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Nov. 4, '20

Re. Potts Cr. Project

Theresa Tanner, District Ranger

James River/Warm Springs RD-GWJNFs-R8-FS-USDA

District Ranger Tanner:

The Virginia Chapter of Sierra Club has over 20,000 members throughout Virginia, including the counties and municipalities in close proximity to this project. We are opposed to the 2156 acres of commercial logging, nine miles of new road construction, 1.7 miles of dozer line construction and other industrial management proposed in the Potts Creek Project scoping notice (SN). The landscape where this project is planned contains a network of old growth forests, Natural Heritage program-identified areas and roadless areas that should be high priority for protection.

Request for Information as it comes available

We request copies of the biological evaluation, economic analysis, roads analysis, old growth surveys, monitoring records for special biological and Natural Heritage-identified areas in the area, and watershed assessments for priority watersheds in the area, as soon as they come available.

This project should be informed by a roads analysis

A number of roads in this area have been identified as roads that should potentially be closed due to environmental impacts, costs of upkeep, and other factors.

The SN and associated maps are unclear about where these roads (and proposed dozer lines) are located. We request a map and further information about these roads and the impacts on resources in the area.

(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.

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

Fragmentation

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

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

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

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

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

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

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

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

Creek RARE II area) is of high concern.

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

New Logging Methods

The FS introduces a new logging method ("late open block" logging) that is not clearly defined in the SN and that we are not familiar with (SN). To our knowledge, it has not been used in any other timber sale. The logging method is not mentioned as one of the silvicultural methods in the GWNF Timber Analysis (GWNF Plan Appx C (Table C-5), nor is it defined in the GWNF Plan.

In addition, it is not clear whether the logging/burning combination would create even-age, two-age or uneven-age stand conditions (GWNF Plan Appx C). The FS should tell us whether the Forest Plan should be amended (with analysis) before this new logging method is permitted. Moreover, the FS should analyze whether this logging method would create more even-age age logged stands and more early successional habitat than disclosed.

Caves/Karst

Please disclose whether this project could impact any cave or karst areas. There are caves and karst areas in this county and, likewise, there may be caves and/or limestone areas in the vicinity of the project area. How will these resources be impacted by the project?

Black bear is an MIS here and throughout the GWNF (GWNF 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).

- 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. There is an extensive road network in this area (see SN and GWNF maps). 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 dened bears dened 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.

The rock skullcap (*Scutellaria saxatilis*) was found in the project area, (See Toms Branch from this Ranger District (EA 43 & BE 7&8). The FS should completely and properly inventory the project area for all populations of rock skullcap or for potential habitat for this species. The FS should adequately disclose impacts to rock skullcap in compliance with NEPA. Rock skullcap has not been properly analyzed or protected.

According to NatureServe:

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

this species. Preserve Selection & Design Considerations: Preserves should be of sufficient size to sustain viable populations over time. Preserves should be of large enough size so that population expansion can occur. In addition, adequate buffer should surround occurrences to protect from outside influences such as exotic species introductions, erosion, etc.

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

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

Northeastern Bullrush

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

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

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

Section 9 of the ESA states that it is unlawful to "take" listed species. 16 USC 1538(a)(1) "'Harm' in the definition of 'take'... may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." 50 CFR 17.3. However, the FS should inventory the project area to determine if northeastern bullrush populations or habitat may exist in the area. The FS should have determined if any shallow sinkhole ponds or sandstone depression ponds exist in the area ('01-'03 M&E Rpt G-72).

Invasive Species

Invasive species are found in the project area (SN 7). 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 Order 13112.:

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

Or,

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

(1) identify such actions;

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

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

Cutting units and bulldozed skid trails (such as that planned here) appear to play a role in the known occurrences of noxious weeds and may play a further role in the presence of yet uninventoried infestations that are out there. We challenge the FS to give an accurate percentage of the miles of roads on the FS that have never had noxious weeds. Likewise, these infestations on the roads readily expand into cutting units, especially the more intensive the logging done in the particular units. Typically, the FS just throws up its hands and accepts that they will be carrying out management activities that inevitably cause more spread of weeds. Instead, a genuine prevention strategy is needed and this needs to be incorporated into the analysis.

The premier tool of prevention of new noxious weed invaders deserves the highest priority. Instead, all prevention strategies assume weeds will invade, then prescribe expensive control methods of unknown efficacy after the fact.

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

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

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

The EA or EIS for this project should address the potential spread of invasives (& noxious weeds) from the

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

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

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

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

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

And at 40 CFR § 1508.25, NEPA regulations state:

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

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

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

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

The FS is required to comply with presidential

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

Section 5: (b) The first edition of the Management Plan shall include a review

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

Or,

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

(1) identify such actions;

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

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

Salamanders

At least one species of salamander exists in the project area (SN6) as may others. The Forest Service should sufficiently examine and consider the potential impacts upon salamanders. This concern is significant here given the agency's intent to destroy, degrade, or fragment suitable salamander habitat. Populations in the project area could be centered in, perhaps even be only found at, the particular places targeted for intense manipulation. They have very small home ranges with limited abilities of mobility (see attachments). They are susceptible and vulnerable to severe site-specific harm to their habitat and numbers; harm that would occur should the decision be implemented.

Their life history requirements and characteristics greatly restrict their abilities to "recolonize" areas. If this PA

contains tiger salamander habitat or other MIS or TESLR salamander habitat, the FS should examine impacts in full. If this project area or the cutting units do not contain Cow Knob or tiger salamander habitat, then the MIS (viz., black bears, pileated woodpeckers) and other birds listed in the GWNF Plan 2-9 are of limited, even misleading, use for gauging impacts to site-sensitive salamander populations. Additional salamander/amphibian/reptile MIS need to be considered in this analysis.

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

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

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

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

Terrestrial salamander abundances are affected by forest thinning. See Grialou, J.A., West, S.D., and R.N. Wilkins. 2000 ("Relative comparisons revealed that red-backed salamanders were influenced by forest thinning. The difference in relative capture rates because the thinning treatment was minor. The observed decline in red-backed salamanders may be explained by direct machine impacts and soil compaction from skidders") The effects of forest clearcut harvesting and thinning on terrestrial salamanders. *Journal of Wildlife Management* 64(1): 105-113; incorporated by reference. See also Harpole and Haas, "Effects of Seven Silvicultural Treatments on Terrestrial Salamanders, *For. Ecol. & Mgmt.* 114:349-356 (1999) ("Salamander relative abundance was significantly lower after harvest on the group selection ($p < 0.005$), shelterwoods ($P < 0.007$ and $p < 0.015$), leave-tree ($p < 0.001$), and clearcut treatments ($p < 0.001$)".; incorporated by reference. Here, researchers in Virginia found that relative abundance of salamanders based on area-constrained searches decreased on group selection cuts, 12-14 sq. m shelterwood cuts, 4-7 sq. m shelterwood cuts, leave tree cuts, and clearcuts. Large plethodontid populations declined in group selection cuts after the Daves Ridge TS (Mt Rogers NRA; Daves Ridge Group Selection "Project Overview"). See the 1994 SO monitoring and evaluation report, section on Daves Ridge TS and James Organ's report on salamanders and related issues in the Daves Ridge area ("Salamander Survey in Connection with Daves Ridge Timber Sale"). "For future Environmental Assessments involving salamanders, Sensitive or of Special Concern," Dr. Organ recommended, for terrestrial salamanders to "keep regeneration areas small, one to three acres in size, maintain large undisturbed tracts of forest between regeneration areas to permit salamanders to freely move around regeneration areas rather than to be trapped by

a checkerboard pattern of thermal and low moisture barriers, do not disturb existing down and decaying logs within the regeneration area if possible..."as well as other recommendations. These documents, already in possession of the GWJNFs, are incorporated by reference.

