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May 2, 2016

Shelby Williams
USDA Forest Service
George Washington and Jefferson National Forest
Clinch River Ranger District
FS-comments-southern-georgewashington-jefferson-clinch@fs.fed.us

Sent Via Email

RE: Proposed Nettle Patch Project

Mr. Williams:

I am submitting these comments on behalf of Wild Virginia, in response to notice of the referenced proposal dated April 1, 2016 (Notice). Thank you for the opportunity to address issues pertinent to this project. In addition to this letter, Wild Virginia endorses the comments filed by the Clinch Coalition and asks that those comments be incorporated by-reference into our submittal (attached).

Scale and Scope of Management Activities Proposed

According to the Notice, the area of Forest Service (FS) land within the project boundary is 6,693 acres. Table 7, entitled "Proposed Action Summary Table," shows a total of 4,204 acres to be altered through cutting, fire, or pesticide applications. This constitutes nearly 63% of the overall Forest lands in the designated area. Table 7 also cites proposals for 0.8 miles of temporary road and 3 miles of road reconstruction. Table 8 has these two mileage figures reversed, such that the greater length would be in temporary road construction. This discrepancy must be corrected. It is not clear whether the road areas noted are part of the overall acreage to be treated and this should also be clarified.

The disturbance of current conditions and the successional processes that are now underway on 63% of this project area would expose most of the lands in this area to considerably increased risk of non-native invasive species occurrence, threats to surface

water and groundwater, and loss of capacity of the forest as a carbon sink. We believe that this scale of activity is unwarranted and contrary to the broad goals the Forest Service is obligated to serve.

We understand and appreciate the intent to have a mosaic of species and ages of plant communities across the forest but we fundamentally disagree with the idea that the kinds and amounts of management proposed in this case are necessary or proper to maintain the integrity and health of the forest ecosystems. It is universally understood, as stated by Hart, that "[a]ll forest ecosystems are subject to canopy disturbance events that influence species composition and stand structure, and drive patterns of succession and stand development."[1] However, the most recent scientific findings seem to indicate that the amount and nature of disturbance proposed for Nettle Patch is far out of balance with natural processes.

For example, Seymour et al. reported on their comprehensive survey of papers in a 2002 article, focusing most heavily on studies of late-successional, undisturbed, or pre-settlement forests. They found "that such forests were dominated by relatively frequent, partial disturbances that produced a finely patterned, diverse mosaic dominated by late-successional species and structures. In contrast, large-scale, catastrophic stand-replacing disturbances were rare, returning at intervals of at least one order of magnitude longer than gap-producing events." The canopy gaps caused by the small, frequent disturbances ranged in size from 24 to 126 square meters (258 to 1,356 square feet) and "[t[he return interval of these gap disturbances is usually in the 50– 200 year range." "Gaps were small and frequent, as expected, whereas catastrophic fires and blowdowns were rare and highly variable in size."[2]

Another study estimated that "[t]he proportion of the presettlement landscape in seedling–sapling forest habitat (1–15 years old)" was on the order of 1 - 3% of hardwood forests in the northeastern U.S.[3] Based on observations of 37 random plots in a 5,000 acre old growth stand in Maine, Fraver et al. wrote "[w]e found no evidence of stand replacing disturbance on any plot during the last 120-280 years (depending on plot). The

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[1]Hart, Justin L., Gap-Scale Disturbances in Central Hardwood Forests with Implications for Management, in "Natural Disturbances and Historic Range of Variation, Managing Forest Ecosystems 32," eds. C.H. Greenberg, B.S. Collins, Springer International Publishing Switzerland 2016.

[2]Seymour, Robert S., Alan S. White, and Philip G. deMaynadier, Natural disturbance regimes in northeastern North America—evaluating silvicultural systems using natural scales and frequencies, Forest Ecology and Management 155 (2002) 357–367.

[3]Lorimer, Craig G. and Alan S. White, Scale and frequency of natural disturbances in the northeastern US: implications for early successional forest habitats and regional age distributions, Forest Ecology and Management 185 (2003) 41–64.

overall mean disturbance rate was 9.6% canopy loss per decade (median 6.5%, maximum 55%, plots pooled), yet the distribution was strongly skewed toward the lower rates."[4]

We recognize that this sampling of reports is far from comprehensive and do not assert that these findings are a sufficient basis, of themselves, for management decisions. However, we do contend that, in view of these types of findings, the FS must seriously question the assumptions behind the proposed management regime that has been outlined in the Notice. The EA must compare what is known about the magnitude and frequency of natural disturbances in this area and areas of a similar nature with the proposed levels of disturbance through human management. If the Forest Service proposes to introduce disturbances through management actions to a degree that is significantly greater than would likely occur through non-human influence, then it must justify that difference in terms of ecosystem health.

