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Comments: Comments On The Proposed Devils Hens Nest Vegetation Project

Powell Mountain Block of High Knob Massif_Clinch Ranger District

I object to the proposed Devils Hens Nest Vegetation Project (DHNVP) for the following reasons, and suggest alternative actions (research and references to follow during the EA comment period).

Primary Objection 1:

1). This proposal is being developed using an outdated Land and Resource Management Plan for the Jefferson National Forest made 17 years ago, with the Revised Land and Resource Management Plan for the George Washington National Forest (2014) being inappropriate if applied to the Clinch Ranger District due to its different climatic and geomorphologic setting.

The Jefferson National Forest (JNF) Land and Resource Management Plan prescriptions are largely inappropriate today given local, regional, national, and global changes in climate and environmental conditions documented prior to and since 2004. In addition, even without regard to climate change, the JNF Land and Resource Management Plan of 2004 contains significant errors related to seasonal and annual under-estimations of precipitation within this wettest terrain of Virginia. Notable modeling errors related to estimated run-off and erosion potential in the High Knob Massif exists within the plan.

Alternative Action: Suspend the DHNVP and develop a new JNF Land and Resource Management Plan consistent with observed conditions in 2021, and expected future conditions, that follows current scientific research related to reduction of human forcing on the climate (Earth) system.

Primary Objection 2:

2). Given primary objection 1, the outdated JNF Land and Resource Management Plan prescription to increase early successional habitat is removed from current reality featuring extensive fragmentation and early successional habitats surrounding the DHNVP. A total of 133 stand units in the current proposal are arranged across the 13,087 acre project area in a way that would greatly increase edge habitat and greatly reduce interior forest habitat critical to many species of flora and fauna.

This proposed action (and associated actions), would increase human forcing on the climate system: It would increase carbon emission and reduce long-term carbon storage (calculate the values). It would increase fragmentation and reduce interior forest habitats vital to many species. It would increase the spread of exotic species already present in the project area. It would prevent this 100 year old (mean age) project area from becoming (with connections to nearby Devil Fork and Big Cherry Lake basins) one of the largest old-growth timber tracts in Virginia.

Alternative Action: Suspend the DHNVP and adopt a proforestation plan to allow existing trees to stand and grow older for maximum and most efficient carbon storage. Improve existing habitat by eradication of existing invasive species and reduction of existing fragmentation along non-essential roadways. Recognize this has great potential to add desperately needed intact, old-growth to an area and region that is highly fragmented with abundant early successional habitats already present.

Primary Objection 3:

3). Given primary objections 1-2, I strongly object to the DHNVF given that the mean age of all stands for harvest is 100 years. Exceptional potential for large, widespread old-growth development that will meet one or more definitions defined by the Report of the Region 8 Old Growth Team exists across the 13,087 acre project area. Increasing scientific research supports that the oldest, largest trees store the most carbon, with the most efficient forest carbon sink to aid reduction of human forcing on the climate system being supported by proforestation management in which existing trees are allowed to stand and grow older. With exception of local micro-habitats requiring management for specific species of flora and fauna, proforestation management is also increasingly supported by scientific research as the best practice for forest health and resilience, as well as for the conservation and preservation of biodiversity.

Alternative Action: Suspend the DHNVF and adopt a proforestation plan to allow existing trees to stand and grow older for maximum and most efficient carbon storage, for maximum reduction of run-off and erosion, for protection of interior forest habitats from fragmentation and invasion by non-native species of flora and fauna, for increased forest health and resilience, for conservation and preservation of biological diversity, for the intrinsic value of living things, for development and increase in habitats possessing desperately needed old-growth (including northern hardwoods) to balance local and regional regimes featuring widespread land use disturbances (*).

*Even if all Clinch Ranger District public land, as well as all watershed land owned by Appalachia, Big Stone Gap, Coeburn, and the City of Norton, followed proforestation management for old-growth development it would comprise less than 9% of land within counties of the Clinch Ranger District.

**Proforestation and suspension of the entire DHNVF would result in a 1.2% gain of old-growth, a needed and positive start toward reducing human forcing of the climate (Earth) system that is not addressed in the outdated JNF Land and Resource Management Plan [a plan which, unfortunately, was lagging behind the science on this major issue with its release 17 years ago when the global atmospheric carbon dioxide concentration had already increased 17.0% above 1960 levels (but were 9.6% less than in June 2021)].

