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Comments: To: Jobe Timm, Forest Supervisor, Reviewing Officer

George Washington and Jefferson National Forest

R-8, USDA FS, Dept. of Agriculture

5162 Valleypointe Parkway

Roanoke, VA 24019-3050

NOTICE OF OBJECTION

Re: Potts Creek Vegetation Project Environmental Assessment (EA); Draft Decision Notice (DDN) and Finding of No Significant Impact (FONSI)

Dear Reviewing Officer Timm:

This letter is a formal objection to the Potts Creek Vegetation Project Draft DN, FONSI and EA pursuant to 36 C.F.R. § 218. [36 C.F.R. § 218.8(d)(4)]. The Responsible Official is James River and Warm Springs District Ranger Theresa Tanner who will implement the project in the George Washington National Forest's James River and Warm Springs District Ranger Districts. 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 of the Virginia Chapter of Sierra Club is the lead objector pursuant to 36 C.F.R. § 218.8(d)(3).

The proposed action calls for 1233 acres of commercial logging, 8.3 miles of new "temporary" roads, 10.4 miles of linear mechanical fuels treatments, and 4,952 acres of prescribed burning. (See DDN and EA).

Sherman Bamford
Forest Issues Chair,
Virginia Chapter-Sierra Club

Introduction:

The Virginia Chapter of Sierra Club has over 20,000 members throughout Virginia, including the counties and municipalities in close proximity to this project. We are opposed to the 1233 acres of commercial logging, 8.3 miles of new road construction, 3.2 miles of dozer line construction and other industrial management proposed in the Modified Proposed Action. The landscape where this project is planned contains a significant network of old growth forests, Natural Heritage program-identified areas and roadless areas that should be high priority for protection.

We are concerned about logging and other land disturbing activities in an around Natural Heritage conservation

sites, tracts of old growth forest identified in the area, the Potts Creek potential wilderness area, and the Barbours Creek RARE II area.

Requested Remedy:

We request that the Forest Service amend the decision such that it avoids logging and other land disturbing activities in and around Natural Heritage conservation sites, significant tracts of old growth forest identified in the area, the Potts Creek potential wilderness area, and the Barbours Creek RARE II area.

The FS failed to adequately address a number of issues we previously raised. These issues need to be fully addressed before the FS authorizes logging in this area.

Introductory Remarks regarding Law

Because the specific objections generally rest on common points of law, this section of the objection letter briefly discusses and identifies those relevant points of law that are applicable to the numerous content-specific objections below. This section is separated from the specific list of objections only for purposes of readability and organization. This section should be read as applying to each and every objection individually.

A. Administrative Procedures Act

Fundamentally, citizens have a right to expect their government to obey its own laws, and to engage in reasoned decision-making.

An agency must articulate a rational connection between the facts found and the conclusions reached.³ An agency "must examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made,'"⁴ and a decision would be arbitrary and capricious if the agency "failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise. ..." ⁵ "We will find a BA inadequate, however, where the agency 'entirely failed to consider an important aspect of the problem' or to 'consider[] the relevant factors and articulate[] a rational connection between the facts found and the choice made.'"⁶

B. 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."⁷ 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."⁸

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."⁹ 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 35 U.S.C.A. § 706(2)(A).

⁴ (Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Auto. Ins. Co., 463 U.S. 29, 43 (1983), citing Burlington Truck Lines v. United States, 371 U.S. 156, 168 (1962).

⁵ Motor Vehicle Manufacturers Association of the United States v. State Farm Mutual Auto Insurance Company, 463 U.S. 29, 43 (1983).

⁶ Pacific Coast Fed'n, 265 F.3d at 1034.

7 42 U.S.C. § 4331(a).

8 40 C.F.R. § 1500.1(b)-(c).

9 42 U.S.C. § 4332(C).

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

Under NEPA, a helpful scientific analysis into an important problem must be performed where it is reasonably possible. If the information is relevant, but costs to obtain it are exorbitant, the agency must include statements indicating this fact, the relevance of the missing information, a summary of existing relevant, credible, scientific evidence, and an evaluation of impacts based on a method that is "generally accepted in the scientific community."¹⁹

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. § 1502.22(a).

¹⁹ 40 C.F.R. § 1502.22(b)(1) - (4).

NEPA requires federal agencies to analyze the foreseeable environmental impacts,

including direct, indirect, and cumulative impacts, of "major Federal actions."²⁰

Many of the objections below relate to failures to achieve NEPA's "hard look" requirement, which failures encompass the above-mentioned statutes and regulations.

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.

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).

²⁷ 40 C.F.R. § 1508.27(b)(7).

3. Mitigated FONSI

Mitigation measures reduce what would otherwise be significant impacts to the level of insignificance. 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. 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,

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).

37 16 U.S.C. § 1604(i); 36 CFR 219.10(e).

Old Growth

There is a significant network of old growth forests in this area. There is a potential for the project to impact and disrupt large-, medium- and small-sized old growth tracts and mature forests adjacent to old growth across the landscape.

Va. Her. Tech. Rpt. 00-10 states: "Frozen Knob Site Description: This site encompasses an unusually large contiguous stand of old growth Mid-Appalachian mixed oak forest. The old growth occurrence occupies approximately 1100 acres on the crests and middle to upper side slopes of the southernmost ridge of Peters Mountain. Most of the old-growth stand has evidently never been logged and is in near pristine condition, and has sustained little fragmentation. Especially impressive are some red and white oak stands on the crest and benches, and some of the chestnut oak-shortleaf pine stands on the east faces of the spur ridges. The site boundary also includes an occurrence of a little known and probably rare mountain temporary pool community, situated on a topographic bench..... Treats: logging or road construction would destroy the integrity of this unusually large stand of old growth forest." (p. 44)

Va. Her. Tech. Rpt. 00-07 states "Data collected during this project provide compelling evidence that large, rugged areas on the Peters Mountain ridges have never been logged. The second stand, on the southern ridge (Fig.12), contain similar [oak-dominated] old-age forest and covers ca. 445 ha (1,100 ac) of the more remote middle to upper slopes and crest." (p. 177)

For example, A white oak with a 1769 AD birth date was recorded in plot 23, a chestnut oak with a 1827 AD birth date was recorded in plot 50, a tulip tree with a 1821` AD birth date was recorded in plot 46 (p. 184). Plot 22 contains a depression or sag "evidently maintained by seasonal flooding" (Appendix). Plot 23 contains a "seasonally flooded bench depression" (Appendix). Plot 46 has "medium high Ca values...This is an old-age stand" (Appendix). Plot 50 is a submesotrophic old-growth forest" (Appendix).

Logging is proposed on two to three sides of old growth tracts identified in the GWNF Plan map "Existing Patches Old Growth Using Region 8 Guidelines" - including the tract east of High Point and immediately south of Rt 617 (even-age logging is proposed on all FS tracts surrounding this old growth tract). Late open block logging is proposed on nearly all FS tracts surrounding the old growth stand due south of Frozen Knob. Even-age logging is proposed on multiple sides around the old growth tract near Rt 3020. And again, because new road locations are not shown, there may be additional impacts from roads.

According to the Forest Service's Southern Region guidance on old growth (FR-62), 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 early part of the 20th century.

As part of this analysis, the Decisionmakers should identify all old growth of any size (including within-stand old growth and old growth partially within multiple stands). 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 may be important ecological components that should be protected, as well. Potential fragmentation in and around old growth tracts should be analyzed. The FS should provide figures on the size, distribution, and age of trees to be cut. The FS should disclose the impacts on old growth and disclose whether the treatments could preclude or delay the attainment of old growth status.

The agency 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 agency 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) the FS should also consider designating some of the best areas as small, medium or large old growth tracts.

In FR-62, the Southern Region of 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.

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 Allegheny woodrat is a species on the GWNF. 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).

Old growth should be surveyed and avoided. The FS should carefully examine the configuration and old growth forest types of old growth to avoid fragmenting large and medium sized old growth tracts and significant and large/medium sized mature forest/old growth tracts. The FS must avoid logging rare or underrepresented old growth forest types and higher elevation old growth forest.

The FS claims it identified some areas meeting R-8 old growth criteria and dropped them. We applaud this. But

the FS did not examine all of the issues we raised. The analysis indicates only that "an inventory was conducted on ...stands proposed for harvest as well as the temporary road locations" (PDEA 29) so there has been no analysis of how old growth forests and adjacent mature forests may be connected and part of a larger network. Since the EA does not provide a summary of where each of the plots were taken, a summary of how each of the criteria for old growth were determined, and information substantiating that the criteria used were appropriate for this geographical area and the old growth types found here.

This is particularly important in a project area that contains an "unusually large contiguous stand of old growth Mid-Appalachian mixed oak forest," [raised in section above] and other old growth features of various sizes, forest types, and conditions, as does this unique area.

