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5162 Valleypointe Parkway
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Re: Draft Revised Land and Resource Management Plan for the George Washington National Forest and Draft Environmental Impact Statement for the Revised Land and Resource Management Plan

Dear Supervisor Hyzer:

Thank you for the opportunity to provide comments on the Draft Revised Land and Resource Management Plan (draft plan) and Draft Environmental Impact Statement (DEIS) for the George Washington National Forest (GW). Please accept the following comments from Wild Virginia.

Water Resources.

We are glad to see the increased attention the draft plan places on watersheds and water resources compared to the current (1993) plan. We believe more protective measures for water resources are needed though. Specific management objectives for the two watershed types identified in the draft plan – Drinking Watersheds and Priority Watersheds - should be part of the final forest plan. The desired conditions for watersheds (page 2-3, draft plan) are too general to be of practical use in managing the GW. Similarly, the five objectives for Watershed Resources (page 3-4, draft plan) lack sufficient definition of terms (e.g., "restored, sustained or enhanced", "appropriate instream habitat", "healthy biological communities", etc.) or detail to be quantifiable and are too general to be useful in managing the GW.

As a practical matter, quantifiable objectives in forest plans often lead to targets and specific projects to implement them, while more general goals fall by the wayside. Without clear restoration objectives and management standards for these watersheds, it is difficult to have

confidence that specific restoration projects will move forward in these watersheds or even that these watersheds will receive enhanced consideration and protection during project planning.

We are troubled by the large area of the GW that is open to road building in the draft plan. Roughly 92% of the GW would be open to either permanent or temporary road construction. According to Table 3.5 (page 3-27, draft plan), only seven prescription management areas totaling 83,000 acres completely prohibit both permanent and temporary road construction. This has serious implications for sedimentation and water quality.

We believe that many Forest Service roads in the GW, both permanent and temporary, negatively affect water quality by funneling or conveying sediment-laden runoff to nearby streams. The DEIS states that the existing system roads in the GW "continue to be a chronic source of sediment." (page 3-52) Decommissioning roads is an excellent restoration tool for both watershed and forest health and should be widely used. Five of the seven plan alternatives have a stated goal of 160 miles of decommissioned roads during the first decade of the new plan (Table 2-3, page 2-21, DEIS). Alternative A does not list a goal (presumably it is zero) and Alternative D has 80 miles as its goal. This does not adequately represent a full range of alternatives for road decommissioning. More levels of decommissioning should be included in the analysis, including higher goals. We do not feel that a "cap" or maximum amount of road closing should be part of the draft plan.

Comments submitted by Southern Environmental Law Center, Southern Appalachian Forest Coalition, Virginia Forest Watch, The Wilderness Society, and other organizations on October 17, 2011, point out agency responsibilities relative to roads, the forest-wide road system, and Travel Analysis Process under the Clean Water Act and other federal or agency mandates. We incorporate the referenced comments herein.

Unfortunately, much of the land in important watersheds of the GW is open to road building. Again based on prescription management areas, our GIS analysis indicates that 94% of the Drinking Watersheds land, 88% of the Priority Watersheds land, and 92% of "local drinking watersheds" land (from the 2008 report from Wild Virginia, *The State of Our Water*) are available to either permanent or temporary road construction.

Similarly, much of the land in the three watershed areas is considered Suitable for Timber Production. The 438,000 acres of the GW that are suitable in the draft plan represents roughly 41% of the total land base. Approximately one third, or 33%, of the Drinking Watershed lands are considered suitable. Priority Watersheds contain approximately 36% of lands in the suitable category, and "local drinking watersheds" contain approximately 39%. These percentages are only slightly below the forest-wide average, and fail to adequately address water quality issues in these watersheds. In watersheds already identified as priorities for restoration, road construction and other ground-disturbing activities that adversely affect water quality, rather than improving it, should be more limited.

Drinking Watersheds.

The nine watersheds and approximately 73,000 acres in Drinking Watersheds are based on the definition of Public Water Supplies (PWS) described in the Virginia Water Quality Standards (at www.deq.state.va.us/wqs/documents/WQS_eff_6JAN2011.pdf). We believe this is a very limited perspective on lands in the GW that supply drinking water to local communities. As one example, headwater areas are often excluded from the PWS watersheds (see discussion in following paragraph). We believe the "local drinking watersheds" identified in *The State of Our Water: Managing and Protecting the Drinking Water Resources of the George Washington National Forest* (published by Wild Virginia in 2008, and attached), composed of approximately 426,000 acres in Virginia, are much more accurate and realistic data for indicating sources of public drinking water.

State defined PWS often, but not always, limit the geographic extent of watersheds to 5 miles upstream of a water intake point. In the GW, Pedlar River and Dry River watersheds are examples of this. The entirety of the watersheds are not included as PWS (and thus Drinking Watersheds in the draft plan). The North River watershed upstream of the Staunton Reservoir is an exception to the normal PWS definition, and rightly includes the headwaters area in the watershed.

Staff members of the GW, in developing the draft plan, wisely added the Skidmore Fork watershed (upstream of Switzer Lake) to the Dry River watershed (R. Patton, personal communication, Aug. 2011), thus including more (but not all) of the Dry River watershed in Drinking Watersheds. We strongly believe the full geographic extent of both the Dry River and Pedlar River watersheds, including all headwaters areas, should be included in Drinking Watersheds.

Priority Watersheds.

Identifying priority watersheds is a good concept, but the draft plan does not adequately describe how or why the watersheds were selected. The draft plan (page 2-2) states only the intent to "highlight those watersheds with sensitive aquatic species, currently identified water quality concerns due to private land or natural causes (impaired streams), and watersheds providing drinking water." This explanation does not allow a meaningful review of the process or the results. The complete methodology for identifying and designating 36 priority watersheds and approximately 440,000 acres must be part of the forest plan.

Less than half, approximately 46%, of the acreage in Priory Watersheds occurs within "local drinking watersheds." This seems to lessen the importance in the draft plan of protecting all drinking water resources in the GW.

Priority Watersheds include almost all of the nine Drinking Watersheds. There are two exceptions though. The areas described below are not within Priority Watersheds, but should be included in them in the final plan. A very rough size estimation is 2300 acres in the two areas combined.

- The "North Fork Shenandoah" Drinking Watershed. A small part of this watershed is in the GW but not included in a Priority Watershed. The area is on the northwestern edge of Massanutten Mountain, upstream of the Strasburg water intake point.

