

From: Sherman Bamford
To: FS-objections-southern-georgewashington-jefferson
Cc: bamford2@verizon.net
Subject: Nettle Patch Vegetation Project
Date: Monday, February 5, 2018 6:41:16 PM
Attachments: [Nettle Patch Objection.docx](#)

To Reviewing Officer Joby P. Timm,

Forest Supervisor, George Washington and Jefferson National Forests,

5162 Valleypointe Parkway,

Roanoke Virginia 24019-3050

Re: Nettle Patch Vegetation Management Project Draft Decision Notice

This letter is a formal objection to the Nettle Patch Draft Decision Notice pursuant to 36 C.F.R. § 218. [36 C.F.R. § 218.8(d)(4)]. The Responsible Official is the District Ranger of the Clinch Ranger District, who could allow implementation the project in the Clinch Ranger District. The objection letter is submitted on behalf of the Virginia Chapter of Sierra Club. Virginia Chapter of Sierra Club submitted timely comments and is eligible to file an objection under 36 C.F.R. § 218.5. Sherman Bamford, Forest Issues Chair of the Virginia Chapter of Sierra Club, is the lead objector pursuant to 36 C.F.R. § 218.8(d)(3).

Signed,



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Feb. 5, 2018

Introduction:

The Virginia Chapter of Sierra Club's 18,000 members include many members in this region of southwestern Virginia. We are opposed to the nearly 1200 acres of commercial logging, roadbuilding, dozer line construction, and other habitat manipulation in the Guest River/Clinch River watershed one of the most diverse areas in the lower 48 states. In order to maintain ecotourism initiatives in the region, protect water quality and wildlife, more

alternatives that fully protect these resources should have been considered

Requested Remedies:

We request that alternatives that substantially reduce logging and roadbuilding be implemented. We request that thorough surveys for all TESLR species be conducted and that these species be fully protected. We request that landslide prone areas and steep slopes be protected. We request that the mileage of roads to be decommissioned be substantially increased.

National Environmental Policy Act

The National Environmental Policy Act (“NEPA”) is the nation’s basic charter for the protection of the environment. NEPA makes it national policy to “use all practicable means and measures * * * to foster and promote the general welfare [and] to create and maintain conditions under which [humans] and nature can exist in productive harmony.”^[1] NEPA’s purposes are to “help public officials make decisions that are based on [an] understanding of environmental consequences, and to take actions that protect, restore, and enhance the environment.”^[2]

1. “Hard Look”

To accomplish these purposes, NEPA requires all agencies of the federal government to prepare a “detailed statement” regarding all “major federal actions significantly affecting the quality of the human environment.”^[3] This statement is commonly referred to as an Environmental Impact Statement (“EIS”). NEPA further provides that agencies “shall * study, develop, & describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.”¹⁰

An EIS must describe (1) the “environmental impact of the proposed action,” (2) any

“adverse environmental effects which cannot be avoided should the proposal be

implemented,” (3) alternatives to the proposed action, (4) “the relationship between local

short- term uses of [the] environment and the maintenance and enhancement of long-term productivity,” and (5) any “irreversible or irretrievable commitment of resources which would be involved in the proposed action should it be implemented.”¹¹

NEPA’s disclosure goals are two-fold: (1) to ensure that the agency has carefully and fully contemplated the environmental effects of its action, and (2) to ensure that the public has sufficient information to challenge the agency’s action. The Council on Environmental Quality (“CEQ”) – an agency within the Executive Office of

the President – has promulgated regulations implementing NEPA that are binding on all

agencies.¹²

The CEQ regulations provided that the direct, indirect, and cumulative effects of the proposed action must be analyzed under NEPA.¹³ When the agency prepares an EIS, it must take a hard look at the impacts of the action and ensure “that environmental information is available to public officials and citizens before decisions are made and before actions are taken,” and the “information must be of high quality.”¹⁴

In preparing NEPA documents, federal agencies “shall insure the professional integrity,

Including scientific integrity, of the discussions and analyses” and “identify any methodologies used and * * * make explicit reference by footnote to the scientific and other sources relied upon for conclusions * * *.”¹⁵

NEPA requires that the Environmental Impact Statement contain high-quality information and accurate scientific analysis.¹⁶ If there is incomplete or unavailable relevant data, the Environmental Impact Statement must disclose this fact.¹⁷ If the incomplete information is relevant and essential to a reasoned choice, and costs are not “exorbitant,” the information must be compiled and included.¹⁸

¹⁰ Id. § 4332(2)(E).

¹¹ 42 U.S.C. § 4332.

¹² See 40 C.F.R. §§ 1500-1508.

¹³ 40 C.F.R. §§ 1508.8, 1508.27(b)(7).

¹⁴ 40 C.F.R. § 1500.1(b).

¹⁵ 40 C.F.R. § 1502.24.

¹⁶ 40 C.F.R. § 1500.1(b).

¹⁷ 40 C.F.R. § 1502.22.

¹⁸ Id. § 15021.22(a).

2. EAs and NEPA significance factors: Context & Intensity

The purpose of an EA is to evaluate whether to prepare an EIS or a Finding of No Significant Impact (FONSI). A FONSI that relied on a flawed EA violates NEPA.²¹

Importantly here, the Responsible Official repeatedly fails to apply the appropriate

standard for whether or not to prepare an EIS. If the action *may* have a significant effect, the agency *must* prepare an EIS.²² In other words, the threshold issue for determining whether or not to prepare an EIS is not whether significant effects will in fact occur but instead whether there are substantial questions about whether a project will have a significant effect on the environment.²³

The determination of a significant effect on the environment requires consideration of “context and intensity.”²⁴ The context of a project is the scope of the agency’s action,

including affected interests and intensity is the degree to which the agency action affects the locale and interests

identified in the context part of the inquiry.²⁵ Many of the objections below identify areas where the Forest Service has underestimated or mis-stated the context

of the proposed action.

Second, a project's intensity requires evaluation of various factors, including specific

adverse impacts on numerous project area management indicator species, "[t]he degree to which the effects on the quality of the human environment are likely to be highly

controversial[.]" ... "[t]he degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks[.]" ... "[t]he degree to which the action may establish a precedent for future actions with significant effects[.]" ... "[w]hether the action is related to other actions with individually insignificant but cumulatively significant impacts[.]" ... [t]he degree to which the action may adversely affect ... significant cultural resources" and whether the action may violate federal environmental laws.²⁶ For purposes of determining whether to prepare an EIS, "[s]ignificance cannot be avoided by terming an action temporary or by breaking it down into small component parts."²⁷

²⁰ 42 U.S.C. § 4332(2)(C).

²¹ *Native Ecosystems Council v. Tidwell*, 599 F.3d 926, 936-937 (9th Cir. 2010).

²² *Foundation for N. Am. Wild Sheep v. United States Dep't of Agric.*, 681 F.2d 1172, 1178-79 (9th Cir. 1982) (emphasis added)(an EIS was required where key questions were "ignored, or, at best, shunted aside with mere conclusory statements"); see also *Blue Mountains Biodiversity Project v. Blackwood*, 161

F.3d 1208, 1212 (9th Cir. 1998)(the "substantial question standard does require a showing 'that significant effects will in fact occur'").

²³ *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1150 (9th Cir. 1998).

²⁴ 40 C.F.R. § 1508.27.^{SEP}²⁵ *National Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 222, 731 (9th Cir. 2001).

²⁶ 40 C.F.R. § 1508.27(b)(1), (4), (5), (6), (7), (8), (10).^{SEP}²⁷ 40 C.F.R. § 1508.27(b)(7).

3. Mitigated FONSI

The DN/FONSI and EA appear to rely in large part on mitigation measures to reduce what would otherwise be significant impacts, to the level of insignificance. Assumptions are made that various measures would be effective at preventing impacts to recreation, wildlife,

PTESLR species and the aquatic environment. Such an approach is allowable to reaching a FONSI only where the agency has adequate assurance of implementation and effectiveness of mitigation, and that it provides an adequate buffer to make impacts insignificant. The Forest Service, in myriad specific ways that are identified in the objections, relies on unsupported mitigation measures to reach the FONSI, in violation of NEPA.

The CEQ recently issued a final guidance to agencies on appropriate use of mitigation and monitoring in EAs, EISs, and FONSI. 76 FR 3843 (Jan. 21, 2011).

CEQ recognizes the appropriateness, value, and efficacy of providing for mitigation to reduce the significance of environmental impacts. Consequently, when such mitigation measures are available and an agency commits to perform or ensure the performance of them, then these mitigation commitments can be used to support a FONSI, allowing the agency to conclude the NEPA process and proceed with its action without preparing an EIS. n21 An agency should not commit to mitigation measures necessary for a mitigated FONSI if there are insufficient legal authorities, or it is not reasonable to foresee the availability of sufficient resources, to perform or ensure the

performance of the mitigation.²⁸

Where mitigation depends on the actions of others, particular duties attach. When agencies consider and decide on an alternative outside their jurisdiction (as discussed in *40 CFR 1502.14(c)*), they should identify the authority for the

mitigation and consider the consequences of it not being implemented.^[SEP] Federal agencies should take steps to ensure that mitigation commitments are actually implemented. Consistent with their authority, agencies should establish internal processes to ensure that mitigation commitments made on the basis of any NEPA analysis are carefully documented and that relevant funding, permitting, or other agency approvals and decisions are made conditional on performance of mitigation commitments.