"Movements were about 1 m and were similar to other species of terrestrial plethodontid salamanders [citations omitted]... The limited movements have implications in the potential fragmentation of *P. hubrichti* populations. Timbering operations that occur in the [Peaks of Otter] salamander's range may not only eliminate animals from the cut areas (Pough et al. 1987, Ash, 1988), but might also create barriers between populations. Recolonization after forest recovery, and the reestablishment of contact between separated populations, might be a slow process due to the limited movements of this salamander. In addition, the Blue Ridge Parkway, logging roads, and other alterations to the forest may produce impassible barriers, thus causing fragmentation of the population (J. Mitchell, pers. Comm.) Effectively salamander populations may become fragmented and genetically isolated. Loss of genetic variability associated with genetic drift could then occur thereby decreasing the long-term probability of survival for this species (Soule, 1983). For this reason, forestry management practices should include prevention of further fragmentation of the already isolated populations of *P. hubrichti*" (Kramer et al., Jour of Herp. Vol. 27, No. 4, pp. 431-435, 1993).

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

TESLR Species

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

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

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 have been 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.

Allegheny Trail

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

long stretching from the Appalachian Trail on Peters Mountain to the West Virginia-Pennsylvania line.

- "The WVSTA has received a steadily increasing stream of inquiries from backpackers interested in hiking through the incomplete portion of the Allegheny Trail in order to have hiked the 'whole thing' from the Mason-Dixon line to the Appalachian Trail or vice versa. Many non-through hikers are requesting information on how to bridge the gap or when the gap will be bridged by the trail. With this mounting public desire to see the trail completed, the WVSTA has decided to shorten the life expectancy of the gap by enlisting aid wherever it can be found to replace the gap on the map with a thin red line indicating a completed Allegheny Trail. As in the past the national forests have a crucial role to play in developing this public recreation resource." (WVSTA, draft DFC sent in response to a 10-1-96 request from Bill Sweet -SO/Recreation)

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

Why is the SN proposing to route the trail to a road (road walk) when earlier planning maps showed the trail routed through the interior of this area on the mountain crest?

Why is extensive logging proposed in and around the new trail corridor proposed in this SN?

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

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

How will these issues be considered?

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Cerulean Warblers and other NTMBs

There is a potential for the cerulean warbler to be found in the PA and vicinity. The cerulean warbler has exhibited the greatest rate of any warbler species and the cerulean is declining at the center of its range. (Robbins, Fitzpatrick and Hamel, 1989, "A warbler in trouble: *Dendroica cerulea*") There are viability concerns for cerulean warblers, other species of interior forest-dwelling warblers, species of cuckoos, and other interior-forest dwelling songbirds listed as declining in BBS (or other ornithological data) that must be taken into consideration.

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

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

The FS found that cerulean warblers "tended to be older, large diameter stands with tall trees, a deciduous understory, multiple layers and ages..." ((Cerulean Warbler Interim Mgmt Strategy, Clinch RD, GWJNFs, p. -7)

"Trees 18.2 in. in diameter composed greater than one-fourth of the overstory trees in the stands." (CW IMS-7)

The IMS documents that research characterized "suitable cerulean warbler habitat as mature forest with a high, closed canopy and a large number of stems greater than 12 in. diameter..." (CWS IMS-8)

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

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

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

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

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

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

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,

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 need 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 will be 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 need to be implemented here.

Riparian areas must be fully surveyed.

The GWNF Plan requires the FS to delineate riparian areas and protect riparian areas in accordance with plan

provisions (RxA 11 areas) based on on-the-ground conditions. RxA 11 areas should be disclosed to the public or decisionmaker in maps or by any other means. Proper disclosure has not occurred; the FS cannot assure the public and decisionmaker that the Plan is being properly implemented.

Vehicular use should be avoided in delineated riparian areas and so they will not be adversely affected. And road construction, reconstruction, or re-opening may occur in riparian areas. The precise location of all the project area riparian areas in relation to cutting units and road sites is not disclosed. The FS does not explain why the full riparian areas are not being fully protected. The FS should properly & accurately disclose 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.

foreseeable impacts. 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 be surveyed during wet weather, when springs and seeps are most likely to be detected. - 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). 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 may be occurrences of the roughhead shiner, a sensitive species in this county and watershed. The roughhead shiner is confined to the Ridge and Valley province of the upper James drainage, Virginia... The contiguity within subpopulations and the sharp limits of the range of the species indicate that high gradient and small size of stream, turbidity, and siltation variously combine to effect the tight distribution of the roughhead shiner (Jenkins and Burkhead, 1975a)" (Terwilliger, Virginia's Endangered Species (1991)) Given the presence of this very rare, sediment-sensitive species, the FS should have considered additional riparian zone/streamside zone protection. . Roughhead shiner habitat could even potentially exist in the streams within the project area. It is entirely appropriate for the FS to implement such protection here.. And as stated in Chamberlain, et al. 1991 (in the FS's possession, as this paper was referenced in the JNF Plan Revision/DEIS): "Increases in soil water content and groundwater levels can indirectly affect fish habitat... On logged hill slopes, moist soil is vulnerable to mass movements (O'Loughlin 1972; Swanston 1974)""The frequency of mass erosion events in forested watersheds is strongly linked to the type and intensity of land treatment in the basin (Rood 1984). Although most mass movements are associated with roads and their drainage systems, many originate on open slopes after logging has raised soil water tables and decreased root strength(O'Laughlin, 1972)"

Vernal ponds and ridgetop ponds occur on this part of the James River RD. How will the project impact these?

TESLR Bats

Because ESA protected species' "may be present" the letter and intent of the ESA must be followed. See Thomas v. Peterson (1985) and 16 USC 1536(c)(1).

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 determine and disclose the distance of the project from the cave and other roost sites,

& properly analyze effects.

(3) Need to Obtain and Analyze Scientific Information

The FS should follow 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 be 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.

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 BE and Plan amendment). "If . . . active roost trees are identified" there will be a 1/4 mile or two mile buffer established around the tree. (BE, 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 species' 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).

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 *Babbitt 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 effect 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.

