 F.3d 792, 800 (5th Cir. 1994). Impacts on soil, slope, and watershed conditions - including cumulative effects on aggregated or clustered treatment areas - should be assessed as part of the agency's NEPA analysis. With that analysis in hand, the agency can then ensure it is not violating NFMA's requirements. But here the agency does not intend to identify treatment areas or assess impacts in specific locations as part of its NEPA analysis. Without that analysis it is unclear how the agency could conclude that its actions are consistent with NFMA.

Violations of the NFMA prohibition on irreversible damage to soils have been found where logging practices, which "compact the soil, displace nutrient-rich organic matter and upper mineral soil, and cause accelerated erosion" were located on sensitive soils contrary to the Forest Plan, and where the Forest Service engaged in timber harvesting practices "eroding nutrient-rich soil from the forest land," failed to "require post-harvest restoration of some areas affected by and contributing to erosion," and engaged in "management practices substantially and permanently reducing organic and other essential matter in the forest soils..." *Alleghany Def. Project, Inc. v. U.S. Forest Serv.*, No. 01-895, 2003 U.S. Dist. LEXIS 27151, at *88-*89 (W.D. Pa. Dec. 24, 2003), adopted, 2004 U.S. Dist. LEXIS 29698 (W.D. Pa. Mar. 24, 2004), *aff'd*, 423 F.3d 215 (3d Cir. 2005); *Sierra Club v. Glickman*, 974 F. Supp. 905, 924-25 (E.D. Tex. 1997), *aff'd*, 185 F.3d 349 (5th Cir. 1999), vacated, 228 F.3d 559 (5th Cir. 2000). Ultimately, the question comes down to whether "the evidence shows that, on-the-ground, the

Forest Service is []protecting the soil resource.” *Glickman*, 974 F. Supp. at 926. But how can the Forest make that showing if it does not know what will happen on the ground?

The productivity provision has been interpreted as a substantive requirement that the Forest Service must “maintain” and “ensure” soil productivity. *See Ecology Ctr., Inc. v. Austin*, 430 F.3d 1057, 1062 (9th Cir. 2005) (among the “substantive requirements” of NFMA, “the Forest Service must maintain soil productivity. 16 U.S.C. § 1604(g)(3)(C).”), *cert. denied sub. nom. Mineral County v. Ecology Ctr., Inc.*, 549 U.S. 1111 (2007), *overruled on other grounds by, Lands Council v. McNair*, 537 F.3d 981 (9th Cir. 2008).

Based on these obligations, the Forest Plan set standards for soil and water protection, including standards for timber harvest and prescribed burns, such as: FW-065 (organic layers, topsoil, and root mat must be left intact over at least 80% of an activity area); FW-190-192 (avoiding burning mesic forests), and FW-202 (retention of litter and duff on at least 85% of prescribed burn areas).

It is difficult or impossible to gauge compliance with these standards because we (nor the agency) know where specific activities will take place. We raise them here because we are concerned that the unprecedented scale of this project and lack of impacts analysis may lead to a violation of these standards. These issues should be carefully considered in the environmental analysis from both a NFMA and NEPA perspective.

b. Species Diversity Requirements

The Forest Service must also “provide for diversity of plant and animal communities...and provide, where appropriate, to the degree practicable, for steps to be taken to preserve the diversity of tree species similar to that existing in the region controlled by the plan.” 16 U.S.C. § 1604(g)(3)(B); *see Conservation Cong. v. U.S. Forest Serv.*, No. 2:12-cv-02800-TLN-CKD, 2014 U.S. Dist. LEXIS 68636, at *43 (E.D. Cal., May 19, 2014); *see also Chattooga Watershed Coalition v. U.S. Forest Serv.*, 93 F. Supp. 2d 1246, 1249 (N.D. Ga. 2000). For example, if a stand “is properly a hardwood management site, it would be improper for the [Forest Service] to regenerate the site as a pine plantation.” *Chattooga Watershed Coalition*, 93 F. Supp. at 1249. Although not entirely prohibited, reductions in diversity must be well-justified and supported by significant analysis. *Glickman*, 974 F. Supp. at 922 (“Reductions in diversity – such as forest type conversions – are permitted only where needed to meet overall multiple-use objectives and must be justified by an elaborate analysis of potential consequences,” quoting CHARLES F. WILKINSON & H. MICHAEL ANDERSON, *LAND AND RESOURCE PLANNING IN THE NATIONAL FORESTS* at 195 (1987).

