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Clinch RD-GWJNFs-R-8-FS-USDA

Ranger Davalos:

The following are comments submitted on behalf of the Virginia Chapter of Sierra Club regarding the Devils Hen Nest project scoping.

The significant and large spatial scale and the high concentration of proposed logging units at the upper reaches of Cove Creek, Stock Creek, and perhaps portions of other watersheds may adversely impact downstream resources, including dozens of Proposed, Threatened, Endangered, Sensitive and Locally Rare (PTESLR) freshwater mussels and other aquatic species in the Clinch River and other downstream watersheds needs to be considered. Cumulative impacts of past, present and reasonably foreseeable events and activities need to be considered. The significant and large spatial scale of the project and the high concentration of cutting in older stands in the project needs to be considered. We believe that the project is likely to have significant impacts on the environment, is highly controversial in nature, and therefore warrants the preparation of an Environmental Impact Statement. [See Devils Hen area VAFWIS Rpt, Stock and Cove Cr watershed map VAFWIS, Stock and Cove Cr top map VAFWIS, Devils Hen Nest Vegetation Project_Stands_Age_Harvest_Acres_Elevation, and Devils Hen cutting units, attached.]

Climate Change

The Forest Service should include an alternative that mitigates or improves the balance of relationships between species, forests and climate change.. These would include, but not be limited to
-Eliminating actions which do not maximize carbon storage in vegetation and in soils
-Eliminating actions where extracted forest products result in reduction of biomass and carbon storage in vegetation and soils
-Eliminating actions which accelerate the rate of evaporation of soils and can potentially increase erosion
-Eliminating actions which remove, facilitate removal or make available forest projects that could be incinerated for any purpose.
-Considering the cumulative impacts of all aspects of the project with regard to carbon storage, carbon released and carbon dioxide released on forest, landscape, state, federal and global scales.

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 InsuranceCompany, 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

Old Growth

Old growth is a significant issue in this project. There is relatively little old growth in this physiographic province and most of it is on public land tracts such as these. Much of the cutting is proposed in older stands within the project area (PA). See Devils Hen Nest_Harvest Ares in Oldest Stands_USFS. (attached). The Map "Jefferson National Forest Clinch Ranger District Old Growth Inventory" from the Jefferson National Forest Plan Revision shows several tracts of old growth to the southwest, northwest, north and east sides of this project. Some of this is quite large in size for this physiographic province. Additional old growth yet to be identified may also exist in this area. The intensive logging proposed in this project could bifurcate old growth/mature forest complexes in the area to a significant degree. Several of the old growth tracts (including tracts to the north and east of the project) would have logging on multiple sides of the tracts and in some cases, nearly surrounding tracts. In light of this, the FS should address the impact of diminished old growth forest tracts as climate change occurs. How would the logging impact the habitat and mobility of salamanders and other species that are known to occur in these areas. What are the cumulative impacts of this project, combined with climate change, and the need to travel across forests to higher elevations or forests with different moisture regimes?

As part of this analysis, the Decisionmakers should identify all old growth of any size (including within-stand old growth and old growth partially within multiple stands). Old growth components and old growth habitat value of all old growth of any size should be adequately protected. The FS should protect mature forest adjacent to or near existing old growth may be important ecological components that should be protected, as well. The FS should provide figures on the size, distribution, and age of trees to be cut. The FS should disclose the impacts on old growth and disclose whether the treatments could preclude or delay the attainment of old growth status.
The agency should examine whether there is any within-stand patches of OG or relic trees that should be protected or buffered from disturbance. It is possible that some old growth may exist within whole stands, partial stands, or portions of stands adjoining other stands. If any inclusions of an older age are found in the course of surveys, it would be proper to change the stand layouts and dimensions and numbers to incorporate this new data also
The agency should examine the spatial arrangement of OG and surrounding mid- late-successional habitat, to determine whether any such areas should be protected or buffered from disturbance. Even if these areas did not meet https://www.youtube.com/watch?v=Wgq-DLrfKjUoperational criteria for old growth, given the obvious shortage of old growth in this area (and throughout the Appalachians) the FS should also consider designating some of the best areas as small, medium or large old growth tracts.
In FR-62, the Southern Region of the FS includes the following "considerations for old-growth forests during project-level planning:""When developing overall management strategies for an area, care should be taken not to isolate the medium- and small-sized old growth patches from the mid- and late-successional forests." (pp. 26-7). National Forests need to "provide for ... representation of all old growth forest community types" (FR-62 p14) and "consider underrepresented old growth forest community types" (FR-62 p17) in planning.
Thorough old growth surveys should be conducted which include a record of where each of the plots were taken, a record of how each of the criteria for old growth were determined, and whether the FS ensured that the criteria used were appropriate for this geographical area and the old growth types found here.

in this project, the FS needs to consider the degree to which large- and medium-size old growth tracts could be dissected or reduced (or if this project would delay the attainment of large- or medium-size old growth tracts in the future. Cumulative impacts be disclosed.

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

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TESLR AQUATIC SPECIES

The GW&JNFs T&E Mussel and Fish Conservation Plan states: "the upper Clinch River contains more imperiled species than any other watershed in the United States (Stein et al. 2000)" (p.4). Dr. Richard Neves says "the freshwater mussel fauna (Unionidae) in Virginia is among the most diverse in the United States…" (Terwilliger, ed., Virginia's Endangered Species,1991, p. 251) In the early 90s, a portion of Clinch River was said to be "the sole remaining sanctuary for a group of mussels living nowhere else on earth...[T]wenty-six species are globally rare and thirteen are listed as federally endangered," according to The Nature Conservancy in its letter to the FS on the Big Flat Timber Sale. There are at least 47 rare aquatic species in the Clinch River/Stock Creek/Cove Creek subwatershed (P13). See http://192.206.31.52/cfprog/dnh/naturalheritage/display_subwatershed.cfm. Stock Creek is also identified as a stocked trout stream on Clinch RD maps. According to the 2004 GW&JNFs T&E Mussel and Fish Conservation Plan (2004 Cons Plan), there are19 spp. of T&E aquatic species in this sixth order watershed, more T&E species than any other sixth order watershed (P13) listed in the 2004 Cons Plan (See JNF Plan FEIS 3-32 and 2004 Cons Plan 48&49). These species include the shiny pigtoe, rough rabbitsfoot, rough pigtoe, purple bean, pink mucket, green blossom, fine-rayed pigtoe, oyster, fanshell, dromedary pearly, birdwing pearly, cracking pearly, Cumberlandian combshell, Cumberland monkeyface, Cumberland bean, Appalachian monkeyface mussels; and yellowfin madtom, duskytail darter, and slender chub (fishes). Eighty-four percent of the T&E freshwater mussels found in or near the GW&JNFs are found in this one watershed and 50% of the T&E fish found in or near the GW&JNFs are found in this one watershed (2004 Cons Plan 4, 5, 48, & 49). Other TESLR aquatic species also exist in this watershed.

The JNF Plan lists this watershed as a "priority watershed[] which possess[es] outstanding aquatic biodiversity due to the "Tippecanoe darter, emerald and steelcolor shiners, and many species of mussels" …"These watersheds will be priorities for watershed assessments, including additional inventory and monitoring beyond what is required in this Forest Plan and project-specific plans" (JNF Plan 2-3). See also Obj. 1.02 (JNF Plan 2-5). As part of this, roads analysis is to be accomplished "within one watershed per year through watershed analysis" (Obj. 33..01, JNF Plan 2-57). This watershed is a priority watershed; the FS should document what "additional inventory and monitoring beyond what is required in this Forest Plan and project-specific plans", watershed analysis, and roads analysis is has been undertaken or is being undertaken in this project area and vicinity. The FS should incorporate all of this information into the analysis for this project and documented in the project file. There have been problems with illegal motorized vehicle use in this area, a cumulative impact combined with the proposed logging. We (and others) have submitted information to the FS on problem areas in this watershed (eg, our comments, letters, and e-mails to you dated August 30, 2003, Jun 8, 2004, August 27, 2004; our Sept. 20, '04 e-mail to Gary Kappesser and Tom Bailey). The FS should conduct watershed analysis/roads analysis and disclose how it plans to involve the public, how it plans to incorporate this information into this analysis, or the timetables. The project must be informed by watershed/roads analysis. Also, rigorous watershed/roads analysis should be undertaken that takes into account existing conditions and fully accounts for the possibility of severe damage to streams from this project.

The USF&WS has stated that "[riparian] standards may need to be adjusted at the project level to ensure additional protection. … While the revised riparian wildlife communities offer considerable habitat benefits to many species, protecting diverse terrestrial riparian wildlife communities generally requires stream-side buffers of 300 ft. or greater (Wenger 1999). Given that more detailed planning will be required at the project level, the FWS stresses the need for our continued involvement as part of an interdisciplinary team that will ensure adequate protective measures for aquatic listed species and critical habitat." (USF&WS Jan 13 '04 BO on the JNF Plan).

- There is no higher priority than protecting endangered species.
- The agency must formally consult with the USFWS on this specific project. 16 USC 1536(a)(2).
- The requisite full, intensive, and competent surveys, inventories, and data gathering for endangered species and their suitable habitat must be performed. Comprehensive surveys or special surveys should be performed or incorporated into the analysis.
- In addition, the FS must maintain the viability of species under NFMA.
- Substantive protection under the ESA applies to species habitat - Babbit v. Sweet Home(1995). The ESA

"indicates beyond doubt that Congress intended endangered species to be afforded the highest of priorities." TVA v. Hill(1978) The FSM requires the agency to "[p]lace top priority on conservation and recovery of endangered, threatened, and proposed species and their habitats..." FSM 2670.31.

- Efficacy of proposed mitigation measures for PTESLR species must be demonstrated and must completely compensate for potential adverse effects.

- Section 9 of the ESA states that it is unlawful to "take" listed species. 16 USC 1538(a)(1) "`Harm' in the definition of `take'... may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns,including breeding, feeding or sheltering." 50 CFR 17.3.

- Of particular concern are cumulative impacts. The FS has must fully evaluate the cumulative effects of this project.

- There are numerous documented records of usage of the project area and areas immediately downstream by PTESLR mussels, fish and other aquatic species.

- The sale is located above the Clinch River. A portion of Clinch River is said to be "the sole remaining sanctuary for a group of mussels living nowhere else on earth...[T]wenty-six species are globally rare and thirteen are listed as federally endangered," according to The Nature Conservancy in its letter to the FS on the Big Flat Timber Sale. There is potential for these and other mussels to be found downstream from the project area, either in the Clinch River or its tributaries. 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... 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 emperiled 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)

- Clean water flowing from the project area is critical to the mussel population downstream because of mussels' sensitivity to water degradation. In addition to the fact that the project area is located in the watershed of the Upper Clinch River system, which has one of the greatest known concentrations of rare and endangered mussels in the world, these watersheds are also two of only a handful of forested watersheds in the Clinch River basin with a high percentage of public lands ownership.

- The watersheds of the Clinch have already witnessed a great deal of abuse. By 1993, the Forest Service had already pounded over 14 miles of roads into the Big Stony RARE II area, in one of these watersheds, and planned to extend that to nearly16 miles. (1993 BFT FONSI, p. 3) Heavy logging accompanied the roads and landings (ibid, p. 4) including the 1800+ acre Big Flat Top timber sale, which was partially logged before being stopped by the OIG and RF. USF&WS asked for doubling of buffer strips in this sale, but some buffer strips were reduced to only 10, 20, or 30 ft. Three and 1/2 years later, Hagan Hall TS, a 1,000 acre sale occurred in the same watershed with logging in riparian zones (along both perennial and intermittent streams) and removal of miles of potential LWD. The area has seen several other massive sales, including the approx. 1000 ac. CMB TS, the Cove Cr. TS, the Stinking Cr. TS, the Elisha Lick TS, the Mtn. School TS, the Lovelady TS, the Stock Cr. TS, the Thunderstruck TS, the Tiv Gap TS, and many other TSs, as well as other activities and events that are CIs on both private and public lands (such as the South Coeburn Gas Field). The very large Powell Mtn. 2 timber project has recently been approved in this watershed as well (Powell Mtn 2 EA and SABP/VAFW appeal, in your possession, incorporated by reference).

