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[redacted]
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USDA Forest Service
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re: proposed Sandy Ridge pine project

Dear Ranger Yonce and Mr. Martin and Mr. Kyle,

Please accept these comments on the proposed Sandy Ridge project.

"Substantive comments provide factual information, professional opinion, or informed judgment that is relevant to the action being proposed. Substantive comments are specific, comparative, or solution oriented. A substantive comment provides the reasons why and goes beyond just expressing an opinion. While all comments will be considered, substantive comments related to the alternatives are the most useful."

In the past, the multiple pages given by the agency planners to "ecological departure" were unintelligible (see North Shenandoah Mountain timber sale project). References to a "natural range of variability" were made, but in the tables under NRV all we had was a single number. A range is just that, some period or distance between an upper and lower bound. How can a range be one number? And the number was a percent; a percent of what?

I truly did not understand what you were talking about, and I still don't — how are these NRV numbers derived, and what is their relevance to this specific proposal? Where were the NRV numbers derived and by whom? And more importantly, where do the numbers in the tables for current condition come from? Who obtained the data? How? Where on the project area were they obtained? **Please clearly answer these questions.**

How do you possibly expect us to intelligently participate in this process when we are being kept in the dark as to your motivations and the information you are supposedly using?

The reasoning behind the **Shortleaf Pine** focus I do not get at all. So you are going to focus time and money on 1500 acres in order to make a common species more common, a **species so common that people are paid to cut them to the ground and kill them**. And meanwhile there are rare, sensitive, and vulnerable species that your proposed actions may harm (*e.g.*, burning of salamander and Wood Turtle habitat, increase invasive species, increase Deer that eat rare flora, increased sediment into watersheds, etc.). **Who or what came up with this Shortleaf Pine focus for expenditures of limited funds? And why is this now a priority, and not, for example, Wood Turtles or Shenandoah Mountain Salamanders?**

Species distributions and disturbance regimes shift with changing climate. And because species disperse/migrate at different rates and in response to different conditions, forest communities can be somewhat ephemeral. With regard to Short-leaf Pine, modeling of tree species distribution/migrations in response to climate change predict that this species can be expected to move northward and more likely be a canopy dominant/co-dominant. In other words, it can be expected to increase here on the GWNF without any direct assistance. So, the FS proposal to spend our limited tax dollars on this common species is simply not prudent decision-making. An expansion of spatiotemporal perspective is in order. The habitat mosaic on the GWNF will most likely shift to include more Short-leaf Pines without having to take the drastic and destructive and unnecessary steps entailed in this proposal. All this patch fabrication (that does not mimic the spatial scale grain of most natural disturbance here) and edge interspersion (from cutting, roads, dozer work) and chronic disturbance (such as repeatedly burning sites) might in some sense enhance diversity at a local scale in the short term, but at the cost of facilitating the proliferation of invasive species and common species (White-tailed Deer and Short-leaf Pine) through impacts to sensitive and vulnerable species and the fragmentation and perforation of the greater landscape (long term damage and impoverishment).

The purpose and need for this project is predicated on the notion of "resilient forests" or "resilience" (pg. 5 of scoping letter). Various assertions are made, but there is no citation to any studies. **Precisely what published research are you using for the implied position that this project area forest cannot be resilient unless chainsaws, dozers, and torches are applied to thousands of acres?**

Here we have "Reforestation" by future intensive logging after the thinning. Our National Forest is reforested and restored by cutting down and removing the forest. And this is purported to improve resiliency.

Restriction of public

I and other members of the public got a post card in the mail about a month before comments are due. So we got 30 days to deal with **a project area of *ca*. 24,000 acres, proposed burning on an area of who knows how many acres (not disclosed in the scoping letter), logging of about 1500 acres (openings and thinning for pines), 600 acres more of intensive "regeneration logging" (the forest types, ages, and other basic information about the stands proposed for cutting are not disclosed in the scoping letter) , other "mechanical and chemical treatments" on who knows how many acres (it is not disclosed in the FS letter), 5 miles of so-called "temporary" roads (locations not**

disclosed in the scoping letter), and 1.5 miles of dozer lines for burning (the agency did not disclose where these are proposed for destruction).

All the above improper withholding of basic information makes some of us very suspicious. For instance, **I wonder if there are stands of forest types that are rare on the Forest that you plan to cut down or convert to pines**. Like occurred at the Dice Run timber sale in the Dunkle Knob MT. A basic diversity concern involves the "forest type" of sites. Numerous types are not well represented on the Forest; and the mature or old growth acreage of these types is even scarcer. For example, there were only 2239 acres (0.2% of the Forest) of "white pine-hemlock", "Forest Type 4", on the entire GWNF (1993 FEIS H-3); this fundamental information was conveniently omitted from the 2014 EIS. Because of their rarity and significance to maintaining the Forest's diversity, such forest types should not be logged. Yet this is exactly what happened at the NRRD Dice Run timber sale. The only mature acreage of such a type on the entire Ranger District and it was cut to the ground.

The scoping letter (SL) states: "Specific locations will likely be decided at implementation" - That is certainly convenient for those who do not really care about or want "substantive comments" or want to impede meaningful public participation and reasonable decision-making.

This agency typically asserts that it wants comments to be precise and specific and focused – and then here it turns around and makes it difficult or impossible to do so. And then no doubt (as I have seen happen in the past) it will then claim to the public or a court that comments were too generic or unfocused for them to address, and thereby rationalize disregarding relevant issues. This is an underhanded way to impede the public's involvement with the management of our public lands. It is also a way to foreclose the full and fair consideration of alternatives. This is not using the NEPA process in a fair and proper way.

Any planning for this project – and the expenditures of taxpayers' money that this necessitates – should be put on hold until an expanded comment period is in place that is commensurate with the magnitude of this proposal**. A proper scoping letter needs to be prepared and promulgated that discloses basic information to the public instead of keeping things secret as does the August 12, 2020 letter.**

This project is *ca.* six- to ten-times the size of typical GWNF logging projects (2100 acres of cutting), entails a lot of other proposed actions on thousands of acres (?) as well (*e.g.*, burning), has 5 miles of road building and 1.5 miles of dozer line, has a project area (24,000 acres) far larger than typical projects, and will cost taxpayers far more than typical projects. For these reasons the comment period should be much longer as well.

This project should be re-scoped and this time allow the public expanded time to submit comments.

What you propose to do and where, the existing conditions, and the rationale for the proposed actions need to be made a lot clearer. Stop hiding information from us and impeding our involvement with our public lands; the GWNF is not the private property of FS employees. Sometimes it seems that somebody up there in the RD office thinks that

other Americans and I are just a bunch of mushrooms - feed us shit and keep us in the dark.