- The "NF Shenandoah-Cedar Creek" Drinking Watershed. There is considerable overlap of this watershed and the GW. Most of the GW lands are in a Priority Watershed (Paddy Run-Cedar Creek). But two areas of the forest inside the Drinking Watershed are outside a Priority Watershed. One area is at the very northern tip of Massanutten Mountain. The second area is at the very northeastern end of the Lee RD (west of Massanutten Mountain and north of Big Schloss).

Riparian Areas.

Riparian areas in the GW deserve special attention. Riparian corridors should be wider than 100 feet along perennial streams and 50 feet along intermittent streams specified forest-wide (in areas where the slope of the ground is 10% or less), as the draft plan calls for. These are the minimum widths required so as not to negatively impact aquatic species. The widths should be significantly expanded to improve water quality and aquatic habitat and provide riparian habitat for many species (e.g., salamanders, turtles) that use these special areas. The Draft Evaluation of the Need for Change (Forest Service document dated March 2010) has a good discussion of Riparian Resources and related topics. Viewpoint 1 (page 33, and additional discussion on page 39) provides good information on the need to adequately protect intermittent (and ephemeral) streams and the large variety of wildlife species that benefit from wide riparian buffers along all streams.

A variety of disturbances are allowed inside riparian corridors under the draft plan. Permissible activities and facilities, under some conditions, include oil and gas leasing, timber harvest, grazing, roads, motorized trails, and recreation facilities (pages 4-114 to 116). These or other disturbances that concentrate runoff, cause erosion, or transport sediment into stream channels only need to be rehabilitated or mitigated to reduce or eliminate impacts (page 4-112). That is, the disturbance does not necessarily have to be eliminated. These conditions can be harmful to forest resources. Wider riparian corridors are one means to minimize and help mitigate the potential negative impacts.

Appendix A of the draft plan (page A-3) states "*This Forest Plan meets or exceeds State Best Management Practices*", but this is not entirely accurate. On sloping lands (slope class of 11% and higher), the draft plan requirements are less stringent than the Virginia Best Management Practices (BMPs). State BMPs call for streamside management zones along Municipal Water Supplies (including both perennial and intermittent streams) to be 150 feet wide where the slope of the ground is 11-45%, and 200 feet wide where the slope exceeds 45% (Virginia's Forestry Best Management Practices for Water Quality, 5th edition, March 2011, page 37). These exceed the draft plan riparian corridor widths for both permanent and intermittent streams. At a minimum, the riparian corridor widths in "local drinking watersheds", Priority, and Drinking Watersheds of the GW should meet these state BMPs.

Sedimentation.

Sedimentation is a large threat to water quality everywhere, including the GW. A number of Forest Service documents state "*On National Forest System land, sedimentation is the primary factor in water quality degradation. Sedimentation may be introduced into stream channels from soil disturbing activities such as timber harvesting and road construction.*" (e.g., 2007

Environmental Assessment, Cubville Project, Warm Springs Ranger District) The DEIS (page 3-40) also describes sedimentation as the largest potential impact on water quality stemming from forest management activities.

Despite its threat, sedimentation is not directly measured or monitored under the draft plan. Instead, quantifying the number of acres of soil disturbance will be used as a proxy for direct measurement. This is wholly inadequate to account for the impacts of sedimentation. Among other things, all ground disturbing activities are assumed to have equal impact with regard to sedimentation and site-specific conditions are not taken into account (e.g., proximity of streams or other waterways, soil conditions, slope, existing ground disturbance, etc.).

According to Table A6.3 of the DEIS (page 3-50), the draft plan would result in the second highest amount of soil disturbance of all the plan alternatives (315 to 407 acres). Even though using acres of soil disturbed as a proxy for sedimentation could be highly inaccurate, the draft plan would have the second greatest impact on sediment and water quality, according to the DEIS. This is troubling in light of the fact that many sixth-level watersheds in the GW are already "functioning at risk" (Forest Service Watershed Condition Classification – Region 8, http://www.fs.fed.us/publications/watershed/).

The final plan for the GW should minimize ground disturbance and the resulting sedimentation in the GW. Measuring sedimentation in strategic locations and waterways must be part of the final plan. Monitoring and measuring sediment will complement the macroinvertebrate sampling in the GW streams and should be part of forest management.

Aquatic Species Viability.

The National Forest Management Act (NFMA) regulations require that "*Fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area.*" The DEIS does not adequately consider the effects of each plan alternative on species viability, or adequately describe how forest management under each alternative would promote species viability.

The viability of many aquatic species is already at risk, and the viability evaluation results indicate that many of these species will remain at risk (Table 5, Appendix H, DEIS). A large number of aquatic species in the forest, including all fish and mussel species of viability concern, are sensitive to sediment (Table 4, Appendix H, DEIS). As discussed above, the draft plan (Alternative G) is expected to produce the second-highest amount of sediment of all seven plan alternatives. This means there is potential for significant negative impacts on the viability of these species. The analysis of aquatic species viability in the draft plan and DEIS is inadequate under both NFMA and the National Environmental Policy Act.

Roadless and Wilderness Areas. (final draft)

The GW is one of the very few places in the eastern U.S. where large areas of relatively undisturbed, mature forest still exist. These forests and the remote settings they provide must be protected. In addition to the public benefits they provide (clean air, clean water, unique

recreation opportunities, etc.), many wildlife species that need large geographic areas (e.g., black bears, bobcats, raptors) or habitat conditions found here (e.g., forest breeding birds, salamanders) depend upon these special habitat areas.

The draft plan identifies 372,000 acres of "potential wilderness area", or PWA. Managing 242,000 acres of the PWA (the Inventoried Roadless Areas, or IRA) consistently with the 2001 Roadless Area Conservation Rule (Roadless Rule) is a very positive and important step that we fully support. That is the stated intention of the draft plan as explained by staff of the GW at several public planning meetings in 2011. However, some of the management prescription areas assigned to locations within IRA are not consistent with the Roadless Rule. Of the five management prescription areas occurring within IRAs (Remote Backcountry, Special Biological Area, Shenandoah Mountain Crest-Cow Knob Salamander, Eligible Scenic River Corridors, Eligible Recreational River Corridors), only the Remote Backcountry designation is fully consistent with the Roadless Rule. This needs to be corrected.

All of the PWA acreage meets the definition of "roadless area" in the Roadless Rule (Guidance on How to Conduct the "Potential Wilderness Area Inventory" for the Revision to the Revised George Washington Forest Plan). In order to protect the roadless character of these areas, the entirety of all PWAs should be managed consistently with the Roadless Rule. Approximately 144,500 acres of the PWA fall outside of IRAs (page 2-34, DEIS). Under the draft plan, roughly 80,000 of the144,500 acres of newly identified roadless areas are to be managed consistently with the Roadless Rule (i.e., assigned to one of the five management prescription areas occurring within IRAs). As stated above though, only Remote Backcountry is fully consistent with the Roadless Rule. Roughly 64,500 acres of these newly identified roadless are subject to active management, with much of the acreage designated as Mosaics of Habitat. The possibility of active management in these areas, including new roads and timber harvesting, could potentially corrupt their roadless character. This should also be corrected.

