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## APPENDIX N – AGENCY RESPONSES TO PUBLIC COMMENTS

### INTRODUCTION

The following is a summary of public comment received regarding the George Washington National Forest Proposed Revised Land and Resource Management Plan (RLRMP) and draft Environmental Impact Statement (DEIS). The comment period was June 3, 2011 to October 17, 2011. We received over 53,000 responses, including letters, emails, resolutions, form letters and petitions. These responses have been analyzed using a process called content analysis.

Content analysis included logging the public respondents and letter numbers into a database, filing copies of every letter, reading the letters, and coding individual requested actions and noted concerns contained within the letters. Each public concern was entered into the database, and given an identifying number that links the specific comment back to the original comment letter. Every effort was made to keep each comment with sufficient context so that it is a stand-alone statement. Comments of a similar nature were combined together to facilitate the development of a response. Once all of the comments were reviewed the Interdisciplinary Team developed responses. The summary of the comment that is displayed in this document often condenses very detailed comments from the letters. When the Interdisciplinary Team members prepared the responses, they reviewed the original comments rather than relying only on the broad summary comment.

The comments received provided valuable input toward development of the Final EIS and Revised Forest Plan. Possible responses to comments included: modifying alternatives, developing new alternatives, improving or supplementing analyses, making factual corrections, or explaining why the comments do not warrant further agency response. The comments were also used to update the draft Forest Plan.

Although this summary and accompanying list of public concerns attempts to capture the full range of public issues and concerns, it should be used with caution. It is important to recognize that the consideration of public comments is not a process in which the outcome is determined by the majority opinion. All comments have been treated equally. They are not weighted by organizational affiliation or status of respondents, and it does not matter if an idea was expressed by thousands of people or a single person. Emphasis is placed on the content of a comment rather than who wrote it or the number of people who agree with it. Although the relative depth of feeling and interest among the public can serve to provide a general context for decision-making, it is the appropriateness, specificity, and factual accuracy of comment content that serves to provide the basis for modifications to planning documents and decisions. Respondents are self-selected; therefore their comments do not necessarily represent the sentiments of the public as a whole. However, these reports do attempt to provide fair representation of the wide range of views submitted. In considering these views, it is important for citizens and decision makers to understand that this process makes no attempt to treat input as if it were a vote. Instead, the content analysis process ensures that every comment is considered at some point in the decision process. Every substantive comment and suggestion has value, whether expressed by one respondent or many.

The comments and responses are grouped by the following resource topics:

Air (Air)	Minerals (MI)
Alternatives (Alt)	Monitoring (MO)
Additional Material (AM)	Net Benefits (NB)
Aquatic Resources (AQ)	Non-Native Invasive Species (NN)
Biologic Resources (BI)	Old Growth (OG)
Biomass (BM)	Process for Preparing the EIS and Plan (PR)
Budget (BU)	Potential Wilderness, Inventoried Roadless & Wilderness (PW)
Climate (CL)	Recreation (R)
Coordination with Other Agencies (CO)	Roads (RO)

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Cultural Resources (CU)	Soils (S)
Economics (EC)	Special Biological Areas (SB)
Energy (EN)	Science (SC)
Facilities (FA)	Timber (T)
Fire (FI)	Trout (TR)
Gas Leasing (GA)	Utilities (U)
Geology (GE)	Visual Resources (V)
Herbicides (H)	Water (WA)
Lands (LA)	Wind (WI)
Management Emphasis (ME)	Wild and Scenic Rivers (WSR)

## AIR

### **Air-1: The Forest Service should assure compliance with air pollution regulations for ozone and fugitive dust.**

During project implementation the Forest Service will comply with all applicable air pollution control regulations.

## ALTERNATIVES

### **ALT-1: The Forest Service should select Alternative A.**

Alternative A would continue management as in the current plan. Comments in favor of Alternative A liked the way the Forest is being managed or perceived that the current plan had fewer restrictions on some management activities. The Record of Decision discusses the reasons for selection of Alternative I and why it was chosen over the other alternatives. In regard to Alternative A, the selected alternative addressed a number of issues that are new since 1993 and addressed new information and research regarding a number of issues.

### **ALT-2: The Forest Service should modify Alternative C or add an alternative to more closely reflect the issues presented in the "Conservationists Alternative."**

The purpose of Alternative C is to represent an emphasis on a large amount of Recommended Wilderness Study areas and very limited active management activities. While it was heavily influenced by the issues presented in the "Conservationists Alternative", it does not exactly duplicate the entire proposed alternative. Alternative C addresses the major issues presented in public comments related to an emphasis on little active management, while still meeting legal requirements for management. In addition, it reflects as close to a viable alternative that incorporates passive management as much as possible. Recreational access (roads) to the national forest is a significant issue that cannot be eliminated or minimized from any alternative.

### **ALT-3: The Forest Service should select Alternative C.**

Alternative C was supported by commenters for a variety of reasons including: all Potential Wilderness Areas would be Recommended Wilderness Study, protection of all old growth, it best addresses climate change with protected core areas and no activities that fragment habitat; all species benefit from no management; it provides the best options for restoration; it is best for tourism and the economy and has the lowest budget to implement; it would keep the forest pristine; more headwaters areas would be protected in wilderness; there would be no prescribed fire which is unnecessary; there would be no timber harvest; there would be no wind development and no gas drilling; all Inventoried Roadless Areas would be protected; all Potential Wilderness Areas would be protected; all Special Biological Areas would be protected; all Virginia Mountain Treasures would be protected; it would reduce impacts from non-native invasive species; and it could be modified to include the Shenandoah Mountain proposal. The Record of Decision discusses the reasons for selection of Alternative I and why it was chosen over the other alternatives. The selected alternative seeks to provide a variety of settings across the forest to address many resource and user needs in a balanced manner. It

addresses many of the same issues as Alternative C, but rather than recommending all of the Potential Wilderness Areas for Recommended Wilderness Study, it recommends 7% of them, the ones with the highest level of support and ones that made for large or larger wilderness areas. The selected alternative identifies about 35% of the forest as core areas where little management activities will occur that will address the desire for old growth and core areas with limited activities that fragment mature forested conditions. Much of the forest is not suitable for wind development. The only acres available for federal oil and gas leasing are the 10,200 acres already under an existing lease. The Special Biological Areas and Inventoried Roadless Areas are not suitable for timber production or road construction. About 56% of the Virginia Mountain Treasures are in protective management prescription areas like Wilderness, Recommended Wilderness Study, Recommended National Scenic Area, Special Biological Areas, and Remote Backcountry Areas. While the selected alternative has a higher budget, it also produces many benefits that Alternative C does not, such as more diverse structure in the ecological systems, more habitat for game animals, more wood products, and more road access within the GWNF.

**ALT-4: The Forest Service should select Alternative C, but modified to include the Friends of Shenandoah Mountain proposal.**

See answer to ALT-3. The selected alternative does include several aspects of the Friends of Shenandoah Mountain proposal including Recommended Wilderness Study for Little River and Recommended National Scenic Area for Shenandoah Mountain.

**ALT-5: The Forest Service should incorporate portions of Alternative C in its preferred alternative, including Recommended Wilderness Study and the treatment of Virginia Mountain Treasures.**

See response to ALT-3. The final selected alternative did include an increase of 27,000 acres of Recommended Wilderness Study and 67,000 acres of Recommended National Scenic Area. However, a recommendation of 386,000 acres for Recommended Wilderness Study would severely limit the progress toward meeting the ecosystem and species diversity objectives. The selected alternative did consider the characteristics of Virginia Mountain Treasure areas that were within Potential Wilderness Areas or within a large block of semi-primitive non-motorized ROS recreation setting for their contribution to preserving those characteristics when allocating the management prescriptions within Virginia Mountain Treasure areas to Remote Backcountry Areas or Mosaics of Habitat.

**ALT-6: The Forest Service should correct errors in the description of Alternative C and its effects.**

The effects analysis does include openings and open woodland conditions from natural disturbances in determining how all alternatives address species diversity objectives. An estimated 1-2% of the forest in openings from natural disturbances and 1-2% in open woodlands is used. In regard to adjacent lands providing habitat for species, one cannot rely on any level of management or non-management on adjacent lands. It is important that the forest attempt to provide habitat for a wide range of species that utilize the forest and not defer habitat management to other landowners. Some of the references to species needing active management have been fixed, as has the discussion about prescribed burning in Alternative C.

**ALT-7: The Forest Service should fully analyze Alternative C.**

Alternative C is fully analyzed in the FEIS and was fully considered in the Record of Decision.

**ALT-8: The Forest Service should select Alternative D.**

Comments in favor of Alternative D generally relate to a desire to have increased timber harvest and creation of early successional habitat, particularly for game species. The Record of Decision discusses the reasons for selection of Alternative I and why it was chosen over the other alternatives. In regard to Alternative D, given past funding and expected future funding, the increases in timber harvest in this alternative are unlikely to occur. The selected alternative projects an increase in timber harvest and while even this projected increase may be difficult to achieve, it is more in line with expected funding than is Alternative D. The selected alternative also better balances some of the concerns from people who want more emphasis on remote settings on the forest. Large remote settings are rare in this geographic area and we have recognized the importance of retaining these areas.

**ALT-9: There are conflicts in the activities proposed in Alternative F.**

One of the comments addresses scenic values. The differences in acreages of lands with low and moderate Scenic Integrity Objectives between the current plan (Alternative A) and the other alternatives are addressed in the selected alternative where scenic integrity objectives have been raised in Management Prescription Area

13–Mosaics of Wildlife Habitat. Another comment described concerns that some land allocations were not appropriate for Alternative F's theme of remote habitats and settings. The alternatives were designed to provide a range of options to address issues. Alternative F addresses a number of issues, not just remote settings. Some of the items raised in the comment are addressed in other alternatives, like Alternative C. The comment also questions why the Management Prescription 12D was developed rather than using the Remote Backcountry prescription 12C used in the Jefferson National Forest Plan. The prescription for 12D was developed to address issues about managing areas in a manner similar to the constraints used in the 2001 Roadless Area Conservation Rule and to allow existing roads to remain open. Existing roads could be considered for decommissioning, but it would be based upon future site-specific analysis.

**ALT-10: The Forest Service should select Alternative F.**

Comments in favor of selecting Alternative F generally refer to its balance among various resources. The Record of Decision discusses the reasons for selection of Alternative I and why it was chosen over the other alternatives. In regard to Alternative F, the selected alternative has modified Alternative G with some of the components of Alternative F.

**ALT-11 & ALT -12: The Forest Service should select Alternative G. The Forest Service should select Alternative G with some modifications.**

Comments in favor of selecting Alternative G generally refer to its balance among various resources and often specifically mention the prohibition on horizontal drilling. The Record of Decision discusses the reasons for selection of Alternative I and why it was chosen over the other alternatives. In regard to Alternative G, the selected alternative is based on this alternative with some changes brought about after review of public comments on the Draft EIS and Draft Plan. The selected alternative does not allow any new federal oil and gas leasing.

**ALT-13: The Forest Service should not select Alternative G.**

Comments recommending against the selection of Alternative G identify reasons such as: allowing the cutting of old growth timber in two old growth forest types, additional road construction, only a small amount of Recommended Wilderness Study, limitations on timber harvest, the reliance on timber harvest and prescribed burning, and insufficient protection of water quality. The selected alternative does allow for vegetation management and some associated road construction to allow for the creation of habitat to meet the needs of a wide diversity of species. Given the aging of the forest, the selected alternative also allows for the harvest of stands that meet the definition of old growth in the more common vegetation types to meet the needs for ecological diversity objectives, given the current age class distribution of the forest. The amount of Recommended Wilderness Study and Recommended National Scenic Areas did increase in the selected alternative and protection of water quality remains one of the highest priorities of the forest.

## ADDITIONAL MATERIAL

**AM-1: The Forest Service should consider the additional information previously sent or in the referenced documents.**

The Forest Service has reviewed the material submitted in public comments. This information was used in the final analysis.

## AQUATIC RESOURCES

**AQ-1: The Forest Service should improve its analysis of aquatic species viability.**

Within the Terrestrial Species Diversity and Viability analysis, the riparian species group is addressed generally through the establishment of standards to guide management of activities in riparian areas (FEIS page 3-145). A more specific aquatic/riparian species viability analysis is covered under the Aquatic Species Viability Evaluation (Section B4A). We have included additional information describing how and why species protection would increase or decrease for each alternative (e.g. by widened riparian corridors, through recognition of channeled ephemeral streams, by avoiding activities that would increase sedimentation, by restoring and enhancing water quality and aquatic habitat, by providing the optimal aquatic habitat and water quality which cannot be ensured on private lands). Appendix H lists the species by watershed by alternative.

**AQ-2: The Forest Service should reevaluate plan direction for standards for dams.**

Riparian corridors are generally unsuitable for new human created stream channel impoundments, but may be considered on a project-specific basis, consistent with appropriate Federal and state regulations. Impoundments will generally be designed to allow complete draining, with minimum flows, cold-water releases, and re-aeration in trout waters and other specific waters when needed. Downstream catch basins and fish ladders are constructed for fish salvage/passage, if necessary. New human-constructed impoundments are unsuitable on streams where federally listed species will be negatively affected (Standard 11-057). The desired condition for riparian corridors includes stream structures that do not decrease in-stream connectivity, with the exception of some existing dams (Plan DC 11-07).

**BIOLOGICAL RESOURCES****BI-1: The Forest Service has addressed threatened and endangered species.**

We agree.

**BI-2: The Forest Service should update its list of species to be addressed under the ESA and implement consultation with the US Fish & Wildlife Service.**

The list has been agreed to with the U.S. Fish & Wildlife Service and we did consult on the Forest Plan.

**BI-3: The Forest Service should improve the analysis of habitat needs for threatened and endangered species.**

The analysis has been updated and includes the Virginia northern flying squirrel (which changed status since the Draft Plan was released) and additional information on shale barren rock cress in relation to burning.

**BI-4: The Forest Service should analyze the alternatives in relation to effects on TES species.**

For the Virginia northern flying squirrel, Big Levels salamander and shale barren rock cress, all known occurrences are protected in Special Biological Areas in all alternatives. Special Biological Area (SBA) designation protects the values for which the SBA was created. Thus, these species receive a high degree of protection in all alternatives. Some sword leaved phlox populations are protected in SBAs. Where there are populations of a single rare species, such as sword leaved phlox and rock skullcap, these populations will be protected as occurrences under all alternatives during project-level analysis. Chapter 3, Section B2B contains a discussion of the alternatives in relation to the Indiana bat. The Species Diversity Report (EIS, Appendix E) contains a species-specific analysis to evaluate whether additional provisions were needed for federally listed terrestrial species and the Aquatic Ecological Sustainability Analysis (EIS, Appendix G) did the same for aquatic species. The FEIS also contains viability outcomes for TES species by alternative.

**BI-5: The Forest Service should improve the analysis of habitat needs for the Indiana bat.**

We have addressed the habitat needs of the Indiana bat in the analysis in Section B2b of Chapter 3 of the EIS. The US Fish and Wildlife Service provided us with recent research related to the Indiana bat during the formal consultation between the Draft and Final Plan, which we have incorporated into the Final Plan.

**BI-6: The Forest Service should collect adequate population data for TES species.**

The type and level of data that needs to be collected to determine the effects of a given project on TES species varies with the species and the type of project. This is a site-specific analysis and the needs should be addressed during the project level analysis.

**BI-7: The Forest Service should correct errors in the terrestrial viability analysis.**

Comments question the identification of the small footed bat and the northeastern bulrush as species that are not affected differently among the alternatives.

For the northeastern bulrush and swamp pink, all of the alternatives allocate the locations where the bulrush is found as Special Biological Areas. The Special Biological Areas are developed to provide whatever habitat management is needed for the species or community for which the area was established. That is why they are all identified as having the same effect. In regard to the Cow Knob salamander, most of the known locations are in the Shenandoah Crest/Cow Knob salamander prescription area. Plan direction also specifies that for any locations where Cow Knob salamanders are found, the same management constraints as the prescription area will apply. With this direction, all of the alternatives are considered to have the same effects.

Viability is addressed in each alternative. Errors were corrected in the table of acres of soil disturbance by alternative and Alternative D now correctly is displayed as the alternative with the greatest amount of soil disturbance. Alternatives G, H and I have the next highest levels. While Alternative G may have second largest amount of soil disturbance, this does not mean that there would be significant impacts on aquatic species. Many of the standards in the Plan are designed to minimize the potential for any disturbed soil to reach stream channels.

The Forest Service has utilized the latest information in the identification of species to be addressed in the analysis. The wood turtle is specifically addressed in the analysis. We have updated the information on the global status of the wood turtle.

The common names of the species have been corrected.

**BI-8: The Forest Service appropriately utilized the Ecological Sustainability Evaluation in the planning process, but some additional analysis is needed.**

The Forest Service updated the ecological analysis with the latest information on ecological zones. The extent of highly departed stands will be addressed during project level implementation of the Plan.

The desired conditions of the Oak Woodland system have been updated in the Forest Plan.

A discussion of potential changes in the composition of the tree species over time has been added to the EIS.

To put in perspective the Forest Plan objective of returning about 800 acres of land to shortleaf pine, it is estimated that shortleaf pine should occupy about 2.5 percent of the forest (about 26,000 acres) of the GWNF.

In regard to the age of regenerating forests in the LANDFIRE models and the traditional definition of early successional stage as zero to ten years in age, we have described the forest desired conditions in ecological terms, but have described the desired conditions in Management Prescription Area 13-Mosaics of Habitat in terms of the 0-10 year age class.

The immediate focus on spruce restoration will be on the Laurel Fork area, other areas may be considered in the future.

**BI-9: The Forest Service should use a combination of core biological areas and surrounding multiple-use areas.**

The selected alternative does incorporate the concept of core areas with relatively little management activity and areas around the cores where there is existing access and sometimes historic management activities as areas where more management activities are implemented. Core areas include the Remote Backcountry Areas at Massanutten North, Duncan Knob, Southern Massanutten, Big Schloss, the ridge of Great North Mountain, Jerkentight, Elliott Knob, Crawford Knob, Archer Knob, Shaws Ridge, Laurel Fork, Little Alleghany, Oliver Mountain, Little Mare Mountain, Dolly Ann, Beards Mountain, Rich Hole, Adams Peak, the western flank of the Blue Ridge, and Three Sisters. It also includes the existing and Recommended Wilderness Study areas at Saint Mary's, Ramsey's Draft, Rich Hole, Rough Mountain, Three Ridges, Priest, Little River and Beech Lick Knob, the existing and Recommended National Scenic Areas at Mount Pleasant and Shenandoah Mountain, and the large Special Biological Areas at Kelly Mountain and the Shenandoah Crest Zone.

**BI-10: The Forest Service should focus on the need for old growth and connected large core areas to meet ecological diversity goals.**

The selected alternative allocates about 44 percent of the GWNF into prescriptions where timber will not be harvested and old growth conditions will continue to develop. These areas contain about 53 percent of the area currently identified as likely to contain old growth forests. In addition, all stands of timber in eight of the ten old growth forest types currently identified as old growth are not suitable for timber production. The current age class distribution shows that about 22 percent of the forest is over 120 years old and in thirty years this will be 70 percent. Even if the upper limits of timber harvest (30,000 acres per decade) occurred during those thirty years and all of the harvest were in stands greater than 90 years of age, the forest would still have 61 percent of the forest greater than 120 years in age. Based on projected age class distributions, there should be adequate connections of late-successional mature forest habitat between old growth areas.

**BI-11: The Forest Service should re-examine the goals for open woodlands.**

Research supporting the historic evidence for open woodland habitat in the Appalachians is found in the FEIS Section B, Ecological Systems Diversity section and the Fire-Wildfire and Prescribed Fire section. The need for open woodland habitat to provide habitat for a number of TES and locally rare species is documented in FEIS Section B2 and Appendix F, Terrestrial Viability Evaluation, and Federally listed Threatened and Endangered Species. In addition, the ability of open woodland habitat to help provide habitat needs for a number of public interest species like white-tailed deer, wild turkey, black bear, and northern bobwhite quail is documented in the Demand Species section.

**BI-12: The Forest Service should not disturb lands above 4000 feet in elevation.**

There is little land above 4000 feet. The areas on Shenandoah Mountain and Elliott Knob are in Special Biological Areas or the Shenandoah Crest, as is the area on Paddy Knob. Some areas above 4000 feet are along the state line in Highland County where vegetation management is allowed. There are no rare communities present there and no particular reason not to manage these areas. However, there is a need for additional early successional habitat at elevations greater than 3,000 feet.

**BI-13: The Forest Service should minimize conversion of oak stands to pine.**

The selected alternative does not propose large scale conversion from oak to pine. Rather, the goal is to restore systems through the use of fire and other tools to the potential historic vegetation type. This may result in some stands that are oak and pine mixed to favor pine in some areas. However, there will not be wide scale changes. The restoration of shortleaf pine to some locations is an objective.

**BI-14: The Forest Service should better address the potential loss of oak and hickory species.**

We recognize the stresses and threats to the oak and hickory ecosystem across the forest and have incorporated strategies in the Forest Plan to address non-native invasive species and regeneration of oak and hickory species through timber harvest and the use of fire. A discussion of potential changes in the composition of the tree species over time has been added to the EIS.

**BI-15: The Forest Service should improve the species diversity analysis.**

The concern about how individual tree species were addressed in the analysis was addressed through the ecological analysis, wherein the ecological systems are, in large measure, based on the assemblage of individual tree species in the system. Regeneration of southern yellow pine species, especially table mountain pine which is declining, is part of the rationale for an increased objective for prescribed burning in the selected alternative. There is a standard to preserve butternut trees (which is included in the species diversity analysis) during timber harvest.

In regard to the comment to specify an objective for creating savannahs of a certain size, this objective can be part of the current objectives to restore and maintain 12,000 to 20,000 acres of forest in open woodland conditions through the use of wildland fire on an annual basis.

**BI-16: The Forest Service should complete an accurate inventory of the Forest's myriad of species.**

It would be very difficult to inventory all of the species on the forest. The purpose of the ecological analysis is to identify the ecological systems on the forest and develop a strategy to maintain them. In this way most of the species on the forest should have habitat they need. Since some species are rare or in decline, these have also been identified and additional management direction prescribed to assure their protection as well. Much inventory of these species has been done on the Forest by our staff and other agencies.

**BI-17: The Forest Service should update its analysis of effects on specific species, including: Big Levels salamander, wood turtle, cerulean warbler, Cow Knob salamander.**

For the Big Levels salamander, all known occurrences are protected in Special Biological Areas in all alternatives. The global rank for the wood turtle has been updated in the documents. Specific guidance for the wood turtle has been updated in Chapter 3 of the Forest Plan. Habitat needs and effects of alternatives for Cerulean warbler are discussed in the FEIS, Species Diversity Report, Appendix F, Section B Terrestrial Viability Evaluation, and the Migratory Species Section. Forest Plan direction specifies that "If Cow Knob salamanders are found in areas outside the Shenandoah Mountain Crest management prescription area, those areas will be subject to the same management measures as described in the Shenandoah Mountain Crest Management Prescription Area 8E7."

**BI-18: The Forest Service should recognize the important role of fungi in the EIS and Forest Plan.**

We recognize the importance of fungi in the ecosystems on the GWNF. In regard to using fungi in restoration practices, we will need to evaluate this at the project level as we implement the Forest Plan. We do not currently have enough information to select a species of fungi as a management indicator species.

**BI-19: The Forest Service should re-evaluate the selected Management Indicator Species to assure that the best species are selected to indicate changes in management.**

The process and rationale for the selection of Management Indicator Species is found in FEIS Section B, Management Indicator Species, Analysis of the Management Situation, and George Washington Management Plan Management Indicator Species Selection Process Paper. Rationale for species proposed for MIS selection includes the need for consistency between the GW Plan Revision and the Jefferson Plan Revision, since both National Forests are administratively combined and share common ecosystems, issues and management direction. The MIS selected complement the species chosen on the Jefferson NF, allowing for better monitoring data on these species.

Management Indicator Species are but one method of monitoring changes from forest management. The ecological analysis identified nine ecological systems and about 295 species needing additional direction for management. We will be monitoring these systems and the implementation of direction for the species' management.

**BI-20: The Forest Service should use beaver as a MIS.**

Beaver is a MIS in the Forest Plan (FEIS Section B, Management Indicator Species).

**BI-21: The Forest Service should incorporate the best science on game management.**

The GW Plan Revision strove to use best science in determining the desired conditions for ecological sustainability and species sustainability, which includes a number of public interest species (FEIS Terrestrial Viability Evaluation). Sound science was also used in identifying the needs for game species and to establish our desired conditions and objectives (FEIS Chapter 3, Section B, Demand Species).

**BI-22: The Forest Service should protect fish and wildlife habitat.**

We agree and have incorporated protection measures in the Forest Plan land allocations, objectives and standards, as well as analyzed effects of proposed alternatives (FEIS Chapter 3 Section B – Biological Environment).

**BI-23: The Forest Service should address the impacts of habitat fragmentation from vegetation management activities.**

The definition of what constitutes habitat fragmentation depends on the species in question. Habitat fragmentation is addressed in the FEIS in many areas, including the following: Chapter 2, Comparison of Alternatives, Climate Change Issue Statement, Chapter 3, Section B, Ecological Systems Diversity, Terrestrial Species Diversity, Migratory Birds, Management Indicator Species, Old Growth, Aquatic Species Diversity, Aquatic Species Viability Evaluation, Fire – Wildfire and Prescribed Fire; Chapter 3, Section C, Wilderness and Inventoried Roadless Areas, Scenery, Chapter 3, Section D, Federal Oil and Gas Leasing Availability; Appendix E Ecosystem Diversity Report, specifically Ecosystem Diversity Characteristics; Appendix, F Species Diversity Report, specifically Area Sensitive Mature coniferous, Deciduous, and/or Mixed Forest Associates and Area Sensitive Grassland and Shrubland and Open Woodlands Associates.

