

August 4, '15

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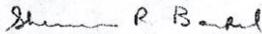
NOTICE OF OBJECTION

Re: Fork Mountain Vegetation Project Environmental Assessment (EA); Draft Decision Notice (DN) and Finding of No Significant Impact (FONSI)

Dear Reviewing Officer Speaks:

This letter is a formal objection to the Fork Mountain 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 Eastern Divide Ranger District Ranger Dan McKeague who will implement the project in the Jefferson National Forest's Eastern Divide Ranger District. The objection letter is submitted on behalf of the Virginia Chapter of Sierra Club and Heartwood. Virginia Chapter of Sierra Club, Virginia Forest Watch and Heartwood submitted timely comments and are 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 635 acres of logging and would include an estimated 5.8 miles of new NFS road construction, dozer line construction and other activities. Nearly 20 miles (19.85 miles) of permanent roads, temporary roads, bulldozed firelines, skid roads, and skid trails are proposed (See EA 8 & 71).



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Introduction:

The Hickory Flats area where this project is proposed is a highly important area. It is a mountain treasure, it contains a substantial amount of old growth, it contains conservation sites identified by Virginia Division of Natural Heritage, it is traversed by and in a valley below the Allegheny Trail, a long-distance trail, and it is at the headwaters of both Big Stony Creek and Potts Creek. The Big Stony Creek stream system is habitat for the candy darter and the Potts Creek stream system is habitat for the James spiny mussel, an endangered species. The proposed logging and roadbuilding will adversely impact the Hickory Flats area and will risk increasing illegal motorized use in the farthest reaches of the area.

Requested Remedy:

We request that the Forest Service amend the decision such that it avoids roadbuilding and bulldozed fireline construction in the mountain treasure area and the Peters Mountain Addition roadless area and avoids cutting trees and building roads within old growth forest. We ask that in the absence of studies on the abundance and distribution of old growth, the Forest Service avoid logging/roadbuilding separates late successional forest tracts from old growth tracts or adversely impacts underrepresented old growth forest types and adjacent late successional forests.

We ask that the roads analysis process be reinitiated and that roads analysis consider black bears, the proposed Mountain Valley Pipeline and other pipelines, Virginia Division of Natural Heritage conservation sites, economics, environmental feasibility and environmental constraints, cultural attachment, potential for OHV use, TESLR aquatic and terrestrial species, and other major and significant issues raised by the public.

The proposal to decommission roads in the project area is certainly warranted. The roads proposed for decommissioning are expensive to maintain, are creating negative impacts to watersheds and wildlife, and are providing vectors for illegal off-road vehicle use in a remote area. This aspect of the project should go forward and you will consider additional roads for decommissioning, including Forest Service Road 10420 and FS Road 1503, which are both located upstream from sensitive habitats in the Rare Community and conservation sites in the project area.

However, most of the other aspects of the project, as proposed, are unsuitable for a remote area like the Hickory Flats Virginia Mountain Treasure area and would be costly, with few tangible benefits.

The FS failed to adequately address a number of issues previously raised in our comments. 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

³ 5 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).

Roadless Areas/Potential Wilderness Areas/Virginia Mountain Treasure Areas/Uninventoried Roadless Areas

The Forest Service should disclose whether and how the project would affect any inventoried roadless areas and uninventoried roadless areas that meet the criteria for roadless (or potential wilderness area) inventory. In the analysis, the Forest Service has not mentioned potential direct or indirect impacts to inventoried roadless areas or uninventoried roadless areas that are (or may be) de facto roadless areas in the project area. There are no maps disclosing the boundaries of inventoried roadless areas, let alone, the boundaries of other areas that meet the criteria for roadless areas (or PWAs) in the east.

Specifically, areas in and around the boundaries of Peters Mountain Wilderness Addition B and the Hickory Flats Virginia Mountain Treasure area should be examined, with respect to the project, to determine if any area of any size will be affected by the project.

The Forest Service should determine whether any roadless or unroaded areas or potential wilderness areas (PWAs) of any configuration in the vicinity of the project be impacted and should determine how would roadless, unroaded, remote, or area sensitive habitat, recreational, watershed and other values be impacted. Direct, indirect, and cumulative impacts to the roadless areas, PWAs, and Virginia Mountain Treasure areas across the GWJNFs should be analyzed. Any roadless areas/PWAs or de facto roadless areas should be protected from logging and roadbuilding.

Peters Mountain Wilderness Addition B is a 2903 acre inventoried roadless area that borders Peters Mountain Wilderness on the east side. Impacts to this inventoried roadless area and any uninventoried roadless areas beyond the boundaries of this area should be fully examined by the Forest Service. According to the 1999 Virginia Mountain Treasures report, “Addition B (northeast) includes the Flat Peter Trail along the North Fork of Stony Creek, and the Allegheny Trail, which follows the ridge top. The area contains 40 acres of possible old growth, and is mostly managed for bear, which benefit from remote, secure forest habitat. It is also a watershed for Big Stony Creek and the North Fork of Stony Creek. Both areas [A&B] are

scenic and unroaded, and about three-quarters of each area provides opportunities for secluded back-country experiences. ”

<http://virginia.sierraclub.org/newriver/mountaintreasures/WildLandInformation/PetersMtnWildnsAddns.html>

Hickory Flats is a 5,000+ acre Virginia Mountain Treasure Area (VMT) at the headwaters of Stony Creek (which flows into the New River) and Potts Creek (which flows into the James River). A portion of the Allegheny Trail traverses the summit of this area on its way from nearby Peters Mountain Wilderness to Pennsylvania. See

<http://www.phys.vt.edu/~jenkins/MountainTreasures/HickoryFlats.htm> Impacts to any uninventoried roadless areas of any configuration and size in the vicinity of Hickory Flats VMT that meet the criteria for roadless areas (PWAs) should be fully examined by the Forest Service.

The Sierra Club has had an interest in both of these areas since 1994, and well before. For example, in the Roanoke River Group of Sierra Club's comments in the early stages of the Jefferson National Forest plan revision stated: "The Hickory Flats area of Fork Mountain is likely the largest roadless area on the Jefferson not included in the revised preliminary inventory. ... This remote and rugged area elevations of up to 4000 ft is a[n] essential component in one of the largest regions of roadless areas on the Forest with the 8000 acre Peters Mountain Wilderness and roadless area directly on the east and the 17000 acre Mountain Lake Wilderness and roadless area adjacent to the south. We urge you to add the Hickory Flats area to the final inventory ... including the maximum amount of improved roads allowed [under the criteria].... It would be an ecological tragedy if the Forest Service allow the wilderness qualities of this area to be destroyed like so many other portions of the Jefferson." (Dec. 31, '94 comments).

And "The eastern addition to the Peters Mountain Wilderness should be further enlarged by several hundred acres by including the area immediately south of FS 241 all the way to FS 10430 and east to Route 613 including most of all fo FS 10410 which is rated 'primitive' except for the first 7/10 of a mile per your staff. Also, the area south of FS 10430 to Route 635 and additional acreage in the Kelly Flats/Sarton Ridge area should be added to the Peters Mountain Addition B. (Dec. 31. '94 comments).

Therefore, all areas of any size that meet criteria for roadless areas (or PWAs) in the east should be fully examined as part of the NEPA analysis for this project.

In the Virginia Forest Watch et al appeal of the Jefferson National Forest plan revision, it was stated:

"Hickory Flats - Blacksburg District (5,037 acres, VMT at 39, 1997 Process Paper at 5 and 1999 Process Paper at 6.)... This large consolidated tract was included in the 1995 and 1997 Roadless Inventories because it had a semi-primitive core of 3,393 acres. Its road density was .42, and it has many outstanding features. The agency reviewed the area in 1999 and decided to disqualify it based on reversing previous findings that roads were unimproved. The boundaries of the area could have been easily redrawn to exclude FS 10521 as it is along the southeast boundary and, if necessary, the boundaries could have been expanded to the northwest and the northeast. The agency had looked at a 6,557-acre area initially. The failure to consider boundaries that would have met road density standards was arbitrary and capricious, particularly given that that the area had been included in two previous versions of the inventory. See attached Hickory Flats FS process paper maps that show potential boundary adjustments; see detailed SELC Analysis at 4-5. when the road determination was changed, the agency found that it exceeded road density and lacked a semi-primitive core, whereas earlier it had found a 3,393-acre semi-primitive core. Given that this area's boundaries could be drawn to meet road density, it is clearly arbitrary to exclude a 5,000-acre area due to the lack of a semi-primitive core."

In "prework notes: meeting with [Supervisor] Joy [Berg] and individual rangers, June 1994", the FS was looking at a larger area which would have allowed the rd. mileage admitted in the 1999 Roadless Area Process Paper and might still meet the road densities. The area was "6557 acres and "can have 3.3 mi." of rds. at this acreage. Larger (and smaller) areas than the existing 5019 ac should have been considered, as these areas might have met the road density criteria then, or now. For example, the area could be expanded along Peters Mtn to the SW or to the NE of the area. An alternative configuration is possible (See FS Roadless maps 4/1/94-5/14/94). For example, all (or some) of the area SW of FS 10582 could be excluded from the area and the maximum allowable proportion of Or an alternative area is available from Salt

Sulphur Turnpike (Rt 945) to the north boundary to near curve to north on Rt 10491 overland south to Rt 10481 (following Rt 10481 a little ways) overland south to Rt 10521 to Rt 635, overland north to Rt 10582 to end of Rt 10582 over land to the end of Rt 10420, north of Rt 10420 and overland north to Rt 1503 to Rt 945. This area appears to be approximately the same size as the original area considered and probably contains about 2 mi. of rds., so road density would be approx. 0.4mi /1000 ac. Other configurations are possible and should be fully explored.

An extensive road system / infrastructure is proposed as part of this project. Nearly 20 miles (19.85 miles) permanent roads, temporary roads, bulldozed firelines, skid roads, and skid trails, dwarfing the amount of road decommissioning in proposal (See EA 8 & 71). This is significant.

The Forest Service should have evaluated whether the Hickory Flats area and Peters Mountain Wilderness Addition (and any areas of any configuration in the vicinity) meet the criteria for areas eligible for wilderness designation in the East. The Forest Service should take active steps to ensure that the roadless/potential wilderness characteristics of such area(s) are not degraded to the point at which the area cannot be considered as an area eligible for wilderness designation/roadless area/potential wilderness area. Evaluation of this area may occur in the near future perhaps as early as 1-4 years, since the Jefferson National Forest Plan is approx. 11 years old and is due for revision within 10-15 years after 2004.

As the Hickory Flats area and Peters Mountain Addition B area will be reconsidered during the Jefferson's next inventory during the next plan revision, the Forest Service should have identified, disclosed, and considered the effects of logging and any associated road upgrades that could degrade the areas' roadless and remote characteristics and values, and should have taken avoided or minimized adverse impacts to these characteristics. Logging and any associated road work that would ruin these areas' roadless characteristics and disqualify them from the next inventory would have significant environmental impacts necessitating an Environmental Impact Statement.

As the Roadless Area Conservation Rule explains, the Forest Service must, both during plan revisions and at any other "appropriate" time, "identify and evaluate ... unroaded areas and then determine which, if any, of those areas warrant additional protection." RACR, 66 Fed. Reg. at 3250. Here, the project-level review is an appropriate time to identify roadless areas that were overlooked in the last inventory.

The Forest Service should have determined if any area of any size in the vicinity of Hickory Flats and Peters Mountain Addition meets the criteria for roadless areas in the east. The Forest Service should also determine whether any activities proposed as part of this project affect the criteria, including any logging, any roadwork, or any actions that change the status of all or part of the road system here.

As the Forest Service is aware, roadless areas in the eastern United States often contain existing roads. See FSH 1909.12, Ch. 71.12. The mere fact that a road "exists" in an area, therefore, does not disqualify the area as roadless or overcome its roadless values. Only authorized, "improved" roads, to use a shorthand for the threshold requirements of the roadless and PWA inventories, can count against an area's eligibility. While the mere existence of a road is irrelevant, however, adding an existing road to the forest road system is an impact that could disqualify the area. Adding a road to the system is tantamount to "construction" of a new road, and it is directly contrary to the values for which roadless areas must be managed. See RACR, 66 Fed. Reg. at 3272 (prohibiting road construction, and defining "construction" to include any activity that "results in the addition of forest classified or temporary road miles"). Similarly, the improvement of a system road is considered "reconstruction," which is also prohibited in inventoried roadless areas and a direct impact to roadless values. Id.

Because the planned logging and roadwork could disqualify otherwise eligible areas from a protective designation and consideration in the future potential wilderness inventory, the Forest Service was required under NEPA to consider that environmental consequence. The Forest

Service must analyze impacts not only to a roadless area's "water resources, soils, wildlife habitat, and recreation opportunities," but also to the area's "potential for designation as wilderness." The Lands Council v. Martin, 529 F.3d 1219, 1230 (9th Cir. 2008). Even if the Forest Service believes that the area will ultimately not be recommended for wilderness, its obligation under NEPA is unchanged. It is the potential for designation, as shown by the area's eligibility for the inventory, that matters. Smith v. United States Forest Service, 33 F.3d 1072, 1077-79 (9th Cir. 1994). Furthermore, impacts potentially affecting an area's future eligibility are inherently "significant," and they must therefore be considered in a full environmental impact statement. Id. The Forest Service's own NEPA regulations provide that EISs normally are required for "Proposals that would substantially alter the undeveloped character of an inventoried roadless area or a potential wilderness area." 36 C.F.R. § 220.5(a)(2). Such proposals would include road construction and timber harvest that would "impact a substantial part" of the area. § 220.5(a)(2)(i). With the exception of Salt Sulphur Turnpike, all roads in this project area are maintenance level 1 or 2 roads.

According to FSH 1909.12, as amended Jan. 30, '15,

"71.22 – Improvements Criteria

"Pursuant to the Wilderness Act, include in the inventory areas "where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean . . . an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; . . ." (16 U.S.C. 1131c). Include areas in the inventory that meet size criteria in 71.21 of this Handbook and both sets of improvements criteria described in the following sections.

"71.22a – Road Improvements

"When considering road-related criteria, the Responsible Official shall ensure the Interdisciplinary Team uses existing information contained in the assessment about roads and routes within the plan area and information gathered from public and governmental participation opportunities (sec. 70.61 of this Handbook) as follows:

"1. Include in the inventory areas that contain the following road improvement attributes if the areas also meet the other inventory criteria (secs. 71.21 and 71.22b of this Handbook):

"a. Areas that contain forest roads maintained to level 1;

"b. Areas with any routes that are decommissioned, unauthorized or temporary, or forest roads that are identified for decommissioning in a previous decision document, or identified as likely unneeded in a travel management plan (36 CFR 212.51) or a travel analysis (36 CFR 212.5(b));

"c. Areas with forest roads that will be reclassified to level 1 through a previous decision document, or as identified in a travel management plan (36 CFR 212.51) or a travel analysis (36 CFR 212.5(b));

"d. Areas in Forests, Grasslands, Prairies, and other Administrative Units east of the 100th meridian with forest roads maintained to level 2 that are identified as closed to motor vehicles yearlong in a previous decision document, or as identified in a travel management plan (36 CFR 212.51) or a travel analysis (36 CFR 212.5(b));"

Without proper mitigation, the Peters Mountain Addition roadless area could be adversely affected by unit 22 and the bulldozed fire line in the area. The Forest Service should have evaluated whether there are any areas east of the roadless area eligible for future designation as inventoried roadless areas / wilderness and analyzed how they would they be affected. The Forest Service should have analyzed how semiprimitive areas in the area would be affected (esp by the bulldozed fireline). If OHV illegal use were to occur along the fireline or in the roadless area or surrounding areas, this could affect semi-primitive areas or the roadless experience. This should have been disclosed.