Cerulean Warblers and other NTMBs

The cerulean warbler may be found in the PA (PDEA 45-46).. The cerulean warbler has exhibited the greatest rate of any warbler species and the cerulean is declining at the center of its range. (Robbins, Fitzpatrick and Hamel, 1989, " A warbler in trouble: *Dendroica cerulea*") 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 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).

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 proposed logging and roadbuilding 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 logging, roadbuilding and associated 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?

- What are current browse levels? Is natural disturbance incorporated in the figures provided?

- How would the project affect cove hardwoods, northern hardwoods, boulder fields, seeps, riparian areas, old growth and other special or unique habitat? Underrepresented habitat? Special, unique or underrepresented habitat with few nearly mature/mature/old growth stands remaining?

How will state-listed species (DNH lists of rare animals, rare plants, state-endangered and threatened species), species listed in Terwilliger, Virginia's Endangered Species and other sources) and species acknowledged as rare by experts be affected by this project? How will plant and animal species with economic value that are vulnerable to overharvesting affected by this project? How will habitat, foraging sites, and nesting sites be affected? Genetic viability? Competition from other species? Freedom from disturbance? Visibility?

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,

FS assertions that "thinning harvest methods which retain 40-90 basal area (BA) and group selection harvest methods, which both favor oak species, can provide for diverse canopy and understory structure that can advance stands toward a late open successional structure which benefit many avian species. The mosaic of

habitats resulting from prescribed fire, especially in areas that are previously thinned, should provide improved habitat for these avian species." (DEA 45-46). These are only vague assurances. The EA provides no assurance as to how older, large diameter stands with tall trees, a deciduous understory, multiple layers and ages, mature forest with a high, closed canopy and a large number of stems greater than 12 in. diameter will be identified and protected as part of the project. Moreover, the late open block logging is an unproven logging method and it is unclear how this logging method, or the extensive other logging proposed as part of this project will impact the cerulean warbler.

The cerulean warbler is found in a variety of deciduous forest types, usually in extensive woods. (Brandt, 1947; Peterjohn and Rice, 1991; Andrle 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; Andrle 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 through shelterwood logging, removal of large, old trees that are potential cerulean warbler nest trees in the course of thinning operations, and through other actions.

We would like to know the impact of logging in the numerous mature forest stands where logging is proposed in the project. The FS needs to clearly establish whether the cerulean warbler is found, or could potentially be found in and around any of these stands and whether the cerulean warbler could be negatively affected by the hundreds of acres of logging proposed within them. And whether previously logging in the project area has already affected this area sensitive forest-interior species.

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 GWNF are critical to the Cerulean Warbler's long-term survival, because of the Cerulean's habitat requirements. 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 cerulea*, 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 provided by Hickory Flats VMT 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.)

Vegetative manipulation for the benefit of the Cerulean Warbler is an extremely challenging and sensitive proposition requiring careful planning and tight restrictions that are likely unachievable through the mechanism of a commercially viable timber sale (as we usually see such sales), because of the need to retain a relatively high basal area, at least 70% of canopy trees, and mature oaks and other specific tree species which Ceruleans prefer for nesting. A team of ornithologists coordinated out of the University of Tennessee have for several years been tracking Cerulean response to a variety of experimental silvicultural treatments in test plots. (Than J. Boves and Dr. David Buehler, University of Tennessee Dept. of Forestry, Wildlife and Fisheries, *Cerulean Warbler Forest Management Experiment - Cumberland Mountains* (powerpoint)) The treatments ranged from light thinning to heavy logging. Results in the first several years showed a promising response by breeding adults with increased densities in all the treated stands, as compared to untreated control stands. Monitoring in subsequent years revealed a more complex story, however. While Cerulean Warbler adults favored the treated stands, they had significantly lower reproductive success in all the treated stands as compared to the untreated control stands. The treated stands may have operated as an ecological trap, attracting Ceruleans to nest in an area that undermined their reproductive success. Id.; J. Battin, *When Good Animals Love Bad Habitats: Ecological traps and the Conservation of Animal Populations*, 18-6 *Conservation Biology* 1482 (Dec. 2004); M. A. Schaeffer, M. Runge and P. Sherman, *Ecological and Evolutionary Traps*, 17 *Trends in Ecology* 474 (Oct. 2002) The researchers also documented strong nesting preference for specific tree species (white oak was strongly favored over red oak, for example) suggesting that leave trees from any logging activity should preferentially include those species. This was true despite tight restrictions on logging in the experimental plots. For example, each 10 ha treatment plot was buffered by 5 ha of mature forest. 47 Furthermore, logging in the intermediate treatment was limited to a thinning with a residual basal area of 50-60 sq. ft./ac and retention of 70% of canopy trees. The researchers recommended no logging in areas with relatively high Cerulean density.

As a result, 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. To the extent logging must be undertaken in prime Cerulean habitat because of other management objectives, retaining at least 70% of canopy trees, and retaining key species of nest trees. Field surveys for Ceruleans should be required when planning projects in Cerulean habitat. Field surveys for other bird species should be conducted. We note that many of the surveys took place after July 1 and into September (of various years). As such, breeding birds in the project area would have been absent or would not have been as likely to be detected.

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

Roads Analysis; Road Decommissioning and Roadbuilding

The Forest Service identified two roads in this project area for decommissioning as part of this project (PDEA 8)

totaling 0.8 miles. However, the Forest Service proposes new roads over 10 times the amount being decommissioned in this project area alone (PDEA 4). This alone is an indicator of the warped priorities of the Forest Service here. A number of roads in this area have been identified as roads that should potentially be closed due to environmental impacts, costs of upkeep, and other factors.

The Forest Service should have done the following:

(b) Road System--(1) Identification of road system. For each national forest, national grassland, experimental forest, and any other units of the National Forest System (§212.1), the responsible official must identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands. In determining the minimum road system, the responsible official must incorporate a science-based roads analysis at the appropriate scale and, to the degree practicable, involve a broad spectrum of interested and affected citizens, other state and federal agencies, and tribal governments. The minimum system is the road system determined to be needed to meet resource and other management objectives adopted in the relevant land and resource management plan (36 CFR 219), to meet applicable statutory and regulatory requirements, to reflect long-term funding expectations, to ensure that the identified system minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance.

-Identification of unneeded roads. Responsible officials must review the road system on each National Forest and Grassland and identify the roads on lands under Forest Service jurisdiction that are no longer needed to meet forest resource management objectives and that, therefore, should be decommissioned or considered for other uses, such as for trails. Decommissioning roads involves restoring roads to a more natural state. Activities used to decommission a road include, but are not limited to, the following: reestablishing former drainage patterns, stabilizing slopes, restoring vegetation, blocking the entrance to the road, installing water bars, removing culverts, reestablishing drainage-ways, removing unstable fills, pulling back road shoulders, scattering slash on the roadbed, completely eliminating the roadbed by restoring natural contours and slopes, or other methods designed to meet the specific conditions associated with the unneeded road. Forest officials should give priority to decommissioning those unneeded roads that pose the greatest risk to public safety or to environmental degradation. 36 C.F.R. 212.5.

"When proposed road management activities (road construction, reconstruction, and decommissioning) would result in changes in access, such as changes in current use, traffic patterns, and road standards, or where there may be adverse effects on soil and water resources, ecological processes, or biological communities, those decisions must be informed by roads analysis (FSM 7712.1).

All such roads should have been identified, not just a small subset.

And even if these new roads are considered temporary, the Forest Service should have disclosed the financial and ecological cost of building these roads, closing these roads, and getting these roads into a condition where they are not adversely affecting soils, watersheds, wildlife, native plants, aquatic species and other resources and where they do not provide potential illegal access. The Forest Service should have disclosed the mileage of the already extensive road network in this area, and why it needs to build additional roads.

- Whether roads/skid trails, rightly or wrongly, are called temporary, these roads/trails can have impacts on a number of resources for a certain amount of time. Please examine and disclose all effects of temporary roads, including impacts on hydrology, springs and seeps, streams, wildlife, geology, caves, motorized use, non-motorized and primitive backcountry users, invasive and non-native plants, native plants, cultural resources, and other key resources. Please disclose how long these roads will impact resources of concern.

Please disclose whether illegal off-road use and ATV/ORV use is occurring in the area, the impacts on resources and non-motorized users, and whether proposed roads might increase illegal motorized use.

A small section of road is proposed for decommissioning, but many more miles of roads and dozer lines are proposed to be built as part of this project. Please analyze whether the adverse effects of new roads is likely to outweigh the benefits of the road decommissioning. Please consider additional miles of decommissioning

Fragmentation

The issue of forest fragmentation and fragmentation of old growth and mature forest habitat should be considered.

Maintaining habitat connectivity and continuity, at a variety of scales, is essential for keeping ecological functions intact. This maintenance of broad ecosystem integrity is critical for terrestrial and aquatic species alike, and for those such as amphibians who are both.