The Bats are known to especially use riparian and stream corridors for dispersal and feeding. All forested habitat is not "equal", yet the agency 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.

(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. 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.

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). There is no record that any surveys were conducted specifically for *Myotis leibii* or, if so, how thorough those surveys were

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; Tuttle 1964; Whitaker and Hamilton 1999)." The FS must perform the requisite surveys using advanced methods to determine if the eastern small footed bat exists in the area. The project area contains rock outcrops. The FS should ensure that "buffers and minimal disturbance zones" were implemented or adequate. The FS 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/or only 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.

Plan

The FS should demonstrate how the project is consistent with the GWNF Plan. The FS should analyze whether the project complies with Plan.

How will riparian areas, springs and seeps be affected by the project?

How will snags and den trees be retained?

How is it demonstrated that utilized veg mgmt contrast reducing treatments will achieve visual quality goals in this particular area?

Has the FS identified areas with high potential for disturbance? Areas with high potential for significant historic and prehistoric sites in this area? How will these areas be affected?

How will sites on the National Register of Historic Places (or eligible areas) be affected?

Will any aspect of the project increase the likelihood of vandalism or destruction of cultural sites due to greater access, greater visitor use, or greater visibility?

Is the project consistent with the preservation/maintenance plan for historic administrative and recreational facilities if any exist nearby? Is there a plan in effect for such sites?

How will non-motorized trails be closed to authorized or unauthorized use?

Will any trails or trail corridors (or vicinity) be used by motor vehicles? How will this affect user experiences?

How will this affect remote trails that attract more experienced hikers and users, those attracting those who desire a remoter experience? How will the trail system in the area provide or not provide for a variety of trail users and experience levels?

How will management activities be implemented with sensitivity to users? What mitigation measures are proposed and how is their effectiveness demonstrated?

How will the FS keep roads from being vegetated by invasive vegetation?

Are roads being constructed to the lowest standard appropriate for this area?

Have order II soil surveys been completed for this area (and every area of the Forest) by 2003, as required?

Do any eroding lands exist in the project area and how will they be inventoried, improved, and maintained?

How will wetlands be identified and protected?

How will the organic layer, topsoil, and root mat be impacted?

Remote Areas/Potential Wilderness Areas/RARE II areas

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

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

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

Impacts of species vulnerable to climate change should be examined.

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

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

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

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

You must address project's impact on these critical ecosystem features by closely examining land beyond the immediate analysis area and considering the cumulative landscape-scale effects of continued habitat destruction within and adjacent to unroaded forest land in the JNF. NEPA demands such. See e.g., *City of Tenakee Springs v. Clough*, 915 F. 2d 1308, 1312-1313 (9th Cir. 1990) (finding Forest Service's cumulative impact analysis inadequate under NEPA and citing *LaFlamme v. Federal Energy Regulatory Commission*, 852 F.2d 389 (9th Cir. 1988) for the proposition that remand to the agency for further consideration of cumulative impacts is appropriate where the agency examined single projects in isolation without considering net impacts of all past, present and future projects in the area); *Save the Yaak Committee v. Block*, 840 F. 2d 714, 721 (9th Cir. 1988); 40 CFR § 1508.27(a) ("the significance of an action must be analyzed in several contexts"). These cumulative impacts include not only present and foreseeable future effects, but also the accumulated, incremental effects of past human activity, including prior degradation or destruction of undisturbed habitat. See 40 CFR § 1508.7.

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

NEPA requires that the Forest Service consider the best available scientific and technical information in making its decisions. See, e.g., *Warm Springs Dam Task Force v. Gribble*, 621 F. 2d 1017, 1023 (9th Cir. 1980). The scientific literature on biological diversity makes it clear that logging project assessments should consider, among other things, size distribution and connectivity for various types of habitat patches, amount and distribution of important types of such patches (such as roadless areas) which have been reduced by prior human activity, disturbed and historic vegetative mosaic patterns across the forest, cumulative effects of past activity from a watershed or regional ecosystem level, and edge effects of further forest fragmentation. See, e.g., Noss, R.F. 1990. Indicators for Monitoring Biodiversity: A Hierarchical Approach. *Conservation Biology* 4(4): 355-364.

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

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

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

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

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

Remaining roadless areas provide essential area-sensitive species habitat, wildlife corridors, clean water, high

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

Trout Streams

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

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

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

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

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

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

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

"Downed material in these spots is providing cover which was formerly provided by a forest canopy. This downed material is retaining the cooler temperatures and higher humidity associated with springs and seeps." (Hagan Hall Wildlife Existing Condition report, Aug. 1998). "Removal of material from these sites [seeps, springs, bogs,

and forested wetlands], particularly where most of the tree canopy is now gone, would increase the solar radiation causing warming temperatures and less humidity. . . . increased temperatures and drier air can affect the presence of certain amphibians and small mammals." (Hagan Hall EA-47). Ecosystem management should recognize that there is more to seeps, springs, bogs, and forested wetlands than just their physical characteristics. If these locations become unusable or unattractive to some amphibians, mammals, or other taxa that would be expected here, then they are not fully functional. There should be analysis or citation to studies to corroborate the assertion that retention of 5-15% (or whatever basal area the cutting method retains) of the overstory cover shading these sites is enough to maintain their full functioning and attain their DFC.

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

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

Conservation Sites, Special Biological Areas and Rare Communities

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

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

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

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

remote middle to upper slopes and crest." (p. 177)

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

Old Growth

There are extensive tracts of old growth forest in this area (see above). There is a potential for the project to impact large-, medium- and small-sized old growth tracts in these working groups.

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

According to the Forest Service's Southern Region guidance on old growth (FR-62), old growth in the eastern U.S. comprises approx 0.5% of the old growth that historically existed in the southeastern US. Much of it was cut down in the early part of the 20th century.

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

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

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

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

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

The Allegheny woodrat is a species on the GWNF. New strategies such as "maintaining sufficient old growth

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

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

Steep Slopes

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

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

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

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

All terrain vehicle incursions:

How does existing Forest Service infrastructure (roads, old skid trails, openings) facilitate illegal use of the Forest by ATVs? Will skid trails, roads, or logging units in this project contribute to ATV use in any parts of the area? Does the Forest Service have the ability to adequately patrol the area, given the low funding levels for law enforcement?

Stream impacts:

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

How would populations of James spiny mussels and other mussels be affected?

How will water quality downstream in Potts Creek and downstream be affected? How will water quality in impaired waterways, eligible wild and scenic rivers, eligible state scenic rivers, and important recreational rivers

be affected?

How would flooding and high water events be affected?

Below-Cost Timber Sales and Ecological Valuation:

Management of this area should occur in a cost-efficient manner. The timber program on the George Washington and Jefferson National Forest loses money. The Forest Service should complete an economic analysis that discloses whether this timber sale, or any parts of it, would be below-cost timber sales. An ecological valuation and net public benefit valuation should be conducted to determine the value of wildlife, fish, soils, water, recreational, scenic, and amenity values of resources lost or degraded as a result of this project.

