July 31, 2014

Warm Springs Ranger District
422 Forestry Road
Hot Springs, VA 24445
comments-southern-georgewashington-jefferson-warmsprings@fs.fed.us

re: Lower Cowpasture Restoration Project

Dear Ranger Sheridan,

Please accept these comments on the July 14, 2014 Lower Cowpasture Restoration Project Scoping Notice on behalf of Wild Virginia and Heartwood.

Wild Virginia is a not-for-profit membership organization devoted to preserving and protecting Virginia's forests, wild lands, unique habitats and endangered species. Wild Virginia has over 500 members and supporters. Wild Virginia has spent much time in the project area, hiking and visiting many areas, evaluating road conditions and leading outings within the project area. Wild Virginia has participated in numerous public meetings and field trips associated with the prescoping period and submitted written comments February 6 and June 12, 2014 which are attached (attchments #1 and #2) and included for inclusion in these comments.

Heartwood is a cooperative network of grassroots groups, individuals, and businesses working to protect and sustain healthy forests and vital human communities in the nation's heartland and in the central and southern Appalachians. Heartwood has over 1000 members and 100 member groups, including Wild Virginia. Heartwood members and member groups have visited, recreated and done research in the project area and the impacts to flora, fauna, endangered species, water resources, pedestrian recreation, conservation and research opportunities would directly affect the organization and our membership. Heartwood members participated in numerous meetings and field trips associated with the prescoping period and submitted written comments February 6 and June 12, 2014.

The Lower Cowpasture Restoration Project is the largest project ever conceived in the George Washington National Forest. It spans over 117,000 acres (77,000 acres of National Forest lands) and would take place over a span of 10 years. Most of the project area lies south of Millboro Springs, VA in the Cowpasture, Jackson, and Calfpasture watersheds north and east of Covington and Clifton Forge and spans parts of Allegheny, Bath and Rockbridge Counties. The proposed project includes over 4,685 acres of logging of various intensities and scales (including 322 acres of permanent wildlife openings and 658 acres of non-commercial thinning), and the burning of 12,907 acres.

It is important to note that there are two other projects currently being implemented in the project area:

Warm Springs Mountain Restoration (prescribed fire) and Mares Run Vegetation Management (timber management and wildlife improvements).

1. Length of period to respond to Scoping Notice

The Scoping Notice is dated July 14, 2014 and comments need to be submitted no later than August 1, 2014 (see Scoping Notice). Two weeks is insufficient time to review, respond and raise issues on a project of this scope and magnitude. While some stakeholders have been receiving information on this project, none of it finalized, for awhile, this small period is insufficient for the general public and concerned citizens, and the membership of groups represented in these comments, to review, analyze, research and respond in any meaningful way to the 30 pages of information, 17 additional pages of maps, or do any meaningful on-site analysis covering an 120,000 zcre area. We will do the best we can with the knowledge that this extremely short timeframe limits our ability to raise many issues that may influence the outcome of such a vast, long-term project.

One may not assume that the planning time leading up to this is in any way related to the ability of the public to respond to a plan once it has been finalized in Scoping. In fact, the National Environmental Policy Act (§1501.8) states that

federal agencies are encouraged to set time limits appropriate to individual actions

and

Consider the following factors in determining time limits:(i) Potential for environmental harm, (ii) Size of the proposed action, (iii) State of the art of analytic techniques, (iv) Degree of public need for the proposed action, including the consequences of delay, (v) Number of persons and agencies affected, (vi) Degree to which relevant information is known and if not known the time required for obtaining it,(vii) Degree to which the action is controversial., (viii) Other time limits imposed on the agency by law, regulations, or executive order.

We submit that the amount of time given for responses to this scoping are inappropriate to the size, scope, number of persons affected and degree to which the action is controversial (see attachments #1 and #2).

We, therefore request that the scoping notice be withdrawn and that scoping be reinitiated with a time period appropriate to its proposed actions. At the very least, the scoping period should be extended.

2. Inappropriateness of plan amendments to existing plan when project will be implemented under new Land and Resource Management Plan

All of the project planning work and scoping information is being presented without the benefit of any direction from the Land Management Plan (still unreleased as of this date) which will dictate the framework within which this project must adhere.

Therefore, many of the comments in response to this project are subject to the comments on the management direction in the yet unreleased plan for the project area. There is no way for the public to know if and how the objective for the Lower Cowpasture Restoration Project meets the goals and objectives in the Forest Plan that it will be implemented under. It would make much more sense to wait until the new plan is released for the project planning and public input to be initiated. The timing does not give the public the opportunity to have all of the information necessary to make educated comments on the project. The size and scope and long time duration for this project all point to the importance of familiarity with the plan that this project will be implemented under.

We request that the scoping notice be withdrawn and that the scoping process be reinitiated after the Final Land and Resource Management Plan for the George Washington National Forest has been finalized, released and implemented.

3. Proposed Plan Amendments

The scoping notice proposes 5 separate amendments to the Land and Resource Management Plan. These amendments include changes in management classifications for over 10,000 acres, reclassifying 189 acres that are unsuitable for timber harvest as suitable, increasing the size of allowable harvest units, and allowing removal of small woody biomass on up to 541 acres as commercial timber stand improvements.

These amendments cover circumstances not allowed under the current forest plan.

Again, there is no way for the public to ascertain if these contentious aspects of the project will be allowed under the new forest plan under which the majority of this project will be implemented. And the public has not been able to benefit from any of the final environmental analysis that would be done in analyzing and assessing the environmental effects of that plan.

4. An Environmental Impact Statement should be required for adequate NEPA analysis.

While single forest plan amendments often require an EIS for NEPA analysis, the combination of these 5 make for a unique situation that clearly should require an EIS. The amending of the plan to allow woody biomass removal for incineration will make it important that all the impacts of removal and use of the resource will have to be considered in the EIS, since these forest resources constitute a new single-use, commodity with a single beneficiary, Meade WestVaco. The use of the forest resources for energy generation that benefits a single user is clearly a contentious issue that both Heatwood and Wild Virginia have opposed in this and numerous other communications with the USFS.

It is important to note that the Lower Cowpasture should consider the impacts of the uses of forest products in its environmental impact statement as well as the

impacts of the simple extraction of resources. That would include, but not be limited to CO2 emissions and 2.5 p.m. and smaller particulates from incineration (biomass burning or prescribed burning) and cumulative effects analysis—projected and actual—for the entire time duration of the project. This should include the aforementioned impacts at a district, forest, landscape, state and regional level. This information is critical to assess the effects of the Cowpasture Project in conjunction with other projects for assessing their contributions to human health problems and climate change acceleration.

5. Inappropriateness of Size, Scope and Timing

The Lower Cowpasture Restoration Project is the largest project ever conceived in the George Washington National Forest. It is to be implemented over a 10 year time frame, a time frame usually delegated for the implementation of entire forest plans.