**BI-24: The Forest Service should consider the impacts of the existing deer population.**

The FEIS includes existing deer population statistics in analysis of effects of alternatives in Chapter 3, Section B, Demand Species. Desired conditions for a range of vegetation ages and structural conditions presented in alternatives benefit a large suite of species, including white-tailed deer (FEIS, Chapter 3, Section B, Terrestrial Species Diversity, and Appendix F, Species Diversity Report). Alternatives also provide for large areas of the forest to move to mature forested characteristics.

**BI-25: The Forest Service should not increase early successional habitat.**

We used an ecosystem sustainability model and species diversity analysis patterned after a system used by the Nature Conservancy to provide a coarse and fine filter approach to providing habitat needs for a large number of species currently utilizing the Forest (FEIS Chapter 3, Section B, Ecological Systems Diversity and Terrestrial Species Diversity, Appendix E, Ecosystem Diversity Report, and Appendix F, Species Diversity Report). There are a number of declining species that require early successional habitat at some stage of their

life cycle. The desired conditions and level of regenerating forests or early successional habitat were also derived from the LANDFIRE models developed by the USGS, USFS and others. These models indicate a need for a range of forested ages and structural condition, including regenerating forests, to meet the needs of a large suite of rare species, species with declining populations, and public interest species inhabiting the forest.

**BI-26: The Forest Service should consider the early successional habitat provided by intensively managed lands like roads and recreation areas.**

Early successional habitat includes habitat that is in the process of regenerating (0-10 years old), old fields, grass/shrubland conditions and openings created by natural disturbances. These varying conditions do not provide the same quality of habitat that is needed for species. The FEIS analyzes the effects of currently available early successional habitat found in a variety of conditions, including road ROWs, powerline ROWs, recreation areas, grasslands found in wildlife openings and rangelands in assessing current conditions (FEIS Chapter 3, Section B, Ecological Systems Diversity and Terrestrial Species Diversity, Migratory Birds, Management Indicator Species, Demand Species, Chapter 3, Section C, Recreation, Minerals Management, Roads System Management, Special Uses, Range, Appendix E, Ecosystem Diversity Report, and Appendix F, Species Diversity Report).

**BI-27: The Forest Service should better address early successional habitat created through natural disturbances.**

An amount of early successional habitat created through natural disturbance regimes is used in the analysis. This estimate is highlighted in greater detail in the final EIS Chapter 3, Section B, Ecological Systems Diversity and Terrestrial Species Diversity, Appendix E, Ecosystem Diversity Report, and Appendix F, Species Diversity Report.

**BI-28: The Forest Service should increase the amount of early successional habitat on the forest.**

The Plan revision process utilized an ecosystem sustainability model and species diversity analysis patterned after a system designed by the Nature Conservancy to provide a coarse and fine filter approach for habitat needs for high priority and public interest species on the Forest (FEIS Chapter 3, Section B, Ecological Systems Diversity and Terrestrial Species Diversity; Appendix E, Ecosystem Diversity Report and Appendix F, Species Diversity Report). The need for a range of ages and structural conditions of habitat in the various ecosystem types present on the forest was clearly demonstrated for whole suites of species groups.

The selected alternative would increase the amount of early successional habitat on the forest by increasing the amount created from timber harvest (2,400 acres per year in the current plan to 3,000 acres per year) and through increasing prescribed burning (3,000 acres per year in the current plan to 20,000 acres per year).

**BI-29: The Forest Service should find ways to expedite the timber sale process so that more early successional habitat can be created.**

We agree with the comment and acknowledge challenges in implementing timber sales efficiently. However this comment pertains to implementation rather than a Forest Plan component. We received many suggestions from the public regarding ways to expedite the timber sale process and look forward to future collaboration with other agencies and stakeholders in an effort to increase the efficiency of the timber sale program.

**BI-30: The Forest Service should modify the management prescription area direction to emphasize wildlife habitat.**

The management direction for Mosaics of Habitat has been updated to more clearly emphasize wildlife habitat in response to these comments.

**BI-31: The Forest Service should evaluate a number of activities to improve game habitat.**

The plan provides for a variety of activities to improve game habitat including timber harvest, prescribed burning, maintaining existing openings, creating new openings, and maintaining old fields. Many of these comments involve implementation activities that will be considered during site-specific project analysis.

**BI-32: The Forest Service should emphasize appropriate seeding and planting to benefit wildlife.**

Seed mixtures that benefit wildlife are generally used and the Forest often works closely with partner agencies and organizations in seeding efforts that will benefit wildlife.

**BI-33: The Forest Service needs to increase the area of open grasslands.**

The need for grassland/open woodland habitat is clearly demonstrated for a large suite of species in the FEIS (FEIS Chapter 3, Section B, Ecological Systems Diversity and Terrestrial Species Diversity; Appendix E, Ecosystem Diversity Report and Appendix F, Species Diversity Report). The selected alternative does have objectives to create and maintain open grasslands.

**BI-34: The Forest Service should address the impacts of the coyote population.**

The Forest Plan does not directly provide population controls for any species but provides emphasis on habitat management. The responsibility for population management for a species such as coyotes is with state game agencies, VDGIF and WVDNR. While the coyote does impact populations of deer and other animals (FEIS, Chapter 3, Section B, Demand Species), specific population objectives are set by state agency regulations, not through the Forest Plan.

**BI-35: The Forest Service should consider that the lack of early successional habitat affects the level of hunting and the economic benefits of hunting.**

The Forest Service recognizes this relationship and is a factor in the decision to increase habitat management through timber harvest and increased prescribed burning. The economic importance of hunting is addressed in the FEIS (Chapter 3, Section C, Recreation).

**BI-36: The Forest Service should improve access for hunters.**

Areas with a wide variety of access are available for hunting. The Forest Plan will likely maintain most current access, though some roads may become open only seasonally and many roads will be maintained at lower maintenance levels. Many of the roads that would be decommissioned are already closed to public use.

**BI-37: The Forest Service should provide habitat for birds and opportunities for bird watching.**

Nature viewing is recognized as an important recreational activity, as well as the need to maintain or improve habitat for bird species.

**BI-38: The Forest Service should protect the areas of significant ecological or recreational value within Management Prescription Area 13-Mosaics of Habitat.**

Management Prescription Area 13 is the portion of the forest where most timber harvest will occur. Areas of significant ecological value have been protected through allocation to Special Biological Areas, or the Shenandoah Crest Zone and areas with significant recreational value are allocated to prescriptions such as the Appalachian Trail Corridor, Dispersed Recreation Areas, Developed Recreation Areas, National Scenic Areas and Wilderness. While a large percentage of the Forest is in Management Area 13, any significant recreation or ecological values can still be recognized during project analysis. In addition, while timber harvest and road construction is allowed in Management Area 13 only about 15 miles of road are expected to be constructed and 30,000 acres of the 500,000 acre area are expected to be harvested in the next 10 years.

**BI-39: The Forest Service should identify a true restoration strategy.**

The selected alternative does provide a framework for ecological restoration. The use of timber harvest to achieve some of the restoration objectives is not just “a simplistic model of rotational forestry.” The George Washington National Forest is not a typical southern Appalachian forest that historically was dominated by gap phase dynamics and only occasional larger disturbances. The GWNF is predominantly an oak hickory forest which was dominated by fire that occurred on both large and small scales. While fire may be the optimum tool to restore this system and the pine systems on the GWNF, there are limitations to the extent, duration and intensity of fire that can be readily managed in a forest located in an area with such a high level of adjacent development. Timber harvest is used as an additional tool that can be used to mimic open woodland conditions, small openings and large openings.

We agree that the current age class distribution is heavily slanted to middle aged structure and that early successional habitat and old growth conditions are both needed. The land allocations in the forest plan that do not allow timber harvest make up about 44 percent of the forest, so old growth will be plentiful with little additional effort. Early successional habitat, on the other hand requires management action, thus the identified need to manage vegetation through timber harvest and fire.

Regenerated stands are part of the composition, structure, function and productivity of native forest ecosystems. The ecological and species diversity analyses identified many species that need early successional habitat at some stage of their life cycle. Much of forest is departed from its reference conditions

due to the change in fire suppression over the past hundred years and addressing this departure is a main component of the Plan.

The role of natural disturbance is addressed in the Plan and EIS. It is estimated that from 1 to 2 percent of the forest is in openings created by natural disturbances and that another 1 to 2 percent is in open woodlands.

The Forest Plan does meet the intent of national direction on restoration. Ecological restoration goals are clearly identified in the desired conditions by ecological system in Chapter 2. The implications of climate change and management strategy to address climate change are in Chapter 3. Ecological refugia can take many forms, but the increase in Recommended Wilderness Study areas, Recommended National Scenic Areas and Remote Backcountry Areas would certainly be considered one example.

Open woodlands would predominantly be created and managed through the use of fire. However, timber harvest can also be used to create or enhance open woodland communities. In Tables 3B1-1 and 3B1-2 of the FEIS, the estimates of open woodlands are based solely on areas created and maintained by fire. Timber harvest in these tables is only included in the regenerating forests. In the Forest Plan, the species diversity objectives in Chapter 3 clearly identify open woodland creation through the use of fire. So, while timber harvest could enhance open woodland creation, the goals and objectives in the plan for open woodlands are based on the fire management program.

We disagree that open woodland conditions would be inappropriate in riparian areas, cove forests or northern hardwoods. While these systems are generally too moist to be easily affected by fire, each of these systems contains a gradation of moisture levels and there are portions that are drier than the general condition. The LANDFIRE models for both cove forests and northern hardwood forests include a small amount (9-10%) of the area in open canopy late succession conditions. While much of this would be created by other extreme weather events, some would be due to fires. It is unlikely that these areas would be targeted for prescribed fires, but small patches of these systems could be located within large burn blocks and under the right conditions could burn.

**BI-40: The Forest Service should emphasize restoration of American chestnut and hemlock.**

Restoration of American chestnut and hemlock are part the Forest Plan.

**BI-41: The Forest Service should meet restoration goals through improving the age class distribution.**

Improving the age class distribution, particularly in those areas of the forest managed for Management Prescription 13-Mosaics of Habitat is a priority in the revised plan.

## BIOMASS

**BM-1: The Forest Service should not allow timber harvesting for biomass to use in energy production.**

Wood biomass energy is becoming an emerging market in some areas of the Forest. The Forest Service realizes that developing and using renewable sources of energy are national goals and that woody biomass is a potential source of renewable energy and fuel. Woody biomass utilization of smaller diameter trees not considered merchantable in traditional markets can also be used to facilitate forest restoration, the growth of higher-value trees and forest products, reduce forest-fire risk, and support the removal of invasive species. Small scale local firewood vendors can play a significant role in economically achieving thinning, especially in younger stands, through woody biomass utilization.

Air quality and water use associated with off- Forest energy production is permitted and regulated by Virginia Department of Environmental Quality, West Virginia Department of Environmental Protection and Division of Air Quality in conjunction with the West Virginia Division of Energy which is part of the permitted operating plan of the facility producing the energy. Where we will be utilizing woody biomass, we will not remove the woody biomass from the entire site but will leave at least 30% of the logging slash. We will leave more material where there are soils most susceptible to impacts from acid deposition and nutrient depletion.

The Forest Service is also charged with protecting the productivity of the lands we manage and ensuring that ecosystems are sustainable. There is a concern that increasing demand for wood biomass energy could result in increased harvest levels using unlimited woody biomass utilization, especially on formerly low productivity or less commercially valuable sites. We do not envision the production of wood biomass energy to be a sole purpose and need of any commercial timber sale. The GWNF will not allow below ground biomass, downed logs, or stumps to be part of the woody biomass utilization of a site. What is included in the woody biomass utilization are logging slash, small diameter trees not considered merchantable in traditional markets, tops and limbs. This material, which has been traditionally left onsite, has contributed to the nutrient pool and the productivity of the soils on the site. Review of scientific literature suggests that removing tree branches and foliage can have negative effects on long term soil productivity. Intensive removal of woody biomass may cause nutrient depletion on sensitive sites such as those with shallow, coarse textured soils. On sites with existing large quantities of woody biomass on the ground, less retention is necessary. A graph was added to the Forest Plan strategy section to guide the level of logging slash that would be left on site after timber harvest. It indicates where harvest intensity is low and harvests are infrequent less woody biomass needs to remain onsite. Using the graph, at least 30 percent of the logging slash will be retained on all sites. On poorer sites, like site index 50, about 60 percent of the logging slash will be retained.

**BM-2: The Forest Service should examine the impacts of harvesting timber for biomass for energy production.**

Literature cited related to soil productivity is included in FEIS Appendix L-References. Currently we remove material down to 4 inch diameter in timber harvest areas. We have examined research done regarding harvesting smaller diameter wood and we will be leaving some (at least 30 percent) logging slash on all sites. On less productive sites, more slash will be retained, see Forest Plan Chapter 3, Forestwide Standards FW-11 and FW-13. No stumps, existing downed material or below ground biomass will be removed.

**BM-3: The Forest Service should provide timber to support the market for biomass for energy production.**

The Forest will utilize timber harvest to achieve restoration goals and objectives. It is likely that some timber sales would include options of utilizing smaller diameter wood than is normally utilized for the biomass energy production market. This would only be done on soils we determine to have low risk for impacts from nutrient depletion.

## BUDGET

**BU-1: The Forest Service should accurately display the costs of implementing each alternative.**

A table has been added to Chapter 3 of the Final EIS displaying the estimated costs of implementing each alternative.

**BU-2: The Forest Service should prepare a draft plan based on a realistic budget.**

The selected alternative does have a budget substantially higher (about 3 million dollars or thirty percent) than the current budget. Most of the difference between the two budgets is in the timber, recreation, and soil/water/air/vegetation budgets. These increases represent the priority that the public and the agency place on these resources and the need for additional financial resources to reach the objectives of the plan. The timber objective was stated as a range of 1,800 to 3,000 acres per year, the budget reflects the 3,000 acre level. The difference between the two levels is about one million dollars. Another one million dollars would represent the difference between the current level of timber harvest and the level of 1,800 acres per year. Many groups were asking for an increase in early successional habitat and timber harvest and there was much attention given to identifying means to improve the efficiency of conducting timber harvest. The recreation budget reflects the desire to maintain the current level of recreation opportunities and infrastructure to support it. The soil/water/air/vegetation management budget increase reflects the emphasis on soil and water improvement projects and on the control of non-native invasive species.

**BU-3: The Forest Service should consider the budget in selecting a preferred alternative.**

The budget was a factor in the decision on the preferred alternative.

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## CLIMATE

### **CL-1: The Forest Service should plan for climate change by protecting core area and decreasing stresses like vegetation management, road construction and gas drilling.**

The selected alternative does incorporate the concept of core areas with relatively little management activity and areas around the cores where more management activities are implemented. Core areas include the Remote Backcountry Areas at Massanutten North, Duncan Knob, Southern Massanutten, Big Schloss, the ridge of Great North Mountain, Jerkemtight, Elliott Knob, Crawford Knob, Archer Knob, Shaws Ridge, Laurel Fork, Little Alleghany, Oliver Mountain, Little Mare Mountain, Dolly Ann, Beards Mountain, Rich Hole, Adams Peak, the western flank of the Blue Ridge, and Three Sisters. It also includes the existing and Recommended Wilderness Study at Saint Mary's, Ramseys Draft, Rich Hole, Rough Mountain, Three Ridges, Priest, Little River and Beech Lick Knob, the existing and proposed National Scenic Areas at Mount Pleasant and Shenandoah Mountain, and the large Special Biological Areas at Kelly Mountain and the Shenandoah Crest Zone. Vegetation management, road construction and mineral development are not allowed in these areas.

Vegetation management and road construction to facilitate the vegetation management is needed outside the core areas to restore vegetation structure needed for many species. Surface use of gas drilling is not allowed in the most biologically sensitive areas of the Forest. We agree that the preservation of forested landscapes is a critical aspect of managing for climate change, but we believe that resiliency is best achieved when the forest is represented by a variety of structure (different ages of the mature trees).

### **CL-2: The Forest Service should better protect, connect and restore the national forest.**

The response to the previous comments addresses the nature of the selected alternative in relation to core areas and restoration of resilient systems. In regard to connections between core areas, it is important to provide forested connections, but as described in the previous response, these forested connections do not all need to be old growth. There will be adequate stands of mature trees throughout the forest and in areas connecting core areas.

### **CL-3: The Forest Service should show how the forest will adapt to climate change.**

It is very difficult to predict exactly how the forest will adapt to climate change. The science is evolving. Several years ago, it was expected that climate change would substantially reduce the number of streams that would retain cold enough temperatures to maintain native brook trout. A more recent study indicated that groundwater sources may be more important than previously identified and it appears that stream temperature may not change as directly as air temperature. As described in the EIS, we expect that temperatures will increase, as will precipitation, but precipitation is likely to demonstrate more extreme dimensions in storms and droughts. Some plant species more adapted to warmer climates may expand their range, and colder adapted plants may have shrinking ranges. There will also likely be new assemblages of plants that have not occurred in the past.

### **CL-4: The Forest Service should recognize that forests and soils are more valuable as carbon sinks than in using forest resources as fuel or as a source of renewable energy.**

We agree, but part of managing forests for resiliency involves vegetation management. Timber is one of our tools in vegetation management and we do not control the ultimate fate of the wood removed from the site. A substantial portion of harvested wood carbon remains stored in durable wood products, paper and landfills for a long time and wood residues that are used for energy production are a renewable source that replaces fossil fuel. New growth created through vegetation management often sequesters carbon at a faster rate and will eventually develop additional stocks of carbon that will replace the harvested wood. In regard to concern about removal of too much biomass from sites of sensitive soils, please review the comments related to biomass.

### **CL-5: The Forest Service should develop a response to acid deposition.**

The Forest Service has been addressing acid deposition for many years and will continue to do so. This involves a very active role in reviewing state air pollution permits; continuing the 25 years of monitoring acid sensitive streams, and liming a number of streams that have been acidified.

**CL-6: The Forest Service should develop a more comprehensive strategy to address climate change including an adaptation strategy, monitoring and vulnerability analyses.**

The Forest Plan does address climate change. It allocates many core unmanaged areas for some species and also provides opportunities to manage vegetation to benefit other species.

As described in Section A3 of Chapter 3 in the FEIS, the forest represents a major carbon sink. So the main effect that management will have in regard to affects to climate change is to maintain the carbon sink function of the forest. While there are differences in the level of management activities between alternatives, the overall effect on climate change should not be substantially different between the alternatives. We have estimates of the total current carbon stocks on the forest, but do not believe that incorporating these numbers into the EIS would improve the discussion. A monitoring question about climate change has been added to the monitoring plan. Many of the existing monitoring tasks, like water quality monitoring, bird surveys, and tracking ecological conditions will provide the data to examine trends associated with climate change.

The Forest Plan does acknowledge the importance of maintaining forests. However, there is a need to have the forests in varying conditions of structure and so vegetation management activities are needed and identified in the Plan.

**CL-7: The Forest Service should better compare alternatives in their response to climate change.**

Section A3 of Chapter 3 of the FEIS does compare the alternatives in response to climate change. However, it is difficult to identify more distinctions between the alternatives since climate change is at a large scale and the differences between alternatives in regard to the amount of active management activities is small on a Forest-level scale. While there is little difference between the effects of the alternatives on climate, the selected alternative is considered among the best adaptation alternative in light of known effects on the Forest.

**CL-8: The Forest Service should consider climate change in its species viability analysis.**

Climate is addressed in that it was considered as a threat in the species diversity analysis (FEIS Appendix F).

## COORDINATION WITH OTHER AGENCIES

**CO-1: The Forest Service should continue to coordinate with other agencies and groups in forest management.**

The Forest has a long history of coordinating activities with other state and federal agencies and many different advocacy groups. This type of coordination will be an important aspect of implementing the selected alternative.

## CULTURAL RESOURCES

**CU-1: The Forest Service should consider the impacts of its activities on cultural resources.**

The Forest Service will continue to assure that all of its activities are in compliance with all of the regulations regarding cultural resources. Chapter 4 of the Plan contains forestwide standards for the protection of cultural resources including direct consultation when necessary with the State Historic Preservation Offices (Virginia Department of Historic Resources and West Virginia Division of Culture and History), and federally recognized Native American tribes with geographic or cultural ties to the Forest. Under all alternatives, cultural resource surveys are conducted by national forest archaeologists during the project-level NEPA process for proposed actions that include ground disturbance or historic properties.

## ECONOMICS

**EC-1: The Forest Service should update its social and economic analysis, particularly the use of the IMPLAN model.**

The IMPLAN model was updated with 2011 data and new estimates of effects on jobs and labor income were determined. New information from the 2010 Census and the Economic Profile System-Human Dimensions Toolkit (<http://headwaterseconomics.org/tools/eps-hdt>) was obtained and analyzed. Additional employment information for the wood products sector and the recreation/tourism sector was obtained for each county of

interest from state employment organizations. The interpretation of the tables presented in Chapter 3, Social and Economic Environment and the effects discussions were also expanded.

With regard to determining the effect on the local economy from the development of Marcellus shale gas, a more extensive review of existing studies for other areas was done. Additional discussion of the complexities of bringing a new industry into the local economy and the economic and social impacts was added. During review of the IMPLAN model, an error was identified in the estimates of natural gas production for each alternative by a significant magnitude. The final estimates of effects of natural gas production on jobs and labor income now reflect a higher, more accurate contribution to the local economy.

**EC-2: The Forest Service should carefully evaluate the economic effects when it selects a preferred alternative.**

The consideration of economic effects is reflected in two of the seven evaluation criteria used to evaluate the alternatives: “the extent to which the alternative provides a variety of uses, values, products, and services for present and future generations by managing within the capability of sustainable ecosystems” and “the extent to which the alternative addresses issues raised by forest staff (as reflected in the Analysis of the Management Situation), partners, and the public.” One of the thirteen significant issues used to develop and evaluate alternatives was Economics and Local Community where the issue statement is “Management activities may affect the economic role of the Forest, particularly the role it plays in the economy of local communities, including the production of ecosystem services and commodity outputs. Increasing population and development near the Forest may influence access to the National Forest and management activities such as special use requests, fire management, and responses to additional recreation demands.”

**EC-3: The Forest Service should support local wood products producers and non-timber product producers.**

With the exception of MeadWestvaco, the majority of our timber sale purchasers represent small, locally owned businesses that either utilize the product or supply local small sawmills and pulpwood facilities. We do receive a small number of requests for non-timber forest products.

**ENERGY**

**EN-1: The Forest Service should help to contribute to renewable energy production.**

The selected alternative does contribute to renewable energy production. It provides 82,000 acres of high wind potential lands as available for consideration for wind energy development.

**EN-2: The Forest Service should acknowledge that energy production is inconsistent with priorities of the Forest.**

We believe that energy production is consistent with other priorities in the Forest Plan. Mineral development has long been a component of national forest management. Development of mineral resources was included in the Organic Administration Act of 1897, the Mineral Resources on Weeks Law Lands Act of 1917 and its development was reaffirmed by the Multiple-Use Sustained-Yield Act of 1960. Energy development would only be done with appropriate mitigation to reduce impacts to other resources such as water quality, soil productivity and management of sensitive biological resources.

**EN-3: The Forest Service should allow for energy production on the Forest.**

The selected alternative does allow for energy production on the forest. It provides 82,000 acres of high wind potential lands as available for consideration for wind energy development.

**FACILITIES**

**FA-1: The Forest Service should follow state regulations regarding hazardous waste management, solid waste management, energy efficiency, and pollution prevention at its facilities.**

The Forest Service complies with applicable regulations regarding hazardous waste management, solid waste management, energy efficiency and pollution prevention. This comment deals more with site-specific activities as opposed to the broad management direction of a Forest Plan. These issues will be addressed at the site-specific project level for activities implementing the Forest Plan.

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## FIRE

**FI-1: The Forest Service should continue to use the Virginia Interagency Coordination Center.**

This is a site-specific issue that is not part of a Forest Plan level decision.

**FI-2: The Forest Service should not increase its use of prescribed fire.**

Research on fire and its role in shaping the ecological systems that dominate this forest are clear in regard to the need to restore fire to the landscape. This is described in Chapter 3 of the EIS and in FEIS Appendix E.

**FI-3: The Forest Service should increase its use of prescribed fire.**

The selected alternative would increase the use of prescribed fire with an objective of burning 12,000 to 20,000 acres per year.

**FI-4: The Forest Service should increase its use of prescribed fire as in Alternative G.**

The selected alternative would increase the use of prescribed fire as in Alternative G with an objective of burning 12,000 to 20,000 acres per year.

**FI-5: The Forest Service should use prescribed fire as a tool.**

We agree.

**FI-6: The Forest Service should formulate a wildfire prevention policy.**

Wildfire prevention is an important aspect of plan implementation, but not a part of the Forest Plan.

**FI-7: The Forest Service should address some concerns with prescribed fire.**

We acknowledge that there are many resource concerns to address when planning and implementing prescribed burns. This includes the timing of the burns, the type of vegetation and soil in the burn area, the fuels to be burned, resources on adjacent lands, and impacts on forest users and adjacent communities. These can all be considered in the site-specific analysis completed before burns are implemented.

**FI-8: The Forest Service should use wildfire to achieve fire objectives.**

We agree.

## GAS LEASING

**GA-1: The Forest Service should not ban horizontal drilling or hydraulic fracturing.**

The selected alternative (Alternative I) does not make any new federal lands available for leasing and therefore no drilling (horizontal or vertical, with or without hydraulic fracturing) would occur on federal minerals.