The maps for this project are perhaps the worst I have ever seen promulgated by the GWNF. There are no streams or rivers marked, nor are there any topo lines. Thus making it exceedingly difficult to orient in the field and find specific sites proposed for significant disturbance. SBAs and other management areas (*e.g.*, 12D) are not delineated either. And there are different colored lines on the map that are not defined in the "legend".

Process

If this project moves forward (and isn't strangled in its cradle or thoroughly and substantially altered) a **draft BE/EA/EIS need to be made available for public comment**, and the FS needs to then consider those comments, well before issuing a draft Decision Notice and associated decision documents.

I incorporate by reference all the comments and associated materials (such as research papers) that I submitted on paper, electronically, and on CD or flash drive to the GWNF planners during the Forest Plan revision process, for the North Shenandoah Mountain project, and for the previous Lee RD burns; this material is pertinent in a multitude of ways to this specific proposal.

Some good things in proposal

Legacy features and other features may be rehabilitated — Use of the treatment called "Full scale obliteration and recontouring to the approximate contour of the landscape" is appropriate and feasible for implementation.

The road system will be evaluated — identification of roads to be closed, and those to be obliterated and recontoured, needs to occur.

I think you are avoiding the core habitat of Wood Turtles; although I am not sure about YPE2 or logging units 1 & 2 (there are different colored lines on the map that the "legend" doesn't define).

Roads

Roads are one of the most pernicious assaults to the ecological integrity of this forest; a mountain of evidence supports this (see, *e.g.*, 2010 "Conservation Alternative" I submitted in 2010 to the GWNF managers at pp. 23-31, 36-43, 72-73, 83-89 and literature previously submitted).

For this reason, **to actually "enhance" this project area, first and fundamentally we need to implement a project that uses only existing roads and constructs no new ones (permanent, temporary, or otherwise – such as "dozer lines");** nor should decommissioned roads, roads being considered for decommissioning, or uninventoried roads (such as previously constructed "temporary" roads or illegal roadways or trails) be used as access roads for this project. This should be the first coarse filter through which any subsequent planning must pass. First thing, drop the cutting units that do not pass (*i.e.*, that need road construction of any kind).

This course of action needs to be fully and fairly considered and developed in an

alternative.

So as to improve wildlife habitat in the Sandy Ridge project area, the FS managers should implement an aggressive program of road closures and decommissionings for all unnecessary roads, with a priority on those with the most severe hydrological problems and those in or adjacent to existing roadless areas, potential Wilderness Areas, VMTs, special biological areas (existing and proposed), rare/sensitive/threatened/endangered species habitat, or old growth tracts. These potential and reasonable and appropriate restoration and enhancement activities need to be fully considered, developed, and analysed.

Consideration of these actions is ripe now since the FS is presently focused on this geographic area and intends to "evaluate the road system" here (SL-7). There are opportunities for decommissioning, closing, and revegetating roads in this Hardy County area.

Myself and others recommended various roads to the USFS in the 2010 Conservation Alternative (previously submitted to the FS during the Plan revision process; incorporated by reference); now it can be fully considered at the project level of analysis: "Some suggested candidate road segments to be evaluated for decommissioning, closure, recontouring, revegetating, and conversion to non-motorized trails (road numbers from 1993 GW Plan maps):

. . .

In Big Schloss MT the **Cove Run road # 371** in WV". (Pg. 90 of 2010 CA)

FS road 371 is in the Sandy Ridge east area. This road would be an excellent one to close, decommission, and revegetate. Not only would this serve to protect, restore, and enhance the Big Schloss Mountain Treasure, it would also greatly benefit a population of a rare and endangered species of "critical conservation need", a "species of greatest conservation need". Doing this would also significantly help to restore the ecological integrity of one of the largest roadless areas on any eastern National Forest. This Roadless Area was over 35,000 acres in the 1978 RARE II review, now it has been demolished by the Forest Service down to around 21,000 acres, a reduction of 40%.

Here is an option that need to be fully considered: **close, obliterate and/or revegetate the current road**. This road is extremely close to the stream; the road and associated camping significantly degrade the riparian benefits of Cove Run, such as by harming the security of a species of "critical conservation need". Parts of the road may be used by nesting turtles — the road sites with appropriate nesting habitat (of preferred aspect, slope, soil character, and openness) should remain as is.

This area and the juxtaposed Paddy Run Area should be managed as a special biological area (unsuitable for timber) — this action can be part of the site-specific project decision.

The **impacts of roads and their associated edge effects upon habitat loss, habitat degradation, habitat fragmentation, and habitat/forest perforation/fragmentation** must be

fully considered, disclosed, analysed, and evaluated. The extent and degree to which roads serve to act as barriers, alter the permeability of the landscape, and reduce accessible habitat must be fully considered, disclosed, analysed, and evaluated. See, *e.g.,* Eigenbrod, F. *et al*. 2008. The degree of the barrier effect of roads and associated habitat loss of course varies with the species and the type of road and the volume of traffic. "However, even minor roads may be a major barrier to movement for some species, such as salamanders (deMaynadier and Hunter 2000), invertebrates (Mader 1984), small mammals (Swihart and Slade 1984), and some snakes (Shine et al. 2004), due to the behavioral response of these species to the road surface." (*id*.) Even small unpaved forest roads can negatively affect **salamander distribution**; see, *e.g*., Marsh, D. M. 2007 (research on the GWNF) and Semlitsch, R.D. *et al*. 2007.

"I took soil samples along transects leading away from the edges of unpaved roads in the Cherokee National Forest in the Southern Appalachian mountains of the United States. Roads significantly depressed both the abundance and the richness of the **macroinvertebrate** soil fauna. Roads also significantly reduced the depth of the leaf-litter layer. These **effects persisted up to 100 m into the forest**." (emphasis added) (Haskell, D.G. 2000)

FS planners need to **identify, quantify, measure, analyse, map, and disclose the road edge effect and intensive logging edge effect zones on the project area**. Perhaps use 100 meters from both sides of all the roads and logging units in the project area as a **distance-of-edge-effect** (Zheng and Chen 2000) to calculate and evaluate the amount and distribution of this pattern. See Reed, R. *et al*. 1996, Forman, R. 2000, Riitters, K. *et al*. 2004, Fletcher 2005, Harper *et al*. 2005. However, analysis of a range of zones should perhaps be performed as a 60m or 100m effect zone may be extremely conservative; see, *e.g*., 800 meters as regards Black Bears in Rudis & Tansey 1995 and Reynolds-Hogland & Mitchell 2007.

This analysis needs to be performed now at the site-specific level since it was not done for this project area during the Plan revision analysis. This way well-reasoned decision-making can occur with regard to the significant issues of fragmentation, perforation, edge effects, and restoration.

Wood Turtles

Looks like you are proposing to do intensive cutting around Slate Run again, oak regeneration sites #1 &2. This site has already been significantly degraded by a timber sale in the recent past (Slate TS); previous cutting turned good WT habitat into depauperate esh (having what some term "minimal benefits") that Turtles tend to avoid. I observed Wood Turtle in this area in the past (see photo of adult female).