The scoping letter describes what past precedent would consider at least 8 separate and distinct projects, each with its own costs, benefits, environmental impacts and NEPA analysis. Rolling them all together makes it impossible look at each project separately, distinctly and on its own merits. It also makes it impossible to analyze them in a timely manner (see #1 above)

The long time frame won't allow for new information, updated analysis or scientific findings that might otherwise affect project specifics and environmental analysis. New scientific information would be rendered moot. Rapidly changing environmental parameters would not be considered, including climate. Subsequent natural disturbances in the project area after scoping cannot not be considered in the environmental analysis. For instance, a large scale disturbance—fire, windthrow, icestorm, drought, insect predation—all which are happening at a larger frequency, is likely to occur which could create thousands of acres of early-successional habitat and make some elements of the project unnecessary as the purpose and need would have been naturally eliminated.

The Forest Service does long-range planning in a forest plan. That is not the role of project planning. The forest plan is meant to allow the agency flexibility in proposing projects that are necessary and timely. The long-range scale of the Lower Cowpasture Project sacrifices both flexibility and expediency in the project area.

In earlier comments, we requested that the Lower Cowpasture Restoration Project be scaled back in time and scale to a 2-3 year implementation schedule. We also requested that it be divided into manageable projects, each area of a size that can be implemented within s significantly reduced time frame. Elements of the project that are unlikely to be implemented within this timeframe should be dropped and proposed and scoped at some later date as necessary under the Forest Plan.

6. Ecological Restoration

The Forest Service Manual defines restoration as "the process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed. Ecological restoration focuses on reestablishing the composition, structure, pattern, and ecological processes necessary to facilitate terrestrial and aquatic ecosystems, sustainability, resilience, and health under current and future conditions." (FSM, Ch. 2020.5 (2011-2013); 36 C.F.R. § 219.19)

Of the 8 projects suggested for the project area, only 4 - aquatic passage, watershed improvements, road decommissionings and invasive management—might qualify as true restoration activities. The rest of the projects, timber management, wildlife management, prescribed fire and new trail construction, are not true restoration activities. We therefore respectfully oppose their inclusion in a large scale "restoration" project such as the Lower Cowpasture is currently conceived.

Each of these 8 projects should stand on their own. Throwing them all together as "restoration" caused a myriad of problems.

- It masks their true identity and clouds individual impacts and benefits of each.
- The range of time for their implementation is unprecedented in the GWNF.
- There is no guarantee or implication that these are the only projects that will be proposed in the project area for the 10 years it spans. What other types of projects might also occur in the project area over that 10 year timeframe? How does this allow for accurate cumulative effects analysis to be done?
- Without clear delineations of each project, NEPA analysis is likely to be further compromised.

Combining restoration and non-restoration activities under the same banner is disingenuous. For example, why is a trail construction in a wilderness area or commercial timber harvest at any scale considered part of this project? What do these have to do with restoration at any level?

We consider the Rough Mountain trail system a valuable project. We also support all manner of road closures and decommissionings and stream impoundment removals. But Wild Virginia will not stand behind a restoration project that neither meets the Forest Service's own definition of restoration nor maximizes all long term ecological benefits. As this project is currently conceived, it fails at both.

In earlier comments we suggested that all of the elements of the project that do not meet the FSM criteria for restoration be removed from the Lower Cowpasture Project and be considered on their own merits as separate projects. This would allow for a broad expansion of the range of restoration activities possible under this project.

7. Restoration with an arbitrary logging bias.

The Lower Cowpasture Restoration Project ignores the entire history of the forest prior to European settlement and uses a virtual snapshot upon which is bases its

desired future conditions. It envisions a time where human disturbances dominated the landscape. The project attempts to replicate that narrow slice of history when human disturbances ranged across the project landscape.

It appears that the project planners envision a landscape with regular, unnatural disturbances that mimic not natural processes, but instead that replicate the human disturbance patterns of logging and burning that have predominated the most recent 150 years. This bias is clearly arbitrary and problematic for any true ecological restoration of the Lower Cowpasture watershed. There is no consideration given to one of the most effective and efficient means of ecological restoration which is *passive restoration*. Simply protecting areas by ceasing activities that cause degradation and impede ecosystem or species recovery is both cost and ecologically efficient. There is no mention of forest restoration that maximizes the benefits that a largely unmanaged landscape can create.

Passive restoration clearly is implied under the Forest Service definition of restoration. The entire Lower Cowpasture project area is at some level of recovery from the ravages of clearcutting, fire, erosion and flooding that leveled the area near the turn of the century. Assistance in "the recovery of an ecosystem that has been degraded, damaged or destroyed" to its former integrity is the goal. Allowing ecological processes that naturally create a mosaic of linked climax ecosystems with natural disturbances creating the diversity of a fully functioning forest can be done simply and easily through a long term commitment to passive restoration. As Willers notes, "if that which has functioned beautifully through the eons free of human meddling is to survive, management must become an erasing, a reversing, a minimizing of human impact—a science of letting things be." (Willers, 1999)

In earlier comments, we suggested that passive restoration areas of significant size be designated throughout the project area. We therefore suggest that the Lower Cowpasture Project include in its environmental analysis the benefits of passive restoration throughout the project area.

We also believe the over 5,000 acres of various methods of logging is inappropriate in scale and unprecedented in the last 20 years that we have been monitoring projects in the GWNF.

The adverse effects logging on salamander populations is well documented (Best 2014; Connette 2013).

8. Roadless and Potential Wilderness Areas

It was our understanding that the scooping notice would include maps of the areas proposed as Potential Wilderness Areas and Inventoried Roadless Areas so it would be easy to see where the project area and proposed units are in relationship to them. No such maps were included in my mailing and I can find none on the project website.

We request that this information be made available and that the scoping period be either reinitiated or extended to give no less than two weeks to analyze this information.

It appears that management activities are proposed within Little Mare Mountain and Beards Mountain Potential Wilderness Areas. We oppose any management activities including temporary roadbuilding, logging of any type or other management activities in these potential wilderness areas that might compromise the wilderness character of these areas.

Beards Mountain PWA includes Beards Mountain Roadless Area. It should be noted that any roadbuilding (permanent, temporary and reconstruction) and logging of any type is not allowed in this area.

It also appears that the LK 3 road is within Little Mare Mountain PWA. This temporary road construction and LK 3 unit should be dropped.

9. Special Biologic Areas

Beards Mountain Area
BM 1, 2, 3, 8, 9, 10 and 11 all appear to contain special biological area acerage. BM 7 appears to border an SBA. It appears that some of these and numerous TSI units also lie within Beards Mountain PWA.

Lime Kiln Area
It appears that LK 6, 7, 9, 23, 28, 30, 32, 33, 34, 35, 36 and 37 also contain some special biological area acres. LK 9, 10 and 13 lie adjacent to Chestnut Ridge Seep, another SBA.

Sandy Springs Area
SS 1, 2, 3, 4, 5, 6, 7, 8 ,9 and 10 all include SBA acerage.

McGraw Hollow
MH 1, 3, 4, 6, 7, 8, and 9 all look to include SBA acerage.

Note that many of the units above seem to have wildlife clearings located either directly in or adjacent to the special biologic areas.