- Unfortunately, these abusive lands practices have gone on for many years. In 1987, Hoffman reported that, "High Knob and vicinity," [which lies at the highest point above the Clinch River] "is undergoing stress through mineral and timber exploitation, the latter appearing more severe than elsewhere in the two Virginia National Forests." (Virginia Journal of Science, vol. 38, no. 4)

- Freshwater mussels depend on fish species in order to reproduce, so potential impacts to mussel reproduction and 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, 1990, p. 254; Hove and Neves, 1994) "The decline of specific fish host species may present a problem in mussel reproduction" (Cons Plan 5). See also

Appx C of the Cons Plan for a listing of some fish hosts. The FS should identify fish host species that may be impacted by the project throughout their life cycle, and analyze the impact of the project on these species.
- Water temperature and timing of springtime water flows are believed to be important factors for reproduction for some mussels. (Hove and Neves, 1994, p. 34 & 37) This project and others could effect water flows, water temperature. It could also affect turbidity during high flow events,
- I also want to note that although there are many species of mussels, fish and aquatic species downstream (or possibility within the PA for some), each species has different habitat requirements, life histories, feeding requirements, reproduction requirements, and other kinds of survival requirements. Some may have more sensitive requirements that need to be addressed.
The GW&JNFs T&E Mussel and Fish Conservation Plan states: "the upper Clinch River contains more imperiled species than any other watershed in the United States (Stein et al. 2000)" (p.4). This is an enormous center of biological diversity and TESLR species - immediately downstream from the project area and a short distance from the project area
-In addition, several of these species, including the hellbender and many of the fish species, are capable of living in streams - not merely in large rivers. The yellowfin madtom is found in "medium sized and large creeks." The duskytail darter is found in "streams/." (2004 Cons Plan). The FS should specifically consider the impacts to these species. The tributaries of the Clinch will be highly sensitive to increased sediment loads and other impacts generated by ATV traffic in this area.
The FS should follow the 2004 Cons Plan, including:
"11-001 Any human caused disturbances or modifications that may concentrate runoff, erode the soil, or transport sediment to the channel or water body are rehabilitated or mitigated to reduce or eliminate impacts. Channel stability of streams is protected during management activities.
11-002 Motorized vehicles are restricted to designated crossings. Motorized vehicles may be allowed on a case-by-case basis, after site-specific analysis, outside of designated crossings where it can be shown to benefit riparian resources.
11-003 Management activities expose no more than 10 percent mineral soil within the project area riparian corridor."
11-009 In-stream habitat improvements, and stream-connected disturbance will be designed and implemented after consideration of the life-cycle requirements of federally listed aquatic species.
11-013 Management actions that may negatively alter the hydrologic conditions of wetland rare communities are prohibited. Such actions may include livestock grazing and construction of roads, plowed or bladed firelines, and impoundments in or near these communities.
Stds. 11-004 & 11-005 (LWD)
Stds. 11-031 to 11-035 (recreation)
Stds. 11-037 (scenic)
Stds. 11-046 to 11-054 (roads).
FW S&Gs: FW-12, FW-13, 17, 20 and 23.
Monitoring requirements (implementation, effectiveness, and inventory requirements).
Moreover, the FS should follow the provisions of the 2003 GW&JNFs T&E Mussel and Fish Conservation Plan (2003 Cons Plan), including any stricter measures that are part of the 2003 Cons Plan. It is not clear that the 2003 Cons Plan has been superceded. In the JNF Plan, the FS states "in addition to identification of these priority watersheds, the Forest has developed a Federally Listed Fish and Mussel Conservation Plan in collaboration with the U.S. Fish and Wildlife Service" [underlining for emphasis](JNF Plan 2-4). The JNF Plan is obviously referring to the 2003 Conservation Plan because the only Conservation Plan referred to in the JNF Plan is the 2003 Conservation Plan and is predicated on additional protections in the 2003 Cons Plan. The 2004 Conservation Plan is dated March 2004, after the JNF Plan was approved in January 2004, so it was not in existence at the time the JNF Plan ROD was approved. The FS should have undergone consultation with US Fish and Wildlife Service regarding the conservation of mussels and other aquatic species

prior to completion of the JNF Plan. If the 2003 Cons Plan were superceded by the 2004 Cons Plan, then the FS should have properly amended the Forest Plan.
For example, "Streams are managed in a manner that results in sedimentation rates that stabilize or improve the biological condition category of the stream as monitored using biological measurements, such as EPA rapid bioassessment protocol II (EPA 1989); and physical habitat measurements, such as Wolman pebble counts, v-star, cobble embeddedness or percent fines in pool tails (Grost et al,1999)." (2003 Cons Plan Obj. 3).
"Soils are stabilized on eroding trails and recreational sites." (2003 Cons Plan 14).
All provisions must be consistent with Executive Order 11644 as amended by 11989.

Cerulean Warblers and other NTMBs

There is a potential for the cerulean warbler to be found in the PA and vicinity. Populations of cerulean warblers have been documented in the Cove Creek watershed, and other cerulean warbler populations may possibly exist in other portions of this project area. The cerulean warbler has exhibited the greatest rate of decline of any warbler species. Although rare everywhere, portions of the Clinch RD have widely been recognized as one of the few strongholds for the cerulean warbler in the GWJNFs.
The JNF-Clinch RD established "An Interim Management Strategy" (IMS) Cerulean Warbler on June 1998. (1.) resurveys of another part of the Clinch RD in response to findings of the USDA Office of Inspector General (1995) that proper Bes/surveys had not been conducted for the Big Flat Top EA/FONSI, which led to the (2.) the conclusion in the Maple Springs BE May 23, 1995, also outside of this area, that a concentration of ceruleans would be adversely affected by Maple Spring Br. TS, which led to (3.) guidance from Bill Damon (dated Sept. 12, 1995), which led to (4.) surveys of the Clinch RD in 1996 & 1997, which led to the IMS (1998). Pertinent sections of the IMS are highlighted. It is clear that the Clinch is "adjacent" to the core area of the warbler's range and may possibly be "part of the core area". Only a few cerulean warbler sighting had been confirmed in the RD by the time of the IMS and many of them were in or near the 10B area. Sixteen cerulean warblers had been visually confirmed on the RD by the time of the IMS; 4 of those stations are in the Cove Cr. watershed and probably in or near the 10B area. Another is probably within the area (Elisha Lick). Another three (Lonesome Ridge) are nearby in an adjacent 6C area. See also "Research and Conservation Needs" [surveys, "deferring management activities in forest habitat with documented cerulean warbler presence"] and "Conservation Measures to Mitigate Loss of Habitat" [eg maintain certain levels of upper canopy trees greater than 18 in dbh, tree height retention requirements, etc., monitoring experimental vegetation manipulation every two years for a period of 10 yrs., etc.]

The cerulean warbler has exhibited the greatest rate of any warbler species and the cerulean is declining at the center of its range. (Robbins, Fitzpatrick and Hamel, 1989, " A warbler in trouble: Dendroica cerulea") There are viability concerns for cerulean warblers, other species of interior forest-dwelling warblers, species of cuckoos, and other interior-forest dwelling songbirds listed as declining in BBS (or other ornithological data) that must be taken into consideration.
The cerulean is recognized by the FS and others as an area-sensitive species (SAA, Terrestrial Rept, Robbins et al., Cove Creek BE, 1995, Clinch RD, J&GWNFs, Maple Springs Branch BE, Clinch RD, J&GWNFs). Other species are listed as area sensitive species in the SAA. The FS should consider the impacts to these area-sensitive species.
The FS found that cerulean warblers "tended to be older, large diameter stands with tall trees, a deciduous understory, multiple layers and ages..." ((Cerulean Warbler Interim Mgmt Strategy, Clinch RD, GWJNFs, p. -7)
"Trees 18.2 in. in diameter composed greater than one-fourth of the overstory trees in the stands." (CW IMS-7)
The IMS documents that research characterized "suitable cerulean warbler habitat as mature forest with a high, closed canopy and a large number of stems greater thatn 12 in. diameter..." (CWS IMS-8)

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

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

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

- What are current browse levels? Is natural disturbance incorporated in the figures provided?
- How would the project affect cove hardwoods, northern hardwoods, boulder fields, seeps, riparian areas, old growth and other special or unique habitat? Underrepresented habitat? Special, unique or underrepresented habitat with few nearly mature/mature/old growth stands remaining?

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

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

(1) support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, 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 (USF&WS) 2002 are potentially found in this area (see BSCC p. 51). Impacts to these NTMBs should be analyzed.

Salamanders

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

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

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

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

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

In addition, the impacts of burning combined with the large-scale logging proposed here should be analyzed with respect to salamander habitat.

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

Terrestrial salamander abundances are affected by forest thinning. See Grialou, J.A., West, S.D., and R.N. Wilkins. 2000 ("Relative comparisons revealed that red-backed salamanders were influenced by forest thinning. The difference in relative capture rates because the thinning treatment was minor. The observed decline in red-backed salamanders may be explained by direct machine impacts and soil compaction from skidders") The effects of forest clearcut harvesting and thinning on terrestrial salamanders. Journal of Wildlife Management 64(1): 105-113); incorporated by reference. See also Harpole and Haas, "Effects of Seven Silvicultural

Treatments on Terrestrial Salamanders, For. Ecol. & Mgmt. 114:349-356 (1999) ("Salamander relative abundance was significantly lower after harvest on the group selection (p‹0.005), shelterwoods (P‹0.007 and p‹0.015), leave-tree (p‹0.001), and clearcut treatments(p‹0.001)").; incorporated by reference. Here, researchers in Virginia found that relative abundance of salamanders based on area-constrained searches decreased on group selection cuts, 12-14 sq. m shelterwood cuts, 4-7 sq. m shelterwood cuts, leave tree cuts, and clearcuts. Large plethodontid populations declined in group selection cuts after the Daves Ridge TS (Mt Rogers NRA; Daves Ridge Group Selection "Project Overview"). See the 1994 SO monitoring and evaluation report, section on Daves Ridge TS and James Organ's report on salamanders and related issues in the Daves Ridge area ("Salamander Survey in Connection with Daves Ridge Timber Sale"). "For future Environmental Assessments involving salamanders, Sensitive or of Special Concern," Dr. Organ recommended, for terrestrial salamanders to "keep regeneration areas small, one to three acres in size, maintain large undisturbed tracts of forest between regeneration areas to permit salamanders to freely move around regeneration areas rather than to be trapped by a checkerboard pattern of thermal and low moisture barriers, do not disturb existing down and decaying logs within the regeneration area if possible…"as well as other recommendations. These documents, already in possession of the GWJNFs, are incorporated by reference.
"Movements were about 1 m and were similar to other species of terrestrial plethodontid salamanders [citations omitted]… The limited movements have implications in the potential fragmentation of P. hubrichti populations. Timbering operations that occur in the [Peaks of Otter] salamander's range may not only eliminate animals from the cut areas (Pough et al. 1987, Ash, 1988), but might also create barriers between populations. Recolonization after forest recovery, and the reestablishment of contact between separated populations, might be a slow process due to the limited movements of this salamander. In addition, the Blue Ridge Parkway, logging roads, and other alterations to the forest may produce impassible barriers, thus causing fragmentation of the population (J. Mitchell, pers. Comm.) Effectively salamander populations may become fragmented and genetically isolated. Loss of genetic variability associated with genetic drift could then occur thereby decreasing the long-term probability of survival for this species (Soule, 1983). For this reason, forestry management practices should include prevention of further fragmentation of the already isolated populations of P. hubrichti" (Kramer et al., Jour of Herp. Vol. 27, No. 4, pp. 431-435, 1993).

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

Roads impacts; project should be informed by a roads analysis

(b) Road System--(1) Identification of road system. For each national forest, national grassland, experimental forest, and any other units of the National Forest System (§212.1), the responsible official must identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands. In determining the minimum road system, the responsible official must incorporate a science-based roads analysis at the appropriate scale and, to the degree practicable, involve a broad spectrum of interested and affected citizens, other state and federal agencies, and tribal governments. The minimum system is the road system determined to be needed to meet resource and other management objectives adopted in the relevant land and resource management plan (36 CFR 219), to meet applicable statutory and regulatory requirements, to reflect long-term funding expectations, to ensure that the identified system minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance.
-Identification of unneeded roads. Responsible officials must review the road system on each National Forest and Grassland and identify the roads on lands under Forest Service jurisdiction that are no longer needed to meet forest resource management objectives and that, therefore, should be decommissioned or considered for other uses, such as for trails. Decommissioning roads involves restoring roads to a more natural state. Activities

used to decommission a road include, but are not limited to, the following: reestablishing former drainage patterns, stabilizing slopes, restoring vegetation, blocking the entrance to the road, installing water bars, removing culverts, reestablishing drainage-ways, removing unstable fills, pulling back road shoulders, scattering slash on the roadbed, completely eliminating the roadbed by restoring natural contours and slopes, or other methods designed to meet the specific conditions associated with the unneeded road. Forest officials should give priority to decommissioning those unneeded roads that pose the greatest risk to public safety or to environmental degradation.36 C.F.R. 212.5.