Looks like there may be a lot of logging traffic on Waites Run road in order to remove trees at oak regeneration units 4-7. Or not? Not clear how you propose to get at these sites or if more road construction is planned there. I also observed Wood Turtles in this area in the past.

Burning of WT habitat should be avoided (*i.e*., the zone within *ca*. 300m of the

perennial streams up to *ca*. 650m asl). The scoping letter does not disclose the locations of proposed burning.

In addition to not burning their terrestrial habitat, **the FS should also refrain from logging mature and old-age forest that they typically use around perennial streams** where they occur or may occur (*i.e*., the zone within *ca*. 300m of the streams).

The Molly's Hill logging project, involving habitat/populations of the Turtle, recently occurred in this Sandy Ridge project area. I previously submitted information to the GWNF managers involving Turtles at this specific project area. This included occurrence locations of living Wood Turtles in this project area, as well as photos of roadkilled Turtle here. Of course, there is an issue and concern about cumulative impacts to this "sensitive" species.

If the FS wants to protect Wood Turtles in the project area a good start would be improving/enhancing Slate Run and Waites Run by diverting vehicles and logging equipment away from those areas and restoring/enhancing the areas by allowing them to advance into heterogeneous patches of old-growth forest.

I incorporate by reference my November 2007 appeal of the Lee RD burn project and all the associated material I submitted with it. All the argument, research, and evidence pertaining to that Lee RD burn are relevant here with regard to Wood Turtles as well as Cow Knob and Shenandoah Mountain Salamanders.

The Trout Run, Slate area, and Waites Run area populations need all the help we can give them.

Restoration

This is purportedly a "restoration" proposal. But many proposed activities are not actually restorative. **Rather than maintaining or enhancing stand development potential (Keeton *et al*. 2005), implementation of the proposed "treatments" would retard it - the extensive intensive logging proposed here (even-aged regen & heavy "thinning") is the antithesis of restorative.**

Here, when the FS mentions restoration, reference is made to maintaining or fabricating cultural landscapes; *e.g*., "mechanical or chemical treatments", "modified shelterwood" or "coppice with reserves" or other "regeneration" cutting stumplands with impeded, retarded, or retrograded stand development that are dependent upon anthropogenic inputs such as future "stand improvements" for their desired structure, composition, and/or function. This is not restoration in the valid sense of the concept; see DellaSala, D.A. *et al*. 2003 and FS Manual.

Most of this proposal reads more like "make work projects" and "job security" for bureaucrats and and their partners in the publicly subsidized exploitation industries. In other words, the same old same old gussied up with new obfuscations.

The SL states that the district silviculturist came up with a plan to – SURPRISE! –

intensively log 1500 acres of our National Forest. The agency needs to go back to square one and this time engage the services and expertise of people other than those trained in cutting down trees, but who have an understanding of and experience with other aspects of the incredibly complex ecosystem that we call a forest, people such as entomologists, mycologists, herpetologists, mammalogists, malacologists, ornithologists, botanists, conservation biologists, and forest ecologists. For a proposal this huge, getting a broad range of advice is essential.

One of the fundamental guiding principles of valid ecological restoration is to have as little impact as possible. Allow natural processes to restore as much as possible. Passive and light-touch actions are preferable to a heavy-handed approach. In other words, restoration is a close-to-nature approach, a level of intervention to the point where forest self-renewal processes operate.

For example: "Where old-growth riparian forests are not currently available, mature riparian forests offer a source for future old-growth structure, provided forest management practices are employed that either maintain or enhance, rather than retard, stand development potential (Keeton 2004)." (Keeton, W. *et al*. 2005) This is the antithesis of the extensive & intensive even-aged logging proposed here that drastically retards stand developmental potential.

We should be preserving, protecting, and maintaining mature forests as much as possible. Particularly where there is already so much young forest available across the landscape of VA and WV (see forest statistics for these states).

Allowing natural forest development and restoration to occur (proforestation) is reasonable, beneficial, and confers desirable conditions — see "Intact Forests in the United States: Proforestation Mitigates Climate Change and Serves the Greatest Good" by Moomaw, Masino, and Faison 2019 (attached).

In the long-term, the FS needs to restore the disbalance in the project area. **At present in the project area there appears to be an extreme disbalance in the distribution of age-class forest acres** (although this is not certain since this basic information is not disclosed by the FS). But there are generally very little or zero acres represented in the 151-160, 161-170, 171-180, 181-190, 191-200, 201-210, 211-220, 221-230, 231-240, 241-250, 251-260, 261-270, 271-280, 281-290, 291-300, 301-310, 311-320, 321-330, 331-340, 341-350, 351-360, 361-370, 371-380, 381-390, 391-400 years-old **age classes.**

The SL does not mention anything about this misbalanced situation regarding "age classes", except that more early successional is "needed". For "stands" said to be greater than 200 years old the FS in 2005 identified only 11,014 acres on the entire Forest (1.06% of the Forest) (pg. G-40 in the September 2005 GW-JNFs Monitoring Report).

How much acreage is there in the project area 140 years old or older ? Not a peep about this salient and important information in the entire SL. Only **10%** of the Forest is >140 years, only15% >130 years (as of 2010) — FEIS 3-349.

To ignore and lump age classes is a way to misleadingly label this project area as "predominantly older". As there are probably extremely few acres of the above-listed age classes here, this project area can be described as "predominantly younger".

It is not reasonable to ignore a lot of age classes and lump them together (such as

150+ or 171+ in various scoping letters and EAs) when discussing and analyzing "distribution" or balanced age class and the need to cut to attain it. Of note is the fact that maximum tree ages found thus far by independent researchers often far exceed those listed in the USDA Silvics manual (see Pederson, N. 2007, with data from the GWNF).

A site that has not been cut for 200, 250, 300, 350, 400, or 500 years is NOT the same as one that is 100 or150 years old. Conditions (such as amounts of woody debris and soil characteristics) are different as are communities. Who could even look at a 350-year old tree and think it to be the same in structure (or function) as one 150 years old of the same species on similar site conditions? Of course they are not the same. And various research indicates that plant and animal communities are not the same at ancient sites as at younger sites.

For instance, it may take centuries for plant species to colonize and populations to stabilize. See Honnay, O. *et al*. 2005.

The use of truncated and/or misleading age classes has little ecological basis, but instead appears to be based upon the concerns and convenience of timber management.