**Humans force the climate (Earth) system by changing the chemistry of the air through manipulations of the carbon and nitrogen cycles (and other biogeochemical cycles), as well as by changing the surfaces of the planet. Collectively, this alters the energy balance of the system. This is critically important, given energy coming in must balance energy going out of the climate (Earth) system or it will become unstable and depart from its natural variability. By definition, human forcing on the system must be mitigated or greatly reduced in order for it to operate with changes in climate natural to the system.

This graphic, from KMZ file extracted data, reveals the old-growth potential that the DHNVF possesses.

This graphic, from KMZ file extracted data, reveals the northern hardwood potential of high elevation units, as well as the cove and mixed-mesophytic units that exist along rapidly decreasing elevation gradients into riparian and cold air drainage corridors of Laurel Fork-Wolf Creek, Stock Creek, and Cove Creek which all feed the Clinch River.

NOTE: This data was not made easily available to anyone wanting to know more about the project.

Specific proposed actions, my objections and alternative actions:

(I repeat the project stats on each proposed action since they were not made publicly available) Proposed Action
- Facilitate desired conditions of ecological succession and age class distribution.

4). Objection: Information related to how this would be accomplished, extracted from the scoping kmz file, suggests this would involve 133 units across the 13,087 acre area. These units would directly impact 2637.7 acres using thinning on 1794.8 acres, shelterwood on 626.9 acres, and coppice with reserves on 216.0 acres. Burning using prescribed fire on 2309.6 acres (87.6% of harvest acres) is proposed. By primary objections 1-3, these actions are inappropriate given the outdated JNF plan and the need to reduce human forcing on the climate (Earth) system.

Alternative Action: Adopt a proforestation management plan that would allow existing trees to stand and grow older, with natural facilitation of ecological succession and uneven age class distribution during continued development of widespread old-growth habitats.

Proposed Action - Increase species diversity and heterogeneity of forest canopy structure.

5). Objection: Information related to how this would be accomplished, extracted from the scoping kmz file, suggests this would involve 133 units across the 13,087 acre area. These units would directly impact 2637.7 acres using thinning on 1794.8 acres, shelterwood on 626.9 acres, and coppice with reserves on 216.0 acres. Burning using prescribed fire on 2309.6 acres (87.6% of harvest acres) is proposed. By primary objections 1-3, these actions are inappropriate given the outdated JNF plan and the need to reduce human forcing on the climate (Earth) system.

Alternative Action: Adopt a proforestation management plan that would allow existing trees to stand and grow old, with development of community structure that naturally becomes more and more complex as diversity increases into stages characteristic of old-growth (which exists locally now, but will become widespread across the project area within only three more decades when the mean age of DHNVP stands will reach 130 years).

Proposed Action - Improve growing conditions for residual stock of treated stands.

6). Objection: Information related to how this would be accomplished, extracted from the scoping kmz file, suggests this would involve 133 units across the 13,087 acre area. These units would directly impact 2637.7 acres using thinning on 1794.8 acres, shelterwood on 626.9 acres, and coppice with reserves on 216.0 acres. Burning using prescribed fire on 2309.6 acres (87.6% of harvest acres) is proposed. By primary objections 1-3, these actions are inappropriate given the outdated JNF plan and the need to reduce human forcing on the climate (Earth) system.

Alternative Action: Adopt a proforestation management plan that would allow existing trees to stand and grow older, with natural development of subterranean mycelia connections between existing flora to improve growing conditions and enhance interactions between units of the biota. Scientific research shows this results in physical processes having less influence on individual species, and acts to increase overall homeostasis, habitat stability, and ecological community resilience against changes in climate and associated environmental conditions.

Proposed Action - Increase resilience to forest threats, such as insects, pathogens, destructive wildfires, and impacts related to climate change.

7). Objection: Information related to how this would be accomplished, extracted from the scoping kmz file, suggests this would involve 133 units across the 13,087 acre area. These units would directly impact 2637.7 acres using thinning on 1794.8 acres, shelterwood on 626.9 acres, and coppice with reserves on 216.0 acres. Burning using prescribed fire on 2309.6 acres (87.6% of harvest acres) is proposed. These proposed actions are in direct opposition to reduction of climate change impacts, and would act to reduce forest resilience and increase human forcing on the climate (Earth) system via both reduction of carbon storage and release of carbon into the atmosphere during logging, post- logging, and during prescribed fire burning of biomass (scientific research shows that it can take up to 3 decades for a logged forest to again become a carbon sink in which it

naturally takes in more carbon for storage than it releases by decomposition and respiration). A fragmented forest, that would result from logging on 133 units spaced across the project area, would increase threats from pathogens and invasive species. This would also greatly reduce forest resilience if the largest, hub trees are extracted since scientific research demonstrates (using isotopic tracing) that these are the trees most needed to help maintain forest health and connectivity of the forest ecosystem.