The FEIS evaluated alternatives that allowed for horizontal drilling (A and H), that had a moratorium on horizontal drilling (B D, and F), that prohibited horizontal drilling (E and G), and that had no gas leasing (C and I). In regard to gas leasing, Alternative H was developed to examine the impacts of gas development using high-volume hydraulic fracturing with a strict set of land allocations and standards to protect sensitive resources on the GWNF. From Alternative H we determined that the use of horizontal drilling and hydraulic fracturing to develop gas resources on the GWNF could be done in a manner that would reduce the potential for adverse impacts to water and other resources. However, while Alternative H illustrates that adverse impacts from gas development may be mitigated, there is insufficient reason at this time to make any new federal lands available for oil and gas development. After completing the analysis of Alternative H, all of the alternatives were evaluated in relation to the issues, public comments, current information and discussions about energy development in relation to the GWNF. Currently, there is an apparent lack of interest in gas development as evidenced by the fact that both existing federal leases on the Forest and existing mineral rights owned by private parties are not active. There are concerns expressed by local citizens, their elected officials, and many other interested parties regarding potential impacts of gas development. Throughout our planning process, we have seen changes in drilling technology, changes in the research on potential impacts of drilling, changes in regulations on drilling, and many studies that are ongoing and not complete. In response to these considerations, an alternative that included all of the forest plan components of Alternative H, but combined the lands available for oil and gas leasing component of Alternative C was developed. This resulted in Alternative I that would make no lands available for oil and gas leasing.

Concerns expressed by local citizens, their elected officials, and many other interested parties included potential impacts of gas development on water quality, biological diversity and recreation use, and the associated traffic and noise. There is a low amount of estimated gas reserves in the portion of the Marcellus formation under the GWNF. Alternative I will also further reduce the potential for any additional stresses on: our watersheds in relation to sensitive aquatic species, drinking water, and the Chesapeake Bay; the remote recreation settings and the high level of recreation use on the GWNF; and the high level of biological diversity on the GWNF.

**GA-2: The Forest Service should not ban horizontal drilling since it is inconsistent with:**

- multiple use sustained yield act, mineral leasing act
- inappropriately affecting national energy policy through forest management planning
- limiting technology in an unprecedented way in forest planning
- should be addressed at the APD stage of permitting
- court decisions.

See response to GA-1.

**GA-3: The Forest Service should not ban horizontal drilling since it will positively address climate change concerns.**

See response to GA-1. While the burning of natural gas can produce less greenhouse gas emissions than burning coal, there are some questions about the impacts of extracting natural gas and the release of methane to the atmosphere during drilling.

**GA-4: The Forest Service should not ban horizontal drilling since it will reduce the amount of land disturbance compared with vertical drilling.**

See response to GA-1. Horizontal drilling does reduce the amount of land disturbance compared to vertical drilling since more of the formation can be developed from one well, and multiple wells can be drilled from one well pad.

**GA-5: The Forest Service should not ban horizontal drilling because there are no adverse environmental effects.**

See response to GA-1. The Final EIS describes the estimated effects from gas drilling. Some impacts could be expected, particularly impacts from accidents.

**GA-6: The Forest Service should not ban horizontal drilling since stipulations are available to reduce impacts to other resources.**

See response to GA-1. A number of comments included references and information about measures that can be used to reduce impacts. These measures are sometimes standard practices used by state and federal agencies and other measures could be added as plan standards or as site-specific conditions of approval for a permit to drill.

**GA-7: The Forest Service should not ban horizontal drilling because water resources can be protected during drilling and operations.**

See response to GA-1. Alternative H was developed to examine measures that could be employed to allow a level of gas development that would not adversely affect water quality. In that alternative public water supply watersheds would not be available for mineral leasing; no surface or groundwater withdrawals from National Forest System lands would be allowed unless an analysis shows that the overall impacts of the drilling could be reduced through the use of such withdrawals; and there would be requirements for closed loop systems for hydraulic fracturing and the use of a secondary containment system to reduce the risk of spills reaching a stream. The analysis of Alternative H indicated that these measures could reduce the potential for adverse impacts to water.

**GA-8 & GA-9: The Forest should not ban horizontal drilling since it is needed to develop the gas resources in the Marcellus shale and this development will produce substantial economic benefits to the area and to the nation and is necessary to meet the country's energy needs.**

See response to GA-1.

**GA-10: The Forest Service should not ban horizontal drilling because it is a safe practice.**

See response to GA-1.

**GA-11: The Forest Service should continue its ban on horizontal drilling to reduce impacts of climate change.**

See response to GA-1. While the burning of natural gas can produce less greenhouse gas emissions than burning coal, there are some questions about the impacts of extracting natural gas and the release of methane to the atmosphere during drilling.

**GA-12: The Forest Service should keep its ban on horizontal drilling.**

See response to GA-1.

**GA-13: Support the ban on horizontal drilling due to the adverse environmental effects.**

See response to GA-1. The Final EIS describes the estimated effects from gas drilling. Some impacts are expected, particularly the possibility of impacts from accidents.

**GA-14: Support the ban on horizontal drilling due to the adverse environmental effects on water quality.**

See response to GA-1.

**GA-15: Support the ban on horizontal drilling, need a moratorium until more information is available.**

See response to GA-1. We looked at options for a moratorium on the gas leasing decision. There are many studies currently underway and much new information has come out during the time we have been preparing the EIS. EPA is working on a study of the potential impacts of hydraulic fracturing on drinking water resources. The Bureau of Land Management has new regulations on hydraulic fracturing that are under review at this time. It is likely that studies of horizontal drilling and hydraulic fracturing will continue for many years.

**GA-16: The Forest Service should consider additional options if it decides to put a moratorium on any drilling.**

We did not include a moratorium on drilling in the selected alternative.

**GA-17: The Forest Service should not allow horizontal drilling until appropriate regulations are in place.**

See response to GA-1. Like the research and studies, regulations on horizontal drilling and hydraulic fracturing will likely be modified many times over the coming years. BLM has regulations currently out for review. The State of West Virginia has just implemented new regulations.

**GA-18: The Forest Service should not allow horizontal drilling until science shows it to be safe.**

See response to GA-1.

**GA-19: The Forest Service should ban horizontal drilling and further analyze the impacts of vertical drilling.**

See response to GA-1. The impacts of other types of drilling were considered in the development of Alternative H.

**GA-20: The Forest Service should ban horizontal drilling and wind energy development.**

See response to GA-1. The selected alternative does limit the locations where wind energy development would be allowed and then a site-specific analysis will determine whether it is appropriate for that location.

**GA-21: Support the ban on horizontal drilling and would like a ban on all hydraulic fracturing.**

See response to GA-1.

**GA-22 & 23 & 24: The amount of land available for leasing: a) is appropriate; b) should be less; c) should not be allowed in certain locations, such as: drinking water watersheds, priority watersheds, recreation areas, sensitive biological areas, Remote Backcountry Areas, South Massanutten, Eligible Wild and Scenic river corridors, scenic areas, Shenandoah Mountain, old growth, Special Biological Areas, riparian areas.**

An additional alternative (Alternative H) was developed to evaluate additional options for areas available for gas leasing. The alternatives in the FEIS evaluated a wide range of options from no leasing to leasing of nearly the entire GWNF. The selected alternative does not allow any new oil and gas leasing.

**GA-25: The Forest Service should not allow leasing of gas on the Forest.**

The selected alternative does not allow gas leasing on the federal minerals on the GWNF. However, this decision does not affect the approximately 10,200 acres of existing leases.

**GA-26: The Forest Service should base its decisions on gas leasing on science.**

We carefully reviewed all of the information submitted in comments and reviewed recent research and studies on the potential impacts of gas development and on control measures that can be used to reduce impacts as demonstrated in Alternative H. See also response to GA-1.

**GA-27 & 28: The Forest Service needs to improve the analysis of the effects of gas leasing decisions and should consider additional information in regard to the effects of gas leasing, including: economic information, adverse effects of high-volume hydraulic fracturing, fluids used in hydraulic fracturing, road effects and stipulations to reduce road effects, safety of high volume hydraulic fracturing, geologic information, additional stipulations.**

The analysis of effects of gas leasing has been updated in the Final EIS.

**GA-29 & 30: The Forest Service should further study the effects of vertical drilling and should further study the effects of vertical drilling and ban vertical drilling in specified locations.**

We did a further review of the effects of vertical drilling before making our decision to select Alternative I.

**GA-31: The Forest Service should carefully consider effects on other resources in making any decisions on gas leasing.**

Section D of Chapter 3 of the Final EIS does include an analysis of effects on other resources.

**GA-32 & 34: The Forest Service should consider the geology of the Marcellus shale formation in making its decision on horizontal drilling and better address the geologic setting of its analysis of horizontal drilling in the Marcellus shale.**

We did consider the geology of the Marcellus and updated the Final EIS with the latest information.

**GA-33: Alternatives B, D, E, F and G are the same as Alternative C in areas underlain by Marcellus shale.**

The Final EIS reflects a range of alternatives for addressing the question of what lands should be available for gas leasing.

**GA-35: The Forest Service should separate the oil and gas leasing availability decision from the consent to lease decision.**

The analysis in this EIS is to support an oil and gas leasing availability decision. The consent to lease is an administrative process, rather than a decision, to verify that the decision on lands administratively available is valid and that the appropriate stipulations have been placed on the lands. The consent to lease occurs when the BLM is getting ready to offer leases for sale.

**GA-36: The Forest Service should not use the EIS and Forest Plan to regulate technology for gas drilling.**

The selected alternative no longer has the ban on a particular technology for gas drilling.

**GA-37: The DEIS contains virtually no evidence regarding the potential impacts of horizontal drilling.**

We have updated our analysis of effects in the EIS.

**GA-38: The Forest Service needs to correct several errors, inconsistencies in the analysis of the effects of gas development and better define several practices.**

We corrected the error in Chapter 2 of the FEIS by clarifying that Alternatives E and G only prohibit horizontal drilling; they do not prohibit hydraulic fracturing. In regard to flowback water, Appendix K states that only 20 percent of the flowback water is recovered during initial post treatment flowback. The reference on page 3-336 of the DEIS that refers to up to 60-80% return of flowback refers to a longer period of time. There is a range of flowback and since no wells have been drilled in the vicinity of the GWNF, it is difficult to specify a precise number.

**GA-39: The Forest Service should appropriately use the Reasonably Foreseeable Development in its analysis.**

The Reasonably Foreseeable Development Scenario has been updated and used in our analysis.

**GA-40: The Forest Service should require additional stipulations to minimize impacts from gas drilling.**

Alternative H contained additional stipulations to reduce impacts. A discussion of those additional control measures is included in Appendix I of the FEIS.

**GA-41: The Forest Service needs to identify monitoring requirements in regard to any gas development.**

Monitoring requirements would be developed and included in the preparation of the surface use plans associated with permits to drill on existing federal leases. This would be part of the second stage of the decision-making on gas drilling.

**GA-42: The Forest Service should identify the environmentally preferred alternative.**

The Record of Decision does identify the environmentally preferred alternative.

**GA-43: The Forest Service ignores the relationship of their decision to the federal and state efforts to increase regulation of horizontal drilling and hydraulic fracturing.**

We have incorporated a discussion of state regulations in our analysis. The impacts of other regulations on the impacts of gas drilling on the Forest are considered in the final analysis.

**GA-44: The Forest Service should select Alternative A since the other alternatives all contain restrictions on horizontal drilling.**

See response to GA-1.

**GA-45: The Forest Service should purchase outstanding and reserved mineral rights.**

The purchase of outstanding and reserved mineral rights is outside the scope of this analysis. It is dependent upon annual appropriations for land acquisition.

## GEOLOGY

**GE-1: The Forest Service should protect caves and other geologic resources.**

The forest plan does protect caves and other geologic resources through land allocations including Geologic Areas, Special Biological Areas and Indiana bat Conservation Areas and through desired conditions and standards applicable to caves and karst systems.

## HERBICIDES

**H-1: The Forest Service should only use herbicides or pesticides in accordance with manufacturers' recommendations.**

The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, requires that the use of all pesticides must adhere to the pesticide label as registered by the Environmental Protection Agency (EPA). The label includes information regarding application rates and methods targeted to a variety of pests as well as mixing and loading recommendations. These are essentially the manufacturer's recommendations for the use of the pesticide as approved by the EPA. Because this is statutory law, no Forest Plan guidance (e.g. a Standard) is necessary. However, Forestwide Standard FW-120 does require us to use the lowest rate effective in meeting project purposes while protecting human and wildlife health (emphasis added).

## LANDS

### **LA-1: The Forest Service should address the issue of lands to a greater extent in the EIS.**

The issue of Lands was not identified as a significant issue in the EIS. It only differs in one alternative and that difference is only in the budget for the lands program which is much higher in Alternative A. The funding level of 1.5 million dollars as identified in Alternative A has never been achieved. The highest funding for both the GWNF and the Jefferson NF has been 1.2 million dollars. The level of funding in Alternative A would achieve a much higher level of boundary line maintenance and this maintenance is important in all aspects of forest management. However, it is unlikely that it would ever be achieved. The budget level used in all of the other alternatives is a much more realistic budget expectation.

In regard to land acquisition, the forest has some identified needs, but these are not extensive and do not vary by alternative.

### **LA-2: The Forest Service should increase land acquisition.**

The Forest Plan identifies priorities for land acquisition, but the amount of acquisition is likely to be small.

### **LA-3: The Forest Service should not increase land acquisition.**

The Forest Plan identifies priorities for land acquisition, but the amount of acquisition is likely to be small.

### **LA-4: The Forest Service should re-evaluate the standards regarding special use permits for water wells in relation to gas drilling.**

Standard FW-241 regarding well and spring permits only applies to special use permits. It does not apply to the exercise of private mineral rights or to mineral leases or permits to drill.

## MANAGEMENT EMPHASIS

### **ME-1: The Forest Plan management emphasis should not be on timber production.**

Timber production is not the management emphasis of the Forest Plan. Restoration of functioning ecological systems is one of the main emphasis areas of the Forest Plan. Timber harvest is an important tool in managing vegetation to achieve the ecological goals of the Forest Plan. In addition, the production of timber is an important component of the Forest Plan and is an important reason for the existence of the National Forest System. It continues to be an important aspect of our management while we achieve our goal of ecological restoration.

### **ME-2: The Forest Plan management emphasis should be to conserve a core network of resilient forests, emphasize ecosystem restoration, maintain and improve healthy watersheds, and provide necessary ecosystem services and recreational benefits for people.**

We agree and these are some of the main emphasis items in the Forest Plan.

### **ME-3: The Forest Plan management emphasis for the Cove Creek Wildlife Management Area should be as described in the comment.**

The Cove Creek Wildlife Management Area is allocated to Management Prescription Area 13-Mosaics of Habitat and so can be managed for game species and a trout fishery and timber can be monitored for future silvicultural treatments as recommended in the comment.

### **ME-4: The Forest Plan management emphasis should recognize the need to be a good neighbor to adjacent landowners.**

We agree and take adjacent landowners into consideration, particularly in management strategies for treatment of non-native invasive plants, control of damaging insects, fire management and vegetation management.

### **ME-5: The Forest Plan management emphasis should be to allow for natural processes to guide restoration of the forest.**

The Forest Plan allocates about 70,000 acres of land to wilderness and recommended wilderness study where natural processes will guide restoration. It also allocates about 300,000 acres of land to National Scenic Areas, Recommended National Scenic Areas, Shenandoah Crest, Remote Backcountry Areas, and Special

Biological Areas where natural processes will be the main guide of restoration, but where prescribed fire may also be used.

**ME-6: The Forest Plan management emphasis should not be on exploitation of natural resources for commercial gain.**

The emphasis of the Forest Plan is not on resource exploitation for commercial gain. The sale of timber is part of the plan and it is used to achieve ecological objectives while also producing timber and jobs. The Forest Plan also allows consideration of wind energy development on the Forest to help meet energy needs while reducing emissions of carbon.

**ME-7: The Forest Service should have less active management.**

The level of active vegetation management in the Forest Plan is the same as in Alternative G (the preferred alternative in the Draft EIS). This level of management is needed to achieve ecosystem objectives and to provide habitat for many species identified in the species diversity analysis that need openings or open woodlands for parts of their life cycle.

**ME-8: The Forest Service should emphasize forest management activities.**

Restoration of functioning ecological systems is one of the main emphasis areas of the Forest Plan. Timber harvest is an important tool in managing vegetation to achieve the ecological goals of the Forest Plan. In addition, the production of timber is an important component of the Forest Plan and is an important reason for the existence of the National Forest System. It continues to be an important aspect of our management while we achieve our goal of ecological restoration.

**ME-9: The Forest Plan management emphasis should be on protection and management of forest resources for future generations.**

We agree. All of the land allocations and management direction in the Forest Plan is designed to manage and protect the forest resources and assure sustainable management for future generations.

**ME-10: The Forest Plan management emphasis should be on multiple use and sustained yield.**

We agree. This is required by law and the concepts of multiple use and sustained yield are part of the management direction in the Forest Plan.

**ME-11: The Forest Plan management emphasis should be on protection.**

Protection of the resources of the GWNF is a management emphasis. Standards are prescribed to protect water quality, soil productivity, biological diversity, scenery and other values. A portion of the Forest is allocated to wilderness and other areas are allocated for the protection of Special Biological Areas and remote recreation character. Still other areas are allocated for management of mosaics of wildlife habitat where protection involves vegetation management activities to protect habitat for vegetation and animals that need varying levels of openings in the forest canopy for periods of time.

**ME-12 & 13: The Forest Service should increase the amount of old growth, restrict horizontal drilling, (restrict road building), and preserve our scenic vistas.**

Under the Forest Plan the amount of old growth conditions is projected to increase, no new federal oil and gas leases are permitted, restrictions on road construction are on about 376,000 acres, and there is an allocation of 34,000 acres of land for scenic corridors.

**ME-14: The Forest Plan management emphasis should be on forest health.**

Forest health is addressed through management direction on insect and disease control, management of non-native invasive species, allocation to a variety of management prescription areas to provide a variety of levels of active or passive vegetation management.

**ME-15: The Forest Plan management emphasis should be on forest ecology, drinking water, and enjoyment of visitors.**

These are all emphasis items in the Forest Plan as evidenced by the standards, management direction and land allocation decisions.

**ME-16: The Forest Plan management emphasis should be on large areas of mature, undisturbed forests.**

Large areas of mature, undisturbed forests are provided through the existing and recommended wilderness study. The selected alternative has additional recommended wilderness study acres from that proposed in the draft Plan. In addition to the Recommended Wilderness Study, the Forest Plan allocates large blocks of mature forest to National Scenic Areas, Recommended National Scenic Areas, Shenandoah Crest, and Remote Backcountry Areas, where only limited disturbance is allowed (prescribed fire).

**ME-17: The Forest Plan management emphasis should be on recreation and water supply.**

The Forest Plan places great emphasis on water supply and provides for a wide diversity of recreation opportunities to address the high level of demands on recreation.

**ME-18: The Forest Service should restrict drilling, wind development, new roads and energy exploration.**

Gas drilling, wind development, new roads and energy exploration are all limited in the Forest Plan to protect the most sensitive areas from these types of development. However, there is also a need to address the energy demands, clean energy demands, and the desire for good access to the forest. So some areas of the forest are identified where these types of development could be allowed.

**ME-19: The Forest Service should not transfer agricultural lands to non-agricultural lands.**

The Forest Plan will not result in the transfer of agricultural lands to non-agricultural lands. However, some lands currently managed in open conditions using livestock may be allowed to grow into riverine forests.

**ME-20: The Forest Plan management emphasis should be on access and local businesses.**

While the management emphasis of the Forest Plan is on water and ecological diversity, access and impacts on local business is an important consideration in the Plan. Local business will benefit from the high level of water quality, scenery, and condition of the ecological systems on the Forest. Local business will also benefit from the level of timber harvest and recreation opportunities provided under the Forest Plan.

## MINERALS

**MI-1: The Forest Service should continue to make mineral resources available for use.**

We agree and retain the direction in the final plan.

## MONITORING

**MO-1: The Forest Service should have a strong system for monitoring water quality.**

The Forest's extensive monitoring of aquatic macroinvertebrates and water chemistry will continue under the Revised Plan. This provides an assessment of water quality across the Forest and also assesses the effectiveness of protective measures implemented during resource management activities. There will also be visual monitoring of the implementation and effectiveness of Best Management Practices.

**MO-2: The Forest Service should improve its monitoring plan.**

The monitoring plan has been updated in the Final plan.

**MO-3: The Forest Service should include recreation in its monitoring plan.**

Recreation is included in the monitoring plan. The monitoring plan does not specify meetings with user groups, but this type of interaction with user groups will continue during plan implementation.

**MO-4: The Forest Service should provide monitoring of climate change in the monitoring plan.**

A monitoring question for climate change has been added to the monitoring section of the Forest Plan.

## NET BENEFITS

**NB-1 & 2: The Forest Service should improve its analysis of net public benefits in the EIS. The Forest Service should include an analysis of ecosystem services.**

The comments relate to the following direction in the planning regulations. 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.” 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 by 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.”

A similar set of comments relate to an inadequate discussion of ecosystem services. These are described in the Forest Plan Appendix E as “the suite of goods and services from the Forest that are vital to human health and livelihood and are traditionally viewed as free benefits to society, or “public goods” - wildlife habitat and diversity, watershed services, drinking water, carbon storage, and scenic landscapes, for example.”

The comments go on to state that the analysis does not assess the net public benefits of the various alternatives and does not identify the alternative that does maximize net public benefits.

As evidenced in the definitions of net public benefits and ecosystem services, many of the most important benefits from the National Forest cannot be readily quantified in terms of dollars. As such it is not possible to create a table or a model that assesses the value of each output from the Forest and calculates which alternative is the best. An additional complicating factor is that different people can place different relative values on a particular output. A wilderness advocate might put a very high value on a trail through a wilderness. A mountain biker (who cannot ride a bike in a wilderness) might see that as having lesser value.

Each alternative was developed to respond to issues regarding how the GWNF should be managed. While different alternatives responded with different levels of management activities, each alternative also prescribed methods for achieving the level of outputs that would reduce impacts to other resources. For example, riparian standards are prescribed for each alternative, so that if one alternative creates more soil disturbance than another alternative, the overall impact to water quality would be minimal in either alternative.

In regard to quantifying the benefits and costs, that is the purpose of the EIS. However, to examine all the benefits and costs, one needs to examine all of the tables in the document; they cannot be summarized in a simple table. For the resources that can be valued, their values are described in the Social and Economic Analysis section of Chapter 3 of the EIS. A table has been added to display the costs of implementing each alternative. In regard to outputs that cannot be readily valued, one must examine the other tables and descriptions of the impacts of the alternatives.

The Record of Decision that accompanies this EIS describes the alternative that maximizes net public benefits and provides the rationale for the selected alternative.

## NON-NATIVE INVASIVE SPECIES

### **NN-1: The Forest Service should consider prevention as a management goal for non-native invasive species.**

The Plan does include a discussion of prevention and includes standards to prevent the spreading of non-native invasive species.

### **NN-2: The Forest Service should consider the role of fungi in the control and spread of non-native invasive species.**

The Forest Service utilizes Integrated Pest Management techniques to control non-native invasive species. Which methods to use are decided on a site-specific and species-specific case-by-case basis.

### **NN-3: The Forest Service should improve the Forest Plan direction on non-native invasive species.**

The Plan sets priorities for non-native plant species treatment.

### **NN-4: The Forest Service should actively control non-native invasive species.**

We agree and have objectives to do so.

**NN-5: The Forest Service should discontinue management activities that encourage non-native invasive species.**

Nine of the twelve objectives for Species Diversity include some form of active management to create grasslands, shrublands, early successional habitat, open woodlands, and old fields. To accomplish these objectives timber sales and prescribed fire are necessary. The Forest Plan includes standards to prevent non-native invasive plants from becoming established in areas where management activities are occurring.

**NN-6: The Forest Service should recognize that vegetation management and road construction creates conditions in which non-native invasive species thrive.**

See above.

**OLD GROWTH****OG-1: The Forest Service should improve its analysis of old growth including the estimated amount of old growth, definitions of old growth, how regional guidance is followed.**

The analysis has been updated to more clearly describe the current and expected extent of old growth on the Forest

**OG-2: The Forest Service should protect old growth.**

Old growth will be protected in the following manner: land allocations, plan direction, unsuitable stands, and site-specific analysis.

**OG-3: The Forest Service should complete an inventory of all old growth.**

Inventory will be better documented in the future as stands are examined.

**OG-4: The Forest Service should inventory old growth stands for fungi.**

Our inventory funds are limited and we have many priorities for inventory. Inventory of old growth is one priority that would be higher than inventory for fungus within any old growth areas. We would gladly support outside research into this issue, but it is unlikely to be a priority for our limited inventory funding.

**OG-5: The Forest Service should not harvest any old growth.**

Some old growth can be harvested in the more common vegetation types, but we do not expect to harvest much old growth in the next ten years. Appendix B contains a discussion of the extent old growth that is currently on the Forest and what is projected to be present in 10 and 50 years.

**OG-6: The Forest Service should provide old growth stands as they are an important part of the ecosystem.**

The Forest Plan does provide for old growth and its extent across the forest will continue to expand.

**OG-7: The Forest Service should protect old growth and not expand it beyond 50% of the forest.**

The Forest Plan does provide for old growth and its extent across the forest will continue to expand.

**OG-8: The Forest Service should manage to enhance old growth obligate plants and animals.**

We know of no old growth obligate plants or animals that have been identified on the GWNF.

**OG-9: The Forest Service should protect Peters Mtn and Frozen Knob for old growth.**

These areas have been identified as Key Natural Heritage Areas.

**OG-10: The Forest Service should provide wildlife transit corridors between old growth areas.**

We know of no specific wildlife that require transit corridors of old growth. Connections of forested areas are important for some species and some species may benefit from connections of mature forest (which do exist in abundance).

**OG-11: The Forest Service has retained more old growth.**

Yes it has and the selected alternative protects a similar amount of old growth as in the draft Plan.

**OG-12: The Forest Service will satisfy the need for old growth forest with its proposed management.**

We agree and the selected alternative protects a similar amount of old growth as in the draft Plan.