Agency NEPA implementing procedures should require clear documentation of mitigation commitments considered in EAs and EISs prepared during the NEPA process and adopted in their decision documents. Agencies should ensure that the expertise and professional judgment applied in determining the appropriate

²⁸ 76 FR at 3848.

mitigation commitments are described in the EA or EIS, and that the NEPA analysis considers when and how those mitigation commitments will be implemented.²⁹

Also,^[SEP] Public involvement is particularly important with regard to mitigation. Public involvement is a key procedural requirement of the NEPA review process, and should be fully provided for in the development of mitigation and monitoring procedures.³⁰

Recent caselaw reinforces the importance of adequately analyzing and considering

enforcement and effectiveness of mitigation measures, where they are relied on to support at FONSI. *See e.g. Friends of Back Bay v. United States Army Corps of Eng'rs*, 681 F.3d 581, 588-89 (4th Cir. Va. 2012) (holding FONSI unsupported where it relied on no-wake- zone that was unmarked and unenforced); *Hill v. Boy*, 144 F.3d 1446, 1450-51 (11th Cir. 1998) (assumptions underlying a mitigated FONSI must be supported by record evidence.);

O'Reilly v. United States Army Corps of Eng'rs, 477 F.3d 225 (5th Cir. La. 2007) (finding EA and FONSI inadequate under NEPA, where effectiveness of mitigation was only discussed in broad, conclusory terms); *Gov't of the Province of Manitoba v. Norton*, 398 F. Supp. 2d 41, 65 (D.D.C. 2005) (holding that, "absent some measurement of the quantum and intensity of any ecological effects from the release of even a small amount of treatment-resistant biota, which can be expected in even the most sophisticated pipeline systems, it cannot be said that risk of environmental impacts is reduced to a minimum."); *National Parks and Conservation Association v. Babbitt*, 241 F.3d 722, 734 (9th Cir. 2001) (holding speculative and conclusory consideration of mitigation measures in EA inadequate, where agency did not study effects of

mitigation measures, nor did it provide criteria for ongoing examination or need for corrective action).

A mitigated FONSI fulfills NEPA's requirements when it "completely compensates for any possible adverse environmental impacts stemming from the original proposal."³¹ A Wyoming district court recently wrote that mitigation measures, which are relied on as the basis for a FONSI, must meet some minimal standards. First, the mitigation measures must be more than a possibility. *Id.* They must be imposed by statute or regulation or have been

so integrated into the initial proposal that it is impossible to define the proposal without the mitigation...³²

Recent CEQ guidance also directs:

Agencies should not commit to mitigation measures considered and analyzed in an EIS or EA if there are insufficient legal authorities, or it is not reasonable to foresee the availability of sufficient resources, to perform or ensure the performance of the

mitigation.³³ The second important threshold issue is whether the mitigation is adequate to reduce impacts an adequate amount. That finding must be made, and be supported by substantial evidence.

²⁹ 76 FR at 3848 (FN 22). ³⁰ 76 FR 3843, 3850.

³¹ *Cabinet Mountains Wilderness/Scotchman's Peak Grizzly Bears v. Peterson*, 685 F.2d 678, 682 (D.C.Cir. 1982).

³² *Wyo. Outdoor Council v. United States Army Corps of Eng'rs*, 351 F. Supp. 2d 1232, 1250 (D. Wyo. 2005).

³³ 76 FR 3843, 3848.

Second, the mitigation measures relied upon must "'constitute an adequate buffer' . . . so as to 'render such impacts so minor as to not warrant an EIS.'" *Greater Yellowstone Coalition*, 359 F.3d at 1276 (quoting *Wetlands Action Network*, 222 F.3d 1105, 1121 (9th Cir. 2000)). In other words, "When the adequacy of proposed mitigation measures is supported by substantial evidence, the agency may use those measures as a mechanism to reduce environmental impacts below the level of significance that would require an EIS." *National Audubon Soc. v. Hoffman*, 132 F.3d 7, 17 (2d Cir. 1997). "In practice, mitigation measures have been found to be sufficiently supported when based on studies conducted by the agency, . . . or when they are likely to be adequately policed. *Id.* (citations omitted).³⁴

Several of the objections below, in particular those relating to the efficacy and effects of

partial harvest prescriptions and thinning, involve failures to achieve these standards.

Proposed mitigation is not supported by substantial evidence of its efficacy, and there is not adequate assurance that they would provide an adequate buffer to diminish effects below

the level of significance. Generally, where mitigation is necessary to achieve a FONSI, an EIS should be prepared, and that is what we recommend here.

C. NFMA

The NFMA provides the statutory framework for the management of National Forests, and imposes a duty on the Forest Service to preserve and enhance the diversity of plants and animals, consistent with overall multiple-use objectives stated in a Forest Plan.³⁵

NFMA involves two levels of forest planning. At the first level, the Forest Service is required to create a comprehensive land and resource management plan (commonly referred to as a "forest plan") for each national forest. The forest plan governs land management activities

in that forest.³⁶ At the second level, implementation occurs through site-specific projects, such as timber sales, which must be consistent with the forest plan.³⁷

Here, NFMA is relevant in two ways: 1) its substantive duties to provide for wildlife habitat (ie. viability), and 2) TLMP standards & guidelines must be enforced. Specific Forest Plan standards are identified in objections below. With respect to wildlife and aquatic impacts, NFMA is also relevant in providing substantive values which must be managed according to

rational decision-making. Failures under NEPA to analyze information, therefore often result in failures to explain how substantive duties under NFMA could be complied with.

³⁴ *Wyo. Outdoor Council v. United States Army Corps of Eng'rs*, 351 F. Supp. 2d 1232, 1250 (D. Wyo. 2005).³⁵ 16 U.S.C. § 1604(g)(3)(B).³⁶ 16 U.S.C. § 1604(a); 36 CFR § 219.1(b).

Note: the page numbers in this comment letter refer to the pdf page numbers from the pdf version of the Nettle Patch Final Environmental Assessment that you provided to the public on your website, not the page numbers printed on the document.

Old Growth

According to the EA, “While none of the areas proposed for timber harvest are in old growth management prescriptions (6C), it does exist infrequently in small to medium sized patches throughout the project area.” (EA 11). It is not clear if all the areas of one acre or larger identified in the field are shown on the map(s). The FS does not disclose how close existing old growth is to cutting units, TSI units (and other recently cut units 1-35 yrs old), or mature forest inclusions in or adjacent to old growth tracts. ^[1]_{SEP}

Cutting units and TSI units exist and/or are proposed within the Natural Heritage site on Pickem Mountain. Notably, some of these units are directly between the two old growth units identified in the Forest Plan and on the Project Map/Timber Map. The proposed prescription calls for removal of vegetation within the cutting unit that is far heavier than a typical thinning unit. (See EA). The FS should have analyzed the degree to which the proposed action would further separate the two map-identified old growth units, would preclude opportunities to provide for a future medium- to large-scale block of old growth in the vicinity of Pickem Mountain by allowing the mature forests between the existing old growth to become a continuous block of old growth. Moreover, any addition field identified OG tracts have not been mapped. So more old growth may exist in the area that may need to be disclosed, with impacts to adjacent mature forest analyzed. Since Pickem Mountain is an important recreation area near Norton, what recreational opportunities would be lost by further disrupting the Pickem Mountain natural heritage site? What opportunities for research and education would be lost?

To begin with, the EA does not disclose the degree to which old growth exists throughout the Cumberland Mountains bioregion and the Clinch Ranger District as a whole relative to other age-classes. To begin with, old growth is relatively rare in the south (See below). Given the history of extractive development in the Cumberland Mountains and Cumberland Plateau regions, more intense than many other regions, we wonder if old growth is more abundant here than other regions and ranger districts. Up to the 1990s and afterwards, the Clinch Ranger District was one of (if not the) most heavily logged ranger districts on the Jefferson NF. Also the Clinch Ranger Districts was established and purchased later than many other districts on the GWJNFs. Given the landscape-scale issues related to the abundance of old growth here and absence of medium- and large-sized old growth tracts, we believe that the mature forest in close proximity to and between old growth tracts should be studied and considered for protection, in order to increase the size of the few old growth tracts in the Clinch Ranger District and Cumberland Mountains bioregion. Impacts on wildlife, wildlife habitat and wildlife corridors in the vicinity should be examined.

In addition to proposed cutting unit 12, TSI Units 24, 11, 25, 27 have evidently been cut in the recent past, separating the two map-identified old growth units on Pickem Mountain. “Most of the stands range in age from 21 to 39 years old.” (EA 12) Proposed logging and recent logging (TSI units) also exist around and between other map-identified old growth areas 41 and 48 and old growth area 20 (Project Map). The FS should have analyzed the degree to which the proposed action would further separate the map-identified old growth units, would preclude opportunities to provide for a future medium- to large-scale block of old growth here by allowing the mature forests between existing old growth to become continuous blocks of old growth. Moreover, any addition field identified

OG tracts have not been mapped. So more old growth may exist in the area that may need to be disclosed, with impacts to adjacent mature forest analyzed. What recreational opportunities would be lost? What opportunities for research and education would be lost?

Impacts on wildlife, wildlife habitat and wildlife corridors in the vicinity should be examined.