By primary objections 1-3, these actions are radical and wildly inappropriate given the outdated JNF plan and the need to reduce (not to increase) human forcing on the climate (Earth) system.

Alternative Action: Adopt a proforestation management plan that would allow existing trees to stand and grow older within intact, unfragmented habitats. Scientific research illustrates that natural development of forest resilience occurs with increasing complexity of terrestrial and subterranean community structure into old-growth (resulting in physical processes and change having less influence on individual species) for maximum carbon storage and reduction of human forcing.

Proposed Action - Control and prevent the proliferation of non native invasive plant species.

8). Objection: Information related to how this would be accomplished, extracted from the scoping kmz file, suggests this would involve 133 units across the 13,087 acre area. These units would directly impact 2637.7 acres using thinning on 1794.8 acres, shelterwood on 626.9 acres, and coppice with reserves on 216.0 acres. Burning using prescribed fire on 2309.6 acres (87.6% of harvest acres) is proposed. These actions are in direct opposition to the control and prevention of invasive plant species proliferation, with a huge increase in fragmentation via increases in edge habitat on 133 units exposing what is now interior forest habitat to increased threat of invasive species of both flora and fauna [e.g., Cowbird (*Molothrus ater*) parasitism detrimental to more than 140 breeding bird species].

By primary objections 1-3, these actions are also inappropriate given the outdated JNF plan and the need to reduce human forcing on the climate (Earth) system.

Alternative Action: Adopt a proforestation management plan that would allow existing trees to stand and grow older to prevent additional fragmentation and preserve currently intact habitats. Against this type of management plan, actions taken to reduce existing invasive species and existing fragmentation are appropriate (e.g., eradicate invasive species along roads and decommission unnecessary roads).

Proposed Action - Promote the establishment of advanced oak regeneration to maintain prominence of oaks on the landscape.

9). Objection: Information related to how this would be accomplished, extracted from the scoping kmz file, suggests this would involve 133 units across the 13,087 acre area. These units would directly impact 2637.7 acres using thinning on 1794.8 acres, shelterwood on 626.9 acres, and coppice with reserves on 216.0 acres. Burning using prescribed fire on 2309.6 acres (87.6% of harvest acres) is proposed. The USFS classification of oak-hickory forest type for nearly all stands is in opposition to actual conditions that feature abundant mixed-mesophytic forest, in addition to oak, with northern hardwoods at highest elevations in the project area as well as within cold air drainages of Cove-Stock creeks and adjoining tributaries. By primary objections 1-3, these actions are also inappropriate given the outdated JNF plan and the need to reduce human forcing on the climate (Earth) system.

Alternative Action: Adopt a proforestation management plan that would allow existing trees to stand and grow older within this wettest terrain of Virginia where oak species are naturally less abundant and much more diverse, mixed-mesophytic forests are climatically favored. Given climate changes and the limited extent of northern hardwoods, this forest type which is developing at highest elevations and in cold air drainages must be favored

(not hindered) for greatest ecological diversity, benefit and buffering against changing climatic conditions.

Proposed Action - Retain and promote southern yellow pine species on appropriate sites.

10). Objection: Information related to how this would be accomplished, extracted from the scoping kmz file, suggests this would involve 133 units across the 13,087 acre area. These units would directly impact 2637.7 acres using thinning on 1794.8 acres, shelterwood on 626.9 acres, and coppice with reserves on 216.0 acres. Burning using prescribed fire on 2309.6 acres (87.6% of harvest acres) is proposed. Retaining yellow pine species where they exist is favored versus their promotion. By primary objections 1-3, actions beyond their nature distribution are inappropriate given the outdated JNF plan and the need to reduce human forcing on the climate (Earth) system.

Alternative Action: Adopt a proforestation management plan that would allow existing trees to stand and grow older within this wettest terrain of Virginia where yellow pine species are naturally relegated to cliff outcrops and other edaphically and geologically favored sites.

Proposed Action - Use prescribed fire, when appropriate, to accomplish ecological objectives.