Soils:

The Forest Service should evaluate the impact of the project on soils and watersheds, including potential for erosion, landslides and slumping, compaction, nutrient cycling, and impacts to sensitive soils and downstream resources. Some soil hazards may exist in the area. The project area should be thoroughly surveyed and all risks to soils and watersheds should be identified and addressed by avoidance where appropriate.

Management Indicator Species:

Appropriate management indicator species (MIS) should be selected to evaluate the impacts of this project on wildlife. Among these, appropriate aquatic MIS and salamander MIS should be selected. The FS should determine whether wild trout and Cow Knob salamanders are present in this project area. If they are not, then other appropriate aquatic and salamander MISs should be selected for this project area.

The Forest Service should adopt management indicator species that truly represent a full range of the habitats and niches found on the Forest. Ideally, these should include aquatic, riparian, non-game, old growth/late successional, remote habitat, and high elevation indicator species. Species that are vulnerable to climate change, such as high elevation species, might also be included. In addition, a salamander that is found at lower elevations and common across most of the Forest should also be selected. Birds are not appropriate substitutes for small site-sensitive species of low mobility such as salamanders and turtles.

Climate Change:

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

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

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

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

term;

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

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

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

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

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

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

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

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

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

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

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

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

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

Cumulative Effects

The many areas considered for stand improvement treatments in the stand improvement treatment map are one indicator that there has been an already large amount of even-aged logging and other logging in the project area and vicinity.

The Forest Service should consider impacts both within and outside of the project area. The FS should consider the cumulative effects of other FS and non-FS activities and events.

Springs, Seeps, Riparian Areas

The FS should carefully identify and protect all springs, seeps, riparian areas, and water resources in this project. Plan mandated and BMP-mandated buffers should be provided. The FS should determine how complex the hydrological system is in this area, and what streams, seeps, riparian areas, and aquifers would be affected by the logging, roadbuilding, prescribed burning, firelines, or associated activities and infrastructure.

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).]

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Visual Quality

Visual quality and aesthetic resources are highly important. The viewshed of important visual corridors in the area should be protected. The FS should conduct a seen-area analysis of the project on these trails. The impact on aesthetics, trail corridors, potential camp spots, rest stops, water sources, interior-forest plant/wildlife viewing opportunities, dispersed/primitive recreation, opportunities to experience solitude, challenge, restfulness, spiritual values should be considered. The FS should consider the views of day hikers, backpackers and long-distance hikers who may prefer locations that are relatively pristine over areas that are heavily managed and choose such locations for hiking. The FS should determine what the hikers use the trail system, what type of

experience such hikers seek, or whether this project and other activities of the FS are cumulatively impacting the trail experience.

Scenic and Aesthetic Resources play a very large role in the GWNF

The scenic backdrop of the GWNF is an economic asset that many localities use to attract businesses, future citizens, and travelers. Travelers are more concerned about the environment than ever before. For example, a September 1996 survey in Conde Naste Traveler magazine found that "the environment" has become a major issue for many travelers. More than half of the respondents said that the environment has become a major factor in their travel plans over the last 10 years, and 91% expressed concerns over environmental problems at their destinations with 25% having been forced to change travel plans because of environmental problems.

As Alfred Runte said, and quoted by Forest Service Chief Jack Ward Thomas in the FS Handbook for Scenery Management, "There is no question... that the national forests are major contributors to an American sense of place, to an identity with landscape that transcends economics for its own sake."

"[P]eople value most highly the more visual attractive and natural-appearing landscapes " (Landscape Aesthetics Handbook (USDA Handbook #701) p. 30). NFMA directs the FS to protect the forest's visual resources when enacting a plan. Aesthetic resources are one of the key resources to be protected under NFMA. Clearcutting and even-aged logging can used "only where" these methods are carried "out in a manner consistent with the protection of esthetic resources" NFMA 6(g)(3)(F)(v) and 1604(g)(3)(F)(v). In addition the statute requires that clearcutting and other even-aged harvesting methods are used "only where" "cut blocks, patches, or strips are shaped and blended to the extent practicable with the natural terrain." NFMA 6(g)(3)(F)(iii), 1604(g)(3)(F)(iii). The language "only where" leaves no reason for discretion. And 98,000 acres of the forest is in the low SIO, equivalent to a "modification" prescription (See crosswalk on Landscape Aesthetics Handbook (USDA Handbook #701) p. H-1. (Landscape Aesthetics Handbook (USDA Handbook #701) p. 2-4 admits that Low SIO areas "begin to dominate the valued landscape character being viewed." An example of a project meeting the low end of the Modification VQO (Low SIO) is described as follows: "Continuous forest texture, seen in this middleground view in the Pisgah National Forest, makes it difficult to introduce any clearings that do not attract attention" (Landscape Aesthetics Handbook (USDA Handbook #701) p. H-38.

It is not clear how the Forest Service ensures that permitted activities in Low SIO areas (and other SIO areas) can and will be "shaped and blended to the extent practicable with the natural terrain" as required by NFMA. This is particularly relevant, since Low SIOs (equivalent of Modification VQOs in the 1985 Plan), have been approximately doubled between the time of the 1985 JNF Plan and the JNF Plan Revision. The need for Low SIO areas is not apparent in or justified by the analysis, or the goals and objectives for the Forest. This is an unacceptable "overkill" that must be drastically reduced. Again, the FS should demonstrate that in all areas where even-aged logging and clearcutting are permitted, such activities would be blended to the extent practical with the natural terrain and would not violate NFMA. The extensive clearcutting, coppice logging, seed-tree logging, modified shelterwood logging, sanitation logging, salvage logging, shelterwood logging, removal cutting, and roadbuilding permitted in Low SIOs, and other SIOs in the Plan will be highly visible and significantly degrade scenery and our enjoyment for decades. The FS failed to demonstrate that in all areas where even-aged logging and clearcutting are permitted, such activities would be blended to the extent practical with the natural terrain and would not violate NFMA.

"Esthetic value is an important consideration in the management of recreation settings. This is especially so in National Forest Settings where most people expect a natural appearing landscape with limited evidence of 'unnatural' disturbance of landscape features." (Landscape Aesthetics Handbook (USDA Handbook #701) p F-1. High SIOs should be the "norm" in SPNM areas, fully compatible in SPM areas, and also the "norm" in Roaded Natural ROS Areas. Very High SIOs are "fully compatible" with SPNM, SPM, RN, and Rural ROS areas. (Landscape Aesthetics Handbook (USDA Handbook #701) p. F-3).

Watershed Impacts

Several projects have been approved, or considered, or are proposed in this watershed Is a watershed analysis being conducted?

The FS should use methods that ensure that oak regeneration will occur after cutting. It is not clear whether oak generation from stump sprouting is adequate in forests in the vicinity of the project or will be adequate if the project proceeds. Or how planted oak seedlings will be adequately protected from deer browsing and other impacts.

