

# CHAPTER 1 – PURPOSE AND NEED

## INTRODUCTION

The purpose of this proposed action is to revise the George Washington Land and Resource Management Plan (Forest Plan). The revised Forest Plan guides all natural resource management activities on the George Washington National Forest to meet the objective of Federal law, regulations, and policy. The proposed action also affects a wide range of socioeconomic factors, as they relate to natural resources. The existing Forest Plan for the George Washington National Forest was approved January 21, 1993. There have been ten amendments to the existing Forest Plan. Revision of the Forest Plan is now needed to satisfy regulation requirements and to address new information about the forest and its uses.

The George Washington and Jefferson National Forests were administratively combined in 1995. However, each National Forest continues to have its own Forest Plan. The Forest Plan applies to the George Washington National Forest for a total of approximately 1,066,000 acres.

This Final Environmental Impact Statement (FEIS) describes the analysis of several alternatives for revising the Forest Plan for the George Washington National Forest and discloses the environmental effects of these alternatives. The FEIS is guided by the implementing regulations of the National Environmental Policy Act (NEPA) of 1969 found in the Council of Environmental Quality Regulations, Title 40, CFR, Part 1500. The companion document to this FEIS is the Forest Plan - a detailed presentation of the selected alternative. The selected alternative is Alternative I.

Notification of initiation of the plan revision process for the George Washington National Forest was provided in the Federal Register on February 15, 2007 [72 FR 7390]. The plan revision was initiated under the planning procedures contained in the 2005 Forest Service planning rule (36 CFR 219 (2005)) and one series of public meetings was held. On March 30, 2007, the federal district court for the Northern District of California enjoined the Forest Service from implementing the 2005 planning rule and the revision of the GWNF Forest Plan under the 36 CFR 219 (2005) rule was suspended in response to the injunction. On April 21, 2008 the Forest Service adopted the 2008 Planning Rule that allowed resumption of the revision process if it conformed to the new planning rule (36 CFR 219.14(b) (3) (ii), 2008). Notification of adjustment for resuming the land management plan revision process under the 2008 Planning Rule for the GWNF was provided in the Federal Register on June 24, 2008 [73 FR 35632]. A series of five topical public meetings were held between July 2008 and February 2009. On June 30, 2009, the 2008 Planning Rule was enjoined by the United States District Court for the Northern District of California (Citizens for Better Forestry v. United States Department of Agriculture, No. C 08-1927 CW (N.D. Cal. June 30, 2009)) and the revision of the GWNF Forest Plan was again suspended. The Department then determined that the 2000 Planning Rule was in effect. The 2000 Rule's transition provisions (36 CFR 219.35), amended in 2002 and 2003 and clarified by interpretative rules issued in 2001 and 2004, and reissued on December 18, 2009 [74 FR 67059-67075] allowed use of the provisions of the National Forest System land and resource management planning rule in effect prior to the effective date of the 2000 Rule (November 9, 2000), commonly called the 1982 planning regulations, to amend or revise plans. The GWNF elected to use the provisions of the 1982 planning regulations. On March 10, 2010 a Notice of Intent to prepare an environmental impact statement and revised land management plan using the provisions of the 1982 National Forest System land and resource management planning regulations for the George Washington National Forest was published in the Federal Register [75 FR 11107]. The current Planning Rule, published on April 9, 2012, also allows for plan revisions initiated before May 9, 2012 to be revised in conformance with the provisions of the prior planning regulations, including its transition provisions (36 CFR part 209, published at 36 CFR parts 200 to 209, revised as of July 1, 2010).