"When proposed road management activities (road construction, reconstruction, and decommissioning) would result in changes in access, such as changes in current use , traffic patterns, and road standards, or where there may be adverse effects on soil and water resources, ecological processes, or biological communities, those decisions must be informed by roads analysis (FSM 7712.1).
- Whether roads/skid trails, rightly or wrongly, are called temporary, these roads/trails can have impacts on a number of resources for a certain amount of time. Please examine and disclose all effects of temporary roads, including impacts on hydrology, springs and seeps, streams, wildlife, geology, caves, motorized use, non-motorized and primitive backcountry users, invasive and non-native plants, native plants, cultural resources, and other key resources. Please disclose how long these roads will impact resources of concern.

Black bear is an MIS here and throughout the JNF (JNF Plan MIS List). Issues of negative impacts to the MIS black bear due to increased disturbance, stress, vulnerability which the project could foreseeably facilitate should receive a hard look. See also 36 CFR 219.19(a)(4). The VGIF released 37 bears in Scott and Wise Counties from 6/90 to 10/92. (Letter from John Baker, 7/11/96). 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 project may impact black bear populations that are just getting a foothold from recent black bear reintroductions in the Clinch RD.

- 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. 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. Portions of some motorized routes lie in this watershed or in the vicinity of this project, but have been excluded from the arbitrarily drawn PA) Use of this rt. and other 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
- 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 the agency's action would remove these key elements, habitat significant to viability. The analysis must fully and fairly consider this factor.
- 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.

- Bears need security. There is must be meaningful analysis of the loss of interior and remote habitat that will occur and has already occurred here. 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. The bears' present population numbers in this analysis area must be disclosed.
- 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).
- U.S. Forest Service EAs 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".
- Present roads and additional "temporary" and permanent road construction/reconstruction will facilitate entrance into an area by hunting groups and hounds. They will be able to more easily interfere in Bears' lives during chase season, kill season, and by illegal poaching.
Poaching and other wildlife disturbing activities are not even mentioned. These relevant factors must be fully and fairly considered.

Invasive Species
Invasive species have been identified in the project area.

The FS should analyze the potential for this logging project to open up habitat and create conditions for the introduction and spread of invasives.

Researchers have found that logging, roadbuilding, and other similar activities create the conditions in which invasives can thrive. For example, logging simplifies structural diversity and eliminates microhabitats, thus decreasing species richness. As a result, communities are more prone to invasion by one or a few dominant species (Elton 1958). Habitats most likely to have an invasive species presence have been correlated with the following attributes: "vacant niches, lack of biotic constraints (predation, parasitism and disease), lack of community richness (biodiversity & structure), and disturbance." Logging is known to cause all four factors in forest ecosystems (Mack et al. (2000)). The introduction and spread of invasive species is linked to poor logging

practices (poor replanting practices, road construction, & movement via machinery and tools) (Aber et al. 2000). Invasives, and vectors for the spread and introduction of invasives, must be fully considered. Mitigation measures must be established to reduce invasives. Additional alternatives with less disturbance should have been considered to reduce the introduction and spread of invasives.
Mack et al. (2000) found that the habitats that invasive species have successfully invaded in the past were qualified to as to their characteristics by Mack et al. (2000). Positive correlations were found between susceptibility to invasion and:
1.vacant niches
2.lack of biotic constraints (predation, parasitism and disease)
3.lack of community richness (biodiversity & architecture)
4.disturbance
All of these phenomena are created in extreme fashion by logging practices.

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

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

A mere listing of mitigation measures is insufficient to qualify as a reasoned discussion by NEPA. EISs must analyze mitigation measures in detail and explain the effectiveness of such measures [Northwest Indian Cemetery Protective Ass'n v/. Peterson 795 F.2d 688 (9th Cir. 1986)]. Forest Service NEPA documents describe possible mitigation measures but do not discuss them in adequate detail nor do they discuss or disclose the costs, effectiveness or efficacy of the mitigation measures. The long-term effectiveness of herbicides and other noxious weed treatments are still seriously questionable.

NFMA regulations relevant to noxious weeds include:

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

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

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

The FS is required to comply with presidential Executive Order13112.:

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 i
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1asive 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 th
e means to address them; and

(3) not authorize, fund, or carry o
ut 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. The EA does not do so. Likewise, these infestations on the roads readily expand into cutting units, especially the more intensive the logging done in the particular units. Typically, the FS just throws up its hands and accepts that they will be carrying out management activities that inevitably cause more spread of weeds. Instead, a genuine prevention strategy is need and this needs to be incorporated into the analysis.
The premier tool of prevention of new noxious weed invaders deserves the highest priority. Instead, all prevention strategies assume weeds will invade, then prescribe expensive control methods of unknown efficacy after the fact.

Without first significantly reducing the type of soil disturbing activities that facilitate noxious weed invasion, the proposed treatment effects may be negated, indeed, overwhelmed by the spread of weeds caused by more of the same road building and logging. By arbitrarily not considering these measures, the FS has failed to show a genuine, pressing need to risk the ecosystems by applying poisons.
The FS should have also disclosed what herbicides and biocides would be necessitated by this project. Cumulative and connected actions should be analyzed. could be the direct result of the types of activities proposed here. This should also include the public health impacts of Round-up and similar herbicides, since Round-up application has been found to contribute to disease and other public health impacts in recent months, since the time that the scoping notice was released. This new information should be incorporated into the analysis.

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

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

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

NEPA regulations at 40 CFR ß 1502.4(a) state:
Agencies shall make sure the proposal which is the subject of an environmental impact statement is properly defined.

And at 40 CFR ß 1508.25, NEPA regulations state:
Scope consists of the range of actions, alternatives, and impacts to be considered in an environmental impact statement. . . To determine the scope of environmental impact statements, agencies shall consider:
(a) Actions (other than unconnected single actions) which may be:
(1) Connected actions, which means that they are closely related and therefore should be discussed in the same impact statement. Actions are connected if they:
(i) Automatically trigger other actions which may require environmental impact statements.

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

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

Or,
Sec. 2. Federal Agency Duties. (a) Each Federal agency whose actions may affect the status of inv
1asive 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 th
e 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.

TESLR Species

TESLR species may occur in the vicinity of the project area or in the project area. See, eg, occurrence records for these subwatersheds and this county at "http://www.dcr.state.va.us/dnh/" and records in Terwilliger, 1991, VSO Virginia's Breeding Birds Atlas, Atlas of the Flora of Virginia, Harvill et al., Strasbaugh and Core, and other sources of information on occurrence records and potential habitat in the area. See also Devils Hen area VAFWIS Rpt, Stock and Cove Cr watershed map VAFWIS, attached.

The FS should conduct thorough surveys and analysis of TESLR species should be conducted. Many TESLR species on the JNF require special techniques for detection or are not easily observed at certain times of the day or times of the year. Appropriate surveying techniques should be utilized and these should be utilized at appropriate times of the year and times of the day. Persons with the requisite training for identification of TESLR species likely to be found in the area should conduct the surveys. An adequate amount of time should be spent in the field conducting surveys.
- Where TESLR species may be harmed by activities, these activities should be avoided in areas with TESLR habitat or known occurrences of TESLR species. Adequate mitigation measures must be established.

Cultural Resources
-Cultural Resources may be impacted.
There may be sites of concern in the project area. The direct and indirect impacts on cultural (heritage) resources resulting from the logging, roadbuilding, current road system and other activities should be thoroughly analyzed. Complete cultural resources surveys should be completed which satisfy the terms of the National Historic Preservation Act, and other laws regarding cultural resources, Native American cultural resources, religion, and traditional practices and their implementing regulations. Thorough surveys should be done. The FS should consult with Native Americans and others who are knowledgeable regarding cultural resources that are found or might be found in the project area. The FS should include in its documentation, the survey methodology used, a copy of any Memoranda of Agreement with the State Historic Preservation Office, and the qualifications of the people doing the survey work. Thorough mitigation measures should be used and those mitigation measures should be demonstrated to be effective.

Riparian Areas
Riparian areas and water resources occur in this project area. Riparian resources and associated aquatic and terrestrial species are important in this area . All portions of riparian areas need to be thoroughly delineated in the field. Impacts to plants, animals, and biological communities in and around these areas needs to be thoroughly evaluated. The management prescription area for riparian areas needs to be clearly delineated and followed in this project area. The document with the scoping notice did not contain maps of these areas. We would be happy to comment further once these maps are completed.
It is unclear how riparian management areas, and stream conservation zones are delineated. Many of the resources associated with these features (and the natural shade within them) may be impacted by this project. How would resources associated with large or old trees such as these be affected? How would LWD be affected?
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). 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.

Riparian areas must be fully surveyed.

The Plan requires the FS to delineate riparian areas based on on-the-ground conditions . Because of their importance (e.g., habitat, feeding fisheries, downstream TESLR species habitat) and the drier site conditions that can be found elsewhere at these units, all riparian areas should be avoided by cutting and vehicles.

- Springs and seeps should be identified during wet weather (See Va. BMPs, incorporated by reference). In order to comply with BMPs, the project area should have been surveyed during wet weather, when springs and seeps are most likely to be detected. There are no survey records to document this.

- Logging is allowed around springs and seeps. These areas 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. And there is no analysis or citation to studies to corroborate the assertion that retention of 20% (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 must be 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). The FS claims to be complying with state BMP guidelines (e.g., EA13&14), but it is not clear that compliance has occurred. 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 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).
-There is a documented occurrence of the roughhead shiner, a sensitive species in this county and watershed.
The TESLR Bats

TESLR bats are known from this area and there are hibernacula nearby in or adjacent to the Clinch Ranger District. The FS should disclose whether these species could be directly or indirectly harmed by the project, what steps the FS will take to protect these species and the effectiveness of these measures

The agency should consult with the USFWS on this specific project. The necessary biological opinion must be obtained. The proper Biological Assessment must be performed. 16 USC 1536(a)(2). This was not done. See Section 7 of the ESA.
(2) Project Area
There is a possibility of usage of the project area by this species. Karst cave entrances, blowholes, and sinkholes may exist nearby and may provide habitat for TESLR bats. The cutting sites forests are mature forests, with canopy gaps and snags and trees with exfoliating bark, that are the habitat known to be preferred by this species. Implementation of the proposed action would remove and damage this habitat. In addition, all the proposed cutting sites are adjacent to riparian corridors, habitat this species is known to prefer.