- 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.
- We are seriously concerned about the potential for this project to impact the VMT areas and any surrounding unroaded areas.
- We are concerned some unroaded areas may not have been adequately analyzed, may not have been properly inventoried as roadless in their entirety, and that certain portions may have been excluded from these roadless areas. We are concerned that roadless areas are not being protected, in accordance with the strong will of the American people. The FS should examine whether any areas outside of the boundaries of inventoried roadless areas could or should fall within these roadless areas (eg. roadless areas may meet road density standards for roadless areas in the east even with the roads included, roads may be non-existent or unimproved, etc). We would like to know what the largest possible roadless area(s) in the vicinity of the project area are and whether any portions of the project area, cutting units, or infrastructure may be included in these areas.
- 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 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.

This issue is highly pertinent to this project because it appears that, although the project could have some potentially positive impacts on such areas that exist in the area [for example, the road decommissioning on the east end of the project area], other actions may negatively impact areas. The scoping notice maps show numerous cutting units and a prescribed burning unit to the west of Rt 945 and to the west of Rt 613. Other project activities are proposed in this area as well. Project Maps do not show the boundaries of the inventoried roadless area (Peters Mountain Wilderness Addition B) in this area and do not show whether uninventoried roadless areas in the vicinity could be impacted by the proposed activities. For example, road extensions off of Rt 10432 & Rt 10411 are proposed in all action alternatives. Also, of high importance, project maps show that under two of the action alternatives, new permanent and temporary roads are proposed across the largest section of the area without any roads – the section between both Rt 10481 and Rt 10531, and Rt 10420; and the section between Rt 10522 and Rt Rt 10420. In the only other action alternative, temporary roads are proposed across the largest section of the area without any roads – the section between Rt 10522 and Rt Rt 10420 – nearly meeting with a cutting unit (and possible skid trails) closing the gap. A road prism may therefore exist from the beginning of Rt 10522 nearly to the beginning of Rt 10420. In addition, high levels of logging (between 459 and 634 acres) are proposed throughout the area.

The road decommissioning is certainly warranted, but the Forest Service should disclose whether any of its roadbuilding, logging, or other activities would adversely impact the roadless characteristics of any area or impact any areas eligibility for wilderness. For example, the Forest Service should disclose whether the activities could cause any area to exceed road densities or ½ mile per 1000 acres, could cause any area to exceed other criteria for road densities, logging, or management activities. The Forest Service should disclose whether any activities could adversely affect roadless characteristics; natural integrity and appearance; opportunity for solitude, challenge, and primitive recreation, special features; or size, shape, and manageability.

What is important for the purposes of NEPA is the on-the-ground character of the area. In *National Audubon Society vs. U.S. Forest Service* 23 ELR 21250 (9th Cir. 1993), the Ninth Circuit determined that “the decision to harvest timber on a previously undeveloped tract of land is ‘an irreversible and irretrievable decision’ which could have ‘serious environmental consequences.’” *Id.* at 2125. Likewise in *Smith vs. U.S. Forest Service*, 24 ELR 21373 (9th Cir, 1994), the court held that the agency had failed to consider adverse impacts to the roadless character of an area, part of which was uninventoried. The operative factor in these cases is the ‘roadless character’ of the area, not the inventoried or uninventoried status of the areas in question.

Due to the clear potential for significant harmful impacts from this proposal, and the uncertainties involved, it is highly likely that for the project, as proposed, an environmental impact statement (EIS) needs to be prepared by the Forest Service. An EIS is required if this project may significantly degrade some human environmental factor. 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) The decision for logging and associated activities in the Fork Mountain area could substantially alter the undeveloped character of the area.

In addition, a full range of alternatives has not been considered. The Forest Service needs to consider alternatives that provide for (1) no permanent or temporary roadbuilding in the Hickory Flats VMT or Peters Mountain B roadless area, and (2) no permanent or temporary roadbuilding and logging in the Hickory Flats VMT or Peters Mountain B roadless area. There is already an extensive road system near Rt 945 that the Forest Service can access to log portions of the area without building new roads.

The project area is located adjacent to Mountain Lake Wilderness and near Peters Mountain Wilderness. Indirect impacts to wildernesses, wilderness values and wilderness users should be considered.

Climate Change

The EA states “Most mature and old stands remained a net sink of carbon. Pregitzer and Euskirchen (2004) synthesized results from 120 separate studies of carbon stocks and carbon fluxes for boreal, temperate, and tropical biomes. They found that in temperate forests NEP is lowest, and most variable, in young stands (0-30 years).” (EA 92).

According to Luysaert, et. al., “Old-growth forests as global carbon sinks,” *Nature*, Vol. 455, pp. 213-215, “The NEP is the net carbon balance of the forest as a whole, and is the difference between CO₂ uptake by assimilation and losses through plant and soil respiration. On the basis of our global data set we find that in forests between 15 and 800 years old, the NEP is usually positive; that is, the forests are CO₂ sinks... all three quantitative tests fail to support the hypothesis of carbon neutrality. The currently available data consistently indicate that carbon accumulation continues in forests that are centuries old.”

“In fact, young forests rather than old-growth forests are very often conspicuous sources of CO₂ (Fig. 1a) because the creation of new forests (whether naturally or by humans) frequently follows disturbance to soil and the previous vegetation, resulting in a decomposition rate of coarse woody debris, litter and soil organic matter (measured as heterotrophic respiration) that exceeds the NPP of the regrowth.” In thinned units, the larger the trees removed, the less the carbon forest sector stores. See Hoover and Stout, *Journal of Forestry*, 2007. See also Dominick A. DellaSala, “Why Forests Need To be Enlisted In Climate Change Actions, Geos Institute (www.geosinstitute.org) : “When an old-growth forest is cut down, much of this stored carbon is released as CO₂ – a global-warming pollutant – switching it from a sink to a “source” or “emitter” of CO₂.

For instance, nearly 60% of the carbon stored in an old-growth forest is emitted as CO₂ when it is converted to young growth, via decomposition of logging slash, fossil-fuel emissions from transport and processing, and decay or combustion (within 40-50 years) of forest products, often in landfills. Planting or growing young trees does not make up for this release of CO₂ from a logged forest. Indeed, after a forest is clearcut, it remains a net CO₂ emitter for its first 15 or more years, and even if not cut down again will not reach the levels of carbon stored in an old forest for centuries. Globally, deforestation and forest degradation contribute about 17% of the world’s annual greenhouse gas pollutants, more than the entire global transportation network, which is why many countries are seeking ways to reduce greenhouse gas emissions from logging.”

“DellaSala recommends:

“-Managing forests to optimize carbon stores through preservation or lengthened timber rotations would provide co-benefits for climate adaptation, including clean water, climate refugia, and connectivity across fish and wildlife habitat.

“-More carbon is removed by thinning than the most severe forest fires because, in order to influence fire behavior, forests need to be thinned over large landscapes resulting in cumulative losses of stored carbon and emissions from fossil fuels, including biomass conversion.

“-Accurate assessment of whether a forest practice yields carbon benefits requires managers to conduct a life-cycle analysis of “upstream” and “downstream” carbon losses, as well as gains. “DellaSala’s recommendations should be considered. FS even-aged logging, thinning, and other activities proposed in the Fork Mtn project will release more carbon into the atmosphere than if these activities were not to take place. The FS should have considered alternatives that protect more mature and old growth forests rather than cutting them down. The FS should have considered the degree to which the Fork Mtn project would enhance or degrade the connectivity of mature forested landscapes in this area. In addition, the models both predict dramatic changes in precipitation patterns (EA 90-91). The FS should have analyzed how run-off patterns from even-aged units and roads might change under scenarios in which the environment is (1) much drier, (2) much wetter, and (3) includes a much greater degree of fluctuation between dry periods and wet periods than in the present.

James spiny mussel and mussels

As Richard Ettelson said in his comments: "Identified Spiny-mussel habitat on the South Fork of Potts Creek, and the Steel Bridge Campground has prompted the Forest Service to assume that the creek between these two known locations is also Spiny-mussel habitat. The North Fork of Potts Creek which also drains the Project Area junctions with the South Fork about a mile east of Waiteville. The mouth of the North Fork is just one foot away from the mouth of the South Fork. They should both be within the scope of the analysis. The potential for silt flooding in from your timber cutting, road construction, Pesticide use, and prescribed fires can have negative effects outside of the Project Area."

High levels of logging and roadbuilding are proposed in the upper reaches of two watersheds. Surveys for James spiny mussel and other TESLR mussels should take place and the FS should thoroughly analyze the impacts on mussels, effectiveness of protective measures. Consultation with US Fish and Wildlife Service should take place.

According to a study commissioned by the American Fisheries Society Endangered Species Committee, there are "297 native freshwater mussels [in the U.S. and Canada], of which 213 taxa (71.7%) are considered endangered, threatened, or of special concern... and only 70 (23.6%) as currently stable... Freshwater mussels (also called naiads, unionids or clams) of the families Margaritiferidae and Unionidae are worldwide in distribution but reach their greatest diversity in North America with about 297 recognized taxa... During the past 30 years, numbers both of individual and species diversity of native mussels have declined throughout the United States and Canada. Freshwater mussels (as well as other aquatic species) are imperiled disproportionately relative to terrestrial species... This alarming decline, the severity of which was not recognized until recently, is primarily the result of habitat destruction and degradation associated with adverse anthropogenic activities." (Williams, Warren, Cummings, Harris and Neves, 1993)

At its peak, the James spiny mussel (*Pleurobema collina*) was distributed from a location a few miles upstream of Richmond, Va. and throughout the James River basin upstream. Since that time, its range has been reduced by approximately 90% (Clarke and Neves, 1984) The James spiny mussel now survives in a few tributaries of the James. (Terwilliger, 1991).

Today the James spiny mussel is in a precarious position. Dramatic declines have been documented in the upper tributaries of Potts Creek, in this watershed, as well as other nearby watersheds in the James spiny mussel's range. Recent GWJNFs M&E Rpts state "Dr. Neves from Virginia Polytechnic Institute and State University surveyed the spiny mussel on the South Fork of Potts Creek in Monroe Co, WV in 2000. *P. collina* abundance has declined by 25% in 5 years in the survey sections in that stream. Throughout the Craig Creek drainage, *P. collina* numbers are declining (Pers. Comm. Neves 12/5/00)" ("99-'00 M&E Rpt p. G-75 and '01-'03 M&E Rpt G=67) (enclosure) (incorporated by reference, already in your possession, enclosed as an attachment our previous (2nd) Little Mountain timber sale appeal).. See also the email from Dawn Kirk (GW&JNFs Staff Fisheries Biologist) regarding her conversation with Dr. Neves. It appears that Dr. Neves believes that sediment is the probable cause of the decline. Kirk also states that based on the conversation, she does not believe that there is a viable population of James spiny mussels on the Forest or that there ever will be one without "massive augmentation." (enclosure). According to the FS, "viability remains a concern for the James spiny mussel" ('01-'03 M&E Rpt G-68).

Efficacy of proposed mitigation measures for the mussel must be explained, and they must completely compensate for potential adverse effects.

Cumulative effects of Forest Service activities in combination with other past, present, and reasonably activities and events in this watershed should be analyzed in accordance with NEPA. There is a possibility that FS activities in combination with non-FS activities or events may already be contributing significant levels of sediment, affecting the viability of the James spiny mussel. Rapid declines of the mussel in portions of this watershed and other nearby watersheds may be indicators that this mussel (and other aquatic species) may be in serious trouble. FS activities may need to be curtailed.

In addition, the James spiny mussel depends on fish species such as the bluehead chub

(*Nocomus leptoccephalus*), rosyside dace (*Clinostomus funduloides*), satinfin shiner (*Cyprinella analostana*), rosefin shiner (*Lythurus ardens*), central stoneroller (*Camptostoma anomalum*), blacknose dace (*Rhinichthys atralulus*) and mountain redbelly dace (*Phoxinus oreas*) in order to reproduce, so potential impacts to these fish species should have been considered as well. These fish serve as the prime fish hosts for young developing mussel larvae, called glochidia (Terwilliger, 1991, p. 254; Hove and Neves, 1994) See also George Washington and Jefferson National Forest T & E Mussel and Fish Conservation Plan (Mussel and Fish Conservation Plan), 6 & 31: " The decline of fish host species may present a problem in mussel reproduction." Appropriate surveys and analysis of impacts on fish host species should take place.

. The FS must also follow the monitoring provisions of the Conservation Plan.

" Monitoring:

Implementation

Annual implementation monitoring will be conducted for projects within the Conservation Zone in watersheds listed in Appendix E to determine if standards are being followed. Implementation monitoring is done one time for a project. See Appendix G for an example of a monitoring checklist. Results of this monitoring will be sent to the U.S.D.I. Fish and Wildlife Service.

Effectiveness

Effectiveness monitoring will be conducted within the watersheds listed in Appendix E and will consist of:

1. Direct monitoring of threatened and endangered mussel and fish populations in conjunction with Virginia Department of Game and Inland Fisheries (lead agency).
2. Direct monitoring of James spiny mussel populations and habitat on Forest Service property.
3. Indirect monitoring of aquatic fauna through the use of macroinvertebrates as bioindicators of the effects of management activities on stream biota (using EPA's Rapid Bioassessment Protocol II, see Objective 3.01).

Inventory

The Forest Service will continue to inventory potential Federally listed mussel and fish habitat on Forest Service land and assist the state in additional surveys."(Cons Plan 23). There is nothing in the EA or DN that refers to a monitoring plan for T&E mussels and fish. No monitoring plan has been established.

In addition, other TESLR mussels and aquatic species could be impacted by the project. The Virginia pigtoe "appears to be restricted to the headwaters of the James River" (Terwilliger, 1991 p. 280). The Atlantic pigtoe is known from the "James River ...[system] in Virginia" (Terwilliger, p. 276). The yellow lance occurs in the "James River" (BE A-2). Green floater occurs in the "James ...[drainage] of Virginia" Terwilliger 269). All of the above TESLR species (see GWJNFs TESLR species lists, incorporated by reference) are known to have historical distributions that include all or portions of the upper James River drainage. This project, in the Potts Cr watershed, occurs within the upper James River drainage. Therefore, it is reasonable to expect surveys for these and other TESLR aquatic species. Otherwise, the FS cannot ascertain whether its activities are impacting or could impact TESLR species, pursuant to NEPA.

Candy Darter and other aquatic species

The candy darter, a Forest Service sensitive species, inhabits this watershed (the Stony Creek watershed) (JNF Plan 2-3) .