See also Dominick A. DellaSala, "Why Forests Need To be Enlisted In Climate Change Actions, Geos Institute (www.geosinstitute.org) : "When an old-growth forest is cut down, much of this stored carbon is released as CO₂ – a global-warming pollutant – switching it from a sink to a "source" or "emitter" of CO₂. For instance, nearly 60% of the carbon stored in an old-growth forest is emitted as CO₂ when it is converted to young growth, via decomposition of logging slash, fossil-fuel emissions from transport and processing, and decay or combustion (within 40-50 years) of forest products, often in landfills. Planting or growing young trees does not make up for this release of CO₂ from a logged forest. Indeed, after a forest is clearcut, it remains a net CO₂ emitter for its first 15 or more years, and even if not cut down again will not reach the levels of carbon stored in an old forest for centuries. Globally, deforestation and forest degradation contribute about 17% of the world's annual greenhouse gas pollutants, more than the entire global transportation network, which is why many countries are seeking ways to reduce greenhouse gas emissions from logging."

"DellaSala recommends:

Managing forests to optimize carbon stores through preservation or lengthened timber rotations would provide co-benefits for climate adaptation, including clean water, climate refugia, and connectivity across fish and wildlife habitat. ^[1]_{SEP}

DellaSala's recommendations should be considered. FS even-aged logging, thinning, and other activities proposed in the project will release more carbon into the atmosphere than if these activities were not to take place. The FS should consider alternatives that protect more mature and old growth forests rather than cutting them down. The FS should consider the degree to which the Fork Mtn project would enhance or degrade the connectivity of mature forested landscapes in this area.

According to Special Biological Areas on the Jefferson National Forest (Nat. Her. Tech. Rpt 96-14), "preliminary field work and aerial photograph analysis indicate that the area of contiguous old growth [at Pickem Mountain] covers possibly as much as 700 acres." (p. 195). In addition, there are few areas of old growth forest in the Clinch Ranger District and in the surrounding landscape of far Southwestern Virginia. Here, regardless of the size of old growth forest tracts, or near-old growth forest tracts, the Forest Service should make every effort to link up these sites, not further fragment them, and provide for future old growth reserves.

The Forest Service's description of old growth on EA 22-23 is unclear. It says that 5.7% (6%) of the "area" is "old growth") but does not disclose if this is based on actual old growth surveys. If not, old growth may be overstated in the project area. What is the correct figure? This information should have been disclosed to the public and decisionmakers.

The table and quantitative descriptions on EA 22-23 do not disclose how many areas there are of specific small-, medium- or large-size old growth tracts, or their size, respectively. Nor does it disclose their spatial configuration.

The Forest Service should protect all existing old growth forest of one acre or larger.

According to regional guidance, old growth in the eastern U.S. comprises approx 0.5% of the old growth that historically existed in the southeastern US. Much of it was cut down in the massive logging in the early part of this century. The majority of existing old growth in the southeastern US consists of small tracts tens of acres in size on average.

As part of this analysis, the FS should identify all old growth of any size (including within-stand old growth and old growth partially within multiple stands). Then, old growth components and old growth habitat value of all old growth of any size should be adequately protected. The FS should protect mature forest adjacent to or near existing old growth, as well. The FS should have provided figures on the size, distribution, and age of trees to be cut and the trees to remain after logging. The FS should have provided figures on the size, distribution, and age of trees to be cut and the trees to remain after repeat entries. The FS should have disclosed the impacts on old growth and disclose whether the treatments could preclude or delay the attainment of old growth status.

The Fs should examine whether there is any within-stand patches of OG or relic trees that should be protected or buffered from disturbance. It is possible that some old growth may exist within whole stands, partial stands, or portions of stands adjoining other stands. If any inclusions of an older age are found in the course of surveys, it would be proper to change the stand layouts and dimensions and numbers to incorporate this new data also

The FS should examine the spatial arrangement of OG and surrounding mid- late-successional habitat, to determine whether any such areas should be protected or buffered from disturbance. Even if these areas did not meet operational criteria for old growth, given the obvious shortage of old growth in this area (and throughout the Appalachians) FS should also consider designating some of the best areas as small, medium or large old growth tracts.

In FR-62, the FS includes the following “considerations for old-growth forests during project-level planning:” “When developing overall management strategies for an area, care should be taken not to isolate the medium- and small-sized old growth patches from the mid- and late-successional forests.” (pp. 26-7). National Forests need to “provide for ... representation of all old growth forest community types” (FR-62 p14) and “consider underrepresented old growth forest community types” (FR-62 p17) in planning.

The FS does not carefully consider these guidelines, as they relate to this project and instead falls back on the simplistic assumption:

"With respect to connectivity, the management activities within the project area will lead to a forest matrix which includes a full array of forest conditions, but which is dominated primarily by mid- and late- successional forest. Harris (1994) states: “a patch of old-growth that is surrounded by mature timber is less distinct than a patch of old growth that is surrounded by regeneration areas,” Since the project area will still be dominated with primarily mid- and late- successional forest, the Region 8 Guidance suggests that there will not be a need to physically interconnect old-growth areas by the use of old- growth corridors. The guidance states that forest conditions normally found on southern national forests should provide the necessary linkages for old-growth areas. "

[Appx D, Response to Comments]

The FS does not demonstrate that the conditions in the area are consistent with “forest conditions normally found on southern national forests.” In addition, other provisions of FR-62 (see above) are ignored.

As stated above, through recent history, the Clinch Ranger District has been one of the most heavily logged ranger districts on the Jefferson National Forest. Logging is so extensive that an Advisory Committee convened by U.S. Representative Rick Boucher (D-VA 9th) found that extensive logging in the Clinch River watershed, among other activities, contributed to catastrophic flooding and landslides in July 2001.

The blanket assumption used by the FS ignores the environment surrounding the Nettle Patch project area and Clinch Ranger District, both on a landscape-wide scale and on a smaller scale. Because of the rarity of old growth forests in the southeast, these factors should be considered.

The Southern Forest Resource Assessment (Wear and Greis, USFS Southern Research Station, 2002) found that all the counties in far southwestern Virginia (counties within and surrounding the project area) have a 0-20% share of areas classified as interior forest at a broad scale [see attachment] far lower than the typical 21-40% comprising the rest of the GWJNFs or the counties surrounding virtually all other southern Appalachian national forests – including those in NC, Tenn., Ga., and Ky. According to the SFRA, “The broad-scale measure of interior forest (56-ha neighborhood highlights the relative scarcity of large contiguous area of forest cover.” (SFRA p. 170).

In addition, it is well known that there is and has been a history of extensive logging, gas wells, gas pipelines, roads, areas of off-road vehicle incursions in this area recently and that mountaintop removal activities are taking place just north of the project area. Based on the 6,693 ac. of NF land in the project area (EA 25) and mileage of roads listed in the Roads Analysis, there is a road density of ~2.4 mi./sq.mi. This figure excludes mileage of pipelines connecting gas wells in the area, old skid trails, utility corridors, and other disturbance.

The FS should have examined whether these factors have degraded existing old growth forests and surrounding areas and their value to wildlife and people. The FS states that “a patch of old-growth that is surrounded by mature timber is less distinct than a patch of old growth that is surrounded by regeneration areas,” but failed to disclose how much of the area is contiguous to or surrounded by regeneration areas and how the project will impact such areas. The FS should have disclosed whether there is a need to “to physically interconnect old-growth areas” in this project area. Lastly, the FS should have analyzed other FR-62 guidelines in our comment letter and how proposed activities (and other past, ongoing and foreseeable activities) would impact forest ecosystems in this project area.

Thorough old growth surveys should be conducted which include a record of where each of the plots were taken, a record of how each of the criteria for old growth were determined, and whether the FS ensured that the criteria used were appropriate for this geographical area and the old growth types found here.

The FS claims that "to date no species had been identified in the Southeastern United States that is considered an old growth obligate; that is requiring old growth for some portion or all of their life cycle" T

However, species that depend on "old forests with dead/dying trees" as a habitat element in the recent Daniel Boone NF Plan DEIS include sharp-shinned hawk (acknowledged as a locally rare species on the GW&JNF, see GW&JNFs Rare Species list), cerulean warbler (acknowledged as a locally rare species on the GW&JNF, see GW&JNFs Rare Species list), and yellow-throated warbler (DBNF Plan DEIS H-9 to H-32). "Old forests with dead/dying trees" describes essentially the same habitat components as old growth forests (See, e.g., the description of old growth forests by Chief F. Dale Robertson, in RG p. 1&2), so it can be demonstrated that there are species now on the JNF that do, in fact, require "old growth for some portion or all of their life cycle." The Forest Service has suppressed pertinent information from within the agency that demonstrates that there are in fact old-growth dependent species in the JNF. Additionally, "species not now appearing in this area could colonize this habitat, or begin to express themselves in a visible manner, once old-growth is established." (DBNF Plan DEIS 3-90).

Regional Old Growth Guidance states that “old-growth forest communities may serve as optimal habitat for some species associates (i.e., red-cockaded woodpecker and landbird late successional habitat associates). Much is still unknown about many species (especially non-vascular plants and invertebrates) associated with old growth. To account for these unknowns, the argument to provide representative old-growth forest communities goes back to Aldo Leopold’s conservative approach of “keeping all of the pieces” (Leopold 1949). This “coarse filter” approach of providing a representation of the different old-growth forest communities will help to address overall biological diversity goals and to provide a “biological safety net.”” (FR-62 12-13).