Because the project area and project is so close where TESLR bats have been observed roosting in trees in the Forest, the FS should have determined and disclosed the distance of the project from the cave and other roost sites, & properly analyze effects.
(3) Need to Obtain and Analyze Scientific Information
The agency often claims to be following the guidelines of the Indiana Bat Plan Amendment EA. The explicit objectives of this Plan are the identification, protection, and promotion of foraging areas, roost sites, maternity sites, and swarming areas. (pg.2) Establishment of whether these units and project area are actual roost sites or foraging or maternity or swarming areas is necessary so as to be consistent with the IBRS, NEPA, NFMA,APA and/or the ESA. This is especially important due to the closeby location of hibernacula. The requisite full, intensive, and competent surveys, inventories, and data gathering to ascertain use of this area by the Bats should have been performed.
The proposal does not accomplish the goals of the IBRS or ESA or NFMA (viability [36 CFR 219.19]). The clear potential for adversely affecting a threatened or endangered species is present. By failing to properly consider, provide for, or protect the Indiana Bat and other T&ESLR bats, this proposal may violate the NFMA [36 CFR 219.19(a)(7)] in addition to the ESA.
Although not explicitly stated in the documents, planners frequently act as if Indiana Bats may occur throughout the GWJNFs (see, e.g.,numerous past BEs from this RD). Activities are often explicitly restricted around roost trees (see BEs and Plan amendment). "If . . . active roost trees are identified" there will be a 1/4 mile or two mile buffer established around the tree. (BEs, amendment). But this measure is weightless as the Forest Service is not taking active measures (as they should be if the Bats were being accorded the requisite top priority) to ascertain the actuality of this "if". "We are not required to survey our project areas for presence of Indiana Bats." (GWNF Mulligan TS EA App.B). This statement is not only false (see section C(3) of this appeal), it is also not the full and fair consideration demanded by law. See Village of False Pass v. Watt (1983) and Conservation Law Foundation v. Watt (1983).
The Forest Service does not seem to recognize the precariousness of the Indiana Bats population in Virginia. Here on the periphery of their range, the Bats' numbers have plummeted. A net loss of 1300 Bats since counts were initiated in VA winter hibernacula (IBat EA-11), a decline of approximately 75% in this state. Bat populations in Starr Chapel Cave have plummeted from 600 bats in the early 60s to 54 bats by 1996-97. . Bat populations in Mtn. Grove Cave have declined from 23 bats in 1992 to 2 bats by 1997-98 (IBAt EA-11). And populations are at higher risk today due to white nose syndrome.
The FS ignores new information since the release of the 90s era BO and since the release of the IBAt EA-DN.

For example, new Indiana bat hibernacula have been identified in the Jefferson NF]" (January 13, 2004 BO on the JNF Plan Revisionpp. 19&20) but there is no record if surveys have been conducted in and around the JNF to identify new hibernacula there. The Brack and Brown (2002) study cited in the above BO discloses that less than half of identified roost trees are shagbark hickory, but here the FS mainly only protects shagbark hickories in its inadequate mitigation measures with no assurance that adequate other potential roost trees are protected. Recent research in Indiana and Kentucky indicates that bats range up to 5 mi. from hibernacula during fall and spring swarming periods (ibid p. 25). Clawson(2002) reported an 80% decrease in bat populations over the last 40 years in the southern portion of the bats' range (Alabama, Arkansas, Kentucky, Missouri, Tennessee, and Virginia) (ibid, 13).

The "plain intent" of Congress in enacting the ESA was to reverse species extinction trends "whatever the cost." And substantive protection under the Act applies to species habitat - see Babbit v. Sweet Home (1995). The ESA "indicates beyond doubt that Congress intended endangered species to be afforded the highest of priorities." TVA v. Hill(1978) The FSM requires the agency to "[p]lace top priority on conservation and recovery of endangered, threatened, and proposed species and their habitats..." FSM 2670.31.

If the FS does not perform the needed surveys and inventories of the area and its habitat (the proper site-specific good faith "hard look" by qualified personnel using valid methods) necessary for clearly establishing the status of the Bat here, it is clear the agency would not be placing the requisite highest priority on the Indiana Bat and other T&E bats and their habitat. Past dereliction as regards proper survey information was articulated at the appeal resolution meeting for the Chestnut Ridge #2 TS on the GWNF Deerfield RD where agency personnel declared that it "wouldn't do any good to determine if Indiana Bats are using this area." And it is not clear how (or what or if) a 'contract inspection' can be relied upon for obtaining adequate Bat population and habitat mitigation monitoring. Maintenance of NFMA mandated viability would not be ensured, let alone the reversal of trends and recovery of populations demanded by the ESA. Top priority also must be given to the Endangered Virginia Big-Eared Bat; this has not occurred here

(4) Harm to Bats

The proposed logging would adversely affect roosting (sheltering), maternity (breeding), foraging (feeding), and swarming habitat of the Indiana Bat and other T&E bats. This timber sale could "take" the Indiana Bat and other T&E bats in that it could result in significant habitat modification or degradation, a violation of section 9 of the ESA. See also 40 CFR 1508.27(a&b), and 36 CFR 219.19. An unknown quantity of Bats may also be directly killed by implementation of the proposed logging.

This sale would remove the very trees (large mature with broken tops and cavities and snags and exfoliating bark) with the characteristics known to be used or favored by the Bats. Top priority is not being given to the Bats.

This felling/removal also ignores the Bats' known loyalty to habitat. The must address the impact of removing a roost tree when the bats are not there. There is lots of research that shows this would harm or indirectly kill bats. There is the need to consider, loyalty to the roost trees, stress of finding new roosts, and the impacts of removing trees next to roosts or potential roosts (i.e., making the tree more susceptible to windthrow and changing the thermal dynamics). Yet the issues were simply ignored.

Ignored also is the fact that the Bats are known to especially use riparian and stream corridors for dispersal and feeding. All forested habitat is not "equal', yet the agency's EA/BE analysis traditionally acts as if it is. The agency is proposing to disturb and degrade areas of Forest that are particularly important to the Bats. Most, if not all, of the tracts proposed for logging are adjacent to streambeds.

This area may be critical summer habitat for the Bats. A petition for designation of summer "critical habitat" is currently before the USFWS. Implementation of this proposal may result in foregoing opportunities to protect areas critical to the Bats recovery. This factor is totally ignored in the assessment and decision-making here.

The figures and narrative in the EA establish that the FS decision intends to remove and/or cut down a large amount of the potential Indiana Bat and other T&E bats' habitat at these cutting sites. The amount of disturbance proposed is not consistent with a FONSI or "no adverse effects to" Indiana Bats and other T&E bats.

(5) Mitigation

Efficacy of proposed mitigation measures for the Bat must be explained, and they must completely compensate for potential adverse effects. For example, the increased susceptibility of remnant leave trees to windthrow should be assessed. Efficacy of retaining only shagbark hickory trees is unsubstantiated; the Bats are known to use other tree species that are present here that the cuts will remove. See Table 4 at pg. 21 of GWJNF IBRS. White, chestnut, and northern red oaks, species which are prevalent here, are "Class 1 Tree Species" and are likely to be used for roosting and maternity sites. The effectiveness of retaining a certain number of snags per acre should be substantiated. If the Bats were receiving the required "top priority" all snags and large potential den trees would be retained. See Bensman v. USFS (1997). The mitigation may not necessarily retain the large old or dead/damaged trees of greatest benefit to the Species. And concern over low snag amounts (and quality) are not merely conjectural. See the information found in USDA FS General Technical Report SE-94 "Biodiversity and Coarse Woody Debris in Southern Forests" (incorporated by reference).

Another mitigation often offered for I. Bat roost trees is in effect no mitigation. "If during implementation active roost trees are identified. . ." Loggers or timber officers can not be expected to be qualified at identifying or locating TESLR species or roost trees. And there is no assurance that they would notify proper authorities if they did find anything. Reliance upon such mitigation for a FONSI is unreasonable and/or arbitrary and capricious.

There is no mitigation requirement for examining cut trees to ascertain if "incidental take" or significant harm to Bats should occur. In a meeting attended by members of the appellants on July 26, 2002 at the GWNF Deerfield RD office, the agency timber sale administrators and contract inspectors present made it quite clear that they "do not monitor or track wildlife killed" at logging sites. In the absence of any documentation to the contrary, the same behavior can be presumed to be operating at this RD. Therefore the agency would not be assuring compliance with the ESA or the viability requirements of the NFMA.

Section 9 of the ESA states that it is unlawful to "take" listed species. 16 USC 1538(a)(1) "`Harm' in the definition of `take'... may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." 50 CFR 17.3.

As the recent finding of IBats in North Carolina shows, one tree may harbor more bats than is allowed to be "incidentally" taken. Proper surveys have not been done here and are not being done here to ascertain whether Bats are present in or using cutting units. Nor is it proposed that proper monitoring by qualified personnel of trees if they are cut be accomplished to ascertain if incidental take requirements are not exceeded.

(6) Cumulative Impacts

Of particular concern are cumulative impacts to the IB. The proposed action, in concert with other past, present and future actions, could result in CIs to the Bat. Past actions have already harmed Bat habitat in this analysis area. There is clear evidence that further habitat modification (e.g., cutting of trees for sale) is foreseeable here and elsewhere in the Bats' habitat in this Forest and ranger district. The agency's assertion that CIs will not result to the Bat's populations here or in Virginia must be explained & substantiated. The Bats' viability is particularly at risk here due to it being on the edge of its range and its small population in Virginia.

The agency is at present modifying and/or damaging and/or degrading and/or destroying IB habitat (or contemplating such) throughout its range. These actions include timber sales throughout the J-GWNFs. Yet the significant CIs accruing from all of this (and other agency and non-agency actions) these must be analyzed and disclosed in the EA or EIS.

(8) Need to Consult with USFWS

The ESA requires agencies to reenter consultation when there is new information. The effect to Indiana Bats is "beyond that which is already disclosed" in the FWS BO/incidental take statement and GW-JNFs' IBat EA/BA/DN.

And the recent finding of IBats in North Carolina shows that one tree may harbor more bats than is allowed to be "incidentally" taken. As the Bats may be adversely affected, formal consultation with USFWS on this project needs to be reentered before any management ground disturbance activities occur.

NEED TO ENSURE VIABILITY OF THE INDIANA BAT and other T&E bats ON THE PLANNING AREA

The findings in the USFWS BO & Incidental Take statement and in the GWNF EA/BA for the Indiana Bat

pertained to jeopardy to the species as a whole, NOT to its specific viability on the GWNF. These are separate issues, and the Forest Service is not fully and fairly considering impacts to the Bats' viability on this particular Forest. The discussion, findings and claims in the EA/BE for this project rely upon and reiterate the discussion, findings and claims that refer to jeopardy to the Bats as a whole, not to its viability on this particular Forest. The Forest Service may not be harming "critical habitat" for the species or be jeopardizing the "continued existence" of the species overall, yet its viability on this particular Forest may still be jeopardized. NFMA requires that viability be maintained on this particular planning area, not just somewhere on the species entire range. It is this NFMA mandated viability on this particular Forest that the agency is not ensuring in this decision.
Because of the species propensity for using the habitat of the type proposed for logging here(e.g., old age/mature sites, forest types, stream corridors), these proposed cutting sites have a high potential for occupancy by the Bats.
The planners often do not seem to recognize the precariousness of the species' population on this Forest. Here on the periphery of their range, the Bats' numbers have plummeted. A net loss of 1300 Bats since counts were initiated in Virginia winter hibernacula (GWJNF IBat EA-11), a decline of approximately 75% in this state.
(1)Lack of viability analysis
Yet there is no viability analysis for the Indiana Bat and other T&E bats for this specific proposal or for the GWNF in the administrative record. There is not even an estimate of a viable population in the FEIS, or where this population is distributed. Nor has an extinction threshold for the Bats on this Forest been established. And there is no analysis of cumulative impacts to the Bats' actual population on the GWNF in the administrative record for this sale. In addition, proper surveys have not been done here and are not being done here to ascertain whether Bats are present in or using cutting units. Nor is it proposed that proper monitoring by qualified personnel of cut trees be accomplished to ascertain if Bats are being "taken" or harmed. Nor is it proposed that qualified personnel ascertain if roost trees are being cut during sale implementation.
(2) Insufficient mitigation
The mitigation for the Bats offered by the agency does not accomplish compliance with the NFMA. Often the chief mitigation offered for I. Bat roost trees is in effect no mitigation. "If during implementation, active roost trees are identified. . ." And the other frequent so-called mitigation measure ("If during implementation of the project any TES species are located . . ." -) is likewise vacuous. Loggers or timber officers can not be expected to be qualified at identifying or locating TES species such as Indiana Bats and other T&E bats or Indiana Bat and other T&E bats roost trees or maternity roosts. And there is no assurance that they would notify proper authorities if they did find anything. Reliance upon such so-called mitigation is unreasonable and arbitrary and capricious. Reliance upon such so-called mitigation does not ensure that significant affects to the Bats' viability on this Forest would not occur.
Further, there is no mitigation requirement for examining cut trees to ascertain if "incidental take" of IBats and other T&E bats has occurred.
(3) Data not obtained - Non-compliance with Plan
Hard data on their population status in this project area has not been gathered, nor has a rigorous viability analysis been performed. Population inventory information of the Bats using this Forest in spring, summer, and fall have also not been obtained. The project area, including proposed cutting units, is habitat for the Indiana Bat. "When adequate population inventory information is unavailable, it must be collected when the site has a high potential for occupancy by a threatened, endangered, proposed, or sensitive species." See Std. 240 at GWNF LRMP 3 - 14. This information, required for a well-informed well-reasoned decision, must be gathered here.