Because of the possible impacts to the Special Bioogic Areas by management activities either directly within or adjacent to them, we request that these actions be dropped or, at least, that the areas in active management be reduced to exclude these areas, with buffers sufficient to protect their special biologic values.

10. Oak Regeneration

Lucy Braun notes that “the idea that a climax is dominated by one or a very few species is widespread.” In reality, the mixed mesophysic forest “is characterized by a large number of dominants.” The dominant trees of the arboreal layer are beech,

tulip tree, basswood, sugar maple, chestnut, sweet buckeye, red oak, white oak and hemlock." Braun further notes that "no good areas of mixed mesophytic forest at lower elevations in the Allegheny Mountains (can be) found."

The demise of the chestnut, in combination with the widespread logging over a century ago has resulted in secondary forests that grew from one virtual clearcut. Unmanaged stands in the project area that have not been logged subsequently continue to contain an inflated population of relatively shade intolerant species. As natural succession makes its way across the temporal landscape, it stands to reason that forests will become more diverse and the population of shade intolerant species would decline from the larger size populations that are remnants from a time of massive deforestation. In addition, there are many other drivers that have created past high populations of oak that have mistakenly been attributed to fire (Arthur 2012, McEwan 2010).

It does not make sense to commit to a future of eternal forest management to create an artificial oak composition of forest still in its infancy and recovering from serious widespread human disturbance. We maintain that the desired future condition of any project labeled "restoration" should strive to achieve a forest that manages itself and that is continually moving towards its natural climax state. Natural disturbance regimes create the conditions for a resilient diversity in forest composition and structure to allow a diverse genepool of species to build forests of relative health and longevity.

11. Prescribed Fire

The Lower Cowpasture Restoration Project proposes 12,907 acres of prescribed fire. The Allegheny Highlands portion of the 636,000 Appalachian Fire Learning Network already includes over 10,000 acres of burning done since 2008. Other fire projects planned for areas near or within the Lower Cowpasture project area (including the Evans Tract Prescribed Burn, Fore Mountain Early Successional Habitat and Little Neal Prescribed Burn) would burn an additional 1,400 acres. This brings a conservative estimate of fire-managed lands in the project area to 24,000 acres. This is nearly ¼ of the entire project area!

Of course, the Lower Cowpasture Project has a 10-year implementation schedule making it more than likely that there will be other projects planned over the next decade within or adjacent to the project area. There is, therefore, no way that a cumulative effects analysis can be done on the Lower Cowpasture Project. But given the fact that such an immense part of the entire project area is planned *at this point in time* to be burned at least once, gives this project a scale of disturbance not seen since the extensive logging and burning of the forest of the end of the 19th century. Is this the forest that this project attempts to emulate?

We are glad to see that some mapping has been done of past fires, prescribed and otherwise, in the project area. This information is very important since these areas are currently providing the benefits of early-successional habitat in the forest. That

being said, we fail to see the need for the huge scale of prescribed burning included in the Lower Cowpasture Project.

For instance the proposed fire area at White Rocks Tower adjoins Rich Hole Wilderness. A great portion of this area has burned recently. Fire has already returned to this ecosystem. We see no need to burn this area.

The area between Rough Mountain and Rich Hole Wilderness is an important corridor for species. However, almost this entire area, over 6,500 acres is scheduled for burning including North Short Mountain, Short Mountain, Ore Bank, Mill Mountain and Slicky Slide. This scale of burning is not historically or ecologically justified. Nature will reintroduce fire to this area.

If there is to be extensive burning in this area, we ask that the burns be small scale and strategically targeted ecologically. There should be burn exclusion areas established as ecological benchmarks and to allow for migration.

While there is not a firm consensus on the role of natural fire in shaping historic southern Appalachian forest composition, two points should be made: first, that the Southern Appalachian Physiographic Province averages between 55 and 60 inches of rain a year, with Millboro and Hot Springs averaging around 45 inches per year. Because of the rates of annual rainfall, the fuel load does not accumulate where there are closed canopy conditions, but decays, and the ground generally stays moist, except on ridge crests, especially ones displaying southern or western aspects.

Second, lightning strikes initiate few fires in the Southern Appalachian Mountains, averaging two to six fires per million acres per year (Southern Appalachian Assessment, Terrestrial Report, 1996; Schroeder, 1970). Such facts cast doubt on the popular position that fire has been a driving factor in southern Appalachian forests beyond the drier ridge sites.

We realize that some southern Appalachian forest types have a historic fire association, though we have questions as to which, if any, have fire dependency. We have reservations about the frequency and extent of the fire regimes in other forest types that are a part of the Lower Cowpasture Project.

We are concerned of the potential for a frequent fire regime to have negative effects that include:

- a loss of humus layer
- a reduced ability for the forest to absorb precipitation
- a resultant loss of soil and water quality
- overall nutrient loss
- reduction in valuable micro and macro organisms
- an overall “xericizing” of the forest that could overall change its basic ecological character

Naturally induced fires are inevitable in some places, and there are existing procedures for National Forest management for their role, as in allowing some natural fires in Wildernesses. In response to those who may claim that such views on fire are dangerous and irresponsible, we state that we do not have objections to the Forest Service taking basic measures to avoid the spread of fires to private property.

Were Southern Appalachian forests allowed to develop according to natural processes, the issue of "fuel load" in much of the landscape would not be an issue. Fires would take place in areas where their association (mostly dry, south facing areas) warrants. It would be worth considering restricting anthropogenic fire to a few clearly xeric areas and the urban-wildland interface.

The "fire-oak" hypothesis that has recently become highly regarded amongst forest managers is not conclusive and should be viewed cautiously. Concerning the issue of "oak suppression", Scheff points out that it is known that oaks can persist in the understory for up to 90 years:

While the top kill and-sprout strategy is often cited as indicative of fire adaptation, it may be more appropriate to consider this as a drought and canopy disturbance adaptation. The theory of "Storage Effect" in ecology explains that long-lived species do not need regular recruitment to maintain their place in an ecosystem. Rare ecological conditions that are conducive to successful reproduction or recruitment can be sufficient. In this case, it may be that extreme drought events (which are becoming more clear in the published and unpublished dendrochronological record for the region) happening once every century or so could be the disturbance process by which oak mysteriously maintains presence, even dominance, in the more mesic range. Under these conditions (which may be associated with fire as a result of extreme drought) we would expect to see extensive die-off of more mesic species in mid-range niches with a selective advantage given to oak species. This model would also explain how some old growth oak forests show recruitment in cohorts, rather than continuous recruitment associated with more classically shade-tolerant species. Oaks are not disappearing from some non-native vector. Rather, they are constricting in dominance across some moisture gradients. They will persist. (Scheff, 2012*)*

A recent study by Matlack, "Reassessment of the Use of Fire as a Management Tool in the Eastern Forests of North America", calls into question the current state of the literature on fire's role in shaping Eastern forest ecosystems.