As the Southern Appalachian Assessment makes clear, the present landscape context of our National Forests is problematic. The landscape within which the Forest is embedded is a conglomeration of patches of land with a multitude of differing conditions and uses. Large forest blocks are the rarest "patch type" in the region. This impoverishment must be acknowledged and counteracted. The great majority of the landscape is in private hands, especially small-acreage owners with widely divergent desires and management emphases.

"Parcelization of private ownerships will continue to be a management challenge with landscape-level planning becoming more difficult and habitat associated with edge effects becoming more plentiful because of increased fragmentation of forest cover." (USDA FS RPA Assessment at pg.2)

To combat this pathology of fragmentation, the large-scale reestablishment of unmanipulated forest conditions is the greatest single improvement and assistance to biodiversity and ecological integrity that we can implement (see Noss 1990 & 1991). For the time being, the only opportunities for even moderately large wildlands in the Central Appalachians are afforded by certain blocks of low road-density land in the George Washington and Jefferson National Forests.

Roads of course are a primary generator of forest fragmentation and its associated pathologies. In just the last thirty years the Forest Service has blasted over 500 miles of permanent roads through the George Washington National Forest (see page G-8 of March 2001 GW-JNFs Detailed Monitoring and Evaluation Report).

The USFS is the largest single road building agency in the world, maintaining over 380,000 miles of road (1.75 miles/square mile of National Forest; a greater density than in the general U.S. landscape), more than eight times the extent of the interstate system.

The logging and burning proposed here (much of it within, up to the boundaries, and surrounding old growth and adjacent mature forest tracts; much of it near or within the Potts Mountain potential wilderness area/Barbours Creek RARE II area) is of high concern.

The forecasted cutting will undoubtedly result in more Deer (a well-known indicator species for forest fragmentation). The FS should analyze the degree to which deer populations could increase in this area and browse upon and negatively impact rare and important herbaceous plants found in this area.

Caves/Karst

The FS admits that there are extensive karst areas in the project area (PDEA 65-66). Also, "The project area includes caves and other karst features identified by the Virginia Department of Conservation and Recreation (DCR) (Hypes, 2020)." (PDEA 66)

The possible presence of karst resources necessitates a high level of NEPA analysis and protective measures. For example, in the Hagan Hall project in the Clinch RD, Tom Collins, JNF SO Geologist recommended that the following mitigating measures be considered in one or more of the action Alternatives: "no landings or roads in the karst area, no timber ... harvested in the karst area, [and] no helicopter service area ... in the karst area." due to the sensitivity and rarity of these terrains on FS land (Hagan Hall EA Geol. Ex. Cond.-1, already in your possession, this volume is incorporated by reference in its entirety) Collins says "Karst and karst ecosystems are

unusual, involving a complex interaction of surface and subsurface processes." Collins describes how easy it is for surface water, including sediment and contaminants, to enter ground water in karst terrain. Ground surface also has the potential to collapse, creating new sinkholes. (Geol. Ex. Cond.-2-3) The mitigation methods do not avoid all the problems Collins refers to: increased trash at the logging sites, risk of contaminants from helicopters, chainsaws, etc., damage to the subterranean groundwater system, etc. (Geol. Ex. Cond.-5 and throughout) Logging and skidding in these areas, esp. near sinkholes, will have long-term negative impacts to karst. We are concerned that after the project is complete, skid trails and other logging infrastructure will remain a long-term source of sediment and contaminants that cannot be mitigated. And there is the potential for sinkhole expansion and new sinkholes near roads, skid trails, and landings and other disrupted areas. (Geol. Ex. Cond. bottom of p. 2 and top 1/3 of p. 3. Collins defines karst as "a type of topography formed in limestone and dolomite (carbonate bedrock) by the desolving of bedrock, eroding of underground spaces, and collapsing of the ground surface. Karst terrane is characterized by sinkholes, caves and underground drainage. Karst lands are unusual, involving a complex interaction of surface and subsurface process..." (Geol. Ex. Cond.-2)

-The DNH's 11/13/98 letter regarding this same karst area in the Hagan Hall raises other concerns about karst that should be considered in the Back Valley analysis, since there may be karst here as well: "The springs which feed the fisheries-supporting tributaries to Stony and Staunton Cr. should be monitored for visual turbidity and temperature over time by Forest Service staff familiar with the historical range of flow conditions associated with these streams. These streams are most likely connected to the cave environments in some way and should be assessed during pre-planning, harvest and post-harvest stages of this project. Field reconnaissance for springs should be focused along the branches of the Hunter Valley Fault which pass through the project, and concentrate on the groundwater flows from the surrounding recharge area (see geology map, DMR Publication 80) The integrity of karst groundwater is vital to the viability of the various aquatic habitats discussed in the EA. These springs, as well as those on down gradient private lands, could exhibit adverse impacts even though the documented sinkholes are buffered from land disturbing activities." (underlining for emphasis) And in its 11/18/98 comments on the Little Mtn. project, New Castle RD, another project with a down-gradient karst/cave environment, the DNH recommended "that the pre-harvest site evaluation include an inventory of sinkholes, springs, and other karst features on both public and private properties below the 2400 ft. contour elevation... [to be] accomplished through aerial photographic analysis and field reconnaissance.... A thorough evaluation of the karst areas on and adjacent to the proposed harvest sites will facilitate the design of effective BMPs and minimize damage to karst and water supplies."

"Caves and springs many miles away can be affected by logging 20 or more miles away and in different watersheds. For example, a timber sale could result in increased water entering a cave and in a major storm event, the increased water could result in a flood large enough to kill (i.e., drown) or harm creatures in the cave. Or it could kill someone exploring the cave. It could also adversely affect or kill creatures living in a cave or a spring by changing the temperature or increasing the sediment. The analysis of effects must also consider groundwater and subsurface water flow." 10/27/98 Heartwood comments on the Hagan Hall project in the Clinch RD, p. 8. These issues should be considered in this particular area as well.

If there are caves in the area, there is a possibility that portions of these caves could underlie the project area, the cutting units, roads, , or downstream areas; there is a possibility that discovered or undiscovered entrances or blowholes may exist in the area, providing access for TESLR species (which could potentially be disturbed by this project).

The PDEA did not analyze the site specific impacts to these resources or to karst areas and caves downstream. Protective measures are proposed, but the Forest Service has not demonstrated that the mitigation measures are effective.

Rock Skullcap

The rock skullcap (*Scutellaria saxatilis*) was found in the project area, (See Toms Branch from this Ranger District (EA 43 & BE 7&8). The FS should completely and properly inventory the project area for all

populations of rock skullcap or for potential habitat for this species. The FS should adequately disclose impacts to rock skullcap in compliance with NEPA. Rock skullcap has not been properly analyzed or protected.

According to NatureServe:

"Threats: Primary threat is loss of forest canopy (affects the moist microclimate of forest floor) and invasion of exotic species" and "Management Summary: Stewardship Overview: Preserves should be designed so that they are large enough to allow for population expansion and should include adequate buffer area surrounding occurrences. Invasive exotic plant species and encroachment by woody plants should be controlled. Grazing should be prevented. Forest canopy needs to be without large gaps and openings which allow sunlight to dry plants; therefore, canopies should be protected from logging or elimination by other means. Populations need to be protected from trampling and other destructive threats. Monitoring needs to be carried out on a frequent basis to assess population size and vigor, reproductive success, habitat quality, and threats. Research is needed to investigate population dynamics, seed dispersal mechanisms, establishment regimes, and the natural history of this species. Preserve Selection & Design Considerations: Preserves should be of sufficient size to sustain viable populations over time. Preserves should be of large enough size so that population expansion can occur. In addition, adequate buffer should surround occurrences to protect from outside influences such as exotic species introductions, erosion, etc.

Management Requirements: Ensure that exotic invasive plant species (such as *Lonicera japonica* and *Microstegium vimineum*) are controlled or removed as part of management considerations (Homoya 1992, Rock 1992). See <https://explorer.natureserve.org>

The plant lives in and among large rocks/boulders where it is usually moist. The plant occurs in "rich, dry to mesic ridgetop woods" (Toms Branch BE 18). The FS should protect rock skullcap habitat, large rocks/boulders, or rich, dry to mesic ridgetop woods from burning, fireline construction and other activities that may adversely impact the plant.

The EA and BE have not fully addressed how this project may affect the rock skullcap, recommendations for management of the species, or contribute to these threats. Although the Forest Service has previously identified rock skullcap in this area (see above), neither the BE or EA admit that this is the case. And there is no evidence that the Forest Service has conducted any surveys for the rock skullcap (or any other species) for this project. Apparently, the FS relies on the work of DCR (Response to Comments 22), but it is not clear when or where DCR examined the area. [it is also ironic that the FS has ignored DCR's work identifying old growth tracts on Peters Mountain, but cites DCR when rock skullcap is allegedly "not" found.]