"For the upland oaks, including red oak, new seedlings are not a viable source of regeneration (Beck 1970, McQuilken 1975, Sander 1972). Newly established seedlings grow much too slowly to compete successfully with associated species after overstory removal. Stump sprouts of upland oaks do grow rapidly enough after overstory removal, but the probability that an oak stump will produce a sprout which will become a dominant or codominant stem decreases with increasing tree diameter and tree age (Johnson 1977). In mature stands on productive sites in the Southern Appalachians, very few small-diameter stems are present. C

Consequently, stump sprouts can rarely be relied upon to regenerate red oak after overstory removal (Loftis 1983a)," (Loftis, David L. 1990.

Predicting Post-Harvest Performance of Advance Red Oak Reproduction in the Southern Appalachians. Forest Science, Vol. 36, No. 4, pp. 908-916.) (Source: http://www.srs.fs.usda.gov/pubs/ja/ja_loftis003.pdf)

Other Issues and Concerns

- The FS is required to consider cumulative effects. For this project, you must consider the cumulative effects of all past, present and foreseeable events and activities on adjacent lands in the vicinity of the PA and this watershed.
- We are concerned about what ecosystems exist in the area and how they will be addressed. We request that you analyze the ecosystems of the project area (PA) and vicinity, and the effects of the project on them. Incorporate ecosystems management into the analysis. Monitor and describe the condition of the ecosystems in the PA on a site-specific level.
- This project may have an impact on mature forests and species that depend on them. Evaluate how the project would impact species and MIS requiring mature forest habitat and other unique ecosystems in this area and in adjacent Management Areas
- Even aged logging is proposed in this project. Such logging may contribute to fragmentation in the PA and vicinity. Evaluate the effects of mature forest fragmentation in the PA on wildlife, forest ecosystems, recreation, stream ecology, watersheds, and scenic values.
- The FS is required to consider cumulative effects. Evaluate the cumulative impacts of past, present and future events and activities in adjacent management areas in the GW NF on this area and the wildlife, forest ecosystems, recreation, stream ecology, watersheds, and scenic values of this area.
- The project and other activities/events may contribute to ESH habitat and other vegetative characteristics. To what degree do past and/or already-approved activities on nearby public and private lands already provide a dispersed system of forest openings, stands of varying ages, and the other desired future conditions? Evaluate whether there is a need for this project based on activities and events taking place in the vicinity of the PA.
- If any municipal watersheds or sources of drinking water are located downstream, they may be impacted by this project or other activities/events. How will this project impact municipal watersheds and sources of drinking water? How will this project affect the quality of drinking water within and downstream from the PA?
- This project and other events/activities may impact important wildlife components. What tracts of remote, roadless, unroaded, or relatively undeveloped wildlife habitat, interior forest habitat and mature/old growth habitat exists in the vicinity of the PA? If so, have these areas been properly inventoried as roadless? Protected from

logging, roadbuilding and other activities that might affect roadless status? Been evaluated for potential wilderness? How will this project impact remote habitat, black bear habitat, PTESLR species and MIS habitat and populations, mature/old growth habitat, interior forest habitat in the vicinity of the project. Evaluate the impacts of the project on wildlife, forest ecosystems, recreation, stream ecology, watersheds, and scenic values of this area.

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

- The FS should analyze whether within-stand ESH (of any size) and grass/forb habitat (of any size) exists or is occurring as a result of natural disturbance or other activities and events. These natural disturbances, etc. may already have created adequate ESH or grass/forb habitat in the PA to meet DFCs or to serve as wildlife habitat. Is there a need for this project?

- The FS is required to consider cumulative impacts. Consider the cumulative impacts of cutting units in adjacent timber sales and other adjacent areas, including those on private land.

- Laws, regulations, other guidance and the GW Forest Plan requires that cuts be of a certain size and there may be limits on the proximity of cuts to one another. Surveys should verify that the cuts do not exceed the approved amounts and the maximum sized allowable and that cuts are properly spaced, and loggers should be carefully monitored. Average size of the cuts for this project should not exceed cutting unit size averages for this MA, as found in the Forest Plan.

- Past cutting and natural disturbance may already impact various resources in and around this PA. Take past cutting and natural disturbance into consideration. How is this impacting forest fragmentation, the introduction and spread of non-native and exotic plants, PETS species, black bears, forest interior, mature and old growth forests, ESH and forest ecosystems?

- Past logging, roadbuilding and other associated activities have taken place here and could be having an effect on soil productivity and various aspects of water quality. What effect have previous cutting units and roads had on soil productivity and water quality? This project could exacerbate problems or create new problems. What effect will these cutting units have?

- There are riparian areas in and around this PA. We are particularly concerned about any activities that may take place in or near these areas and the impacts on riparian and aquatic resources of any kind. What impacts could occur? The FS should document that adequate monitoring of streams has been conducted and will be conducted. The FS should ensure that water quality, watersheds and aquatic species will not be negatively affected.

- The GW Forest Plan explicitly provides for a riparian area management area (MA 11). The FS should document whether any management areas for riparian areas exist in the project area. These areas should be delineated and mapped. All riparian resources in these areas should be protected through means that are

demonstrated to be effective. Watershed analysis for this area should take place.

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

- This project occurs in the known range of (or is upstream from) a number of key MISs, TESLR species, and other key wildlife species and native plants, and, aquatic species. What are the impacts of the project on black bears and black bear habitat? What are the impacts on trout, mussels, and other aquatic species? The habitat of these species? How have sediment in streams, acid rain, gypsy moth, hemlock adelgid and other factors affected the habitat of trout and other aquatic species? How will this project affect these species further? We are particularly concerned about the impacts of this project on trout and other aquatic resources.

- Has a roads analysis been completed for this project area or vicinity? If so, please send us a copy of the roads analysis as soon as it is complete. As is appropriate in a project like this that may involve the adverse impacts of road work and road use, the FS must examine and ground truth the entire road system in this area (including user created roads) and determine the impacts of the road system based on environmental concerns, fiscal concerns and other concerns.

-What conflicts with hunting, recreation, fishing, and wildlife do existing/planned roads create? 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/roads 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. Consider the impacts of roads on soils, native plants, invasive plants, disturbance sensitive wildlife, nonmotorized recreationists and other factors.

- Existing conditions in this PA and downstream areas (including past logging and roadbuilding) may demonstrate a need to consider ecological restoration activities as the primary portion of this project. Consider an ecological restoration alternative across this project area.

- The FS should consider no-logging alternatives that provide economic benefits and amenity values, recreation, and other resources (clean water, clean area,etc). Studies have shown that on national forests, these values and resources provide many times the economic benefits of logging.

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

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

- National Forests are managed for the public. How does logging and roadbuilding complement the values the public associates with this area ? In what ways does it destroy or diminish these values?