**OG-13: The Forest Service should harvest old growth to improve deer populations.**

Some old growth can be harvested in the more common vegetation types, but we do not expect to harvest much old growth in the next ten years.

**PROCESS FOR PREPARING THE EIS AND PLAN****PR-1: The Forest Service should fix the issues that made the DEIS and Draft Plans substantially flawed documents.**

Public comments on the Draft Plan and Draft EIS did note a number of errors in the documents. In response to a number of these comments, errata (a list of errors, corrections and corrected versions of the text) were prepared and posted on the Forest website. An additional 45 days were added to the comment period to allow the public to review these changes. These errors have been fixed in the Final EIS and Final Plan. The Final EIS and Final Plan are consistent with the requirements of the 1982 planning regulations.

**PR-2: The Forest Service made errors in the AMS.**

The AMS meets the requirements of the 1982 planning regulations. The errors in the present net value analysis have been corrected. These errors did not affect the development of the “need for change” component of the AMS.

**PR-3: The Forest Service needs to allow for public comment after the IMPLAN analysis is updated.**

The purpose of issuing a Draft Plan and Draft EIS is to receive comments about errors, additional information, and additional analyses that could improve the analysis. Public comments identified the errors in the IMPLAN analysis. These have been corrected in the Final EIS. There is no requirement to have another comment period to review this information.

**PR-4: The Forest Service should respond to comments.**

This appendix is the response to comments. In addition all of the comments were posted on our website, so that anyone could review them.

**PR-5: The Forest Service did not seek industry input.**

The Notice of Intent to prepare the EIS was sent to our Forest Plan mailing list. This included the following: Cabot Oil and Gas Corporation, Columbia Gas Transmission Corporation, Columbia Natural Resources, Equitable Production Company, West Virginia Oil and Natural Gas Association, Pennzoil Products Co, Carrizo Oil and Gas, CNX Gas Company, High Mount Exploration and Production, and Nomad Geosciences. The prohibition on horizontal drilling in the Draft Plan was developed in response to public comments; it was not proposed at the time that the Notice of Intent was issued.

**PR-6: The Forest Service should provide criteria and a better process to compare alternatives.**

The Forest Service used the following criteria to identify the preferred alternatives in the Draft EIS and the selected alternative in the Final EIS:

***Evaluation Criteria for Identification of the Preferred/Selected Alternative***

***Criterion 1:*** The extent to which the alternative maintains or restores water quality and the soil productivity necessary to support ecological functions in upland, riparian, and aquatic areas.

***Criterion 2:*** The extent to which the alternative maintains or restores plant and animal diversity and provides habitats needed to sustain viable populations of native and desired non-native species, including threatened and endangered species.

***Criterion 3:*** The extent to which the alternative maintains the resiliency of the ecological systems in relation to futures changes such as increased development adjacent to the National Forest, climate change, and increased demand for ecosystem services and products from the National Forest.

***Criterion 4:*** The extent to which the alternative maintains or restores forest vegetation to ecological conditions with reduced risk of damage from fires, insects, diseases, and invasive species.

***Criterion 5:*** The extent to which the alternative provides settings for a variety of recreation opportunities.

***Criterion 6:*** The extent to which the alternative provides a variety of uses, values, products, and services for present and future generations by managing within the capability of sustainable ecosystems.

*Criterion 7: The extent to which the alternative addresses issues raised by: the forest (in the AMS), partners, and the public.*

A number of the objectives in the Forest Plan are expressed as a range rather than as a single number. The range was used to reflect the fact that budgets may constrain activities that would otherwise be desired at higher levels. When addressing objectives for a ten to fifteen year plan, a range of objectives seems to express a more realistic vision than the use of a single number. The use of ranges does complicate the analysis of effects in the EIS. To facilitate the analysis sometimes the full range was analyzed, at other times the maximum, or minimum or average value was used in the analysis. The description of the effects includes statements as to which value was used.

NEPA requires evaluation of a No Action alternative. For a Forest Plan, the No Action alternative represents continuing implementation of the current Plan. Alternative A is the No Action alternative and is described by the current (1993) Forest Plan. However, in many areas the levels of activities identified in the current plan are different from the levels actually achieved. To reflect this difference, the narrative description of effects also identifies the effects of the current plan as implemented. The Final EIS also includes the current Plan, as implemented, in a number of the tables comparing alternatives. The “as implemented” version of Alternative A is generally based on the years 2009 to 2011, unless otherwise noted.

**PR-7: The Forest Service should appropriately portray the current forest plan in the EIS.**

The Draft EIS contained some errors in describing the current plan in Alternative A. Errors were made in describing the amount of timber regeneration harvest planned (it should be 2,400 acres per year and not the 3,000 acres displayed throughout the DEIS), in describing the Scenic Integrity Objectives (Alternative A has higher levels of Moderate and fewer acres of Low than is shown in the DEIS), in describing the level of recreation development planned (much higher than is displayed), and in the costs to implement the Alternative (much higher than displayed). These errors were corrected in the Errata issued during the comment period and are included in the Final EIS.

**PR-8: The Forest Service erred in its analysis of Alternative B.**

Alternative B is based on changes to the current plan identified in the Analysis of the Management Situation. The analysis was based on an IDT evaluation of the 1993 Forest Plan direction, monitoring and evaluation results, new policies, best available science and an attempt to balance public issues that were identified as of March 2010. There is no need to change the Alternative or to drop it from consideration.

The comment states that the Analysis of Management Situation document recommends maintaining a suitable base between 350,000 and 370,000 acres, but Alternative B displays the suitable base as 476,000 acres. The AMS recommended striving to maintain at least the existing amount of forest suitable for timber production or suitable for timber harvest between 350,000 to 370,000 acres. The 476,000 acres of forest suitable for timber production is greater than the range of 350,000 to 370,000 acres and so meets the goal of at least matching that level. After the discussion of the acreage, the AMS recommendation goes on to state a need to identify: 1) all of those NFS lands currently within MA 17 (Timber Production) but outside of any other special areas and otherwise consistent with timber suitability requirements as Suitable for Timber Production; and 2) all of those NFS lands currently within other MA but outside of any other special areas and otherwise consistent with timber suitability requirements as Suitable for Timber Harvest. The identification of these areas helped to increase the suitable base to 476,000 acres.

**PR-9: The Forest Service should correct errors in Alternative C.**

The comment addresses the budget cost for fire which is higher in Alternative C, than in Alternative A. The budget for fire includes fire preparedness as well as prescribed fire. Without a prescribed fire program in Alt C, the budget is projected to have a small increase in preparedness funds to address the lack of fuels treatment. The budget figure used for prescribed fire is the same as in Alternative A, since it is expected that unit costs to perform any needed burning would be higher, since less total acres would be burned. There is no need to correct the budget.

**PR-10: The Forest Service should have an alternative that examines the timber harvesting at a level similar to the past three years of harvest.**

Alternative A is the No Action alternative and is described by the current (1993) Forest Plan. However, in many areas the levels of activities identified in the current plan are different from the levels actually achieved. To

reflect this difference, the narrative description of effects also identifies the effects of the current plan as implemented. The Final EIS also includes the current Plan, as implemented, in a number of the tables comparing alternatives. The “as implemented” version of Alternative A is generally based on the years 2009 to 2011, unless otherwise noted.

**PR-11: The Forest Service should have an adequate range of alternatives.**

The Final EIS evaluates nine alternatives in detail. These alternatives reflect a wide range of outputs and reflect a reasonable range of alternatives.

**PR-12: The Forest Service should correct errors in existing wilderness acreage.**

The acreage of land on the GWNF that are located within the Barbours Creek Wilderness and Shawvers Run Wilderness are included in the description of existing wilderness in Chapter 3 of the Final EIS.

**PR-13: The Forest Service should make some specific changes to the wording in the EIS.**

There is no need to add Didymo, hemlock wooly adelgid and invasive species to the list of changes needed on page 1-6 of the EIS, since these items are all discussed in Chapter 3. Adding the adjacency of the Monongahela to the description of the Forest Profile on page 1-2 of the EIS is not needed since it is clearly identified on the vicinity map on the next page. The *Vegetation Management in the Appalachian Mountains* is a reference to an EIS that contains environmental analysis that provides support for some of the decisions in the Forest Plan EIS. We corrected the names of agencies and organizations in the Final EIS and Plan.

**PR-14: The Forest Service should improve Chapter 3 of the EIS by providing additional tables.**

Additional tables have been added to Chapter 3.

**PR-15: The Forest Service should improve its analysis of cumulative effects.**

The effects analyses have been updated in the Final EIS.

**PR-16: The Forest Service should fix problems with the analysis of present net value.**

The comment questioned the use of a range of numbers for the timber volume output for each alternative since the acres to be harvested are represented by a range; however, the PNV analysis uses a discrete volume estimation that represents the Allowable Sale Quantity (maximum amount) for each alternative. The cost estimates used in the PNV analysis has been updated.

**PR-17: The Forest Service should follow NFMA.**

The Forest Plan follows the need for inventories of the applicable resources of the forest (National Forest Management Act of 1976 Sec.6) through the inventories created for the Analysis of the Management Situation, the EIS and the Forest Plan. There are many inventories used in the analysis and these include potential old growth, Potential Wilderness Areas, recreation opportunity spectrum, ecological systems, species of concern in the ecological analysis, scenery, soil survey, geologic surveys, and Special Biological Areas.

The Forest Plan follows the identification of the suitability of lands for resource management (National Forest Management Act of 1976 Sec. 6) in Forest Plan Appendix C.

The Forest Plan follows the need for obtaining inventory data on the various renewable resources, and soil and water, including pertinent maps, graphic material, and explanatory aids; (National Forest Management Act of 1976 Sec. 6) as described above.

The Forest Plan follows the need for methods to identify special conditions or situations involving hazards to the various resources and their relationship to alternate activities (National Forest Management Act of 1976 Sec. 6) through the previously identified inventories, the ecological and species diversity analyses (EIS Appendix E and Appendix F) and Chapter 3 of the EIS.

The Forest Plan follows the need to insure consideration of the economic and environmental aspects of various systems of renewable resource management, including the related systems of silviculture and protection of forest resources, to provide for outdoor recreation (including wilderness), range, timber, watershed, wildlife, and fish; (National Forest Management Act of 1976 Sec. 6) through the effects analysis in Chapter 3 of the EIS.

The Forest Plan follows the need to provide for diversity of plant and animal communities (National Forest Management Act of 1976 Sec. 6) through the ecological and species diversity analyses (EIS Appendix E and

Appendix F), Chapter 3 of the EIS and the resulting management direction for species and ecological systems in the Forest Plan.

The Forest Plan follows the requirement to provide, where appropriate, to the degree practicable, for steps to be taken to preserve the diversity of tree species similar to that existing in the region controlled by the plan; (National Forest Management Act of 1976 Sec. 6) through the ecological analysis in Appendix E of the EIS and the management direction for ecological diversity in the Forest Plan.

The need to insure research on and (based on continuous monitoring and assessment in the field) evaluation of the effects of each management system to the end that it will not produce substantial and permanent impairment of the productivity of the land; (National Forest Management Act of 1976 Sec. 6) 103 is largely the purview of the research branch of the Forest Service. Soil productivity is part of the monitoring plan in Chapter 5 of the Forest Plan.

The Forest Plan follows the need to insure that timber will be harvested from National Forest System lands only where- "(i) soil, slope, or other watershed conditions will not be irreversibly damaged; "(ii) there is assurance that such lands can be adequately restocked within five years after harvest; (National Forest Management Act of 1976 Sec. 6) through the suitability analysis in Forest Plan Appendix C and in forest-wide standards including FW-131.

The Forest Plan follows the requirement that protection is provided for streams, stream-banks, shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment, where harvests are likely to seriously and adversely affect water conditions or fish habitat (National Forest Management Act of 1976 Sec. 6) through the riparian management direction including the standards for riparian areas.

NFMA has a requirement to insure that clearcutting, seed tree cutting, shelterwood cutting, and other cuts designed to regenerate and even-aged stand of timber will be used as a cutting method on National Forest System lands only where- "(i) for clearcutting, it is determined to be the optimum method, and for other such cuts it is determined to be appropriate, to meet the objectives and requirements of the relevant land management plan; "(ii) the interdisciplinary review as determined by the Secretary has been completed and the potential environmental, biological, esthetic, engineering, and economic impacts on each advertised sale area have been assessed, as well as the consistency of the sale with the multiple use of the general area; "(iii) cut blocks, patches, or strips are shaped and blended to the extent practicable with the natural terrain; "(iv) there are established according to geographic areas, forest types, or other suitable classifications the maximum size limits for areas to be cut in one harvest operation, including provision to exceed the established limits after appropriate public notice and review by the responsible Forest Service officer one level above the Forest Service officer who normally would approve the harvest proposal: Provided, That such limits shall not apply to the size of areas harvested as a result of natural catastrophic conditions such as fire, insect and disease attack, or windstorm; and "(v) such cuts are carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, and esthetic resources, and the regeneration of the timber resource. (National Forest Management Act of 1976 Sec. 6). The Forest Plan follows these requirements through the analysis in Forest Plan Appendix C and forest-wide standards on Timber Management.

The Forest Plan follows the requirement to identify lands within the management area which are not suited for timber production, considering physical, economic, and other pertinent factors to the extent feasible (National Forest Management Act of 1976 Sec. 6) through the analysis documented in Forest Plan Appendix C and the land allocations in the Forest Plan.

**PR-18: The Forest Service should follow appropriate planning criteria.**

Criteria for evaluating the alternatives are described in PR-6.

**PR-19: The Forest Service should make the Plan more consistent with the Jefferson NF Plan.**

Making the Forest Plan for the GWNF more consistent with the Forest Plan for the Jefferson NF was a goal of the revision process. Management prescriptions from the Jefferson form the basis of the prescription in the final Forest Plan. However, some aspects of the management prescriptions were modified based on the conditions of the GWNF or on new information. One example is the combination of the wildlife and timber prescription areas from the Jefferson NF (management prescription areas 8A1, 8B, 8C, 8E1 and 10B) into a single management prescription area on the GWNF, 13-Mosaics of Wildlife Habitat. The purpose of this was to

facilitate the use of ecological systems identified on the GWNF and the desired conditions that go with these systems.

**PR-20: The Forest Service should simplify the plan by reducing the number of management areas.**

We utilized management areas as needed to adequately describe the desired conditions on the Forest, particularly because so many unique areas exist on the GWNF (e.g. Appalachian Trail, Cow Knob salamander). We also had a desire to make the GWNF Forest Plan more consistent with the Jefferson Forest Plan. We utilized many of the prescription areas from the Jefferson Forest Plan, but did reduce the number of management areas in response to a desire to simplify the Plan.

**PR-21: The Forest Service should better define the terms desired future condition and objectives.**

We believe that these terms are clearly defined in Chapter 1 of the Forest Plan.

**PR-22: The Forest Service should acknowledge the proposal made by the stakeholders group.**

We did review the proposal made by the stakeholders group and made some changes in the Final Plan in response to recommendations made by the stakeholders (and other individuals and groups). The changes included the final Recommended Wilderness Study acres, and the recommendation of a National Scenic Area at Shenandoah Mountain.

**PR-23: The Forest Service should improve its niche statement.**

The suggested additions to the niche statement are more of a list of current conditions and statistics on numbers of recreation areas than items indicating the role of the Forest. No changes were made.

**PR-24: The Forest Service should follow state regulations.**

The Forest Service will follow applicable state regulations.

## POTENTIAL WILDERNESS AREAS, INVENTORIED ROADLESS AREAS, WILDERNESS

**PW-1: The Forest Service should protect roadless areas.**

In the Forest Plan all Inventoried Roadless Areas, not recommended for congressional designation, have management direction that is consistent with the 2001 Roadless Area Conservation Rule.

**PW-2: The Forest Service should manage all inventoried roadless areas under the 2001 RACR.**

In the Forest Plan all Inventoried Roadless Areas, not recommended for congressional designation, have management direction that is consistent with the 2001 Roadless Area Conservation Rule. The Forest Plan has been changed to implement this in those portions of prescription areas like Special Biological Areas that are within inventoried roadless areas.

**PW-3: The Forest Service should adjust the boundaries of inventoried roadless areas in relation to roads and areas suitable for timber production.**

The Inventoried Roadless Areas were identified in the 2001 Roadless Area Conservation Rule and FEIS, and currently, there are no provisions for the Agency to update those IRA boundaries.

**PW-4: The Forest Service should manage all Potential Wilderness Areas not recommended for federal designation under the requirements of the 2001 Roadless Rule.**

The 2001 RACR specifically applies to those Inventoried Roadless Areas identified in the EIS supporting the rule, so there is no requirement under the RACR that it apply to newly identified PWAs. Of the 372,000 acres of Potential Wilderness Areas, 228,000 are Inventoried Roadless Areas (and additional 14,000 acres of Inventoried Roadless Areas were not included in the Potential Wilderness Area inventory). Of the remaining 144,000 acres 6,000 acres were allocated to Recommended Wilderness Study, 12,000 acres were allocated to Recommended National Scenic Area, 42,000 acres to Remote Backcountry Areas (with standards that meet the 2001 RACR) and Special Biological Areas where timber harvest and road construction are limited, but not prohibited. About 80,000 acres were allocated to Management Prescription Area 13-Mosaics of Habitat which allows timber harvest and road construction. Many of the areas allocated to MA 13 are already roaded and have been actively managed for many years. A few, like Paddy Knob, Galford Gap and Little Alleghany have few existing roads, but have some potential for vegetation management from the existing boundary roads.

**PW-5: The Forest Service should assure that management activities in PWAs will only be done if they will not affect the PWA to the point that it would no longer meet the definition of a PWA.**

The portions of PWAs that were allocated to Management Prescription Area 13-Mosaics of Habitat were allocated so that vegetation could be managed for ecological and wildlife benefits, rather than management for remote characteristics. As such, no restrictions on road construction are placed on these areas. However, any project involving permanent road construction that exceeds the level of roads allowed in a PWA would require an analysis of the effects of the road construction on the wilderness character of the area.

**PW-6: The Forest Service should make all Potential Wilderness Areas and all Virginia Mountain Treasures free from logging and road building.**

See the response to PW-4 for Potential Wilderness Areas and the response to PW-31 for the Virginia Mountain Treasures.

**PW-7: The Forest Service should manage Potential Wilderness Areas as recommended by the Stakeholders group.**

Many comments were received regarding the management of Potential Wilderness Areas (PWAs), with some in favor of treating all of them the same as Inventoried Roadless Areas (IRAs) and some opposed to special treatment of the PWAs. The stakeholders group dealt with specific PWAs on a case by case basis with recommendations for Mosaics of Habitat, Remote Backcountry Recreation, Special Biological Areas and Recommended National Scenic Area.

The stakeholders recommended that all Inventoried Roadless Areas, not recommended for congressional designation, be managed consistent with the 2001 RACR. This is in the final Forest Plan. The stakeholders recommended no permanent road construction in any PWAs. The final Forest Plan does this for the areas allocated to Remote Backcountry Areas. However, as noted in PW-5, the Forest Plan places no restrictions on those portions of PWAs allocated to MA 13 Mosaics of Habitat. The stakeholders recommended that all other PWAs be allocated to Mosaics of Habitat except for part of Crawford Mountain, Duncan Knob, and Archer Knob that should be allocated to Remote Backcountry Areas. The Forest Plan allocates more areas to Remote Backcountry Areas than recommended by the stakeholders and does have Remote Backcountry Areas in much of Archer Knob. The Forest Plan does not allocate the Crawford Mountain or Duncan Knob areas to Remote Backcountry Areas. These two areas are closer to existing roads and are allocated to Mosaics of Habitat.

**PW-8: The Forest Service should not make all Potential Wilderness Areas consistent with the restrictions in the 2001 RACR.**

The Forest Plan did not make all PWAs consistent with the restriction in the 2001 RACR. Each PWA that is not an Inventoried Roadless Area and not recommended for congressional designation was evaluated on its own merits. The allocations are summarized in the response to PW-4.

**PW-9: The Forest Service should address concerns with those Potential Wilderness Areas that would be allocated to Mosaics of Habitat.**

Some comments were received regarding the Potential Wilderness Areas (PWAs) and Virginia Mountain Treasures not being adequately protected from road construction and logging in the preferred alternative. See response to PW-31 regarding Virginia Mountain Treasures. In the final selected alternative, those PWAs found to be not suitable for wilderness recommendation are allocated to a variety of management prescription areas, many which do have restrictions on road construction and timber production including Special Biological Areas, Remote Backcountry Recreation and the Appalachian Trail Corridor. Many PWAs are partly or entirely allocated to Mosaics of Habitat in Alternative I, which allows for multiple uses including road construction and timber production.

The effects of allocating lands in PWAs to Mosaics of Habitat are described in the EIS. This allocation could result in disqualifying some areas for future consideration as wilderness. However, based on past management and past inventories, our experience has been that at each new inventory of areas that qualify for consideration as wilderness, the extent of the areas that qualify increases and increases substantially ( from 168,000 acres in 1979 to 293,000 acres in 1993, to 412,000 acres now).

One comment included concern over PWAs' vulnerability to non-native invasive species (NNIS) where allocated to Mosaics of Habitat. Forestwide standards FW-91 through FW-100 require mitigating measures to minimize the introduction and spread of NNIS. OBJ NNI-1 and OBJ NNI-2 provide Forest Objectives for surveys and

treatment of NNIS plants annually. The potential effects of management activities (including the potential introduction and spread of NNIS) is provided in the EIS for each alternative.

**PW-10: The Forest Service should not consider the 37 areas identified as new Potential Wilderness Areas as having any special designation.**

The 37 Potential Wilderness Areas do not have a special designation. The areas or portions of the areas are allocated to a variety of management prescription areas in the Forest Plan. Some of these are recommendations for designation by Congress as wilderness or national scenic area. Management direction for the areas is identified by the management prescription area in the Forest Plan. However, since these areas qualify as Potential Wilderness Areas, future projects proposed in these areas will need to evaluate the potential for affecting the wilderness characteristics that made the area eligible as a PWA.

**PW-11: The Forest Service should change the rules that define Potential Wilderness Areas.**

The rules that define Potential Wilderness Areas are established in the US Forest Service Manual and Handbook and are based on direction from the Wilderness Act of 1964. Therefore, they cannot be changed on the forest or by the Forest Plan.

**PW-12: The Forest Service should add several areas as Potential Wilderness Areas.**

The GWNF followed "Guidelines on How to Conduct the 'Potential Wilderness Area Inventory' for the Revision of the Revised George Washington Forest Plan". That document is based on national direction provided in Chapter 70 of the Forest Service Land Management Planning Handbook 1909.12 as amended in January 2007. Using this national direction, the Forest did an extensive review of areas to be considered as Potential Wilderness Areas. This is documented in Appendix C of the EIS. The Whites Run area does not meet the guidelines in regard to size of the area. In regard to the Virginia Mountain Treasures, there is an analysis document on our website and in the process record that reviewed these areas.

**PW-13: The Forest Service should update its evaluations of Potential Wilderness Areas.**

The evaluations of Potential Wilderness Areas in Appendix C of the EIS were reviewed and updated as a result of many public comments received on the Draft Environmental Impact Statement. There was a comment that acres of existing designated Wilderness on other federal lands in Virginia and West Virginia should not be considered since there wasn't a corresponding inclusion in the timber harvest analysis. The evaluation of wilderness suitability includes determining whether each PWA may contribute something new to the National Wilderness Preservation System, such as an unrepresented ecological land type association. This requires a review of other federal lands with designated Wilderness that may contain the same landtype associations. Furthermore, Chapter 70 - Wilderness Evaluation of the Forest Service Land Management Planning Handbook 1909.12 directs at section 72.31 that the location, size and type of other designated wildernesses in the general vicinity be a factor in the evaluation.

Another comment stated that too much emphasis was given to concerns over illegal ATV use because it is just as illegal in other parts of the national forest. This concern remains part of the capability analysis because: (1) the impacts of ATVs can have greater significance when they occur in an area that, by definition, provides opportunities for remoteness, solitude, and a setting where the earth and its community of life are untrammelled by man. Forest Service Land Management Planning Handbook 1909.12, Chapter 70, Wilderness Evaluation, Section 72.1 Evaluation of Potential Wilderness-Capability, Paragraph 5. Manageability: "In determining capability, consider the ability to manage an area as wilderness as required by the Wilderness Act... Forest Service ability to manage an area as an enduring resource of wilderness, untrammelled by humans, retaining its primeval character.... consider such factors as size, shape, and juxtaposition to external influences; (2) It can be significantly more challenging for law enforcement to apprehend illegal ATV use in Wilderness compared to other parts of the national forest, as law enforcement cannot pursue with motorized vehicles into designated Wilderness. It is more time consuming to investigate on foot or horseback for evidence in wilderness in order to build a case; and (3) Without the use of chainsaws and other mechanized equipment, repairing trails damaged by ATVs and removing trails created by ATV riders can be more challenging.

Another comment stated that private mineral rights should be acquired for certain PWAs in order to expand an existing Wilderness or recommend a new one (Little River). Acquisition of mineral rights would improve the suitability of certain PWAs for wilderness study recommendation. However, Forest Service funding is not available for acquisition of mineral rights at the time of this Forest Plan revision process.

**PW-14: The Forest Service should keep the areas Recommended for Wilderness Study in Alternative G.**

As a result of the public comments received, the evaluations of PWAs were reviewed and updated. Subsequently, the final Forest plan keeps the Recommended Wilderness Study areas that were in Alternative G and adds recommendations for Beech Lick Knob and Rough Mountain Addition.

**PW-15: The Forest Service should not increase the amount of wilderness on the Forest.**

During the draft plan comment period, concerns were expressed about the loss of access for hunting and fishing (particularly for those who find it challenging or impossible to hike or ride horses), loss of timber benefits, potential delays in fire suppression, and the permanence of wilderness designation that would prohibit reverting back to other uses in the future.