The FS should conduct thorough surveys and analysis of TESLR species should be conducted. Many TESLR species on the GWNF require special techniques for detection or are not easily observed at certain times of the day or times of the year. Appropriate surveying techniques should be utilized and these should be utilized at appropriate times of the year and times of the day. Persons with the requisite training for identification of TESLR species likely to be found in the area should conduct the surveys. An adequate amount of time should be spent in the field conducting surveys.

Northeastern Bullrush

Known populations of northeastern bullrush exist nearby (eg, Potts Pond, VDNH Nat. Her. Tech. Rpt. 96-14 Pp. 211-216) and other locations in this county and watershed (eg, Morning Knob '01-'03 M&E Rpt G-72 and Peters Mtn North VDNH Nat. Her. Tech. Rpt. 00-10 pp. 74-76).

The agency must formally consult with the USFWS on this specific project regarding endangered species. 16 USC 1536(a)(2).

-The requisite full, intensive, and competent surveys, inventories, and data gathering for endangered species must be performed. Cumulative impacts must be analyzed and accounted for.

Section 9 of the ESA states that it is unlawful to "take" listed species. 16 USC 1538(a)(1) "'Harm' in the definition

of 'take'... may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." 50 CFR 17.3. The FS should inventory the project area to determine if northeastern bullrush populations or habitat may exist in the area. The FS should have determined if any shallow sinkhole ponds or sandstone depression ponds exist in the area ('01-'03 M&E Rpt G-72). Thorough surveys should be conducted.

The FS should conduct thorough surveys and analysis of TESLR species should be conducted. Many TESLR species on the GWNF require special techniques for detection or are not easily observed at certain times of the day or times of the year. Appropriate surveying techniques should be utilized and these should be utilized at appropriate times of the year and times of the day. Persons with the requisite training for identification of TESLR species likely to be found in the area should conduct the surveys. An adequate amount of time should be spent in the field conducting surveys.

The FS should analyze the impact of prescribed fire within the Potts Pond SBA, construction of control lines, and use of drip torches in areas with potential northeastern bullrush habitat (Response to Comments 22). The FS has not disclosed whether mitigation measures are demonstrated to be effective.

The EA and BE have not fully addressed how this project may affect the northeastern bullrush, recommendations for management of the species, or contribute to these threats.

Invasive Species

Invasive species are found in the project area. The FS should have analyzed the potential for this logging project to open up habitat and create conditions for the introduction and spread of invasives.

Researchers have found that logging, roadbuilding, and other similar activities create the conditions in which invasives can thrive. For example, logging simplifies structural diversity and eliminates microhabitats, thus decreasing species richness. As a result, communities are more prone to invasion by one or a few dominant species (Elton 1958). Habitats most likely to have an invasive species presence have been correlated with the following attributes: "vacant niches, lack of biotic constraints (predation, parasitism and disease), lack of community richness (biodiversity & structure), and disturbance." Logging is known to cause all four factors in forest ecosystems (Mack et al. (2000)). The introduction and spread of invasive species is linked to poor logging practices (poor replanting practices, road construction, & movement via machinery and tools) (Aber et al. 2000). Invasives, and vectors for the spread and introduction of invasives, must be fully considered. Mitigation measures must be established to reduce invasives. Additional alternatives with less disturbance should have been considered to reduce the introduction and spread of invasives.

Mack et al. (2000) found that the habitats that invasive species have successfully invaded in the past were qualified to as to their characteristics by Mack et al. (2000). Positive correlations were found between susceptibility to invasion and:

- 1.vacant niches
- 2.lack of biotic constraints (predation, parasitism and disease)
- 3.lack of community richness (biodiversity & architecture)
- 4.disturbance

All of these phenomena are created in extreme fashion by logging practices.

The FS should consider the full impacts of invasive plants in this area, the degree to which projects such as this one (by itself and cumulatively) will contribute to the spread of invasive plants. The FS has not demonstrated that the mitigation measures effectively eliminate the causes of noxious weed spread. logging, roadbuilding, and skid trail use and heavy vehicle traffic spread existing weeds, and probably introduce new species of weeds

The Forest Service should consider all reasonable measures that could reduce the potential spread of noxious

weeds. Failure to consider strong mitigation measures violates NEPA requirements to minimize adverse effects: Use all practicable means, consistent with the requirements of the Act and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment. (40 CFR 1500.2(f))

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 long-term effectiveness of herbicides and other noxious weed treatments are still seriously questionable.

NFMA regulations relevant to noxious weeds include:

"Management prescriptions, where appropriate and to the extent practicable, shall preserve and enhance the diversity of plant and animal communities, including endemic and desirable naturalized plant and animal species, so that it is at least as great as that which would be expected in a natural forest . . ." (36 CFR 219.27(g))

"Provide for and maintain diversity of plant and animal communities to meet overall multiple-use objectives, as provided in paragraph (g)" (36 CFR 219.27 (a)(5)) "[D]iversity shall be considered throughout the planning process. Inventories shall include quantitative data making possible the evaluation of diversity in terms of its prior and present condition." (36 CFR 219.26)

"[V]egetative manipulation of tree cover shall" "[p]rovide the desired effects on water quantity and quality, wildlife and fish habitat, regeneration of desired tree species, forage production, recreation uses, aesthetic values, and other resource yields." [36 CFR 219.27 (b)(6)]

The FS is required to comply with presidential Executive Order 13112.:

Section 5: (b) The first edition of the Management Plan shall include a review of existing and prospective approaches and authorities for preventing the introduction and spread of invasive species, including those for identifying pathways by which invasive species are introduced and for minimizing the risk of introductions via those pathways, and shall identify research needs and recommend measures to minimize the risk that introductions will occur. Such recommended measures shall provide for a science-based process to evaluate risks associated with introduction and spread of invasive species and a coordinated and systematic risk-based process to identify, monitor, and interdict pathways that may be involved in the introduction of invasive species.

Or,

Sec. 2. Federal Agency Duties. (a) Each Federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law,

(1) identify such actions;

(2) subject to the availability of appropriations, and within Administration budgetary limits, use relevant programs and authorities to: (i) prevent the introduction of invasive species; (ii) detect and

respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them; and

(3) not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.

Cutting units and bulldozed skid trails (such as that planned here) appear to play a role in the known occurrences of noxious weeds and may play a further role in the presence of yet uninventoried infestations that are out there. We challenge the FS to give an accurate percentage of the miles of roads on the FS that have never had noxious weeds. Likewise, these infestations on the roads readily expand into cutting units, especially the more intensive the logging done in the particular units. Typically, the FS just throws up its hands and accepts that they will be carrying out management activities that inevitably cause more spread of weeds. Instead, a genuine prevention strategy is needed and this needs to be incorporated into the analysis. The premier tool of prevention of new noxious weed invaders deserves the highest priority. Instead, all prevention strategies assume weeds will invade, then prescribe expensive control methods of unknown efficacy after the fact.

Without first significantly reducing the type of soil disturbing activities that facilitate noxious weed invasion, the proposed treatment effects may be negated, indeed, overwhelmed by the spread of weeds caused by more of the same road building and logging. By arbitrarily not considering these measures, the FS has failed to show a genuine, pressing need to risk the ecosystems by applying poisons.

The FS should have also disclosed what herbicides and biocides would be necessitated by this project. Cumulative and connected actions should be analyzed. could be the direct result of the types of activities proposed here.

The FS should consider preventive measures, including foregoing or greatly reducing the footprint of this project, in order to better address the problem of invasive plants.

The EA or EIS for this project should address the potential spread of invasives (& noxious weeds) from the activities proposed as part of this project. We feel that the introduction and spread of invasives are some of the greatest threats to our public lands. In addition to addressing current weed infestations foreseeable from implementation of this project, the NEPA document should be focused on stemming the increasing infestation and spread of noxious weeds in the project area. The NEPA document should include measures to limit future ground disturbing and weed spreading activities. For example, all livestock that use the trail should be required to use certified weed-free hay. The NEPA document should examine and address the most prevalent ways that soil disturbances are created which lead to weed invasions. This should be recognized in terms of costs to the taxpayer, impacts on biodiversity, and the likely need for doing even more weed control in the future. It makes absolutely no sense to analyze controlling weed invasions that exist now without taking a full and honest look at how to prevent new sites from being invaded. While limiting future land disturbance should be the foremost

priority, prevention measures associated with land disturbing activities that do occur should also be outlined in the NEPA document. The past effectiveness of the proposed prevention activities should be discussed. Roads and trails likely have the greatest potential for spreading noxious weed seeds.