"Habitat - The candy darter inhabits rocky, typically clear, cold and warm, small to large creeks. Adults generally occupy unsilted runs, riffles, and swift pockets of current in and around large rubble and boulders. ... Threats - Turbidity and siltation are assumed to be limiting factors..." (Terwilliger (ed), 1991, Virginia's Endangered Species, p. 385) "In Virginia, *Etheostoma osburni* (candy darter) is generally distributed in Big Stony Creek only. Although six other systems of the New River drainage have its critical habitat requirements, recent records do not indicate the presence of candy darter. Furthermore, the fish is endemic to the New River drainage in the Ridge and Valley of Virginia and the Appalachian Plateaus of West Virginia and is

experiencing declines throughout its range. Stony Creek provides essential habitat in preventing this species from becoming federally listed." (JNF Plan FEIS D-12).

For example, the following is from NatureServe (regarding the candy darter):

"Degree of Threat: Substantial, imminent threat

"Threat Scope: High

"Threat Severity: Moderate

"Threat Immediacy: High

"Threats: Primary threats may be turbidity and siltation resulting from human activities. Stocking of trout may be detrimental (trout probably eat *E. OSBURNI*). Also, anglers may limit populations by wading through possible spawning sites (Burkhead and Jenkins 1991). Jenkins and Burkhead (1994) stated that they previously (Burkhead and Jenkins 1991) may have underrated the jeopardy of this species in Virginia by recommending it for only special concern status; in 1994 they rated it as endangered or threatened in Virginia due to "localization or extirpation of most populations." Warren et al. (2000) rated this species as vulnerable.

"Environmental Specificity: B

"Endemism: endemic to a single nation

"U.S. & Canada State/Province Distribution

"United States - VA, WV

"Global Range: EF

"Global Range Comments: New River drainage, in the Ridge and Valley of Virginia and the Appalachian Plateaus of West Virginia (Jenkins and Burkhead 1994). See Jenkins and Burkhead (1994) for corrections of identifications affecting the known ranges of this species and *E. KANAWHAE*. In Virginia, generally distributed only in Big Stony Creek, perhaps solely above the gypsum plant at Kimbalton; extremely localized in Laurel Fork of the Wolf Creek system; limited range in the New River. Known also from Reed, Big Walker, Little Stony, and Sinking creeks, and Spruce and Pine runs, but there are no recent records from these streams (Burkhead and Jenkins 1991)....

"Reproduction Comments: Spawning typically peaks mid-to-late May in the Greenbrier River, West Virginia (Lee et al. 1980). Spawners were found in late April at a water temperature of 15.5 C in Big Stony Creek, Virginia; adults were in breeding condition on 20 June at 18 C in a different year (Burkhead and Jenkins 1991). Sexually mature in 2 years, lives up to 3 years.....

"Habitat Comments: Swift water over stones and boulders in cool montane streams. Rocky, typically clear, cold and warm, small to large creeks; adults generally occur in unsilted runs, riffles, and swift pockets of current in and around large rubble and boulders (Burkhead and Jenkins 1991). Fast rubble riffles of small to medium rivers (Page and Burr 1991). In three streams in West Virginia, occurred in fast current velocities and rock substrate in water depths of 20-30 cm (Chipps et al., 1994, *Am. Midl. Nat.* 131:175-180). May spawn in patches of sand in swift water? (Burkhead and Jenkins 1991)." (NatureServe. 2004. NatureServe Explorer: An online encyclopedia of life [web application]. Version 4.1. NatureServe, Arlington, Va. Available <http://www.natureserve.org/explorer>. (Accessed: November 23, 2004).

"Habitat - The candy darter inhabits rocky, typically clear, cold and warm, small to large creeks. Adults generally occupy unsilted runs, riffles, and swift pockets of current in and around large rubble and boulders. ... Threats - Turbidity and siltation are assumed to be limiting factors..." (Terwilliger (ed), 1991, *Virginia's Endangered Species*, p. 385)

The Forest Service should have analyzed how the project (including logging, roads, skidding, firelines, and burns) affect sediment-sensitive species such as trout, candy darter, and other aquatic species. Efficacy of proposed mitigation measures for the candy darter and other aquatic species must be explained, and they must completely compensate for potential adverse effects.

Cumulative effects of Forest Service activities in combination with other past, present, and reasonably activities and events in this watershed should be analyzed in accordance with NEPA. There is a possibility that FS activities in combination with non-FS activities or events may already be contributing significant levels of sediment, affecting the viability of the candy darter.

Northern Long-eared Bat, Indiana Bat and other PTESLR Bats

In our comments, we stated: “Indiana bats, Virginia big eared bats and other PTESLR bats could potentially have habitat or populations in this PA . This PA and the entire GWJNFs is considered potential habitat for Indiana bats. How will Indiana bats and other PTESLR bats be affected by this project and other activities? What surveying for habitat or bats, using up-to-date methods, will take place? Has there been any new information regarding Indiana bat (and other TESLR bat) occurrences or Indiana (and other TESLR bat) bats? Have Indiana bat mortality thresholds, or other thresholds, been exceeded in any areas? Has monitoring regarding Indiana bat thresholds been adequate?”

The BE considers the northern long-eared bat, then a proposed Endangered Species Act listed species, (BE 8) and now [as of April '15] a federally listed threatened species. The northern long-eared bat has declined 99% in the Northeast, 96% in Virginia, roughly 68% in West Virginia. Unlike the little brown bat, which is showing signs of stabilization in areas longest affected by white nosed syndrome, the northern long-eared bat population does not appear to be stabilizing anywhere. Northern long-eared bat populations are starting to show increasing mortality in the Southeast and Midwest. Twenty-five states in its 38 state range are now affected by white nosed syndrome, and 5 Canadian provinces in its range are also now affected by white nosed syndrome.

The FS should alter the project if any provisions are inconsistent with the recommendations of US F&WS consultation on the bat.

In addition the FS refers to existing management direction for the protection of caves and bats (EA 61).

- The FS should have analyzed the particular habitat needs of the long-eared bat and should have analyzed how the project would impact the bat and its habitat. Surveys should be conducted for the bat (and other PTESLR bats). “Compared to random trees, roosts of northern long-eared bats were within intact forests ($x^2 = 10.56$, d.f. = 1, $P = 0.001$). Amount of obstruction and decay differed; roosts of *M. sodalis* typically were less cluttered and more decayed than those of *M. septentrionalis* ($x^2 = 38.63$, d.f. = 2, $P < 0.001$). Indiana bats roosted almost exclusively under exfoliating bark of bottomland snags, whereas northern long-eared bats also made extensive use of cavities and crevices.” “Northern long-eared bats used five identified species of trees for roosting; nine roosts were in pin oak, five in elm, two in unidentified snags, and one each in sweetgum, oak, and hawthorn (*Crataegus* spp.)” “Comparing roosts of Indiana bats and northern long-eared bats (Table 3), two variables were significant ($x^2 = 38.633$, d.f. = 2, $P < 0.001$). Degree of roost obstruction was greater around northern long-eared bat roosts than around Indiana bat roosts ($x^2 = 14.954$, d.f. = 1, $P < 0.001$), and *M. septentrionalis* roosts were less decayed than those of *M. sodalis* ($x^2 = 4.876$, d.f. = 1, $P < 0.027$).” (Timothy C. Carter , George A. Feldhamer, “Roost tree use by maternity colonies of Indiana bats and northern long-eared bats in southern Illinois,” Forest Ecology and Management 219 (2005) 259–268).

-The FS should consider the differences between northern long-eared bats and Indiana bats and their use of habitats.

From Northern long-eared bat (NLEB) comparisons with the Indiana bat (Ibat)
Appendix B:

Canopy cover around roost trees:

Northern long-eared bats: They appear to select roosts with **generally more canopy cover** than Indiana bats do. Canopy coverage at NLEB roosts has ranged from 56 percent in Missouri (Timone *et al.* 2010), 66 percent in Arkansas (Perry and Thill 2007), greater than 75 percent in New Hampshire (Sasse and Pekins 1996), to greater than 84 percent in Kentucky (Lacki and Schwierjohann 2001). Examples of studies that compared NLEB and Indiana bats directly:

• Indiana bat 25% vs. NLEB 56% (Timpone et al. 2010)

- Indiana bat 18% vs. NLEB 44% (Carter and Feldhamer 2005)

Indiana bats: Mean values of canopy cover are highly variable among studies, ranging from <20 to 88 percent (FWS 2007).

FWS (2007) “First, some variation undoubtedly is related to differences in methodology, because virtually every study measures canopy cover in a different way. Second, roosts found in closed-canopy forests, particularly primary roosts, are often associated with natural or man-made gaps (e.g., openings created when nearby trees fall, riparian edges, trail or forest road edges).

Although the forest may be accurately described as closed canopy, the canopy in the immediate vicinity of the roost tree may have an opening that allows for solar radiation to reach the roost.

Food sources:

Northern long-eared bat: Similar to Indiana bat. Beetles, mayflies, moths (Brack and Whitaker 2001, Lee and McCracken 2004, Feldhamer *et al.* 2009) Potential differences Indiana bat, as gleaners, **NLEB eat more arachnids (spiders)** (Feldhamer *et al.* 2009) and **more orthopterans** than Indiana bat (Lee and McCracken 2004).

Indiana bats: Flying insects. Consistent use of moths, flies, beetles, and caddisflies throughout the year at various colonies suggests that Indiana bats are selective predators to a certain degree, but incorporation of ants into the diet also indicates that these bats can be opportunistic (Murray and Kurta 2002). Hence, Brack and LaVal (1985) and Murray and Kurta (2002) suggested that the Indiana bat may best be described as a “selective opportunist,” as are a number of other *Myotis* species (Fenton and Morris 1976).

Foraging behavior:

Northern long-eared bats: Nocturnal. Both hawking and **gleaning** (Brack and Whitaker 2001, Feldhamer *et al.* 2009, Fenton and Bogdanowicz 2002; Ratcliffe and Dawson 2003). **Within canopy** more than Indiana bat (Nagorsen and Brigham 1993).

Indiana bats:

Nocturnal. Generally hawking. Indiana bats hunt primarily around, not within, the canopy of trees, but they occasionally descend to subcanopy and shrub layers. While Indiana bats appear to forage in a wide variety of habitats, they seem to tend to stay fairly close to tree cover.

The FS should take the following conservation measures to protect the northern long-eared bat. Conservation Measures for NLEB in Known or Potential Summer Habitat (Advisory):

NLEB may be present in suitable summer habitat during the regional or local summer season (see Table 1). See the main guidance document for a description of suitable NLEB summer habitat. See Appendix C for assistance in establishing a NLEB home range based on capture records.

9. Determine where NLEB occur in the summer. o Coordinate with partners to gather and evaluate NLEB location information. § Review both positive and negative data (e.g., acoustic transect surveys).

o We recommend that large landholders (e.g., U.S. Forest Service, Department of Defense, National Wildlife Refuges, state natural resource agencies) perform baseline bat surveys.

10. Take actions to protect NLEB and their habitat within known NLEB homeranges.

11. Avoid killing or injuring NLEB during tree clearing activities.

o Do not clear maternity colony summer habitat during the summer maternity season to avoid direct effects to females (pregnant, lactating, and post-lactating) and juveniles (non-volant and volant).

12. Minimize other direct effects to NLEB. o Avoid clearing of summer habitat during the time of year when females are pregnant or the pups are non-volant (consult the FWS office for these times).

o Minimize use of pesticides (e.g., rodenticides, sticky traps) in and around structures with roosting bats.

o Avoid conducting construction activities after sunset in known or suitable summer habitat to avoid harassment of foraging NLEBs.

13. Avoid/minimize altering clean drinking water and foraging areas. o Minimize use of herbicides and pesticides. If necessary, spot treatment is preferred over aerial application.

o Contaminants, including but not limited to oils and solvents, should be strictly controlled so the quality, quantity, and timing of prey resources are not affected.

o Implement sediment and erosion control measures, ensure restoration of pre-existing topographic contours after any ground disturbance, and restore native vegetation (where possible).

o Site equipment servicing and maintenance areas at least 300 feet away from waterbodies (e.g., wetlands, streams). Follow available standards on spill prevention, containment, and control.

o Avoid filling, channelizing, or degrading streams, wetlands, and other watering areas.

14. Maintain summer maternity habitat. o Retain and avoid impacting potential roost trees, which includes live or dead trees and snags ≥ 3 inches dbh that have exfoliating bark, cracks, crevices, or cavities. Do not remove trees surrounding potential roosts to maintain the microclimate.

o Where possible and not a safety hazard, leave dead or dying trees standing.

o Avoid reducing the suitability of forest patches with known NLEB use.

o Maintain or improve forest patches and forested connections (e.g., hedgerows, riparian corridors) between patches.

o Clearly demarcate trees to be protected vs. cut to help ensure that contractors do not accidentally remove more trees than anticipated.

o Avoid/minimize tree clearing that fragments large forested areas or tree lined corridors. For example, route linear features along the edge of a woodlot instead of through the middle of it; use horizontal directional drilling for pipeline crossings of wooded stream corridors and upland tree lines.

(USFWS, "Northern Long-eared bat Interim Conference and Planning Guidance", Jan 6, '14)

Impacts to Soils

In our comments, we stated: "If there are any potentially sensitive or vulnerable soils in this project area, activities here could impact them and could impact soil productivity. The FS must ensure that soil productivity is protected. How will the project affect steep slopes, erosive soils, soils where soil movement may occur, soils with compaction hazards, soils with puddling hazards, rocky soils, soils with equipment limitations, soils at risk of losing organic material, soils with low levels of organic material, and other sensitive soils along the creeks in this project areas and their tributaries? What portion of the units are on steep slopes? Identify these areas. Do not merely take an average of slope. Will the project affect poorly drained floodplain soils? Soil Productivity? How will this affect soils in the project area?"

- Many important species and resources are associated with riparian forests, both here in this PA and throughout the Jefferson NF. Riparian forests and other such forests are valuable resources in their own right and deserve their own insulating buffers from disturbance. How will the project affect riparian buffer zones? Old growth buffer zones? Potential old growth buffer zones?

- Consider how the project would affect soil stability, moisture retention capability, erosion, compaction, nutrient leaching rates, roots, soil niches, soil structure, and biological productivity (for all cutting units, roads, and associated infrastructure). Cumulative effects?"

There is no information on the condition of these roads in the NEPA analysis, or the potential for problems (slumping, soils, proximity to streams, run-off to streams, access for off-road vehicles, adverse impacts to wildlife, invasive species, whether any are located on steep slopes and/or soil

types rated by NRCS as having erosion hazards, high costs to maintain and/or build etc.) along these roads and other access roads. The FS should have disclosed whether any of the new road construction/dozer lines are proposed on steep slopes and/or soil types rated by NRCS as having erosion hazards, are on locations poorly suited for construction of roads, log landings, or skid trails, etc. Likewise, the FS should have disclosed potential problems with new road segments eg, potential for slumping, soil problems, proximity to streams, run-off to streams, access for off-road vehicles, adverse impacts to wildlife, invasive species, rocks and boulders, whether any are located on steep slopes and/or soil types rated by NRCS as having erosion hazards, high costs to maintain and/or build etc.) When I visited the site in April 2013, I noticed that the area where many parts of the permanent roads area planned is extremely rocky. There is also a need to analyze and disclose in the EA the soil types in areas proposed for logging, road construction, and skid road/trail construction and the risks and hazards associated with each soil type.