Alternatives

If this agency can scientifically and logically establish that there is not enough esh in this project area and that more is needed in order to "restore" it, then **develop and completely analyse an alternative that turns already existing early- and mid-successional stands into new esh**. There are thousands of acres in the 11-35 year age classes on the Forest. These are called by some the "biological desert" seral stage; the FS admits these early seral sites "provide minimal benefits in regards to herbaceous undergrowth and bugging areas for wildlife." (JNF FEIS 3 - 108)) (DS-6). See Reynolds-Hogland, M. *et al*. 2006 for such a proposal and the science behind it. Such an alternative complies with the NFMA and MUSY.

Restoration priorities call for the Forest Service to:

- prioritize watersheds for restoration activities (*e.g.*, drinking water and Wild Trout watersheds),
- recover and restore rare/vulnerable/threatened/sensitive/endangered species populations
- close targeted roads and revegetate them with blight-resistant Chestnut trees or other native species,
- combat Hemlock Wooly Adelgid,
- transform roads into trails (through re-contouring and/or re-vegetation),
- augment stream loadings of large woody debris,
- restore riparian areas by relocating camping areas, trails and roads away from streams/rivers,
- reforest riparian pastures,
- promote increased Beaver populations (Naiman, R.J. *et al*. 1988; Elliot, J. 1990),
- work to return extirpated species (*e.g.*, Cougar, Elk?) to suitable habitat (Taverna, K. *et al*. 1999), and

- eradicate and prevent introduction of invasive species.

This project as proposed would accomplish some of the above forms of actual restoration. But thousands of acres of logging and road building that result in tons of sediment added to watersheds, forest perforations, and edge effects do not "restore" water quality or natural habitat conditions.

FS planners need to develop alternatives in detail that address the above issues and incorporate the above possible restorative activities (without the damage and degradation to structure, composition, and pattern wrought by logging and its associated road building). Then the public and the agency can have a comparative basis for reasonable decision-making.

Purpose and need - monitoring data

The SL discloses no population monitoring data for esh-dependent taxa in the project area. The evidence in support of the "need" to fabricate more is not disclosed; a programmatic non-site-specific "desire" is not evidence in support of a well-reasoned site-specific decision.

If Yellow Pine communities are of concern, then why aren't prescribed burns restricted to or concentrated in these sites? Instead, the FS is burning riparian areas and vast tracts of mesic hardwoods.

Yet the FS asserts "not enough prescribed fire is occurring Forestwide" - GWNF DCER-43

In actuality, **the problem is that the burning is NOT "targeted at restoring the yellow pine community". The FS must do this instead of burning moister deciduous habitat used by biota such as salamanders and Wood Turtles**.

Indeed, for the Yellow Pine community the agency admitted to "Lack of prescribed fire specifically targeted at restoring this community type . . ." - GWNF DCER-48

However, the 2007/2009 proposed burns on the Lee RD and the 2010 proposed burns on the North River RD were not confined to drier sites with rare plants. **Mesic sites, including drainages, north slopes, and riparian areas, and sites with ground cover used by salamanders are proposed for burning** (see maps). The 2010 NRRD burns were even proposed within the Shenandoah Crest SIA, so CKSalamanders may obviously have been present; this "extraordinary circumstance" was ignored by the RD planners (see DM). The decisions (DMs for "categorical exclusions") were not consistent with the 1994 Conservation Assessment for the CKS (see Mitchell, J. 1994).

And now this Sandy Ridge proposal again proposes to inflict improper avoidable harms and waste Americans' tax dollars by burning areas that are not fire dependent.

Many of the concerns and issues expressed elsewhere for logging apply as well to burning of habitat (*e.g.*, microclimate alteration). Just as with logging, prescribed burning operations may significantly harm biota and/or ecosystems directly, indirectly, and/or cumulatively. As does intensive logging, burning alters the microclimate of the forest floor

and alters microhabitat conditions (localized structural and compositional attributes). It serves to simplify niche complexity by removing woody and leafy material from the forest floor. Cover and food used by species such as the Wood Turtle can be destroyed, diminished, or altered.

Burning can make sites hotter, drier and more open and exposed (to sun, wind, and predators). The decay process generally tends to mesify microsites, while fire tends to xerify microsites (Van Lear, D.H. 1996. "Dynamics of coarse woody debris in southern forest ecosystems", pp. 10-17 in McMinn, J.W. and D.A. Crossley, Jr. (eds.), Biodiversity and Coarse Woody Debris in Southern Forests. USDA FS General Technical Report SE-94. — this the Forest Service's own document, so you already have it; incorporated by reference). Burns dry out the very conditions upon which the Forest Service has claimed that species such as salamanders or Wood Turtles depend. Soil moisture is an important abiotic factor affecting the local diversity of soil fauna, such as snails (Martin, K. and M. Sommer 2004).

The incineration of forest material (*viz*., woody debris, litter, humus) not only directly destroys many small creatures, but also significantly alters the site quality for a great many other species, such as Wood Turtles and salamanders. For instance, fire can have a negative impact on important components of habitat, such as leaf litter, thus degrading mesic micro-habitats (Ford, W.M. *et al*. 1999).

Invertebrates that live in the forest floor litter, topsoil, and "fuels", such as snails, slugs, millipedes, worms, and arthropods, are a significant component of forest diversity (see, *e.g*., McMinn, J.W. and D.A. Crossley 1996 *op cit*). Snail assemblages and densities are positively correlated with litter composition and depth (Martin, K. and M. Sommer 2004). Litter-related habitat characteristics also influence the composition of other soil faunal groups in forests, such as earthworms and carabid beetles (*id*.). " P lots in which salamanders were captured, harbored significantly higher numbers of snails than plots in which salamanders were not captured." (Harper, C.A. and D.C. Guynn 1999)

The concern is about significant impacts resulting from the burns to the viability and distribution of species/populations/communities with limited mobility (see, *e.g*., Santos, X. *et al*. 2009 regarding negative effects to mollusks). Past experience with burns on the National Forest indicates that a managerial criterion of success for a burn is when a substantial proportion of the duff and leaf litter are incinerated. **How long does it take litter/duff/soil populations to recuperate, reinvade, reestablish, and/or recover after they are suppressed by fire?** Does repeated burning on short time intervals (*e.g*., 5 years or 15 years or 25 years or more) allow them enough time to recover? **Are their populations being chronically suppressed due to an accumulation of impacts over time?**

Prescribed fires on the Forest are often implemented through ignitions around the perimeter of the burn area. And on top of these multiple ignitions, the interiors of burn sites are also ignited. See, *e.g*., 2007 Lee RD burn project DM-10: "Boundaries of the area may be ignited with drip-torches followed by strips through the interior to complete burning out the area." Small and/or slow moving animals have negligible chances to escape when thus surrounded, and even large and/or swift movers can become confused and trapped by a wall of flames that is seemingly in every direction.

Perimeter and/or interior burns kill wildlife of public interest. The ethical

underpinnings for intentionally incinerating sentient beings for any reason are certainly questionable. But it is particularly heinous when the incineration is done in such a manner that could not be worse if calculated or that could be avoided or that is unnecessary or that is done simply to achieve some floristic composition that somebody deems desirable.