Creating wilderness study areas (WSA) is an excellent means for protecting these large, remote forests. We are disappointed in the meager recommendation of 20,454 acres for WSA in the draft plan (page 3-238, DEIS). Each of the four areas recommended are important, but three need to be increased in size. The 9000 acre recommendation for Little River is a fraction of the 30,227 acres in its PWA. Similarly, the 5000 acre recommendation for Rich Hole Addition should be increased to protect the 12,165 acre PWA, and the 6000 acre recommendation for Ramsey's Draft Addition should be increased to protect the 19,072 acre PWA.

Just as importantly, many other areas of the GW are worthy of WSA designation. No wilderness exists in the Lee Ranger District, and part of the Big Schloss PWA should become WSA. Several other PWAs in the North River Ranger District should become WSA, including Beech Lick Knob, High Knob, Gum Run, Hone Quarry-Oak Knob, and Jerkemtight. Laurel Fork PWA in Warm Springs Ranger District is a truly unique and special place also deserving to be WSA.

Under Alternative C, almost all PWAs and 386,762 acres would become WSA (page 3-238, DEIS). We feel wilderness recommendations under Alternative C have not been given adequate review and analysis during the planning process. The wilderness recommendations of Alternative C should be adopted.

Primitive Recreational Opportunity.

1. The Draft Evaluation of the Need for Change, the March 2010 Forest Service document, fails to include the creation of primitive recreation as a concern, issue, goal, or objective in the draft plan.
2. The DEIS fails to offer an alternative that specifically contains the existence of or creation of primitive recreation opportunities or areas where true primitive recreation is available. The DEIS fails to implement a comparative analysis of the long term Net Public Benefits of primitive recreation opportunities in the GW.
3. The DEIS fails to consider the goals or objectives of road closures in its analysis and therefore fails to consider the creation of primitive recreation as a possible goal or objective of such road closures.
4. The draft plan fails to recommend the entire Little River PWA as a Wilderness Study Area, thereby failing to provide the potential for the full range of recreational opportunities in the forest.
5. The draft plan and DEIS fail to consider these issues and requests as raised in the Conservation Alternative, submitted by Wild Virginia and Heartwood on May 06, 2010.

In the current (1993) forest plan, the potential for primitive recreation opportunities was not adequately considered. The Forest and Rangeland Renewable Resources Planning Act of 1974 directed the Secretary of Agriculture to prepare a Renewable Resources Assessment in 1975 with updates in 1979 and each 10th year thereafter. These assessments are to include "an analysis of present and anticipated uses, demand for, and supply of the renewable resources, with consideration of the international resource situation, and an emphasis of pertinent supply, demand and price relationships trends".

“The sense of creativeness, refreshment and pleasure which the recreationist has while recreating or having a good time can be viewed as the recreationist realizing satisfactory experiences. The recreationist attains these satisfactory experiences by participating in preferred recreation activities in preferred surroundings or settings. Therefore although the recreation resource manager manages settings, he or she does so to provide opportunities for recreation experiences and the benefits those experiences produce for individuals and society. Those experiences are influenced by many factors: the settings, the activities, other resources present, activities by managers, and by the values, expectations and other characteristics of the recreationists. These factors interrelate to define outdoor recreationists' needs and the way these needs are met by management action.”

“Managing for recreation requires different kinds of data and management concepts than does most other activities. While recreation must have a physical base of land or water, the product - recreation experience - is a personal or social phenomenon. Although the management is resource based, the actual recreational activities are a result of people, their perceptions, wants, and behavior. “

“The word opportunity is defined as a combination of circumstances favorable for a purpose. The purpose or goal of the recreationist, as discussed above, is to realize satisfying experiences.

This is done by participating in preferred activities in preferred environmental settings. Thus, recreation opportunity is the availability of a real choice for a user to participate in a preferred activity within a preferred setting, in order to realize those satisfying experiences which are desired."

The March 2010 Forest Service document, Draft Evaluation of the Need for Change, notes in the Analysis of the Management Situation section that "the most primitive class in the ROS system is Primitive (P). This class is characterized as being essentially unmodified; at least 5000 acres in size and at least 3 miles from all roads, railroads, or utility corridors. There are no Primitive (P) ROS class areas inventoried on the forest and there is little or none of it known to exist anywhere in the East." (page AMS-163)

The draft plan notes that "the demand for outdoor recreation opportunities…outweighs the forests supply." (page 2-22)

"While the goal of the recreationist is to obtain satisfying experiences, the goal of the recreation resource manager becomes one of ***providing the opportunities for obtaining these experiences".*** By managing the natural resource, and the activities that occur within it, the manager is providing the opportunities for recreation experiences to take place. " (emphasis ours) (USFS Recreation Opportunity Spectrum Users Guide -1982)

Due in part to their heavily roaded nature, there is not a single primitive recreation area available in any eastern national forest. Given this, the opportunity to create a large, unfragmented area in the GW which meets the criteria for Primitive ROS class is highly desired and highly valued. The GW has the most and best potential in the East to provide primitive recreational opportunities.

The draft plan defines road closure as "a technique used by management to regulate and control the use of facilities to achieve transportation economy, user safety, protection of the public investment, and accomplishment of forest resource objectives. It may be intermittent or long term." (Appendix F – Glossary, page F-38)

In its discussion of the Recreation Opportunity Spectrum (ROS), the DEIS notes that "increasing remote settings may be associated with road closures in some areas, both seasonal and permanent. Closing roads increases the satisfaction of visitors that prefer solitude and fewer disturbances by motorized vehicles." (page 3-209)

The draft plan and DEIS have the responsibility to consider using road closures as a tool to fulfill its requirement to at least consider and at most to implement actions necessary to create an area which meets the Primitive ROS designation in the GW.

The area which currently comes closest to fulfilling the criteria for primitive recreation and that has the most obvious potential to provide primitive recreation is Little River. The DEIS notes that the 30,227 Little River PWA "is the largest area in the inventory and possibly the largest block of land to meet potential Wilderness criteria in the east. It has a huge core of about 20,500 acres of semi-primitive ROS class that offers significant opportunities for isolation, primitive

recreation and physical challenge. This is the largest PWA; and with its proximity to existing Ramsey's Draft Wilderness, offers a significant opportunity on the GWNF to provide adjacent Wildernesses that cumulatively are a substantial size." (Appendix C, DEIS)

The final forest plan should designate the entire Little River PWA as Wilderness Study Area (note that standard 1B-007d for recommended Wilderness Study Areas states that "use of bicycles on existing trails can continue." (page 4-33, draft plan)) At least one of the seven plan alternatives should consider implementing strategic road closures and any other measures needed to create an area of primitive recreational opportunity in Little River PWA.

