

Nettle Patch Vegetation Management Project Objection
Statement of Barry Sulkin

1. My name is Barry Sulkin. I give this Statement for use by The Clinch Coalition and the Southern Environmental Law Center in their February 5, 2018 objection related to the Nettle Patch Vegetation Management Project in the Clinch District of the Jefferson National Forest, in Wise County, Virginia ("the Project"). I base this Statement on my personal knowledge, experience, training, and a review of regulations and reports related to this matter.
2. I received my Bachelor of Arts in Environmental Science in 1975 from the University of Virginia where I received a du Pont Scholarship. During my undergraduate years, I worked as a Lab Technician and Research Assistant at the University of Virginia and Memphis State University conducting water and soil/sediment analyses and sampling.
3. In 1976 I joined the staff of what is now called the Tennessee Department of Environment and Conservation as a Water Quality Specialist. I worked in the Chattanooga, Knoxville, and Nashville field offices and the central office of what is now called the Division of Water Resources. My duties included inspections and enforcement coordination for the drinking water and water pollution programs, as well as work with underground storage tank, and solid/hazardous waste issues. I also conducted investigations regarding fish kills, spills, and general complaints, including problems of erosion and other matters related to logging, oil drilling, and road building activities.
4. In 1984 I was promoted within the Division to Special Projects Assistant to the Director. Among the issues I dealt with were the water quality impacts of forestry activities, including clear-cutting and related road building and soil disturbance. As a part of my work in this area I researched citizens' complaints and forestry practices, including Best Management Practices (BMPs), and inspected logging sites in Tennessee and Alabama. I also met with industry representatives to discuss findings and the adequacy of BMPs, as well as the need for monitoring of the effectiveness of the practices.
5. In 1985 I became state-wide manager of the Enforcement and Compliance Section for the Division of Water Pollution Control. In this capacity I was responsible for investigating and preparing enforcement cases, supervising the inspection programs, permit compliance monitoring, and special projects and field studies including water quality, assimilative capacity and permit modeling.
6. While in this position with the state, I received a joint Tennessee-Vanderbilt scholarship and took an educational leave to obtain my Masters of Science in Environmental Engineering in 1987 from Vanderbilt University. My thesis was "Harpeth River Below Franklin, Dissolved Oxygen Study," which was a field and laboratory study, and computer analysis of stream water quality and impacts of pollutants.
7. In 1987 I returned to my position as manager of the Enforcement and Compliance Section where I remained until 1990. During my time working for the state, I managed major projects including the Oak Ridge Department of Energy Pollution

Investigation, the City of Nashville Sewer Overflow Enforcement case, and the Obed River/City of Crossville Wastewater Assimilative Capacity Study.

8. In 1989 I received the Tennessee Conservation League's Water-Conservationist-of-the-Year Award, and in 1990 I received the Tennessee Environmental Counsel's Lifetime Achievement Award.
9. Since 1990 I have engaged in a private consulting practice specializing primarily in water quality problems and solutions, regulatory assistance, NPDES permits, wasteload allocations, stream surveys, and various environmental investigations related to water quality, as well as air pollution and solid/hazardous waste. My work as a consultant has included review of the impacts of road building, logging, erosion, and review of Environmental Impact Statements (EISs) and Environmental Assessments. I have attended training courses on erosion control techniques, and am certified by the state of Tennessee as an Erosion Prevention and Sedimentation Control Professional.
10. In 1992 I was contracted by the University of Tennessee Center for Industrial Services (UTCIS) to write a training manual for the new state and federal stormwater regulations. In this project, I researched and included topics such as erosion control, BMPs, and monitoring. Upon publication of the manual, I was hired to conduct a series of training seminars at various locations in Tennessee on stormwater regulations and compliance for industries. I conducted these seminars with staff from UTCIS and the Division of Water Pollution Control. Four seminars were for the Tennessee Association of Business.
11. A fifth seminar was conducted for the Tennessee Forestry Association (TFA) for training of persons in the logging and lumber industry. Subsequent to the stormwater regulations taking effect, I have been employed by a number of saw mills and logging operations as a consultant on stormwater and water quality matters, including monitoring and preparation of Storm Water Pollution Prevention Plans. I have also written for the TFA newsletter on the subject of storm water regulations.
12. I have been involved as a consultant in a case regarding road building and the associated impacts of construction and erosion to area streams, including portions in the National Forest where logging was conducted prior to the road construction. This work involved field investigations, biological monitoring, chemical monitoring data review, and review of the EIS. In other work regarding consulting for proposed landfills, I investigated sites that had been logged and reviewed some of the water quality impacts of that activity.
13. I have reviewed the Forest Service's Environmental Assessment (EA) for the Nettle Patch timber sale, dated December 2017, and the Draft Decision Notice and Finding of No Significant Impact. Although I have not visited the site of the proposed timber sale, I visited the Clinch District in 2001 to inspect specific sites of proposed cuts and road construction, as well as streams, associated with the nearby Bark Camp timber sale. Unfortunately, I believe the proposed Nettle Patch project has many of the same problems I identified with the Bark Camp timber sale.