- Several of the units have steep slopes "D" and "E". The FS should have avoided logging on steep slopes or slopes with high hazards. The FS should have discussed the impacts of logging above VDNH conservation sites and the risks of the particular soil types above these sites.

Impacts to Riparian Resources and Water Quality

In our comments, we stated "The FS should document whether any management areas for riparian areas exist in the project area. These areas should be delineated and mapped. All riparian resources in these areas should be protected through means that are demonstrated to be effective. Watershed analysis for this area should take place.

- "In addition, agency letters & correspondence & research papers suggest that riparian buffers larger than those provided in the JNF Plan may be appropriate and may need to be considered (e.g., USF&WS Jan 13, '04 BO on JNF Revised Plan; VGIF letter on JNF Revised Plan; and Wenger, S. (1999) - referenced in Jan 13, '04 USF&WS BO --- all of these documents are in the possession of the GW&JNFs and are incorporated by reference)."

The preliminary riparian area map shows a large number of seeps (14-15 or so) near/within units 1 and 2 and the approach roads to these units. The Forest Service should have considered the impacts of logging in or around these seeps and the degree to which they would be impacted. These units and the approach roads that adversely affect seeps and water quality should be dropped. There are 2 seeps near/within units 6 & 7.

Logging is planned around the VDNH conservation sites. The Forest Service should have considered the impacts of logging in or around these sites. The Forest Service should have disclosed whether any seeps would be impacted and should have analyzed how the flow of water into the conservation sites would be impacted.

The Forest Service should have identified all seeps in around these conservation sites. The Forest Service should have analyzed how the flow of water into the riparian areas and wetlands in the conservation sites is maintained and regulate, where it originates, and the degree to which any of the activities could disrupt the flow of water under a wide range of conditions. The Forest Service should have analyzed the degree to which activities could directly or indirectly lead to the addition of sediment to the water.

There have been several logging operations in your ranger district in which there were very wet and muddy conditions including the Upper Craig Project. The Forest Service should demonstrate how it will prevent sediment resulting from wet and muddy conditions such as these from entering the VDNH conservation sites, and should demonstrate the effectiveness of these mitigation measures. High intensity burns are proposed in this project area. The Forest Service should

have demonstrated how it will prevent a burn from burning hotter that can be tolerated by plants in the VDNH conservation sites and should demonstrate the effectiveness of these measures.

The FS should pay particular attention to how ground disturbing activities and loss of shading and canopy near streams could affect trout habitat and trout populations in streams in the area - since this is an important area for trout. We are particularly concerned about the proposed logging in this project (the proposed even-aged logging) to negatively affect water quality, sediment levels, and water temperature. The FS should analyze these issues and should fully mitigate all impacts. What are large woody debris levels along these streams and do they need to be augmented?

The FS should have also considered how it would protect the stream management zones, as laid out in the Virginia BMPs. These are different from the riparian zones established in the JNF Plan in some respects. For example, they require that the forest floor "remain essentially undisturbed" in the SMZ, which is 60-120 ft. along trout streams, dependent on slope of adjacent lands.

Wider stream buffers should have been 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 JNF Plan requires the FS to delineate riparian areas (manage prescription area (RxA) 11 areas) and this should be done 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 TS 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).

Economic Analysis

The proposed action calls for 635 acres of logging and would include an estimated 5.8 miles of new NFS road construction, dozer line construction, 3581 acres of prescribed burning with bulldozed fireline construction and herbicide treatments on 498 acres, and other activities. Nearly 20 miles (19.85 miles) of permanent roads, temporary roads, bulldozed firelines, skid roads, and skid trails are proposed (See EA 8 & 71). Compared to other logging/roadbuilding/spraying proposals on other national forests in the southern Appalachians, this is one of the largest I have seen. This project is a prime example of Forest Service's improper prioritization of fiscal and management issues - decommissioning roads so more roads can be built. The scoping notice does not provide any information on how it will pay the full costs for this massive project or what needed projects on the GWJNFs will be underfunded as a result of the funds diverted to this project. The scoping notice does not provide any economic information about the project, even rudimentary information. A full economic analysis of the project needs to be completed.

The Forest Service should have disclosed all costs that will be incurred as a result of this project, including the costs of (1) new road construction, (2) damage from off-road vehicles accessing the area through new roads, (3) increased costs for patrolling this area for off-road vehicles, (4) costs of maintaining existing and new roads in the area, (5) costs of watershed restoration downstream from existing decommissioned and undecommissioned roads and new roads and skid trails, and (6) future herbicide spraying and invasive species management in and around newly logged and roaded areas.

By the late 1990s, the Forest Service had a \$8.4 billion backlog for road maintenance nationwide. This backlog has undoubtedly increased in the intervening years. The GWJNFs, like most Forests, has only a fraction of the money needed to maintain the existing road system on the Forest. For example, the GWNF TAP recommends decreasing road mileage on the GWNF by 18% for to reach the Minimum Road System (GWNF TAP p. 6). Only 39% of maintenance needs are funded (GWNF TAP p. 8). The Forest Service has not disclosed whether the JNF has

the funds to maintain the roads in this project area, whether the JNF has the funds to build the roads in this project area or what needed road, trail, or other maintenance projects will have to be deferred, canceled, or scaled back in order to build new roads in this project area. There are thousands of miles of FS roads on the JNF and the Forest Service does not have the financial wherewithal or the capability to maintain them or adequately patrol them to stop illegal use. See also Richard Ettelson's comments on this issue.

In the past few years, Congress has forced drastic across-the-board cuts to federal agencies through the "sequester process." The FS should have considered whether the agency has the financial wherewithal or capability to maintain this road or protect this area from illegal motorized use given the precarious state of FS budgets. The FS has not disclosed how many law enforcement officers are available to monitor this area now, and how the coming budget cuts will impact patrols in the area. Law enforcement has already been cut to the bone and the number of law enforcement personnel has dwindled. In the 1990s, there were 23-25 law enforcement officers distributed throughout the ranger districts of Virginia's two national forests. In recent years there have only been 10-12 officers. (Meeting with Brian Webb, Patrol Captain, Supervisors Office, February 11, 2011).

These budgetary issues raise a number of issues unanswered in the EA: Is this project the wisest use of the Forest Service's money? Can the Forest Service sustain this project given the state of Forest Service budgets? Given a limited overall road budget, will the implementation of this project mean that fewer roads will be decommissioned in areas where new roads are not being built elsewhere? Is the project (or any aspects of it) going to be below-cost? The FS has not taken the required hard look at these issues, as required by NEPA.

Rare Communities

According to DCR's website, "Conservation sites are a tool for representing key areas of the landscape worthy of protection and stewardship action because of the natural heritage resources and habitat they support."

Virginia DCR's Natural Heritage Tech. Rpt. 96-14 says of the North Fork Stony Creek special biological area (SBA), the Rare Community (9F Area) in this project area, "land use alterations or soil disturbing activities, such as those associated with some types of timber harvest, could disrupt the hydrology of the wetlands through sedimentation of feeder streams. Hydrological perturbation may disturb or directly eliminate rare species habitat, and degrade the wetlands. Sedimentation or changes in water quality could negatively impact the rare plant populations at this site by allowing colonization by invasive, aggressive species or by species which could outcompete rare wetland plants currently found here." VDCR recommends avoiding logging within the immediate area of rare plants, monitoring to track the health of wetland & rare plants, and monitoring of beaver trends. It is not clear that these measures will be followed.

Wetlands, riparian areas, conservation sites and other unique and rare communities should have been carefully delineated. There is an (are) additional conservation site(s) downstream from Salt Sulphur Turnpike.. Likewise, regarding the Forest Service says that activities will take place "in close proximity to" Kire Bog but does not disclose how close or what the impacts on the area in resources in the area will be. The shelterwood logging unit at the end of Rt 10240 is quite close to the SBA. When Sherman Bamford visited the site in April 2013, there were riparian/wetland/boggy areas to the right of the road in close vicinity to this area. A review of satellite images on GoogleEarth indicates that there is an opening of some sort near this proposed cutting unit. In addition, the two thinning group selection units, while across from the road, are quite within the drainage for this area. And the two other shelterwood logging units are immediately above another portion of the SBA. Sediment from these proposed cutting units and the use of logging vehicles within them, and accessing them, are likely to adversely affect water quality in the SBA downstream. If there are any wetlands or plant populations/plant communities outside of the VDNH conservation sites, these should have been identified, protected, and buffered.

Other factors, such as future or ongoing loss of hemlocks, resulting formation of openings, drying as a result of loss of canopy, and impacts resulting from prescribed burns, should have been evaluated to determine impacts and cumulative impacts on the SBA, beavers, and rare plant communities.

In addition, the Forest Service should examine whether any additional beaver meadow openings or peat bogs have formed downstream from the SBA and, if so should expand the size of the Rare Community prescription area, with additional protective measures to protect the downstream resources from adverse affects from logging, roadbuilding, herbicide spraying, and prescribed burning. GoogleEarth images indicate that there may be some openings along the stream immediately downstream from the SBA. [see letter from VDNH and attachments to Sierra Club's previous comments.] The extent to which conservation sites, sites with rare species, site with unique or rare communities, natural openings, wetlands, or TESLR habitat exists in this area and throughout the project area should have been determined by proper surveys and analysis.

Consistent with the Forest Plan, The Forest Service should have:

Determined whether this project Impacts any of these areas near or adjacent to the project
Determined whether any of the rare communities occur in or adjacent to the 8-C, and also warrant formal protection through similar mitigation measures that would be used in a 9F area, and/or a plan amendment expanding the 9F area.

Determined impacts to any rare communities - assemblages of plants or animals.

Determined impacts to any areas characterized by a variety of natural communities generally being more affected by the forces of nature than by humans.

Protected all areas from human-caused detrimental habitat change, the taking of T&E spp.

Determined whether it should limit recreational access to existing roads and trails.

Protected beaver ponds and assoc. wetlands.

Maintained existing openings and old fields only if compatible with the rare community.

Protected rare communities from detrimental effects caused by management actions.

Periodically monitored rare community sites. Identified management activities needed to maintain restore rare communities.

Determined whether it should nominate sites to Va. registries of natural areas.

Allow vegetation mgmt activities only for the specific reasons in 9F-012.

Used natural processes or prescribed fire, rather than timber harvest.

Use timber harvest only within disturbance dependent rare communities?

Avoided constructing fire lines with heavy mechanized equipment in rare communities.

Excluded basic mesic forests from burning blocks where this can be accomplished w/out large increases in fireline construction.

In the three VDNH conservation sites, the Forest Service did not disclose how the resources protected from OHV incursions or demonstrate the effectiveness of such measures.

The EA says that roads will cross "rock bars" and areas "associated with the subsurface flow of water." (EA 34). How will road construction affect water flows, including water flows to VDNH conservation sites? Aquatic species? What wildlife and plant communities are associated with the rocky areas, rock outcrops, and rock bars? How will rattlesnakes and bats be affected?

Some of the logging takes place fairly close to the VDNH conservation sites. The FS should have analyzed edge effects to these areas and the resources in them. The FS should have used a 200, 400, and 600 meter edge effect to analyse edge effects (see the work of Leimgruber, McShea, and Schnell on the GWNF Warm Springs RD; incorporated by reference). P. Leimgruber, W.J. McShea, and G.D. Schnell. "Roadside Surveys: Changes in Forest Composition and Avian Communities with Distance from Roads". (Recognizes a potential 600 meter edge effect for bird populations. Research conducted on GWNF; in James River RD Hoover Creek timber sale project file.

Old Growth

In our comments we stated: "The FS should examine whether potential old growth or large or old trees are found in the area; if these characteristics are lacking, the FS should examine methods that make up for this lack of old growth and large or old trees (see also below regarding old growth in the Appalachians). The FS should disclose whether there is an adequate old growth/mature forest/ and large tree component in this PA. The FS should analyze how the project may affect these components and the species that utilize them or depend on them. Many MISs and TESLR species depend on this component. What old growth exists in the project area and vicinity? Does adequate old growth exist in the project area to ensure the viability of old growth dependent species? What large, medium, or small tracts of old growth exists in the project area and vicinity? What mature forest tracts adjacent to (or in the vicinity of) old growth exist in the project area and vicinity? What potential old growth that will achieve old growth status in the coming years exists in the project area and vicinity? How do fragmented ownership patterns, motorized access, other access, past logging, and other factors affect the quality of old growth in the project area and vicinity? How would the project diminish the quality of old growth or affect the size and distribution of large, medium and small sized old growth patches or potential old growth patches. The FS should follow regional old growth guidance for the project area/ and vicinity and the GW&JNFs as a whole. The FS should protect adequate old growth and mature forest habitat to ensure viable populations of MISs, NTMBs, salamanders, aquatic species, and PTESLR species and other key species that use old growth and/or mature forest in the project area. The FS should determine what actual old growth levels are in the project area, vicinity and the GW&JNFs as a whole, through surveying; if old growth levels are inadequate, additional old growth or potential old growth (if actual old growth is unavailable) should be protected from logging and roadbuilding. "

- The "inconsistency" of stand conditions is a characteristic of old growth; see, e.g., "a temporally and spatially 'shifting mosaic' of age and size-class patches [pg.2] . . . Irregular age distributions are common in old-growth stands [pg.8] . . . the tremendous variability among and combination of features exhibited in old-growth forests.[pg.9]" in "An Old-Growth Definition for Western and Mixed Mesophytic Forests" by C. Greenburg, D McLeod, and D. Loftis, USDA FS General Technical Report SRS-16, 1997).

- See also "Eastern Old-Growth Forests: Prospects for Rediscovery and Recovery," M.B. Davis (ed.), Island Press, 1996.

- See also "Composition and Structure of an Old-Growth Versus a Second-Growth White Oak Forest in Southwestern Pennsylvania", by J. Downs and M. Abrams, pp. 207-223 in Proceedings of the 8th Central Hardwood Forest Conference, USDA FS General Technical Report NE-148. An important finding of this research was that "over 90% of all trees in the old-growth stand were < 120 years old."

Edge effects on old growth should have been considered. of Leimgruber, McShea, and Schnell recommend using a 200, 400, and 600 meter edge effect to analyze loss of interior forest conditions (see the work of Leimgruber, McShea, and Schnell on the GWNF Warm Springs RD; incorporated by reference). P. Leimgruber, W.J. McShea, and G.D. Schnell. "Roadside Surveys: Changes in Forest Composition and Avian Communities with Distance from Roads". (Recognizes a potential 600 meter edge effect for bird populations. Research conducted on GWNF; in James River RD Hoover Creek timber sale project file)

As mentioned above, this is a large project with 635 acres of logging and 19.85 miles of permanent roads, temporary roads, bulldozed firelines, skid roads, and skid trails are proposed (See EA 8 & 71). There is a very serious issue as to whether the logging and roadbuilding proposed here will impact the interconnectedness of old growth here (as well as interconnectedness of habitat for species that rely on old growth habitat for some part(s) of their

life cycles). Likewise the project activities may impact will impact the interconnectedness of late-successional habitat for species that rely on this habitat for some part(s) of their life cycles).