Alternatives Analysis

The Notice discusses a proposed alternative and a "no action" alternative; essentially an "all or nothing" approach to management planning. We believe the EA must include a much more robust analysis of a mixture of alternatives that balance the multitude of values and uses the FS is responsible for promoting and maintaining.

We propose that the FS look at options such as road decommissioning, extensive programs to remove invasive non-native species, and stream channel and floodplain restoration efforts. Such efforts may be needed simply to mitigate for many of the disturbances caused by management activities previously undertaken. To make such positive improvements on the forest seems to us to be of a higher priority than many of the proposed changes.

Monitoring

The EA should describe a range of monitoring activities that will be conducted before any new management is begun, to establish "background conditions," during the project's implementation, and after its completion. Such monitoring should look at the health and composition of tree stands in light of the management choices made and compare those results to other stands that have not undergone these treatments. Water and air sampling and soils analyses are essential and the FS should complete thorough surveys of forest areas to be disturbed to discover whether sensitive or unknown species are present and whether changes to the management options need to be made in response.

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[4]Fraver, Shawn, Alan S. White, and Robert S. Seymour, Natural Disturbance in an Old-Growth Landscape of Northern Maine, USA, Journal of Ecology, Vol. 97, No. 2 (Mar., 2009), pp. 289-298.

Surface Water and Groundwater Protection

One factor that makes the water resources in the Nettle Patch area especially vulnerable is the prevalence of karst geology underneath a large portion of the project area. Figure 1 shows the project area outline in red and the area underlain by karst geology in turquoise shading. It is important to note that the karst areas are on both sides of the project boundary to the west and south. Land disturbance in this project may easily affect water quality outside of the project boundary, because karst formations can carry pollution long distances and often the direction and rate of transport is impossible to predict without dye tracing and/or other monitoring methods. Also note that the two water supply reservoirs for Norton lie not far to the west of the project and may well be connected with the project area through underground flow.

The use of herbicides on the forest, for treatment of forest stands or of invasive species must be carefully planned and closely monitored, or it should not be undertaken. Again, the fate and transport of these chemicals and the potential impacts to humans and the environment must be understood. The standard requirement that appliers must be trained and use only approved chemicals is not sufficient - this lax approach can and has resulted in the contamination of many water bodies.

All water pollution assessments done for this project must compare the conditions measured or observed in the waters monitored to the Virginia water quality standards, including both narrative and numeric criteria, support of all designated and "existing" (as defined in the Clean Water Act) uses, and the antidegradation policy. In addition to the surface water standards, Virginia's groundwater quality standards must be applied. For National Forest lands, the strict application of antidegradation provisions is especially important because the Forests form the headwaters of many valuable streams.

Economic Analysis

The EA must present a thorough analysis of the costs of operations proposed under the various alternatives addressed in the EA, including all wages, administrative expenses, equipment costs, contractor fees and any other expenses and it must compare those expenditures with any income the FS receives from contracts with timber harvesters and any other sources. In addition, the FS must make a strong effort to assess the values of the forest for all non-extractive purposes and weigh those values against the monetary measures cited above.

The Multiple-Use Sustained-Yield Act of 1960, commands that "[i]n the administration of the national forests due consideration shall be given to the relative values of the various resources in particular areas," (codified at16 U.S.C. § 529). Unless we have an accounting of the costs of various management activities proposed for the Nettle Patch

project versus the values of the other resources and potential uses, neither the citizens nor the FS can have confidence that these "relative values" have been duly considered as the law requires.

For example, the EA should answer questions such as the following:

- What is the current economic value of Forest-based or -related recreation and tourism and how would various management choices increase or decrease that value?
- Have sufficient expenditures been made to keep roads maintained in the project area and, if not, what increases would be needed to remove the backlog? Will the spending necessary to maintain roads throughout the project period be available if the management activities proposed are also undertaken?
- What is the status of invasive species on the project area, have the funds needed to adequately address this problem been available or is there a need for increased spending?

Climate Change

There was no mention in the Notice of the effects that this project could have on climate nor of the benefits that could accrue if affirmative measures were taken to improve climate sequestration. Also, the changes that will likely occur on the forest due to climate change must be understood in combination with the proposed management choices analyzed in the EA. Only through such an analysis can the requirement for a cumulative analysis under NEPA be met.