Again, due to the lack of site-specific disclosure it is unclear whether the agency is complying with this requirement but at least three project activities may decrease species diversity. First, some project activities appear to be intended to increase the relative abundance

of oaks and decrease “undesirable” – though native – species such as poplar, maple, black gum, and white pine. Based on the Forest Service’s own research regarding the lack of oak regeneration in heavily logged areas,²⁴ however, the elements of this project that involve more intensive cutting may backfire and significantly reduce or eliminate the oak component, instead. The environmental analysis should carefully consider the likelihood of success of these treatments given site-specific conditions and past efforts to recruit oaks. Second, the project contemplates creating up to 7,400 acres of woodlands. Proposed Action, 12. Our analysis suggests this far exceeds the amount of woodland that would naturally exist on the landscape and converting complex stands to woodland environments which naturally occur on less productive sites may violate NFMA’s diversity requirements. Third, the project contemplates an unspecified amount of “artificial regeneration.” If the agency pursues that option it should be careful not to reduce overall stand complexity.

c. Restocking and Regeneration Requirements

NFMA also instructs that “timber will be harvested from National Forest System lands only where . . . (ii) there is assurance that such lands can be adequately restocked within five years after harvest.” 16 U.S.C. § 1604(g)(3)(E)(ii); 36 C.F.R. § 219.11(a)(v) (lands unsuitable for timber production include those where there is no reasonable assurance that such lands can be adequately restocked within five years). This requirement applies to all timber harvests, not only the category of regeneration harvests.

As part of the Foothills project the Forest contemplates creating up to 7,400 acres of woodlands (Proposed Action, 12). If these conditions are created in appropriate areas they may be consistent with NFMA’s restocking requirements. But they may violate NFMA if they are forced onto inappropriate sites, requiring the Forest to continually use timber harvest, prescribed fire, mowing, and herbicide to suppress regrowth, thereby working against natural restocking and the innate productivity of the site. The environmental analysis should carefully consider the agency’s compliance with NFMA’s restocking requirements.

Finally, the agency should also carefully consider whether the project complies with NFMA’s conditions on regeneration timber harvests, such as: limits on the maximum size of cut area, blending cut area with natural terrain, interdisciplinary review assessing “the potential environmental, biological, esthetic, engineering, and economic impacts,” and that “such cuts are carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, and esthetic resources and the regeneration of the timber resource.” 16 U.S.C. § 1604(g)(3)(F). The Forest Plan places a 40-acre limit on the size of an opening created by an

²⁴ Katherine J. Elliott (USFS Coweeta), Lindsay R. Boring (UGA School of Forest Resources & Jones Ecological Research Center), Wayne T. Swank (Coweeta), Bruce R. Haines (UGA Botany Dept.), *Successional changes in plant species diversity and composition after clearcutting a Southern Appalachian watershed*, *Forest Ecology and Management* 92, pp. 67-85 (1997) available at www.treearch.fs.fed.us/pubs/4558.

even-aged or two-aged regeneration treatment. Forest Plan at 2-25. The agency has committed to limiting even-aged regeneration harvests to 40 acres as part of its preliminary design features (Proposed Action, 44) but it should assess compliance with these standards for two-aged regenerated harvests and be sure not to cluster harvests in such as a way to violate the 40-acre requirement.

d. A Plan Amendment May be Required to Harvest in Unsuitable Prescriptions

When developing a Forest Plan NFMA requires the Forest Service to “identify lands within the management area which are not suited for timber production, considering physical, economic, and other pertinent factors to the extent feasible . . .” 16 U.S.C. § 1604(k). “Except for sales sales or sales necessitated to protect other multiple-use values, no timber harvesting shall occur on such lands . . .” *Id.* Restated, once lands are identified as unsuitable for timber production, NFMA prohibits all timber harvest, of any type, there, except under two narrow circumstances: (1) salvage sales or (2) “sales *necessitated* to protect other multiple use values.” 16 U.S.C. §1604(k)(emphasis added). Other than timber, multiple uses and values include: outdoor recreation, streams and watersheds, wildlife, fish, the diversity of plant and animal communities, and soil productivity. *See* 16 U.S.C. § 528 (1960); § 1604(e), § 1604(g)(3).

The Forest appears to be well aware of this requirement as it devoted a significant portion of the May 23, 2017 community workshop to discussing the parameters of NFMA’s unsuitable limitation. As we articulated at that meeting, what should or should not occur in unsuitable prescriptions is not a matter of public opinion. NFMA prohibits timber harvest in unsuitable prescriptions unless the harvest meets one of the two exceptions – period.