Matlack points out that the number of spatially explicit studies so far is small. He analyzes 14 of the most frequently cited studies on fire in Eastern North America. He observes the limitations in these studies:

Most published studies have been done in a small subset of possible landscape positions, including dry ridge tops, geologically defined barrens (e.g., cedar glades, serpentine barrens, oak openings), steep slopes, and well-drained dune systems. Nine of the 14 studies fell into one of these categories. Because fire occurrence is strongly

affected by landform and soil texture, such sites are likely to have atypical fire regimes (sampled communities were often intentionally selected for high fire frequency)…. Studies have not been representative at a continental scale. Eight of the 14 studies were done in the prairie transition zone on the western edge of the MDF(Mixed Deciduous Forest). Six de- scribed their sites as "prairie" or "savanna"—community types that are known to have frequent natural fires. Study locations are strongly clustered (4 are from a small area in Missouri), and large regions have received no attention at all. Few studies have been done in Braun's (1950) Appalachian oak, oak–chestnut, or mixed mesophytic regions, making generalization difficult across the whole MDF (Hart & Buchanan 2012).

The actual studies themselves have distinct limitations in sample size, duration of study, and other aspects of methodology. In most of these studies, few stands were sampled. Also, fire ring studies are not very long. For example, Only 5 of the 14 studies included at least 10 trees dating back to 1850, and 4 of these studies came from a single study area (i.e., southwestern and central Missouri).

Matlack also addresses a glaring problem with the core design of these studies: *Probably the greatest weakness in the use of fire-scar records as evidence for the occurrence of fire lies in the handling of negative results. Understandably, trees without fire scars would not be of interest in a study seeking to measure fire interval; few studies mention trees without scars (10 of the 14 studies report only results from scarred trees). It is questionable whether a study reporting mainly unscarred trees would be publishable at all, implying a publishing bias toward scarring. Selective reporting could potentially skew fire-history reconstructions to a high frequency of fires.*

Amongst the studies examined by Matlack (Matlack 2013) were those of Abrams, Guyette, and McEwan, whose works are cited here and are frequently cited by the agency.

Matlack's work should at least raise some questions as to the strength of the science behind landscape fire regimes in the Central Appalachians and in much of Eastern North America in general. In his closing comments, Matlack adds to the speculation that we have raised regarding the long-term future for forests that are undergoing a frequent fire regime:

On the basis of these observations, what would be the cumulative effect of introducing fire over large areas? In removing aboveground stems fire is similar to herbivory. Deer (Odocoileus virginianus) browsing has resulted in a near-complete shift in forest vegetation to graminoids and ferns (species with protected basal meristems) over large areas in western Pennsylvania and northern Wisconsin (Rooney 2001). By analogy, it is reasonable to expect widespread prescribed burning to increase the prominence of graminoids and ferns and substantially reduce species with exposed meristems. With introduction of fire, the MDF (mixed deciduous forest) could potentially come to resemble the fire-shaped, grass-dominated forests of western North America (e.g., Laughlin & Fule 2008; Coop et al. 2010).

There is absolutely no ecological justification for the scale of burning that the Lower Cowpasture Project proposes. While we understand that the financial incentives exist for this scale of burning, we believe that this is no reason to burn over 23,000 acres of forest in a 100,000 area, no matter what "benefits" you wish to create. We submit that natural disturbance regimes are sufficient for a naturally diverse forest ecosystem and natural process to dominate the project area. They should be allowed to proceed without the eternal management of an ecosystem by logging and fire.

We support prescribed fire as a tool to protect and restore rare, threatened or endangered species and ecosystems. Therefore, prescribed fire should be relatively small and tightly focused, not large, sweeping and random. We request that the Lower Cowpasture Project identify such species and ecosystems and only focus prescribed burning in these areas and implement a long-term monitoring to assess effectiveness at meeting these goals and objectives.

Wild Virginia and Heartwood wish to reiterate our opposition to the large-scale and seriously flawed approach to prescribed burning promoted by the Fire Learning Network and Nature Conservancy that has been adopted as a major component of the Lower Cowpasture Restoration Project.

Recent reports (*Using Phyiscal Chemistry And Tree Rings To Calculate The Likelihood Of Fire*, Richard Guyette, Frank Thompson, Jodi Whittier, Michael Stambaugh, Daniel Dey, Rose-Marie Muzika, University of Missouri, Columbia, USA, Northern Reseach Station US Forest Service, Columbia, USA, 2006; and others previously mentioned) bring into question many of the assumptions upon which the Fire Learning Network model is based.

We suggest that natural disturbance mapping and monitoring be a vital part of the Lower Cowpasture Restoration Project. The percentage of existing canopy gaps and existing ESH should be mapped throughout the project area *and* on a landscape area to determine the existing % of ESH and unforested/canopy gap area in the project area and on a landscape area. This should be required baseline information in determining any purpose and need for vegetation management to create ESH. Information should be monitored quarterly to account for "real time" natural canopy gap creation in the project area.

We are unaware of any monitoring that has been done in the project area that demonstrates that goals and objectives can or cannot be met through natural processes. We are unaware of any monitoring that confirms that the goals and objectives of the prescribed burn program are likely to be achieved. At the very least, monitoring should be ongoing in order to generate this information critical to understanding the role of natural processes in the project area.

It is important to note the negative impacts that fire have on reducing the amount of leaf litter and corresponding salamander and millipede populations (Best 2014, Gagan 2002).

Finally, we want to point out the corresponding links between large tick populations and prescribed burns (Allan 2009; Willis 2012). It is important to note that the increased populations of *Amblyomma americanum* and corresponding vectors for various forms of lyme disease on the rise in VA correlates positively with increased burn programs in Virginia's forests.

We request that the majority of the area proposed for prescribed burning be removed from the proposal. We further request that significant "fire exclusion zones" of similar/identical forest types within the burn units be preserved and not burned. Joint monitoring of these adjacent areas as mentioned above can provide important information for future management of the forest by determining if the desired results are achieved.

12. Inappropriateness of Dozer Lines

The project proposes 11.8 miles of dozer lines. The environmental effects of these are significant, often more than even temporary roads, as they can become permanent fixtures by their continued illegal use. Dozer lines are areas of accelerated stream and sediment movement and erosion. Like unauthorized roads, dozer lines are vectors for illegal orv/atv/bicycle use and non-native invasive species.

For instance, over 3 miles of dozer line is proposed along the top of Little Mountain in the Cigar Ridge Area. These ridge tops are special ecotones where NW/SE slopes join. A dozer line there poses numerous ecological hazards and what is not needed from this project is what amounts to a temporary road that can be used for illegal access later. This burn unit should be dropped.

We submit that the use of fire, the level of which in this project we do not support, should absolutely be limited to existing roads and trails that can be used as fire breaks. No new dozer lines should be constructed.