Old growth will be cut for this project – to make way for roads (EA 26). Roads would go through “several areas that contain old growth and / or large decadent trees” (EA 42-43). [underlining for emphasis] Moreover, several known old growth tracts of forest would be situated directly between proposed even-aged cutting units and other logging units. On p. 35 the FS states its intention to cut old growth to build roads (EA 35).

According to the FS, there are “outstanding examples” of dry mesic oak old growth in the area (EA 34). Where are the “outstanding” examples within the project area? How close to these areas will logging, roadbuilding and other activities take place? How will they be protected from adverse direct or indirect impacts?

Units 3, 4, 8, 7, 6, 11, 10, and 9 and proposed roads separate the 417 ac. tract from the 18.95 ac., 5.51 ac., 23.12, 12.12, 29.2, 0.56, 8.02, 0.8, and 79.48 ac. tracts on both sides of N Fk of Potts Creek. On the other side of the project area, units 21, 22, and 23 and TSI units (past logging units) adjacent to units 21 and 23 separate the old growth tracts 16.12, 22.33, 11.29 acres in size. Unit 12 by itself separates the 1.94, 1.86, and 1.16 acre old growth units. The 1.12 acre old growth tract appears to be within unit 12. (See old growth map in the project file and alternative maps in the EA). This logging/roadbuilding separates late successional forest tracts from old growth tracts. How would the 22.33 ac old growth tract on the west end be affected by unit 22 and the bulldozed fireline proposed in this general area? How would mature forest around the tract be affected? For the most part, old growth tracts directly adjoin even-aged or other cutting units. The effects would be: in some cases, small old growth tracts directly abutting cut-over areas; in some cases, mature forest tracts between old growth tracts removed; in all cases, the potential for reestablishing medium or large scale old growth tracts in the future eliminated, because mature forest between old growth tracts has been removed over a large number of acres. The FS simply assumes that existing old growth tracts are big enough, are abundant, and are distributed well enough – without providing any information to demonstrate that this is so. The FS also simply assumes that it is a good thing to cut the mature forest surrounding old growth tracts (some relatively small), as opposed to allowing these tracts to expand with the passage of time, and to create larger future tracts of old growth forest. The sheer number of the logging units (and roads) in close proximity to the old growth tracts is evidence that the FS has not carefully or judiciously planned for the expansion of existing old growth tracts with the passage of time. Nor is there any evidence that the FS has considered how its activities will impact wildlife, plants, and aquatic species that rely on these areas. How many large and medium sized old growth tracts are found in this project area and ranger district

The FS should disclose whether there is any old growth near or adjacent to proposed cutting units, roads, and activities, or whether and tracts of old growth less than the size of an existing stand exist in the project area. Such areas must be disclosed and protected.

- The FS should have examined the spatial arrangement of OG and surrounding mid- late-successional habitat, to determine whether any such areas should be protected or buffered from disturbance. The FS should have considered the distribution of old growth, given the obvious shortage of old growth in this area (and throughout the Appalachians) FS should have also considered designating some of the best areas as small, medium or large old growth tracts.

- In FR-62, the FS includes the following “considerations for old-growth forests during project-level planning.” “When developing overall management strategies for an area, care should be taken not to isolate the medium- and small-sized old growth patches from the mid- and late-successional forests.” (pp. 26-7)

The old growth map in the project file is certainly well done, but there is nothing in the map that breaks existing old growth into specific forest types or old growth forest types. The FS does not analyze whether there are there any forest types, old growth forest types, or sub-types within the broad old growth forest types that are not well represented. The FS does not disclose whether there any tracts that are not yet old growth, but are approaching (or will approach within a few decades) old growth status within underrepresented forest types and sub-types. The FS should

have demonstrated that it has avoided forest types, sub-types, and old growth forest types that are not well represented or well distributed. Linkages between riparian areas and surrounding upland forests should have been considered. The FS should have considered the degree to which wildlife travel between these areas and the degree to which forested corridors between these areas provide shelter or other needs for wildlife.

National Forests need to "provide for ... representation of all old growth forest community types" (RG-14) and "consider underrepresented old growth forest community types" (RG-17) in planning.

If any potential old growth may be affected by this project, the FS should have explained how it will "maintain characteristics consistent with old growth. ("Recent vegetative management activities which maintain characteristics consistent with old growth probably would not disqualify an area as existing old growth" (Regional Old Growth Guidance, p. 25). The FS should also analyze whether any underrepresented old growth forest types existing the project area, including those in mature and old growth condition. The FS should protect any such underrepresented mature or old growth forest in this project area.

Prescribed Burning

The Forest Service proposes 3581 acres of prescribed burning with bulldozed fireline construction. We believe that both natural fire and prescribed fire are an important part of healthy ecosystems and should play a role in the management of portions of the George Washington and Jefferson National Forests. However, the FS must take precautions to ensure that prescribed fire is used in appropriate ecosystems, at appropriate times of the year, at appropriate intensities, and at appropriate frequencies. The FS should fully take into consideration potential soil and watershed impacts, native plant impacts, wildlife impacts (including impacts to species with limited motility, smaller species, and species found in the ground or close to the ground), old growth impacts, invasive species impacts, and the cumulative impacts of fire in combination with other activities and events. The FS should provide detailed information on the types of biological communities, the natural fire regimes of these communities, and other pertinent information in order to fully evaluate whether burning is natural and appropriate in all of the areas proposed for burning or whether burning may be more natural or more appropriate in other areas not considered in this proposal.

Lynch and Clark studied charcoal and pollen depositions at ten sites throughout Virginia, North Carolina, Maryland, and Tennessee, and found no consistent pattern of historical fire nor any strong connection between historical incidence of fire and the establishment of oak-dominated forests. Some sites showed greater incidence of fire consistent with the possibility of local Native American settlements, whereas other sites in equally oak-dominated forests showed little incidence of fire prior to European settlement. "Many periods of low fire importance occur at all sites with vegetation dominated by oak species..." Id at 7. The paper directly states that fire actually "may have delayed the establishment of the oak dominated deciduous forest" at one site where the oak forest did not arise until 1,000 years later than at a comparable site, where fire was "unimportant" during this transition. Id.

Lynch and Clark found that "fire may not be always necessary for maintaining and regenerating oak forests." Id. The paper cited forestry research from the agency's own Coweeta research station showing that oak can compete successfully in small gaps, and then stated:

Our research is consistent with this, suggesting that gaps resulting from ice damage, drought, wind throws, and insect damage might contribute to the maintenance of oak forests in the southern Appalachians. Id.

Thus, this research provided strong support for the prevalence of gap-phase dynamics throughout the southern Appalachian forests, including oak-dominated forests, and cast substantial doubt on both the historical and ecological importance of fire in either creating or maintaining these forests, just as found in the agency's own historical records.

"Fire and vegetation histories in the southern Appalachian Mountains: The historical importance of fire before and after European/American settlement," by Lynch and Clark, a report

submitted directly to the George Washington & Jefferson National Forest in April 2002 (already in the GWJNF's possession, submitted by Wildlaw/SAFC/VAFW/SELC regarding JNF Plan Revision comments, incorporated by reference).

Similarly, another paper that found distinct differences in historical fire patterns at different sites and a relative lack of fire prior to European settlement at one of two sites studied was "The History of Fire and Vegetation in the Appalachian Mountain Region of Virginia: A Piece of the Puzzle We Call Ecosystem Management," by Patterson and Stevens (1995) (already in the GWJNF's possession, submitted by Wildlaw/SAFC/VAFW/SELC regarding JNF Plan Revision comments, incorporated by reference).

It should be noted that portions of the burn areas are in low-lying areas near streams. The Forest Service should analyze whether these area appropriate areas for prescribed burning, whether burning at the intensity and frequency proposed is natural in these areas, and whether resources in these areas (including hemlocks, bottomland hardwoods, TSELR species, aquatic species, and other resources associated with bottomlands or low-lying areas near streams) could be adversely affected. If so, the boundaries of the burn units should be changed to avoid these areas.

The prescribed burning (Block 3) appears to be proposed within or very close to the Rare Community (9F) area and VDNH conservation sites here. Burning should not be considered in or around this area if analyses indicate that it will directly or indirectly adversely impact any of the resources in the 9F Area. Sensitivity of rare plants and animals in the 9F area and VDNH conservation sites to various intensities of burning should have been analyzed.

The EA discusses the impacts of "low intensity" burns, but, actually, a "high" intensity burn is proposed (EA 8). Impacts of high intensity burns like those proposed are not analyzed.

The EA does not disclose how the 22.33 ac old growth tract on the west end and how the Peters Mountain Addition Roadless Area would be affected by unit 22 and the bulldozed fireline proposed in this general area.

Scenic and Aesthetic Resources

In our comments, we stated: -" There are a number of recreational, visual, and cultural/social resources in the vicinity of the PA that could potentially be affected by the project. Consider the visual/aesthetic sensitivity of wilderness and roadless areas, campgrounds, primitive and dispersed camps, fishing streams, access roads to trails and trailheads, lookout sites and towers, level 1 and 2 viewsheds, roads used by recreationists, trail corridors, sites visible along the length of all trails/ trail corridors, historical and tourist sites, seasonal differences in visual quality, viewpoints, recreation facilities, airplane-visible areas and airplane-routes, prominent ridges and features, important biological/birding/wildflower/nature-walk areas, areas used by groups/special events (such as backpacking routes for summer camps, routes of wildflower pilgrimages, etc.), shelters, (DNH) special biological areas, , proposed and eligible W&S rivers, rivers, streams, proposed recreation sites, proposed trails, potential trails and connectors, scenic byways and connectors. Cumulative impacts should be considered.

"- There may be impacts to recreational opportunities and to recreational users in these areas as well. Consider the impacts to the recreational experience along or associated with all of the areas and types of areas listed in the above paragraph. There may be impacts to ecological resources as well. Consider impacts to special ecological resources associated with these areas. Consider indirect impacts. Consider impacts of logging in the proximity of the above sites and campsites, etc. accessed from the above sites. Consider impacts to the entire primitive/dispersed recreational experience associated with the above. Consider impacts to users of trails. What values should be protected along trails and in viewsheds? What are existing conditions? Will the project result in a change in conditions or desired conditions? What values do trail users expect

and desire? What kind of views? What values do hikers expect and desire? What kind of views? “

The FS should fully analyze the impact of the project on viewsheds from the Allegheny Trail, the Appalachian Trail, Peters Mountain Wilderness, Mountain Lake Wilderness, Potts Rail Trail, the Whistlestop Scenic Byway, Hanging Rock Raptor Observatory, the Glen Alton area, the Dixon Branch Trail, trout fishing streams, and the new proposed trail system in and around Glen Alton and connecting points for the trail system elsewhere. Noise impacts to these areas should be considered as well.

Early Successional Habitat Understated

According to the FS, there are only 38 acres of early successional habitat (ESH) in the project area (EA 12). This includes only artificially created openings and vastly understates the amount of habitat created by tree fall gaps, multitree fall gaps, gypsy moths, ice, lightning, insect outbreaks, fires, Derecho damage, other storm damage, hemlock adelgid damage, beaver, decommissioned roads, old jeep trails and skid roads, open, closed and temporary roads. Studies in the southern Appalachians show that small intensity disturbance creates about 1/2% a year in an unmanaged forest. (Lorimer, Age Structure and Disturbance History of a Southern Appalachian Virgin Forest). Moreover, as I observed when I visited the site in April 2013, there is already a large amount of relatively young forest in the area, particularly around the existing roads. As the SN states, “there are 753 acres 11-40 years old (SN 3). The need for logging mature forests deep within the project area to create early successional habitat is not well established. If early successional habitat is needed in addition to that already created by insects, disease, and natural processes, then an alternative should be examined that converts some of the 11-40 year old stands near existing roads to early successional habitat.

Herbicide Spraying

Nearly 500 acres of herbicide spraying (498 acres) is proposed in this project area, and this may only be the tip of the iceberg, because the additional roadbuilding, bulldozed fireline, and logging proposed as part of this project. These activities are sure to create ground disturbance, additional logging traffic and avenues for potential new off-road vehicle traffic that is likely lead for more invasive species infestations (see below).

The EA does not identify what stands, portions of stands, or areas near stands now have invasives, what invasives they have, the propensity of these particular invasives to spread to stands after manipulation. The ranger district appears to have no clear strategy for addressing invasives.

In addition, hay-scented fern, native species, will be treated with herbicide (EA 8-9). The FS should demonstrate a need for spraying and killing hay-scented fern. "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)

Buffers for TESLR species, water resources, and other resources should be carefully enforced (JNF Plan 2-29)

As part of this, the FS proposes herbicide treatment for hay-scented fern, a native species. The FS should demonstrate the need for spraying potentially harmful chemicals on a native plant, given the adverse impacts to other resources. The FS should also analyze the degree to which the proposed logging, roadbuilding, and burning would create additional habitat for the hay-scented fern and lead to additional herbicide spraying and the adverse impacts related to herbicide spraying.

Invasive Species

The FS should consider the impacts of Invasive Plants or properly mitigate impacts from the

activities and expected invasive species introduction and spread associated with the project, including the introduction and/or spread of invasive species resulting from new activities.

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.

The FS provides no basis for the statement that the risk of invasive species introduction in logged and roaded areas is "low." For example, 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 have considered 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 should have 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.

- This is a vegetation project. The FS should address hemlock wooly adelgid, HWA treatments, and hemlock restoration in this project. the EA does not disclose when future activities will take place in the project area, so there can be no assurance when, if ever, these issues will be examined.

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. 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 need and this needs to be incorporated into the Plan Revision.

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.

- A large amount of invasives/non-native treatment is proposed as part of this project (EA 8-9). This treatment is proposed mostly in past cutting units and old roads, We would expect you to analyze the amount of such treatment required as a result of the logging and roadbuilding and burning in this project as well.

Black Bear Habitat Area

The large-scale logging and roadbuilding in this proposal would take place in a JNF black bear habitat area. The FS should analyze the impact of this project on bears, bear habitats, and on those who might utilize the additional roads and infrastructure for illegal access.

We are concerned about the amount of intensive logging planned in this area.

How does this project:

Provide optimal habitat for black bears and other wide-ranging area sensitive species?

Ensure adequate den sites?

Provide secluded and diverse habitat?

Meet road densities?

Affect any core areas that provide SPM or SPNM recreation opportunities?

Affect backcountry recreation or recreation associated with nearby wilderness areas?

Affect ovenbirds, northern saw-whet owls, cerulean warblers, wood thrushes, pileated woodpeckers, hooded warblers, southern pigmy shrews, and eastern wood peewees?

Affect forests in prime mast-producing years?

Affect late-successional and old growth forests?

Affect portions of this MRxA managed through natural processes?

Affect solitude and feelings of challenge and risk experienced by forest users here?

Affect forests 40-100 yrs old?

Manage forests consistent with rotation requirements?

Meet SIO and Scenic Class requirements?

Affect OHV use and mountain bike use and wildlife affected by such use?

Manage pests consistent with Integrated Pest Management methodologies?