Road- work, logging, and open woodland creations and other major activities contribute to the spread of invasives & should be fully examined. A comprehensive, integrated policy that specifically includes the halting or significant curtailment of logging, roadbuilding, road construction, grazing allotments, mineral development, ORV riding and other activities that contribute to the spread of noxious weeds should have been considered. The premier tool of prevention of new noxious weed invaders deserves the highest priority. Too often the Forest Service has relied on ineffective stop-gap measures - at the same time it has allowed some of the worst ground disturbing activities to continue.

The NEPA document must meet NEPA's requirements that a reasonable range of alternatives be fully analyzed. The Forest Service Handbook, chapter 20, section 23.2 states that the purpose and intent of alternatives are to "ensure that the range of alternatives does not foreclose prematurely any option that might protect, restore and enhance the environment." Under NEPA, an environmental impact statement must contain a discussion of "alternatives to the proposed action" [42 U.S.C. 4332(2)(D)]. As interpreted by binding regulations of the CEQ, an environmental impact statement must "(r)igorously explore and objectively evaluate all reasonable alternatives" [40 C.F.R. 1502.14(a)]. The importance of this mandate cannot be downplayed; under NEPA, a rigorous review of alternatives is "the heart of the environmental impact statement." 40 C.F.R. 1502.14. Similarly, case law has established that consideration of alternatives that lead to similar results is not sufficient to meet the intent of NEPA. [Citizens for Environmental Quality v. United States, 731 F.Supp. 970, 989 (D.Colo. 1989); State of California v. Block, 690 F.2d 753 (9th Cir. 1982).]

NEPA regulations at 40 CFR § 1502.4(a) state:

Agencies shall make sure the proposal which is the subject of an environmental impact statement is properly defined.

And at 40 CFR § 1508.25, NEPA regulations state:

Scope consists of the range of actions, alternatives, and impacts to be considered in an environmental impact statement. . . To determine the scope of environmental impact statements, agencies shall consider:

(a) Actions (other than unconnected single actions) which may be:

(1) Connected actions, which means that they are closely related and therefore should be discussed in the same impact statement. Actions are connected if they:

(i) Automatically trigger other actions which may require environmental impact statements.

The FS is required to comply with presidential

Executive Order 13112. The FS does not assure the public that the proposal is consistent with the following sections of Executive Order 13112:

Section 5: (b) The first edition of the Management Plan shall include a review of existing and prospective approaches and authorities for preventing the introduction and spread of invasive species, including those for identifying pathways by which invasive species are introduced and for minimizing the risk of introductions via those pathways, and shall identify research needs and recommend measures to minimize the risk that introductions will occur. Such recommended measures shall provide for a science-based process to evaluate risks associated with introduction and spread of invasive species and a coordinated and systematic risk-based process to identify, monitor, and interdict pathways that may be involved in the introduction of invasive species.

Or,

Sec. 2. Federal Agency Duties. (a) Each Federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law,

(1) identify such actions;

(2) subject to the availability of appropriations, and within Administration budgetary limits, use relevant programs and authorities to: (i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them; and

(3) not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.

The FS's assertion that timber sales are needed to fund or do invasive species mitigation/reduction work ignores the reasoning behind our comments on invasive species - Fundamentally: "Without first significantly reducing the type of soil disturbing activities that facilitate noxious weed invasion, the proposed treatment effects may be negated, indeed, overwhelmed by the spread of weeds caused by more of the same road building and logging."

Salamanders

At least one species of salamander exists in the project area (PDEA p. 7) as may others. The Forest Service should sufficiently examine and consider the potential impacts upon salamanders. 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 PA contains tiger salamander habitat or other MIS or TESLR salamander habitat, the FS should examine impacts in full. If this project area or the cutting units do not contain Cow Knob or tiger salamander habitat, then the MIS (viz., black bears, pileated woodpeckers) and other birds listed in the GWNF Plan 2-9 are of limited, even misleading, use for gauging impacts to site-sensitive salamander 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 ensure 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. 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", Petranks et al, 1993, *Conserv. Biol.* 7:363-370; "Effects of Timber Harvesting on Low Elevation Populations of Southern Appalachian Salamanders", Petranks 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.

"Movements were about 1 m and were similar to other species of terrestrial plethodontid salamanders [citations omitted]... The limited movements have implications in the potential fragmentation of *P. hubrichti* populations.

Timbering operations that occur in the [Peaks of Otter] salamander's range may not only eliminate animals from the cut areas (Pough et al. 1987, Ash, 1988), but might also create barriers between populations. Recolonization after forest recovery, and the reestablishment of contact between separated populations, might be a slow process due to the limited movements of this salamander. In addition, the Blue Ridge Parkway, logging roads, and other alterations to the forest may produce impassible barriers, thus causing fragmentation of the population (J. Mitchell, pers. Comm.) Effectively salamander populations may become fragmented and genetically isolated. Loss of genetic variability associated with genetic drift could then occur thereby decreasing the long-term probability of survival for this species (Soule, 1983). For this reason, forestry management practices should include prevention of further fragmentation of the already isolated populations of *P. hubrichti*" (Kramer et al., Jour of Herp. Vol. 27, No. 4, pp. 431-435, 1993).

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.

The FS's assertion that there are no MIS salamanders or PTESLR salamanders in the project area, therefore no analysis of salamanders or salamander habitat must take place is a fundamental flaw in this analysis. As we stated, salamanders are a key species in Appalachian forests: "in southern Appalachian forests, salamander biomass may exceed that of all other vertebrates combined (see Hairston, 1987, Community Ecology and Salamander Guilds)." Fire, opening of forest canopy, roadbuilding, dozer line construction and other activities have the potential to kill, displace, and impede movement of salamanders.

TESLR Species

TESLR species may occur in the vicinity of the project area or in the project area. See, eg, occurrence records for these subwatersheds and this county at "<http://www.dcr.state.va.us/dnh/>" and records in Terwilliger, 1991, VSO Virginia's Breeding Birds Atlas, Atlas of the Flora of Virginia, Harvill et al., Strasbaugh and Core, and other sources of information on occurrence records and potential habitat in the area. The FS should conduct thorough surveys and analysis of TESLR species should be conducted. Many TESLR species on the GWNF require special techniques for detection or are not easily observed at certain times of the day or times of the year. Appropriate surveying techniques should be utilized and these should be utilized at appropriate times of the year and times of the day. Persons with the requisite training for identification of TESLR species likely to be found in the area should conduct the surveys. An adequate amount of time should be spent in the field conducting surveys.

- Where TESLR species may be harmed by activities, these activities should be avoided in areas with TESLR habitat or known occurrences of TESLR species. Adequate mitigation measures must be established.

It is not clear from the analysis what surveying took place for TESLR species or how thorough that surveying is. The BE, for example, provides only a list of species with little discussion on occurrence and impacts to specific species and little discussion that species were not in the area or not likely to be affected.

Allegheny Trail

The Allegheny Trail is unique because it is one of the few long-distance trails in the GWJNFs. The trail is the result of a long-standing partnership between the West Virginia Trails Coalition and the FS dating to the 1970s. (Al McPherson, SO Recreation Staff, conversation 7-30-98) When completed, the trail will be over 300 miles long stretching from the Appalachian Trail on Peters Mountain to the West Virginia-Pennsylvania line.

- "The WVSTA has received a steadily increasing stream of inquiries from backpackers interested in hiking through the incomplete portion of the Allegheny Trail in order to have hiked the 'whole thing' from the Mason-Dixon line to the Appalachian Trail or vice versa. Many non-through hikers are requesting information on how to

bridge the gap or when the gap will be bridged by the trail. With this mounting public desire to see the trail completed, the WVSTA has decided to shorten the life expectancy of the gap by enlisting aid wherever it can be found to replace the gap on the map with a thin red line indicating a completed Allegheny Trail. As in the past the national forests have a crucial role to play in developing this public recreation resource." (WVSTA, draft DFC sent in response to a 10-1-96 request from Bill Sweet -SO/Recreation)

- The needs and desires of hikers and the impacts on the trail experience should be considered. The impact on aesthetics, trail corridors, potential camp spots, rest stops, water sources, interior-forest plant/wildlife viewing opportunities, dispersed/primitive recreation, opportunities to experience solitude, challenge, restfulness, spiritual values, etc. have been ignored. Day hikers, backpackers and long-distance hikers prefer locations that are relatively pristine over areas that are heavily managed and choose such locations for hiking/. There are already cumulative impacts of other logging activities along the ALT corridor (see location maps; Hematite EA, Appx. A-2, James River RD; DNH maps of existing cuts, Peters Mtn North Area; Peters Mtn TS, New Castle RD; and proposed Little Mtn TS, New Castle RD) Jerrys Run EA, James River RD)

How will the proposed new trail corridor and surrounding logging and other activities affect aesthetics, trail corridors, potential camp spots, rest stops, water sources, interior-forest plant/wildlife viewing opportunities, dispersed/primitive recreation, opportunities to experience solitude, challenge, restfulness, spiritual values?