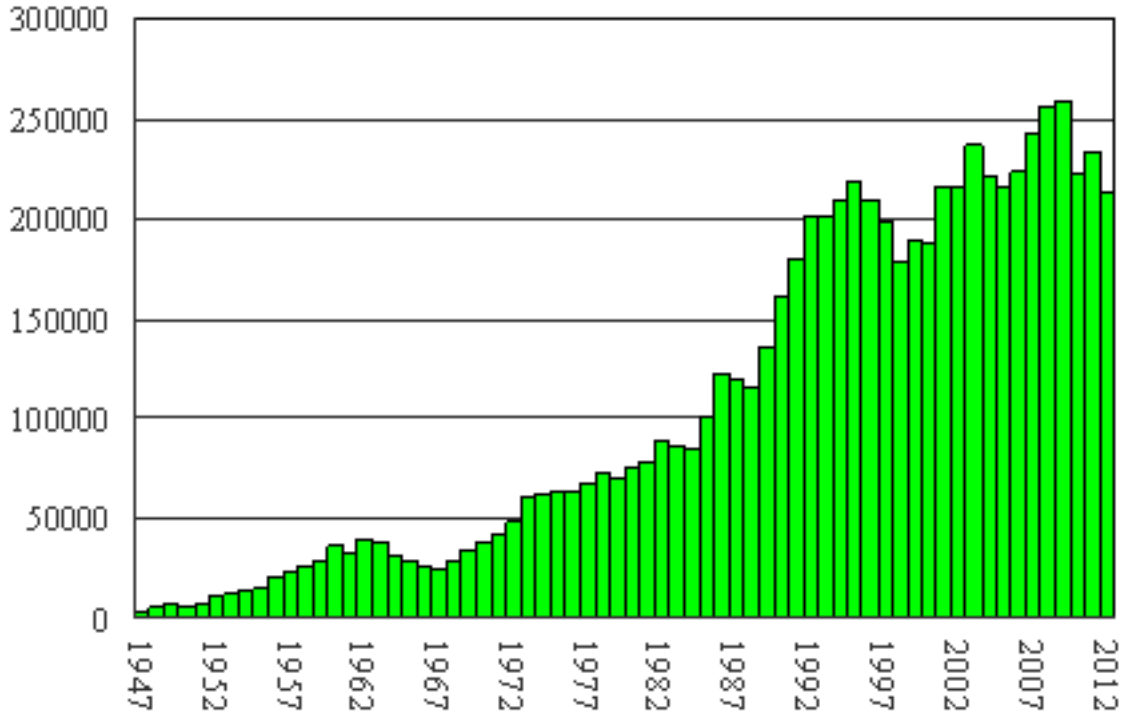
13. Inappropriate focus on Early Successional Habitat and Wildlife

In earlier comments, we questioned the purpose and need to create more opportunities for wildlife and hunting? We do not believe that science, history or trends substantiate a purpose or a need for active management to increase hunted game species in the GWNF.

U.S. Fish and Wildlife Service shows a steady drop in the number of hunters and hunter days in the US since 1991. In the Mid Atlantic states the total number of hunters has declined more than 12% since 1991. (USFWS, 2014)

What is the result of creating increases in deer habitat and edge areas? Despite a decline in the number of hunters, deer and deer kills are at or near historic levels. But dead deer are not the only cost/benefit of large deer populations. Virginia is one of the ten states with the highest probability of hitting a deer with your car. (Chandler LG, 2014) Deer cause over 56,000 reported car crashes yearly here in Virginia. Better than one of every hundred drivers hits a deer each year in Virginia (State Farm Insurance, 2013) An average of three fatalities and more than 450 injuries are attributed to deer-vehicle accidents annually. (VDGIF) Car crashes make deer the deadliest animal in North America. (Cambronne, 2013)

Virginia Deer Kill, 1947 to 2012 (VDGIF, 2014)



White tails also pose a risk to other wildlife and to forest restoration as a population of deer will eat the forest understory, reducing the kind of brush that you need there for turkey, grouse and some native songbirds. Also, the effects of deer populations browsing on sensitive plant species and understory diversity is well documented. (Alverson 1988; Rooney,2001)

Wild Turkey

DGIF estimates Virginia's wild turkey population to be approximately 180,000 birds. In Virginia, 4,432 turkeys were harvested during the 2012-13 fall turkey season.

The 2012-13 season total was the highest fall harvest reported over the past 5 years.

Grouse

DGIF reports that ruffed grouse populations have been stable over the past few years with an overall gentle decline over the last decade which corresponds to a gradual decrease in the number of hunters providing population data (Norman, 2010-11 Ruffed Grouse Population Status in Virginia).

While populations of hunted wildlife in Virginia are in no jeopardy, the distribution of their populations has changed with the gradual increase in age of national forests overall since their widespread denuding of the late 1800's and early 1900's. This is a result of natural succession, not of any failing in forest management.

14. Inappropriate reliance on herbicides to control non-native invasive species

All of the projects considered part of the Lower Cowpasture Restoration Project create new opportunities for pests, pathogens and invasive species. Any project that is focused on restoration must do everything possible to limit the increase and influx of pests, pathogens and invasive species. We do not consider the introduction, or the increase in population or range of non-native invasive species in the project area an acceptable byproduct of any type of forest management.

Stream impoundment removal, erosion control and bank restoration are the only activities in the project that can create conditions which help stem the tide of pests, pathogens and invasives but even these, if not carefully implemented, can be problematic. We believe that true ecological restoration can only be effective if it reduces or eliminates the vectors and opportunities for their spread and their intrusion to new areas.

Non-Native Invasive Species (NNIS) of plants are a severe threat to the project area resulting in loss of biodiversity, increased exposure of native species to disease and degradation of the ecosystem. Early recognition and removal of NNIS is extremely important to maintain intact ecosystems.

The project proposes chemical treatment of 1,400 acres of areas that have been logged and an additional 280 acres including 55 miles of Forest Service Roads. The invasion of these species is a problem accelerated and promoted by past, present and future forest management. This is a significant problem that the agency fails to address. All of this chemical treatment has effects that extend far beyond its effect on the intended species of plant. Herbicides are not plant-specific. They affect other plants, fungi and both terrestrial and winged organisms. Although uninteneed, these effects are real and significant.

Effects of glycophosphate herbicides on humans is well documented (Gasnier 2009).

The scoping notice gives no strategy for removal based upon the biology of the plant to be removed. The best removal practice will determine the season, the method of removal and how many times the area needs to be remediated. Mechanical means are the most desirable methods but are not always the best method of removal. For example, cutting *Ailanthus altissima* (tree of heaven) causes suckers to grow profusely, increasing the number of individuals and making the problem worse.

The scoping letter gives no consideration for mechanical methods of removal. Mechanical methods should be considered and, if they are used, the site should be returned to as close to initial, undisturbed conditions as possible. Disturbance is what usually allows NNIS to become established in the first place. Moving leaf litter and disrupting soil exposes seeds present in the soil to conditions that might favor germination. Exposed soil also makes a good substrate for new NNIS to be introduced. If the NNIS targeted for removal has already set viable seeds, the plants should be bagged and removed from the forest.

Finally, follow up visits and monitoring of the area should be done to determine effectiveness of the remediation method. Depending on the species targeted to be removed, multiple site visits may need to be scheduled until the seed bed is depleted or there is no regrowth.

We recommend that invasive species should be controlled and prevented by limiting the ground disturbing forest management practices included in this project. The chemical treatment of 55 miles of roads and 1,680 acres of forest land is an unacceptable cost of the proposed project. Human and mechanical treatments should be the optimal method of removal of existing populations.