Top priority also must be given to the Endangered Virginia Big-Eared Bat; must occur here. This species is listed as "Endangered" federally and by the state of Virginia. There is no population, monitoring, survey, or viability information on the species in the FEIS, the Forest Monitoring Reports.
This Bat is known to use the type of forest habitat proposed for intensive disturbance here.
It is possible that an unknown cave hibernaculum used by this species exists closeby (it is known that Bats in West Virginia "travel up to 6 miles from their caves to forage" - see pg. 63 of "Biological Assessment for Threatened and Endangered Species on the Monongahela National Forest West Virginia November 2000"; document incorporated by reference).

This species is known to use "tree crowns" in "forest habitat" to forage in summer (MNF BA at pg. 62). During summer foraging a radio-tracked Bat "spent most of its time in wooded areas" (id at pg. 66). More specifically this species is known to use mixed oak or oak/pine sites for foraging (id.), the very forest types found in this project area and proposed "cutting units".
Research shows that these Bats "forage only after dark." (id. at pg. 62) So they cannot reasonably be expected to be detected by "walking through" "field surveys" conducted in the daytime.
In addition, Townsends big eared bats (Corynorhinus townsendii) have recently been found use large hollow boles of trees for roosting elsewhere in their range in the U.S. For example, the Idaho Habitat Conservation Assessment/Conservation Strategy contains information on recent discoveries (1990s) of Corynorhinus townsendii roosting in cavities in trees in the western U.S. The FS should have determined whether there is a potential for Virginia big eared bat to roost in the trees, or in boles of large trees, here.
Establishment of whether these units and project area are actual foraging areas is necessary so as to be consistent with the NEPA, NFMA, APA and/or the ESA. This is especially important due to the closeby location of a critical hibernaculum and the even closer occurrence record. The requisite full, intensive, and competent surveys, inventories, and data gathering to ascertain use of this area by the Bats must be performed. By not performing the needed surveys and inventories of the area and its habitat (the proper site-specific good faith "hard look" by qualified personnel using valid methods) necessary for clearly establishing the status of the Bat here, it is clear the agency would not be placing the requisite highest priority on the "Endangered" Virginia Big-eared Bat and its habitat.

The Indiana bat and other PTESLR bats, cave- and karst-related species, and cave- and karst-related biological communities may be found in or downstream from the PA. The eastern small footed bat (Myotis leibii) may occupy and/or forage in the area. According to Burt and Grossenheider, Peterson's Field Guide to the Mammals of North America (1976), the habitat for this bat includes caves, crevices in rocks, and forested areas (p. 33).

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.

There is currently no Forest Plan provision for protecting the Northern long eared bat than required for the Indiana bat. Forest clearing proposed in the Alternatives could adversely affect roosting (sheltering), maternity (breeding), foraging (feeding), and swarming habitat of the northern long-eared bat and other T&E bats. Logging could remove the very trees (large mature with broken tops and cavities and snags and exfoliating bark) with the characteristics known to be used or favored by the Bats. Top priority should be given to the Bats.
This felling/removal also ignores the Bats' known loyalty to habitat. The agency must address the impact of removing a roost tree when the bats are not there. There is the need to consider, loyalty to the roost trees, stress of finding new roosts, and the impacts of removing trees next to roosts or potential roosts (i.e., making the tree more susceptible to windthrow and changing the thermal dynamics).
Efficacy of proposed mitigation measures for the Bat must be explained, and they must completely compensate for potential adverse effects. For example, the increased susceptibility of remnant leave trees to windthrow should be assessed. Efficacy of retaining only shagbark hickory trees is unsubstantiated; the Bats are known to use other tree species that are present here that the cuts will remove. See Table 4 at pg. 21 of GWJNF IBRS. White, chestnut, and northern red oaks, species which are prevalent here, are "Class 1 Tree Species" and are likely to be used for roosting and maternity sites. The effectiveness of retaining a certain number of snags per acre should be substantiated. If the Bats were receiving the required "top priority" all snags and large potential den trees would be retained. See Bensman v. USFS (1997). The mitigation may not necessarily retain the large old or dead/damaged trees of greatest benefit to the Species. And concern over low snag amounts (and quality) are not merely conjectural. See the information found in USDA FS General Technical Report SE-94 "Biodiversity

and Coarse Woody Debris in Southern Forests" (incorporated by reference).
Another mitigation often offered for bat roost trees is in effect no mitigation. "If during implementation active roost trees are identified. . ." Loggers or overseers can not be expected to be qualified at identifying or locating TESLR species or roost trees. And there is no assurance that they would notify proper authorities if they did find anything. Reliance upon such mitigation for a FONSI is unreasonable and/or arbitrary and capricious.
Of particular concern are cumulative impacts to the northern long eared bat. The proposed action, in concert with other past, present and future actions, could result in CIs to the Bat. Past actions have already harmed Bat habitat in this analysis area. There is clear evidence that further habitat modification (e.g., cutting of trees for sale) is foreseeable here and elsewhere in the Bats' habitat in this Forest and ranger district. The agency's assertion that CIs will not result to the Bat's populations here or in Virginia must be explained & substantiated. The Bats' viability is particularly at risk here due to declines from white nosed syndrome in Virginia.
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.. ÒCompared to random trees, roosts of northern long-eared bats were within intact forests (x2 = 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 (x2 = 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.Ó ÒNorthern 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 (Cratagus spp.).Ó ÒComparing roosts of Indiana bats and northern long-eared bats (Table 3), two variables were significant (x2 = 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 (x2 = 14.954, d.f. = 1, P < 0.001), and M. septentrionalis roosts were less decayed than those of M. sodalis (x2 = 4.876, d.f. = 1, P < 0.027).Ó(Timothy C. Carter , George A. Feldhamer, ÒRoost tree use by maternity colonies of Indiana bats and northern long-eared bats in southern Illinois,Ó Forest Ecology and Management 219 (2005) 259Ð268).
-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
Indiana bats: Mean values of canopy cover are highly variable among studies, ranging from <20 to 88 percent (FWS 2007).
FWS (2007) ÒFirst, some variation undoubtedly is related to differences in
Food sources:
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)
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 Òselective

opportunist,Ó 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, Feldhammer et al. 2009, Fenton and Bogdanowicz 2002; Ratcliffe and Dawson 2003). Within canopy more than Indiana bat (Nagorsen and Brigham 1993).

The 2001 DCR Eastern Small Footed Bat Conservation Agreement states: " When timber harvesting activities occur near summer bat roosts, caves, and foraging areas, use of buffers and minimal disturbance zones is strongly recommended. Timber harvesting techniques that leave snags,and trees with cavities and exfoliating bark are potentially beneficial, and are recommended in areas known to support eastern small-footed myotis. " The conservation agreement states that "Summer roosts are often in trees,buildings, behind loose bark, on rock outcrops, and on rocky ridges (Barbour and Davis 1969; Tuttle1964; Whitaker and Hamilton 1999)." The FS must perform the requisite surveys using advanced methods to determine in the eastern small footed bat exists in the area. The project area contains rock outcropsThe FS should ensure that "buffers and minimal disturbance zones" were implemented or adequate. The should require the recommended " timber harvesting techniques that leave snags,and trees with cavities and exfoliating bark" be implemented as mitigation measures around these areas. Habitat for small footed bats, also other species that rely on forested rocks and boulders (e.g., the Allegheny woodrat, rattlesnakes, southern rock voles, coal skinks, eastern ribbon snakes, mountain earthsnakes, pine snakes, turtles, salamanders, and other species) could also be affected. Only a limited number (and/oronly limited types of species) trees and snags in these categories were protected. The eastern small footed bat and other species (and their habitats) are not adequately considered or protected.

Remote Areas

The Forest Service should examine remote habitat, on a landscape scale, and ensure that sufficient large blocks of remote habitat and linkages between such blocks of habitat remain. Areas such as the Laurel Fork Virginia mountain treasure area, and other remote areas should be examined.

- A coalition of 17 Virginia and regional groups has identified a 3,657 acre area encompassing most of the western half of this project area as a Virginia Mountain Treasure Area. The groups recommend that the Laurel Fork VMT area be protected from roadbuilding. See Virginia Mtn Treasures, Wilderness Society et al., p. 88. The logging planned here would put the outstanding values of this area at serious risk.

- Would any roadless or unroaded areas in the vicinity of the project be impacted? How would roadless, unroaded, remote, or area sensitive habitat, recreational, watershed and other values be impacted?
-The FS has acknowledged the importance of roadless areas for a number of resources and values on NFS lands (See Federal Register Notice, Roadless Area Conservation Rule (RACR), January 2001). The FS should identify all inventoried roadless areas, uninventoried roadless areas, and unroaded areas (as defined in RACR, the RACR FEIS or similar guidance) of any size, should identify the roadless characteristics of all of these areas, and should analyze the impacts of this project and other activities/events on these areas. The FS should analyze the impacts of the project on wilderness el igibility.
-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 recognized 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, Sundland, 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 Fragmentatio
n 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 "manag
ement" 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 m
ust 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.

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.

Eligibility for Wilderness

"[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)

FS should examined whether any activities approved as part of this project could impact the any area's future eligibility for wilderness.

Trout Streams, Trout, Aquatic Species and Amphibian Species

There is trout habitat in this area. See Stock and Cove Cr top map VAFWIS. Adequate protection of these and other trout streams in the project area should be a high priority. Perennial, intermittent, and ephemeral tributaries of trout streams should also be considered because these play an important role in downstream water quality.

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

Headwaters and small streams are particularly sensitive: "The effects of sediment delivered to a stream channel diminish as watershed size increases. Most vulnerable are small sensitive headwaters catchments where concentrated timber harvest activity can have profound results. . . . After four years, sediment rates are normally back to predisturbance levels. However, once sediment is deposited in a stream channel, its effects can persist for decades or even centuries (Frissel, 1996)." (JNF Enterprise TS EA-42; incorporated by reference). "Generally the headwater fish populations are the most threatened." (GWNF FEIS J-8). For information regarding salamander use of headwater stream habitat see <http://www.epa.state.oh.us/dsw/wqs/headwaters/TechRep_FishAmphibian_2002.pdf> (incorporated by reference). This information needs to be fully considered and incorporated into the analysis. Expanded no cutting or no disturbance zones around stream courses needs to be implemented here.

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

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

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

"Downed material in these spots is providing cover which was formerly provided by a forest canopy. This downed material is retaining the cooler temperatures and higher humidity associated with springs and seeps." (Hagan Hall Wildlife Existing Condition report, Aug. 1998). "Removal of material from these sites [seeps, springs, bogs, and forested wetlands], particularly where most of the tree canopy is now gone, would increase the solar radiation causing warming temperatures and less humidity. . . . increased temperatures and drier air can affect the presence of certain amphibians and small mammals." (Hagan Hall EA-47). Ecosystem management should recognize that there is more to seeps, springs, bogs, and forested wetlands than just their physical characteristics. If these locations become unusable or unattractive to some amphibians, mammals, or other taxa that would be expected here, then they are not fully functional. There should be analysis or citation to studies to corroborate the assertion that retention of 5-15% (or whatever basal area the cutting method retains) of the overstory cover shading these sites is enough to maintain their full functioning and attain their DFC.

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

Seep areas provide critical riparian habitat. A VDGIF biologist states they should be protected "by a minimum of 100 feet on each side (preferably 200-300 feet)" (see GWNF Johnson Mtn. timber sale project file at tab 20; incorporated by reference). This 200-300' zone should be applied here. See also Jan 13, '04 USF&WS BO for the JNF p. 2 bottom paragraph; and Seth Wenger, 1999, "A Review of the Scientific Literature on Riparian Buffer Width, Extent and Vegetation", Institute of Ecology, University of Georgia, 59 pp. (both in your possession and incorporated by reference).
Although the FS proposes a high level of logging ,roadbuilding, road reconstruction and other activities- this in addition to previous logging and roadbuilding - the FS fails to adequately analyze the total impact on water quality, aquatic health, trout populations, other aquatic species populations and amphibian species populations, including impacts to headwaters, small streams, ephemeral streams, seep areas, areas around aquatic breeding sites for amphibians, sedimentation, and water temperature. The analysis does not examine the site-specific impacts of a project of this scale or cumulative impacts.