Special Biological Areas and Related Management Prescription Areas.

Properly identifying, designating, and managing Special Biological Areas (SBAs) is critical to protecting and conserving biodiversity in the George Washington National Forest (GW). As the draft forest plan states (p. 4-54), SBAs "*serve as core areas for conservation of the most significant and rarer elements of biological diversity identified to date on the Forest*." Management of SBAs seeks to "*perpetuate or increase existing individual plant or animal species and communities that are of national, regional, or state significance and identified as threatened, endangered, sensitive, or locally rare*."

In most states across the country, Natural Heritage programs are in place to identify and monitor sites statewide that are biologically significant and necessary for conserving biodiversity. The Natural Heritage programs in West Virginia and Virginia include the GW in their surveys and research and have communicated with the GW staff historically on SBAs, related management areas, and management issues. The forest plan should incorporate all recommendations for SBA designations that are made by the Natural Heritage programs (more details below).

There are a number of ways the draft forest plan needs to be improved. A management document should be developed for each SBA in the forest. At a minimum, the documents should describe the critical resources of the SBA and guiding principles for managing them. Specific management goals should be developed for some SBAs, including those with the most sensitive and vulnerable resources. The current plan does not require such documents, and no such documents have been created since the plan was adopted in 1993.

As new information is developed about Threatened, Endangered, Sensitive (TES) and locally rare species, management of SBAs should be adjusted to incorporate the new knowledge. In particular, if new biologically significant sites are identified in the forest, either by GW staff or the Natural Heritage programs, they should be managed as SBAs until such time as the forest plan is amended to designate them as such. The forest plan should require this. Forest Service staff should work very closely with Natural Heritage programs as new sites and information become known.

Several other management prescription areas are similar in nature and function to SBAs, and are critical in conserving biodiversity in the GW. These include Designated Wilderness (prescription 1A), Recommended Wilderness Study Area (1B), Research Natural Area (4B), Geologic Area (4C1), Key Natural Heritage Community Area (4D1), Indiana Bat Primary

Protection (8E4a), and Shenandoah Mountain Crest-Cow Knob Salamander (8E7). Designation of conservation sites recognized by Natural Heritage programs to these management prescription areas (rather than SBA) is appropriate in some circumstances, if revisions to some management standards are made (as discussed below). Assigning conservation sites recognized by Natural Heritage programs to management prescription areas other than these is not appropriate without compelling reasons and full explanation and justification.

Some of the management standards for SBAs (and Key Natural Heritage Community Areas, which have the same management standards as SBAs) should be revised. Most troubling is standard 4D-014, which makes SBAs available for federal oil and gas leasing with controlled surface use (CSU). The special, critically important areas designated as SBAs should not be available to oil and gas leasing in any form. Oil and gas leasing with CSU is also allowed in Geologic Areas under the draft plan. As with SBAs, this is not appropriate.

Similarly, the standards for roads (4D-019a, 4D-019b) allow construction of new permanent roads. The potential chronic disturbance of oil and gas leasing activities and permanent roads is counter to the purpose of SBAs, and should not be allowed. For the many SBAs and similar management areas that occur within Inventoried Roadless Areas (e.g., Salus Springs, Dry Run, Big Levels, etc.), allowing new permanent roads is counter to the 2001 Roadless Area Conservation Rule. At numerous public meetings, GW staff stated the draft forest plan would manage Inventoried Roadless Areas consistently with the 2001 rule.

The standard for timber management, 4D-007, is also inappropriate as worded. Commercial timber sales are described as "*an appropriate method of reducing costs*" associated with vegetation management activities. Commercial timber sales and any potential timber harvest should be allowed only when it is beneficial to or compatible with the biological resources for which the SBA was established. Standards for vegetation management (4D-006) and salvage logging (4D-007a) are explicit in stating that activities must be compatible with biological resources, and standard 4D-007 should be explicit on this point also.

Some management standards for the Shenandoah Mountain Crest-Cow Knob Salamander also need to be revised. Standards 8E7-020 and 8E7-021 allow federal oil and gas leasing with CSU to occur. Even though some leases currently exist, and private mineral rights occur in parts of Shenandoah Mountain Crest, no new leases should be permitted where mineral rights are federally owned. Two of the standards for roads (8E7-024, 8E7-026) are also troubling. These allow some flexibility in road construction, reconstruction, and construction of parking facilities. As with SBA road standards, this is not consistent the 2001 Roadless Area Conservation Rule, as the vast majority of Shenandoah Mountain Crest occurs within Inventoried Roadless Areas. These disturbances should not be allowed in the Shenandoah Mountain Crest.

There are some positive developments in the draft plan relative to SBAs. The expansion of the Big Levels SBA is welcome, as is the creation of some new SBAs. The newly designated Cast Steel Pond wetland area is a sensitive site that merits the SBA designation. However, the draft plan should incorporate <u>all</u> the recommendations of the Virginia and West Virginia Natural Heritage programs in designating and managing SBAs. The locations <u>and</u> sizes of areas recommended by the Natural Heritage programs should be followed.

Unfortunately, the draft plan does not meet all the recommendations of the Virginia Division of Natural Heritage (VDNH). Many of the SBAs in the draft plan are smaller in size than recommendations made by VDNH. In fact, of the approximately 122,500 acres recommended for SBA by VDNH, only about 109,000 acres are designated as SBA or one of the seven related management prescription areas described above (VDNH, Sept. 2011). This means that many biologically significant sites recognized by VDNH are in inappropriate management prescription areas. At least 43 sites in the GW that VDNH has identified as biologically significant and recommended for SBA designation include areas assigned to Mosaics of Habitat (VDNH, Sept. 2011). More than 3200 acres of the VDNH sites are assigned to Mosaics of Habitat.

Mosaics of Habitat is clearly an inappropriate management prescription area for sites that VDNH recommends for SBA designation. Other management prescriptions, such as Scenic Corridor and Viewshed, Indiana Bat Secondary Protection and others, are assigned to portions of VDNH recognized sites that were not included in SBAs. These management prescription areas pose potential problems for the proper management of these biologically sensitive sites that should be designated as SBAs.

The Shenandoah Mountain Crest-Cow Knob Salamander management prescription area illustrates the problem. The Virginia portion of this area is smaller in size than the VDNH recommendation. Portions of the site that are outside the prescription area but within the area recommended by VDNH fall into several management prescription areas, including Mosaics of Habitat.