- This project may lead to increased ATV use on the trail or on other recreation resources. The WVSTA has found that ATV use of the ALT was "a potential problem in some areas." (Records of the 8-22-92 ALT meeting, file 2340)

How were these issues considered?

The Forest Service claims that the proposed cutting is not visible from six locations along the trail (PDEA 76). The EA does not disclose where these viewpoints exist, whether it may be visible from other points along the trail, whether the road or firebreaks may be visible from the trail, or whether project activities could be visible during the leaf-off season.

Remote Areas/Potential Wilderness Areas/RARE II areas

Since this is a large-scale project, covering over 35,000 acres, the Forest Service should ensure that large blocks of remote habitat and linkages between remote habitat blocks are protected.

Projects in roadless areas that would alter the area's undeveloped character require an EIS. (National Audubon Society vs. U.S. Forest Service, 1990) See also FSH 1909, 8.12 ch 20. An agency must prepare an EIS if "substantial questions are raised as to whether a project may cause significant degradation of some human environmental factor" (LaFlamme vs. FERC, 1988) See also 42 USC 4332(2), 40 CFR 1508.27, and Thomas vs. Peterson, 1982) "[T]he decision to harvest timber on a previously undeveloped tract of land is 'an irreversible and irretrievable decision' which could have 'serious environmental consequences.'" (National Audubon Society vs. U.S. Forest Service, 1993).

Some aspects of this project are controversial. The Forest Service proposes to construct 2 miles of bulldozed firelines and WUI lines in the Potts Mountain potential wilderness area to facilitate nearly 4,000 acres of burning. (PDEA 83). The Forest Service provides no assurance that these bulldozer activities will not later be used to exclude portions of the area from roadless, PWA, or wilderness status. The Forest Service provides no assurance that these bulldozer activities will adversely impact the wilderness characteristics used to evaluate the area. The Forest Service could have analyzed an alternative that includes hand construction of these lines only. The Forest Service could have analyzed an alternative that places any bulldozed firelines and WUI lines outside of the potential wilderness area. The prescribed burning proposed here is proposed at the Forest Service's

discretion, so we would have expected the agency to have considered alternatives that mitigate these concerns.

Much of the project is proposed in the Potts Mountain Potential Wilderness Area and Barbours Creek RARE II area, an area that was first identified as a nearly 13,000 acre roadless area under the Forest Service's RARE II roadless area evaluation in the late 1970s. Because a large part of this unique area is immediately north of Barbours Creek wilderness and still retains its wildland character, it should be protected from logging, roadbuilding, and bulldozed fireline construction. (Including logging units proposed south of Rt. 616). This area should be managed consistent with the 2001 Roadless Area Conservation Rule and consistent with plan provisions for potential wilderness areas. In fact a large portion of the project area was designated "remote habitat" for wildlife like black bear for many years.

The Forest Service should examine remote habitat, on a landscape scale, and ensure that sufficient large blocks of remote habitat and linkages between such blocks of habitat remain.

Impacts of species vulnerable to climate change should be examined.

- Would any roadless or unroaded areas in the vicinity of the project be impacted? How would roadless, unroaded, remote, or area sensitive habitat, recreational, watershed and other values be impacted?

-The FS has acknowledged the importance of roadless areas for a number of resources and values on NFS lands (See Federal Register Notice, Roadless Area Conservation Rule (RACR), January 2001). The FS should identify all inventoried roadless areas, uninventoried roadless areas, and unroaded areas (as defined in RACR, the RACR FEIS or similar guidance) of any size, should identify the roadless characteristics of all of these areas, and should analyze the impacts of this project and other activities/events on these areas. The FS should analyze the impacts of the project on wilderness eligibility.

-The Forest Service should recognize and consider the unique ecological values associated with designated and de facto roadless areas within what is otherwise a heavily roaded and fragmented national forest system. The Forest Service continues to resist change, excluding a sound application of "ecosystem management" that looks at the role of the increasingly scarce roadless resource in sustaining ecosystems far into the future. Scientists both inside and outside of the Forest Service have come to recognize that such undisturbed areas provide critical habitat for the maintenance of biological diversity and population viability. See, e.g., Wilcove, D.S., C.H. McLellan and A.P. Dobson. 1985. Habitat Fragmentation in the Temperate Zone. In: M.E. Soule, ed. Conservation Biology: The Science of Scarcity and Diversity. Sinauer Associates, Sunderland, Mass.; Noss, R.F. 1987. Protecting Natural Areas in Fragmented Landscapes. Natural Areas Journal 7(1): 2-13; Saunders, D.A., R.J. Hobbs and C.R. Margules. 1991. Biological Consequences of Ecosystem Fragmentation: A Review. Conservation Biology 5(1): 18-32; Harris, L.D. and G. Silva-Lopez. 1992. Forest Fragmentation and the Conservation of Biological Diversity. In: P.L. Fiedler and S.K. Jain, eds. Conservation Biology: The Theory and Practice of Nature Conservation, Preservation, and Management. Chapman and Hall Publishers, New York, NY. pp. 197-238.

The establishment of a regional network of interconnected reserves and appropriate linkages is considered, by many scientists, to be critical to managing for genetic, species, and landscape diversity on our public lands. See, e.g., Noss, R.F. 1983. A Regional Landscape Approach to Maintain Diversity. Bioscience 33(11): 700-706; Hudson, E.E. 1991. Landscape Linkages and Biodiversity. Island Press, Covelo, Cal., 195pp. You should consider the unique functions of roadless areas as refugia for solitude-dependent wildlife and at-risk fisheries, reservoirs of undisturbed genetic material, connecting corridors within an increasingly fragmented landscape and natural "control" areas for experimental "management" and scientific research.

You must address project's impact on these critical ecosystem features by closely examining land beyond the immediate analysis area and considering the cumulative landscape-scale effects of continued habitat destruction within and adjacent to unroaded forest land in the JNF. NEPA demands such. See e.g., City of Tenakee Springs v. Clough, 915 F. 2d 1308, 1312-1313 (9th Cir. 1990) (finding Forest Service's cumulative impact analysis inadequate under NEPA and citing *LaFlamme v. Federal Energy Regulatory Commission*, 852 F.2d 389 (9th Cir. 1988) for the proposition that remand to the agency for further consideration of cumulative impacts is appropriate

where the agency examined single projects in isolation without considering net impacts of all past, present and future projects in the area); *Save the Yaak Committee v. Block*, 840 F. 2d 714, 721 (9th Cir. 1988); 40 CFR § 1508.27(a) ("the significance of an action must be analyzed in several contexts"). These cumulative impacts include not only present and foreseeable future effects, but also the accumulated, incremental effects of past human activity, including prior degradation or destruction of undisturbed habitat. See 40 CFR § 1508.7.

For example, logging these adjacent or marginal places will degrade the roadless/unroaded area's special ecological, recreational, and scenic values; the roadless area will in effect be diminished in size as visitors will have to retreat further and further into the interior in order to escape "sights and sounds of civilization". This and other relevant impacts are not assessed by the planners. The cumulative effects of these actions are important and relevant.

NEPA requires that the Forest Service consider the best available scientific and technical information in making its decisions. See, e.g., *Warm Springs Dam Task Force v. Gribble*, 621 F. 2d

1017, 1023 (9th Cir. 1980). The scientific literature on biological diversity makes it clear that logging project assessments should consider, among other things, size distribution and connectivity for various types of habitat patches, amount and distribution of important types of such patches (such as roadless areas) which have been reduced by prior human activity, disturbed and historic vegetative mosaic patterns across the forest, cumulative effects of past activity from a watershed or regional ecosystem level, and edge effects of further forest fragmentation. See, e.g., Noss, R.F. 1990. Indicators for Monitoring Biodiversity: A Hierarchical Approach. *Conservation Biology* 4(4): 355-364.

The best science states that a major focus of analyses such as this should be to find ways to connect and buffer roadless areas with other undeveloped land to assure species viability and ecosystem functioning is perpetuated. In short, take a "hard look" at the cumulative impacts of allowing logging and road building in unroaded areas and in roaded areas providing corridors or linkages between core roadless areas. See *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21 (1976); *Save the Yaak*, supra, 840 F. 2d at 718-719. State-of-the-art conservation biology and the principles that underlie the agency's own new policy of "ecosystem management" dictate an increasing focus on the landscape-scale concept and design of large biological reserves accompanied by buffer zones and habitat connectors as the most effective (and perhaps only) way to preserve wildlife diversity and viability. See, e.g., Noss, R.F. 1993. The Wildlands Project Land Conservation Strategy. *Wild Earth Journal*, Special Issue: 10-26; Baker, W.L. 1992. The Landscape Ecology of Large Disturbances in the Design and Management of Nature Reserves. *Landscape Ecology* 7(3): 181-194; Graham, R.W. 1988. The Role of Climatic Change in Design of Biological Reserves:

The Paleocological Perspective from Conservation Biology. *Conservation Biology* 2(4): 391-394; Noss, R. 1995. Maintaining Ecological Integrity in Representative Reserve Networks. World Wildlife Fund, Washington, DC. 77 pp..