The FS should have analyzed how the project (including forest clearing, roads, and other infrastructure) affect sediment-sensitive species such as trout, and other aquatic species, including any TESLR fish species found downstream in the Cove Creek watershed, Stock Creek watershed and Clinch River. Efficacy of proposed mitigation measures for the aquatic species must be explained, and they must completely compensate for potential adverse effects.
Cumulative effects of the project, other land disturbing activities in combination with other past, present, and reasonably activities and events in the range of the candy darter should be analyzed in accordance with NEPA. There is a possibility that these activities in combination with non-FS activities or events may already be contributing significant levels of sediment, affecting the viability of the candy darter.

Virginia Natural Heritage conservation sies

The FS should ensure the public that activities (including proposed logging, burning at foreseeable intensities, roadbuilding, skid trail construction, dozer lines, and other infrastructure) are consistent with Virginia Natural Heritage recommendations for these areas. The FS should ensure the public that activities will not adversely impact the biological resources, aquatic resources, and other resources found within and around these special biological areas.

For example, see A Natural Heritage Inventory of the Clinch Ranger District II, GW&JNFs, Ludwig, Moorhead and Belden (Nat. Her. Tech Rpt 95-3, 1995:

Cliff Mountain - 2400 ac.
"This large site consists of an impressive series of low cliffs and steep slopes along portions of the southwest face of Cliff Mountain and the northwest face of Powell Mountain…

"Timber harvest is a threat to the significant communities and rare plant species at this site. Timber harvest could damage these resources directly or by causing erosion and sedimentation in this area. In addition, timber harvest could change light and moisture regimes or foster the establishment or speed of invasive, non-native plant species."
"Additional inventory is needed in this area to determine if other occurrences of natural heritage resources are present." (pp. 22-25)

Cove Creek Headwaters 50 ac.
"This site contains a small but relatively impressive, relatively pristine stand of old growth forest." (p, 33 et seq)

Pick Breeches and Flannery Ridges:
"This site contains three contiguous significant forest communities, which together comprise an exceptional stand of old-growth forest. This stand is unusual and significant because of its very large size .. and the fact that large portions of the stand occupies gentle to moderate sloping terrain."
"Additional inventory is needed at the site to determine if other occurrences of natural heritage resources are present.:
"Immediately prohibit timber harvest, mining, and road building within the significant communities on the site." (pp. 50-54).

See also. Special Biological Areas on the Jefferson National Forest, First Supplement (Nat. Her. Tech Rpt. 00-11)

Because of the abundance of relatively Natural Heritage identified conservation sites throughout the area and on multiple sides of the area, thorough additional surveys and studies should be conducted between Natural Heritage conservation sites to determine if natural heritage resources exist elsewhere.

Steep Slopes
The District needs to analyze the slopes and soils in the project area and to consider avoiding riskier sites or adding mitigation. Much of the information needed to conduct this analysis is readily available for download and GIS analysis … Conducting these important analyses as early in the process as possible will help the District plan and thus expedite the project and improve management. Further, the Forest Plan requires compliance with Virginia's Forestry Best Management Practices for Water Quality (BMPs), which provide that logging plans should consider 'steep slopes, highly-erosive or hydric soil types.'
The 10B Areas within the Jefferson Forest Plan are illegal
The FS Must Reinitiate Section 7 Consultation with the FWS Because the Material Changes Made Between the Draft and Final LRMP Were Not Considered in the 2004 Biological Opinion

Reinitiation of consultation is required under § 402.16(c) because the FWS did not consider the changes made between the publication of the Draft LRMP and the Final LRMP in its January 2004 Biological Opinion. Title 50 C.F.R. § 402.16(c) requires reinitiation of formal consultation:

If an identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion [.]"

The changes to the final revised LRMP affect the impacts determinations to the Indiana bat and listed endangered aquatic species.

First, the FS reclassified 16,200 acres (2%) of the JNF as Management Prescription 10B - "High Quality Forest Products" - potentially increasing the local impact of timber harvest activities in those areas. There is no evidence that the FWS was aware that the FS had already earmarked 2% of JNF lands for timber production when it prepared the 2004 Biological Opinion, even though the Forest Service was ready to send the final revised LRMP to the printer when the FWS was preparing the BO. The locations of new logging areas coincide with two areas providing habitat for Indiana bat and listed imperiled aquatic species, on the Clinch and the Glenwood-Pedlar Ranger Districts. The significant local impacts this will have on riparian areas within the 10B Prescription or on Indiana bat foraging patterns in these areas is undetermined, and in fact, unanalyzed in the BA/BO process. However, the Forest Service cannot reasonably argue that it will have no additional effect on the consultation determinations.

The entire JNF is considered to be foraging habitat for the endangered Indiana bat, and heavy localized timber harvest can be assumed to pose a significant threat to any Indiana bats foraging in lands classified as 10B. The

FWS should have the opportunity to evaluate the effect such a conversion of a substantial percentage of the JNF into a timber production zone will have on local PETS. In regard to the aquatics species, the FWS concurrence is already highly qualified and believes the FS is doing only the minimum to protect imperiled aquatic species, let alone contribute to their recovery. The impacts of establishing areas for commercial logging where impacts from such operations flow downstream potentially impacting aquatic habitats must be analyzed.

Second, the FS increased the number of acres of timber harvest annually by nearly 10% from 1,830 to 2,010 acres. In the 2004 Biological Opinion, the FWS considers only 1,830 acres of timber harvest annually in its determination of the level of disturbance to the Indiana bat. BO at 23. The FWS Biological Opinion considers the entire JNF as Indiana bat habitat, and classifies timber harvest as one of the primary activities under the LRMP with a direct effect on the species. BO at 4, 7. Any timber harvest on the JNF inherently affects the Indiana bat habitat, and therefore this increase in the scale of timber harvest activities should have been considered in the BO. Logged acreage also is one of the factors in determining the incidental take permitted by the BO, discussed herein below, and the increase in acreage will impact the incidental take assessment.

Third, the Final Jefferson LRMP includes a new distinction between the "extended riparian corridor" and "the riparian core." See Jefferson LRMP at 3-180. The final LRMP maintains that any land classified as extended riparian corridor is available for timber harvesting if the neighboring management prescription is suitable for timber harvest. Jefferson LRMP at 3-180. Not only is this a significant change to the LRMP that was not evaluated in either the BA or BO, the FWS only conditionally concurred in the FS's determination of "not likely to adversely affect" on the various threatened and endangered aquatic species on the JNF by establishing that riparian corridor widths "may need to be adjusted at the project level to ensure additional protection." BO at 2. The FWS also "stresses the need for [its] continued involvement as part of an interdisciplinary team that will ensure adequate protective measures for aquatic listed species and critical habitat." Id. However, the FS's modified Riparian Corridor Management Prescription 11 does not provide an adequate mechanism for such an extension of the riparian corridor. Jefferson LRMP at 3-180.

The newly added distinction between core and extended corridor effectively undermines the primary purpose of extending the riparian corridor and fails to protect or aid in recovering imperiled aquatic species. It also is significant that the Management Prescription 10B areas have many areas with slopes greater than 10%. Since the FWS established that the core width is merely the "minimum necessary," it implicitly contemplated numerous situations in which the corridor must be extended to provide adequate protection for aquatic T&E species. BO at 2. The modifications to Management Prescription 11 eliminate the full and already marginal riparian standards beyond the riparian core, and thus require reinitiation of consultation.
Cerulean Warbler - The JNF-Clinch RD established "An Interim Management Strategy" (IMS) Cerulean Warbler on June 1998. (1.) resurveys of another part of the Clinch RD in response to findings of the USDA Office of Inspector General (1995) that proper Bes/surveys had not been conducted for the Big Flat Top EA/FONSI, which led to the (2.) the conclusion in the Maple Springs BE May 23, 1995, also outside of this area, that a concentration of ceruleans would be adversely affected by Maple Spring Br. TS, which led to (3.) guidance from Bill Damon (dated Sept. 12, 1995), which led to (4.) surveys of the Clinch RD in 1996 & 1997, which led to the IMS (1998). Pertinent sections of the IMS are highlighted. It is clear that the Clinch is "adjacent" to the core area of the warbler's range and may possibly be "part of the core area". Only a few cerulean warbler sighting had been confirmed in the RD by the time of the IMS and many of them were in or near the 10B area. Sixteen cerulean warblers had been visually confirmed on the RD by the time of the IMS; 4 of those stations are in the Cove Cr. watershed and probably in or near the 10B area. Another is probably within the area (Elisha Lick). Another three (Lonesome Ridge) are nearby in an adjacent 6C area. See also "Research and Conservation Needs" [surveys, "deferring management activities in forest habitat with documented cerulean warbler presence"] and "Conservation Measures to Mitigate Loss of Habitat" [eg maintain certain levels of upper canopy trees greater than 18 in dbh, tree height retention requirements, etc., monitoring experimental vegetation manipulation every two years for a period of 10 yrs., etc.]

See the Maple Springs BE (1995).

See also previous Cove Cr. BE (1996) for a project that took place in the area that is now 10B. E.g, ceruleans require large tracts (1730 acres) of mature hardwood forest. This project did not cut any stands older than 80 yrs. old but the subsequent IMS allowed this but imposed other "Conservation Measures." In 1996, prior to the IMS, the FS found that alternatives 2-5 of the CC EA "would likely result in a trend toward federal listing or the loss of viability of the cerulean warbler." (CC EA-7-8; CC BE; DN 7 & 8). Alt 6 was the only alternative that met the Sept. 12, 1995 JNF guidance. Alts. 1-5 logged 995 ac., 640 ac., 1027 ac., and 739 ac. respectively while Alt. 6 logged 370 ac. I think the biggest factor was not logging the 80 yr. Old stands which was considered "potential cerulean warbler habitat" (EA 45 et seq).

See also maps of potential cerulean warbler habitat identified for surveys in early stages, cerulean stations (on Cove Cr.) and other info from breeding bird surveys.

Old growth - The 10B area goes directly to the boundary of the largest old growth patch on the inventory in the Clinch RD (on the lower part of Flannery Ridge) The stand is "unusual and significant because of its large size - 900 acres "(VDNH Nat. Heritage Tech. Rpt. 00-11).

Cove Cr. Headwaters, a "small (ca. 17 acres) but impressive, relatively pristine stand of old growth forest" also exists just to the north of the area (VDNH Nat. Heritage Tech. Rpt. 00-11).

Two other significant old growth areas have been identified within the area by VDNH, the "Good Spur Ridge Area" and the "Cove Cr Submesotrophic Forest U94OVE0IVAUS." (see eg, VDCR letter on Cove Cr project dated Feb. 27, '95). These appear to be the small 6C "islands" in the middle of the 10B area.

Invasive plants, deer browsing, loss of connectivity with adjacent forests could affect these areas. Previous logging has already occurred near some of these areas.

Aquatic & Soils- Cove Cr. is designated as natural trout waters by the state water control board (Laurel Fork OAA p. 11). Stock Cr. and Cove Cr. are currently designated class vi trout streams by the state water control board (Jan 15 '03 Water Quality Stds). These may not seem significant classes, but there are relatively few trout streams at all in the Clinch RD and the protection of any an all of the few trout streams in the Clinch RD is of utmost importance.

Several of the soil types in the area have severe erosion hazards over 35%. Some soils on steep lower slopes adjacent to drainages have severe erosion hazards. "There are very steep slopes south of Maple Gap below Good Spur Ridge along Stock, Dry and Cove Creeks. These steep slopes are areas where soils may become unstable when roads are built across them. Slide prone areas are more prevalent on these slopes" (OAA 9 & 10). "There are significant areas of floodplain soils along Cove Cr. near the junction with FS 294 and along Stock Creek near the intersection with FS 239." (OAA p 10).

The OAA says that past mining activities have already negatively impacted the lower reaches of Cove Cr.

Remote habitat and Roadless - the west side of the 10B area overlaps a Va. Mtn. Treasure area (Laurel Fk. (p. 88). There is a possible unroaded area to the south of Rt. 710 where most of the Flannery Ridge old growth is, and perhaps other areas. The Aug 1997 JNF Roadless Rpt lists a 2,900 acre area in Laurel Fk, but it was never conclusively determined if that area (or a smaller or differently configured area) met or didn't meet the road density criteria for roadless areas in the eastern US. The 10B area goes well to the west of Stock Cr. and Stock Cr. Rd. (Rt. 239), the natural boundary for the area, and activities would alter any unroaded characteristics of that area or the old growth tract.