This is a significant issue, as well as an issue of controversy. Yet the FEIS and DCER for the Forest Plan failed to address it in the slightest. What is the agency's rationale for concentrating on some variable floristic composition pre- and post-burn, but showing no apparent concern or consideration for the killing of numerous animals during the fire? This is an ethical issue with on-the-ground ramifications. It is also an issue involving important values held by the public. This concern with controversial and uncertain aspects must be fully and fairly evaluated. See Strohmaier, D.J. 2000.

"early successional habitat", existing conditions on the project area

A major problem with this proposal is that the FS does not properly consider the contribution of natural processes to maintaining wildlife habitat, such as "early successional habitat", on the project area. The FS planners must properly consider and analyse natural esh patches, particularly those under two acres in size (the scale of many canopy gaps) (there is no mention of this in the SL). As a consequence, the GWNF managers use an invalid "need" to fabricate such habitat as a rationale for cutting down valuable and important mature and old-growth forest habitat. Until this natural e.s.habitat is fully and fairly considered and assessed this proposal does not have a valid foundation.

On the GWNF canopy gaps are said to annually form from natural disturbances at the rate/extent of 0.4 to 2.0% of the land area (GW-JNFs Indiana Bat EA-20). **This means that in any ten-year period (this is the increment used by the agency to define age classes and wildlife habitat), up to 4-20% of this project area may have natural esh conditions.**

There is every reason to believe that this is the case on the GWNF in Hardy Co. WV. The need to fabricate more is not apparent.

And yet, here the agency again fails to honestly and fully address and assess this significant issue. See Table 1 at SL-7. The "current ESH" is just the acreage of artificial ESH fabricated by human logging operations. So, this misleading and inadequate information does not make it clear that this area is ecologically departed or needs more logging to fabricate ESH.

In the interests of accountability, reason, science, sustainability, and forest health, the agency must accomplish the full survey, analysis and consideration of the contribution of naturally occurring ESH in the project area (down to 0.1 acre in size) to sustaining wildlife populations. The FS must clearly and thoroughly disclose supporting site-specific rationale and data for assertions that various amounts of ESH must be artificially fabricated at this project area.

Further, the agency must fully and fairly **consider and analyze the ESH on private lands near the GWNF** here and its contributions to sustaining wildlife populations in the project area.

By refusing to acknowledge, tabulate, and analyse all the natural esh in gaps and

at edges the public would be misled and the FS would be using a flawed basis of decision making. The so-called "purpose and need" for this project would be biased and inadequate and illegal under NEPA.

The truth is that much of our maturing and recovering GWNF at the project area naturally contains all developmental stages of forest growth due to regeneration at canopy gaps created by disease, fire, snow & ice, lightning strikes and resultant fire, insect outbreaks (including gypsy moths), tree senescence, windthrow, Beaver, drought, flooding, and other small-scale natural disturbances (Braun, E. 1950, Rentch, J. 2006). Does the agency have some evidence that these factors do not operate in the project area? A disturbance regime of small-scale, within-stand gap processes dominated the natural forests in this region (Rentch, J. 2006, Runkle, J. 1985, 1991). Further, it is critical to consider that intensive logging operations not only significantly directly alter structural/compositional habitat conditions, but in addition they interfere with, impede, truncate, and/or prevent the expression of the natural disturbance regime. Something that one would not want to do if actual restoration was the goal.

The simple fact is, natural disturbances small and large are constantly happening somewhere throughout the Forest, naturally forming a shifting mosaic of habitats (see Shugart, H. and D. West 1981, Harris, L. *et al*. 1996). Such mosaics of wildlife habitat are desirable. With the sporadic nature of natural disturbances (see JNF FEIS 3-107, 109), early successional habitat is naturally patchy or spotty and species are adapted to this. Though episodic, natural canopy gaps are a regular occurrence here, their rates varying depending on the scale of natural disturbance events in a particular year and the forest type studied.

Old growth or old-age sites

Destroying or degrading old growth or old-age sites is not reasonable "restoration" nor is it necessary in order to "satisfy local markets". These old sites need to be allowed to continue to maintain and enhance their development and complexity through natural regeneration processes. Proposed logging sites YPE3, YEP1, 14 (oak regeneration), YPE2 and adjacent oak shelterwood, YPE4, and oak regen units 10, 9, & 6 contain old growth/old age sites of 140+ years old (there may be more but I do not have the most recent stand inventory information or old growth survey data). At the very least, these sites must not be subjected to proposed heavy-handed human disturbance (*e.g.*, vegetation management such as thinning, regeneration, openings; dozer lines; road construction).

Only 10% of the Forest is >140 years, only15% >130 years (as of 2010) — FEIS 3-349.

I am in possession of two maps showing the location of old age stands (as per USFS inventory data) on the GWNF. It appears that some of the sites proposed for logging in the project area are old age and very probably meet any valid criteria for being labeled old growth. There are also other sites on the Forest that that are not considered old age, but that are nonetheless old growth (due, for example, to the failure to properly identify and

age the oldest trees in a tract).

I have had a great deal of experience with FS failures to properly identify old growth (such as at the Hematite, Hoover Creek, Sugar Tree, and Mulligan timber sale sites). I certainly hope that this does not occur again here.

It is reasonable and easily feasible to leave old age and old growth sites out of the heavy-handed "restoration" proposed; in that way natural processes can restore and enhance Sandy Ridge.

White-tailed Deer populations

The proposed regeneration logging and other "vegetative manipulation" would **predictably inflate White-tailed Deer populations** in the project area by fabricating more browse. Even-age logging causes increases in the level of Deer that browse on forest understories (Redding, J. 1995; US Forest Service 2000).

There is a good reason for not wanting to draw focus to the Deer issue: Who could possibly think there is a shortage of Deer? **There is already a very high density of Deer on the Forest, recently estimated at 31/square mile** (GWNF DCER - 45). In Virginia, it was estimated that the White-tailed Deer population has increased 400% since 1968, and Virginia's human population has increased 61% (Donaldson, B. 2005). Deer are the most dangerous wild animal to human safety in the country (*id*.). High Deer populations harm flora and fauna, including rare species (*e.g.*, sensitive plants and ground-nesting birds) (see JNF FEIS 3 – 137 and citations — this is the Forest Service's own document, so you already have it; incorporated by reference). High Deer densities also reduce tree seedlings such as regenerating oaks.

Inflating the populations of a species (in the absence of its natural predators such as Cougars and Wolves) that will have detrimental impacts to flora and fauna (see various papers by T.P. Rooney, W.J. McShea, S.D. Cote and others) does not facilitate the restoration of the project area or the enhancement of wildlife habitat or hardwood communities, it impedes it.

This issue regarding Deer impacts must be fully and fairly considered, assessed, and disclosed in the EA or EIS for the project.