Over 95% of the 37 million acre southern Appalachian region is roaded (SAA, 1996). Only 12% of the total area is national forest land, so there are fewer opportunities to protect roadless habitat across the landscape here than in the west. While there are 103.6 million acres in the wilderness system only 4.5% is east of the Mississippi, and there is only 428,545 acres of wilderness in the southern Appalachians. (SAFC, "SAA Highlights" and SAA). All existing roadless areas should be protected to the highest levels possible.

Forest Service projections for the southern region estimated that 1.4 million acres of wilderness would be needed to meet recreational demands and "carrying capacity" of wilderness. (Morton, 1994.

The Living Landscape, The Wilderness Society). A 1993 FS study estimates that backpacking in the south will increase 238% by the year 2040. (SAFC, "SAA Highlights" and SAA)

Remaining roadless areas provide essential area-sensitive species habitat, wildlife corridors, clean water, high quality fisheries, clean water sources for freshwater mussels, and habitat for wide-ranging, disturbance-sensitive herbivores, omnivores and carnivores like elk, bears, wolves, and cougars, etc. (both existing and extirpated species). Black bears occupy only 5-10% of their former range in the southeast and "would now likely be totally extirpated in this region were it not for federal lands containing designated wilderness or de facto wilderness" (Pelton, "Habitat needs of black bears in the east," in *Wilderness and Natural Areas in the Eastern United States*, Kulhavy and Conner, eds., 1984) Other such species have been extirpated or are barely surviving in the east.

Trout Streams

Any class ii-v trout streams in or downstream from the project area these areas should be protected. This should be a high priority. Perennial, intermittent, and ephemeral tributaries of trout streams should also be considered because these play an important role in downstream water quality.

Trout streams within the area and downstream from proposed activities are not disclosed. Site specific impacts to trout and trout streams are not analyzed. (PDEA 39).

Wide stream buffers should be considered. Many species and biological communities rely on the health of riparian areas. See Jan 13, '04 USF&WS BO for the JNF p. 2 bottom paragraph and p. 3 top paragraph; and Seth Wenger, 1999, "A Review of the Scientific Literature on Riparian Buffer Width, Extent and Vegetation", Institute of Ecology, University of Georgia, 59 pp. (both incorporated by reference). And The Virginia Department of Game and Inland Fisheries (VDGIF) stated its position that the proposed riparian corridors in the draft revised Jefferson LRMP were not sufficient to protect threatened and endangered aquatic species. See Comment letter 2575 on the draft revised Jefferson LRMP, William Woodfin, Jr., Virginia Department of Game and Inland Fisheries, already in the FS's possession, incorporated by reference. Instead of the proposed riparian standards, the VDGIF recommended increasing the standard buffers with an allowance to reduce the buffers on a site-specific bases after consultation with all cooperating agencies. Id. Wider streamside buffers than those proposed here (EA 13&14) should have been considered and implemented.

Headwaters and small streams are particularly sensitive: "The effects of sediment delivered to a stream channel diminish as watershed size increases. Most vulnerable are small sensitive headwaters catchments where concentrated timber harvest activity can have profound results. . . . After four years, sediment rates are normally back to predisturbance levels. However, once sediment is deposited in a stream channel, its effects can persist for decades or even centuries (Frissel, 1996)." (JNF Enterprise TS EA-42; incorporated by reference). "Generally the headwater fish populations are the most threatened." (GWNF FEIS J-8). For information regarding salamander use of headwater stream habitat see

<http://www.epa.state.oh.us/dsw/wqs/headwaters/TechRep_FishAmphibian_2002.pdf> (incorporated by reference). This information needs to be fully considered and incorporated into the analysis. Expanded no cutting or no disturbance zones around stream courses needs to be implemented here.

The GWNF Plan requires the FS to delineate riparian areas and this should be done as part of the proposed project through maps and other documentation.

- Springs and seeps are a component of landscape diversity and are very important for maintaining the population viability and distribution of salamanders, frogs, crayfish, box turtles, ruffed grouse, turkeys, and other species (see JNF Hagan Hall Timber Sale EA -43, 44, 46; incorporated by reference). Removal of their canopy cover impedes and disrupts the natural ecological succession of these areas. Implementation of the proposed alternative/mitigation is not compliant with the DFC for these microhabitats. These areas should be absolutely off-limits to cutting and removal and vehicles; and the no-disturbance zone should be more than just the "immediate" wet area due to hydrological, shade, and drying concerns.

"Elimination of terrestrial vegetation around aquatic breeding sites causes amphibian populations to decline [citations omitted]. Thus, maintenance of amphibian biodiversity depends on the protection and management of both aquatic breeding sites and the surrounding terrestrial habitat." "Factors influencing amphibian and small mammal assemblages in central Appalachian forests", Mitchell et al, Forest Ecology and Management 96: 65-76 (1997). (research conducted on the GWNF, incorporated by reference).

"Downed material in these spots is providing cover which was formerly provided by a forest canopy. This downed material is retaining the cooler temperatures and higher humidity associated with springs and seeps." (Hagan Hall Wildlife Existing Condition report, Aug. 1998). "Removal of material from these sites [seeps, springs, bogs, and forested wetlands], particularly where most of the tree canopy is now gone, would increase the solar radiation causing warming temperatures and less humidity. . . . increased temperatures and drier air can affect the presence of certain amphibians and small mammals." (Hagan Hall EA-47). Ecosystem management should

recognize that there is more to seeps, springs, bogs, and forested wetlands than just their physical characteristics. If these locations become unusable or unattractive to some amphibians, mammals, or other taxa that would be expected here, then they are not fully functional. There should be analysis or citation to studies to corroborate the assertion that retention of 5-15% (or whatever basal area the cutting method retains) of the overstory cover shading these sites is enough to maintain their full functioning and attain their DFC.

Surveys to identify these areas should have been carried out during wet periods when they can be properly detected (see state BMP manual). "Seeps and other wetlands ... are best located during rainy season as many wetlands are difficult to identify during dry periods." - Forestry Best Management Practices for Water Quality in Virginia Technical Guide at pg. 42 (incorporated by reference). If the habitats are not properly identified and inventoried, they cannot be properly protected, mitigated, and monitored.

Seep areas provide critical riparian habitat. A VDGIF biologist states they should be protected "by a minimum of 100 feet on each side (preferably 200-300 feet)" (see GWNF Johnson Mtn. timber sale project file at tab 20; incorporated by reference). This 200-300' zone should be applied here. See also Jan 13, '04 USF&WS BO for the JNF p. 2 bottom paragraph; and Seth Wenger, 1999, "A Review of the Scientific Literature on Riparian Buffer Width, Extent and Vegetation", Institute of Ecology, University of Georgia, 59 pp. (both in your possession and incorporated by reference).

Conservation Sites, Special Biological Areas and Rare Communities

This project could directly or indirectly impact Division of Natural Heritage identified conservation sites, special biological areas, rare communities, and species that are rare on the state, national, or global level. What surveys have been conducted to locate and identify rare communities, rare species, or listed species not previously identified in this area?

According to the Agency's Response to Comments, "based on proposed active management locations, it was determined that no SBAs would be affected" (p.22). However, the Forest Service does not disclose whether activities could indirectly impact conservation sites or populations of rare or unique species within them, whether there is a possibility of accidental incursions (by logging, roadbuilding, prescribed burns that overshoot control lines, off-road vehicle incursions facilitated by roads and dozer lines created by the project, etc.) into conservation sites

There are several special biological area, Division of Natural Heritage identified conservation sites and other areas of unique habitat within the project area (SN, Maps). The FS should ensure the public that activities (including proposed logging, burning at foreseeable intensities, roadbuilding, skid trail construction, dozer lines, and other infrastructure) are consistent with Virginia Natural Heritage recommendations for these areas. The FS should ensure the public that activities will not adversely impact the biological resources, aquatic resources, and other resources found within and around these special biological areas. For example, see Va. Her. Tech. Rpt. 91-1 (Biological Diversity Protection on the George Washington National Forest), Va. Her. Tech. Rpt. 00-07, and Va. Her. Tech. Rpt. 00-10 (already in the FS's possession, and incorporated by reference).