Frozen Knob and Peters Mountain North also illustrate the problem. Both were assigned to a new management prescription area, Key Natural Heritage Community Area, in order to protect the very high quality old growth forest habitat occurring there. The new designation and identification of these two areas is very positive. However, only 3307 acres are designated as Key Natural Heritage Community Areas in the draft plan. This is approximately 1868 acres less than the VDNH recommendation. The 1868 acres not included in the site are assigned to Mosaics of Habitat, as is all the area of the national forest surrounding the two sites. Again, Mosaics of Habitat is clearly an inappropriate management prescription for these two sites.

Wood Turtles.

An example of incorporating the most current information in managing the forest is the TES list. The list is currently developed and maintained by the US Forest Service Regional Office in Atlanta, and has not been formally updated in many years. In recent months, a locally rare species inhabiting the GW, the wood turtle (*Glyptemys insculpta*), was reclassified by NatureServe from a G4 species (described as "Apparently Secure" globally) to a G3 species ("Vulnerable" globally). The classification of "Vulnerable" is defined as "*At moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors*." The draft plan does not incorporate this recent classification change. GW staff must use information of this sort immediately in making management decisions, and not be reliant upon receiving an officially updated list.

The reclassification of the wood turtle highlights two things: 1) the need to designate an SBA specifically to conserve the existing population in the GW, and 2) the need for the Forest Service to classify the wood turtle as a "sensitive species." The 2009 Wood Turtle Species Conservation Strategy for the GW, which is largely incorporated in the draft forest plan (beginning at page G-55 of Appendix G, DEIS), is inadequate for long term protection of the species. Though a wood turtle "Emphasis Area" is identified, and several "Goals and Conservation Measures" are given, there are no mechanisms to ensure the Emphasis Area is sufficiently protected and that Conservation Measures are enacted.

Further, the Goals and Conservation Measures lack information specific enough to guide forest management. For example, Conservation Measure 1.01 (page G-55) states "*Maintain or create openings in riparian areas for turtle foraging and thermoregulation.*" There is no information provided about the desired number, size, or spacing of openings, the desired physical or vegetative characteristics of the openings, or how they relate to overall physical and vegetative qualities of the riparian areas as a whole. In fact, Section 4 of the Species Diversity Report of the draft plan (Appendix F of DEIS) lists five distinct ecological systems that the wood turtle is associated with: late successional hardwood dominated forest, grassland, shrubland, open woodland, and riparian areas.

Without more specific information and guidance, the Goals and Conservation Measures are open to widely different interpretation and are not useful in making management decisions. To help ensure long term viability of the wood turtle population in the GW, the "Emphasis Area" should be expanded in size and designated as a Special Biological Area.

Cerulean Warbler.

The cerulean warbler (*Dendroica cerulea*) is a prime example of a bird species with dangerously declining population levels that could benefit from proper management of their habitat on the GW. As an "area-sensitive", forest interior breeding bird, large land areas like the GW are necessary for the long term viability of their population. Breeding Bird Survey data from 1967 through 2007 show a population decline of approximately 80%, with much of the decline occurring in the warbler's core breeding range (J.R. Sauer et al., The North American Breeding Bird Survey, Results and Analysis 1966-2007, Version 5.15.2008, USGS Patuxent Wildlife Research Center, Laurel, MD, at www.mbr-pwrc.usgs.gov/bbs/bbs.html).

The cerulean warbler population is obviously in trouble. Management measures for the species in the draft plan will be ineffective however, and possibly counterproductive. Comments submitted on the draft plan by Southern Environmental Law Center, Southern Appalachian Forest Coalition, Virginia Forest Watch, The Wilderness Society, and other organizations on October 17, 2011, provide good discussion and recommendations for managing cerulean warbler habitat in the GW. We incorporate the referenced comments herein.

Management Indicator Species.

We believe the 14 Management Indicator Species (MIS) listed in Table 2.5 of the draft plan (page 2-15) are of limited value as overall indicators of the effects of forest management. Page 3-

342 of the DEIS states MIS are "*selected during forest planning 'because their population changes are believed to indicate the effects of management activities' (36 CFR 219.19(a)(1)) on important elements of plant and animal diversity."*

The MIS list includes one fish (the only aquatic species), one salamander, three mammals, and nine birds. No reptiles, invertebrates, plants, or fungi are on the list. We believe species that are more sensitive to active forest management should be used as MIS. Though the Cow Knob salamander (*Plethodon punctatus*) is sensitive to disturbance and activities, its very restricted range diminishes its value as a forest-wide MIS.

The eastern red-backed salamander (*Plethodon cinereus*) would be a very appropriate MIS, as an indicator of activities harmful to amphibians and, conversely, an indicator of healthy, resilient forest ecosystems. It is known to occupy the entire range of the GW. The Virginia Fish and Wildlife Information Service, BOVA Booklet notes it is "*absent from highly acidic soils with pH <3.7*".

The MIS list should be revised to include greater diversity of taxa and species that more directly reflect the effects of forest management activities. Other comments submitted on the draft plan advocate that fungal species in general, and the honey mushroom (*Armillaria mellea*) in particular, be used as a MIS in the final plan. We encourage full consideration of this.

Old Growth.

We support implementing the Region 8 Old Growth Guidance, as the draft plan seeks to do. Old growth forests are a tremendously valuable resource that contribute mightily to conserving biodiversity and mitigating the effects of climate change through carbon sequestration.

We are disappointed that the draft plan would allow harvest of two types of old growth communities – Dry-Mesic Oak Forest (type 21) and Dry & Dry-Mesic Oak Pine Forest (type 25). The current (1993) plan does not allow harvest of type 25. We also believe that mesic sites containing old growth forest are less common in the GW than dry sites, and are deserving of increased attention and protection.

We endorse and support comments submitted on old growth issues in the draft plan by Southern Environmental Law Center, Southern Appalachian Forest Coalition, Virginia Forest Watch, The Wilderness Society, and other organizations on October 17, 2011, and incorporate the referenced comments herein.

Forest Restoration.

We strongly advocate true ecological restoration of watersheds and ecosystems in the GW. The draft plan identifies and emphasizes the need for restoration of many resources, including watersheds, riparian resources, aquatic diversity, and soil quality. We have concerns though about some aspects of the draft plan, including the lack of discussion and analysis of the role that natural disturbance plays in creating early successional habitat across the forest.

We are also concerned about the term "open woodland" as it is used in the draft plan and DEIS. In some document sections, the term is vague and not well-defined, even though there are ambitious goals for creating open woodland (e.g., Tables B.1.1 and B.2.2 of the DEIS). Both the extent (i.e., acreage) and locations for potential open woodland creation must be justifiable based on ecological grounds and physical site conditions.