14. As the Forest Service recognized in the Nettle Patch EA, logging and road construction inevitably result in pollution of streams and waterways that are geographically proximate to these soil-disturbing activities. The issues are whether the EA adequately described, quantified, discussed, and analyzed this pollution and the resultant impacts to the area's streams and aquatic habitats, and whether the agency's Finding of No Significant Impact is reasonable. It is my professional opinion that the answer to both these issues is "no;" that the EA's discussion and analyses of water quality impacts is seriously deficient and that, as a result, the Finding of No Significant Impact is arbitrary and likely erroneous.
15. During the construction of roads, land is cleared of trees and other growth, and the ground is loosened and disturbed. The operation of heavy equipment, dragging of logs, and other activities during logging, disturb additional ground and soil. The removal of vegetation and disturbance of the ground allows for the release of soil, silt, rock, sand, clay, organic matter, and other materials. Once loosened and unprotected from rainfall, such materials can erode and wash through road cuts, drainage ditches, pipes, and natural drainways. If the activity is near a river or stream, these materials can be discharged as sediment and other pollutants into these streams during and after rainfall events. The discharges are not limited to occurrence during construction and maintenance of the roads, but occur as well during use of the roads for logging or other activities for which they were built, and long after the logging and traffic ceases.
16. In the long term, such as in the case of roads built for logging and oil/gas drilling, the dirt or gravel roads remain long after the activity for which they were built has ceased. The roads can continue to erode and release sediment and other pollutants to area streams and rivers as rainfall causes channeling and cutting of the road surface and any associated drainage ditches which are often located adjacent to the road on the up-gradient side. Such discharges of soil, silt, rock, sand, clay, organic matter, and other materials can flow in the road-side ditches and through pipes or culverts placed under and along the roads for the purpose of directing such flows to area streams and rivers. Particularly during the initial phase of a rain event of significant intensity, the first flush can release large quantities of pollutants, thus these ditches and pipes become point sources. These principles hold true for other silviculture areas, such as staging and yarding areas (those locations where cut logs are accumulated and held for loading and hauling).
17. Sediments coming from the areas of roads are composed of the materials naturally found in the area that have been disturbed or eroded, such as rock, sand, clay, soil, and organic matter such as leaves, humus, and other local vegetation debris. There may also be some imported material in the gravel or other material brought into the area for the purposes of building the road.
18. Based on EA, it seems clear that this project, as proposed, would impermissibly violate the Clean Water Act and Virginia state water quality standards because, as the EA acknowledges, the proposed ground-based disturbance will contribute to the impairment of streams, and thus cannot have "no significant impact".

19. Sediment pollution is a significant problem in and around this project area. I note that, within the project area, Eastland Creek is designated as impaired for sediment, as is the segment of the Guest River immediately downstream from the project area.
20. I also note that the Forest Plan prioritizes maintaining or improving water quality in the project area. For example, the Plan deems the impaired Guest River segment immediately downstream from the project area a "Priority Watershed." The Forest Plan also states the emphasis for this area (the Clinch River Management Area) is to protect habitat for rare species (particularly aquatic species) and that "Forest Service activities will not contribute to impaired water segments."
21. Despite this, the EA admits that the ground disturbance proposed for this project would increase sedimentation into impaired Eastland Creek and the Guest River. Again, this would violate the Clean Water Act and Virginia state water quality standards.
22. The EA also violates NEPA because it candidly concedes that it is not possible to determine if the proposed actions will have an additional significant impact on the impaired streams. Where, as here, there is a risk of significant impacts from a proposed action, an Environmental Impact Statement (EIS) must be prepared (or the project must be modified to such a degree that a Finding of No Significant Impact is possible).
23. In my professional opinion, the District must eliminate any proposed ground disturbance management that would increase sediment into impaired waters or prepare an EIS.
24. In addition, I do not think the sediment model used in the EA supports a Finding of No Significant Impact. The District has ignored a number of important limitations of this model and over-relies on it. These include:
 - a. The Final EA should identify all margins of error involved in its use, which are likely high. Without this, outside reviewers cannot assess adequately the model and conclusions.
 - b. As the EA acknowledges, this model can be used to determine relative risk among alternatives (not quantify sediment absolutely). Yet the District relies on it to do the latter by concluding that the cumulative sediment yield from this action (based on the model) is within the "range of interannual variability."
 - c. In my professional opinion, the "interannual variability" concept described above remains faulty. Using data from heavily-disturbed and heavily-polluted watersheds as the baseline masks the natural baseline and the true significance of the likely impacts. That is precisely what is happening with this project.
 - d. I note that background sedimentation data that feeds into the model is calculated based on an equation set forth in a study from the Great Lakes Region (Whiting). That study relied on local data from that region to input into the equation. The EA does not disclose whether it also relied on this Great Lakes data, which would be inappropriate, or input local data as the study calls for. I note the