In my comments on the SR 622 Bear timber sale in the Mt. Rogers NRA in 2010, I asked whether “a disproportionate amount of logging and roadbuilding taking place in these areas compared to other MRxAs across the JNF.” Since 2007, the major logging proposals I am aware of are (from past SOPAs and other sources):

Fry Hill (Mt R) 7E2

Interior (Eastern Divide) 8C

Big Mtn (Eastern Divide) 8A1

Johns Cr Mtn (Eastern Divide) 8C

Back Valley (Clinch) 8A1

Olean (Eastern Divide) 8C

SR 622 Bear (Mt R) 8C/6C/4A

Goldbond (Eastern Divide) 8C
Laurel Cr (Eastern Divide) 8C
Wells Branch (Clinch)
Mine Mountain (Eastern Divide)
White Rocks (Eastern Divide)
Wallen Ridge (Clinch)
Clinch Hardwood Restoration (Clinch)
Flatwoods (Clinch)
Rich Mountain (Eastern Divide)
Fork Mountain (Eastern Divide) 8C

I have included some timber projects not in 8C areas that are smaller timber projects in this list. Even so, about 41% of the timber sales above have been in MRxA 8C areas. Given the fact that this is rudimentary list, I hope the FS will examine how many timber sales of all the timber sales planned in the JNF during this period have been in 8C areas, how many acres of logging has taken place in 8C areas and in the JNF as a whole during this period, and how many miles of permanent, temporary, and reconstructed roads have been built in 8C areas and in the JNF as a whole during this period.

Looking at what has transpired during this period, it appears that a disproportionate amount of the logging and roadbuilding is still taking place in 8C areas today. According to the JNF Plan, "this management area is allocated to approximately 57,300 acres (8%) across the Jefferson National Forest." (3-120). Yet according to the management prescription, the emphasis and desired condition for these areas are: "to provide a secluded and diverse habitat," "the landscape character of this area retains a natural, forested appearance," "forest visitors....may experience solitude in portions of these prescription areas and feelings of challenge and risk are expected." (JNF Plan 3-120 to 122). Is a disproportionate amount of logging and roadbuilding taking place in these areas compared to other MRxAs across the JNF and what is the motivation for this? How is it possible to provide for these attributes if this management prescription is receiving a disproportionate amount of the logging across the JNF? Why are management prescription areas closer to roads not receiving a higher proportion of logging than these areas? What are the cumulative impacts on black bears and their habitat? What monitoring has taken place? Why are so many roadbuilding and logging projects being selected in this MRxA? How does this affect semiprimitive areas, backcountry areas, wildlife corridors between roadless or Virginia Mtn Treasure areas or other such habitat, remote areas utilized by black bears forestwide? If road densities for the MRxA 8C area in Olean are above Forest Plan objective levels, why not decrease the amount of roadbuilding in this area to compensate (SN 14)? Have vehicle collisions with black bears, nuisance complaints, poaching incidents, or other black bear-human incidents increased or decreased in these other areas where roadbuilding and logging has taken place? An analysis of the cumulative effects of this logging and roadbuilding regime across the JNF should take place as part of the analysis for this project, in order to better inform the public and decisionmakers before this project proceeds.

This is the largest black bear management area in the JNF (EA 12). This is also the area with the "highest portion of radio collared sows in the southern portion of the Cooperative Allegheny Bear Study" (EA 26). This project would involve considers a large amount of logging, roadbuilding, herbicide spraying, and burning in the area. The FS has not examined the degree to which all the proposed activities, done in a short period of time, could adversely affect black bear populations. Monitoring activities do not even include studying impacts to black bear populations (EA 26-27). There are not feedback provisions in black bear monitoring to ensure that if there are impacts to black bears at certain stages, the project can be altered to protect black bears. The cumulative impacts of pipeline construction and this project on black bear populations are not analyzed (EA Wildlife section).

Black bear is an MIS here and throughout the JNF (JNF Plan MIS List) and an important featured species in this bear management area and adjacent areas. Issues of negative impacts to the MIS black bear due to increased disturbance, stress, vulnerability, and deaths which the

project could foreseeably facilitate should receive a hard look. See also 36 CFR 219.19(a)(4). "It is evident that hunting is a stronger influence on the dynamics of the local population than is habitat capability... Potential biotic increases in habitat quality resulting from timber harvest may easily be outweighed by the potential effects on population dynamics...We believe that habitat capability models, no matter how complex, cannot predict the status of bear populations by themselves. Population dynamics must be explicitly considered in evaluating the long-term effects of habitat manipulation on bears." - Brody and Stone "Timber Harvest And Black Bear Population Dynamics" (previously submitted with appeal of the West Dry Branch TS on this GW National Forest - the agency is already in receipt of this information - we incorporate it by reference into the AR - including the Powell declaration - "To date I have not been able to document that logging...ha[s] any positive effects on black bears or black bear habitat..."). 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) The FS should analyze the negative impacts to populations that the proposal would foreseeably result in (e.g., increased legal and illegal disturbance, facilitated poaching and hunting). See also 40 CFR 1507.2(d) and 1508.27 and FSH 1909.15, ch.05.

- Foreseeable negative impacts from the proposed action to most MIS must be thoroughly analyzed in the EA or EIS. For example, agency planners must use the latest scientific information when assessing impacts to MIS black bears and their habitat. A report published in 1991 by Steven Reagan, "Habitat use by female black bears in a southern Appalachian bear sanctuary", analyzes how logging adversely affects black bears. The agency is already in receipt of this information; it was delivered to the JNF Supervisor's office (currently the GW&JNFs SO) several years ago by the Southern Appalachian Biodiversity Project. We incorporate it by reference into the administrative record. One significant finding of this research was that black bears were not taking advantage of food and habitat in even-age logging sites as was anticipated. He also found that such logging results in a dramatic increase in female black bears' home range. The same potential result can reasonably be expected to occur here from this proposed even-age logging. The outcome would be increased competition for a limited food and habitat supply. Having to roam over a greater area would also make them potentially more vulnerable to legal, illegal, and accidental killing, injury, or stress by humans. These foreseeable direct, indirect, and cumulative impacts must be adequately considered and analyzed by the planners. The best and most accurate scientific information must be used - per NEPA. The potential clearly exists for significant impacts to black bear viability here. There must be hard inventory and population data for this MIS to provide an accurate picture.

-Bears need security. Black bears are classified as "wide ranging area sensitive species" (SAA Terr Rpt 154&158). Areas of grapevines and large denning trees are key habitat components. Large hollow den trees are the preferred den sites of black bears (see eg JNF Plan Rev DEIS 3-177). Grapes are a soft-mast food source of black bears (see JNF Plan Rev DEIS 3-177). Hollow trees, existing stumps, snags, shallow holes, and rock outcrops are potential bear den sites. These must be protected from logging. There must be analysis of the loss of interior and remote habitat that will occur and has already occurred here. The road density, when both legally and illegally used motor routes are considered, may be in excess of that found to be desirable for bears. (there is little info in the SN) And the affects of miles of nearby access roads. must be properly analyzed. Use of these rts. (and associated noise, disturbance, and partying) create constant disturbance which may impact black bears. And "closed" roads are known to be violated by vehicle use here and elsewhere. Temporary and closed roads facilitate more access and disturbance and mortality.). Road densities must meet Plan objectives for these important habitat components in the PA. And the agency's own "Wildlife Population Data Working Paper" (Goetz and McEilwane - incorporated by reference) shows that the impacts to bears becomes negative when the proportion of suitable acreage in regen areas exceeds 10%.). If recent even-aged cuts, grassy areas around roads existing and proposed roads, existing and proposed landings, and natural within stand openings are included in these figures, The criteria data and amount of suitable land here should be disclosed to the public

- The fabricated "cover" areas would actually provide the bears no real "escape" at all. Plus the cut sites would be easily accessible and identifiable. These sites could foreseeably act as "sinks" on the bear population. Significant affects on their viability here and distribution in the Forest may occur. This relevant factor should be fully and fairly considered by the planners (see "Black Bear" at EA-Wildlife), a violation of NEPA an NFMA (36 CFR 219.19).
- Above ground den trees are important to black bears in the Appalachians. Data from a study in the Allegheny mountains of Virginia, for example, "show 93 percent of denned bears denned above ground in standing hollow trees." (GWNF Hoover Creek timber sale EA-57; incorporated by reference) Trees of sufficient size for bears to den are old large trees. Yet, in spite of good intentions, the agency's action would remove these key elements, habitat significant to viability. Even if a few den trees are protected these trees are vulnerable to accidental or intentional damage by logging operators and may topple over in windstorms if left standing in a much more exposed location in the middle of a timber cut. The analysis must fully and fairly consider this factor. This is omission particularly glaring since there is no information in the project record as to amounts of trees in the area suitable for bears to den in, and given that the agency claims old growth is not present which would mean that such trees can be expected to be scarce.
- A clear goal for black bear conservation is "promoting remote forest conditions when managing forests (e.g., minimizing forest fragmentation, limiting road development)." Rudis, V.A., and J.B. Tansey. 1995. Regional Assessment of Remote Forests and Black Bear Habitat from Forest Resource Surveys. J. Wildl. Management 59(1): 170-180 (written by FS researcher; incorporated by reference).
- In these NFs, U.S. Forest Service EAs (e.g., JNF Glenwood RD Bannister Branch project) acknowledge that timber sale operations in an area results in increased hunting pressure there. Logging operations can be seen to make an area more desirable for Bear hunters (e.g., providing easier access for humans, attracting Bears to so-called "escape" habitat that does not actually provide an escape), but this does not equate to being better for Bears.
- The FS recognizes that new or reconstructed roads serve to increase access into a project area (see GWNF West Dry Branch EA-42). The FS is also well aware that roadways can foreseeably be used for legal and illegal access. See also Jefferson NF Wilson Mtn. TS EA-69 - "roads and forwarder trail could increase hunting/poaching pressure". Poaching and other wildlife disturbing activities must be fully and fairly considered.
- These foreseeable direct, indirect, and cumulative impacts must be adequately considered and analyzed by the planners.
- The FS should provide hard inventory and population data for this MIS.

Cerulean Warblers and other NTMBs

In our comments, we stated: "- The cerulean warbler could potentially be found in the PA and vicinity. 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 warbler is found in the PA and vicinity (EA 18). The cerulean warbler, is an area-sensitive bird (Southern Appalachian Assessment, Terrestrial Report); the cerulean warbler is experiencing the greatest annual decline of any of the warbler species and this significant decline is continuing. (Robbins, Fitzpatrick and Hamel, 1989, " A warbler in trouble: Dendroica cerulea") Studies have found cerulean warblers chiefly in "large tracts of mature, semi-open deciduous forest." Robbins, Fitzpatrick and Hamel, 1992. The authors of one study, affirm that there is a "need to protect extensive tracts of mature deciduous forest," especially on publicly owned land. See also excerpts from the Maple Springs Branch BE on the cerulean warbler (Clinch RD, GWJNFs, already in the agency's possession, incorporated by reference).

- The cerulean is recognized by the FS and others as an area-sensitive species (SAA, Terrestrial Rept, Robbins et al., Cove Creek BE, 1995, Clinch RD, J&GWNFs, Maple Springs Branch BE,

Clinch RD, J&GWNFs). The Southern Appalachian Assessment Terrestrial Report lists the cerulean warbler among “area sensitive, mid- to late-successional deciduous forest species” (SAA/TR-70, in the agency’s possession, incorporated by reference). It predicts that “based on past trends in land use, it is expected that, over the next 15 years, suitable acreage [for these area sensitive species] and associated forest interior habitats will continue to decrease due to loss of forestland to other uses such as agricultural pasture and development.”(SAA/TR-72) The cerulean warbler is found in a variety of deciduous forest types, usually in extensive woods. (Brandt, 1947; Peterjohn and Rice, 1991; 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.

The FS assumes that cerulean warblers will be protected merely by retaining stands over 100 years old and by the thinning proposed in the Fork Mtn area. There is no mention of impact of extensive logging in the numerous mature forest stands where shelterwood with reserves and open woodland logging is proposed elsewhere 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 (“38 acres...early successional....753 acres ... in sapling pole condition” 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 JNF 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 2004II]. See also C. Oliarnyk & R. Robertson, —Breeding Behavior and Reproductive Success of Cerulean Warblers in Southeastern Ontario, *Wilson Bull* 108(4): 673 (1996); R. Askins, “Relationship Between the Regional Abundance of Forest and the Composition of Forest Bird Communities,”

Biological Conservation 39: 144 Table 5 (1987); R. Connor and J. Dickson, "Relationships Between Bird Communities and Forest Age, Structure, Species Composition and Fragmentation in the West Gulf Coastal Plain," *Texas J. Sci. suppl.* 49(3): 131 (1997) ("Cerulean Warblers, ...are perhaps the most area-sensitive bird in this region and are likely the most vulnerable species to the forest fragmentation in this region"); Cathy A. Weakland & Petra Bohall Wood, —Cerulean Warbler (*Dendroica Cerulea*) Microhabitat and Landscape-Level Habitat Characteristics in Southern West Virginia, *Auk* 122(2): 497, 498, 506 (2005).

Cerulean Warblers require a minimum forested area of 700 hectares to sustain a viable population. (MTM EIS at III.F-15.) In a Tennessee study, Ceruleans were found only in forest tracts greater than 800 hectares (2,000 acres). (Chandler S. Robbins et al., *A Warbler in Trouble: Dendroica cerulean*, at 555, Manomet Symposium (1989)) Another study found that the probability of encountering a Cerulean reached its maximum when the area consisted of 3,000 or more unfragmented hectares (7,500 acres) of forest. (Robbins et al. 1992) Within the context of a fragmented landscape of private land, the unfragmented forest habitat 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.)

The proposed logging in the action alternatives averages tens of acres per cutting unit. We would like to know how the cerulean warbler benefits from even-aged logging averaging tens of acres in size. See above regarding cerulean warblers. The shelterwood logging proposed in the project area leaves a residual basal area (15-25, EA 18), well below that recommended in cerulean warbler study cited in the EA (EA 51). Woodland silvicultural treatments are also on the low end. Effects on the cerulean warbler were "variable due to differences in preharvest densities, topography, forest structure and composition" (CEWA study p. 13) Were these taken into consideration?

Cerulean warblers prefer canopy gaps 400-1000 sq ft, 87-218 times smaller than the 2 acres considered in the EA (EA 43).

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

The FS suggests that this project will benefit the cerulean warbler. However the FS needs to weigh all aspects of the project, not just the thinning, but also the hundreds of acres even-aged logging. 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, any proposal to apply silvicultural treatment for the purported benefit of the Cerulean Warbler should be abandoned until such time as there is a completed scientific study addressing the substantial questions about the potential adverse impacts of such treatment. Instead, prime Cerulean habitat should generally be protected from fragmentation, especially large unfragmented forest blocks of 7,500 acres or more that contain existing old growth forest.

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

Other species are listed as area sensitive species in the SAA. The FS should consider the impacts to these area-sensitive species.

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?