The Allegheny woodrat is a species on the JNF. New strategies such as "maintaining sufficient old growth mast producing canopies (Beck 1977; McShea 2000), maintenance of continuously forested corridors" “public education, maintenance of coarse woody debris such as large snags and fallen logs, and more may be required to insure the long-term survival of the Allegheny woodrat" See (See '01-'03 GWJNFs M&E Rpt Mengak 2002 pp. 30-34, See also the entire '01-'03 GWJNFs M&E Rpt Mengak 2002 pp. 1-38, already in your possession, incorporated by reference).

What monitoring for the Allegheny woodrat and its habitat has been conducted in the area? How do the results inform the project planning?

By utilizing the narrow terms, "old growth obligate" and "old growth dependent", the FS is ignoring many species that prefer old growth, that utilize old growth, or species for which old growth is the optimal habitat. The difference is not just a difference of semantics; instead it reflects our current incomplete level of understanding, and may be a difference of tremendous importance to species living in the NF. The FS should consider impacts to these and other species in the project area.

Issue previously raised in Draft Environmental Assessment comments pp.13-16 and throughout comment letter.

Roads

Only 0.61 miles of roads are to be decommissioned in the proposed alternative [road mi that weren't even approved in the first place] and many times more road construction miles/dozer miles/skid trail & skid road miles are proposed -new road construction (0.88 mi) is proposed and 2.73 mi of temporary road construction [that may have long-term impacts to soils, watersheds, aquatic resources, native plants, and recreation] is proposed. In addition 1.7m of bulldozed fire line is proposed. (EA 11-16). Many more miles of skid trails and skid roads are proposed. The FS proposes 15.4 mi. of the road system for maintenance. The EA does not disclose how much money it costs to maintain the existing roads in this project area or the district, or whether the FS has the funds to continually maintain this road system to prevent adverse impacts to environmental resources, much less to maintain the additional roads, skid roads, skid trails and dozer lines proposed. [Response to comments Appx D does not address this.]

Forest Service policy requires the completion of a forest-wide Travel Analysis Process and Travel Analysis Report. It makes sense that EAs being completed now for large analysis areas should include travel analysis that is based on the recent forest-wide TAP or that can inform the forest-wide TAP.

Maintenance and environmental impacts of road systems within large analysis areas, like those in the project area, should be considered.

The FS should avoid making further scattershot investments in roads that might turn out, in a forest-wide analysis, to be roads with relatively low needs and/or relatively high impacts and, therefore, candidates for downgrading, conversion to other uses (such as trails), or decommissioning.

The George Washington NF and the Jefferson NF, like most Forests, have only a fraction of the money needed to maintain the existing road system on the Forest. The most recent TAP report (Sept. '15) for the GWJNFs found that the cost of maintaining the existing roads system on the two forests is 2.35 times the amount of available funding. (GWJNFs TAP Rpt pp.5-6). The total minimum road system in both forests is 13% below existing levels. (p.17)

According to the GWJNFs TAP, "Certain roads, particularly those located relatively low in the watersheds, may be causing undue stress to water quality and associated aquatic organisms, especially if they cannot be regularly and properly maintained. This is particularly the case in watersheds that are classified as "impaired." " (p.6)

There is an action component to the GWJNFs TAP: "Next Steps:(1.) TAP recommendations will be used to inform NEPA decisions, many of which will eventually be implemented in conjunction with various restoration projects on the Forest.(2.) Prior to implementing these recommendations, NEPA determinations will be conducted at the appropriate scale, using the TAP to inform issues, particularly cumulative effects and affordability." (p.7)

Maps accompanying the GWJNFs TAP include a map entitled "Opportunity for Change to Road System" 3/28/15 which includes mapped roads that are "likely not needed for future use." [attached]. These include FS Road 2020C, 2443, 2020A, 2430A, 2435A and 293G. In addition, there may be other roads in the PA that warrant closure due to adverse wildlife, aquatic, social, or other environmental impacts or due to high costs to maintain. Despite listing these as part of the TAP process, there is no evidence that "NEPA determinations [were] conducted at the appropriate scale, using the TAP to inform issues, particularly cumulative effects and affordability." (TAP 7). In the Oct. '17 Roads Analysis for this project, the same generic rationale is used to justify why all these roads "are needed": Serves as a linear opening, provides non-motorized access for recreational users to national forest lands, provides administrative access, needed for future management access" (Nettle Patch Roads Analysis (RA pp. 9-10). There is no site-specific analysis of these roads. The FS should have determined whether closure is warranted on a site-specific basis due to adverse wildlife, aquatic, social, or other environmental impacts or due to high costs to maintain. The FS failed to take the hard look at these roads as required by NEPA, the Transportation Analysis Process/Roads Analysis regulations and the 2015 GWJNFs TAP. It is unclear when minimum road system decisions regarding these and other roads in the project area will take place. This forecloses any real analysis of the road system in this area for the foreseeable future.

It appears that although the disparity between the cost of maintaining rds. vs. funding for maintaining roads is extreme on this NF (2.35 times!) and although the FS itself recommends reducing the road system 13% across the GWJNFs, this is likely to never be accomplished if the agency cannot give serious consideration to road decommissioning and actually decommission roads in actual project-level decisionmaking. This project is a prime example. The agency only proposes to close/decommission about 2.5% of the road system in the area, and it is unclear that this road closure will have any real effect because this was a road that was illegally built and was not part of the FS's road system in the area. This situation has a striking resemblance to self-interested individuals "guarding their own turf." We recommend that roads analysis/road closure decisions be made by individuals who have no vested interest at keeping money-losing roads open and by individuals who are willing to examine the environmental impacts in detail.

In addition there are additional roads labeled "likely not needed for future use" that connect directly to Rt 890 (the boundary of the project area), but are just south of the project area. These include FS Rt. 704, 2584A, 2584, 2606 and 2604. The mileage of these roads comprise a significant portion of the road mileage on the Clinch RD. The boundary of the project area may have been artificially devised to exclude these roads. Since it is not clear when NEPA analysis for these areas will take place in the future, foreclosing analysis of the minimum road system of these areas, these roads that directly connect to Rt 890 should have been included in the analysis. Since these roads are directly accessed via Rt 890, cumulative effects analysis should have included analysis of these roads as well.

In addition, the agency should have examined whether illegal off-road vehicle incursions are occurring on so-called closed roads. When examining the nearby Cove Creek area where the ATV Trail was proposed a few years ago, I found that illegal use of roads on public lands and the nexus between public lands and private lands was rampant. Open road information and open road density information (EA 58 and Roads Analysis) is worthless when closed roads and the general forest area are being used extensively by off-road vehicles. The FS should have ground-truthed the roads in the area to determine the degree to which closed roads are being commandeered by illegal off-road vehicle users. Impacts on wildlife, non-motorized users, aquatic resources, invasive plants and other resources should have been examined. Thus, the "hard look" required by NEPA has not been taken.

Issue previously raised in Draft Environmental Assessment comments pp.3-5 and throughout comment letter.

Salamanders

The Forest Service should have sufficiently examined and considered the potential impacts upon salamanders & other amphibians and reptiles. This concern is significant here given the agency's intent to destroy, degrade, or fragment suitable salamander habitat. Populations in the project area could be centered in, perhaps even be only found at, the particular places targeted for intense manipulation. They have very small home ranges with limited abilities of mobility (see attachments). They are susceptible and vulnerable to severe site-specific harm to their habitat and numbers; harm that would occur should the decision be implemented.

Their life history requirements and characteristics greatly restrict their abilities to "recolonize" areas. If this project area or the cutting units do not contain Peaks of Otter salamander habitat, then the MIS (viz., black bears, pileated woodpeckers) and other birds listed in the JNF Plan are of limited, even misleading, use for gauging impacts to site-sensitive salamander or coal skink populations. Additional salamander/amphibian/reptile MIS need to be considered in this analysis.

The MIS are also insufficient for gauging impacts to truly area-sensitive species of mature interior forest (such as various warbler or tanager species). The MIS are not strictly interior species and/or are more habitat generalists and/or are not area-sensitive and/or are not site-sensitive.

The use of these species does not accurately gauge the impacts to small site-sensitive species of low mobility such as salamanders and turtles. Management plans must insure research on and (based on continuous monitoring and assessment in the field) evaluation of the effects of each management system to the end that it will not produce substantial and permanent impairment of the productivity of the land.

Present MIS do not allow for the accurate monitoring and assessment of management impacts to salamander populations in the RD where POS do not occur. Then some other indicator of effects needs to be used; the project's and Plan's MIS are deficient. 16 U.S.C. 1604(g)(3)(C).