In the selected alternative, we strived to meet the many needs and desires of the public in a balanced and environmentally responsible manner. We recognize that for a variety of reasons, many people cannot access the national forest on foot or horseback. No system roads are included in the areas Recommended for Wilderness Study. With regards to timber benefits, the suitable acres will increase from about 348,000 acres to about 439,000 acres and timber harvest is expected to increase from an actual average harvest (past ten years) of 629 acres per year to 1,800-3,000 acres per year.

The Forest Plan does recommend increasing the amount of wilderness from the current level of 40,000 acres up to about 70,000 acres. In regard to objections by several county boards of supervisors, there is a group of stakeholders that are working together to increase the level of timber harvest and the amount of wilderness on the forest and this group will be working with the county boards. At least one of the county boards has indicated a willingness to engage in these discussions. The Record of Decision recognizes this fact and we hope that any designations by Congress would strongly consider the opinions of the local county boards.

One comment references a DEIS statement that there are no old growth obligate plant or animal species on the GWNF, therefore additional wilderness designation would be to the detriment of early successional dependent species. The selected alternative includes objectives (SPD-1 through SPD-7) that provide for regeneration of 1,800-3,000 acres per year from timber harvesting, with the amount and location of early successional based on ecological objectives and restoration needs. If this objective is met, regeneration harvest will create 18,000-30,000 acres in age class 0-10 by the end of the first decade; in addition, old fields, grasslands, shrublands and open woodlands will be created and maintained. The impacts of the alternatives analyzed on terrestrial habitat components and wildlife species are contained in Appendix E of the EIS.

**PW-16: The Forest Service should reduce the acreage of wilderness and backcountry prescriptions.**

Several comments were received opposing additional wilderness recommendations, and at least one comment opposing allocations to remote backcountry, because of the loss of flexibility to manage habitat. In the final selected alternative, the GWNF attempts to find the best balance between lands that allow for active management of habitat and those where other needs and values are emphasized. The reasons for increasing the areas recommended for Wilderness study are provided in response to other comments in this section.

With regards to remote backcountry, the majority of acres allocated to this management prescription area are within IRAs. The setting provided by IRAs is compatible with the type of primitive recreation opportunities people seek in the remote backcountry. Similarly, after evaluating PWAs that are outside of IRAs (including some of the Virginia Mountain Treasures) on a case by case basis, some are allocated to remote backcountry as the most prudent and reasonable option for a variety of reasons. One is to strive to maintain core, unmanaged areas. Areas with existing road access and those where active management have occurred in the past are preferred for habitat and timber management over those lacking road access and past management.

While the Forest Plan does increase the area Recommended for Wilderness Study and Remote Backcountry Areas, it also increases the amount of land available for timber production. In addition, the amount of prescribed burning would be increased and this burning would improve habitat for game species.

**PW-17: The Forest Service should avoid recommending wilderness in some specific areas that would affect trail maintenance.**

During the wilderness suitability evaluation of PWAs, consideration was given to the presence of trails with known volunteer trail maintainers, especially the Appalachian National Scenic Trail. We appreciate the support

expressed for Alternative G by the Appalachian Trail Conservancy and the Natural Bridge Appalachian Trail Club. The final selected alternative is the same as Alternative G with respect to the Three Sisters and Three Ridges Addition PWAs. No additional wilderness has been recommended that would affect trail management on the Appalachian Trail.

**PW-18: The Forest Service should not recommend more wilderness until adequate environment monitoring and mitigation has taken place.**

There is not a requirement to restrict Wilderness study recommendations to areas with adequate environmental monitoring data. However, the Forest has considered the impacts of acid deposition and climate change in the decision to recommend the areas proposed for designation as wilderness. Forest Service specialists were consulted throughout the evaluation of PWAs with regards to the suitability and availability for recommended wilderness study evaluations. These Forest Service specialists brought to the process not only their own professional, working knowledge, but also that of research and monitoring accomplished by partners such as state agencies, universities and other organizations. The evaluation of each PWA was provided to the public for review and comment in the DEIS, and those public comments were used to update the PWA evaluations found in Chapter 2, Appendix C of the EIS.

**PW-19: The Forest Service should consider the size of Potential Wilderness Areas when making Recommendations for Wilderness Study.**

The areas that are Recommended for Wilderness Study are large areas or additions to make existing wilderness larger. Our Forest Service Land Management Planning Handbook, Chapter 70, directs that areas containing 5,000 acres or more (or less than 5,000 acres if additional criteria are met) are to be evaluated. The capability portion of the evaluation (Section 72.1.3) directs that a determination of the area's ability to provide solitude include a look at the size of the area, presence of screening, distance from impacts and degree of permanent intrusions. Many of the areas, though relatively small, do possess the presence of topographic screening and a lack of permanent intrusions.

Several of the largest PWAs evaluated were found to be unavailable in their entirety or in part due to the competing values and benefits of other resources and/or due to concerns over the Forest Service's ability to manage the area as an enduring resource of Wilderness. This resulted in eliminating several of the larger PWAs from Recommended Wilderness Study. However, a portion of Beech Lick and Little River are being recommended for wilderness study. Existing Ramseys Draft, Saint Mary's, Rich Hole and Rough Mountain Wildernesses will have additions recommended that will bolster their size. The evaluation of PWAs is found in the EIS, Appendix C.

**PW-20: The Forest Service should add more areas as Recommended Wilderness Study.**

We heard well-reasoned and passionate comments on both sides regarding whether or not to recommend additional acres for Wilderness Study. Many in support of wilderness stated that 4% of the GWNF designated as Wilderness is far too low. There is no legal requirement or national direction with regards to a minimum percent of national forest system lands to be designated as Wilderness.

Many comments were received regarding the lack of permanent protection from road construction, timber harvesting and special uses when areas are allocated to remote backcountry or other management area prescriptions. We also heard many comments that the Forest Service should maintain future management flexibility to deal with emerging issues. We have attempted to provide optimum protection to IRAs during the life of this revised plan. IRAs that are not allocated to Recommended Wilderness Study are allocated to Recommended National Scenic Area, Special Biological Areas, Remote Backcountry and Appalachian Trail Corridor. These management prescription areas restrict road construction and timber harvesting (with specific exceptions), are not suitable for wind development, and are not suitable for federal oil and gas leasing.

The nine alternatives in the Final EIS provide wilderness recommendations ranging from 1,500 acres in Alternative A to 386,809 acres in Alternative C. Alternative I, the final selected alternative, keeps the areas Recommended for Wilderness Study from Alternative G and adds recommendations for Beech Lick Knob and Rough Mountain Addition. Chapter 3 of the Final EIS describes effects to all resources and uses under the various alternatives. The Record of Decision explains the rationale for which alternative provides the best balance in meeting the wide range of public desires evident in the comments.

**PW-21: The Forest Service should increase the acreage of the areas Recommended for Wilderness Study including Little River, Rich Hole, Ramseys Draft and Laurel Fork.**

Alternative C included all PWA acres in Little River, Rich Hole, Ramseys Draft Addition and Big Schloss as Recommended for Wilderness Study. In Alternative I, the Little River area that is Recommended for Wilderness Study is reduced from the total PWA due to conflicts with popular bicycle trails and the proposed boundary was developed by a group of interested users. The Rich Hole area was reduced to not include a block of land with an extensive private land boundary that would make management difficult. The western addition to Ramseys Draft was not included because of outstanding or reserved mineral rights.

Another PWA for which we received many comments is Laurel Fork. Laurel Fork is recommended for Wilderness Study in Alternatives C and F. It was not recommended in other alternatives, in part, due to the concerns over climate change. This is a high elevation area with many species more common in northern environments. As such, these species may be more vulnerable to changes in climate. We feel it is critical, until additional information is known about the impacts of climate change, to maintain management flexibility that allows the Forest Service to take needed action to protect and retain the species in Laurel Fork.

A comment was received that it is the responsibility of the FS to provide the full range of recreation opportunities and settings including the primitive setting which does not currently exist on the GWNF. It is not legally required that the GWNF offer every opportunity within the Recreation Opportunity Spectrum. For example, there is currently no Urban ROS provided by the GWNF. While the primitive recreation setting is compatible with the GWNF niche, the national protocol for inventorying the primitive setting is that it be at least three miles from roads and 5,000 acres in size (or smaller if contiguous lands are semi-primitive non-motorized that can offer a primitive experience). There are no areas within the GWNF that meet this criterion. In order to create the Primitive ROS setting, multiple roads would need to be closed, and there is no evidence that there is public or political support for this. However, per Plan standards, we manage designated Wilderness (1A) and Recommended for Wilderness Study (1B) Areas for the Primitive ROS setting.

One comment cites the island biogeography study by Robert MacArthur and E.O. Wilson and stated that it is necessary to increase the size of forest islands and reduce the distance between them in order to increase the number of species and reduce the threat of extinction. We feel this final plan, with the mix of Wilderness, Recommended Wilderness Study, Special Biological Areas and Remote Backcountry, increases core areas and their connectivity over the existing (No Action) alternative. Alternatives C and F also maximized core islands. Chapter 3 of the Final EIS describes effects to all resources under the various alternatives.

Several comments received state that the DEIS showed a FS bias against wilderness designation. We disagree and believe the evaluation of PWAs demonstrates that the FS made a concerted, good faith effort to find a balance between the value and need for wilderness and the value and need for other resources. The Record of Decision explains the rationale for which alternative provides the best balance in meeting the wide range of public desires evident in the comments.

**PW-22: The Forest Service should follow the recommendations of the stakeholders group in relation to Recommended Wilderness Study, National Scenic Areas and Backcountry Recreation.**

Many comments were received regarding the management of Potential Wilderness Areas (PWAs), with some in favor of treating all of them the same as Inventoried Roadless Areas (IRAs) and some opposed to any special treatment of the PWAs. The stakeholders group dealt with specific PWAs on a case by case basis with recommendations for Mosaics of Habitat, Remote Backcountry, Special Biological Areas and Recommended National Scenic Area. The final Forest Plan is similar to the recommendations of the stakeholders group. The Shenandoah Mountain National Scenic Area is recommended but with slight modifications to the boundary. Beech Lick Knob, Rich Hole, and Rough Mountain Additions are Recommended for Wilderness Study with some boundary modifications. The Bald Ridge portion of the Ramseys Draft Addition is recommended, but the Lynn Hollow portion is not recommended due to private mineral rights. High Knob is not Recommended as Wilderness Study, but is included in the national scenic area. The Three Ridges Additions were not recommended due to ownership and trail maintenance concerns on two areas and the small size of the additions.

**PW-23: The Forest Service should adopt the recommendation from the Friends of Shenandoah Mtn.**

Alternative F incorporated the Friends of Shenandoah Mountain (FOSM) proposal. As a result of public comments, Alternative I was developed. It incorporates much of the FOSM proposal as modified in their letter of November 2011, such as a Recommended National Scenic Area (NSA), Recommended Wilderness Study area for Little River and Ramseys Draft addition. It does not include allocating Lynn Hollow, Bald Ridge or Skidmore Fork to Recommended Wilderness Study, but does include these areas in the recommended NSA. Alternative I reduces the acres of the Little River PWA area allocated to Recommended Wilderness Study from the FOSM proposal.

A desire raised by the Friends of Shenandoah Mountain as well as many others is the protection of the area from oil, gas and wind energy development, timber harvesting, and the road construction associated with these activities. There were also comments received by others in favor of these developments to increase the United States' energy independence and for economic benefits. In Alternative I, the Recommended Shenandoah Mountain NSA and the Recommended Wilderness Study Areas are not suitable for federal oil and gas leases, timber production or wind energy development. New road construction and timber harvesting are prohibited or very limited. A notable exception to this is the Hankey Mountain/Dowells Draft area that the FOSM recommend for NSA, but that is allocated to Dispersed Recreation 7E2 in the selected alternative. This management area prescription is suitable for timber production and wind energy development, but an inventory of wind classifications indicates this area would not support utility scale development. Another area in the FOSM proposal shown as "other national forest lands" is allocated to Dispersed Recreation 7E1, which is unsuitable for timber production, but vegetation management activities are allowed to meet specific resource objectives.

The Forest Plan does adopt the major portion of the proposal from the Friends of Shenandoah Mountain with the recommendation of the Shenandoah Mountain National Scenic Area. The Plan makes the Kelley Mountain area a Special Biological Area and makes the Laurel Fork area a Special Biological Area and a Remote Backcountry Areas.

**PW-24: The Forest Service should recommend the following areas for designation as Recommended National Scenic Areas, recommended National Recreation Areas and Recommended Wilderness Study:**

**Northern Massanutten as a recommended National Recreation Area**

**Shenandoah Mountain as a Recommended National Scenic Area**

**Kelley Mountain as a Recommended National Scenic Area**

**Big Schloss as a Recommended National Scenic Area**

**Little Alleghany as Recommended Wilderness Study**

**Laurel Fork as Recommended Wilderness Study**

**Three High Heads as Recommended Wilderness Study**

**Beech Lick Knob as Recommended Wilderness Study**

**Three Ridges as Recommended Wilderness Study**

**Shenandoah Mountain proposal for Recommended National Scenic Area and Recommended Wilderness Study**

Alternatives C and F included all of the Recommended Wilderness Study areas put forth in this statement, and Alternative F included the proposed National Scenic Area (NSA) designation for Shenandoah Mountain and Kelley Mountain. Based on public comments, Alternatives H and I were developed. It recommends the Shenandoah National Scenic Area and Beech Lick Knob as Recommended Wilderness Study. While a popular area for recreation, we do not believe that Northern Massanutten has the size, access or diversity to make a high quality national recreation area. Kelley Mountain and Laurel Fork have important biological components that make them more important as Special Biological Areas rather than Recommended Wilderness Study Areas or Recommended National Scenic Areas. Big Schloss is another remote area and its hiking, biking and equestrian recreation management needs can best be addressed as a Remote Backcountry Area. Little Alleghany has an odd configuration and we have allocated the Inventoried Roadless Area portion to Remote Backcountry Areas and the other portion to Mosaics of Habitat. The four additions (total of 370 acres) to Three Ridges are very small in size. One of them contains a large bridge across the Tye River, another is not National Forest System lands (it is National Park System land managed by the Forest Service, and the other two are small and have issues with adjacent private lands).

**PW-25: The Forest Service should recommend all of the possible wilderness areas suggested in the past by the Virginia Wilderness Committee.**

The Virginia Wilderness Committee recommended the areas in the stakeholder's agreement, and this is addressed in the response to PW-22.

**PW-26: The Forest Service should recommend the following list of areas as Recommended Wilderness Study.**

The recommendations in the Forest Plan have been addressed in the responses to the other wilderness comments. In regard to Adams Peak, the area is relatively small and has a bicycle trail that is important to a number of interested parties, so it was not Recommended as Wilderness Study.

**PW-27: The Forest Service should recommend all Virginia Mountain Treasures as Recommended Wilderness Study. All undesignated Potential Wilderness Areas should be managed the same as Inventoried Roadless Areas.**

The information contained in the Virginia Mountain Treasures was revisited and considered. The Forest Plan seeks to address many public and agency issues. Allocating all of the Virginia Mountain Treasures would result in conflicts with our ability to achieve our goals of ecological restoration; it would result in the closure of trails to bicycle use and some types of equestrian use and would limit our ability to respond to management needs in response to changes in the climate. The final Plan is the best balance of land allocations to meet the needs we identified in our analysis.

**PW-28: The Forest Service should follow the Recommended Wilderness Study and Potential Wilderness Area recommendations in Alternative C.**

Alternative C was developed to examine an alternative with a large amount of Recommended Wilderness Study. Comments on the Draft Plan included area specific recommendations for stronger protection of certain Potential Wilderness Areas (PWAs) than what is provided in Alternative G. Some expressed support for the protections provided in Alternative C which allocates these areas to Recommended Wilderness Study. Chapter 3 of the Final EIS describes effects to all resources and uses under the various alternatives. The Record of Decision explains the rationale for which alternative provides the best balance in meeting the wide range of public desires evident in the comments. We believe the special places of the GWNF will be protected by allocations other than the Recommended Wilderness Study Area prescription only. Many of these areas are allocated in the selected alternative as Special Biological Areas, Remote Backcountry and Recommended National Scenic Area. A forestwide standard restricts road construction and timber harvesting in Inventoried Roadless Areas. While Alternative C addresses the issues of many wilderness advocates, it does not address many other issues related to access, biological diversity, climate change and energy development.

**PW-29: The Forest Service should recognize the impacts to mountain biking in Recommended Wilderness Study recommendations.**

The Forest Plan and the land allocations made for the Plan do recognize the impacts to mountain biking in Recommended Wilderness Study Areas. The presence of trails used by mountain bicyclists was considered in the Potential Wilderness Area evaluations. The recommendations are in line with many of the comments we received from mountain bikers. Some comments expressed appreciation that the recommended Wilderness Study Area prescription standards do not prohibit mountain bicycle use. Our direction for these areas is to manage them so as to retain those qualities for which they qualify for Wilderness study. Continued mountain bicycling on existing trails during the study period is not expected to detract from those qualities.

**PW-30: The Forest Service should protect all areas identified as Virginia Mountain Treasures, protect all roadless areas as much as possible, designate more wilderness areas, and protect all existing old growth forests.**

All inventoried Roadless Areas have management direction as in the 2001 RACR. More areas are Recommended for Wilderness Study in the final Forest Plan. See the responses to comments on old growth.

**PW-31: The Forest Service should protect all areas identified in the Virginia's Mountain Treasures publication by designating them as unsuitable for timber harvest, new road building and surface-occupying oil and gas drilling.**

Allocation of lands included in the Virginia Mountain Treasures was given much consideration. In total, they comprise almost 60% of the George Washington National Forest including areas that are currently in active

management prescriptions, and the majority outside of IRAS have existing road access. We received many comments on the Draft Revised Plan from individuals, groups and state agencies in favor of not only continuing but increasing active management particularly for early successional habitat.

About 56 percent of all of the Virginia Mountain Treasure areas are allocated to management prescription areas that are unsuitable for timber production and unsuitable for road construction. The following table identifies the allocations within the selected alternative for each area. All of the GWNF, including the Virginia Mountain Treasure areas are unavailable for federal gas leasing.

Table N-1. Acres by Management Prescription Area within Virginia Mountain Treasure Areas

Virginia Mountain Treasure Area	Acres by Management Prescription Area				Grand Total
	1B	12D	Other Unsuitable For Timber Production Prescriptions 2C2, 2C3,4A,4B,4C,4D,4F,8E4a,8E7	Prescriptions Suitable For Timber Production 5A,7A1,7B,7C,7E1,7F,7G,8E4b,13	
Adams Peak		8,617	0	1,350	9,967
Archer Knob		5,079	24	4,691	9,793
Back Creek			1,467	4,245	5,712
Beards Mtn		7,200	1,003	3,511	11,714
Bearwallow Mtn			0	3,724	3,724
Beech Lick Knob	5,730	3,438	0	7,974	17,142
Benson Run		3,861	0	6,865	10,726
Big Ridge			0	4,683	4,683
Big Schloss		20,157	1,031	9,994	31,181
Broad Run			2,513	2,534	5,047
Browns Run			1,138	6,099	7,237
Church Mtn		4,341	455	7,191	11,986
Cove Mtn			99	2,473	2,572
Crawford Mtn		9,702	0	5,265	14,967
Dolly Ann		6,272	2,086	1,253	9,611
Dry River		4,491	3,721	4,725	12,937
Dunkle Knob			2,429	5,963	8,391
Elliot Knob		6,232	3,324	7,097	16,652
Falls Ridge		3,193	0	4,542	7,735
Feedstone Mtn			1,713	2,342	4,056
Fore Mtn			618	5,169	5,787
Friar		2,128	0	1,847	3,976
Great North Mtn		2,078	7	4,576	6,661
Green Mtn			48	4,305	4,353
Gum Run		44	14,619	0	14,663
Hog Pen Mtn			0	9,209	9,209
Jerkemtight		16,826	1,598	2,833	21,258
Jerrys Run			0	4,761	4,761

Virginia Mountain Treasure Area	Acres by Management Prescription Area				Grand Total
	1B	12D	Other Unsuitable For Timber Production Prescriptions 2C2, 2C3,4A,4B,4C,4D,4F,8E4a,8E7	Prescriptions Suitable For Timber Production 5A,7A1,7B,7C,7E1,7F,7G,8E4b,13	
Jonnies Knob		1,892	0	603	2,496
Kelley Mtn			10,193	2,698	12,891
Kritchie Mtn			1,433	5,243	6,676
Laurel Fork		3,581	6,695	38	10,314
Little Alleghany		10,321	0	5,537	15,857
Little Cow Knob			1,706	3,596	5,302
Little Mare Mtn		4,286	220	8,073	12,579
Little River	9,543		18,464	1,330	29,337
Long Mtn		1,028	22	9,444	10,494
Longdale Furnace			0	3,937	3,937
Mill Mtn	4,608	5,989	444	1,358	12,399
Mud Run			16	4,282	4,298
North Massanutten		11,018	1,117	6,247	18,382
Oak Knob			10,656	5	10,660
Oliver Mtn		12,235	718	42	12,994
Paddy Lick			786	4,575	5,361
Panther Knob			0	4,178	4,178
Ramseys Addition	6,117	0	7,454	5,469	19,040
Revised Hankey			3,038	8,345	11,383
Rough Mtn Addition	983	122	120	971	2,195
Scaffold Run			0	7,633	7,633
Shaws Ridge		7,165	90	4	7,259
Short Mtn			273	4,375	4,647
Sideling Hill			0	7,152	7,152
Signal Corp Knob			0	4,044	4,044
Signal Knob			824	4,637	5,461
Skidmore			5,702	1	5,703

Virginia Mountain Treasure Area	Acres by Management Prescription Area				Grand Total
	1B	12D	Other Unsuitable For Timber Production Prescriptions 2C2, 2C3,4A,4B,4C,4D,4F,8E4a,8E7	Prescriptions Suitable For Timber Production 5A,7A1,7B,7C,7E1,7F,7G,8E4b,13	
Slaty Mtn			0	4,040	4,040
Snake Run Ridge			1,598	4,676	6,274
South Massanutten		11,544	155	9	11,708
St Mary's Add A			3,007	0	3,007
St Mary's Add B	271		1	0	272
St Mary's Add C		1,455	0	51	1,506
Three Sisters		7,404	2,055	3,565	13,024
Toms Knob			301	6,732	7,033
Walker Mtn			29	5,564	5,594
Warm Springs Mtn		3,005	69	4,755	7,829
Waterfall Mtn		3,287	181	2,871	6,340
West Back Creek			1,019	6,937	7,956
Whites Peak		4,297	0	316	4,613
Wildcat Ridge			7,347	1,169	8,516
All VMT	27,252	192,286	123,624	273,723	616,885

**PW-32: The Forest Service should improve its analysis of alternatives regarding the issue of wilderness.**

Comments were received from individuals, groups and organizations with regards to deficiencies and additional information to consider in the wilderness evaluations and analysis of the alternatives. The wilderness evaluations were revisited as a result of these comments, and the analysis was updated in the Final EIS.

**PW-33: The Forest Service should modify forest plan direction for Recommended Wilderness Study areas.**

Additional direction has been added for management of Recommended Wilderness Study areas.

**PW-34: The Forest Service should manage wilderness to limit motor traffic, not maintain wildlife openings, and prohibit timber harvest.**

Motorized and mechanized equipment, maintenance of wildlife openings and timber harvesting are prohibited in Wilderness. This is standard management direction for wilderness as required by law.

One comment poses the question whether viewsheds from Wilderness should be available for wind. The Forest Plan does not restrict industrial wind energy development based solely on visibility from a designated Wilderness. The potential impacts of industrial wind energy development on designated Wilderness(es), including the area visible from trails and known viewpoints or overlooks, would be considered during project-level NEPA analysis.

**RECREATION****R-1: The Forest Service should maintain the current level of ATV trails and roads.**

We received comments both in favor of developing more ATV trails as well as opposed. Those opposing it cited noise, environmental and scenic degradation, availability of non-public land for this activity, and the need for Americans to get more exercise through hiking and mountain biking. The alternatives included a range from no change in miles of ATV trail (Alternatives B, C and E) to an increase of up to 60% (Alternative D). The final selected Alternative I provides for no new designated ATV areas, but allows for expanding the existing ATV trail systems within their designated areas. Any proposed expansion would require project-level NEPA that would consider the potential environmental, social and economic effects of the proposal. The Archer Run trail system identified in the 1993 plan will not be developed.

**R-2: The Forest Service should increase monitoring of illegal ATV use and not increase ATV use.**

Monitoring of illegal ATV use is included in the monitoring plan in Chapter 5 of the Forest Plan.

**R-3: The Forest Service should increase roads available for ATV use.**

Comments in favor of increasing ATV trails and roads cited local economic benefits, the need for single-track trails that aren't currently offered on the GWNF, and the seemingly obvious solution of converting closed roads into motorized recreation trails. The current ATV trail systems fall short of the desired opportunities that we would like to provide. While progress has been made in improving our ATV trails through grants obtained, there is room for improvement. We would like to provide the types and quality of trails desired including single track trails and a range of difficulty levels with beginner level being separated from the moderate and difficult loops. It is because the existing trails were converted from old closed roads not sited or designed for ATV use that there are deficiencies in the quality of the riding opportunity currently offered. Some of those converted roads were constructed to be temporary roads and are not environmentally sustainable for long-term motorized uses. It is for these reasons that the selected alternative allows for expansion of existing trail systems to improve the ATV and motor-bike riding opportunities, but it does not provide for a broad brush approach of converting old roads or closed roads into motorized trails.

The Forest Plan provides for maintaining the existing motorized trail systems. Allowances are made for additional miles of trails within the ATV areas, but no new ATV areas are proposed. The Archer Run trail system identified in the 1993 plan will not be developed, since ATV trail systems require a high level of design and maintenance to remain sustainable. In addition, the potential for impacts to soil and water quality are high as are impacts of noise and disturbance to wildlife.