The 10B area covers approximately half of the Laurel Fk. Opportunity Area (OA). The Laurel Fk. OA Analysis (OAA), describes the OA as follows: "the relatively unroaded character of this OA and the fact that 72% of the area is mature or old growth hardwood increases the value of the area to nongame wildlife, in particular forest interior bird species requiring large blocks of undisturbed habitat." (OAA-15). Relative… so to speak. The Clinch as a whole is heavily roaded, and this OAA is relatively less roaded - one of the more remote areas of the Clinch RD.

According to John Baker of VGIF, after declines of black bears in the Clinch region, VGIF completed a black bear reintroduction program between May 1988 and Oct 1992. "The reintroduction areas used had suitable, but unoccupied bear habitat at the time. The Department released a total of 37 bears in Wise and Scott counties from June 1990 to October 1992. The Department used large forestland tracts found in counties and portions of counties closed to bear hunting as 'nucleus' release sites to augment a small existing bear population. These large tracts were dispersed throughout the region, and provided the best, isolated habitat." (letter to me July 11, 1996) At the time, Baker said the FS was doing an "excellent" job at providing a variety of food sources, and that human disturbance was "low enough", but this was several years ago. Today, I believe it is unclear how the 10B area (along with recent threats of ATV trails [eg Sawmill ATV trail in this area scoped in 2003], mineral development [E.g., Coeburn gas field development - private minerals and N Fk of Pound - federal minerals, elsewhere on the RD] and other projects could impact the bear.

Two eastern cougars were reported seen in the Cove Cr. area on Nov. 1992 by a cabin-owner (Dec. 1993 conversation record with FS). The person reporting this said a friend of his had also seen cougars in the area.

Range of Alternatives

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

Other alternatives should be considered that strongly protect black bears; native species susceptible to invasive species; salamanders;TESLR species; bats; cerulean warblers; NTMBs; cultural resources; riparian areas;; trout; aquatic species; amphibians; wood turtles; old growth; steep or landslide prone slopes, and other issues raised in our comments.

Other Issues:

- The project could potentially impact numerous rare animals and plants, including salamanders, rare plants, rattlesnakes, coal skinks, Allegheny woodrats, and other species.
- Areas with steep slopes, severe erosion hazards, compaction hazards, mine spoil areas, riparian soils, and floodplain soils exist in the area (Laurel Fk OAA 9&10).
- Cove Creek, Laurel Fk and Wolf Cr and possibly other streams are natural trout waters (OAA 11).
- In the 1990s, 62,000 recreation visits occurred in this OA per year (Laurel Fk OAA 40).
- We are concerned about how this project in combination with other activities/events could produce cumulative impacts. Consider the cumulative impacts all activities/events, including logging, roadbuilding, herbicide spraying, prescribed burns, private lands activities and other activities/events in and adjacent to the project area,

including adjacent OAs.
- We are concerned about how this project could impact various aspects of the ecosystems in this area. How will the project impact forest fragmentation, the introduction and spread of non-native and exotic plants, black bears, forest interior, early successional habitat, grass-forb habitat, mature/old growth forests, MISs, PETS species, locally rare species, species recognized by experts as rare, state-listed species, species with viability concerns, disjunct species, species near or at the edge of the limits of their range, species with special habitat needs (such as freedom from disturbance, uncompacted soil, wildlife corridors and mobility needs, sediment-free water, unpolluted water, area sensitive habitat, forest interior habitat, old growth habitat, and/or mature forest habitat,etc.)?
- We are concerned that this project could adversely affect soil resources and aquatic resources. What effect will the project have on soil productivity and water quality?
- We are concerned that motorized recreation could adversely affect non-motorized recreation, wildlife, and other resources. Develop alternatives that feature/protect the primitive experience of non-motorized hiking trails and that mandate some road closure, obliteration, and revegetation where appropriate in this analysis. What are the impacts of the project on black bears, black bear habitat, other remote habitat species, trout, and other aquatic species? What are the impacts of roads on the quality of the hiking or backcountry experience? How great is hunting pressure in the project area? Near the project? Have any open or closed roads been used for poacher access or illegal ORV access?
- We are concerned about the impacts of this project on hunting, fishing, other recreation and wildlife. What conflicts with hunting, fishing, other recreation and wildlife do existing/planned roads/ORV trails create?
- We are concerned about the impacts of this project on hunting, fishing, other recreation and wildlife. Is the area a popular hunting area? How will the project affect wildlife? Hunters? What conflicts exist among hunting/wildlife and loggingin the area now? What conflicts are likely to result in the future? What types of game is hunted in the area? What types of hunters (gun, bow, type of gun, type of game, difficulty of finding this particular type of game, length of hunting trip, season of hunting trip, proximity to hunting cabins nearby, local use, traditional use of camp-sites, in-state, out of state, tolerance for noise, tolerance for litter, tolerance for signs of human use and its effect on game, etc.) hunt in the area? How would the project affect hunters and hunting patterns?
- We are concerned about the impacts of this project on hunting, fishing, other recreation and wildlife. Is the area, including the downstream area, a popular fishing area? What conflicts among aquatic species/ fisheries /water quality/fishermen/-women and logging projects exist and are likely to exist in the future as a result of this project?
- We are concerned about the impacts of this project on fish and fish habitat. What wild trout waters, stocked trout waters, and other fisheries exist in the project area and downstream? What is their present condition? How will they be impacted
- We are concerned that there is a potential for the project to impact perennial streams, intermittent streams, other streams, seeps, springs, and riparian areas of all forms. Virginia BMPs, p. 5, describe the important role of intermittent streams, "which despite not having water in them for parts of the year, can contribute significantly to water quality." "Sensitive areas such as wetlands, bogs, seeps, and marshes are found in all watersheds and should be treated with care and receive special protection." (BMPs, p. 5) This project should not be undertaken unless it can be demonstrated that the project will maintain or enhance water quality, trout populations, fisheries, aquatic species, riparian areas, bogs, wetlands, seeps, ephemeral streams, intermittent streams and perennial stream in the Hunting Camp Creek watershed and project area.
- This project should be in compliance with the antidegradation policies of the commonwealth, the DEQ (above, pp.4-5) and the Clean Water Act. "As a minimum, existing instream use and the level of water quality necessary to protect existing uses shall be maintained and protected." (DEQ, p. 4) Some streams receive a higher level of protection. The FS should ensure that all aspects of this project are consistent with these laws and policies.
- We are concerned about the impact of the project on resources and users that are sensitive to roads, other motorized travelways, and motorized use. How will these resources and users be protected? Are existing roads/motorized trails (legal and illegal) in compliance with General Direction (1), first heading, JNF Plan, p. IV-87-88? Are road densities within plan limits in this analysis area? Roads should "not be available for motorized

public use" unless compliant with the provisions found under General Direction (1) second heading (p. IV-88). Roads should be seasonally or temporarily closed to motorized use if "there is a temporary or recurring need to" do any of the things described in General Direction (1), third heading, pp. IV-88-89. Consider all of these issues and factors in the transportation analysis. Do not approve this project if non-compliant with the Plan (e.g. if these provisions cannot be met). Include provisions to frequently monitor the condition of the project area and to monitor resource/user conflicts and close motorized use before any resource damage occurs or before any history of user conflicts emerges. Allow additional monitoring and evaluation by non-Forest Service personnel, if offered. Immediately close motorized use when evidence from Forst Service personnel or others indicates that any resource damage is occurring, or about to occur, or that a history of user conflicts is emerging.
- The FS has stated that "illegal use of ATVs on district roads and trails in increasing" (Old Sawmill SN 1). How will the project increase illegal ATV use?
We are concerned that the project may impact the visual/aesthetic values, recreational resources, and/or ecological resources of key areas within and around the project area. Consider the project's and other cumulative activities'/events' impacts on visual/aesthetic sensitivity, recreational resources, and/or ecological resources of key areas of the area and vicinity, including old growth areas, proposed designated old growth areas and other specially designated areas under alternatives considered in the plan revision, proposed or eligible W&S Rivers, lookouts/recreational sites, any areas of any size that meet road density stds. and minimum logging thresholds for roadless areas in the east, and all other recreation areas, fisheries, trails, access roads to trails and trailheads, campgrounds, primitive and dispersed campgrounds, roads used by hunters and recreationists, trail corridors, sites visible along the length of all sites/trails/corridors, archaeological sites, seasonal differences, 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, club hikes, routes of wildflower pilgrimages, etc.), hiking shelters, (DNH) special biological areas, national recreation trails, streams, proposed recreation sites, and proposed trails, scenic byways and connectors. Consider direct impacts to all of the above. Indirect impacts. Consider impacts to the entire primitive, dispersed and non-motorized recreational experience associated with the above. Consider impacts to remote or rarely-visited areas. Use the SMS regarding aesthetics. Consider sight, sound, and the full range of aesthetic experience. Use up-to-date information and science regarding aesthetics. Consider the quality of the overall scenic/aesthetic experience regarding the Clinch RD, the project area and project area. What values should be protected? What are people's expectations?
- We are concerned that the project may directly or indirectly impact the whole recreational experience 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. 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 remote or rarely-visited areas. Use the SMS re. aesthetics. Consider sight, sound, and the full range of aesthetic experience. Use up-to-date information and science re. aesthetics. What values should be protected? What are people's expectations? Cumulative impacts should be considered.
- We are concerned that the project may impact soil resources, watersheds, and aquatic resources. 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, karst and cave areas, and other sensitive soils along the creeks in this project areas and their tributaries? What portion of the rts 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?
-How will the project affect watershed quality? Woody debris recruitment?
- We are concerned that the project may impact existing or needed buffer zones around several types of resources in the area. How will the project affect riparian buffer zones? Old growth buffer zones? Potential old growth buffer zones? Riparian forests and other such forests are valuable resources in their own right and deserve their own insulating buffers from disturbance.
- We are concerned that the project may impact various aspects of soil resources, watersheds, and aquatic

resources. .How will the project affect watershed quality and woody debris? The organic content of soils? Pit and mound topography? Large boles on the forest floor? Snags? Nurse logs? How will this affect soils in the project area?
- We are concerned that this project may have cumulative effects in combination with other activities and events. What are the cumulative impacts of this project along with those of ozone, acid rain, hemlock adelgid, paucity of old growth trees and interior forest habitat, poor water quality, effects of roads, slowing tree growth rates and other legitimate forest health problems not thoroughly recognized by the Forest Service to date? How will this affect the project area? Please examine forest health in an ecological manner, in terms of the health of the entire forest, not just individual trees. How will the project contribute to the above forest health problems, including impacts to water quality, increased road densities in the forest, and the spread of exotics?
- We are concerned that the project could adversely effect many important habitat components for wildlife. Examine whether the project could lead to a hiatus in mast production. Den trees. Large above-ground den trees. Bear wallows. Examine how the project will impact mast utilization. Den tree utilization? Early successional habitat and grass-forb utilization? Stream and riparian area utilization? Foraging, feeding, breeding, nesting, denning and shelter? Wildlife corridors? Dispersal and interaction among isolated and connected populations, families, individuals and other groups of wildlife? Other habitat components for black bears, turkey, pileated woodpecker and other wildlife.
- We are concerned that the project could adversely effect many important habitat components for wildlife. How will species' vulnerability to hunting, poaching, and disturbance be affected?
- How would the project affect old growth, potential old growth, and old growth reserves? Would the project affect the size of any old growth tracts, old growth reserves, or buffers (as habitat value)? The project impacts some of these areas directly. Would cutting or trail construction be taking place in or near any old growth tracts? How would the protect affect potential old old growth levels for turkeys? Bear? Salamanders? Songbirds? Ceruleans? Other key species? TESLR species?
-This project may have both direct and indirect effects. Biological and resource surveys should be conducted throughout the entire project area, not just along the immediate trail route or its immediate vicinity.
- We are concerned that the project could adversely effect populations, individuals or habitat of PTESLR species. How will PTESLR (TES, locally rare species, and proposed species, including candidate species), PTESLR species habitat, PTESLR viability and T&E species survival and recovery be affected by the project and all cumulative effect and connected actions? How will MISs, MIS habitat, and MIS viability be affected by the project and all cumulative effect and connected actions? What are the populations of these species? What are the population trends for these species? What are levels of habitat for these species? What are the habitat trends for these species? How has this information been gathered and are monitoring techniques adequate? Over what period of time have trends been measured? Is this adequate? What conservation agreements, recovery plans, and critical habitat designation agreements have been approved and established for TES species? Are the FS and other parties abiding by these? Are all TES species protected here through the establishment of enforceable conservation agreements, recovery plans, and critical habitat designations?
-We are concerned that the project could adversely effect populations and habitat for PTESLR species. 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 occurrences or Indiana bats? Have Indiana bat mortality thresholds, or other thresholds, been exceeded in any areas? Has monitoring regarding Indiana bat thresholds been adequate? How do bats respond to disturbance and how would they be affected?
-How do other rare species respond to disturbance and how would they be affected?
- How would the project affect components of natural forests? Components of natural disturbance? How would the project affect the natural functioning of a forest? How would pit and mound topography, large woody debris on the forest floor, coarse woody debris, nurse logs, snags, components of the food chain and components of decay be affected?
- How would the project affect cove hardwoods, northern hardwoods, boulder fields, seeps, riparian areas, old growth, caves, blowholes and other special or unique habitat? Underrepresented habitat? Special, unique or underrepresented habitat with few nearly mature/mature/old growth stands remaining?