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

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

- Logging and roadbuilding in this PA has the potential to impact a number of aspects of soils, water and in turn, watersheds. How will the project affect watersheds and woody debris? The organic content of soils? Pit and mound topography? Large boles on the forest floor? Snags? Nurse logs? Jackstrawed logs? How will this affect soils in the project area? How will wildlife components associated with these be affected?

-There are roads in this project area (SN Timber Sale Map). We are not even certain that all permanent, temporary, and user created roads in this area have been delineated and disclosed. What other roads exist? And an undisclosed amount of so-skid trails to the cutting units is proposed. How will species' vulnerability to hunting, poaching, and disturbance be affected?

- Whether roads, rightly or wrongly, are called temporary roads, these roads 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.

- The general area is known to contain karstlands. Please disclose whether this project could impact any cave or karst areas. What are the potential impacts to these areas and what species and resources could be impacted by activities in these areas?

- Previous activities/events and this proposed project could alter habitat preferred by deer, deer populations, and resources impacted by deer in and around this PA. Are deer population's above or near carrying capacities? How could this project lead to increases in deer populations? Browsing on herbaceous plants may increase.

- Forest raptors are important predators and keystone species in forest ecosystems such as those proposed for logging in this PA. Their habitat may be replaced by the project. How will habitat for barred owls, other owls, Coopers hawks, and other forest raptors be affected in this area?

- The USF&WS, VDNH, RDs, and GWJNF list a number of PTESLR species that could potentially occur in or downstream from this PA, county, and the watersheds around this project area. - see Virginia Natural Heritage occurrence record database). 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?

- Indiana bats, Virginia big eared bats and other PTESLR bats could potentially have habitat or populations in this PA. This PA and the entire GWJNFs is considered potential habitat for Indiana bats. How will Indiana bats and other PTESLR bats be affected by this project and other activities? What surveying for habitat or bats, using up-to-date methods, will take place? Has there been any new information regarding Indiana bat (and other TESLR

bat) occurrences or Indiana (and other TESLR bat) bats? Have Indiana bat mortality thresholds, or other thresholds, been exceeded in any areas? Has monitoring regarding Indiana bat thresholds been adequate? Has the FS properly considered the impacts of white-nosed syndrome on TESLR bats? Has the FS consulted with the US Fish and Wildlife Service regarding the new infestations of white-nosed syndrome within the GW National Forest? Has this new information been considered?

- According to regional guidance and numerous other reports, old growth in the eastern U.S. comprises approx 0.5% of the old growth that historically existed in the SE. Much of it was cut down in the massive logging in the early part of this century. It is imperative that old growth be allowed to return to the area by leaving areas alone and linking existing old growth. How would the project affect old growth, potential old growth, and old growth reserves? Many species known to use old growth could potentially occur in this PA. Would the project affect the size of any old growth, old growth reserves, or buffers. Old growth levels for turkeys? Bear? Salamanders? Songbirds? Ceruleans? Other key species? Many species known to use mature forests could potentially occur in this PA. Would the project affect the size of mature forest tracts? Mature forest levels for turkeys? Bear? Salamanders? Songbirds? Ceruleans? Other key species?

- Logging and roadbuilding may impact a number of bird species, both during the time that logging is taking place, and in subsequent years. For example, 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 is documented in the area. 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.

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

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

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

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

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

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

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

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

How will state-listed species (DNH lists of rare animals, rare plants, state-endangered and threatened species), species listed in Terwilliger, Virginia's Endangered Species and other sources) and species acknowledged as rare by experts be affected by this project? We know, for example, that at least one state listed plant, ginseng, is found in the project area (FS Field Notes). 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?

- We would like to see a consideration of other non-native (and invasive) species as well. We are concerned that many non-native and invasive species can be established or thrive in areas directly or indirectly impacted by

logging or ground disturbing activities. The project may lead to increased nonnative species introduction or spread. How will nonnative species be impacted by the project and other activities/events in the area? How will these problems be addressed?

- How will roads, cutting units and other infrastructure bring non-native plants into the areas, especially areas near landings, roads and skid trails? 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 will it only reduce selected plant species?

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

- What activities result in self-replacement? What are the anticipated impacts on soil productivity? How much of the nutrients in branches and boles are removed? How much is left? For how many generations can self-replacement take place at the present rate of extraction? Cumulative effects?

- Water quality: What effect will the project and other activities/events in the vicinity 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? Cumulative effects? What are the MAIS rankings for these areas? How good a predictor of water quality are these rankings?

- How will the project impact TESLR mussels and other TESLR aquatic species?

- The project may directly or indirectly impact wetlands and other riparian areas. What wetland buffers/riparian area buffers are provided? Include maps with adequate detail and scale of all wetlands, wetlands types, and proximity to landings, cutting units, roads, and associated infrastructure.

- The FS is required to consider cumulative effects. What is the cumulative impact of this project in conjunction with all other USFS management activities (including TSs, mineral extraction, game openings, grazing, powerlines, communication towers, salvage sales, roads, waterholes, recreational development, etc.) throughout the project area and surrounding areas past (at least 50 years), present, and future (300 years)?

- Private lands are not providing and cannot provide the needed large tracts of undisturbed, unfragmented forests that public lands provide. How do the proposals for the TS provide for that which cannot be provided for on private land? (i.e. undisturbed, unfragmented habitat)?

- As part of the NEPA process, the FS must consider up-to-date scientific information, conservation biology, and changing public attitudes toward logging since the existing plan was signed. The FS must use the best information possible in this analysis.

- As part of the FS's duty to consider up-to-date scientific information, the FS must consider biodiversity on all levels - genetic, population, species, community, ecosystem, and landscape levels. Specifically how are this project and other projects, activities and events effecting biodiversity on these levels, both in the PA and in the cumulative effects area?

- Natural forest succession is a process that is occurring as we move from the heavily cut-over forests of the early 20th century to the forests of the future. How will natural forest succession be set back by this project?

- Disclose how natural disturbance regimes can provide and are providing early successional habitat in this PA.

- By creating addition infrastructure in the forest there is a potential to create a number of directly and indirectly related other problems. For example, the FS should disclose how the TS, associated activities, and other activities/events in this PA and surrounding areas will affect potential poaching, illegal road use, litter problems, and noise.

- This project, like other TSs we have observed, has the potential to impact a number of habitat components. How will activities affect canopy, canopy structure, natural disturbance regimes, pit and mound topography , snags, wood debris on the forest floor and across streams? How will soil quality, wildlife species (esp. MIS species, TESLR species, and forest interior bird species) be impacted by the project?

- Due to heavy cutting at the beginning of the 20th century, there is an age-class imbalance, particularly in the older age classes both in this PA and throughout the GJWNFs and eastern US. How will TS/projects help the current age imbalance (or lack of stands/trees) in the 100-110, 110-120, 120-130, 130-140, 140-150, 150-160,

160-170, 170-180, 180-190, 190-200, 200-210, 210-220, 220-230, 230-240, 240-250, 250-260, 260-270, 270-280, 280-290, 290-300, and 300+ age classes? Does national forest management consider all age classes or just a limited number of age classes on the lower end of eastern deciduous and coniferous tree lifespans?