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

- (1) support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions;...
- (4) design migratory bird habitat and population conservation principles, measures, and practices, into agency plans and planning processes (natural resource, land management, and environmental quality planning, including, but not limited to, forest and rangeland planning, coastal management planning, watershed planning, etc.) as practicable, and coordinate with other agencies and nonfederal partners in planning efforts;...
- (6) ensure that environmental analyses of Federal actions required by the NEPA or other established environmental review processes evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern;...
- (9) identify where unintentional take reasonably attributable to agency actions is having, or is likely to have, a measurable negative effect on migratory bird populations, focusing first on species of concern, priority habitats, and key risk factors. With respect to those actions so identified, the agency shall develop and use principles, standards, and practices that will lessen the amount of unintentional take, developing any such conservation efforts in cooperation with the Service. These principles, standards, and practices shall be regularly evaluated and revised to ensure that they are effective in lessening the detrimental effect of agency actions on migratory

bird populations. The agency also shall inventory and monitor bird habitat and populations within the agency's capabilities and authorities to the extent feasible to facilitate decisions about the need for, and effectiveness of, conservation efforts;"...

Sec. 2 i) "Species of concern" refers to those species listed in the periodic report "Migratory Nongame Birds of Management Concern in the United States," priority migratory bird species as documented by established plans (such as Bird Conservation Regions in the North American Bird Conservation Initiative or Partners in Flight physiographic areas), and those species listed in 50 C.F.R. 17.11." Several birds listed in Bird Species of Conservation Concern 2002 are found in this area (see project file notes and BSCC p. 51). Impacts to these NTMBs should be analyzed.

Not Consistent with Plan/Purpose and Need

Management in this project area is not consistent with the JNF Plan. Late successional and old growth is only 16% (SN 3). "Maintain a minimum of twenty-five percent of the area in late-successional to old growth conditions" (8C-OBJ2). None of the alternatives would increase the amount of 41-100 year old habitat to 60% and the proposed alternative is at the lowest level below 60% of all the alternatives (SN 21).). "Maintain a minimum of sixty-five percent of the area between 40-100 years of age" (8C-OBJ1). The late-successional/old growth figure includes the entire project area. Because of this shortage of late successional/old growth habitat, the FS should consider reducing the level of logging proposed. The FS should also consider the spatial arrangements of existing old growth and create linkages between the old growth patches (and between old growth and riparian areas and other important areas of habitat, especially where old growth is underrepresented).

- Alternative 1 is by far the worst of the alternatives, in terms of meeting the 60% 40-100 yr DFC. Alternative 2 is the best. Alternative 3 is the best of the action alternatives.

- The FS is well short of the 25% DFC for late successional and old growth habitat (EA 11).

- If ESH levels are too low, the FS should have considered utilizing existing roadbeds, treefall gaps, anticipated gypsy moth openings, existing utility corridors, as ESH. The FS should have considered maintaining or converting existing 11-39 year old stands to ESH.

Roads Analysis/Soils/Roads/Cutting Units

As is appropriate in a project like this that may involve the adverse impacts of road work and road use, the FS must examine and ground truth the entire road system in this area (including user created roads) and determine the impacts of the road system based on environmental concerns, fiscal concerns and other concerns

There are many aspects of the project that make appear to be unnecessary. For example, why are roads proposed for closure on one end of the project and two additional permanent roads are built across a long distance, joining two of the roads that are to be closed (Rt 10481 and 10521)? In total, 19.85 miles of permanent roads, temporary roads, bulldozed firelines, skid roads, and skid trails are proposed. And why is another road proposed to be closed and another temporary road is built across a long distance, nearly joining that road (Rt 10522). In carrying out this project, the FS will spend large amounts of public money to build expensive roads at the same time other roads (that are closer to the proposed cutting units) are being decommissioned/.

A goal of the JNF is to "decommission 30 miles of road per decade (Classified and unclassified)" (JNF Plan 2-57), or 3 miles per year. "Priorities for decommissioning are roads causing resource damage and roads in areas where the desired condition is to reduce open road density." If there is a limited amount of funding for road decommissioning, then it can be argued that this project, as proposed, takes away from more worthy projects. This project would use scarce funds to decommission roads so that nearly the same mileage of roads can be built in close proximity to

the decommissioned roads. It can be argued that the new roads to be built may “cause resource damage” (OBJ 33.02) and that the project does not have a goal of “[reducing] open road density” (OBJ 33.02). According to the DEIS, “There is an aggressive effort currently on-going with regards to management of the Forest road system. This effort is aimed at opportunities for increased resource protection, eliminating the backlog of deferred maintenance...” etc (DEIS 3-430). The new road construction coupled with the decommissioning does nothing to aggressively increase resource protection or eliminate the backlog of deferred maintenance, since nearly as many miles of new road would be built as would be decommissioned, and the new roads would be in close proximity to the decommissioned roads. As persons closely following and involved with the development of the JNF Plan, our understanding was that decommissioning of roads would be used to actually reduce the excessive miles across the Forest and to reduce the road maintenance backlog. This project circumvents that goal in this area of the Forest.

The Transportation Policy requires the Forest Service to consider impacts of existing roads and any proposed roads on roadless/unroaded values in transportation analysis for this area. One of the issues singled out in “Roads Analysis” Report FS-643 that should be addressed in Travel Analysis are impacts to unroaded values. Step 4 of the travel analysis process states:

Step 4 — Assessing benefits, problems, and risks. After identifying the important issues and associated analytical questions, the interdisciplinary team will systematically examine the major uses and effects of the road system including the environmental, social, and economic effects of the existing road system, and the values and sensitivities associated with unroaded areas. The output from this step is a synthesis of the benefits, problems, and risks of the current road system and the risks and benefits of building roads into unroaded areas.(emphasis added) Report FS-643 p. v.

The RAR admits that most of the local roads “are built for high clearance vehicles.” (RAR 5).

- Forest Service policy requires the completion of a forest-wide Travel Analysis Process and Travel Analysis Report before the end of FY 2015 (September 2015). If the FS does not meet this deadline, it cannot expend any funding from the Capital Improvement and Maintenance Budget Line Item. We note that the GWNF has already completed a TAP, but the JNF has not. We would like to know how and when the JNF is going to complete a forest-wide TAP that identifies the minimum road system, i.e. an economically and environmentally sustainable system, as Forest Service policy. It make sense that EAs being completed now for large analysis areas should include travel analysis that is based on the forest-wide TAP or that can inform the forest-wide TAP. Maintenance and environmental impacts of road systems within large analysis areas, like those in the project area, should be considered. Also, if a TAP is completed for the JNF at a later time, it could potentially impact management of roads in this project. It could recommend road decommissioning in this area. The FS should avoid making further scattershot investments in roads that might turn out, in a forest-wide analysis, to be roads with relatively low needs and/or relatively high impacts and, therefore, candidates for downgrading, conversion to other uses (such as trails), or decommissioning.

Has the scheduled Forestwide TAP been completed for the Jefferson NF? When is the JNF is going to complete a forest-wide TAP that identifies the minimum road system, i.e. an economically and environmentally sustainable system, as Forest Service policy requires before the end of FY2015. The GWJNFs, like most Forests, has only a fraction of the money needed to maintain the existing road system on the Forest. For example, the GWNF TAP recommends decreasing road mileage on the GWNF by 18% for to reach the Minimum Road System (GWNF TAP p. 6). Only 39% of maintenance needs are funded (GWNF TAP p. 8). What is the minimum road system on the JNF? Does the JNF have the funds to maintain the roads in this project

area? Does the JNF have the funds to build the roads in this project area? What needed road, trail, or other maintenance projects will have to be deferred, canceled, or scaled back in order to build new roads in this project area? Has the JNF completed a Forestwide TAP that recommends additional investment in the road system in this area, given the inability to fund maintenance of existing roads? These questions are not answered by the planners. The FS should avoid making further scattershot investments in roads that might turn out, in a forest-wide analysis, to be roads with relatively low needs and/or relatively high impacts and, therefore, candidates for downgrading, conversion to other uses (such as trails), or decommissioning. This is particularly true in a mountain treasure area and bear management area that may qualify as a roadless area.

The Roads Analysis Report (Feb 2, '15) (RAR) omits key pieces of information and contains discrepancies. The RAR makes no reference to the minimum road system, informed by the Forestwide TAP, for this project area.

Significant issues are omitted. Potential impacts to wildlife are not considered. Impacts to black bears are not considered although the RAR area is almost entirely within a black bear management area. Impacts to old growth are not considered although, as the EA and project file disclose, there are some tracts of old growth (designated and newly inventoried) within the RAR area, adjacent to existing roads, and in the path of the proposed new road system. Cultural attachment is not considered although this was considered a significant issue in the 765 kV powerline analysis, which covered the same area of the Forest. Special biological areas and VDNH conservation sites are not considered, although they are immediately adjacent to and downstream from the existing and proposed road system. Economics and environmental feasibility of constructing this road system are not considered as issues (see above in this section, and above in our comments on this issue). Potential for illegal OHV use and the effectiveness of mitigation measures to control such future use are not considered an issue although road miles in this area have experienced "considerable" ATV use (RAR p. 3). These are but a few of the omitted issues. Likewise, many of these issues are not thoroughly explored in the Analysis Questions section (Appx C) of the RAR.

When discussing areas of "special sensitivity" (RAR 11), the RAR only considers impacts with respect to proposed new construction, not existing roads, which are directly adjoining these areas.

The FS is inconsistent in the RAR. The FS's response to TW(3) is that "all of the existing roads are closed year round except FSR 945." However, the FS states that despite this some road miles in this area have experienced "considerable" ATV use (RAR p. 3). So the issue is not clearly addressed. Moreover, the FS says that "no increase in illegal activities" would be expected on new roads, simply because these roads would also be closed, a method that has proven to be ineffective in the past.

The RAR suggests that road construction would increase access for stream monitoring (RAR 20). But fails to evaluate the increased need for more stream monitoring to assess negative impacts of road construction. Wildlife research and monitoring activities, monitoring of non-native plant encroachments are not discussed at all.

Circular logic is used in the RAR in order to preclude fair examination of no-road construction, low-mileage road construction, or increased road decommissioning alternatives within the RAR. The RAR states "Assessing if an existing road is not needed is beyond the scope of this analysis unless construction of an additional permanent road is to provide alternative access to that provided by an existing road" (RAR 9). As such, the FS is limited in determining what economically and environmentally sustainable road system alternatives may exist. It is possible that the proposal may not conform with the Forestwide TAP or provide for a reasonable means to reduce the road system in the area, in order to bring the minimum road system on the JNF down

to a more manageable level suggested in the Forestwide TAP. It is possible that the proposal may unduly limit the amount of net road decommissioning that may be performed in the area, and may preclude the JNF from decommissioning an appropriate number of road miles in accordance with plan standards and guidelines. Alternative 3 provides an example of how the FS can still move the area towards desired future conditions for the area without constructing any new roads (and decommissioning some roads). Therefore the restriction guiding the RAR is entirely artificial.

Road decommissioning is proposed because road segments are “close” to Potts Creek (EA 8). Yet some segments of Rt 10481, 10420/10521 extension, Rt 10411 and 1042 and others are just as close to these and other streams. Why not consider decommissioning other roads as well? Again, these issues are not explored by the FS.

A hard look has not been taken.

Range of Alternatives

NEPA requires the agency to develop a reasonable range of alternatives for a proposed action. See 42 USC 4332(2)(E); 40 CFR 1502.14 and 1508.9(b). The agency is required to assess to the fullest extent possible the reasonable alternatives that will avoid or minimize adverse effects upon our human environment, resolve conflicts, and not prematurely foreclose options. See 40 CFR 1501.2(c), 1507.1(d); CEQ 46 Fed. Reg. 18026, 18027; and FSH chap. 20, section 23.2. The full range of possible alternatives is to be impartially explored - 1909.15 FSH 14.2 and 12.3c. This proper consideration of alternatives is the “heart” of the NEPA process - *Monroe County Cons. Council, Inc. v. Volpe* (1972). Examination only of alternatives that achieve similar results is not sufficient to meet the intent of NEPA - *CEQ v. United States* (1989) and *Sierra Club v. Espy* (1993). The existence of a single viable but unexamined alternative renders the EA inadequate - *Citizens for a Better Henderson v. Hodel* (1985).

Alternatives suggested by the public are not even disclosed or acknowledged, much less analyzed in the EA. None for the range of alternatives raised by the public. Only two alternatives that recommended more intensive logging were considered and disclosed in the EA (EA 25).

Cumulative impacts

In our comments we stated – “The FS is required to consider cumulative impacts. Consider the cumulative impacts of cutting units in adjacent timber sales and other adjacent areas, including those on private land.

“The pipeline survey for the Mountain Valley Pipeline is proposed through the northeast corner of this project area. The pipeline, however, is not mentioned in the EA. What are the cumulative impacts of the pipeline? What would be the impact of a pipeline with a corridor of the size proposed (plus other infrastructure) on soils, wildlife, trails, old growth, TESLR species, aquatic species, scenery, cultural attachment, illegal OHV use, SBAs, conservation sites, and other resources? How much ESH would be created in the project area as the pipeline is constructed? If a pipeline is proposed or built through this area, will you drop the activities planned and re-analyze? Will you not allow the pipeline if it increases ESH or open roads in this area above the DFC in the JNF Plan? If it adversely affects the late successional and old growth DFC? Will you halt the project and prepare an EIS if cumulative impacts warrant? What if the pipeline route changes again to go more to the center of this project area? Why not delay this project until you determine what will happen regarding MVP Construction?”

The cumulative effects analysis is inadequate. Impacts to soils, wildlife, trails, old growth, ESH, late successional forests, TESLR species, aquatic species, scenery, cultural attachment, illegal OHV use, SBAs, conservation sites, and other resources should be disclosed. *“The EIS should include analysis of temporary and permanent disturbances, and direct and indirect project effects, caused by the construction, operation, and maintenance of the pipeline corridor, access roads, staging areas, disposal areas, and any associated facilities”* (Forest Supervisor Speaks, FERC submittal 20150616-5112, dated 6-16-15, page 1).

Since the FS is a cooperating agency, the impacts are not speculative. The FS should disclose whether it would permit the pipeline to cross this part of the Jefferson NF and under what grounds it would do so.

The FS should include the FERC EIS documentation on MVP’s Cumulative Effects on the Fork Mountain Project Area before the District issues a Revised EA and a Final DN on a Preferred Alternative.

Significant Issues

Significant issues for this EA are nearly as limited as those for the Roads Analysis Report. Potential impacts to wildlife are not considered. Impacts to black bears are not considered although the RAR area is almost entirely within a black bear management area. Impacts to old growth are not considered although, as the EA and project file disclose, there are some tracts of old growth (designated and newly inventoried) within the RAR area, adjacent to existing roads, and in the path of the proposed new road system. Cultural attachment is not considered although this was considered a significant issue in the 765 kV powerline analysis, which covered the same area of the Forest. Special biological areas and VDNH conservation sites are not considered, although they are immediately adjacent to and downstream from the existing and proposed road system. Potential for illegal OHV use and the effectiveness of mitigation measures to control such future use are not considered an issue although road miles in this area have experienced “considerable” ATV use (RAR p, 3, EA 8, see also R. Ettelson comments). Impacts to TESLR species are not listed as issues, even though these are watersheds for TESLR on both the Va. and West Va. side. These are but a few of the omitted significant issues.