11). Objection: Information related to how this would be accomplished, extracted from the scoping kmz file, suggests this would involve 133 units across the 13,087 acre area. These units would directly impact 2637.7 acres using thinning on 1794.8 acres, shelterwood on 626.9 acres, and coppice with reserves on 216.0 acres. Burning using prescribed fire on 2309.6 acres (87.6% of harvest acres) is absurd, wildly inappropriate, within this wettest terrain of Virginia and in direct opposition to reduction of human forcing on the climate system. By primary objections 1-3, these actions are inappropriate given the outdated JNF plan and the need to reduce human forcing on the climate (Earth) system.

Alternative Action: Adopt a proforestation management plan that would allow existing trees to stand and grow older within their natural conditions where fire is rare within this wettest terrain of Virginia (relative to the western USA and much of the eastern USA).

Proposed Action - Maintain or improve watershed conditions with actions such as road maintenance or decommissioning, rehabilitation of compacted areas, culvert work for aquatic organism passage, and stream habitat improvements.

12). Objection: Information related to how this would be accomplished, extracted from the scoping kmz file, suggests this would involve 133 units across the 13,087 acre area. These units would directly impact 2637.7 acres using thinning on 1794.8 acres, shelterwood on 626.9 acres, and coppice with reserves on 216.0 acres. The proposed actions for improvement of watershed conditions would be favored if timber extraction and widespread burning are omitted. By primary objections 1-3, actions taken beyond road maintenance and decommissioning, rehabilitation of compacted areas, culvert work for aquatic organism passage, and stream habitat improvements, are objected to given the outdated JNF plan and the need to reduce human forcing on the climate (Earth) system.

Alternative Action: Adopt a proforestation management plan that would allow existing trees to stand and grow older while doing road maintenance and decommissioning, rehabilitation of compacted areas, culvert work for aquatic organism passage, and stream habitat improvements that would reduce erosion and run-off from existing disturbances (to include illegal ATV activities impacting streams).

Additional Concerns (Contains Sensitive Information):

A. Extensive on-the-ground biological surveys for species of flora and fauna across different seasons through the

course of 1-2 years are needed prior to any proposed actions, given the biological richness of this area and the significant number of new species (some endemic) discovered in the High Knob Massif during recent decades.

Populations of Hermit Thrush (*Catharus guttatus*), documented during the past decade by Dr. Phil Shelton and Wayne Browning, along with many other bird species possessing northern affinities, need to be surveyed for in the DHNVP area given their documented existence immediately adjacent to this project area boundary.

These are the lowest elevation summer populations of Hermit Thrush currently known in the southern Appalachians, with logging activities on private and commercially-contracted and owned land already putting increased pressure on these habitats along with warming conditions due to a changing climate. It is essential that large, unfragmented tracts of forest remain to support these and many other northern breeding species that find the climate and geomorphology of the High Knob Massif attractive.

B. Wetlands on Wolf Creek of Laurel Fork, and along portions of Stock Creek, are of special concern and additional stream-team type surveys (as preformed during the Nettle Patch Project) should be done to identify existing wetlands and seeps across the DHNVP area as exemplified by the following within the 8.A.1 sector (far above the main wetlands on Wolf Creek).

C. Rich to exceptionally rich slope and cove forests are scattered across the DHNVP, as recently documented by the following in proposed timber stand units 92 and 87b. Logging or any activity would be exceedingly detrimental to such environments, as would isolating them by fragmentation.

D. Watersheds within the High Knob Massif, including Cove and Stock creeks, have a history of land slips and slides. Stratigraphy dipping southeast, toward the ecologically rich Clinch River, exists across the DHNVP area and are at increased risk from disturbances associated with logging activities given a high (in the mean) precipitation regime and modeling that tends to under-estimate precipitation totals as well as associated run-off and erosion potential. Extra wide buffer zones, featuring no activities, should be used along all cold air drainage-riparian corridors.

Potential for major landslides was recently exemplified by a 10-acre slide on South Fork of Powell River, in the watershed adjoining the DHNVP area, where ESE-SE dipping stratigraphy also exists and climate conditions (especially precipitation) are similar.

E. All older trees with scaly bark, across all species in which such characteristics are present, should be surveyed and flagged for no treatments due to the diversity of bat species using caves and old mine sites within and adjacent to the project area. Many bat species use trees for all or portions of the year.

F. How are non-native invasive species going to be treated? This is a notable concern that needs to be detailed for all units where treatments are planned, especially with respect to chemical treatments that are dangerous to all living things (including humans).

G. All information related to the DHNVP needs to be released for public comment and viewing in a manner accessible to everyone (without ArcGIS or any tools needed to render it out of embedded files).