Whiting paper references a high margin of error of around 50 percent. The EA must disclose such limitations.

- e. The model does not deal with some ground disturbing activities that will increase sediment yield, specifically unbladed skid trails and the proposed dozer fireline. Without considering all such significant sources of sedimentation proposed by this project, there is no basis for a Finding of No Significant Impact.
 - f. I am also particularly concerned by certain gaps in the model inputs. For example, the EA estimates a private timber harvest will deliver 19.5 tons of sediment to Mill Creek, 13.7 tons to one of its tributaries, and another 1.21 tons of sediment to a second tributary. However, the Summary of the modeled cumulative sediment effects from Alternative 3 and nearby private activities by watershed (Table 37) does not appear to include the sediment yield to the 2 tributaries.
 - g. In addition, Table 37 does not provide any summary of modeled sediment effects into impaired Eastland Creek even though the District is proposing several commercial harvest units in that watershed. Without that, it is not clear how the District arrives at the conclusion that sediment into Eastland Creek will increase by 5.1% to 17.3% over background levels (Table 38). This gap is particularly troubling because of Eastland Creek's impairment designation. Without this data, outside reviewers cannot assess adequately the model and conclusions.
25. Another significant defect in the EA's analysis is its assumption that Best Management Practices (BMPs) will be fully carried out and its failure to analyze or disclose the likely impacts if these BMPs are less-than-fully met. It is my experience and, I believe, common knowledge among experts in this field, that BMPs are rarely, if ever, fully met or carried out.
26. The EA should disclose, discuss, and evaluate the in-field effectiveness of BMPs, generally or specifically in Virginia. It has been my experience and is my opinion that BMPs are rarely adequate to prevent pollution of streams, rivers, and other water bodies associated with logging and road building. This is due to a number of factors such as: BMPs not being followed; BMPs not being fully implemented; BMPs not appropriate for a given situation; a lack of maintenance and follow-up; BMPs often do not contain actual monitoring or sampling during rain events, thereby resulting in limited information for evaluating effectiveness and determining improvements.
27. The many inadequacies in data use, models, application of results, over-reliance on BMPs, and candid admissions of further impairment quite clearly fail to ensure compliance with NEPA. There appears to be no dispute that past logging, roadbuilding, and related activities have caused significant and long-term negative impacts to water quality and aquatic habitat in the Nettle Patch area. Nor is there any dispute that the project will impermissibly increase sedimentation into already impaired streams. For the reasons discussed above, the EA does not adequately support the District's proposed Finding of No Significant Impact. To the contrary, it is my professional opinion that,

consistent with history, limitations of sedimentation modeling, ineffectiveness of BMPs, and admissions in the EA, the Nettle Patch Project likely will cause significant negative impacts to water quality and aquatic habitat in the Clinch Management Area.

28. Beyond the need to cure the above, and given the existing impairments, the Forest Plan's prioritization of improved water quality in this area, and inadequacy of BMPs, I recommend the following minimum buffers (areas with no timber harvest or other ground-disturbing activities) for this project if it is to proceed:

- a. 150 feet around perennial streams, lakes, ponds, wetlands, springs, or seeps, regardless of slope class;
- b. 100 feet around all intermittent streams, regardless of slope class; and
- c. 50 feet around all ephemeral stream channels, regardless of slope class.

Submitted this 5th day of February, 2018.



Barry Sulkin