Wild Trout streams and priority watersheds

I am concerned about the impacts to **Wild Trout streams** and Trout populations that would occur if the proposed logging, roading, and burning were implemented. There is no mention of providing instream habitat (*e.g.*, LWD).

It is also not at all clear what **impacts to "priority watersheds"** the agency expects or how they would be prevented or mitigated. Are there "priority watersheds" here? The SL says nothing about this. I am concerned about the impacts to watersheds that would occur if the proposed logging, roading, and burning were implemented. Fabricating more sources of sediment to at risk streams is a particularly bad idea.

American Chestnut restoration

Returning the grandeur of the American Chestnut to the Forest must be an agency

priority, as must be halting the loss of Hemlocks. Prior to introduction of the Blight, Chestnut was a dominant canopy species throughout many of the lands of the GWNF (see Braun, L. 1950). It had a tolerance for a wide range of site conditions and its growth and reproduction characteristics gave it a competitive edge over many species. Its widespread occurrence also confirms the lack of an intensive or extensive natural fire regime here (see Q. Bass material previously submitted to the GW-JNFs' managers during the revision of the JNF Plan) Through the efforts of The American Chestnut Foundation a blight-resistant hybrid suitable for planting is or will soon be available.

There are many miles of currently open, closed, and temporary roads, "wildlife openings", and recent even-age logging sites on the project area that could and should be used as planting sites to reintroduce American Chestnut. Various roads can be decommissioned, recontoured and revegetated with Chestnut. Similarly, the vegetation at various game openings and recent logged-over sites can be manipulated so as to reintroduce Chestnut at these sites. New logging is not needed to restore the Chestnut to the GWNF.

By using existent roadbeds and recent logging units for Chestnut restoration, several restoration goals (providing for remote habitat and recreation, interior forest, helping to impede the influx of invasive species, decrease road densities and road maintenance expenditures, improve watershed quality) can be accomplished in one action.

"Departure analysis"

The scoping letter states that a driver for all this proposed logging, roading, and burning is that the project area is "departed" from some desired structural condition.

Where do these numbers come from? Who specifically decided that 67% of Oak and 79% of Pine should be mid or late open conditions? How was this number derived? From where (geographically) were field data used? Precisely where in the project area were numbers derived for openness that indicate "departure"? Who did this? How?

When I asked this before, the FS planners did not clearly and fully answer — instead there was more circumlocution, obfuscation, and plain and simple ignoring of the questions; see "responses" in NSM "Draft Environmental Assessment Comments and Concerns" at pg. 27.

I do not have the slightest idea as to the validity of any of the agency's assertions regarding "departure".

There is no citation to anything in the scoping letter and the explanation for using this information is lacking to say the least.

The FS is not disclosing basic information to the public in support of the "purpose and need" for this proposal. How can we be expected to make substantive comments and actually be involved with this project when we are being kept in the dark?

The agency implies that stand of a certain age are necessary for optimal oak mast production (see, *e.g.*, NSM DS-8). But stands do not produce mast, trees do. And trees of optimal mast producing age can and do exist in old-age and old-growth stands. In fact, the vast majority of trees in an old-growth forest are not old (a reverse J curve of abundance-

age). “Stands” of a certain younger age do not necessarily produce more mast than do older “stands”. What exactly is meant by “optimal”? Is it simply the greatest number of acorns? **How many oaks of so-called “optimal mast producing age” are there in the project area? Precisely how did the agency reach the conclusion that there is a shortage of these trees in the proposed cutting units?** And how do you know that cutting down mature oaks will result in an increase in mast available, considering all the factors that go into this (diverting energy to reproduction/mast is just one part of a tree’s energy allocation budget - there can certainly be good reasons for instead allocating it to maintenance, growth, or storage)? Particularly since at some time in the near future more cutting will take place in the project area (since it is suitable) and mature mast producing trees will again be “harvested” and removed from the system.

In the ‘dear stakeholder’ scoping letter for the North Shenandoah Mountain logging project it was stated that “Complexes of woodlands, savannahs, and grasslands were once a frequent occurrence across the southeastern landscape” (DS-16), but that generic verbiage said absolutely nothing about conditions at the NSM area. The southeast includes Florida, the coastal plain and other areas with conditions greatly different from mountains in the Central Appalachians, such as Hardy County. The references cited in the NSM scoping letter did not support the purpose and need; for instance, the Davis 2002 citation referred to piedmont sites, specifically in the Carolinas (*i.e.*, a different ecosystem). Using references with little relevance and broad-scale generalizations are not valid support for this proposal.

What citations dealing with frequently occurring complexes of woodlands, savannahs, and grasslands in Hardy Co. or similar sites in the Central Appalachians is the FS using to support this Sandy Ridge proposal? (NEPA 40 CFR 1503.4, 1502.24) I want to read them so I can better participate in the decision-making process.

What species are harmed by the proposed actions, particularly conversion of the forest to Short-leaf Pine, fragmentation/perforation of the forest by regeneration logging units, thinning of the canopy, and roads ?

Grassy areas

Recent GWNF documents contains a lot of verbiage having to do with managers’ desire for more grass. The letter’s statements imply that the FS would have us believe that all we need to do to fabricate a grassy (or grassier) understory is cut down canopy trees or otherwise open the overstory canopy (such as with fire). Nothing could be farther from the truth. Various ecological gradients and conditions (physical, such as edaphic, topographic, climatic and biotic, such as competition, predation, and mutualisms, as well as historical contingency) will influence/determine the ground story composition.

Your own photograph (Fig. 4 in North Shenandoah Mtn. Scoping letter) is a perfect example of resultant non-grassy ground floor conditions from a so-called “open canopy condition”.

I see lots of grassy understories in my visits to the GWNF. I encountered them

regularly at my Wood Turtle study sites on the Forest, as well as at this project area. It is not clear who and how it was determined that these are not enough.

What population monitoring data for what grass-obligate taxa were used to claim a need for more understory grass? (this is not a rhetorical question)

How will the agency ensure that implementation of the proposed actions will indeed result in the "desired conditions" with respect to grass ?

Thinning and Canopy openings

There is much more influencing conditions on the ground that simply the amount of canopy openness that exists.

Your own photos demonstrate this (see Fig. 4 in 2017 North Shenandoah Mtn. Scoping letter). You may desire grassy understories, but what you get can be something quite different.

Just as I regularly find grassy understories, in my hikes around the GWNF I also regularly find sites with open canopy conditions. These sites and those with grassy understories are sporadically existent all over the place. For example, there were numerous tracts of relatively open canopy in one of the NSM units proposed for intensive cutting at Camp Run. Four spherical densiometer readings averaged 44% open.

And I was not looking for open canopy, this is just one example.