15. Roads

The project proposes not a single foot of road closures. Note that the 19 miles of unauthorized road mentioned in the project area are not part of the roads inventory and don't even exist as parts of your roads analysis, despite the fact that their use impacts the forest. These should be totally restored and obliterated and restricted from access while the restoration is taking place. This should be done as benignly as possible.

However the fact that there are no system roads proposed for closure or decommissioning is one of the most distressing parts of the project.

The Forest Service issued a Memorandum on November 2010 directing all National Forests "to identify, through science-based analysis, an ecologically and fiscally sustainable road system by 2015". To identify the minimum road system necessary to meet forest objectives, a Travel Analysis Policy (TAP) Report was produced for the George Washington National Forest in 2011. Neither of these are referenced, noted, acknowledged or implemented in this project. They have been arbitrarily and capriciously ignored.

The presence of roads in the forest creates many significant ecological and management problems (Avon 2013).The scientific literature abounds with information on the negative impacts of forest fragmentation and associated edge effects created by roads and other disturbances. Among the widely recognized impacts are the isolation of wildlife populations, changes to plant communities and structure due to altered physical conditions, and increased predation on forest-breeding birds. Recent research reveals that even small dirt roads in Virginia's national forests can fragment and negatively affect woodland salamander populations. As previously stated, roads are the most common avenue for the spread of non-native invasive plant species. (Trombulak 2000)

Roads are also a significant source of sedimentation, particularly when they are not adequately maintained. In the mountain regions of Virginia, excess sediment is a grave threat to water quality and aquatic species. As a recent Environmental Assessment for a proposed timber sale and prescribed burn on the GWNF explains, "On National Forest System land, sedimentation is the priomary factor in water quality degradation. Sedimentation may be introduced into stream channels from soil disturbing activities such as timber harvesting and road construction." (USDA FS, 2007)

Decommissioning roads is a very effective tool for restoring healthy forests and watersheds. Many of the problems described above can be minimized by closing, regrading, and revegetating unneeded roads. Some management problems that are impediments to restoration, such as illegal all-terrain vehicle (ATV) use and wildlife collection, can also be reduced.

Road decommissionings should strike a balance between maximizing ecological and hydrological benefits while minimizing costs. At minimum, all decommissionings should include blocking entrances, removal of culverts, manual removal of invasive vegetation, establishing drainageways and installing waterbars.

In order to maximize recreational access and connectivity, we recommend that all decommissionings should be considered either as additions to the existing trail system or as "unauthorized" (unmaintained) trails.

Roads considered for closure and decommissioning within the project area should include, but in no way be limited to FS462 (Coffee Pot Barrens), FS336 (McGraw Hollow), FS328D, FS6008/125A (Brown Hollow), FS 125F (Piney Branch), FS364 IMare Run), FS1901 (between TR465 and TR620), FS1745 (Porter Hollow), FS337, FS365/243(west of Clifton Forge) and FS362 (Mill Mountain).

In our earlier comments, we recommended that the Lower Cowpasture Project include 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, potential wilderness, research natural or special biological areas. It is troubling that no road closures have been recommended as part of the project.

Lime Kiln Area
The road construction to access LK 14 follows the south bank of Porters Mill Creek. LK 11, 12 and 13 contain temporary road construction and they lie adjacent to Porters Mill Creek. This road construction has the potential to severely impact the quality of Porters Mill Creek. LK 2 road construction crosses Little Wilson Creek. We request that these units and that accompanying road construction be dropped from the project.

16. Riparian and Sediment impacts

The Cowpasture Watershed (as we noted in earlier comments) contains numerous native trout streams and contains habitat for expansion of native brook trout populations. Riparian and stream impacts from management activities have the potential to negatively impact both current, historical and potential native brook populations and ranges (Muehlbaier 2014, Suurkuukka 2014).

Lime Kiln
LK 5, 6 and 7 drain directly into the Right Fork of Wilson Creek. LK 25 lies at the confluence of two branches of Stouts Creek.

Sandy Springs
SS 6, 7, 8 and 9 all drain into Smith Creek. SS 1, 2, 3 and 4 all drain directly into the Left Prong of Wilson Creek which provides drinking water for the community of Clifton Forge.

17. The Scoping notice fails to propose actions that address Climate Change and Climate Mitigation

Climate Change is one of the most serious environmental, social, and economic threats the world is facing today. It is a significant issue and is to be considered a significant issue in all federal actions, including the Lower Cowpasture Project. The Directive from the Chief of the Forest Service, *Climate Change Considerations in Land Management Plan Revisions*; January 20, 2010, lists two basic considerations for evaluating climate change: How climate change is likely to modify conditions on the planning unit and how management of the planning unit may influence levels of global greenhouse gases and thus climate change? (Climate Change Considerations in Land Management Plan Revisions; January 20, 2010; p. 2) Furthermore, the Chief's direction on climate change directs forest planning to "place increased value on monitoring and trend data to understand actual climate change implications to local natural resource management." In its absence, it is essential that projects incorporate measurable outcomes to measure the success of climate strategies so that the climate strategies can become a part of forest-wide adaptive management.

The current forest plan does not address climate, as it predates most climate/carbon directives. While it may be difficult to quantify the carbon and climatic effects of an individual project, cumulative effects analysis through NEPA is

the primary vehicle for analyzing project effects over a wide special and temporal range.

Recent studies confirm that logging and vegetation management contribute to the disruption of carbon cycles that are contributing to climate change. (Sharma, et. al., 2013; FAO UN, 2006) Furthermore, climactic effects and effects of projects on a forest's ability to mitigate and stabilize climate are increased as the spatial and temporal ranges increase. Therefore, in the absence of such analysis, project level NEPA analysis becomes the vehicle for analyzing the cumulative effects of a single project when considered in concert with all other projects within a broad special and temporal range, including forest-wide analysis, region-wide analysis, a decade's worth of implemented projects, current projects and those projects likely to be implemented in the reasonably foreseeable future.

This project, as conceived, will have negative effects on the forest's carbon sequestration capacity in terms of logging, soil structure disturbance, loss of humus layer, and road impacts.