Carbon and the ability of mature forests to sequester carbon are extremely valuable forest products. The logging, thinning, burning, and dead and downed tree removal will create a forest that will store less carbon and will continue to do so for the entire duration of the project and beyond. These activities cannot 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."[5]

Forests affect climate and weather, in four primary ways: they lower temperatures, increase the moisture content of air and soil, absorb carbon dioxide from the atmosphere, and store or sequester carbon. Each part of the forest contributes to climate control, from

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[5]Sebastiaan Luyssaert, E. -Detlef Schulze, Annett Borner, Alexander Knohl, Dominik Hessenmoller, Beverly E. Law, Philippe Ciais, & John Grace. "Old-growth forests as global carbon sinks. *Nature*. Vol 455, 11 September 2008; "The Water Cycle: Transpiration." U.S. Geological Survey. http://ga.water.usgs.gov/edu/watercycletranspiration.html

the leaves, stems, trunks and roots of trees and vegetation, to down woody debris, leaf litter and soils. Leaves cool the air through evapotranspiration, the combination of 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. 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.

The logging, thinning and burning proposed in the alternative presented in the Notice will affect climate directly. 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 (the rise of air). ("Vegetation & Air Quality." U.S. Environmental Protection Agency. 2007. http://www.epa.gov/hiri/strategies/level3_vegairquality.html)

Thank you and we look forward to working with you further to improve monitoring systems in the National Forests.

Sincerely,

/s/ David Sligh

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David Sligh
Conservation Director

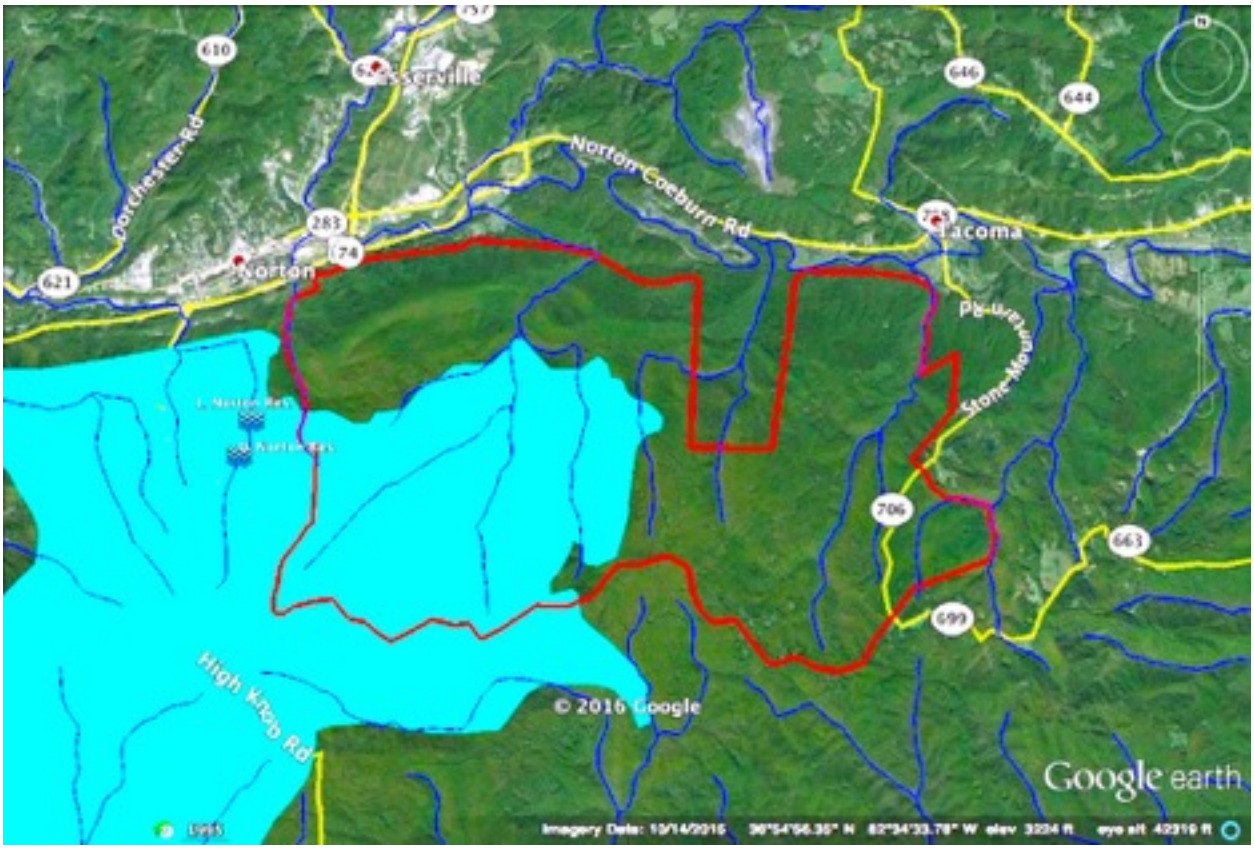

Figure 1 - Nettle Patch Project Area and Karst Terrain