The Foothills project may be running awry of this requirement in at least two ways. First, given the large amount of ESH creation contemplated as part of the project it seems likely that some of that ESH will be located in unsuitable prescriptions. Creating ESH as the sole justification for logging (i.e., not as a byproduct of one of the two exceptions) is not allowed in unsuitable prescriptions on the Chattahoochee. Under the Chattahoochee Forest Plan creating ESH is the primary means by which timber will be produced from the forest. Plan FEIS at 3-541 to 542. In other words, creating ESH is the main vehicle for harvesting timber. The Plan designated approximately 367,000 acres of the Chattahoochee National Forest as suitable for timber production (about 49% of the Chattahoochee). Plan Appx. F-10. Most of the suitable acreage, approximately 270,000 acres (about 36% of the Chattahoochee) was placed within management prescriptions with minimum objectives to create early succession, primarily through timber harvest. Plan FEIS at 3-160 to 161. Those are the designated areas for “timber harvest” under the current Forest Plan, and creating ESH is the mechanism to harvest that timber; therefore it is prohibited in unsuitable prescriptions unless it meets one of the two exceptions.

Second, in response to a comment on the Restoration Plan from the Georgia Department of Natural Resources requesting that the Forest Service focus vegetation management activities

in suitable prescriptions (a recommendation we support for legal as well as practical reasons) the Forest Service responded that “[v]egetation management is a large part of the Foothills Landscape project and *it would need to occur across the landscape*. Leaving out tracks of land would not meet the goal of restoration.” Comment CONF64 (emphasis added). But leaving out “tracks of land” is what is required by the suitable/unsuitable distinction in NEPA for most timber activities. The agency’s response suggests that it does not view the difference between suitable and unsuitable lands under NFMA as a meaningful distinction. NFMA, the Chattahoochee Forest Plan, and the environmental analysis underlying the Forest Plan all view the distinction as meaningful. In other words, the Chattahoochee cannot simply decide that it needs or wishes to target unsuitable lands for a massive logging project such as this, throwing out a forest planning structure that assumed such logging would not occur on unsuitable lands, without thorough analysis of the implications for the forest plan and its effects as a whole. And simply referring to harvests as “restoration” does not excuse compliance with NFMA suitability provisions.

As noted earlier, proceeding with typical harvests on unsuitable lands also does not seem to match the opinion of the collaborative group which seemed to recognize ample harvest opportunities on suitable lands alleviating the need for attempting to force harvests on unsuitable lands. Nevertheless, if the CONF insists on proceeding with a proposal that contemplates extensive harvest in unsuitable prescriptions, a change which would significantly affect unsuitable lands in ways not considered in the Plan EIS, it will likely need to complete additional environmental analysis, such as a supplement to the Plan’s EIS, *see* 40 C.F.R. § 1502.9(c), to disclose the agency’s current intentions for logging on unsuitable lands and to analyze, consider and disclose the effects on the uses and resources for which the Plan designated those lands as unsuitable. Complicating matters, since forest planning assumed the unsuitable lands would be generally left undisturbed, these lands likely were relied upon in the plan EIS’ analysis of effects on various other resources, e.g., mature and interior forest wildlife habitat and species, cumulative effects on water quality and aquatic species and habitat, old-growth, etc. These conclusions will be cast into serious question, and would need to be reanalyzed, if extensive commercial harvest is now intended for the unsuitable lands. Any plan amendment would be subject to the new NFMA regulations. *See* 36 C.F.R. § 219.17(b)(2).

e. Excessive Early Successional Habitat

Finally, the Foothills project contemplates creating up to 9,500 acres of early successional forest habitat. Proposed Action, 23. As noted earlier, we continue to question whether there are only “500 acres of young forest habitat currently in the Foothills landscape” justifying creating 9,500 additional acres. *Id.* Moreover, the 500-acre estimate appears to have been developed using FS Veg data (*see* Comment CONF250), which the agency has admitted is inaccurate. This estimate also does not include naturally existing patches of ESH which the agency must consider when assessing compliance with maximum ESH acreages. Finally, it is unclear where project activities will occur and therefore unclear whether prescription-specific

ESH maximums in the Forest Plan will be exceeded. Authorizing a project that is inconsistent with the Forest Plan is a violation of NFMA. *See* 16 U.S.C. § 1604(i). The agency must disclose where its planned site-specific activities will occur to comply with NEPA's impacts assessment requirements and also to ensure compliance with NFMA.

Additionally, consistent with taking a landscape-scale approach, the Forest should identify and consider early successional conditions on nearby private land. Under NEPA, the agency must consider the cumulative impacts on wildlife and wildlife habitat of logging mature forest on the CONF to create ESH, when mature forest may be in short supply, and ESH in abundant supply across the landscape, including on nearby private lands, as a whole.

XVII. Compliance with other Laws

a. Endangered Species Act

The Endangered Species Act ("ESA") mandates that the Forest Service give the conservation of threatened and endangered species the highest priority, "above any of the agency's competing interests." *House v. U.S. Forest Service, U.S. Dept. of Agriculture*, 974 F. Supp. 1022, 1027 (E.D. Ky. 1997); *see Tennessee Valley Auth. v. Hill*, 437 U.S. 153, 175, 98 S. Ct. 2279, 57 L.Ed.2d 117 (1978) (The ESA's language "indicates beyond doubt that Congress intended endangered species to be afforded the highest priorities.")