Impacts to site-sensitive creatures such as salamanders should be properly monitored and assessed. It is not clear that this is being done. There is no documentation that thorough surveys are being done. For example, the FS's response to our comments stated: "Green salamander surveys are occurring as feasible." (EA Appx D). It is not clear what "as feasible" means. Also, SELC and the Clinch Coalition stated in their Draft EA comments: "With regard to the green salamander, we appreciate that the DEA includes mitigation measures .55 However, we are concerned that it appears no widespread surveys will be performed for the species outside of areas where it is already known (e.g., screening for sites only "as the project progresses"). This presents the possibility that populations could be unintentionally impacted by management activities within the project area. Since the project area occurs across such a large extent with a high proportion of cliffs and bluffs, negative impacts to populations could be substantial and disrupt corridors of habitat connecting populations if surveys are not performed. We think it is appropriate to ensure that formal surveys for this species are performed prior to the start of management activities to ensure that these impacts are mitigated as much as is possible." The FS answered only in a vague and perfunctory manner and did provide any information on green salamander surveys, including information on thoroughness of surveys or methodology (EA Appx D). Additional surveys are warranted throughout the project area, including areas away from rock outcrops, because, as the EA states: "Observations are beginning to accumulate that indicate green salamanders may be much more arboreal than previously thought. This may have been a lack of systematic searching of the habitat in the vicinity of the rock outcrops known to support the salamanders." (EA 55)

These creatures are very important components of forest ecosystems. The biomass of salamanders in a northern hardwood forest was twice that of the bird community during the breeding season and nearly equal to that of small mammals (see Burton and Likens, 1975, *Copeia*: 541-546). While in southern Appalachian forests, salamander biomass may exceed that of all other vertebrates combined (see Hairston, 1987, *Community Ecology and Salamander Guilds*). It is clear that they play key roles in ecosystem dynamics. Abundant studies reveal the severe impacts of logging upon salamander populations and their preference for older forest sites. See "The Relationship Between Forest Management and Amphibian Ecology", 1995, deMaynadier and Hunter, *Environmental Reviews* 3:230-261 (incorporated by reference). See also "Effects of Timber Harvesting on Southern Appalachian Salamanders", Petranka et al, 1993, *Conserv. Biol.* 7:363-370; "Effects of Timber Harvesting on Low Elevation Populations of Southern Appalachian Salamanders", Petranka et al., 1994, *Forest Ecology and Management* 67:135-147; and "Plethodontid Salamander Response to Silvicultural Practices in Missouri Ozark Forests", 1999, Herbeck and Larsen, *Conservation Biology* 13:3, 623-632) (these are standard journals readily available to the agency; the agency is already in possession of this info as the studies took place on and were funded by NFs; info incorporated by reference). See also the "Conservation Assessments/Agreements" for the Peaks of Otter and Cow Knob Salamanders on the J-GWNFs (incorporated by reference).

Terrestrial salamander abundances are affected by forest thinning. See Grialou, J.A., West, S.D., and R.N. Wilkins. 2000 ("Relative comparisons revealed that red-backed salamanders were influenced by forest thinning. The difference in relative capture rates because the thinning treatment was minor. The observed decline in red-backed salamanders may be explained by direct machine impacts and soil compaction from skidders") The effects of forest clearcut harvesting and thinning on terrestrial salamanders. *Journal of Wildlife Management* 64(1): 105-113; incorporated by reference. See also Harpole and Haas, "Effects of Seven Silvicultural Treatments on Terrestrial Salamanders, *For. Ecol. & Mgmt.* 114:349-356 (1999) ("Salamander relative abundance was significantly lower after harvest on the group selection ($p < 0.005$), shelterwoods ($P < 0.007$ and $p < 0.015$), leave-tree ($p < 0.001$), and clearcut treatments ($p < 0.001$))."; incorporated by reference. Here, researchers in Virginia found that relative abundance of salamanders based on area-constrained searches decreased on group selection cuts, 12-14 sq. m shelterwood cuts, 4-7 sq. m shelterwood cuts, leave tree cuts, and clearcuts.

Large plethodontid populations declined in group selection cuts after the Daves Ridge TS (Mt Rogers NRA; Daves Ridge Group Selection "Project Overview"). See the 1994 SO monitoring and evaluation report, section on Daves Ridge TS and James Organ's report on salamanders and related issues in the Daves Ridge area ("Salamander Survey in Connection with Daves Ridge Timber Sale"). "For future Environmental Assessments involving salamanders, Sensitive or of Special Concern," Dr. Organ recommended, for terrestrial salamanders to "keep regeneration areas small, one to three acres in size, maintain large undisturbed tracts of forest between regeneration areas to permit salamanders to freely move around regeneration areas rather than to be trapped by a checkerboard pattern of thermal and low moisture barriers, do not disturb existing down and decaying logs within the regeneration area if possible..."as well as other recommendations. These documents, already in possession of the GWJNFs, are incorporated by reference.

The EA states: "If and when the green salamander is listed on the Regional Forester's list of Sensitive Species, rock outcrops that inhabit green salamanders may qualify as a rare community (Forest Plan management prescription 9F). A Plan Amendment may designate these newly discovered occurrences in the new prescription. At this time these areas are not designated in this category" (Draft EA 63). In the prior EA, on which we commented, the FS stated "When the green salamander is listed on the Regional Forester's list of Sensitive Species, rock outcrops that inhabit green salamanders will qualify as a rare community (Forest Plan management prescription 9F). A Plan Amendment would have to designate these newly discovered occurrences in the new prescription. At this time these areas are not designated in this category." (DRAFT EA 42). [underlining for emphasis]. So in addition to lack of thorough surveying for the green salamander [see above], the FS has created additional uncertainty as to how or if green salamander habitat will be protected once the salamander is listed as a sensitive species.

There is no assurance that the upcoming plan amendment on green salamander habitat (EA 54 & 63). would be coordinated with the timing of the DN from this project, so that the plan amendment will be in effect before the

release of the DN. There is no assurance that rare communities are adequately protected in the project area before the project is underway.

Mitigation measures are inadequate. They state “Retain trees within 300 feet of a rock feature supporting salamanders.” (EA 53). However, this is contradicted in the EA: Research suggests buffering known inhabited rock locations by 100 meters [~328 feet] (Petranka 1998).” (EA 55) [SEP]

The FS also fails to square the extensive habitat manipulation proposed as part of this project – including 1173 acres of commercial logging (EA 16) and 1455 acres of prescribed burning proposed as part of this project with protection of green salamander habitat. These activities would increase drying on the forest floor and would increase the risk that salamanders would be trapped by a checkerboard pattern of thermal and low moisture barriers. As noted in previous comments elsewhere in the district, we have observed that some burns appeared to burn quite heavy, scorching and removing much of the duff and ground cover. For example, we observed this in the Dry Creek project area (SE end of Clinch RD) and on the plateaus above Little Stony Creek after burns in this area. The former burn had some quite heavy scorching and duff/ground cover removal, even next to streams and bottomlands. What monitoring of prescribed burns has taken place in the Clinch RD? Are burns achieving desired results? Causing resource damage? Are any burning too hot? How are salamanders and salamander habitat being impacted? Salamander habitat near streams? Away from streams?

This is pertinent information in light of new information on green salamander habitat.

“Observations are beginning to accumulate that indicate green salamanders may be much more arboreal than previously thought. This may have been a lack of systematic searching of the habitat in the vicinity of the rock outcrops known to support the salamanders. Green salamanders have been observed to move up to 350 feet, and it is possible they move farther at times.

“Suitable habitat:

- Emergent rocks and rock outcrops ranging in size from several feet by several feet to [SEP]extensive clifflines. [SEP]
- The rocks must have deep narrow crevices for the salamanders to occupy, perhaps mainly for [SEP]breeding and overwintering. It has been said that the green salamander likes to feel the rock [SEP]on its back – nice and snug. [SEP]
- The rocks must be damp. No running water, but a high degree of humidity. They may be [SEP]somewhat moss covered. [SEP]
- The existing microclimate of the rocks needs to be maintained. Factors that contribute to the [SEP]microclimate are aspect, humidity, wind speed, solar insolation, rainfall, and air and soil [SEP]temperature. [SEP]
- Trees are needed as a source of shade, to reduce wind speed and moderate temperature, [SEP]and to provide arboreal feeding habitat. [SEP]
- Corridors between rock outcrops need to be maintained to allow for dispersion and [SEP]interbreeding. [SEP]
- Northern aspects tend to be more protected from the drying effects of the sun.” [SEP](EA 55).

And, “extent to which logging has reduced gene flow among rock outcrop populations should be studied (Petranka 1998). “ http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=103197&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=103197&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=103197

It is apparent that the proposed operations have the potential to significantly harm the habitat of and thereby the distribution and viability of some salamander species. This issue should be fully and fairly considered by the agency here.

- How has salamander habitat been affected by past projects? How will such habitat be affected here? How were salamanders affected? Cumulative effects from mountaintop removal operations in the greater Guest River and Clinch River watersheds also should have been considered. The green salamander is a species threatened by mountaintop removal coal mining, as are many high elevation endemics (Gatwicke 2008, Wood 2009). Concerning the concentration of endemic salamanders in coal mining areas, Palmer and Bernhardt (2009) state: "Where mining activities destroy stream habitat and degrade stream water quality, many of these taxa become locally extinct, and for species with small geographic distributions, mining activities will contribute to their global extinction."

The FS should have considered how the project affect would affect sites associated with water, food-gathering, breeding, mating sites or other important life-cycle sites for salamanders, other amphibians, other riparian-dependent, or aquatic species. How will the project affect these species? How will movement between populations be affected? How will interactions between certain salamander species and their competitors be affected?

The FS should have considered how the project would affect closed forested canopy, deep moist soil, abundant surface cover objects.