Va. Her. Tech. Rpt. 00-10 states: "Frozen KnobSite Description: This site encompasses an unusually large contiguous stand of old growth Mid-Appalachian mixed oak forest. The old growth occurrence occupies approximately 1100 acres on the crests and middle to upper side slopes of the southernmost ridge of Peters Mountain. Most of the old-growth stand has evidently never been logged and is in near pristine condition, and has sustained little fragmentation. Especially impressive are some red and white oak stands on the crest and benches, and some of the chestnut oak-shortleaf pine stands on the east faces of the spur ridges. The site boundary also includes an occurrence of a little known and probably rare mountain temporary pool community, situated on a topographic bench..... Treats: logging or road construction would destroy the integrity of this unusually large stand of old growth forest." (p. 44)

Va. Her. Tech. Rpt. 00-07 states "Data collected during this project provide compelling evidence that large, rugged areas on the Peters Mountain ridges have never been logged. The second stand, on the southern ridge (Fig.12), contain similar [oak-dominated] old-age forest and covers ca. 445 ha (1,100 ac) of the more remote middle to upper slopes and crest." (p. 177)

For example, A white oak with a 1769 AD birth date was recorded in plot 23, a chestnut oak with a 1827 AD birth date was recorded in plot 50, a tulip tree with a 1821` AD birth date was recorded in plot 46 (p. 184). Plot 22 contains a depression or sag "evidently maintained by seasonal flooding" (Appendix). Plot 23 contains a "seasonally flooded bench depression" (Appendix). Plot 46 has "medium high Ca values...This is an old-age stand" (Appendix). Plot 50 is a submesotrophic old-growth forest" (Appendix).

Steep Slopes

An examination of the topo map and materials in the DEA reveals that there are some 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 portions of the project on 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 affect downstream, in-unit, and adjacent resources?

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

All terrain vehicle incursions:

The Forest Service did not analyze the degree to which existing or planned Forest Service infrastructure (roads, old skid trails, dozer lines, openings) facilitate illegal use of the Forest by all terrain vehicles (ATVs). The Forest Service did not analyze the degree to which skid trails, roads, dozer lines, or logging units in this project contribute to ATV use in any parts of the area. The Forest Service did not analyze the degree to which Forest Service has the ability to adequately patrol the area, given the low funding levels for law enforcement.

Climate Change:

To comply with the Executive Order on Climate Change, the agency should take the following steps, as they pertain to this project and to planning and project-implementation on the George Washington National Forest :

"Sec. 5. Federal Agency Planning for Climate Change Related Risk. (a) Consistent with Executive Order 13514, agencies have developed Agency Adaptation Plans and provided them to CEQ and OMB. These plans evaluate the most significant climate change related risks to, and vulnerabilities in, agency operations and missions in both the short and long term, and outline actions that agencies will take to manage these risks and vulnerabilities. Building on these efforts, each agency shall develop or continue to develop, implement, and update comprehensive plans that integrate consideration of climate change into agency operations and overall mission objectives and submit those plans to CEQ and OMB for review. Each Agency Adaptation Plan shall include:

"(i) identification and assessment of climate change related impacts on and risks to the agency's ability to accomplish its missions, operations, and programs;

"(ii) a description of programs, policies, and plans the agency has already put in place, as well as additional actions the agency will take, to manage climate risks in the near term and build resilience in the short and long

term;

"(iii) a description of how any climate change related risk identified pursuant to paragraph (i) of this subsection that is deemed so significant that it impairs an agency's statutory mission or operation will be addressed, including through the agency's existing reporting requirements;

"(iv) a description of how the agency will consider the need to improve climate adaptation and resilience, including the costs and benefits of such improvement, with respect to agency suppliers, supply chain, real property investments, and capital equipment purchases such as updating agency policies for leasing, building upgrades, relocation of existing facilities and equipment, and construction of new facilities; and

"(v) a description of how the agency will contribute to coordinated interagency efforts to support climate preparedness and resilience at all levels of government, including collaborative work across agencies' regional offices and hubs, and through coordinated development of information, data, and tools, consistent with section 4 of this order.

(b) Agencies will report on progress made on their Adaptation Plans, as well as any updates made to the plans, through the annual Strategic Sustainability Performance Plan process. Agencies shall regularly update their Adaptation Plans, completing the first update within 120 days of the date of this order, with additional regular updates thereafter due not later than 1 year after the publication of each quadrennial National Climate Assessment report required by section 106 of the Global Change Research Act of 1990 (15 U.S.C. 2936)"

The Forest Service should include an alternative that mitigates or improves the balance of relationships between species, forests and climate change.. These would include, but not be limited to

- Eliminating actions which do not maximize carbon storage in vegetation and in soils
- Eliminating actions where extracted forest products result in reduction of biomass and carbon storage in vegetation and soils
- Eliminating actions which accelerate the rate of evaporation of soils and can potentially increase erosion
- Eliminating actions which remove, facilitate removal or make available forest projects that could be incinerated for any purpose.
- Considering the cumulative impacts of all aspects of the project with regard to carbon storage, carbon released and carbon dioxide released on forest, landscape, state, federal and global scales.

-The Forest Service should analyze the effects of the project with regard to habitat fragmentation, loss and degradation and in converting forests to agricultural uses.

Habitat fragmentation is a direct result this project as proposed. (See also comments on old growth above) Roadbuilding, maintaining road inventories and the creation of early successional habitat create and promote habitat fragmentation. As restoration efforts are dominated by actions that attempt to remedy actions and past projects by the agency that have resulted in, promoted or implemented habitat degradation and fragmentation of ecosystems, an alternative must be considered that does not contribute to continued habitat fragmentation.

It would be inappropriate to take steps to restore fragmented habitat in one place while continuing to promote and implement projects that continue to fragment habitat somewhere else or to attempt to mitigate climate change on one hand while exacerbating it at the same time with the other hand. Yet these are conditions that would be allowed to continue and proliferate with this project.

Among other measures, the Forest Service should plan for climate change by (1.) protecting core roadless areas, (2.) reducing forest fragmentation and (3.) decreasing and eliminating non-climate stresses such as logging and logging road/skid trail building.

Any alternative selected by the Forest Service should be (1) informed by the most up-to-date science, including identification and designation of core areas, corridors, and analysis of the connectivity of the Forest with other

lands, (2) include an audit of activities permitted in the project to ensure that activities do not increase carbon emissions and do not decrease carbon sequestration, (3) incorporate monitoring and adaptive management to ensure that if climate-related conditions or indicators are worse than expected, appropriate stronger measures will be applied here and elsewhere.

The Forest Service already recognizes the need for careful climate change analysis and planning. For example, recent guidance has acknowledged that the Forest Service should "identify ecosystems that are most at risk due to climate change," should analyze "conditions and trends of carbon stocks and fluxes on the planning unit, and greenhouse gas emissions influenced by the management of the planning unit," and should use the best available science in forest planning for the George Washington and Jefferson National Forests, among other things. See "Considering Climate Change in Land Management Planning," Joel Holtrip, Deputy Chief, Mar. 2, '10 and accompanying "Climate Change Considerations in Land Management Plan Revisions" Jan. 20, 2010.

The FS asserts that only a very small portion of the GWJNFs would be logged as part of this project (PDEA 22). Cumulative effects of multiple projects across the ranger district and GWJNFs have not been examined for their impact on climate. The FS has not disclosed how this project would affect lands needed for protection in the Administration's 30 by 30 or "America the Beautiful" initiative. This initiative recognizes the important role of intact forests in carbon sequestration and sets goals. Status 1 areas under the USGS Protected Areas Database are areas "have permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a natural state within which disturbance events (of natural type, frequency, intensity, and legacy) are allowed to proceed without interference." Since current acreage of 30 x 30 protected areas type 1 & 2 exists in the U.S. (and underrepresented areas) than is needed under the 30 x 30 plan, additional areas should be protected. The FS should identify what areas should be protected as status 1 and status 2 areas. A smaller acreage is currently protected across the U.S. and across the southeastern U.S. than areas protected as roadless in the Roadless Area Conservation Rule. Therefore, additional areas should be identified as Protected Areas. As stated above, this is a unique project area with RARE II areas, potential wilderness areas, DCR Conservation Sites and other features across the interconnected landscape. This area is one such area that should be identified and protected.

Range of Alternatives

The NEPA document must meet NEPA's requirements that a reasonable range of alternatives be fully analyzed. The Forest Service Handbook, chapter 20, section 23.2 states that the purpose and intent of alternatives are to "ensure that the range of alternatives does not foreclose prematurely any option that might protect, restore and enhance the environment." Under NEPA, an environmental impact statement must contain a discussion of "alternatives to the proposed action" [42 U.S.C. 4332(2)(D)]. As interpreted by binding regulations of the CEQ, an environmental impact statement must "(r)igorously explore and objectively evaluate all reasonable alternatives" [40 C.F.R. 1502.14(a)]. The importance of this mandate cannot be downplayed; under NEPA, a rigorous review of alternatives is "the heart of the environmental impact statement." 40 C.F.R. 1502.14. Similarly, case law has established that consideration of alternatives that lead to similar results is not sufficient to meet the intent of NEPA. [Citizens for Environmental Quality v. United States, 731 F.Supp. 970, 989 (D.Colo. 1989); State of California v. Block, 690 F.2d 753 (9th Cir. 1982).]