- There has been recent cutting in this PA and more cutting is proposed; this could impact forest fragmentation on a number of levels. Please consider all known and reasonably anticipated effects of forest fragmentation on native biodiversity, interior dependent species, exotic species invasion, seed drift, temperature change through increased sunlight, and deer browse.

- The scoping notice contains inadequate information on logging methods, provision of residual trees, and other aspects of the proposed cutting. The volume, size, and species distribution proposed for logging should be thoroughly delineated. Further, the size, species, age, and spatial distribution proposed to remain following logging should be disclosed. The FS should document whether trees are more likely to be damaged by logging equipment or nearby falling trees and whether trees are more likely to blow down because they are more exposed in even-aged logging units. The volume of snags and coarse woody debris proposed to remain following logging for all logging methods considered should be addressed.

- Disclose effects on old growth, potential old growth, and old growth dependent communities.

- There is a potential for cultural sites in this project area, as elsewhere in the GWNF. See above regarding cultural sites. What is the possibility of cultural sites in the project area, or along travelways associated with cultural sites along the James River, along ridgelines and other sites? In our experience, cultural resources have been found in a number of FS projects in the GWJNFs and not all are adequately protected by mitigation measures. For example, a recent project we were actively monitoring included an extensive road network in and near a cultural site. We do not think that cultural sites should not be threatened by placing cutting units, roads, or other infrastructure near them. Adequately monitor, inventory and protect all historic and prehistoric archaeological/cultural sites. Consult with knowledgeable persons and appropriate authorities. Respect and protect all native American archaeological/cultural/religious sites and all native American and non-native-American cemeteries/graves.

- Den trees, hard mast, cover and road densities are key components for black bear habitat and some other species. How would den trees, hard mast production, cover, and road densities be effected?

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

- How many miles of roads, skid roads and other access are associated with this sale and past FS activities? What are their impacts on wildlife, native plants, watersheds, soils, and other resources? No roads of any type should be built to access this sale.

- This project and other activities/events may contribute to the introduction and spread of invasive species and nonnative species. How do this project and other FS activities in this project area and across the GW&JNFs contribute to the spread and introduction of invasive plants? What could the FS do to minimize the risk of the introduction and spread of invasive plants (including foregoing certain activities that open up the forest canopy and provide vectors for invasive plants, decommissioning and revegetating existing access routes in the project area, using native species, etc)? How will the FS incorporate a preventive strategy into project planning and implementation?

- The effects of logging, roadbuilding, and associated activities proposed as part of this project are not limited to effects occurring on-site. What are the impacts on biodiversity of each of the proposed activities throughout the entire cycle - including gravel mining, road-building, site prep, herbicide use, and thinning?

- According to Division of Natural Heritage reports to the FS and the reports of other agencies and experts, what special biological areas are recommended for special interest area and/or research natural area designation here

or nearby? What existing areas are found in the project area? What other important areas or important species/resources are identified in the project area? What other unique natural areas have been identified by other naturalists, researchers, or others? How will projects in or around these areas affect the areas or the species/resources associated with these areas?

- How will the project affect recreation sites? How will views be affected? Will people be more or less encouraged to go for a hike, fish, or experience nature? Will people get an artificial view of how nature works?

Do any natural disturbance areas exist in these areas? Why is logging necessary, esp. near campgrounds?

- Logging and other activities can impact soils at a variety of depths, other important soil quality components, and important species such as amphibians, reptiles, small mammals, insects, fungi, and herbaceous understory plants. How will these be affected? What temperature changes in the upper/middle/ and lower zones of the soil would occur? In winter? In summer? How long? Are these extreme temperature changes for the species affected? Are these tolerable temperature changes? What changes in moisture and microclimate would occur in the top/middle/lower zones? How would logs/debris on the forest floor be affected? How would the organic content of soils be affected? How would certain trees and non-tree plant species be affected? How would salamanders be affected by the above changes? How would all other salamander species be affected? Other amphibians and reptiles? Plants, including herbaceous understory plants? Soil organisms? The food chain? Burrowing animals?

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

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

- Consider how the project affects closed forested canopy, deep moist soil, abundant surface cover objects, late successional stages or oak and maple woodlands, hardwoods mixed with eastern hemlock, hemlock stands, cove hardwoods, mixed cove hardwood and conifer stands, tuliptree stands, and rhododendron thickets, stands at high elevations, and any species associated with these habitats or habitat components? How will the project affect species in these areas?

- A number of bird species occur in forested ecosystems such as the ones proposed for logging. What are the effects on these species? 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.

- How many additional vehicles will pass down project area roads as a result of the TS? What impact will these additional vehicles have on water quality? What impact will the cutting of logging units have in addition to this new truck traffic? How will this affect recreation? Where will roads, skid trails, landings and other logging infrastructure be located?

- What will be the impacts of all infrastructure and access routes associated with the project, including landings, cable corridors, skid trails, haul roads, skid roads, etc.? Where will they be located and what resources will be impacted by them at these sites?

- The analysis for this project should be consistent with the findings and recommendations of USDA OIG Eval. Rpt. No. 08801-10-At (incorporated by reference).

Public Participation

The FS espouses an "early", "continuous" and "open" decision-making process, and you should demonstrate that this will be the case for this project, as it proceeds:

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

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

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

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

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

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

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

Therefore, comments should be accepted, considered and addressed up to the time the decision is signed, the process should allow ample time for the general public to learn about the project, visit the project area or project file, inform themselves about the project, gain standing to appeal it if desired, and comment on it, especially after the predecisional EA or DEIS is completed and before the DN or ROD is signed.

We strongly encourage the District to make a draft Environmental Assessment available for public comment, prior to making a decision.

We believe that an opportunity for public comment on a draft EA is critical to achieving the goals of both this collaborative project planning process and NEPA. In fact, we believe that NEPA and its implementing regulations require that the public have an opportunity to comment on the environmental effects of the proposal and its alternatives - information normally made available in a draft EA.²

1 36 C.F.R. part 218.

2 NEPA requires that the public have an opportunity for informed, meaningful comment and participation before decisions are made. 40 C.F.R. § 1500.1(b); *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989) (NEPA "guarantees that the relevant information will be made available to the larger audience"). For the public to have meaningful involvement it must be sufficiently informed, so environmental information analyzing the impacts of the proposal and alternatives must be submitted for public review and comment. Therefore, the Forest Service must provide environmental information to the public and provide an opportunity for public comment on it before making a final decision. *Sierra Nevada Forest Prot. Campaign v. Weingardt*, 376 F. Supp. 2d 984, 990 (E.D. Cal. 2005).

2003).