How will state-listed species (VDNH lists of rare animals, rare plants, state-endangered and threatened species, species listed in Terwilliger, Virginia's Endangered Species and other sources) be affected by this project? How will habitat, foraging sites, and nesting sites be affected? Genetic viability? Competition from other species? Freedom from disturbance? Visibility?
- How will the project bring non-native plants into the area? How have projects affected non-native species in the past? How will the overall project affect populations of non-native plant species? Will it reduce them or increase them? What native plants could be impacted by loss of habitat or competition?
- We are concerned that the project could adversely affect NTMBs and other land birds. To what extent do birds likely to be in the area exhibit faithfulness to certain sites, groves of trees or certain trees? How would the project thus affect migratory birds?
- The cerulean warbler has exhibited the greatest rate of decline 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. Cerulean warblers have been documented in some of these watersheds. See my comments on the Cove Creek project, Thunderstruck project, and see the Clinch RD's cerulean warbler interim management strategy.)
- The cerulean is recognized by the FS and others as an area-sensitive species (SAA, Terrestrial Rept, Robbins et al., Cove Creek BE, 1995, Clinch RD, J&GWNFs, Maple Springs Branch BE, Clinch RD, J&GWNFs). Other species are listed as area sensitive species in the SAA. The FS should consider the impacts to these area-sensitive species. The FS should consider how the project may directly or indirectly affect cerulean warblers and other forest birds.
- 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? How could the project impact birds that nest on or use the ground or low lying branches and vegetation? How could the project impact ovenbirds, for example? How would the project impact birds found in and around cove forests or riparian areas?
- During what period due ceruleans and other 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 cerulean warbler and other migrating birds throughout their breeding range? Wintering range? How do these activities cumulatively affect birds?
- We are concerned that the project could impact soil resources and soil productivity. Consider how the project would affect soil stability, moisture retention capability, erosion, nutrient leaching rates, roots, soil niches, soil structure, and biological productivity.
- We are concerned that the project could impact soil resources and watersheds. How much of the project area would be compacted as a result of the project?
- - We are concerned that the project could impact soil resources and watersheds. We request that the FS provide maps of the soil type, erodibility, and slope for all sections of the cutting units to allow the public and decisionmakers to better gauge the impacts of the project on particular soil resources.
- We are concerned about the adverse effects of the project that on soils and organisms that utilize particular soil and forest niches. What are the impacts on soil build-up and mycorhyzae of proposed activities? What is the impact on litter detritivores and ground floor invertebrates and micro-organisms?
What are the impacts higher up the food chain?
- We are concerned that the project could adversely effect water quality. What effect will the project have on coarse particulate organic matter, fine particulate matter, algal abundance, temperature extremes, turbidity, nutrient input into streams, amount of suspended solids, stability of substrate and banks, uniformity of water depth, flow extremes, diversity of microhabitat velocities, abundance of shredders vs. scrapers, and abundance of omnivores vs. piscivores? How will the project affect all sediment-sensitive aquatic species?
- We are concerned that the project could adversely effect water quality, watersheds, and riparian areas. What wetland and riparian buffers are provided? Would adequate buffers be provided sufficient to protect riparian dependent resources? Include maps with adequate detail and scale of all riparian areas/wetlands, riparian

areas/wetlands types, and proximity to cutting units and associated infrastructure.
- We are concerned about the impacts of this project in combination with What is the cumulative impact of this project in conjunction with all other USFS management activities (including TSs, game openings, grazing, powerlines, salvage and fuel wood sales, roads, waterholes, recreational development, Army reserves training, etc.) throughout the project area and surrounding OAs past (at least 50 years), present, and future (300 years).
-How do the proposals for this project provide for that which cannot be provided for on private land? (i.e. high quality non-motorized trails and viewsheds, extensive wildlands, PETSLR habitat, bear habitat, high quality watersheds, old growth habitat, unfragmented habitat)?
- The activities proposed may affect biological diversity on a number of levels. These activities and other activities throughout the GWJNFs may also affect biological diversity on a number of levels. Consider biodiversity on all levels - genetic, population, species, community, ecosystem, and landscape levels.
- We are concerned that the project (and roads and infrastructure associated with it) may lead to other problems. Disclose how the project will affect potential poaching access, illegal road use, litter problems, and noise.
- We are concerned that the project could impact wildlife and important wildlife components. How will the project affect nest predation and parasitism? Cowbirds? Black bear habitat? Eastern Cougar habitat? Eastern cougars? Neotropical migratory bird habitat? Neotropical migratory birds and other migratory birds?
- We are concerned that the project may not be consistent with the existing JNF Plan and/or the alternatives now being considered in the JNF Plan Revision. Please analyze precriptions, ROS designations, featured species, road densities, appropriateness of highly intensive motorized development, and VQOs on a site specific level. Please update these inventories if new information has developed.
- We are concerned that this project may affect archaeological and cultural sites of significance to society as a whole, or to persons with special ties to this area. We are concerned that the area where this project is planned has a large number of large boulders, rock outcrops, and potential rock shelter sites. We are concerned that given the long history of Native American, European and African-American settlement in this area, a number of historical sites could be impacted. Adequately monitor, inventory and protect all historic and prehistoric archaeological/cultural sites. Respect and protect all native American archaeological/cultural/religious sites and all native American and non-native- American cemeteries/graves.
- This project could impact multiple types of resources. Adequately monitor, inventory and protect all biological, watershed, recreational and geological resources/v alues.
-What impact would the project have on salamanders other amphibians, snakes, other reptiles, turtles, moss, clubmosses, lichens, fungi, arthropods, detritivores and soil organisms, amphipods, aquatic macroinvertebrates, molluscs, trout, fish, Indiana bat, western big-eared bat other bats, black bears, butterflies and moths, rare insects, area-sensitive birds, songbirds, winter wrens, cerulean warblers, owls, raptors, Allegheny woodrats, peregrine falcons, golden eagles, northern goshawks, Coopers hawks, eastern cougars, ginseng, butternuts, herbaceous understory plants, ferns, beavers, river otters, shale barrens, old growth dependent species, wetland/riparian area species, hemlock cove species, hardwood cove species, and mixed hemlock/hardwood cove species? What impact will this project have on other species with viability concerns (e.g., species listed in RD TESLR lists, Cove Cr BE, Thunderstruck BE, Stock Cr helicopter NEPA documents, Elisha Lick project NEPA documents, Laurel Fk OAA, JNF Plan (current), JNF Plan Revision, USF&WS lists, R-8 lists, other lists from researchers, agencies, and academic institutions) or other rare or important natural habitats and biological communities (VDNH Special Biological Areas, Southern Forest Resource Assessment, SAA Terr Rpt, JNF Plan Revision lists of rare communities, JNF Plan (current) lists of important habitat components, etc.)?
-Black bears have only recently been reintroduced into the Clinch RD and vicinity. What large blocks of habitat do black bears utilize and how will this project affect black bears or the suitability of black bear habitat in the area? How will this project affect black bear corridors? Other habitat components?
- We are concerned about the impacts of existing and proposed roads and skid trails on a number a resources. Include a listing of all system and non-system roads in the project area, information on ROWs, lease, and permit terms, frequency of use, litter, noise, and wildlife disturbance problems, and no. of mi. these roads contribute to road densities. Are road densities within plan limits in this analysis area? Do any roads warrant closure due to impacts, plan requirements, user conflicts or other considerations? Consider all of these issues in the transportation analysis for this NEPA document and roads analysis for this area. Conduct a roads analysis, and

allow public comment, in order to determine whether any roads should be considered for decommissioning due to environmental impacts, fiscal costs of maintenance or other factors.
-We are concerned about impacts of this project and other activities/events on aquatic species and aquatic resources. Consider impacts on downstream species in Wolf Cr, Laurel Fk, Stock Cr, Cove Cr, the Clinch R, the N Fk of the Clinch, S Fk of the Powell and all other streams and rivers and their tributaries in the vicinity.
-We are concerned about the impact of the project on bats and their habitat. How will bat roost trees and forage areas be affected? How will other habitat components for bats be affected?
- We are concerned about the impact of the project on wildlife. Would the proposed activities displace any wildlife? What types of wildlife? How so? How would wildlife be affected?
-All Va. BMPs should be met or exceeded throughout the planning, project implementation and project use stages. The FS should adequately monitor BMPs. We are concerned that, without specific and rigorous mitigation measures incorporated into this NEPA mitigation measures will not be conducted or they may not accurately reduce impacts to resources or avert declines/degradation of these resources as part of this project and in future projects. All Va. BMPs should be met or exceeded throughout the planning, project implementation and post-sale stages. The FS should adequately monitor BMPs. All BMPs should be specifically examined by the FS and followed throughout the process. Past FS activities 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.
-- We are concerned that, without specific and rigorous monitoring requirements and mitigation measures incorporated into this NEPA document, adequate monitoring and mitigation measures will not be conducted or they may not accurately gauge impacts to resources or avert declines/degradation of these resources as part of this project and in future projects. Adequately monitor, inventory and protect all biological, watershed, recreational and geological resources/values.
- We are concerned about impacts on natural areas in the project area and vicinity. According to Division of Natural Heritage reports to the FS, what special biological areas are recommended for special interest area and/or research natural area designation? What other important areas or important species/resources are identified in the project area? How will portions of the project in or around these areas affect the areas or the species/resources associated with these areas? What other natural areas could exist in the area (including natural areas containing habitat for species or representations of species/biological communities similar to those in other SBAs in the Clinch RD and elsewhere)
- We are concerned about the impacts of the project on NTMBs and other land birds. What area sensitive birds exist in the area? What area-sensitive forest interior birds? What area-sensitive birds with other habitat needs? How much forest interior/forest habitat is required for each species? How much old growth/mature forest? How much other special habitat? How far are the roads and cutting units from populations of these birds?
- We are concerned about the impact of the project on non-motorized recreation. We are concerned about the impacts of the project on existing recreational uses. How will the project affect recreational sites? Trails near these sites? How will views be affected? Will people be more or less encouraged to go for a hike, hunt, fish, experience or learn about nature? Will people get an artificial view of how nature works?
- We are concerned about the impacts of this project on soil resources and various soil components and the species that utilize them. What changes in moisture and microclimate would occur in the soil in the top/middle/lower zones? How would the organic content of soils be affected? Plants, including herbaceous understory plants? Burrowing animals?
- We are concerned about how the project might affect NTMBs and other land birds. In order to inform the public and decisionmaker about the impacts of this project, disclose the impacts of the project and similar projects on: neotropical migratory songbirds who utilize the area as a summer breeding ground, neotropical migratory songbirds who are faithful to certain sites or certain trees, forest interior birds, area sensitive birds, rare birds, bird species with certain habitat needs, common bird species, generalists (birds), species of interior forest, area sensitive, (etc.) birds that are declining, species of birds whose populations are increasing and deep forest

raptors and owls.

Thank you for the opportunity to comment.

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Sincerely yours,

Sherman Bamford
Forests Issues Chair
Virginia Chapter Sierra Club