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In addition to the future listing on the FS's R-8 Sensitive Species list, on July 1 2015 the US Fish and Wildlife Service issued a 90-day finding saying that protection may be warranted and initiated a status review. See Federal Register notice, attached.

"Climate Change

Climate change is an emerging, dire, and primary threat to the green salamander. In a study to identify the amphibians most vulnerable to climate change in the southeastern United States, Barrett et al. (2014) report that the green salamander was the most frequently identified species of concern for climate change impacts by state agency biologists (p. 286).

"Salamanders are particularly susceptible to climate change because of their restrictive physiological requirements and low vagility (Sutton et al. 2014, p. 1). Sutton et al. (2014)

evaluated species-specific vulnerabilities to projected climate change by the year 2050 and found that all analyzed salamander species were projected to lose a portion of their climatic niche, defined as the collective climatic patterns that regulate an organism's distribution (p. 2, 3). For the green salamander, the authors found that it will likely lose 49 percent of its climatic niche by 2050 (p. 14). Other researchers have predicted an even greater loss of habitat for the green salamander due to climate change. Barrett et al. (2014) predict that 93 percent of the green salamander's range will become climatically unsuitable by 2050 (p. 287).

"Climate change also exacerbates the negative effects of other threats to the green salamander, such as habitat degradation due to logging, mining, pipelines, or fracking. Mantyka-Pringle et al. (2011) examined how climate change affects the negative impacts of other threat factors such as habitat loss. They found that the "most important determinant of habitat loss and fragmentation effects, averaged across species and geographic regions, was current

maximum temperature, with mean precipitation change over the last 100 years of secondary importance” (p. 2). They highlight the rapid population decline of green salamanders in fragmented habitats in the southern Appalachians as an example of the synergistic effects between habitat degradation and climate change (Mantyka-Pringle et al. 2011, p. 2).

“Researchers believe that climate change is already harming green salamanders. Corser (2001) identifies climate change and increasing summer temperatures and more variable winter temperatures specifically as a primary factor in the population crash of green salamanders in the Blue Ridge Mountains (p. 122). He also identifies a population lost to drought that contributed to total reproductive failure (p. 122). Because green salamander females only brood every other year and do not become sexual mature until age three (Jensen et al. 2008), the number of times a female can reproduce in her lifetime is limited, which will exacerbate the negative effects of climate change on failed broods.” **[Comments in support of Endangered Species Act Protection for the Green Salamander (*Aneides aeneus*) 80 FR 37568, Center for Biological Diversity, Aug. 31, '15, attached]**

This project area includes some of the highest elevation habitat in the Cumberland Mountains. See our comments and comments by Browning/Clinch Coalition on this issue. For example, “It is especially pertinent to understand that the complex terrain of the High Knob Massif, and of the Nettle Patch Project Area, frequently generates weather conditions which are different from the surrounding atmosphere (i.e., forming microclimates which are notably different from the surrounding mean climate of the region). Research suggests that places which often have conditions different from that of the surrounding, large-scale atmosphere become favored as buffers against climate changes and strong-holds for the preservation of biodiversity (Daly, et. Al, 2009).* These places are not detected by global climate models.”” The High Knob Massif is the wettest area in Virginia, with the City of Norton being the wettest location in Virginia possessing an official National Weather Service rain gauge (outside of the High Knob Massif, the City of Norton Water Plant measuring site is the wettest location in all of Virginia with precipitation records / it tends to receive significantly less than the massif). “

The FS should have considered the impacts of climate change in conjunction with logging and habitat manipulation in the moist, high elevation forests and their ability to support salamanders such as the green salamander. Cumulative effects to these moist high elevation forests should have been considered.

“Logging

“Because green salamanders lack lungs and breathe through their skin, they require stable moist microhabitat conditions. Mature, closed canopy forests better maintain habitat conditions for lungless salamanders (Petranka 1998, Connette and Semlitsch 2013). It is well established in the scientific literature that logging can cause decreased salamander abundance (Brand et al. 2014, p. 234). Logging can directly remove the trees needed by green salamanders and also harm the microhabitat conditions of their rock outcrops, as reviewed in our listing petition.

The loss of chestnut forests likely contributed to historical decline of green salamanders (AmphibiaWeb 2015). The loss of chestnut old-growth forests and arboreal foraging sites due to the chestnut blight and logging may have restricted green salamanders to crevices of rock outcrops in recent times (Brodman 2004, p. 6).

Brodman (2004) states that deforestation is the main threat to green salamander populations (p. 2). In addition to direct timber harvest, clearing of land for other reasons threatens green “salamanders include fracking, mining, and pipeline construction. Hardman (2014) reports that green salamanders are slow to recover from past logging (p. 30).” **[Comments in support of Endangered Species Act Protection for the Green Salamander (*Aneides aeneus*) 80**

Impacts of the extensive logging proposed on salamander populations should have been considered and appropriate mitigation measures implemented.

Issue previously raised in Draft Environmental Assessment comments pp.24-26 and throughout comment letter.

All terrain vehicle incursions:

According to the EA, several areas within and around the project are have seen ORV incursions and illegal use. How does existing Forest Service infrastructure (roads, old skid trails, openings) facilitate illegal use of the Forest by ATVs? Will skid trails, roads, or logging units in this project contribute to ATV use in any parts of the area? Does the Forest Service have the ability to adequately patrol the area, given the low funding levels for law enforcement?

The EA says: "Slash will be placed in skid trails and existing ATV trails (in harvest units along 238, 706, 890^[1] and 2445 road) to discourage illegal ATV use." (EA 51). As described elsewhere in the EA, illegal ORV routes appear to be a serious problem throughout many parts of the project area. ORV riders often bypass gates, slash and other deterrents, sometimes using saws or other tools to cut through these. For example, during the field visit, the author observed that ORV riders had bypasses the gate near proposed unit 56. (Photo attached to draft EA comments).

The Forest Service should demonstrate the effectiveness of any mitigation measures with respect to illegal motorized use. A mere listing of mitigation measures is insufficient to qualify as a reasoned discussion by NEPA. EISs must analyze mitigation measures in detail and explain the effectiveness of such measures [Northwest Indian Cemetery Protective Ass'n v. Peterson 795 F.2d 688 (9th Cir. 1986)]. Forest Service NEPA documents describe possible mitigation measures but do not discuss them in adequate detail nor do they discuss or disclose the costs, effectiveness or efficacy of the mitigation measures.

The area already has an extensive road network. Several closed system roads and non-system road closures are being illegally used on a frequent basis" (See this EA and the CMB EA, pp.71,11). Gas-line access roads may create additional cumulative impacts. In addition, open and closed road access may contribute to increased litter, noise, and disturbance in some areas and the gravel surfacing used throughout the project would contribute to the visibility and unsightliness of closed roads. Forest Service budgets are being decreased, so it is unlikely that the Forest Service will be able to patrol the area any more thoroughly in the future than now. The increased infrastructure resulting from the proposed alternative should be considered as well. Alternatives with low levels of road construction/reconstruction should have been examined among the action alternatives as well.

^[1]
SEP

Issue previously raised in Draft Environmental Assessment comments pp.2-3 and throughout comment letter.

Cerulean Warblers:

Impacts to cerulean warblers from the logging proposed in this project should be analyzed. According to the EA,

“There are occurrences of the cerulean warbler throughout the project area. Timber management in areas of mature forests with open understories would reduce nesting habitat for this species, but create some foraging opportunities. Implementation of the Proposed Action or the Alternative will likely reduce the total amount of cerulean warbler habitat in the Project Area.” (EA 95). However, the EA contains no information on cerulean warbler populations in the area or impacts on the degree to which known cerulean warbler habitat (and general cerulean warbler habitat) would be impacted.

The cerulean is recognized by the FS and others as an area-sensitive species (Southern Appalachian Assessment, Terrestrial Rept, Robbins et al., Cove Creek BE, 1995, Clinch RD, J&GWNFs, Maple Springs Branch BE, Clinch RD, J&GWNFs). Other species are listed as area sensitive species in the SAA. The FS should consider the impacts to these area-sensitive species.

The FS found that cerulean warblers “tended to be older, large diameter stands with tall trees, a deciduous understory, multiple layers and ages...” ((Cerulean Warbler Interim Mgmt Strategy, Clinch RD, GWJNFs, p. -7) “Trees 18.2 in. in diameter composed greater than one-fourth of the overstory trees in the stands.” (CW IMS-7) The IMS documents that research characterized “suitable cerulean warbler habitat as mature forest with a high, closed canopy and a large number of stems greater than 12 in. diameter...” (CWS IMS-8) The cerulean warbler is found in the PA and vicinity. The cerulean warbler, is an area-sensitive bird (Southern Appalachian Assessment, Terrestrial Report); the cerulean warbler is experiencing the greatest annual decline of any of the warbler species and this significant decline is continuing. (Robbins, Fitzpatrick and Hamel, 1989, "A warbler in trouble: *Dendroica cerulea*") Studies have found cerulean warblers chiefly in “large tracts of mature, semi-open deciduous forest.” Robbins, Fitzpatrick and Hamel, 1992. The authors of one study, affirm that there is a “need to protect extensive tracts of mature deciduous forest,” especially on publicly owned land. See also excerpts from the Maple Springs Branch BE on the cerulean warbler (Clinch RD, GWJNFs, already in the agency's possession, incorporated by reference).