Climate is influenced by changes in land cover. Large-scale conversions of forestland into agricultural land or urban development reduce carbon storage and the potential for sequestration and thus contribute to the build-up of carbon dioxide in the atmosphere. The warming of the atmosphere is linked to increased concentrations of greenhouse gases, including increases in carbon dioxide from changes in land management. Even though forests in the U.S. have acted as net carbon sinks since the 1950s, the annual additions to the sink (sequestration) appear to be declining. The Environmental Protection Agency lists the following forestry practices that can sequester carbon or preserve carbon storage: afforestation, reforestation, avoiding logging, and longer harvest-regeneration cycles. (USEPA, 2013)

Obviously, planned logging and burning and taking out vegetation for other reasons do not increase the capacity of forests a carbon sinks. "In fact, young forests rather than old-growth forests are very often conspicuous sources of CO2 because the creation of new forests (whether naturally or by humans) frequently follows disturbance to soil and the previous vegetation, resulting in a decomposition rate of coarse woody debris, litter and soil organic matter that exceeds the NPP (net primary production) of the regrowth." (Sebastiaan Luyssaert, E. et. al. 2008)

Forests affect climate and weather, in four primary ways: they lower temperatures, increase the moisture comment of air and soil, and absorb carbon dioxide from the atmosphere and they store sequester carbon. Each part of the forest contributes to climate control, from the leaves, stems, trunks and roots of trees and vegetation, to down woody debris, leaf litter and soils. Leaves cool the air through a process called evapotranspiration. Evapotranspiration is the combination of two simultaneous processes: evaporation and transpiration, both of which release moisture into the air. During evaporation, water is converted from liquid to vapor and evaporates from soil, lakes, rivers and even pavement. During transpiration, water that was

drawn up through the soil by the roots evaporates from the leaves. It may seem like an invisible process to our eyes, but a large oak tree is capable of transpiring 40,000 gallons of water into the atmosphere during one year. (USGS) Leaves also filter particles from the air, including dust, ozone, carbon monoxide and other air pollutants. Through the process of photosynthesis, trees remove carbon dioxide and release oxygen into our air. Trees store the carbon dioxide, called carbon sequestration, and -- depending on the size of the tree -- can hold between 35 to 800 pounds of carbon dioxide each year. (USEPA, 2007)

Land surface changes can affect local precipitation and temperatures. Vegetation patterns and soil composition can influence cloud formation and precipitation through their impact on evaporation and convection. (de Sherbinin, A. 2002) Overall, the world's forest ecosystems are estimated to store some 638 Gt (638 billion tons) of carbon, which is more than the amount of carbon in the entire atmosphere. (www.greenfacts.org.)

There are many positive effects of allowing second-growth trees to mature into old-growth character. There are numerous studies that show that mature and old-growth stands act as carbon sinks. Their benefits in carbon sequestration are more complex than indexing the rate of vegetative growth. Undisturbed forest stands sequester carbon not only in the trunks of trees, but in the understory and in soils, where fungi and microbes promote an active role in storing carbon and nitrogen. As was reported recently in *Nature*, old-growth forests accumulate carbon for centuries and contain large quantities of it. (Sebastiaan Luyssaert, E. , et. al. 2008)

Contrary to the hypothesis that old trees are ineffective at carbon sequestration, the research shows that young forests, rather than old-growth forests, are very often conspicuous sources of CO_2 because the creation of new forests (whether naturally or by humans) frequently follows disturbance to soil and the previous vegetation, resulting in a decomposition rate of coarse woody debris, litter and soil organic matter. (ibid. 2008) Indeed, there is research emerging that old growth stands are carbon-rich forests (Pichancourt, 2014) effective at accumulating carbon in their soils (Guoyi Zhou, Shuguang, et. al., 2006) and that the rate of tree carbon accumulation increases continuously with tree size. (Stephenson, et al., 2014)

Federal lands have a unique potential to be effective carbon sinks due to the ability to minimize anthropogenic changes to the landscape that would otherwise release carbon and/or decrease carbon carrying capacity (logging, roads, species conversion, etc). For example, a comparative study between the lands in Ft. Benning, Georgia and the surrounding region demonstrates how lands under a stable owner (the military) with stable management (little or no logging in much of its holdings) are much more effective at sequestering carbon than the mix of private and state lands surrounding it. (Shuquingzau, Shuguangliu, et. al. 2010)

In earlier comments we recommended that the Lower Cowpasture Project include a proposal for an expansive network of potential old growth/carbon reserves both for their positive ecological benefits and for their ability to offset carbon emissions

produced by other aspects of the project**.** We are dismayed that this recommendation was not considered.

Strategies for minimizing carbon output and improving carbon sequestration are critical at the project level and should lead to measurable goals or outcomes where success or failure can be gauged. Such strategies could be attached to specific outcomes: e.g. forest restored to natural range of variation; watersheds restored to functioning condition class; second-growth forests developing old-growth characteristics; estimates of carbon sequestered. When it comes to climate, nothing happens in a vacuum.

Research shows that the types of logging and thinning that attempt to create permanent wildlife openings and early successional habitat are unsustainable and create long term increased carbon emissions. (Hudiburg, 2013) The majority of the projects considered in the Lower Cowpasture Project—vegetation management, regeneration cuts, thinnings, wildlife openings, timber management and prescribed fires—separately and together, are net carbon dioxide producers, reducing carbon uptake and producing increased carbon emissions when compared to leaving these areas be. It will result in a 10 year program of continual contributions to increasing amounts of GHGs in the atmosphere. The Lower Cowpasture Project has the potential to put into place a methodology that considers no climate impacts insignificant and that evaluates the cumulative impacts of all projects projects affecting carbon storage, carbon sequestration, and carbon releases to the atmosphere both from the project itself and the subsequent uses including incineration, burning, transporting or refining of any carbon-based forest products extracted.

We request that the Lower Cowpasture Project NEPA analysis address carbon and climate effects in this project. In addition, the project analysis should acknowledge the effects that the no action alternative has on maintaining and increasing the ability of the project area to mitigate climate change currently and over time.

The beneficial results of the no action alternative would include, but not be limited to:

- Eliminating actions that do not maximize carbon storage in vegetation, in soils and in terrestrial stocks.
- Eliminating actions that accelerate the rate of carbon released into the atmosphere both in the extraction and the use—incineration—of the forest resource.
- Eliminating actions which accelerate the rate of evaporation from soils and that can potentially increase erosion
- Eliminating actions that reduce the rate of evapotranspiration to the atmosphere
- Eliminating actions where prescribed burning result in reduction of biomass and carbon storage in vegetation and soils.
- Eliminating prescribed burning activities that result in large releases of carbon dioxide and particulates to the atmosphere.

We request that an alternative for the Lower Cowpasture Restoration Project area be that the project area be considered for designation as a Climate Reserve Area. Carbon storage analysis should be done for the entire project area and the loss of carbon storage capacity and rate of carbon storage should be estimated under this and all alternatives. Analysis should also contain analysis of how designating the project area a Climate Reserve dominated by natural process would serve to achieve the purpose and need of the project. This should include, but not be limited to, the economic benefits of all ecosystem services provided by such an alternative.

We further request that the project provide a monitoring framework that identifies measurable goals and objectives for climate adaptation and mitigation and monitors progress towards them. We further request that an analysis of the range of alternatives compare long term Net Public Benefits with respect to climate mitigation, CO_2 emissions, and carbon sequestration.

18. Biomass removal as an incompatible use of forest resources.

Logging the Lower Cowpasture Project area for purposes of biomass incineration and energy generation is a contentious issue. We are aware that WestVaco has put on line a 85MW biomass incinerator that will power its Covington operations. The Covington mill and plant has for years been the single largest user of power from Dominion Power. The Lower Cowpasture Project has been considered a source of trees and wood fiber to fuel these operations. Commonwealth transportation credits also make possible the logging in the Lower Cowpasture Project for energy fuel markets and Dominion Power biomass burners in central and eastern Virginia.