**R-4: The Forest Service should open up areas for the use of ATVs during hunting season.**

The context of this comment pertains to providing a special recreation permit to seniors during hunting season. Under the Travel Management Rule, use inconsistent with designations shown on the motor vehicle use map is prohibited unless exempted. Programs that grant exceptions to prohibitions in favor of one group of recreationists raise significant program, policy and legal concerns. Roads that are closed seasonally or year round are done so for specific reasons. The impact to the resource by the vehicle is the same regardless of the age of the operator.

ATVs are only authorized for use on the designated ATV trail systems. ATV trail systems need to be designed and maintained to prevent soil and water quality impacts. We have many roads open for access during hunting season and many areas where hunters and park and camp. We believe that these provide access even for hunters whose ability to hike is limited.

**R-5: The Forest Service should work more closely with 4WD user groups.**

We agree. Forest Service policy identifies motorized uses, including ATV and OHV riding, as legitimate uses of the national forest. There is room for improvement in the collaboration between the GWNF and the ATV and OHV users. We hope to work closely with all user groups in implementing the revised Forest Plan.

**R-6: The Forest Service should not increase motorized use for ATV or OHV.**

The Forest Plan provides for maintaining the existing motorized trail systems. Allowances are made for additional miles of trails within the ATV areas, but no new ATV areas are proposed and the Archer Run trail system identified in the 1993 plan will not be developed.

**R-7: The Forest Service should not reduce motorized use for ATV or OHV.**

The comment received includes a recommendation that roads closed for environmental, financial or other reasons be converted to use by off road vehicles. Continued motorized use on roads that were closed due to cost of maintenance or environmental impacts will continue to have those same issues. The Forest Plan provides for maintaining the existing motorized trail systems. Allowances are made for additional miles of trails within the ATV areas, but no new ATV areas are proposed and the Archer Run trail system identified in the 1993 plan will not be developed.

**R-8: The Forest Service should not allow ATV use on the Forest.**

The comment letter states that this recreational activity should be provided by the private sector. To date, the private sector has not provided for this activity in any significant way. Forest Service national policy is that motorized trails are legitimate uses of the national forests. The comment adds that the costs are disproportionately high and the use is apparently highly subsidized. The cost of maintaining motorized trail miles is higher than non-motorized trail miles. However, there are 65 miles of trail available for motorized use compared to 1,013 miles of trail available for non-motorized use. The limited miles of ATV trails on the forest, combined with the special recreation permit fees paid by users, keep the use of appropriated funding to a reasonable level forestwide.

We believe that ATV use of the Forest is appropriate in areas where the use can be regulated. The existing ATV use areas will continue to be managed and monitored for ATV use.

**R-9: The Forest Service should maintain the current system of featured OHV roads.**

Three of the OHV roads featured in the 1993 Forest Plan have been closed due to flood damage or unacceptable levels of resource damage. Now we have the Motor Vehicle Use Maps that identify the roads open and seasonally open on the Forest. We have about 600 miles of road on the Forest that are managed as Maintenance Level 2-High Clearance and are open seasonally or year round. We believe that we will be able to maintain a level similar to this into the future without identifying a network of specific roads that could change.

**R-10: The Forest Service should increase open roads suitable for OHV use.**

The primary statement in the letter with regards to this comment was that the FS should not require an open designation for legal use of OHVs. The Travel Management Final Rule published in the Federal Register on November 9, 2005, and the Code of Federal Regulations, Title 36, Part 212 require that each national forest or ranger district designate those roads, trails and areas open to motor vehicles, that the designation include class of vehicle and, if appropriate, time of year a route is open to motor vehicle use; that the public be allowed to participate in this designation; provides general criteria for designation pertaining to protection of natural and cultural resources, public safety, access needs, conflicts among uses, provision of recreation, and need for

maintenance; and that these designations be published on a motor vehicle use map made available to the public.

We currently have about 1,000 miles of road open or seasonally open on the Forest. Given resource impacts from roads (on water quality, soil erosion, wildlife disturbance), the cost to maintain roads and limited budgets, we do not believe that we will be able to increase the miles of open road on the Forest. In fact, it is likely that more roads that are open year round will be managed as seasonally open in the future. However, we will strive to maintain the best access we can in a sustainable manner.

**R-11: The Forest Service should have less ATV and OHV use.**

Comments were received both in favor of and opposed to increasing areas and/or miles available for ATV and OHV use. Several letters were received that described the difficulty OHV users experienced in their attempts to work with local district offices to establish the type of OHV opportunities desired. Others stated that no provision should be made on the forest for ATV and OHV riding due to environmental concerns and impacts of noise on other recreationists. The final selected alternative provides for continued use of existing, designated ATV/OHV areas, including maintaining, improving and expanding the trail systems within the areas as needed to meet demand to the extent feasible; but no new ATV areas are proposed and the Archer Run trail system identified in the 1993 plan will not be developed. In addition, outside of the designated ATV/OHV areas, high clearance roads will remain available at current levels (over 1,000 miles), but there will not be featured or designated OHV routes on the forest.

**R-12: The Forest Service should incorporate direction to allow continued use of motorcycles.**

The use of motorcycles will continue to be allowed on all open roads (for street legal motorcycles), and non-street legal motorbikes can be operated on the designated ATV trails. However, there are currently no single track trails on the GWNF. The ATV Use Areas, management prescription 7C, includes a standard to construct trail and road systems that include both single track, narrow trails for the motorcycle and ATV user as well as roads that may be used for larger 4-wheel drive vehicles and for timber removal.

**R-13: The Forest Service should identify the need to provide a primitive recreation experience in part of the Forest.**

A primitive recreation setting, according to the Forest Service Recreation Opportunity Setting guidance, is an area at least 5,000 acres in size that is more than 3 miles from a road. We have no areas on the Forest that meet this definition. The only way that a primitive opportunity could be provided would be to close some major access roads on the Forest. Given the high level of concern for access to the Forest, this level of road closure would meet with significant opposition and not be supported by local communities. Alternative C provides the most remote settings, but even it is unable to provide a true primitive opportunity. The selected alternative does provide for a concentration of remote settings in the Shenandoah Mountain area. We do agree that large areas that provide solitude are important and our Recommended Wilderness Study Areas and Recommended National Scenic Areas recommendations were made to keep large areas in remote conditions.

**R-14: The Forest Service should adopt ROS classes as in the Jefferson and the current GW plan.**

We used the ROS inventory to assist in making land allocation decisions for each alternative. Rather than adopting a ROS class in the plan, the management prescription area direction determines how the area will be managed with respect to the Recreation Opportunity Setting. The analysis in EIS Chapter 3 identifies the amount of land that will or will not be managed to maintain current levels of each ROS class. Semi-primitive settings are not as extensive on the Jefferson, so the Jefferson Forest Plan used a different approach.

**R-15: The Forest Service should increase the amount of the forest managed for remote settings in core areas.**

As documented in EIS Chapter 3, about 85 to 90 percent of the inventoried SPNM areas are allocated to prescriptions that will assure that these conditions will be retained. However, it is likely that even more will be retained. The 1993 plan adopted SPNM settings for 150,000 acres of land, yet the recent inventory of current settings shows that 198,000 acres of land meet the definition of SPNM.

The final plan identifies and provides for recreation in remote settings where users can find solitude and will need to rely on their own skills and abilities. This type of setting and opportunity is provided in designated Wilderness, Recommended Wilderness Study areas, Remote Backcountry management prescription areas and, to a somewhat lesser degree, in Dispersed Recreation management prescription areas. Although not

necessarily by design, this type of setting can also be found within the Special Biological Areas and many areas within the mosaics of wildlife habitat.

**R-16: The Forest Service should allow timber cutting for early successional habitat in Remote Backcountry Areas.**

From an ecological standpoint, timber harvest in Remote Backcountry Areas would be an important benefit to a number of species. However, the majority of Remote Backcountry areas are Inventoried Roadless Areas. While habitat management is not restricted in IRAs, harvesting timber and constructing roads is prohibited (with limited exceptions) by standards in the Revised Plan and the 2001 Roadless Areas Conservation Rule. For those Remote Backcountry areas not within IRAs, timber harvest requires road access and these areas are established to emphasize their remote settings, so timber harvest is not allowed. However, to provide for habitat improvement, prescribed fire is allowed in these areas. Wildlife openings and old field habitats can be maintained to the extent that no new road construction is required.

**R-17: The Forest Service should enhance management to encourage tourism.**

We agree with comments to enhance tourism opportunities and this was an important consideration in the design and selection of the alternatives.

**R-18: The Forest Service should increase recreation opportunities.**

The final Forest Plan was established to provide a diverse set of recreation opportunities and to increase a number of these opportunities. However, it needs to be done in a financially sustainable manner.

**R-19: The Forest Service should develop strategies to address increasing recreation demands and education.**

The final Forest Plan was established to provide a diverse set of recreation opportunities and to increase a number of these opportunities. In regard to education, we agree that increasing outdoor and environmental education opportunities is important, but these types of activities are not part of the Forest Plan decision making process.

**R-20: The Forest Service should better address the issues associated with developed recreation.**

Developed recreation was not included as a significant issue in the EIS. Providing developed recreation opportunities continues to be a very important component of managing recreation use on the Forest. However, given past and expected budgets, we do not see realistic opportunities for significant expansion of our developed recreation facilities. Maintaining the existing level of developed recreation and focusing more of our attention on dispersed recreation also fits in better with our role in providing recreation opportunities. The scoping process did not identify a need to address a wide range of options to address developed recreation. The only alternative that is substantially different is Alternative A. This alternative was developed when there was more emphasis on developing future desired conditions that were not constrained by budget expectations. They were based on assumptions that the Forest should play a greater role in providing developed recreation opportunities, so it represents a much greater emphasis on facility construction.

**R-21: The Forest Service should manage recreation areas to minimize impacts on wildlife species.**

We agree with the emphasis on promoting bear safety measures in our campgrounds and that, in general, we highlight safety concerns with wildlife. However, specifying certain signs and methods of promoting safety is beyond the scope of decisions to be made in a Forest Plan.

**R-22: The Forest Service should not allow prescribed fire and timber harvest in dispersed recreation areas.**

The high use areas are identified as developed recreation areas. Around some of our developed recreation sites we have allocated lands to Dispersed Recreation and in some of these areas timber management and prescribed fire use are allowed. These activities would be allowed where their use can enhance the recreation experience and would only be implemented if they could be done safely and with minimal impact on users.

**R-23: The Forest Service should protect the Great Eastern Trail corridor and other trail corridors from development.**

The Appalachian National Scenic Trail is the only trail that has a corridor established as a management prescription area. Other trails were included in the development of scenic objectives and these objectives can limit activities that would adversely affect the trail users or the trail environment.

**R-24: The Forest Service should make some minor modifications in management of the AT.**

The Forest Plan identifies that Scenic corridors, like the one adjacent to Mt. Pleasant, will be unsuitable for wind development. The Plan also added a standard regarding commercial events.

**R-25: The Forest Service should increase trails.**

The Forest Plan allows for additional trail construction, but no net increase in trail maintenance costs. In regard to the comments on a cap of 30 miles of trail construction, this is not a limit; it was just an estimate of how much trail construction might occur so that environmental effects could be estimated.

**R-26: The Forest Service should adopt additional standards for trail construction.**

We have a number of guidance documents such as the Trail Management Handbook that provide direction on trail construction. The Forest Plan contains a forestwide standard that new trail construction and reconstruction will be physically and environmentally sustainable, however, the Plan does not include new standards that address how this is to be achieved specifically.

**R-27: The Forest Service should better address the effects of management on bike use.**

The reason bicycles and motorcycles were considered together in the wilderness analysis reflects that wilderness designation would restrict any mechanized use of trails. There are many opportunities on the Forest for backcountry trail use by bicycles. These trails and trail systems vary by recreation opportunity settings, challenge level and distance or scale.

**R-28: The Forest Service should increase horse trails, ATV trails, and primitive camping areas.**

The Forest Plan does allow for more horse trails as long as trail maintenance costs can be kept at current levels. It also allows for some increase in ATV trails, as long as they are within the existing ATV Use Areas. There are extensive primitive camping opportunities on the Forest.

**R-29: The Forest Service should consider management actions in relation to the Blue Ridge Parkway.**

We agree. The Blue Ridge Parkway corridor has its own management prescription with desired conditions, standards and scenery integrity objectives.

## ROADS

**R0-1: The Forest Service should improve its analysis of road access needs.**

A statement has been added to the roads discussion in Chapter 3 of the Final EIS indicating that there may be additional road decommissioning in Alternative C. The road access needs for each alternative are displayed in Table 3C8-1. This table has been updated in the Final EIS. Table 3C8-4 has been added to provide estimates of the miles of closed and open roads in each alternative.

**R0-2: The Forest Service should not construct more roads.**

The Forest Plan anticipates the need to construct up to about 15 miles of new permanent roads during the next 10 years to meet the needs of vegetation management and recreation. It also anticipates the closure of about 160 miles of existing roads for a net decrease in roads.

**R0-3: The Forest Service should not build any more logging roads.**

The Forest Plan anticipates the need to construct up to about 15 miles of new permanent roads during the next 10 years to meet the needs of vegetation management and recreation. Some of these roads will be for timber harvest. This harvest is needed to increase openings and open woodland conditions on the Forest for many species that need this type of habitat. While timber harvest activities are concentrated in areas that already have substantial road systems in place, some additional sections of road will need to be constructed. In addition, temporary roads will also be needed to access log landings in timber sale areas.

**RO-4: The Forest Service should minimize road construction.**

The Forest Plan anticipates the need to construct up to about 15 miles of new permanent roads during the next 10 years to meet the needs of vegetation management and recreation. It also anticipates the closure of about 160 miles of existing roads for a net decrease in roads. Most of the new roads would be closed after their use. The spread of invasive species is a concern and we have developed strategies to reduce the impacts.

**RO-5: The Forest Service should limit road access.**

The Forest Plan anticipates the need to construct up to about 15 miles of new permanent roads during the next 10 years to meet the needs of vegetation management and recreation. It also anticipates the closure of about 160 miles of existing roads for a net decrease in roads. Most of the new roads would be closed after their use.

**RO-6: The Forest Service should have no net increase in open road miles and decommission roads.**

The objective for no net increase in open roads and the objective for decommissioning existing roads remains in the final Forest Plan.

**RO-7: The Forest Service should decommission roads.**

We agree, the Forest Plan has an objective to decommission about 100 to 200 miles of road in the next decade.

**RO-8: The Forest Service should consider the benefits of closing roads.**

We have considered the benefits of closing roads and this is the reason for the objective to decommission about 100 to 200 miles of road in the next decade.

**RO-9: The Forest Service should decommission more than 160 miles of roads.**

We have reviewed the objective for road decommissioning and given concern about reducing access to the Forest and expected opportunities and funding, we believe that 160 miles is an appropriate objective.

**RO-10: The Forest Service should not limit the amount of road closures.**

There is not a limit on the amount of road closures. The objective is an estimate of what will be accomplished.

**RO-11: The Forest Service should limit permanent roads to the support of ongoing ESH habitat development.**

The estimate of additional road construction needs under the Forest Plan assumes that most of the additional construction would be for vegetation management activities that would enhance early successional habitat.

**RO-12: The Forest Service should turn any closed roads into trails for bikes or ATVs.**

When site-specific decisions are made to close a road, the ultimate use of the old road will be addressed. Often these roads can be used as trails. The trail could be used for ATVs only if the closed road were located within one of the ATV use areas.

**RO-13: The Forest Service should reduce the road network and use closed roads for non-motorized trails.**

The Forest Plan anticipates the need to construct up to about 15 miles of new permanent roads during the next 10 years to meet the needs of vegetation management and recreation. It also anticipates the closure of about 160 miles of existing roads for a net decrease in roads. When site-specific decisions are made to close a road, the ultimate use of the old road will be addressed. Often these roads can be used as trails.

**RO-14: The Forest Service should use closed roads as linear wildlife openings.**

When site-specific decisions are made to close a road, the ultimate use of the old road will be addressed. Often these roads can be used as linear wildlife openings on either a temporary or permanently maintained basis.

**RO-15: The Forest Service should coordinate any road decommissioning with state game agencies to minimize impacts to hunters.**

Any decisions to close specific roads would be accompanied by a site-specific environmental analysis. The state game agencies, as well as the public, would be asked to provide input to the analysis.

**R0-16: The Forest Service should adjust its minimum roads analysis to recognize increased demand.**

The minimum roads analysis does consider increased demands for use, but is also constrained by expected budgets for road maintenance and the potential impacts on other resources like water quality if roads are not properly maintained. The increasing demands to maintain the roads along with expected budgets resulted in the conclusion that the minimum road system needed to manage the Forest includes fewer roads than currently exist.

**R0-17: The Forest Service should not limit access through road decommissioning.**

Implementation of the road objectives in the Forest Plan would result in fewer miles of roads. However, the roads analysis that informed the Forest Plan direction identified predominantly roads that are already closed to public use for decommissioning. While some roads currently available for public use may be closed, we will try to keep these to a minimum.

**R0-18: The Forest Service should not reduce road access.**

The Forest Plan anticipates the need to construct up to about 15 miles of new permanent roads during the next 10 years to meet the needs of vegetation management and recreation. It also anticipates the closure of about 160 miles of existing roads for a net decrease in roads. The roads analysis does consider increased demands for use, but is also constrained by expected budgets for road maintenance and the potential impacts on other resources like water quality if roads are not properly maintained. The increasing demands to maintain the roads along with expected budgets resulted in the conclusion that the minimum road system needed to manage the Forest includes fewer roads than currently exist. However, the roads analysis that informed the Forest Plan direction identified predominantly roads that are already closed to public use for decommissioning. While some roads currently available for public use may be closed, we will try to keep these to a minimum.

**R0-19: The Forest Service should make all existing roads available for use.**

Roads are closed for a variety of reasons including preventing soil erosion, preventing stream sedimentation, avoiding impacts to wildlife (such as turkey during nesting season), and preventing road maintenance hazards in bad weather.

**R0-20: The Forest Service should coordinate seasonal road closures with user groups.**

Any decisions to permanently change road access are based on site-specific environmental analyses that include opportunities for public involvement.

**R0-21: The Forest Service should examine the timing of seasonal road closures.**

The exact dates of seasonal closures are based on a variety of factors including weather conditions, wildlife needs, and user needs. These dates are not defined in the Forest Plan.

**R0-22: The Forest Service should utilize seasonal road closure to protect wildlife.**

We agree.

**R0-23: The Forest Service should relocate roads in poor locations.**

We agree and some of the miles of road construction would likely be due to relocation.

**R0-24: The Forest Service should maintain roads for other activities.**

We agree. There are many factors to consider in every decision regarding road construction, seasons of operation and decommissioning.

## SOILS

**S-1: The Forest Service should assure that there will be no permanent impairment of the productivity of the land.**

Please refer to the Final Environmental Impact Statement, Chapter 3 Section A4-Soils. We identify soil productivity as the most important soil resource issue. We describe the possible impacts to soil productivity, the estimated areal extent and what the estimated percent of the Forest will be impacted for each alternative proposed. Estimated cumulative effects to soil productivity can be viewed in this Chapter as well. We have not said that we "will not remove timber from soils of low productivity", as stated in the comment. We will not remove harvest residue from soils of low productivity as in small diameter utilization. We will use geology, elevation and acid deposition data for broad scale assessment and at the project level we will use soil and site

index to further refine the analysis. Many soils with low productivity and at risk of nutrient depletion are on upper slopes and ridges with sandstone and shale geology, higher elevations and are influenced by acid deposition due to low buffering capacity. Effects to soil productivity are assessed at the project level by determining activity areas where soils are most likely to be impacted and then estimating the areal extent of long term impacts. A percentage of the area impacted is estimated for the proposed project and also cumulative effects are estimated for the project area. We feel the EIS (FEIS Chapt. 3 Section A4) uses sufficient information to assess estimated impacts to soil productivity and the Plan contains adequate direction to protect soil and water resources.

**S-2: The Forest Service should meet state regulations on erosion control and soil contamination.**

The Forest Plan in Chapter 4, Forestwide Standards, states that we will follow state forestry best management practices and state erosion and sediment control handbooks and regulations. Timber harvesting is exempt from Virginia's erosion and sediment control regulations (Virginia Code Section 10.1-560, Exemptions to Land Disturbing Activity) as long as the land is regenerated with trees after harvest, which we do. In West Virginia the use of BMPs for erosion and sediment control is voluntary. The forestry best management practices are required in West Virginia and for us to implement on all timber harvest projects and are designed to control erosion on these site. All other projects disturbing more than 10,000 ft<sup>2</sup> will follow local and state erosion and sediment regulations. All soils/sites suspected of contamination will be evaluated and treated according to state and federal regulations as a standard operating procedure.

**S-3: The Forest Service should manage in recognition of the impacts of acid rain on soils.**

The Forest has used geology, elevation, water chemistry and acid deposition spatial data to produce mapping of broad areas at greatest risk to becoming increasingly acidic, having greater amounts of aluminum in rooting zones, and being stressed due to losses of beneficial plant-available soil nutrients. At the project level we assess soil and site index information. We do not allow removal of below ground biomass on any soils. Small diameter utilization on low productivity sites is restricted.

**S-4: The Forest Service should use soils information in determining where to manage timber.**

The Forest uses current soil survey maps and information to evaluate project proposals. Assessments of where to manage for timber use access, site index, management prescription of an area and other values are used to determine suitability for timber production. Of course, site index of the trees should reflect the productivity of the soils. Demand for products and product types also play a role in where timber is managed.

## SPECIAL BIOLOGICAL AREAS

**SB-1: Comment supports Special Biological Area designations.**

We have maintained these designations in the final Forest Plan and added some additional areas.

**SB-2: The Forest Service should create Special Biological Areas or other protective allocation to all areas identified by the state natural heritage programs.**

The Forest Plan does create Special Biological Areas or other protective allocations for most of the areas identified by the state natural heritage programs. Special Biological Areas, including protection for the Cow Knob salamander in a number of management areas, increased from the current level of 54 areas (90,000 acres) to 120 areas (121,000 acres) in the revised plan. A few areas were identified by the state due solely to the presence of species, although the community itself is not rare. We utilize Special Biological Areas for rare communities; we can use other management tools to protect individual species that are not confined to rare communities. These areas identified by the State that were not used as Special Biological Areas include Paddy Run, Great North Mountain Forests, Lower Scotchtown Draft, Mountain Grove, Route 609 Roadbanks, Warwick Mountain, and Wilson Mountain North. There were some boundary adjustments made to the State recommendations on some of the other areas, but they were incorporated into Special Biological Areas or other protective prescriptions.

**SB-3: The Forest Service should update its treatment of Special Biological Areas.**

The Forest Plan does have an objective to develop specific strategies for each Special Biological Area. For those SBAs, the Key Natural Heritage Communities, and portions of the Shenandoah Crest that are in Inventoried Roadless Areas, standards have been added to manage the areas with appropriate restrictions on timber harvest and road construction.

**SB-4: The Forest Service should develop better direction in Special Biological Areas to protect the habitat values.**

The Special Biological Areas, key natural heritage community areas, and Shenandoah Crest areas in the final Forest Plan are unsuitable for timber harvest, allow vegetation management only if compatible with the needs of the rare community, and only allow road construction under limited circumstances. The tiger salamander habitat is now in Special Biological Areas.

**SB-5: The Forest Service should provide better management direction for activities allowed in Special Biological Areas.**

The Forest Plan does provide management direction for activities in Special Biological Areas and this direction has been updated in the final Forest Plan.

**SB-6: The Forest Service should create management direction for each special biological area.**

The Forest Plan does have an objective to develop specific strategies for each Special Biological Area.

**SB-7: The Forest Service should make provisions for any new Special Biological Areas as they are identified.**

The Forest Plan can be amended as new information is found about rare communities.

**SB-8: The Forest Service should designate more Special Biological Areas.**

More areas were identified in the final Forest Plan.

**SB-9: The Forest Service should create a Special Biological Area for the wood turtle.**

The wood turtle is not restricted to any rare community and Special Biological Areas are established to protect rare communities. The Forest Plan does contain specific guidance for managing the wood turtle. The status of the wood turtle has been upgraded, but the designation of sensitive species is made through a process outside the planning process. Regardless of its status as sensitive, habitat for the wood turtle was addressed in the Forest Plan.

**SB-10: The Forest Service should designate shale barrens and certain wetlands as Special Biological Areas.**

Shale barrens and wetlands that support populations of Threatened and Endangered Species are all identified as Special Biological Areas, or more restrictive allocations.

**SB-10: The Forest Service should not include so much suitable land in special biological and geologic areas.**

We examine each of the Special Biological Areas very carefully when allocating Special Biological Areas and consider the needs of the natural community and other needs in the area. This consideration is what results in some areas recommended by the State being adjusted.

**SB-11: The Forest Service should expand the Special Biological Area along the Coal Road.**

We greatly expanded the Special Biological Area at the Coal Road in the Draft Forest Plan and this has been retained.

**SCIENCE****SC-1: The Forest Service should recognize the importance of using science in its decision-making.**

We utilized the science in analyzing the options available for management and in choosing the land allocations and management direction. Examples of current science used in our analysis include the LANDFIRE ecological analysis, recent models of the ecological systems on the GWNF, and the Template for Assessing Climate Change Impacts and Management Options.