We endorse and support comments submitted on restoration issues, particularly in relation to natural disturbances and open woodland, in the draft plan by Southern Environmental Law Center, Southern Appalachian Forest Coalition, Virginia Forest Watch, The Wilderness Society, and other organizations on October 17, 2011, and incorporate the referenced comments herein.

Wind Energy.

We are very concerned about the potential for industrial scale wind energy projects that the draft plan allows. We recognize the need to shift to renewable energy sources for producing electricity in the United States. The environmental benefits of moving away from fossil fuels, nuclear power, and other common sources of generating electricity are numerous and significant. However, we have serious concerns about siting large wind turbines on the ridgelines of the GW.

The draft plan identifies 11 management prescription areas, totaling approximately 456,000 acres, as unsuitable for utility scale wind energy development. This leaves roughly 610,000 acres of the GW available for consideration of wind energy projects. Of this, 39,236 acres of ridge crest, is judged "suitable for consideration of wind energy development" (based on areas classified in wind power classes 3 through 7). Due to the inevitable impact on wildlife and habitat, we believe that all areas of the GW are inappropriate for large scale wind energy projects. The benefits of this type of development in GW have not been demonstrated, but the direct impacts to wildlife, habitat fragmentation, ground disturbance, water resource degradation, and industrial intrusion on forested mountain landscape that would result are clear.

Any consideration of wind energy development on the GW should involve National Environmental Policy Act review, including objective assessment of both costs and benefits. The final plan should include an explicit standard requiring that any permit application for any project related to wind energy development shall include reviewable data and analysis that quantifies any purported benefits associated with the particular proposed project.

Although large-scale wind energy development has been promoted as part of the solution to some of our most pressing energy and environmental challenges, the limited available analysis indicates that wind energy is, at best, only a small part of the solution. Wind energy is highly diffuse and intermittent, and wind energy development requires a large footprint to generate relatively small amounts of electricity. A 2007 National Research Council report, *Environmental Impacts of Wind Energy Projects*, incorporated herein by reference, found that the most ambitious level of onshore wind development could satisfy only 3.5 to 19% of the projected increase in U.S. electricity demand through 2020 and offset U.S. carbon emissions by only 1.2 to 4.5%. Given that 95% of the U.S. onshore wind resource is located in the western part of the country, the potential contribution of wind energy development on central Appalachian ridges is

substantially less (National Research Council, 2007. Environmental Impacts of Wind Energy Projects. Washington, DC: National Academy Press, http://www.nap.edu/catalog/11935.html).

In addition to other environmental damage associated with wind energy development, impact with wind turbines is a significant cause of bird mortality. In 2009, the U.S. Fish and Wildlife Service estimated that 440,000 birds are killed at wind farms each year (A. Manville. 2009. Towers, Turbines, Power Lines and Buildings – Steps Being Taken by the US Fish & Wildlife Service to Avoid or Minimize Take of Migratory Birds at These Structures. Proceedings of the Fourth International Partners In Flight Conference). Sadly, the direct mortality of birds by wind turbines has not been adequately studied to this point in time. This lack of data is true of the ridgelines of the Appalachian and Alleghany Mountains, where migrating songbirds and raptors often occur in great numbers.

It is widely known that many raptors, and golden eagles (*Aquila chrysaetos*) in particular, are susceptible to collisions with turbine blades. Recent research has shown that the population of golden eagles in eastern North America is small, and that a large proportion of these birds both travel through and overwinter in the Appalachian Mountains. Although the golden eagle is rare in the eastern U.S., recent research has shown that wintering golden eagles often concentrate on forested ridges in the central Appalachian region. These are the same areas that show the most potential for wind energy development in the GW. Given the significant risk to these birds posed by wind development, areas of coincident golden eagle use and potential wind energy development should be carefully determined before any decisions are made to allow wind development in the GW. We also recommend adherence to the requirements of the Bald and Golden Eagle Protection Act a prerequisite for wind project consideration.

The potential impacts of wind turbines to bat populations are even less studied and known than potential impacts to birds. The federally endangered Indiana bat (*Myotis sodalis*) occurs in the GW. The federally endangered Virginia big-eared bat (*Corynorhinus townsendii virginianus*) occurs on private lands near the GW, though no known hibernacula or summer roosts have been documented in the GW. The bats likely fly over and forage in the GW though (Appendix F, DEIS).

Of tremendous concern is the white-nose syndrome (WNS) that is decimating bat populations in the northeastern U.S. and beyond. Since first observed in 2006 in New York, it has been blamed for the death of more than 1 million bats and has spread to many states, including Virginia and West Virginia. It is a threat to many species of bats, and is known to occur in Indiana bats. Scientists fear WNS is a threat to Virginia big-eared bats as well, as the fungus that causes the syndrome, *Geomyces destructans,* has been found in caves where the bat hibernates (Smithsonian Conservation Biology Institute website, 13 Oct. 2011, http://nationalzoo.si.edu/scbi/SpeciesSurvival/VirgianiaBigEaredBats/default.cfm). Given existing threats to bat species, particularly these two endangered species, the additional threat posed by industrial scale wind energy development should not be allowed in the GW.

It is important to note that birds and bats are threatened not only by mortality from collisions with wind turbine blades, but from degradation, fragmentation, and loss of habitat as well. Development of industrial wind facilities (generally requiring 2-5 acres of cleared land for each

industrial sized wind turbine), transmission-line corridors, and corresponding access roads will negatively impact populations of many wildlife species through habitat loss and damage.

One of the perceived benefits of wind energy production is a reduction in greenhouse gas emissions when generating electricity, thus reducing a primary cause of global warming. It is highly ironic then, that some of the most critical natural areas required by flora and fauna in adapting to climate change – the ridgeline and high elevation areas of the eastern mountains – will be removed if wind energy facilities are developed. The need for animal and plant populations to move along both elevation and latitudinal gradients in response to changing climate conditions will be severely impacted by eliminating or degrading these very habitat areas.

Hydraulic Fracturing, Oil & Gas Leasing.

We strongly support the prohibition on horizontal drilling in the draft plan. This will reduce the risk of serious water quality degradation and other environmental concerns associated with hydraulic fracturing. Please keep this prohibition in place.

We are very concerned about the degree of oil and gas leasing that will be possible under the draft plan. Approximately 994,000 acres, or 93% of the forest, will be open to oil and gas leasing in some form. Approximately 556,000 acres will be open to standard lease terms (as opposed to No Surface Occupancy, Controlled Surface Use, etc.), an increase of 411,000 acres from the current (1993) plan.