- The cerulean is recognized by the FS and others as an area-sensitive species (SAA, Terrestrial Rept, Robbins et al., Cove Creek BE, 1995, Clinch RD, J&GWNFs, Maple Springs Branch BE, Clinch RD, J&GWNFs). The Southern Appalachian Assessment Terrestrial Report lists the cerulean warbler among “area sensitive, mid- to late-successional deciduous forest species” (SAA/TR-70, in the agency's possession, incorporated by reference). It predicts that “based on past trends in land use, it is expected that, over the next 15 years, suitable acreage [for these area sensitive species] and associated forest interior habitats will continue to decrease due to loss of forestland to other uses such as agricultural pasture and development.”(SAA/TR-72) The cerulean warbler is found in a variety of deciduous forest types, usually in extensive woods. (Brandt, 1947; Peterjohn and Rice, 1991; Andrie and Carroll, 1988; Brooks, 1908; Mengel, 1965; Cadman et al., 1987; Torrey, 1896; Kirkwood, 1901; Maxon, 1903; Hann, 1937) Most often, its occurrence is recorded in forests with large, tall trees. (Lynch, 1991; Robbins et al, 1989; Wilson, 1811; Oliarnyk, 1996; Mengel, 1965; Andrie and Carroll, 1988; Robinson, 1996; Torrey, 1896; Schorger, 1927) “A change to shorter rotation periods and even-aged management,” one of the 6 “chief constraints on the breeding ground” listed in Robbins et al., 1989.

According to USF&WS, “Ceruleans are routinely identified with large tracts, tall trees, and mature forest.” (Cerulean Warbler Status Assessment April 2000) For example, Lynch (1981) indicates minimum habitat requirements of the birds along the Roanoke River of North Carolina “to include: (1.) a closed canopy, (2.) presence of scattered, very tall old-growth canopy trees, and (3) good development of vegetation strata, i.e. distinct zonation of canopy, subcanopy, shrub, and ground-cover layers.” (Cerulean Warbler Status Assessment April 2000). This project has the potential to alter or degrade these habitat characteristics in the project area removal of contiguous forest cover and removal of large, old trees that are potential cerulean warbler nest trees.

The Cerulean Warbler is in need of robust conservation planning, especially by the Forest Service. Cerulean Warbler populations have declined dramatically since the 1960s. Data from the Breeding Bird Survey show that the Cerulean population has decreased approximately 80% since 1966, with an average rate of decline of -4.1% per year from 1966 to 2007. (J. R. Sauer et al., *The North American Breeding Bird Survey, Results and Analysis 1966-2007* (updated 15 May 2008), Version 5.15.2008 (USGS Patuxent Wildlife Research Center, Laurel, MD, 2009) The U.S. Fish and Wildlife Service's Cerulean Warbler Status Assessment concluded that this precipitous population loss represented the largest decline among any warbler species and one of the most significant declines among neotropical migratory birds. (J. R. Sauer et al) Much of this decline has occurred in the species' core breeding range. Dramatic habitat loss to mining, development, and logging throughout the Cerulean's breeding range, as well as loss of habitat in its winter range, are the primary causes of this decline. (Hamel (2000); Paul B. Hamel, How We Can Learn More About the Cerulean Warbler (*Dendroica Cerulea*), *Auk* 121(1): 7, 9 (2004).)

National forests like the JNF and portions of this project area are critical to the Cerulean Warbler's long-term survival, because of the Cerulean's habitat requirements. Cerulean warblers were documented in the CMB project area (virtually the same as this project area), the Pickem Mountain project area (see letter from district ranger Sten Olsen to Forest Supervisor, Aug. 26, '88) and the Nettle Patch final EA p. 95. The Cerulean Warbler is an area sensitive forest-interior species, dependent on large tracts of mature forest to breed successfully. (C. Robbins., *A Warbler In Trouble: Dendroica Cerulea*, in Hagen, et al., *Ecology and Conservation of Neotropical Migrant Landbirds* at 555-56, 560. Smithsonian Inst. Pr. (1992); Nicholson, C.P. 2004. *Ecology of the Cerulean Warbler in the Cumberland Mountains of East Tennessee*, at 1. Dissertation, University of Tennessee, Knoxville, USA [hereinafter —Nicholson 2004]. See also C. Oliarnyk & R. Robertson, —Breeding Behavior and Reproductive Success of Cerulean Warblers in Southeastern Ontario, *Wilson Bull* 108(4): 673 (1996); R. Askins, "Relationship Between the Regional Abundance of Forest and the Composition of Forest Bird Communities," *Biological Conservation* 39: 144 Table 5 (1987); R. Connor and J. Dickson, "Relationships Between Bird Communities and Forest Age, Structure, Species Composition and Fragmentation in the West Gulf Coastal Plain," *Texas J. Sci. suppl.* 49(3): 131 (1997) ("Cerulean Warblers, ...are perhaps the most area-sensitive bird in this region and are likely the most vulnerable species to the forest fragmentation in this region"); Cathy A. Weakland & Petra Bohall Wood, —Cerulean Warbler (*Dendroica Cerulea*) Microhabitat and Landscape-Level Habitat Characteristics in Southern West Virginia, *Auk* 122(2): 497, 498, 506 (2005).

Cerulean Warblers require a minimum forested area of 700 hectares to sustain a viable population. (MTM EIS at III.F-15.) In a Tennessee study, Ceruleans were found only in forest tracts greater than 800 hectares (2,000 acres). (Chandler S. Robbins et al., *A Warbler in Trouble: Dendroica cerulean*, at 555, Manomet Symposium (1989)) Another study found that the probability of encountering a Cerulean reached its maximum when the area consisted of 3,000 or more unfragmented hectares (7,500 acres) of forest. (Robbins et al. 1992) Within the context of a fragmented landscape of private land, the unfragmented forest habitat in the project area is of critical importance to area-sensitive species like the Cerulean Warbler. The landscape surrounding the George Washington-Jefferson National Forests is projected to continue to fragment for new housing density at the fastest rate of any national forests. (U.S. Forest Service, *Forests on the Edge* at 9.)

"For nest trees, cerulean warblers preferred white oaks, sugar maples, and cucumber magnolias and avoided red maples and oaks in the red oak group (scarlet, black, northern and southern red oak." (CEWA study p. 15). It is not clear that these preferences are used in determining tree species retention.

Prime Cerulean habitat should generally be protected from fragmentation, especially

large unfragmented forest blocks of 7,500 acres or more that contain existing old growth forest.

There are viability concerns for cerulean warblers, other species of interior forest-dwelling warblers, species of cuckoos, and other interior-forest dwelling songbirds listed as declining in BBS (or other ornithological data) that must be taken into consideration.

The proposed activities could impact birds that have different stratigraphic preferences, niches, and life cycle needs. What are the stratigraphic preferences and vegetative preferences of cerulean warbler and other birds? How would the project affect birds with different stratigraphic preferences and vegetative preferences of birds other than and including cerulean warblers?

The proposed activities could impact birds during the time that birds are seeking mates, breeding, nesting, rearing their young, or migrating. During what period do forest interior birds seek mates? Breed? Migrate? How would the project affect these factors? The project may involve a taking under the MBTA if birds are killed in nest trees or nearby trees

What activities are affecting the forest interior birds throughout their breeding range? Wintering range? How do these activities cumulatively affect birds?

The 2001 Executive Order on Migratory Birds states: "Sec. 3. Federal Agency Responsibilities. (e) Pursuant to its MOU, each agency shall, to the extent permitted by law and subject to the availability of appropriations and within Administration budgetary limits, and in harmony with agency missions:

(1) support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions;...

(4) design migratory bird habitat and population conservation principles, measures, and practices, into agency plans and planning processes (natural resource, land management, and environmental quality planning, including, but not limited to, forest and rangeland planning, coastal management planning, watershed planning, etc.) as practicable, and coordinate with other agencies and nonfederal partners in planning efforts;...

(6) ensure that environmental analyses of Federal actions required by the NEPA or other established environmental review processes evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern;...

(9) identify where unintentional take reasonably attributable to agency actions is having, or is likely to have, a measurable negative effect on migratory bird populations, focusing first on species of concern, priority habitats, and key risk factors. With respect to those actions so identified, the agency shall develop and use principles, standards, and practices that will lessen the amount of unintentional take, developing any such conservation efforts in cooperation with the Service. These principles, standards, and practices shall be regularly evaluated and revised to ensure that they are effective in lessening the detrimental effect of agency actions on migratory bird populations. The agency also shall inventory and monitor bird habitat and populations within the agency's capabilities and authorities to the extent feasible to facilitate decisions about the need for, and effectiveness of, conservation efforts;"...

Sec. 2 i) "Species of concern" refers to those species listed in the periodic report "Migratory Nongame Birds of Management Concern in the United States," priority migratory bird species as documented by established plans (such as Bird Conservation Regions in the North American Bird Conservation Initiative or Partners in Flight physiographic areas), and those species listed in 50 C.F.R. 17.11." Several birds listed in Bird Species of Conservation Concern 2002 are found in this area (see breeding bird survey records). Impacts to these NTMBs should be analyzed.

Issue previously raised in Draft Environmental Assessment comments pp.7-8 and throughout comment letter.