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## TIMBER

### **T-1 & T-2 & T-3: The Forest Service should harvest timber at the level in the Alternative G. The Forest Service should harvest timber at the level in the stakeholder's agreement. The Forest Service should increase the level of timber harvest.**

Forest Plan Objective OBJ TIM-1 identifies a desire to harvest timber an average of 1,800 to 3,000 acres per year over the next decade. The lower range of this objective represents an increase over the current actual timber harvest program. The upper end of this range represents a slight increase over the harvest levels identified in the current Forest Plan. This is the level described for Alternative G (and for the selected alternative) and is within the scope of levels supported by many involved in the stakeholder's agreement. It should be noted that "the various stakeholders could not come to agreement on the desired level of timber harvest" but support varying ranges of timber harvest. The FEIS examined alternatives that harvested annual averages from 0 to 5,000 acres. However, we do not believe an average annual timber harvest objective beyond 3,000 acres is reasonably attainable. Table 3C6-5 of the FEIS indicates the highest annual acreage harvested since 1993 has been 3,300 acres and only twice did we achieve more than 3,000 acres. An average of the 10 highest acreages harvested since 1993 results in just over 2,000 acres annually. We simply do not envision an annual average of acres harvested over the next decade above 3,000 acres as reasonably attainable.

### **T-4: The Forest Service should show how it could increase timber harvest, since it has not been able to meet the objectives of the current plan.**

The forest has harvested slightly more than 3,000 acres in a given year twice since 1993 (Table 3C6-5 of the FEIS). An average of the 10 highest acreages harvested since 1993 results in just over 2,000 acres annually. We have demonstrated that an objective of 1,800 to 3,000 acres per year is possible. Certainly decreased budgets and staffing will provide a significant challenge to achieving this objective in the future. However, through increased partnerships and cooperation with various State agencies, Non-Governmental Organizations, and other stakeholders, we believe timber harvesting on the Forest can be more efficient and it is possible that we can achieve the stated objective despite the budgetary and staffing challenges.

### **T-5: The Forest Service should increase harvest of timber by small-scale local firewood vendors.**

We agree. The Final Plan now includes recognition of the role that small-scale firewood vendors can play in achieving silvicultural objectives such as thinning. A statement of this recognition has been added to the Management Approach for Timber Management in Chapter 3 of the Forest Plan. Appendix B of the FEIS describes the analysis process and indicates that thinning silvicultural prescriptions were constrained to be between 200 and 400 acres annually. In other words, the Spectrum model "forced" a scenario that would thin at least 200 acres annually which is slightly higher than the current 3 year average of actual acres thinned. Table 3C6-14 of the FEIS indicates that as many as 400 acres per year may be thinned over the next decade. Much of this thinning would be ideally suited to the small-scale local firewood vendor.

### **T-6 & T-7: The Forest Service should increase the level of clearcutting. The Forest Service should only use clearcutting in extreme circumstances.**

The creation of wildlife habitat is a primary purpose of timber harvesting in addition to the production of wood and fiber for society. Silvicultural practices (e.g. the choice of cutting method) are very often tailored to achieve a desired wildlife habitat condition. When we compare Tables 3C6-5 and 3C6-14 of the FEIS we see that the current 3 year average annual clearcut harvest is about 60 acres and the projected clearcut harvest would be roughly 90 acres per year over the next decade. However, much of this increase in the clearcut harvest method results from the overall increase of harvesting projected; the percentage of clearcut acres would drop from 8.5% to 2.6% of the total annually harvested acres.

It is also important to note that the concept of any given acre providing only one habitat component is no longer strictly valid. For instance, Oak Forests and Woodlands as described in Chapter 3 of the FEIS can provide both hard mast (traditionally attributed to mid-late successional forests) as well as herbaceous understories and browse habitat (traditional attributed to grass/forbs openings and early successional habitat, respectively). The projected increase in percent of open canopy Oak Forests and Woodlands from 2% currently to 12% at the end of the next decade indicates that we can achieve many of the positive habitat components formerly attributed to clearcutting and shelterwood with reserves harvest, while maintaining a mid-late successional partial canopy on the same acres (Table 3B1-1 of the FEIS). This shift in use of cutting method

and habitat objective is also reflected in Table 3C6-14 of the FEIS with the increasing use of thinning, and shelterwood methods as well as Objective OBJ ESD-6 of the Forest Plan.

**T-8 & T-9: The Forest Service should harvest less than Alternative G and should have additional standards. The Forest Service should harvest approximately 1,000 acres per year.**

The FEIS examined alternatives that would harvest from 0 to 5,000 acres annually averaged over a ten year period. Alternatives C and F were constrained to harvest less acres than Alternative G. The lower bound of the range of harvest for Alternative F was 1,000 acres. Table 3C6-14 of the FEIS indicates that the annual harvest for both alternatives C and F were projected at 0 and 1,200 acres, respectively. Generally speaking, Alternatives C and F did not move toward the desired condition for important habitat conditions as well as the alternatives that harvested more acres (Table 3B1-1, FEIS). For instance, Alternative F is projected to provide only 2% in regenerating forests and 12% in open canopy forest in the Oak Forests and Woodlands, by far the dominant ecological system on this forest. This compared to Alternative G's and H's and I's 5% and 12%, respectively, for regenerating and open forest conditions. Meanwhile Alternative F provides slightly more mid-late successional forest than desired while Alternatives G, H, and I provide slightly less. For these reasons, harvest levels higher than current actual harvest levels and higher than 1,000 acres are favorable over the lower harvest levels assigned to Alternatives C and F.

We believe the standards that apply to timber harvesting are sufficient to protect various resources from adverse impacts. One should understand that the standards listed under Timber Management are not the only standards relating to timber harvesting. Soil, Water, and Scenery all contain forest-wide standards that relate to timber harvesting. In addition, several Management Prescriptions contain standards relating to timber harvesting that further protect various resources. Comments focused on standards pertaining to logging systems on "steep" slopes. The 35% slope designation for use of advanced logging systems in FW-125 of the Plan relates directly to Virginia Best Management Practices (BMPs, Virginia Best Management Practices, Fifth Edition, March 2011). Skidders are said to be "a flat ground system, but with winches can be can be effectively used on flat to moderate slopes" (page 32). Table 6 of the same document describes the slope component of the skidder's "niche" as <35%. Presumably, anything below a 35% slope is considered flat or moderate slope insofar as Virginia BMPs are concerned.

**T-10: The Forest Service should only harvest timber if there are standards to assure sustainability and other resource protection.**

A determination of sustained yield is required by law. As described in Appendix B of the FEIS, a Long Term Sustained Yield (LTSY) constraint is applied to the Spectrum model. The LTSY is computed for each alternative and is displayed in Table 3C6-10 of the FEIS. For the selected alternative the LTSY is computed at 6.4 MMCF per year and the Allowable Sale Quantity is computed at 5.5 MMCF per year. Therefore, LTSY is maintained. Please also see the response to Statement T-9 above for more discussion of standards that protect various resources. Finally, timber sale contract provisions provide for a determination and penalty for excessive or negligent damage incurred by the purchaser.

**T-11: The Forest Service should harvest timber.**

The Organic Act of 1897 created National Forests for the "purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States". The selected alternative of the FEIS contributes to this purpose in many ways, including the harvest of timber on an estimated 34,000 acres over the next decade (Table 3C6-14, FEIS). The Forest Plan includes an Objective to harvest an average of from 1,800 to 3,000 acres annually over the next decade. Please see also the responses to Statements T-1, T-2, T-3, T-6, and T-7 above.

**T-12 & T-13: Timber harvest is not important on the national forest. The Forest Service should not harvest timber.**

A comparison of the ecological systems indicators in Table 3B1-1 of the FEIS for Alternative C (no harvest) versus any other alternative leads us to believe that timber harvest is important as a mechanism to create some wildlife habitat components. Commercial timber harvests allow us to create these habitat components in a cost effective manner. We acknowledge that the Forest does not play a critical role in the supply of wood products to the local market. Table 3C6-12 of the FEIS indicates that the ASQ under the selected alternative would only meet 22% of the market demand. Yet a vast majority of this volume on National Forest is greater than 19 inches in diameter and greater than 60 years old, resulting in the opportunity for this Forest to play a

more important role in supplying large diameter high quality hardwood sawtimber. Please also see the response to Statement T-11 above.

**T-14: The Forest Service should leave areas unharvested for carbon sequestration, protecting water quality and old growth.**

Impacts to carbon sequestration are disclosed in Section A3 of Chapter 3 of the FEIS. While it is recognized that harvesting of old growth forests is not an effective carbon sequestration strategy, the overarching aspect in affecting carbon sequestration is that we keep forests as forests. All alternatives, including the selected alternative, do this. All alternatives increase the ability of the forest to sequester carbon while enhancing other ecosystem services that serve to create more resilient ecosystems. Approximately 60% of the Forest will be allocated to Management Prescriptions that do not allow harvesting (Forest Plan Appendix C). Increased riparian buffers are adopted in the selected alternative to help protect water quality (Forest Plan Appendix A). Approximately 428,000 acres of future old growth will be provided for in key management prescriptions that will provide most large blocks of old growth (Table 3B3-6).

**T-15: The Forest Service should increase acreage of active timber management.**

The selected alternative increases both the number of acres available for active timber management (suitable for timber harvest, Section C6 of the FEIS) and the upper bound of the range for timber harvesting (OBJ TIM-1) as compared to the current Forest Plan. While two other alternatives analyzed identified even more acres suitable for timber production, we believe the selected alternative provides adequate acres available for timber management to enable us to enhance and maintain resilient ecosystems and increase timber harvest levels. Please also see the response to Statements T-1, 2, and 3 above.

**T-16: The Forest Service should reevaluate its identification of lands suitable for timber production.**

The identification of lands suitable for timber production was reviewed between draft and final. Minor adjustments to acreage of suitable/unsuitable land were made due to mapping errors. Some comment concerns for "errors" in identification of lands suitable for timber production centered on Stage II analysis including costs and prices that factor into that analysis. The Stage II information was reviewed; however, no changes to lands suitable for timber production were necessary as a result of the Stage II analysis. In the final analysis, approximately 452,000 acres were determined to be suitable for timber production.

**T-17: The Forest Service should reduce the area suitable for timber production.**

Appendix B of the FEIS describes the process for determining lands unsuitable for timber production (FEIS, B-14 to 16). This process is mandated by law (16 USC 1604(k); 36 CFR 219.14) and is a fairly straightforward process. The acreage that is considered suitable for timber production is simply what is "left over" from the identification of unsuitable lands. It is not driven by the allowable sale quantity (ASQ). The largest factor influencing the amount of land suitable for timber production is the Stage III suitability analysis and the allocation of management prescriptions in various alternatives. The availability of Potential Wilderness Areas, designation of wider stream buffers, and allocation of new Special Biological Areas area all were accounted for in the analysis. Furthermore, sustainability is assured through the long term sustained yield constraint imposed during modeling exercises (see the response to Statement T-10 above). The alternatives examined resulted in from 0 to 495,000 acres suitable for timber production (FEIS Table 3C6-6). We believe the selected alternative is the best mix of multiple uses meeting the mission of the Forest Service, resulting in approximately 452,000 acres suitable for timber production. While it may be true that all of these acres are not needed to meet the ASQ, it does provide for flexibility in implementing habitat management and provide different habitats in the areas they may truly be needed.

**T-18: The Forest Service should make it clear which areas are suitable for timber harvest.**

The Forest Service has clearly described which areas are suitable/unsuitable for timber production as required by NFMA. Appendix B of the FEIS, Tables 3C6-2 and 3C6-6, Appendix C of the Forest Plan, and Table 3-6 and 3-7 of the Forest Plan all describe lands that are suitable/unsuitable for timber production. It is important to understand that suitability for timber production is ultimately a stand level determination as is made apparent by the discussion of the Stage I and III suitability discussion in Appendix C of the Forest Plan. For this reason, even in those Management Prescriptions identified as suitable for timber production in Table 3-5, portions of those Management Prescriptions remain unsuitable due to various stand characteristics such as site productivity, species composition, accessibility, slope, etc. Suitability is not strictly a function of Management

Prescription alone, however certain Management Prescriptions are deemed unsuitable for timber production in whole as a result of the Stage III analysis (Forest Plan, Appendix C).

**T-19: The Forest Service should be cost effective in its timber program.**

The Forest Service agrees and continually strives to improve the cost efficiency of the timber program. However, because we are managing public lands we must comply with several laws and regulations to ensure protection of the natural resources we manage as we plan and administer a timber program. However, we do recognize that through working with various partners and stakeholders in a collaborative approach to planning timber activities has the potential to reduce costs to some extent. Utilizing new authorities, such as Stewardship Authorities, may also increase the cost effectiveness of our timber program. We look forward to exploring these potentials as we implement the Revised Forest Plan.

**T-20: The Forest Service should meet the ASQ to increase income.**

The economic impacts of the alternatives analyzed are disclosed in Chapter 3 Section C12 of the FEIS. Table 3C12-21 of the FEIS indicates that the timber program under the selected alternative would result in approximately \$3 million dollars of annual income in the first decade. This amount is a moderate amount as compared to the other alternatives, which range from 0 to \$6 million. However, there are certainly challenges in meeting the ASQ as recent history has demonstrated (see also the response to Statement T-19 above). It is important to understand that the ASQ functions more as a "ceiling" for the timber program than as a "target attainment" goal. In the end, budget and staffing will limit what may actually occur. However, as discussed in the response to T-19 above, we foresee a potential to increase efficiency of the timber program and stretch our limited resources further.

**T-21: The Forest Service should create brood habitat with timber sales.**

The impacts of the alternatives analyzed on terrestrial habitat components and wildlife species can be found in Chapter 3 Section B2A of the FEIS, as well as Appendix E of the FEIS. The requirements for "brood range" differ somewhat depending upon the species. Generally speaking we understand this to include grassland habitat (turkey and ruffed grouse) and regenerating forested stands that contain a significant herbaceous component (ruffed grouse) (adapted after pages 3-190 through 198 of the FEIS). It is important to recognize that brood range can be created through several tools, including prescribed fire, mechanical methods, and not simply timber harvesting. Table 3B2-11 provides a summary of the project acres and percentages of various habitat types under each alternative analyzed. The selected alternative is projected to produce about 18,000 to 30,000 acres of early successional habitat from timber harvesting (some portion of which would serve as brood range for ruffed grouse). Another 6,700 acres of grassland/shrubland would also be maintained. The Forest Plan identifies objectives OBJ SPD-2 through SPD-5 to create habitat components that would serve as brood range. Certainly timber harvesting is expected to contribute significantly to these objectives.

**T-22: The Forest Service should harvest timber and provide provisions for small game habitat.**

The analysis of impacts to Demand Species can be found in Chapter B section 2C of the FEIS. Small game species discussed in detail here include wild turkey, ruffed grouse, bobwhite quail, and woodcock. Key habitat components for these species include the creation of early successional habitat through timber management, creation and maintenance of grass/shrub habitat, and/or creation of open woodland habitat. Table 3B1-1 displays the percentage of these habitat components by alternative within ecological systems at the end of the first decade. We expect to maintain or increase the percentage of these habitat components in the Oak Forests and Woodlands system, the largest component on this Forest. Small game habitat is expected to increase under the selected alternative. Objectives ESD-1 and ESD-6 of the Forest Plan support this conclusion. From 18,000 to 30,000 acres of regenerating forest are desired and 90,000 acres are desired in an open canopy condition.

**T-23: The Forest Service should not rely on thinnings to improve wildlife habitat.**

Timber Stand Improvement (TSI) thinnings are but one of many tools that integrate into a complete package that can benefit many species of wildlife. TSI alone is certainly not relied upon or emphasized to provide all habitat components. Forest Plan objectives OBJ SPD-1 through SPD-13 demonstrate an emphasis on early successional and grassland/shrubland habitat, while no mention of TSI is made. No other objectives in the Forest Plan relates to TSI. While it may be true that thinning does not create the herbaceous understory that some wildlife species prefer, TSI is utilized to manipulate tree species composition. Oak and other hard mast species are favored and released so that they may attain a dominant/codominant position in the canopy. Many species of wildlife depend upon hard mast production to thrive.

**T-24: The Forest Service should assure adequate regeneration of desired species.**

A finding that assures that lands can be adequately restocked is required by law (NFMA) for all proposals that involve vegetative manipulation. Forest-wide Standard FW-131 relates to this requirement and provides minimum, desired, and maximum levels of trees per acre needed to satisfy this requirement. Adequate natural regeneration of a majority of our ecological systems arises from three main sources; existing advanced regeneration (seedlings or seedling sprouts in the understory of sufficient size), viable seed stored in the soil litter layer, and stump sprouting. While stump sprouting is a common source of regeneration, especially on the dry and xeric oak found on lower productivity sites, it is not the only source. Further, cutting of low stumps forcing low origin sprouts greatly mitigates the incidence of rot in the resulting stem. While oak species do dominate much of our forests and provide a very valuable hard mast food resource for wildlife, we also recognize a need for diversity of species in regeneration, especially as we consider future episodes of gypsy moth defoliation (see FEIS Chapter 3, section B5). Unfortunately, on our most productive sites, oak regeneration is often outcompeted by yellow poplar. This can result in a loss of quality hard mast production on these productive sites. This is the concern that leads to the identification of a need for research in regenerating oak species on productive sites. There is little concern for difficulty in regeneration of oak species on moderate to lower site productivity lands.

**T-25: The Forest Service should recognize that oak die back is the result of diminished nutrition.**

Oak decline is discussed in Chapter 3 section B5 of the FEIS. Oak decline is indirectly related to site productivity. The ratio of site index, a measure of site productivity, to age is a useful indicator for the risk of oak decline. Less productive sites with older trees are at a higher risk of incidence of oak decline. However, low site productivity, or "diminished nutrition" is not the cause of oak decline. As described in the FEIS, oak decline is a complex native disease involving interactions between environmental and biological stresses and subsequent attacks by insects and pathogens of opportunity. Chapter 3, Section A4 of the FEIS discusses expected impacts to soil movement and nutrient cycling. It is important to note that soil is not lost, although it may move from one area to another. Thus, natural regeneration does not result in a "constant loss of soil". While harvesting may remove organic matter from the nutrient cycling system, the FEIS concludes "...research has shown that removal of the tree main stem alone will not reduce long-term soil productivity. Most tree nutrients are in smaller branches and leaves, which normally remain on site after a timber harvest. Short-term losses are made up by leaf fall, atmospheric additions and weathering of parent material."

**T-26: The Forest Service should use selective cutting of mature trees.**

"Selective cutting" is not an officially recognized harvest method in the Southern Region. However, group selection and single tree selection are accepted harvest methods for managing uneven-aged stands. Appendix C of the Forest Plan describes the conditions under which various harvest methods are Possible, Recommended, Recommended with Conditions, or Not Recommended and why. Group selection is either Possible or Recommended with Conditions except for the Southern Appalachian Montane Pine Forest and Woodland ecological system where it is Not Recommended. Single tree selection is predominantly Not Recommended except in the Central and Southern Appalachian Spruce-Fir Forest. The primary reason for not recommending the uneven-aged management harvest methods is related to the shade tolerance of many of the preferred species in our ecological systems. Many of those species that are most beneficial to wildlife species (e.g. hard and soft mast producers) are of moderate or lower shade tolerance. The uneven-aged harvest methods, especially the single tree selection method, are not favorable to the regeneration and perpetuation of these species. Some exceptions are the northern hardwood, white pine, and spruce-fir forest types; these types can benefit from uneven-aged management techniques.

The term "selective cutting" may also refer to partial harvests where varying amounts of residual trees are left to create a partial or open canopy structure. In this more generic sense, partial harvests are expected to be the predominant method of harvest under the revised Forest Plan. Table 3B1-1 of the FEIS displays the projected percentage of forests in an open canopy mid-late successional stage. Relatively large percentages of this open canopy condition are projected for many of the ecological systems and especially the most common systems found on this Forest. Harvesting, prescribed fire, or both are expected to be used to achieve this condition. The Forest Plan includes objectives ESD-1 through ESD-6 for ecological diversity on. Objectives to create open canopy conditions on almost 90,000 acres are described.

**T-27: The Forest Service should identify how much of the timber harvest is for saw logs and how much is for building board or paper.**

Table 3C6-9 has been added to Section C6 of Chapter 3 of the FEIS to address this concern. Historically about 30% of the volume sold is sawtimber, 50% is pulpwood, and 20% is fuelwood. The fuelwood component is predominantly sold through personal use "dead and down" fuelwood permits.

**T-28: The Forest Service should not manage for a mono-culture of oak.**

Table 3B1-2 of the FEIS discloses that some 756,000 acres of the GWNF is comprised of Oak Forests and Woodlands. Oak species also occur as a component of a few other ecological systems. Oak is a very important vegetative component of our forests. The importance of the oak community types is reiterated on page 3-348 of the FEIS when we disclose that 77% of the forested acreage is of an oak type. While oak species do dominate much of our forests and provide a very valuable hard mast food resource for wildlife, we also recognize a need for diversity of species in regeneration, especially as we consider future episodes of gypsy moth defoliation (see FEIS Chapter 3 section B5). Some comments focused on a statement found in the DEIS on page 3-348: "...we attempt to salvage the dying trees prior to the oak losing their capability to stump sprout and regenerate the next stand to a desirable oak component to meet future conditions." This discussion does not portray an intention to create a "mono-culture" of oak, but a recognition that two major threats exist to this important community type. One of many viable strategies for perpetuating this resource that exists on a vast majority of the forest is to cut damaged trees in order to stimulate stump sprouting once gypsy moth defoliation has occurred or the early onset of oak decline is noted.

**T-29: The Forest Service should correct the analysis for the allowable sale quantity.**

Appendix B of the FEIS describes the process for determining the allowable sale quantity (ASQ). The ASQ is correct for the inputs into the Spectrum model as described in Appendix B. The discussion describes timber yields and addresses the focus of this comment. Only sawtimber and pulpwood volumes comprised the yield data that was input into the Spectrum model (B-21). Product smaller than 4" in diameter, the traditional merchantability limits for this Forest, were not modeled or included. Thus, small diameter utilization, what many people refer to as "biomass", did not contribute to the yield component or the computation of ASQ in any way. The discussion in Chapter 3 section C6 of the FEIS relating to the supply and demand comparison and small diameter utilization supports the comment that estimates of available wood biomass energy are not realistic: "This puts the almost 9 million ton figure identified as a maximum into perspective; it is probably not realistic."

**T-30: The Forest Service erred in identifying past levels of timber harvest.**

Table 3C6-5 of the FEIS displays the acres harvested by method of cut since 1993, the beginning of the last Forest Plan cycle. The GWNF has averaged 511 acres of regeneration harvest acres per year for the past 10 years. Table 3C6-13 of the FEIS identifies Alternative A as representing the 1993 Forest Plan as well as Alternative A1 as representing historic values. So the alternatives analyzed can be compared with both the 1993 Plan and actual historic harvest levels.

**T-31: The Forest Service should improve the analysis of forest health.**

The Forest Health discussion focuses on non-native invasive plants, insects, diseases, and other organisms that influence the health of our forested ecosystems. We agree that there are many other aspects of forest health and these are addressed under various other headings in the FEIS. A statement has been added to the introductory discussion of Forest Health in the FEIS that directs the reader to the Ecological Systems section of Chapter 3 of the FEIS to find discussions on many of these other aspects (page 3-257).

**T-32: The Forest Service should not identify any areas harvested since the 1960s for Recommended Wilderness Study or other allocations unsuitable for timber management.**

The alternatives analyzed in detail include a wide range of 1.1 million to 618,000 acres designated as unsuitable for timber production. However, all alternatives necessarily include some areas that have been harvested in the 1960s in unsuitable designations. Some older harvest units currently exist within already Congressionally Designated areas (Mount Pleasant National Scenic Area). Others occur within inventoried Roadless Areas or Special Biological Areas. Agency policies result in these areas being designated as unsuitable under Stage III suitability analysis as described by the National Forest Management Act. The decision on how to manage Potential Wilderness Areas (that were not Recommended for Wilderness Study) incorporated past investments in the areas through timber harvest history, usually occurring along existing

roads. This resulted in 23% percent of the PWAs (that are not Inventoried Roadless Areas) being allocated to management prescriptions suitable for timber management. The selected alternative does increase the acres suitable for timber production as compared to the 1993 GWNF Forest Plan. We believe the selected alternative provides adequate acres available for timber management to enable us to enhance and maintain resilient ecosystems and increase timber harvest levels.

## TROUT

### **TR-1: The Forest Service should use trout as an indicator species.**

Wild brook trout are listed as a Management Indicator Species in Section B2E of the FEIS, and FEIS Table 3B2-16. There is an extensive discussion on brook trout in the FEIS and in the Aquatic Ecological Sustainability Report (Appendix G).

### **TR-2: The Forest Service should provide management direction to improve habitat for trout.**

Management direction for trout is generally provided in the riparian corridor management prescription (Rx 11) on Forest Plan. Specific direction for trout is found in Standard 11-010: In cold water stream habitat, activities that unfavorably affect trout spawning should be avoided from October 1 to April 1 in brook trout and brown trout streams and/or March 15 to May 15 in rainbow trout streams. Any necessary in-stream disturbance activities within these time limits must have consultation with state and Forest biologists; and Standard 11-057: Impoundments will generally be designed to allow complete draining, with minimum flows, cold-water releases, and re-aeration in trout waters and other specific waters when needed. Furthermore, discussion regarding chemical mitigation from impacts such as acid deposition, strategies in light of climate change, and working with partners to maintain instream habitat are included in the FEIS pages 3-246, 3-84, and 3-241 respectively.

## UTILITIES

### **U-1: The Forest Service should use utility corridors to provide wildlife habitat.**

We agree and include open sections of utility corridors in our estimates of shrubland habitat.

### **U-2: The Forest Service should expand current utility corridors to allow for additional corridors.**

The Forest Plan does expand most of the existing utility corridors to 500 feet in width to allow opportunities for potential expansion. These are the corridors that we are identifying for potential future energy needs.

### **U-3: The Forest Service should address energy transmission rights of way.**

Rights of way for utility transmission are considered a special use and addressed in the special use sections of the EIS and Forest Plan.