It needs to be noted that the current Land and Resource Management Plan makes no mention timber as an energy resource. There is no reference to the extraction, removal or use of timber resources to be used as energy.

Note the positive correlation between the paucity of coarse woody debris, absent from clearcut areas and areas cleared for biomass, and decline in specialized species who suffer from loss of habitat in contrast to an upsurge generalized species (Sullivan 2010).

Any environmental analysis of this project must include both the effects of biomass removal (see above) and the effects of its use, since this is a single-use resource. The environmental effects of particulates (China 2013), carbon emmissions (Endres 2012, Hudiburg 2011, Jacobson 2014, Schulze 2012, Springsteen 2014) and water use should be analyzed.

We maintain that the use of timber and vegetation management resources for use in energy generation is an incompatible use of forest resources that is not sufficiently addressed in the proposed plan amendment.

19. The project needs to include commitments to monitoring of progress and projected outcomes.

Historically, projects in the GWNF were not monitored to assess to what degree the projects were successful in achieving their objectives, purpose and need. This is a question of both cost and will. The GWNF lacks both the funding to do the monitoring and the will to allocate scant financial resources to projects after they have been completed.

We have great concern that many aspects of the Lower Cowpasture Project will not meet restoration objectives. The public and the agency need to know if they do in order to inform future projects. We submit that sufficient monitoring is critical to the success of any restoration project.

Changing environmental conditions, weather patterns, natural disturbance events and use patterns all have great potential to effect this project over a 10 year period. It is vital that environmental monitoring also note changing conditions that can effect the purpose and need of this project.

We suggest that the project include a clearly defined monitoring program for each of the projects umbrellaed under the Lower Cowpasture Project. Yearly and seasonal monitoring should continue throughout the duration of the project and extend for 5 years beyond in order to assess how well each project achieved its objectives, purpose and need.

20. The Lower Cowpasture Restoration Project should include the establishment of Hemlock Restoration Areas

With the passage of the 2014 Farm Bill and based on recent requests by Virginia's Governor and confirmation by the USFS, the entire GWNF has been identified as a qualifying area due to wooly adelgid infestation. The Farm Bill authorizes the USFS

to carry out forest restoration treatments that--
`(A) maximizes the retention of old-growth and large trees, as appropriate for the forest type, to the extent that the trees promote stands that are resilient to insects and disease;
`(B) considers the best available scientific information to maintain or restore the ecological integrity, including maintaining or restoring structure, function, composition, and connectivity;(sec. 603).

In earlier comments, Wild Virginia and Heartwood request that project planners inventory the project area and identify areas that contain the most significant existing live hemlock populations. We further suggest that these identified areas be identified as Hemlock Restoration Areas under Sec. 603 of the 2014 Farm Bill and that individual trees be selected based on relative health, age, and population density for targeted chemical treatment to prevent their decline from the impacts of the wooly adelgid. The purpose and need would be to maintain the genetic heritage

and genepool of eastern hemlocks in these areas. These areas should be monitored regularly and treated a necessary with the goal of increasing the population density of eastern hemlock in the areas.

21. The Project fails to address Eastern Brook Trout restoration.

Wild Virginia and Heartwood first raised this issue at the May 19, 2014 public meeting.

Wilson Creek, Smith Creek and Simpson Creek are listed by the Virginia Department of Game and Inland Fisheries as Wild Trout Waters. Each of these wild trout streams are in the project area fisheries stand to be significantly degraded by proposed actions.

Many of the Lime Kiln and Sandy Springs harvest units occur in the Wilson Creek watershed. Up to 7 miles of temporary road construction are proposed. Numerous TSI areas are proposed in the Wilson Creek Watershed as well.

Numerous Sandy Springs harvest units and TSI areas line the western Smith Creek watershed. TSI units also occur on the relatively steep east side.

The Craft Road Harvest units and at least one TSI area all occur in the Simpson Creek Watershed.

It is difficult to fathom why these are proposed as part of a "restoration" project when all have the potential to negatively impact native trout populations.

The resulting sediment load to the streams and the rise in water temperatures as a result of timber activity, road building, canopy removal and removal of down woody debris will combine to negatively impact native trout populations.

Wild Virginia recommends that these actions be cancelled and that these areas be designated as management exclusion zones for the restoration of Eastern Brook Trout.

Conserving the Eastern Brook Trout: Action Strategies, prepared by the Conservation Strategy/Habitat Work Group, Eastern Brook Trout Joint Venture, January 2011 notes that

Brook trout Salvelinus fontinalis are a recreationally and culturally important species, regional icon, and indicator of high water quality. Biologists have long known that brook trout populations are declining across their historic eastern United States range, which spans from Maine to Georgia. For purposes of this document, a population of brook trout is defined as a group of individuals that are reproductively isolated from other groups. In recognition of this trend of long-term decline and continued vulnerability, representatives from over 50 state and federal fish and wildlife management agencies, nongovernmental organizations, and academic institutions

met in June 2004 to discuss the opportunity for a collaborative approach to the conservation of brook trout in the eastern United States. In addition to identifying threats to brook trout across their historic range, it was the group's consensus there was an opportunity to form an Eastern Brook Trout Joint Venture (EBTJV). A collaborative approach to brook trout management is justified because (1) brook trout are declining across their entire eastern range; (2) causes for these declines are similar; (3) an integrated approach would be cost effective; and, (4) watersheds of concern span state borders and state and federal jurisdictions.

Goals and strategies of the EBTJV include

- *Work closely with state and federal permitting agencies to avoid or minimize potential impact to brook trout habitat or water quality.*

- *Develop a comprehensive management plan to protect the genetic integrity of remaining southern Appalachian brook trout populations and restore populations where appropriate.*

- *Develop a list of potential projects based on brook trout distribution data, land ownership, likelihood for success and angler access.*

- *Use the state's restoration biologists to develop natural stream designs for habitat restoration projects.*

- *Use historic brook trout distribution information, current land use data, water quality data and location of spring sources to develop a list of streams that could be restored with a high potential likelihood for success.*

- *Maximize fishing opportunity through regulation:*
    - *Monitor populations to determine if angling pressure is adversely impacting brook trout populations*
    - *Insure optimum populations of brook trout are available for anglers through the appropriate use of size, creel and gear restrictions.*
    - *Conduct periodic creel surveys on selected brook trout waters to determine angler use, harvest, and preferences.*

We fail to see any reason why the Lower Cowpasture Restoration Project should not present an important opportunity to implement these goals and strategies. There are ecological and recreational opportunities for the Lower Cowpasture Watershed that are not being considered. They should be.

At the very least, management activities should be prioritized that benefit native brook trout populations and those that hamper, hinder or negatively impact existing populations should be removed from consideration.

Increasing the population of eastern brook trout, restoring them to areas within their historical range and actively monitoring their populations and range should be goals of the Lower Cowpasture Restoration Project.

Thank you for the opportunity to comment on the scoping notice for the Lower Cowpasture Project.

Sincerely,

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