Natural Heritage Resources:

This project will directly and indirectly impact Division of Natural Heritage recognized conservation sites, special biological areas, rare communities, and species that are rare on the state, national, or global level.

Renee Hypes of DCR wrote "The Pickem Mountain Conservation Site is located within the project site. ... Upon further review, DCR supports the use of prescribed fire in the targeted areas as a management tool. However, we do not support the other treatments proposed in the scoping notice including two TSI-Crop Tree Release units which encroach into the Montane Mixed Oak-Oak- Hickory forest EO associated with High Knob Conservation Site and the two thinning treatment units which the Oak/Heath Forest element occurrence associated with the Pickem Mountain conservation site. DCR also recommends no herbicide use near documented occurrences of rare plants." (EA Appx D).

The Pickem Mountain special biological area designated by the Virginia Division of Natural Heritage (DNH) is in the project area and activities are proposed within the area. As stated above in our old growth section, cutting units and TSI units exist and/or are proposed within the Natural Heritage site on Pickem Mountain. Notably, some of these units are directly between the two old growth units identified in the Forest Plan and on the Project Map/Timber Map. The proposed prescription calls for removal of vegetation within the cutting unit that is far heavier than a typical thinning unit. (See EA). According to the DNH, "[b]ecause this site's significance is defined by absence of anthropogenic disturbance, even selective timber harvest would seriously diminish the site's scientific and natural heritage resource values." "Timber harvest should be prohibited in this area, and exact boundaries and character of all the old growth forest at this site should be determined by field survey." "Designate [the] National Forest portion of this site as a Special Interest Area in [the] upcoming Jefferson National Forest Plan revision." "[t]he 'A' occurrence rank reflects the apparent large size of the old growth stand and its undisturbed condition." (Erdle, Smith, and Howarth) Erdle, Smith, and Howarth, Special Biological Areas of the Jefferson National Forest: Candidates for Special Interest Area and Research Natural Area Designation, Va. DNH, April 1996, pp. 196-197. The FS proposal includes logging units, prescribed burning, and other activities directly within this site.

Management recommendations for the area include "Long-term monitoring of the old growth forest occurrences is recommended to document changes in the forest ecosystem, resulting from stresses such as insect infestation and to provide baseline data on these mature occurrences of the mixed mesophytic and chestnut oak-pitch pine forest. Timber harvest should be prohibited in this area, and exact boundaries and character of all the old growth forest at this site should be determined by field survey." (pp. 196-197) There is no evidence that this monitoring has occurred and there is no information on any surveys have been conducted to locate and identify rare communities, rare species, or listed species not previously identified in this area. (No response received from inquiries on this matter from our 2016 and 2017 comment letters and our follow-up with Barry Garten on Jan. 2, '18).

Impacts to salamanders, cerulean warblers, other cove forest songbirds, forest interior species, and other species in the area should be fully analyzed. Historically, rich sites (the habitat of many such species) have been the first to be cut. The Forest Service should disclose whether mature cove forests and old growth cove forests are underrepresented in this watershed, this district or this forest. How would cutting these stands preclude attainment of future old growth status?

The FS should have analyzed and fully disclosed the reasons why logging the Pickem Mountain conservation site, against the recommendations of Virginia Division of Natural Heritage is appropriate. The FS should have analyzed and fully disclosed why directly between the two old growth units identified on Pickem Mountain in the Forest Plan is appropriate, given the small acreage of existing old growth forest in this portion of the Clinch Ranger District and within the Cumberland Mountains bioregion. See Clinch RD old growth map from JNF Plan Revision, 2004.

Issue previously raised in Draft Environmental Assessment comments p. 2 and throughout comment letter.

Steep Slopes/Soils

The author of this letter visited the Nettle Patch site on Sep. 25, '16. We are concerned about the potential for erosion and mass movement along steep slopes including cutting units 2, 57, 23, 15 and many other units. . Please consider the adverse effects on soils and watersheds from logging and roadbuilding on steep slopes. What is the erosion hazard for each soil type in each unit and what potential is there for erosion and mass movement? How will this risk be eliminated?

In the field visit we learned that there are numerous steep slopes in the area and numerous streamside areas within the area. How will these areas be affected? As stated above, maps with topographical markings are not provided to the public in this scoping, so it is impossible to tell where the boundaries of proposed cutting units, streams, management prescription areas and other project-specific features are on the ground.

How will the project affect steep slopes, erosive soils, soils where soil movement may occur, soils with compaction hazards, soils with puddling hazards, rocky soils, soils with equipment limitations, soils at risk of losing organic material, soils with low levels of organic material, and other sensitive soils along the creeks in this project areas and their tributaries? What portion of the units are on steep slopes? Identify these areas. Do not merely take an average of slope. Will the project affect poorly drained floodplain soils? Soil Productivity? How will this affect soils in the project area?

Regional soil quality standards and best management practices must be followed in full.

Issue previously raised in Draft Environmental Assessment comments pp2. and throughout.

Stream impacts:

The Forest Service should have examined this area closely to determine the presence of seeps, springs, wetland plants, and other features related to the hydrology of this area. The Forest Service should have disclosed the impact that logging in, and around this area will have on the stream systems and hydrological features within this area and downstream. The effects of sedimentation, alteration of water flows, removal of forest cover, change in water temperature, and other effects should be fully evaluated. Steep slopes, soils, variation in water flows and other variables should be considered. Virginia BMPs should be followed. Riparian corridors should be established of adequate sizes to protect the resources in and around the headwaters of streams.

How will water quality downstream in the Guest River and the Clinch River be affected? How will water quality in impaired waterways, eligible wild and scenic rivers, eligible state scenic rivers, and important recreational rivers be affected? The section of the Guest River downstream is a Virginia scenic river. The Guest River flows into the Clinch River, an ecosystem which supports more than 100 species of freshwater fish and more than 50 species of mussels, many of which are endangered or threatened.

According to the CMB EA covering this project area, the western tributary of Machine Creek ranks strongly in the poor category for stream stability. The northwestern tributary of Burns Creek has been heavily impacted by past logging and is in poor shape as well. Sediment is flowing into Burns Creek from a cutting units on the mainstem of the creek. Clear Creek receives a large amount of sediment as well. (EA, pp. 46-47) The decision would not improve the water quality in any of these streams. The decline of these streams would continue.

The EA admits that several streams in this area are already fishless or not supporting aquatic life (Burns, Machine, Mill Cr, and Guest River). (Draft EA 63). How would the project worsen the already bad water quality?

In our Draft EA comments, we stated “There have been no MAIS samples for Burns Creek, Clear Creek, or Machine Creek since 2000 (EA 89). The CMB timber sale was conducted 1998-2005 (EA 79), so the samples predated most of the CMB timber sale. There is no way to gauge impacts of past logging.” In response, the FS stated: “MAIS scores had not been processed at the time the Draft EA was put out for Comments. Since that time, MAIS scores have been updated for the Project Area streams and these values have been added to the Final EA.” (EA Appx D). However, with the exception of one sample in Clear Creek from April 2016 and one sample in Clear Creek in 2009, there have been no samples in these watersheds (EA 110-111). The watersheds with the most extensive logging and gas development have not been monitored. And as stated above, monitoring is important in these watersheds because, as stated above, most of the very large CMB timber sale likely took place after these surveys took place in Burns and Machine Creek watersheds.

The FS has not monitored water quality and aquatic species health in these watersheds. The requisite “hard look” required by NEPA has not been taken.

Issue previously raised in Draft Environmental Assessment comments p. 5 and throughout.

Soils:

The Forest Service should evaluate the impact of the project on soils and watersheds, including potential for erosion, landslides and slumping, compaction, nutrient cycling, and impacts to sensitive soils and downstream resources.

Some soil hazards may exist in the area. The project area should be thoroughly surveyed and all risks to soils and watersheds should be identified and addressed by avoidance where appropriate.

The FS states that “Cutting Units with an average slope over 35% will be required to use a cable logging method.” (EA 51).

There have been numerous instances of erosion, slumping, and landslides on other slopes on this mountain. For example, after logging in the Big Stony watershed (Big Flat Top timber project), landslides occurred and a tremendous amount of flood damage occurred. The author and members of the Clinch Coalition observed that several of the landslides originated in recent cutting units, in spite of the use of cabling logging. Dry Creek, also on this mountain, saw heavy flood damage. And the author has personally observed slumping and slides at the site of the formerly proposed off-road vehicle trail, also on this mountain. The slumping originated from Forest Service roads. In fact, an Advisory Committee convened by U.S. Representative Rick Boucher (D-VA 9th) found that extensive logging in the Clinch River watershed, among other activities, contributed to catastrophic flooding and landslides in July 2001. The mitigation measures are not enough to prevent erosion, slumping and landslides originating from FS logging and infrastructure associated with FS logging in this terrain.

he CMB EA, covering this area, reports that there have been large floods in 1862, 1918 and 1977. Other large floods have occurred at regular intervals. (Draft EA, p. 45)

This is a serious issue that has had grave consequences in the past. The FS is not treating it as seriously as this hazard warrants.

Issue previously raised in Draft Environmental Assessment comments po. 6-7 and throughout.

[\[1\]](#) 42 U.S.C. § 4331(a).

[\[2\]](#) 40 C.F.R. § 1500.1(b)-(c).

[\[3\]](#) 42 U.S.C. § 4332(C).