Forest Service directives require the Forest Service to "avoid all adverse impacts on threatened and endangered species and their habitats . . ." FSM 2670.31 (4). The Forest, commensurate with these requirements, is also required to "[p]rohibit the taking of threatened and endangered species of plants and animals except under FWS or NOAA Fisheries permits." FSM 2670.46. Take of an endangered species is prohibited under Section 9 of the ESA, unless authorized by a permit. *See* 16 U.S.C.A. § 1538.

In order to carry out its obligations to prevent an unlawful take and to give threatened and endangered species the highest conservation priority, the Forest must also comply with Section 7 of the ESA. Pursuant to Section 7, the Forest Service must, in consultation with FWS, "insure" that its activities are "not likely to jeopardize the continued existence" of any threatened or endangered species in the Foothills area or "result in the destruction or adverse modification" of designated critical habitat. 16 U.S.C. § 1536(a)(2).

The proposed action indicates that threatened and endangered species and/or their habitat may be impacted by the Foothills project. *See, e.g., Proposed Action*, 12, 16. The Forest should initiate consultation with the Fish and Wildlife Service as soon as possible and conclude and disclose the outcome of that process prior to completing its environmental analysis. In line with its duty to maintain and conserve threatened and endangered species, the Forest should also assess project alternatives that avoid impacts to protected species and their habitats.

b. Clean Water Act

The Clean Water Act requires all federal agencies to comply with state water quality standards. 33 U.S.C. § 1323(a). This includes Georgia’s anti-degradation policy at Ga. Comp. R. & Regs. 391-3-6-.03(2)(b); *see, e.g., Save Our Cabinets v. United States Dep't of Agric.*, 254 F. Supp. 3d 1241, 1249 (D. Mont. 2017), *judgment entered*, No. CV 16-53-M-DWM, 2017 WL 2829681 (D. Mont. June 29, 2017)(applying state anti-degradation policy to the Forest Service).

In the Foothills project area there are over thirty miles of Clean Water Act § 303(d) listed streams and § 305(b) listed streams which are not meeting water quality standards. Restoration Plan, 68-69. We recognize and support the activities outlined in the Foothills project that are intended to alleviate impacts on these waterbodies. However, because we do not know where vegetation management activities will take place, it remains unclear as to whether any of these activities may cause water quality problems in listed or unlisted streams and/or violate Georgia’s anti-degradation policy. The agency’s environmental analysis should document compliance with these federal and state water quality provisions.

c. National Historic Preservation Act

Section 106 of the National Historic Preservation Act requires federal agencies to “take into account the effect of the undertaking on any historic property” “prior to the approval of the expenditure of any Federal funds on the undertaking.” 54 U.S.C. § 306108. An “undertaking” is “a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency.” 54 U.S.C. § 300320. The Foothills project is an undertaking. “Historic property means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe . . . that meet the National Register criteria.” 36 C.F.R. § 800.16(1)(1). The requirement to take effects on historic properties into account prior to expending federal funds on the undertaking “does not prohibit agency official[s] from conducting or authorizing nondestructive project planning activities before completing compliance with section 106, provided that such actions do not restrict the subsequent consideration of alternatives to avoid, minimize or mitigate the undertaking's adverse effects on historic properties.” 36 C.F.R. § 800.1.

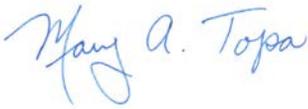
Our understanding is the Forest Service plans to sign a NEPA decision document authorizing a large, flexible project across the Foothills area. At the time a decision document is signed the Forest Service will not yet have determined on-the-ground treatment locations or considered on-the-ground impacts of those treatments, including impacts to historic properties. The Forest plans to begin implementing this project in phases such that the agency may begin

implementing phase 1 but not know where phase 2 will be located despite the fact that both phases will be authorized under the same NEPA document. The agency should assess how it can comply with National Historic Preservation Act requirements in light of that schedule. Once the agency begins implementing phase 1 it will be expending federal funds. Before it begins expending federal funds on this project, NHPA generally requires that it take into account the effect of the entire project on any historic properties. 54 U.S.C. § 306108.

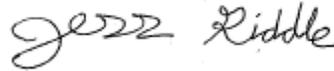
XVIII. Conclusion

We appreciate the opportunity to comment on the Foothills project and that the agency sought public feedback on this project even before scoping the proposed action. We want to see this first collaborative effort on the Chattahoochee succeed. But we remain concerned about many aspects of this proposal, and we urge the agency to reconsider substantive parts of the proposal and the procedure for getting from proposed to implementable project. Please let us know if any of our concerns are unclear or if the agency wishes to discuss them further.

Sincerely,



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