## VISUAL RESOURCES

### **V-1: The Forest Service should better address scenic resources.**

Protection of the scenic values of the GWNF has been a high priority for many years. Because of this priority we did not expect that the alternatives would vary substantially in how they would address scenery management. In the course of preparing the management prescriptions we relied heavily on the prescriptions used in the Jefferson Forest Plan. When we did this we inadvertently lowered the Scenic Integrity Objectives on the GWNF. This was due to the manner in which the 1993 GW Forest Plan was prepared; it overrode the scenic inventory and adopted a higher standard for scenery on much of the Forest. In the final Forest Plan we adjusted the Scenic Integrity Objectives for Management Prescription Area 13-Mosaics of Habitat to increase the protection of scenic values. Now the final Forest Plan has more acres with an objective for a High Scenic Integrity than the current plan.

### **V-2: The Forest Service should reduce impacts of timber harvest on scenic resources.**

Each management prescription area has a standard that includes a Scenic Integrity Objective (SIO) to be met for all projects. During project level planning, the design of management activities is crucial in meeting the SIOs. To help assure SIOs are met, Chapter 3 contains a Scenery Treatment Guide in Table 3-3 which provides recommended mitigations specific to each type of management activity for the High, Moderate and Low SIOs. The intent of this Scenery Treatment Guide is to reduce impacts of timber harvesting and other management activities on the scenic resource. In addition, the final Forest Plan made changes in Scenic Integrity Objectives

to increase protection of visual quality, particularly for the areas where most timber harvest will occur. The Final Plan changed the Scenic Integrity Objectives within Mosaics of Habitat from Low to Moderate within Scenic Classes 3-5.

## WATER

### **WA-1: Alternative G adequately addresses water issues.**

We agree. The expanded corridor widths and the protection of ephemeral channels in Alternative G will amply protect water quality and riparian areas. These corridor widths were used in the final Plan.

### **WA-2: The Forest Service should examine the impacts of Alternative G in having the second highest amount of ground disturbance.**

We reviewed the soil disturbance table (Table 3A6-3) and found some errors in that estimates of annual soil disturbance were added to estimates of decadal soil disturbance. These errors have been fixed. While Alternative G (and H and I) remains second in highest acres of disturbance, it is very similar to the levels in Alternatives A, B, and E. The reasons Alternatives G, H, and I have relatively high levels are that these alternatives continue to harvest timber and construct some access roads. With the standards of the Forest Plan, particularly the riparian standards, the potential for this soil disturbance to reach stream channels is small. In addition, while these alternatives have the second highest levels, the total area of disturbance is low (0.03% of the Forest).

### **WA-3: The Forest Service should make water and forest health as the first priorities.**

Chapter 2 of the Plan ("Vision") states that maintenance and restoration of healthy, diverse, and resilient watersheds is a high priority in our management activities. Priority watersheds and Public Water Supply watersheds are identified for restoration and protection. Standards provide for added protection through wider riparian corridors.

### **WA-4: The Forest Service should protect water quality.**

The Revised Plan is designed to protect water quality through forest-wide standards, riparian corridor direction, and identification of public water supply watersheds and priority watersheds. Wider riparian corridors are specified.

### **WA-5: The Forest Service should protect water quality for fisheries.**

The Revised Plan is designed to avoid and minimize effects on aquatic resources through forest-wide standards, riparian corridor direction (management prescription 11), and identification of priority watersheds.

### **WA-6: The Forest Service should maximize water absorption in the soil.**

In timber harvests, the conductivity of the soil is maintained except in areas of high compaction, such as landings and skid trails. Compacted areas are ripped and seeded to help mitigate the effects of compaction. Standards require the use of Best Management Practices and the revegetation of disturbed areas. Soil disturbance must be less than 15% of an activity area.

### **WA-7: The Forest Service should protect watersheds.**

The Revised Plan is designed to protect watersheds through forest-wide standards, riparian corridor direction, and identification of public water supply watersheds and priority watersheds. Wider riparian corridors are specified.

### **WA-8: The Forest Service should protect watersheds by allowing no drilling, tree cutting or bull dozing.**

Although these activities (drilling is only allowed on existing federal gas leases and for private mineral rights), are allowed in the Revised Plan, the Plan is designed to protect watersheds through forest-wide standards, riparian corridor direction, and identification of public water supply watersheds and priority watersheds. Wider riparian corridors are specified.

### **WA-9: The Forest Service should place greater emphasis on drinking watersheds.**

Public Water Supply watersheds, as designated by the State of Virginia, are recognized in the Forest Plan. Three watersheds were added to the list of priority watersheds, so that now all Forest Service watersheds encompassing Public Water Supply watersheds are priority. In the Final Plan, a standard was added that provides for wider lakeside management zones around municipal water supply reservoirs.

**WA-10: The Forest Service should update its list of drinking water supplies.**

The list of drinking water supplies within or downstream of the Forest was updated to include drinking water supplies in Maryland and the District of Columbia.

**WA-11: The Forest Service should describe how the priority watersheds were selected.**

Chapter 3 of the Plan states that priority watersheds were selected with an emphasis on watersheds with sensitive aquatic species, watersheds with impaired streams, and watersheds providing drinking water. A more detailed description of the selection process was added to Appendix D, Priority Watersheds.

**WA-12 & WA-13: The Forest Service should identify all (or more) drinking water supply areas as priority watersheds and develop more standards for priority watersheds.**

Three watersheds were added to the list of priority watersheds, so that now all Forest Service watersheds encompassing Public Water Supply watersheds, as designated by the State of Virginia, are priority. These Public Water Supply watersheds are the water supplies whose water quality is most likely to be affected by activities on the Forest. Additional drinking water watersheds were identified in comments (as those in Wild Virginia's The State Of Our Water report), based on water supply intakes on rivers in the vicinity of the Forest, and having part of their watersheds on the Forest. The water quality for these water supplies is much more dependent on private land uses and conditions. Thus these watersheds are not included as priority. Priority designation was also based on other factors, such as impaired waters indicating a risk to biologic resources, and the presence of threatened or endangered, sensitive, or locally rare aquatic or riparian species. If all of the additional drinking water watersheds were added as priority, 62% of Forest land would be included in priority watersheds. The focus on restoration and protection would be diluted if such a large percentage of the Forest were listed as "priority". All watersheds in the Forest are protected through forest-wide standards and riparian corridor direction. Riparian corridors are wider than in the 1993 Plan. Also, in the Final Plan, a standard was added that provides for wider lakeside management zones around municipal water supply reservoirs.

**WA-14: The Forest Service should enhance protection of water supplies through expanded buffers, limits on road construction and decommissioning of roads.**

Riparian corridors are wider than in the 1993 Plan. Also, in the Final Plan, a standard was added that provides for wider lakeside management zones around municipal water supply reservoirs. Plan strategy states that "Road management decisions regarding . . . decommissioning and construction will all be done after careful consideration of potential impacts to water quality." The Plan includes an objective to decommission 100 to 200 miles of roads over the next 10 years. Priorities for decommissioning are roads causing resource damage and roads in priority watersheds. All public water supply watersheds are included in the priority watersheds.

**WA-15: The Forest Service should protect water in Davis Mill Creek.**

All watersheds in the Forest are protected through forest-wide standards, riparian corridor direction and the identification of priority watersheds. The watershed encompassing Davis Mill Creek is a priority watershed in the Forest Plan.

**WA-16: The Forest Service should not allow geologic carbon sequestration or hydraulic fracturing of the Marcellus formation in the Pedlar watershed.**

There is no Marcellus shale underlying the Pedlar watershed. There are no proposals for geologic carbon sequestration; moreover, the geologic environment of the Pedlar watershed is not known to be suitable for geologic carbon sequestration.

**WA-17: The Forest Service should keep the North Fork of the Shenandoah watershed pristine.**

All watersheds in the Forest are protected through forest-wide standards, riparian corridor direction and the identification of priority watersheds. Three watersheds were added to the list of priority watersheds, so that now all watersheds encompassing the Public Water Supply watersheds of Woodstock, Strasburg, and Winchester (as designated in Virginia's Water Quality Standards) are priority.

**WA-18: The Forest Service should have strict compliance with BMPs.**

Standard FW-1 states that Forest practices will meet or be more stringent than Virginia and West Virginia Best Management Practices. A standard was added to clarify that, at public water supply reservoirs, wider lakeside management zones will be applied, in compliance with Virginia's BMPs. The Virginia Department of Forestry has confirmed that this meets the intent of their Streamside Management Zone BMP for Municipal Water Supplies.

**WA-19: The Forest Service should increase widths for riparian buffers.**

Riparian corridor widths were increased to 100 feet for perennial streams and 50 feet for intermittent streams, with greater widths for slopes above 10%. These widths can be varied where site-specific analysis indicates the need. Channeled ephemeral streams are protected with a 25-foot zone on each side, as well as upslope from the head of the channel. To conform to Virginia Best Management Practices for Municipal Water Supplies, a standard was added, implementing wider riparian areas around public water supply reservoirs. These riparian corridor widths protect water quality and aquatic and riparian habitat.

**WA-20: The Forest Service should examine the standards for riparian areas.**

Standards provide for wider riparian corridors and for protections of ephemeral streams. Livestock access to streams is limited. For existing allotments, grazing in riparian corridors can be reauthorized only if there would be no unacceptable resource damage to riparian resources. New grazing allotments or new permits for inactive allotments must exclude the riparian corridor. In the Final Plan, riparian standards clarify that, while roads, pipelines, and utilities associated with access to lease operations may be allowed to cross riparian areas, well pads and associated well development infrastructure are not allowed in riparian areas.

**WA-21: The Forest Service should correct some specific items in the DEIS.**

While there will be continued natural and man-caused stresses on watersheds, it is still appropriate to speak of "the continued natural recovery of watershed conditions." Over time, watersheds are recovering naturally from the degraded conditions that much of the Forest experienced prior to Forest Service ownership.

**WA-22: The Forest Service should correct an error in the DEIS about streamflow.**

The commenter states that absorption is a major use of precipitation and thus streamflow is not simply precipitation minus evaporation and use by vegetation. Absorption can be considered a component of water storage. Over a number of years, changes in storage average to near zero, and thus can be viewed as a minor component of precipitation use, when compared to evaporation and use by vegetation.

**WA-23: The Forest Service should analyze the effects of its activities on sediment production.**

There are many difficulties associated with modeling sediment. Even the best of models have many limitations, and numerous assumptions must be made. Site specific conditions are very difficult to model at the Forest scale. The results will be, at best, within plus or minus 50% of the true value. Thus there is no reason to believe that sediment numbers derived from a model would provide a better indication of the relative effects of the alternatives on sediment and water quality than would the acres of disturbance that were used in the EIS analysis.

**WA-24: The Forest Service should consider the value of preserving water quality in its net public benefits analysis.**

The high value of water quality is an emphasis in all of the alternatives. While it is difficult to place a monetary value on the water on the Forest, the importance of maintaining high quality water is recognized through land allocations and standards for implementation.

**WA-25: The Forest Service should discuss clearcutting and flooding.**

The discussion of flooding in the EIS was expanded to address the impacts of forest harvesting on flooding.

**WA-26: The Forest Service should consider that watershed management can allow for some ground disturbing activities.**

We agree. With the application of Best Management Practices and other standards, water quality can be maintained with some ground disturbing activities that are managed and controlled.

**WA-27: The Forest Service should use best science in watershed management.**

See response to Comment SC-1. Riparian corridor widths are the same as those in the Jefferson National Forest Revised Plan, which were developed using best available science from numerous sources.

**WA-28: The Forest Service should recognize the flood control dams and their management.**

The Forest Plan includes the following statement in the desired conditions for lands and special uses: "Existing flood control dams are maintained in good working order per provisions in the special use permit."

**WA-29: The Forest Service should incorporate national direction on Watershed Condition Framework.**

National direction in the Watershed Condition Framework is being followed by the Forest. Forest Plan Appendix D - Priority Watersheds has been revised to show the Watershed Condition Class for each Forest Plan Priority Watershed. Watershed Condition Class is one factor considered in the designation of priority watersheds. Watershed Condition Framework Priority Watersheds for 2011 are identified in Appendix D.

**WA-30: The Forest Service should discuss how the plan interacts with the Chesapeake Bay.**

A discussion was added to the Forest Plan, describing the Forest's support for Chesapeake Bay initiatives, including Executive Order 13508, EPA guidance, and the Chesapeake Bay Total Maximum Daily Load analysis.

**WA-31: The Forest Service should provide opportunities for municipal wells on the Forest.**

The Forest Plan does not prohibit municipal wells on the Forest. Any proposal for municipal wells would be considered on a case-by-case basis, with site-specific analysis of effects.

**WA-32: The Forest Service should recognize that fungi can be used in restoration to improve water quality.**

The use of fungi for restoration is a site-specific decision to be considered in project development and is outside the scope of the Forest Plan.

**WA-33: The Forest Service should improve watershed direction in the forest plan.**

The desired conditions for watersheds describe the overall vision for these areas. Desired conditions for riparian corridors (Management Prescription Area 11) augment the desired conditions for watersheds. Some comments requested more stringent standards for certain watersheds. Protection of water quality is essential in all watersheds and we have provided a set of standards to provide this high level of protection across the GWNF.

**WA-34: The Forest Service should have a management prescription area for source watersheds.**

Source water supplies are protected with other Plan direction. We examined the options of using a management prescription for source watersheds. Protection of water quality is one of the highest priorities of the Forest Plan as noted in the riparian standards. With this level of protection for the sensitive areas along all water bodies, the use of a management prescription area for watersheds becomes unnecessary. We have identified the source watersheds, they are used in identification of priority watersheds and they were used in the analysis of lands available or suitable for oil and gas leasing.

**WA-35: The Forest Service should correct some specific items in the draft plan.**

The comment concerns the statement under "Desired Condition for Soils": "Forest streams located in watersheds of base-poor bedrock and soils are not being negatively impacted by acid deposition." This is not a statement about the existing condition, but rather a statement of the desired condition. The sentence is modified in the Final Plan to make this clearer.

**WA-36: The Forest Service should monitor sediment.**

Collecting sediment samples can be difficult and expensive. Because of the high degree of natural variability of sediment, it is very difficult to show a statistically significant change. Moreover, there is no consensus on how much of an increase in sediment is too much. For these reasons, aquatic macroinvertebrate sampling was adopted as the main tool for effectiveness monitoring. Macroinvertebrates integrate the physical, chemical, and biological components of aquatic systems and have been successfully used as biological indicators of change and impacts.

**WA-37: The Forest Service should follow state and federal regulations.**

The Forest will follow all applicable state and federal regulations. The Forest Plan under "Standards Overview" states: "In addition to the standards found in this Revised Plan, the Forest is required to comply with applicable laws, executive orders, and regulations, manuals, and handbooks."

**WA-38: The Forest Service should determine if its roads are point sources of pollution.**

The Clean Water Act (Act) requires that National Pollutant Discharge Elimination System (NPDES) permits be secured before pollutants are discharged from any point source into the navigable waters of the United States. One of the Environmental Protection Agency's (EPA) implementing regulations, the Silvicultural Rule, specifies which types of logging-related discharges are point sources. 40 CFR §122.27(b)(1). These discharges require

NPDES permits unless some other federal statutory provision exempts them from coverage. One such statutory provision exempts “discharges composed entirely of stormwater,” 33 U. S. C. §1342(p)(1), unless the discharge is “associated with industrial activity,” §1342(p)(2)(B). Under the EPA’s Industrial Stormwater Rule, the term “associated with industrial activity” covers only discharges “from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant.” 40 CFR §122.26(b)(14). In Northwest Environmental Defense Center v. Brown, 640 F.3d 1063 (9th Cir. 2011) (“NEDC”), the Ninth Circuit Court of Appeals held that stormwater runoff associated with two logging roads that flows into systems of ditches, culverts, and channels before being discharged into forest streams and rivers is a point source discharge for which a National Pollutant Discharge Elimination System (NPDES) permit is required. The Court of Appeals then remanded to the district court for further proceedings consistent with its opinion. The State of Oregon and other parties filed petitions for certiorari with the U.S. Supreme Court to review the Ninth Circuit’s decision.

On December 7, 2012, EPA issued a final rule (Federal Register 77 FR 72970) that clarifies that stormwater discharges from logging roads do not constitute stormwater discharges associated with industrial activity and that a NPDES permit is not required for these stormwater discharges. The final rule also clarified that, for the purpose of assessing whether stormwater discharges are “associated with industrial activity,” the only facilities under SIC code 2411 that are “industrial” are: rock crushing, gravel washing, log sorting and log storage.

On March 20, 2013 the Supreme Court upheld EPA’s policy for regulating stormwater runoff on logging roads. They ruled that the preamendment version of the Industrial Stormwater Rule, as permissibly construed by the EPA, exempts discharges of channeled stormwater runoff from logging roads from the NPDES permitting scheme. The regulation is a reasonable interpretation of the statutory term “associated with industrial activity,” §1342(p)(2)(B), and the agency has construed the regulation to exempt the discharges at issue here. When an agency interprets its own regulation, the Court, as a general rule, defers to it “unless that interpretation is ‘plainly erroneous or inconsistent with the regulation.’” Here, it was reasonable for the EPA to conclude that the conveyances at issue are “directly related” only to the harvesting of raw materials, rather than to “manufacturing, processing, or raw materials storage areas at an industrial plant.” 40 CFR §122.26(b)(14). The regulatory scheme, taken as a whole, leaves open the rational interpretation that the regulation extends only to traditional industrial buildings such as factories and associated sites and other relatively fixed facilities.

## WIND

### **WI-1: The Forest Service should follow the wind direction in Alternative G.**

The final Forest Plan generally follows the wind direction in Alternative G, but added Scenic Corridors to the list of management prescription areas unsuitable for wind energy development.

### **WI-2: The Forest Service should adopt Alternative G or an alternative that expands the available areas that assure that a reasoned discussion will occur about wind energy development.**

The final Forest Plan generally follows the wind direction in Alternative G, but added 7B-Scenic Corridors to the list of management prescription areas unsuitable for wind energy development.

### **WI-3: The Forest Service should expand the list of areas where wind energy development would not be allowed.**

The final Forest Plan generally follows the wind direction in Alternative G, but added 7B-Scenic Corridors to the list of management prescription areas unsuitable for wind energy development. 4D1-Key Natural Heritage Community areas were on the list in the Draft Plan as well as in the final Plan. We did not expand the list to include water supply watersheds, as we do not believe that we can conclude that the impacts of wind energy development would be incompatible with these areas (e.g., road access could be predominantly outside the watershed with just turbines in the watershed). We did not expand the list to include the Great Eastern Trail, since the Appalachian National Scenic Trail is the only trail which has its own management direction.

### **WI-4: The Forest Service should not allow wind energy development at specific sites.**

The final Forest Plan makes much of Shenandoah Mountain unsuitable for wind energy development, except for the portions of Shenandoah Mountain just south of Highway 250. The final Forest Plan added Scenic Corridors to the list of management prescription areas unsuitable for wind energy development.

We did not make all of the National Forest System lands in Bath County as unsuitable for wind energy development. We understand the County's concern about impacts to the tourism industry and to their viewsheds. However, it is difficult to manage the National Forest based on county boundaries. Should we receive any applications for wind energy development on lands in Bath County, we would carefully consider the viewpoint of the Bath County Board of Supervisors, and any decisions would be based on an environmental analysis with public input.

**WI-5: The Forest Service should not allow the development of wind energy on the forest.**

We understand the concerns about the potential impacts of wind energy development on birds, bats, other animals, sensitive ridgetop ecosystems, and scenery. We also understand the concerns about the economic viability of wind energy development on these ridgelines. However, federal lands may be important to the development of a diverse set of energy options in the U.S. and National Forest System lands are one of the few opportunities in the east. We have identified some lands as available for further study if a proposal should be made.

**WI-6: The Forest Service should allow wind energy development in more areas than identified in Alternative G.**

We reviewed the information regarding the areas where wind energy development would not be allowed in Alternative G. We believe that the resource values in these areas could be substantially degraded by the activities of developing wind energy and so we carried all of them forward into the new selected alternative. In some of the areas identified in comments like Mount Pleasant, wind energy development is prohibited by law. Most of the 12D-Backcountry Recreation Areas are Inventoried Roadless Areas and road construction (essential to wind energy development) would be prohibited by the 2001 Roadless Rule. The scenic resources of the Blue Ridge Parkway would be diminished if wind energy development would be allowed in its corridor.

**WI-7: The Forest Service should allow the development of wind energy on the forest.**

The Forest Plan does allow for consideration of wind energy development in some portions of the Forest.

**WI-8: The Forest Service should examine the potential to construct wind generators without extensive road improvements.**

This would be examined in any proposal made to develop wind energy on the Forest.

**WI-9: The Forest Service should allow the development of wind energy on the forest if other resources are protected.**

The Forest Plan does allow for consideration of wind energy development in some portions of the Forest. The Forest Plan identifies areas where we do not believe that we could protect other resources as unsuitable to this development.

**WI-10: The Forest Service should require NEPA review of any wind energy development projects.**

Any wind energy development projects would be subject to site-specific environmental analysis and public involvement under the requirements of NEPA.

**WI-11: The Forest Service should consider all aspects of wind energy development including the adverse effects.**

The effects analysis for wind energy has been updated to consider more aspects.

**WI-12: The Forest Service should consider the economics of wind energy development.**

The economics of any wind energy development would be considered as part of the environmental analysis associated with any site-specific proposal.

**WI-13: The Forest Service should recognize and utilize the expertise of other agencies if reviewing wind energy projects.**

During the site-specific analysis of any energy development proposal, we will seek out expertise from other agencies.

**WI-14: The Forest Service should not impair adjacent landowners' development of wind energy on their property.**

There is nothing in the Forest Plan intended to affect how adjacent landowners manage their lands. However, these comments refer to a possible need for road improvements on National Forest System lands to facilitate

development on adjacent private lands. Management of special uses and road improvements are part of each management prescription. In the case of these comments the adjacent management prescription area is 8E7-Shenandoah Mountain Crest and the direction is dependent upon the conservation agreement covering the Cow Knob salamander.

**WI-15: The Forest Service should incorporate additional direction for wind energy development in the plan.**

The specific requirements to be included in any environmental analysis of a wind energy development project would be determined during the scoping for a site-specific project.

**WI-16: The Forest Service should review the Wyoming analysis of wind energy development.**

We did review the Wyoming report. We incorporated some of the ideas from the report in that we identified areas of the GWNF that would be most sensitive to impacts from wind energy development and made them unsuitable for wind energy development. This included inventoried roadless areas as identified in the report. Many of the other recommendations in the report related to site-specific mitigation which would be considered if we receive an application for a project.

**WI-17: The Forest Service should react to each wind energy development project rather than making a plan decision.**

The decisions in the Forest Plan are to identify areas where wind energy development would conflict with other resource needs. In other areas, the direction is to react to each individual project with site-specific analysis.

## WILD & SCENIC RIVERS

**WSR-1: The Forest Service should have an alternative that maximizes designation of eligible rivers.**

We evaluated rivers for their eligibility under the National Wild and Scenic Rivers Act (Forest Plan EIS Appendix D). All of the eligible sections of river are managed to protect their qualities that make them eligible.

**WSR-2: The Forest Service should modify management direction for wild and scenic rivers.**

The standard about managing fire use was changed in the final Forest Plan.

**WSR-3: The Forest Service should evaluate all rivers eligible for wild and scenic river designation.**

The evaluation of rivers is found in the Final EIS Appendix D. In addition to the rivers evaluated in 1993, we did examine other rivers but we did not identify outstandingly remarkable values in these other rivers.

COMMENT LETTERS RECEIVED FROM GOVERNMENT ENTITIES

This section reproduces comment letters on the Draft Forest Plan and DEIS from government entities in their entirety (FSH 1909.15.24.13). This section only contains those comment letters that were submitted during the formal Draft Forest Plan and DEIS comment period (June 3, 2011 to October 17, 2011). Table N-3 shows the list of letters received from government entities and the letter number they are filed under at the Supervisor’s Office in Roanoke, Virginia. The comment letters are reproduced in this section in the order that they are listed in Table N-2.

Table N-2. Government Entities that Submitted Comment Letters on the Draft Forest Plan and DEIS.

Government Entity	Letter Number
<b>Federal Agencies</b>	
United States Army Corps of Engineers	485
United States Department of Interior - Bureau of Land Management	479
United States Department of Interior - National Park Service	40
United States Department of Interior - Office of Environmental Policy and Compliance	158
United States Environmental Protection Agency	494
United States Geological Society	456
<b>Federal Elected Officials</b>	
US Congress, House of Representatives - Connolly	464
US Congress, House of Representatives - Cummings	464
US Congress, House of Representatives - Edwards	464
US Congress, House of Representatives - Griffith	251
US Congress, House of Representatives - Moran	464
US Congress, House of Representatives - Norton	464
US Congress, House of Representatives - Sarbanes	464
US Congress, House of Representatives - Scott	464
US Congress, House of Representatives - Van Hollen	464
<b>Tribal Officials</b>	
Eastern Band of Cherokee Indians	234
<b>State Agencies</b>	
Virginia Department of Conservation and Recreation	513
Virginia Department of Environmental Quality	513
Virginia Department of Forestry	513
Virginia Department of Game and Inland Fisheries	513
Virginia Department of Health	513
Virginia Department of Historic Resources	513
Virginia Department of Mines, Minerals and Energy	393, 513
Virginia Marine Resources Commission	513
West Virginia Division of Natural Resources	232
West Virginia Geological and Economic Survey	469

State Elected Officials	
Virginia General Assembly, 26th District House of Delegates - Wilt	203, 564
Virginia State Governor - McDonnell	628
County Officials	
Augusta County Board of Supervisors	253
Augusta County Service Authority	37
Bath County Board of Supervisors	256
Botetourt County Board of Supervisors	272
Central Shenandoah Planning District Commission	513
Fairfax County Water Authority	378
Headwaters Soil and Water Conservation District	275
Interstate Commission on the Potomac River Basin	468
Roanoke Valley-Alleghany Regional Commission	513
Rockbridge County Board of Supervisors	270
Rockingham County Board of Supervisors	545
City Officials	
City of Lynchburg, Virginia	261
City of Roanoke, Virginia	200