The full potential impacts of vertical wells, including the hydraulic fracturing that typically accompanies them, have not been adequately analyzed in the draft plan or DEIS. Much more analysis of potential surface area and ground disturbance and impacts to water quality, biodiversity, scenic and recreational resources, and other natural resources is needed. Comments submitted by Southern Environmental Law Center, Southern Appalachian Forest Coalition, Virginia Forest Watch, The Wilderness Society, and other organizations on October 17, 2011, include a discussion of the need for further analysis, and we incorporate the referenced comments herein.

Oil and gas leasing should not be allowed in the GW where mineral rights are federally owned. Further leases should not be made available and existing leases should be removed from lease availability when they expire.

Woody Biomass.

As we stated in comments jointly submitted with Heartwood on July 6, 2009 and May 6, 2010 on the forest planning process, woody biomass is a significant issue on the GW as forests and trees are becoming increasingly desirable as a source of energy.

There are significant environmental, economic, and ecological problems with woody biomass, though. Among the resources that are likely be negatively impacted are water quality, air quality, soil fertility, fish and wildlife habitat, and recreational areas. Sourcing for and the

harvesting of woody biomass on the GW is incompatible with other uses of the forest. Biomass production and sourcing, as well as whole tree harvesting techniques in particular, should be prohibited in the GW.

There are many detailed and thorough accounts of the negative impacts of using woody biomass as a source of energy. Among the best reports are:

- Massachusetts Biomass Sustainability and Carbon Policy Study: Report to the Commonwealth of Massachusetts Department of Energy Resources. Walker, T., editor. Manomet Center for Conservation Sciences. 2010.
- Biomass Electricity in the United States: The case for ending taxpayer and ratepayer subsidies for this form of "renewable" energy. Sheehan, M., Chirillo, S., Schlossberg, J., Sammons, W., Leonard, M. Biomass Accountability Project. June, 2011.

Comments on the draft plan and DEIS submitted by Heartwood on October 17, 2011 detail many of the specific environmental, economic, and ecological problems associated with woody biomass harvesting. Their comments also describe and discuss the problems associated with the analysis of woody biomass issues in the draft plan and DEIS. Their comments are incorporated herein by reference.

Climate Change.

In dealing with the effects of climate change, standing forests and soils are more valuable as carbon sinks than in using forest resources as fuel or as a source of renewable energy. The final plan for the GW should not allow further gas and oil leasing, industrial scale wind energy development, whole tree harvesting, or timber harvesting for biomass incineration.

The draft plan does not adequately address climate change concerns or forest management activities designed to reduce its impacts. Comments submitted by Southern Environmental Law Center, Southern Appalachian Forest Coalition, Virginia Forest Watch, and The Wilderness Society on October 17, 2011, include recommendations for improving ways to address climate change in the draft plan, and we incorporate the referenced comments herein.

Timber Harvest.

Annual timber harvest levels in the GW have generally declined since the current plan was completed in 1993. This is a welcome trend. We believe the draft plan's objective for annual timber harvest should be lower than stated range of 1800-3000 acres/year.

Good management direction for timber harvest is lacking in the draft plan. There are few standards for timber management, and they written more as guidelines that lack explicit or strict language. We are concerned about timber harvest on steep slopes and believe a clear standard is needed. The analysis of lands suitable for timber production did not screen out all steep slopes from the suitable lands. It explicitly considers logging on slopes steeper than 30%, including ground-based logging on slopes up to 35% (draft plan, page 4-13). Forestwide Standard FW-111 (page 4-13) recommends using cable, helicopter or other advanced harvesting techniques on land sloping 35% or more.

Comments submitted by Southern Environmental Law Center, Southern Appalachian Forest Coalition, Virginia Forest Watch, and The Wilderness Society on October 17, 2011, include a discussion of the weaknesses in the timber and vegetation management direction of the draft plan and the lack of full economic analysis of the various types of harvesting methods that may be used. We incorporate the referenced comments herein.

Timber Suitability Analysis.

We endorse and support comments submitted on timber suitability analysis in the draft plan by Southern Environmental Law Center, Southern Appalachian Forest Coalition, Virginia Forest Watch, The Wilderness Society, and other organizations on October 17, 2011, and incorporate the referenced comments herein.

Social and Economic Analysis.

We endorse and support comments submitted on the social and economic analyses in the draft plan by Southern Environmental Law Center, Southern Appalachian Forest Coalition, Virginia Forest Watch, The Wilderness Society, and other organizations on October 17, 2011, and incorporate the referenced comments herein.

Maximizing and Monitoring Long Term Net Public Benefits.

1. The DEIS fails to implement a methodology or present a comparative analysis of the long term Net Public Benefits of the alternatives considered.

2. The DEIS fails to offer an alternative that specifically contains those management directives, goals, objectives and prescriptions that maximize long term Net Public Benefits.

3. The draft plan fails to create a monitoring and evaluation plan for determining and evaluating the effects of the management plan, management practices, and projects on long term Net Public Benefits.

4. The GW planning team, Supervisor and Regional Supervisor have failed to choose as the preferred alternative that alternative (from the range of alternatives presented) which specifically maximizes long term Net Public Benefits.

5. The draft plan and DEIS fail to consider these issues and requests as raised in the Conservation Alternative, submitted by Wild Virginia and Heartwood on May 06, 2010, as comments on the Notice of Intent.

In its opening paragraph, the 1982 National Forest System Land and Resource Planning Rule states “the resulting plans shall provide for multiple use and sustained yield of goods and

services from the National Forest System in a way that ***maximizes long term net public benefits in an environmentally sound manner.***" (emphasis ours) (47 FR 43037, Sec 219.1)

The term "net public benefits" is defined in the 1982 NFMA regulations as "An expression used to signify the overall long-term value to the nation of all outputs and positive effects (benefits) less all associated inputs and negative effects (costs) whether they can be quantitatively valued or not. Net public benefits are measured by both quantitative and qualitative criteria rather than a single measure or index. The maximization of net public benefits to be derived from management of units of the National Forest System is consistent with the principles of multiple use and sustained yield."(Sec. 219.3)

In other words, Net Public Benefit comprises 1) Revenues (benefits) and Expenditures (costs) that can be valued in Dollars, and 2) Non-Monetary Costs (inputs, negative effects) and Benefits (outputs, positive effects) expressed in quantitative or qualitative terms including Ecosystem Services valuations.