Core areas

The JNF Plan says of MRxA 8C, areas, “Often, although not always, the core of these prescription areas provide semi-primitive Recreation opportunities” “This prescription area is frequently connected to a backcountry or wilderness recreation area.” (JNF Plan 3-120). This proposal turns that concept on its head. If there is a core to this area, semiprimitive or not, it is located roughly in the area running from the upper reaches of Whiskey Hollow to the top of Hickory Flats to Johnson Flats towards the county line and up to Peters Mountain. This is the portion of the project area that is farthest from any roads, closest to the center of the area, and closest to a good sized tract of old growth on Fork Mountain. [All roads are shown on the field trip map per Mark Miller, email May 24, ‘13]. The action alternatives propose building 1-3 roads through the middle of this core area. This is particularly pertinent since this is the MRxA 8C area containing the largest block of contiguous land on the JNF (See SN Map 11). By virtue of this fact, there must be a “core” in this larger area. Otherwise it is doubtful that there a “core” in any of the MRxA 8C areas at all. The proposal, as framed, does not adequately protect the values for which this Black Bear habitat area was established. According to the JNF Plan, “these core areas are currently unroaded and remain unroaded.” (JNF Plan 3-120). A road should not be built through the middle of the area.

The FS should have also analyzed the potential for the project to disrupt any connection “to a backcountry or wilderness recreation area,” including the potential to disrupt any potential connections with the Peters Mountain Wilderness/IRA to the west and Mountain Lake Wilderness to the south.

Priority Watersheds

Upper Potts Creek (in this project area) and Stony Creek (also in this project area) are both Priority Watersheds which possess outstanding aquatic biodiversity. (JNF Plan 2-3). Watershed assessments, and “additional monitoring beyond what is required in this Forest Plan and project-specific plans” (JNF Plan 2-3) should take place before any potential activities that may impair these watersheds is contemplated or approved.

What collaborative activities and work with other federal agencies will take place “to restore water quality and maintain and restore aquatic habitat in addition to identification of these priority watersheds”? (JNF Plan 2-4). Collaboration with US Fish and Wildlife Service and state agencies should be an important part of the activities here since these are agencies that oversee conservation efforts for TESLR species such as James spinymussel and candy darter.

Monitoring

The FS should document that adequate monitoring of streams has been conducted and will be conducted. The FS should ensure that water quality, watersheds and aquatic species will not be negatively affected.

All BMPs should be specifically examined by the FS and followed throughout the process. Past logging operations in the project area should be examined to see if they complied with BMPs. If not, these problems should be corrected and a decision should be made as to whether to proceed with planning with this TS. Pre-sale planning and layout BMPs, adequate, repeated monitoring, and all post-sale BMPs should be followed. Specific BMPs regarding road grades, road construction, stream crossings, road placement, cold water stream buffers, rehabilitation of bare areas, and identification and avoidance of riparian areas, seeps and intermittent streams should be carefully followed.

Monitoring is only proposed for macroinvertebrates, road placement, and vegetation EA 26-27. None for the wide range of issues raised by the public.

Salamanders

How has salamander habitat been affected by past projects? How will such habitat be affected here? How were salamanders affected?

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

How would the organic content of soils be affected? How would certain trees and non-tree plant species be affected? How would salamanders be affected by the above changes? How would all other salamander species be affected? Other amphibians and reptiles? Plants, including herbaceous understory plants? Soil organisms? The food chain? Burrowing animals?

The FS has not complied with the NFMA regulations at 36 C.F.R. 219.19(a)(1), which require:

In order to estimate the effects of each alternative on fish and wildlife populations, certain vertebrate and/or invertebrate species present in the area shall be identified and selected as management indicator species and the reasons for their selection will be stated. These species shall be selected

because their population changes are believed to indicate the effects of management activities. In the selection of management indicator species, the following categories shall be represented where appropriate: Endangered and threatened plant and animal species identified on State and Federal lists for the planning area; species with special habitat needs that may be influenced significantly by planned management programs; species commonly hunted, fished, or trapped; non-game species of special interest; and additional plant or animal species selected because their population changes are believed to indicate the effects of management activities on other species of selected major biological communities or on water quality. On the basis of available scientific information, the interdisciplinary team shall estimate the effects of changes in vegetation type, timber age classes, community composition, rotation age, and yearlong suitability of habitat related to mobility of management indicator species.

Two significant studies have been published in the journal *Conservation Biology* documenting impacts to salamander populations from various logging practices and urging the use of salamanders as MIS.

Terrestrial salamanders of the family Plethodontidae have unique attributes that make them excellent indicators of biodiversity and ecosystem integrity in forested habitats. Their longevity, small territory size, fidelity, sensitivity to natural and anthropogenic perturbations, tendency to occur in high densities, and low sampling costs mean that counts of plethodontid salamanders provide numerous advantages over counts of other North American forest organisms for indicating environmental change. Furthermore, they are tightly linked physiologically to microclimatic and successional processes that influence the distribution and abundance of numerous other hydrophilic but difficult-to-study forest-dwelling plants and animals. . . . plethodontid salamanders provide an important statistical advantage over other species for monitoring long-term forest health.

See Hartwell H. Welsh, Jr. and Sam Droege, *A Case for Using Plethodontid Salamanders for Monitoring Biodiversity and Ecosystem Integrity of North American Forests*, *Conservation Biology*, Volume 15, No. 3, p 558-569, 558 (June 2001) (written in 2000 by a Forest Service employee, the Forest Service has no excuse for failing to address this important and valuable information in the Forest Plan revision process); *see also in* Shannon M. Knapp et al., *Initial Effects of Clearcutting and Alternative Silvicultural Practices on Terrestrial Salamander Abundance*, *Conservation Biology*, Volume 17, No. 3, p 752-762 (June 2003).

The failure to consider any salamanders as MIS, other than the POS is not informed decision-making. "Measures of forest health must accommodate all the communities of plants and animals (alpha biodiversity) that exist under the defining umbrella of large, woody plants. . . . These indices of change may also contribute to a more realistic assessment of forest system integrity than those based on the classical measures on stocking and growth rates." Hartwell H. Welsh, Jr. and Sam Droege, *A Case for Using Plethodontid Salamanders for Monitoring Biodiversity and Ecosystem Integrity of North American Forests*, *Conservation Biology*, Volume 15, No. 3, p 558-569, 565 (June 2001). In addition to these appellants urging the use of salamanders as MIS, the Virginia Department of Game and Inland Fisheries also recommended the adoption of more salamander species as MIS for use as indicators of the impacts of management activities. See Comment Letter No. 2575 to the draft revised Jefferson LRMP, William Woodfin, Virginia Department of Game and Inland Fisheries. In response to comments, the Forest Service concluded it would not be "wise" to use salamanders as MIS, without any explanation or rationale for the conclusion. Jefferson FEIS Appendices, p J- 90.

Rocky areas and boulderfields

A number of units may contain boulderfields or very rocky areas. These are important elements of biodiversity (see "unique" at JNF Bannister Branch EA-87) and are important habitat for various species (e.g. Allegheny Woodrats, amphibians, reptiles). "Harvesting" activities must be avoided in these areas. But merely not performing actions within the outcrops and slopes themselves does not avoid impacts to these unique areas. Without proper buffer zones (such as extending out at least a tree height or approximately 150') the habitat conditions and populations within the outcrops would not be protected. See the above discussion regarding habitat conditions, functionality, and no-disturbance zones around springs and seeps. The present mitigation is not sufficient for avoiding significant impacts to these areas and the decision does not protect the Forest's diversity.

Rocky outcroppings, rocky ridge spines, cliffs, and rocky slopes are known to be extremely important habitat for various species such as Timber Rattlesnakes, Coal Skinks, Allegheny Woodrats, peregrine falcons, and salamanders, as well as mosses and lichens and others. Implementation of the proposed cutting would significantly alter the ecological conditions at these rocky sites (e.g., temperature and moisture regimes). In addition, the operation of logging equipment would alter the soil conditions and the rocks. Small site-sensitive species of limited mobility would also be killed or maimed directly.

This relevant environmental factor must be given a hard look. The Forest Service must fully and fairly consider the impacts of the proposed activities upon these areas.

These rocky conditions are not found everywhere. The disturbance proposed to take place on them may significantly harm the distribution and viability of species of limited distribution that depend on them.

These are important elements of biodiversity (see "unique" at JNF Bannister Branch EA-87) and are important habitat for various species. Mitigation measures must fully and meaningfully address these areas. "Harvesting" activities must be avoided in these areas. But merely not performing actions within the outcrops and rocky slopes themselves does not avoid impacts to these unique areas. Without proper buffer zones the habitat conditions and populations within the rocky sites would not be protected.

Because of their significance for sustaining the Forest's diversity and viability of populations, it is essential that these rocky sites be protected. We ask that these rocky areas be withdrawn from cutting. To ensure that the conditions and populations at these areas are not harmed, we further ask that the rocky areas be protected by no-cutting and no-vehicle buffers.

Further, these rocky outcropping areas may be ecologically critical areas for species such as the Eastern Banded (aka "Timber") Rattlesnakes (*Crotalus horridus*). We are particularly concerned about their use of such sites as winter hibernation "dens". Den sites are known to occur at elevations such as those here. A Rattlesnake den may be closeby or in a "unit" or "units" that may be used by many snakes for miles around.

The proposed logging operations could significantly affect their distribution and mortality (degrade or destroy den conditions, road kills and crushing, increased motorized use, draw more people to area, habitat displacement, etc.). Their security and viability may be significantly worsened. Den sites are ecologically critical areas, like bird rookeries or Indiana Bat hibernacula. The snakes are even more vulnerable because unlike birds and bats they cannot fly away. There is a clear need to establish what their status is here. Harm to a relatively small area could actually effect an area or population for miles around.

They should be searched for during the time of spring egress (from the den) or fall ingress (into den). During these times they stay in close proximity to their den sites. Then their status and the possibility of the presence of dens here can be ascertained.

This species uses "rock outcrops and cliffs" and is a species of concern in new JNF Plan (see 2003 JNF DEIS at E-1 & 4). There are cliffs and very large rock outcrops in and adjacent to proposed "units 9 & 12". If the entire units are not dropped or the Rattlesnakes not properly searched for, then the rocky areas should have a 1/4 mile no-disturbance buffer.

We are particularly concerned about the harm implementing this project could have on Eastern Banded (aka "Timber") Rattlesnakes (*Crotalus horridus*). This is a species of viability concern on this Forest and elsewhere throughout its range (see, e.g., 2003 JNF DEIS at Appendix E). See

Reptiles of Virginia by Joseph Mitchell and "The Timber Rattlesnake: Its Distribution and Natural History" by W.H. Martin in *Conservation of the Timber Rattlesnake in the Northeast* published by the Massachusetts Audubon Society, incorporated by reference. Individuals of this species congregate in concentrated areas (i.e., den sites) during the winter and immediately pre- and post-hibernation. Many snakes may travel from a wide area (from 2.5 miles away and more) when migrating to one of these overwintering sites. Populations and individuals are especially vulnerable to direct and indirect disturbance during these denning times. Because of their concentrated distribution at these times, disturbance to a relatively small area can thus have impacts to population viability reaching far beyond the size of the "project footprint" itself. And destruction of an ancestral den sight or disturbance to its surroundings, even if done when the snakes are not there or are not directly killed, could affect their future survival as another suitable site in the surrounding area might not be known to or available to them. This specific project site, and "cutting units" themselves, may even be a den site or part of a "den colony". The road/skid construction and associated logging could foreseeably harm and/or disturb rattlesnakes directly and indirectly and cumulatively. These impacts may be significant. The habitat at this project area is already degraded as regards Rattlesnake population viability. Additional impacts should be strictly avoided. What site-specific population data on Rattlesnakes do you have? What Forest population viability data and analyses are you using for the Rattlesnakes? The Forest Service should immediately consult with Timber Rattlesnake researcher W.H. Martin of Harpers Ferry, WV (304-876-3219) for expert input about this project and/or to survey for Rattlers here.

There may be viability concerns regarding Allegheny woodrats in this general area and in the GWJNFs as a whole. A report by Dr. Michael Mengak on Allegheny Woodrats in portions of the GWJNFs (Challenge Cost Share Rpt Jul 1, '97 to Jun 30 '98, in the GWJNFs, possession, incorporated by reference. The report said that "Little is known of historic population levels, home range, dispersal, food habits, or habitat requirements. Our understanding of basic population dynamics - litter size, frequency of reproduction, survival of young, sex ratio of young and dispersal - is abysmally weak. The role of predators, disease, forest management, and food resources in regulating woodrat populations is completely unknown." (p. 6). The FS should disclose the status of Allegheny woodrat populations in this area and how will this project impact this species?

Public Participation

The FS espouses an "early", "continuous" and "open" decision-making process

"Exhibit 01 sets forth principles of effective public participation. In 1994 and 1995, the Chief of the Forest Service wrote several letters to employees concerning the agency's interactions with the public. Set forth in those letters are the following basic principles regarding effective public participation:

Make It Timely. The process allows enough time for the public to participate fully, with enough advance notice for all activities and crucial points in the process.

Make Your Process "Free." The public is able to participate at minimum cost and commitment of time, while meeting your public involvement objectives.

Emphasize Fairness. Participants agree that the process is fair, that all views offered are considered.

Practice Openness. Dialogue is welcomed and facilitated among all interests. Anyone who wishes to participate can. Information to the public (documents, etc.) is accessible to all and is in language that people can understand.

Make Involvement Early and Continuous. The public is involved from beginning to end, and relationships are built over the long term.

Make It Tangible. Results of the public's input are clearly demonstrated, and the public understands how public involvement affected the decision or outcome" (FSM 1626.7 - Principles of Public Participation) [underlining for emphasis]

Although the Forest Service provided a comment period on the EA for this project, the Forest Service did not make the results of the public's input clear and opportunities for public involvement were not adequate. The "response to comments" section in the predecisional EA omitted and failed to respond to numerous comments by the objectors in the EA comment period stage. Comments were not acknowledged and several specific comments were not addressed. The Forest Service did not explain how public involvement affected the analysis leading to the decision and outcome proposed in the draft Decision Notice/FONSI. See comments by the objectors, dated and the Fork Mountain EA Appx. B (Labeled Appendix B on GWJNFs website and labeled Appendix A on the first page of the pdf document).

This is necessary to ensure that planning and decisions reflect environmental values, to ensure that environmental issues are adequately considered in the process, and to reduce the potential for conflicts.

§1501.2 Apply NEPA early in the process.

Agencies shall integrate the NEPA process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts.

Each agency shall:

(a) Comply with the mandate of section 102(2)(A) to "utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment," as specified by §1507.2.

(b) Identify environmental effects and values in adequate detail so they can be compared to economic and technical analyses. Environmental documents and appropriate analyses shall be circulated and reviewed at the same time as other planning documents.

(c) Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources as provided by section 102(2)(E) of the Act.

(d) Provide for cases where actions are planned by private applicants or other non-federal entities before federal involvement so that:

(1) Policies or designated staff are available to advise potential applicants of studies or other information foreseeably required for later federal action.

(2) The federal agency consults early with appropriate state and local agencies and Indian tribes and with interested private persons and organizations when its own involvement is reasonably foreseeable. (CEQ NEPA Regulations)