The rationale for all the proposed thinning is not clear at all – how it was decided that some large tracts need to be opened up, where the desired numbers are coming from, and how the current conditions were calculated. I get the feeling that just as it is with esh, **the multitude of naturally existent open canopy tracts are not being considered**, perhaps since they do not take up an entire "stand".

Anthropogenic Habitat & Forest Fragmentation/Fracturization/Perforation - Edge Effects

Timber cuts, roads, development, and other conversion of habitat result in the fabrication of ecological edges with a multitude of deleterious impacts. The impacts of deleterious edge effects translate to a form of habitat loss for various taxa (Harris *et al*. 1996). Edge width or depth/distance of edge influence (DEI) is the result of the penetration distance of various environmental variables and gradients (*e.g.*, soil temperature, air temperature, litter moisture, photosynthetic active radiation effect on vegetation patterns, alien plant species invasion, and ingress by herbivores or predators) (Zheng, D. and J. Chen 2000); *e.g.*, the 100m effect from roads on macroinvertebrates in Appalachian forests found by Haskell (2000).

Although there are various ways to examine it, at the least a meaningful effort must be made by the FS planners to in some way **identify, quantify, measure, analyse, map, and disclose the road effect and intensive logging effect zones on the project area**. Perhaps use 100 meters from both sides of all the roads and logging units in the project area as a **distance-of-edge-effect** (Zheng and Chen 2000) to calculate and evaluate the amount and distribution of this pattern. See Reed, R. *et al*. 1996, Forman, R. 2000, Riitters, K. *et al*. 2004, Fletcher 2005, Harper *et al*. 2005. However, analysis of a range of zones should

perhaps be performed as a 60m or 100m effect zone may be extremely conservative; see, *e.g.*, 800 meters as regards Black Bears in Rudis & Tansey 1995 and Reynolds-Hogland & Mitchell 2007.

This analysis needs to be performed now at the site-specific level since it was not done for this project area during the Plan revision analysis. This way well-reasoned decision-making can occur with regard to the significant issues of fragmentation, perforation, edge effects, and restoration.

"The configuration of edges is largely determined by human-induced disturbances including timber harvesting, agricultural expansion, and urbanization. . . . In all these landscapes including the Chequamegon NF , the area of edge influence has the potential to be a dominant component of the landscape. . . . Different fragmentation patterns can result in varying amounts of edge in the landscape. About 70-81% of these landscapes including the Chequamegon NF are still described as forest, but the amount of forested area falling within 60 m of edges is 34, 24, 33, and 56%, respectively. . . . Additive effects from two or more edges may influence the core area (Table 1) in fragmented landscapes and therefore be particularly important for conservation." (Harper, K. *et al*. 2005)

"Harrison & Bruna (1999) suggested recently that most effects arising from habitat fragmentation were driven by edge effects. Thus, understanding the effects of habitat fragmentation will require understanding edge effects, which will ultimately require understanding how multiple edges influence edge responses." (Fletcher, R. 2006)

Roadless areas/Unroaded areas/Mountain Treasures

Logging within Big Schloss (a roadless area and Mountain Treasure in the west area of the project area) is unacceptable and needs to be dropped. The area is already degraded by cuts and roads from the recent Rocky Anderson timber sale; it does not need any more, such as from this proposed "enhancement" project (logging units 8, 9, 10).

"Regeneration harvests" within Great North Mountain (a roadless area and VMT) is unacceptable and needs to be dropped. This place was already degraded in the recent past by the Slate timber sale. It was improperly excluded from the inventory of roadless areas during the Plan revision/EIS process. The proposed cutting sites of concern are numbered 1-7 on the Sandy Ridge east area map.

The Forest Service oftentimes fails to protect roadless areas administratively. For instance, Roadless Areas on the GWNF previously inventoried in 1978 as part of the RARE II analysis have been significantly diminished in size or even damaged to the point that the Forest Service no longer considers them to be roadless. The Big Schloss area of the GWNF was 36,526 acres in RARE II. But according to the 1993 inventory for the GWNF FEIS, its acreage has been whittled down to 20,755 (a decrease of over 40%).

Roadless areas/Unroaded areas/Mountain Treasures continue to be diminished in size and degraded in quality on the GWNF. This proposal continues this harmful pattern. Recent projects in Mountain Treasure areas on the GWNF include the recent North Shenandoah Mountain project. **The direct, indirect, or cumulative impacts to the Forest's Mountain Treasures are significant**.

For maps and descriptions of the above-mentioned MTs see the publication "Virginia's Mountain Treasures: The Unprotected Wildlands of the George Washington National Forest" (copyright by The Wilderness Society) — incorporated by reference; this publication is already in the hands of the GWNF managers.

How do you intend to access units 8, 9, and 10? Are you proposing to build new roads in the Big Schloss MT in order to access them? If so, this is unacceptable and needs to be dropped.

Invasive species

One of the first and more obvious ways to honestly restore the Sandy Ridge project area is to not propose management that will result in new or exacerbated infestations of alien invasives. With regard to this fundamental issue this proposal fails miserably.

Thus far the FS is failing to address and evaluate the impacts and effects of Forest roads (be they system, closed, temporary) upon **invasive plant species** (see Goal #3 at GWNF CER pg. 4). The construction and maintenance of roads on the Forest does not "reduce impacts from invasive species", instead it exacerbates them. **Decommissioning and revegetating (with native species such as Chestnut) various roads on the Forest will positively address GWNF Goal #3**.

This option for achieving desired conditions must be developed and studied in detail.

Until the FS can control and eradicate the invasives that are already there, it should not inflict more management activity (*e.g.*, logging, roading, burning) on this project area that will predictably lead to more problems with invasive plant species.

Some of the worst places (*i.e.*, most overrun with invasives) I have seen on the Forest are sites that have been repeatedly burned (prescribed): Go over to places on the Shenandoah River South Fork (Lee RD) and check out the Garlic Mustard and Multiflora Rose enhancement that the FS has inflicted there.

Has this agency heard of **Asian Stiltgrass** (*Microstigeum*)? This species sure does love anthropogenic disturbance (*e.g.*, logging sites, roads, burns) (Glasgow, L. and G. Matlack 2007). I can take you to places on the GWNF and show you plenty of this plant. In over 600 plots at my research sites on the GWNF, Stiltgrass was in more of them than all the other herbaceous invasive taxa put together. Implementation of this proposal would foreseeably significantly facilitate and enhance this invasive.

Another species of concern is *Ailanthus*. I have witnessed numerous regen logging sites on the GWNF with lots of this tree.

Steep slopes/Rocky areas

I have brought up this issue repeatedly in the past; not that it did much good, as numerous decisions to log steep slopes have been issued. Regardless, here I raise it again. Roads, dozers, and logging on steep slopes is unacceptable, improper, and avoidable; the same goes for areas with highly erosion-prone soils and rocky areas. These characteristics need to be used as another filter to make site-specific decisions.