Long term Net Public Benefits of a plan alternative are maximized when, over the 10-15 duration of the implementation of that alternative:

1. The public benefits derived from the provision of goods and services—including Ecosystem Services—as outlined in the alternative are higher than the public costs incurred in providing them,
2. The stock, store, supply and value of the goods and services—including Ecosystem Services—available is maximized so that the potential yield of goods and services could be maximized over the term of the alternative, and
3. There is no conceivable other mix of goods and services—including Ecosystem Services—or use of resources that could provide any higher long term Net Public Benefit.

Within the constraints of its budget, the Forest Service maximizes long term Net Public Benefit by creating, considering and choosing the alternative that generates the greatest long term Net Public Benefit over those that create a lower long term Net Public Benefit or a net loss. Long term Net Public Benefit for an alternative is maximized when management directives, goals, objectives and prescriptions allow and encourage those management activities that increase the supply and value of goods and services and strictly limits or eliminates those management activities that decrease the value of goods and services so that the supply and value of available goods and services is maximized.

What does it mean when long term Net Public Benefit is not maximized? It means that when both monetary and non-monetary effects of the forest plan are considered and estimated, that a different use of funds, pursuing different activities, or refraining from particular activities could provide society with a higher long term Net Public Benefit than the one achieved by the GW Plan. Long term Net Public Benefit cannot be maximized when activities allowed under one alternative that have a lower long term Net Public Benefit are preferred over activities that are allowed by another alternative which have a higher long term Net Public Benefit.

The Forest Service, both in its forest planning, implementation and monitoring, has consistently failed to fulfill its legally required responsibilities with regard to long term Net Public Benefits.

For example, neither the 1993 Final Revised Land and Resource Management Plan nor the 1993 Final Environmental Impact Statement for the Revised Land and Resource Management Plan for the George Washington National Forest (1993 FEIS) contain any substantive mention of long term Net Public Benefits. The 1993 FEIS uses the term twice: the term "net public benefit" is defined in the glossary (Glossary-5) and is mentioned once in reference to 1982 regulatory requirements (The Analysis Process, Appendix B, page B-90). Neither the 1993 Final Revised Land and Resource Management Plan nor the 1993 FEIS contain any long term Net Public Benefit analysis, comparative or otherwise.

The 2011 DEIS appears to use Present Net Value as a proxy for long term Net Public Benefit. This fails to meet Forest Service responsibilities and results in comparative economic analysis which totally ignores the value of the stock of resources—increasing or decreasing—over the long term. It also fails to include any valuation of Ecosystem Services—a critical component of long term Net Public Benefits—over the term of the plan.

The only references in the DEIS to Net Public Benefit make note of the NFMA regulations and states that "for resources that have no values estimated by generally accepted methods, we will discuss them in a narrative fashion as part of the assessment of net public benefits that is made in the Record of Decision…" (page 3-297). The DEIS then presents Table C12.19: Cumulative Decadal Present Net Value of Benefits and Costs, which compares various components of cost and benefits by program among the seven plan alternatives.

The complete absence of accounting for Ecosystem Services, and the failure of any analysis that values the stock of resources under these alternatives, demonstrates that net present value cannot substitute for long term Net Public Benefits.

The draft plan and DEIS do not analyze, assess, or compare long term Net Public Benefits under different management scenarios, as required by NFMA regulations. "While the concept of net public benefits is widely discussed in the economics literature and while various statutes and administrative directives suggest that this is indeed a goal of national forest management, the reality is that there is no objective way to determine when this goal is achieved—too many relevant factors cannot be quantified, let alone expressed in monetary terms. In a democratic society such as ours, the presumption is that net public benefits will be maximized as diverse stakeholders compete with one another through the political process (directive from Ann M. Bartuska, Director, USFS Forest and Rangeland Staff to Regional Directors, File Code: 2400, November 6, 2000)." To defer responsibility for clear economic analysis to a "democratic political process," is irresponsible on the part of the Forest Service and not acceptable.

The absence of any comparative long term Net Public Benefit analysis in the DEIS prevents the agency from making a determination of which alternative maximizes long term Net Public Benefit. Moreover, the absence of any comparative long term Net Public Benefit analysis denies the public critical information with which to compare alternatives and/or determine which alternative, in fact, maximizes long term Net Public Benefit.

The most clear, specific and relevant analysis of Net Public Benefit can be found in;

- *Economic Contributions and Expenditures in the National Forests*, prepared by Karyn Moskowitz, MBA, for the American Lands Alliance and the John Muir Project of Earth Island Institute, Washington, D.C. January 1999.
- *The Economic Case Against National Forest Logging*, Karyn Moskowitz, National Forest Protection Alliance, December, 1999.
- *Economic Analysis of the 2006 Wayne National Forest Plan*, Greenfire Consulting Group, LLC, Heartwood, May, 2008.

Analysis on maximizing long term net public benefit by issue in the George Washington National Forest can be found in:

- *The Conservation Alternative—George Washington National Forest—comments on the Notice of Intent*, Wild Virginia and Heartwood, May 6, 2010.

Conservation Alternative, Other Plan Alternatives.

The Forest Service must consider a full range of alternatives when developing and deciding upon the forest plan. As presented in the DEIS (using Present Value figures, Table C12.19, page 3-297), Alternative C has the lowest budget cost of all seven plan alternatives. It maximizes net public benefits and protects all resource values in the long term. However, because it maximizes creation of Wilderness Study Areas (all of the potential wilderness areas) and minimizes oil and gas leasing on the GW (no oil or gas leases where mineral rights are federally owned and no horizontal drilling), we do not believe it was given full and fair consideration

The oil and gas leasing availability is particularly illuminating. Several plan alternatives prohibit horizontal drilling, but every alternative other than Alternative C makes more than 600,000 acres available for vertical wells. This results in two basic options – no availability and wide availability. With only one plan alternative providing "no availability", the "no availability" option was not seriously considered or analyzed. Failure to do so puts the natural resources of the GW in jeopardy.

Alternative C should be adopted as the Preferred Alternative and as the Final Land and Resource Management Plan for the George Washington National Forest.

Thank you for considering our comments on the draft plan.

Sincerely,

David Hannah

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Attachments

- *The State of Our Water: Managing and Protecting the Drinking Water Resources of the George Washington National Forest.* 2008. Wild Virginia. (http://wildvirginia.org/wp-content/uploads/2009/01/state-of-our-water-full-report.pdf)
- *Towers, Turbines, Power Lines and Buildings – Steps Being Taken by the US Fish & Wildlife Service to Avoid or Minimize Take of Migratory Birds at These Structures*. 2009. A. Manville.
- *White-Nose Syndrome*. From website for Smithsonian Conservation Biology Institute. October 13, 2009. (http://nationalzoo.si.edu/scbi/SpeciesSurvival/VirgianiaBigEaredBats/default.cfm)