The FS's handbook on environmental policy and procedures requires the FS to allow the public to fully participate in the NEPA process:

"4. Ensure that the public is kept informed of the results of scoping and the progress of the environmental analysis commensurate with the public interest in the proposed action." FSH 1909.15.10.4

"11.7 - Inform Participants and the Public of Results of Scoping and the Progress of the Analysis. Consistent with the importance of the proposed action, inform participants of the results of scoping and keep the public informed of the progress of the environmental analysis through appropriate means. This may include, but is not limited to: personal contacts with individuals, organizations, and State and local government officials; use of local media; and newsletters." FSH 1909.15.11.7

In certain case, expanded public involvement may be appropriate.

"12.3d - Expand Public Involvement as Appropriate.

"1. Identify target groups. Identify potentially affected groups and the nature of their concerns (FSH 1609.13). Establish, maintain, and use mailing lists as appropriate.

"2. Determine the methods of public participation. Establish the level of needed public participation. Ensure that the level of effort to inform and to involve the public is consistent with the scale and importance of the proposed action and the degree of public interest. FSH 1909.15.12.3d."

The FS is required to "Consider a full range of reasonable alternatives to the proposed action that address the significant issues and meet the purpose and need for the proposed action. During scoping and the subsequent public participation activities, discuss the feasibility and possible effects of these alternatives with potentially interested and affected agencies, organizations, and persons." FSH 1909.15.12.3c. Therefore, there must be an opportunity to "discuss" these issues and effects "with" the public and interested parties.

"The CEQ regulations provide the following direction:....

If the proposed action is not covered by paragraph

(a) of this section prepare an environmental assessment ({1508.9). The agency shall involve environmental agencies, applicants, and the public, to the extent practicable, in preparing assessments required by

{{1508.9(a)(1)." FSH 1909.15.17. It is entirely practicable for the FS to allow the public and agencies to review and comment on the EIS or EA, since this has been common practice for a number of years.

If you purposefully do not allow the public or agencies to review or comment on the EIS or EA for this project before a decision is made, and the public or agencies submit new information not considered in the decision (or makes you aware of new information not considered in the decision) as a result of the public's or agencies' review of the EIS or EA, you will have to correct, supplement or revise (and reconsider) the decision:

"CORRECTION, SUPPLEMENTATION, OR REVISION OF ENVIRONMENTAL DOCUMENTS AND RECONSIDERATION OF DECISIONS TO TAKE ACTION.

"18.1 - Review and Documentation of New Information Received

After a Decision Has Been Made. If new information or changed circumstances relating to the environmental impacts of a proposed action come to the attention of the responsible official after a decision has been made and prior to completion of the approved program or project, the responsible official must review the information carefully to determine its importance." FSH 1909.15.18.1.

Scoping is "an early and open process". FSH 1909.15.11. Public involvement methods, issues, analysis criteria, exploration of possible alternatives and their probable alternative effects, etc. (see below) cannot be predetermined before the scoping:

"The results of scoping are used to identify

public involvement methods, refine issues, select an interdisciplinary team, establish analysis criteria, and explore possible alternatives and their probable environmental effects." FSH 1909.15.11.

"1. Conduct scoping (sec. 05) to:

- a. Determine the nature and complexity of the proposed action.
- b. Identify environmental issues related to the proposed action.
- c. Determine the disciplines required to guide environmental analysis and documentation.
- d. Determine how much analysis is necessary.
- e. Achieve effective use of time and money in conducting environmental analysis.
- f. Determine the type and level of public participation." FSH 1909.15.10.

Therefore, limitations on public involvement methods cannot be predetermined before mailing out the scoping letter for this project. Since issues, analysis criteria, and exploration of possible alternatives and their probable alternative effects cannot be disclosed or predetermined before the scoping, the public cannot rationally be expected to fully and adequately comment on these until a more detailed document is released.

"The following direction on scoping from the CEQ regulations applies to all scoping conducted by the Forest Service without regard to whether or not the results of the analysis is to be documented in an EIS or an environmental assessment (EA).

"(a) As part of the scoping process the lead agency shall:

(1) Invite the participation of affected Federal, State, and local agencies, any affected Indian tribe, the proponent of the action, and other interested persons (including those who might not be in accord with the action on environmental grounds), unless there is a limited exception under {{1507.3(c)}. An agency may give notice in accordance with {{1506.6.

...

(4) Allocate assignments for preparation of the environmental impact statement among the lead and cooperating agencies, with the lead agency retaining responsibility for the statement.

(5) Indicate any environmental impact statements and environmental assessments which are being or will be prepared that are related to but are not part of the scope of the impact statement under consideration.

(6) Identify other environmental review and

consultation requirements so the lead and cooperating agencies may prepare other required analyses and studies concurrently with, and integrated with, the environmental impact statement as provided in {{1502.25.

(7) Indicate the relationship between the timing of the preparation of environmental analyses and the agency's tentative planning and decisionmaking schedule. (40 CFR 1501.7) FSH 1909.15.11.

Northern Long-eared Bat

- The FS should analyze the particular habitat needs of the long-eared bat and should analyze how the project would impact the bat and its habitat. Surveys should be conducted for the bat (and other PTESLR bats).

"Compared to random trees, roosts of northern long-eared bats were within intact forests ($x^2 = 10.56$, d.f. = 1, $P = 0.001$). Amount of obstruction and decay differed; roosts of *M. sodalis* typically were less cluttered and more decayed than those of *M. septentrionalis* ($x^2 = 38.63$, d.f. = 2, $P < 0.001$). Indiana bats roosted almost exclusively under exfoliating bark of bottomland snags, whereas northern long-eared bats also made extensive use of cavities and crevices." "Northern long-eared bats used five identified species of trees for roosting; nine roosts were in pin oak, five in elm, two in unidentified snags, and one each in sweetgum, oak, and hawthorn (*Crataegus* spp.)." "Comparing roosts of Indiana bats and northern long-eared bats (Table 3), two variables were significant ($x^2 = 38.633$, d.f. = 2, $P < 0.001$). Degree of roost obstruction was greater around northern long-eared bat roosts than around Indiana bat roosts ($x^2 = 14.954$, d.f. = 1, $P < 0.001$), and *M. septentrionalis* roosts were less decayed than those of *M. sodalis* ($x^2 = 4.876$, d.f. = 1, $P < 0.027$)."(Timothy C. Carter , George A. Feldhamer, "Roost tree use by maternity colonies of Indiana bats and northern long-eared bats in southern Illinois," *Forest Ecology and Management* 219 (2005) 259Ð268).

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) "First, 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

Schwieerjohann 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)

methodology, because virtually every study measures canopy cover in a different way. Second, roosts found in closed-canopy forests, particularly primary roosts, are often associated with natural or man-made gaps (e.g., openings created when nearby trees fall, riparian edges, trail or forest road edges). Although the forest may be accurately described as closed canopy, the canopy in the immediate vicinity of the roost tree may have an opening that allows for solar radiation to reach the roost.

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

more orthopterans than Indiana bat (Lee and McCracken 2004).

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

Foraging behavior:

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

These issues should be considered in the EIS/EA and appropriate standards and monitoring should be required.

Sincerely yours,

Sherman Bamford
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