Cow Knob Salamander – Shenandoah Mountain Salamander

The Shenandoah Mtn. Crest SBA/SIA-B only protects (somewhat) the upper elevations of some of the habitat of Cow Knob Salamanders (*Plethodon punctatus*) on the GWNF. CKS are known to inhabit sites and elevations lower than the boundary of the SBA (see, *e.g.*, Graham, M. 2007).

Would this proposal, if implemented, log, road, and burn sites possibly occupied by this rare and vulnerable species as well as by the Shenandoah Mountain Salamander (SMS) (*P. virginia*) ?

If so, this is unacceptable and improper and does not protect the Forest's diversity and harms me personally (as well as other people who enjoy healthy ecosystems, amphibians, and ecological integrity).

During the last Plan revision **the FS stated** the "agency is postponing making any proposal to expand the existing CKS SBA until it meets with the Conservation Team." (DCER-44)

Who was consulted, how, and when? What did they recommend?

Did the revised Plan expand the Shenandoah Crest SBA north and south and lower in elevation to incorporate newly found locations and suitable or probable habitat of the Salamanders? If this happened I am not aware of it.

In this project area, the Shenandoah Mtn. Crest SBA should be expanded to include areas of the GWNF (including areas down to 2500-feet in elevation) where the CKS or SMS occurs (the CKS is known to inhabit areas of such elevation; see Buhlmann, K. *et al*. 1987, Graham, M. 2007). For species with a small range like the CKS/SMS, the more effective conservation strategy is to protect as much of the underlying genetic diversity within the species as possible (Graham, M. 2007, Mitchell, J. 1994). Strict protection of the Salamanders' full habitat on the Forest is feasible and can be accomplished with minimal difficulty.

This issue (SMC SBA/MP 8E7 expansion) is legally ripe with this site-specific proposal. Develop and analyse an alternative that accomplishes this expansion. Once this is done, then implement it as part of the project decision.

If this project is not dropped, then intensive, comprehensive, and appropriate **surveys for the CKS** need to be performed in all the sites proposed for ground disturbance. Walking through a site does not qualify as intensive, comprehensive, and appropriate, nor does it comply with the NEPA requirements for the maintenance of "scientific integrity".

With respect to to the **Cow Knob** and **Shenandoah Mountain Salamanders, t**he treatments proposed to be meted out by this proposal serve as an example to be avoided. According to the 1994 CKS "Conservation Assessment – Management Measures": "The Cow Knob salamander must be actively protected against taking and killing by humans, except for specified scientific purposes. . . . fires occur predominantly on drier sites where the Cow Knob salamander is absent. Therefore, controlled burns on dry sites supporting rare plants and unique natural communities appear to be compatible with salamander conservation."

However, th**e proposed burns here are not clearly confined to drier sites with rare**

plants — the public does not know where the burns will be in this 24,000 acre project area**.**

Mesic sites, including drainages, north slopes, and riparian areas, and sites with ground cover used by salamanders (including potentially the CKS and SMS) are probably proposed for burning (not disclosed - why all the secrecy?). **This is unacceptable and unreasonable.**

Burning can make sites hotter, drier and more open and exposed (to sun, wind, and predators). The decay process generally tends to mesify microsites, while fire tends to xerify microsites (Van Lear, D.H. 1996) Burns dry out the very conditions upon which the Forest Service has claimed that species such as salamanders depend.

In addition, at present sites with salamanders and other sensitive taxa may be routinely subjected to intense ground disturbance by **fabrication of fire control lines with dozers — 1.5 miles worth proposed here**. The scoping letter and maps for the project do not disclose which lines were to be constructed in such a way, or where. Such construction may directly kill salamanders, destroy habitat, create additional habitat fragmentation, increase forest edge, facilitate invasive species, and provide for illegal motorized access and attendant harms. I oppose this significant harm.

Roads serve to fragment Cow Knob Salamander populations and habitat (Flint, W. 2004). **To address habitat degradation and fragmentation, and actually restore this project area, some need to be decommissioned/removed/revegetated in the Forest**. The proposal needs to be revised in order to do this.

How does the FS intend to protect the rare and restricted range endemic Shenandoah Mtn. Salamander (*Plethodon virginia*)? First you need to ascertain where they are at the appropriate project area sites (within elevational and habitat limits) proposed for ground disturbance. The vulnerable SMS needs to be strictly protected, at least as much as the CKS.

Special Biological Areas

I am concerned about harm to the Big Schloss, Buck Mountain, Pond Run Pond, Teets Bog, and Tibbet Knob Special Biological Area "SBAs" since the project area contains or overlaps them (SL-2).

Why aren't these SBAs marked on the project maps? That would of course help the public in understanding and commenting on what we're paying for. But no, instead we get more secrecy. Nor could I find a map in the FEIS or Plan.

Cutting and edge effects from logging sites YEP2 and YPE6, and YPE5, oak shelterwood, regen units 17 and 18 that harm SBAs are one significant issue.

SIGNIFICANT IMPACTS - Such as to VMTs/RAs/PWAs/SBAs/Brook Trout/Interior forest

Intensive ground disturbance activities (such as even-age logging, dozer lines, road

building) are proposed or possible (the scoping letter is short on information as to the locations of some activities). If implemented these would significantly **damage ecological or recreational or scenic conditions in the Big Schloss and Great North Mountain VMTs/ roadless areas/potential wilderness areas**. Significant harm may occur to roadless characteristics and values (regardless of whether the areas are inventoried or not), wilderness characteristics and values, **SBAs** (including all those in the project area that were identified by WV state biologists), **Brook Trout** (particularly "wild trout") habitat/ populations, **interior forest and associated wildlife**, **old growth/old age forest**, **rare/ sensitive species** (*e.g.*, Wood Turtle, Cow Knob and Shenandoah Mountain Salamanders), and **non-motorized recreation** such as from edge effects, sedimentation, loss of mature/ old age habitat.

My interests in and use of all these areas and Forest attributes (including things like natural appearance, undeveloped character, wildlife populations, old growth/old age forest) would also be significantly harmed.

The magnitude of this proposed project (*e.g.*, thousands of acres of logging of various types) is new for this Forest (with the exception of the destructive and deceptively named Lower Cowpasture and N. Shen. Mtn. "restoration" projects).

The precedent that the analysis for this project would set for other future projects is a significant NEPA issue.

From the multitude, extent, and intensity of factors/issues/concerns (discussed herein), there is the clear potential for significant direct, indirect, and/or cumulative impacts to occur from the proposal's implementation.

For these reasons, unless the above impacts are avoided preparation of a full EIS for this project would be necessary.

Thank you for your consideration. If anything is not absolutely clear, please do not hesitate to contact me.

Sincerely,
Steven Krichbaum

The above comments also submitted on behalf of:
Sherman Bamford