The information gathered from public collaboration efforts and most of the analysis conducted prior to the court's injunction in June 2009 remained useful for completing the plan revision using the provisions of the 1982 planning regulations. The GWNF concluded that the following material developed during the plan revision before the 2010 Notice of Intent was appropriate for continued use:

- The inventory and evaluation of potential wilderness areas published on August 21, 2008 was consistent with the 1982 planning regulations, and was brought forward into the plan revision process.
- A Comprehensive Evaluation Report (CER) was developed under the 2005 and 2008 rule provisions, and it was available for public comment. This analysis was updated with additional information to meet the requirements of the Analysis of the Management Situation (AMS) provisions of the 1982 rule. The information from this analysis was used to help identify the need for change and the preliminary proposed actions that were identified in the 2010 Notice of Intent. Comments received during the scoping process were used to further update the need for change analysis.
- Information on the life history, threats, habitat needs and population trends for a number of terrestrial and aquatic species contained in the forest planning records for the ecosystem and species diversity assessments were used as a reference in the planning process as appropriate to meet the requirements of the 1982 planning regulations. This was scientific information and was not affected by the change of planning rule.
- Public comments previously submitted in writing, or recorded at past public meetings, related to the revision of the GW Forest Plan since 2007 were used to help identify issues and concerns and to help develop alternatives to address these issues and concerns.

## FOREST PROFILE

The George Washington National Forest extends for about 140 miles along the Appalachian and Blue Ridge Mountains of northwestern Virginia and adjacent West Virginia. The George Washington National Forest comprises lands located in Virginia (approximately 960,282 acres) and West Virginia (approximately 105,099 acres) and is close to a population of about 10.5 million people. The Forest contains the Lee, North River, Warm Springs, James River and Pedlar Ranger Districts. See Figures 1-1 and 1-2.

The National Forest is located in the Northern Blue Ridge and the Northern Appalachian Ridges and Valleys, providing habitat for a wide variety of species including at least 70 amphibian and reptiles, 180 species of birds, 60 species of mammals, and 100 species of freshwater fishes and mussels. Ten of the plants and animals species found on, or near, the Forest are listed by the US Fish and Wildlife Service as threatened or endangered. The Forest affords excellent opportunities for wildlife viewing, as well as hunting and fishing.

The George Washington National Forest is a part of the Appalachian Hardwood Forest which is located within the Eastern Deciduous Forest Province. There are over 60 tree species represented on the National Forest. Hardwood-dominated forest types comprise over 75 percent of the acreage. There is much variation in the vegetation and many natural changes are taking place as forest succession progresses.

The George Washington and Jefferson National Forests together have an average of 44 wildfires each year, with the average size approximating 55 acres. Seventy-five percent of the wildfires are human-caused. Research indicates that fire played a major role in establishing and maintaining the plant communities of the Appalachian Mountains. Major insect pests include the gypsy moth, southern pine beetle, and hemlock woolly adelgid. Major disease problems include oak decline, dogwood anthracnose, and shoestring root rot.

The Forest is located within two major river basins (the James and the Potomac Rivers) and is entirely within the Chesapeake Bay watershed. The Forest contains 1,171 miles of perennial streams, of which over 700 miles support a cold water fishery. At least 30 communities use water from the Forest for all or part of their water supplies.

The Forest transportation network has about 1,800 miles of National Forest System Roads which range from paved highways to non-surfaced roads designed for high clearance vehicles. Many of these roads are available for pleasure driving, the removal of forest products, bicycling and scenic viewing. Interstate 81 and other U.S. and State highways also cross or adjoin the National Forest. The National Forest is also traversed by the Blue Ridge Parkway.

Developed recreation opportunities are offered at about 60 sites on the Forest. The Forest has approximately 1,100 miles of non-motorized trails. The Forest also has six designated Wildernesses, totaling approximately 43,000 acres and one designated National Scenic Area.

There are three individual ATV trail systems offering a total of about 65 miles of motorized trails. The George Washington National Forest encompasses approximately 48 percent of the public hunting lands located in Virginia (the combined George Washington and Jefferson National Forests comprise about 80 percent). Hunting is among the most popular recreation activities on the Forests. The Forests provide the majority of the black bear and ruffed grouse habitat in Virginia.

The George Washington National Forest has very limited energy resource development at the current time. Only about 10,200 acres of the Forest is currently leased under federal oil and gas leasing procedures. Mineral rights on about 16 percent of the Forest are privately owned.

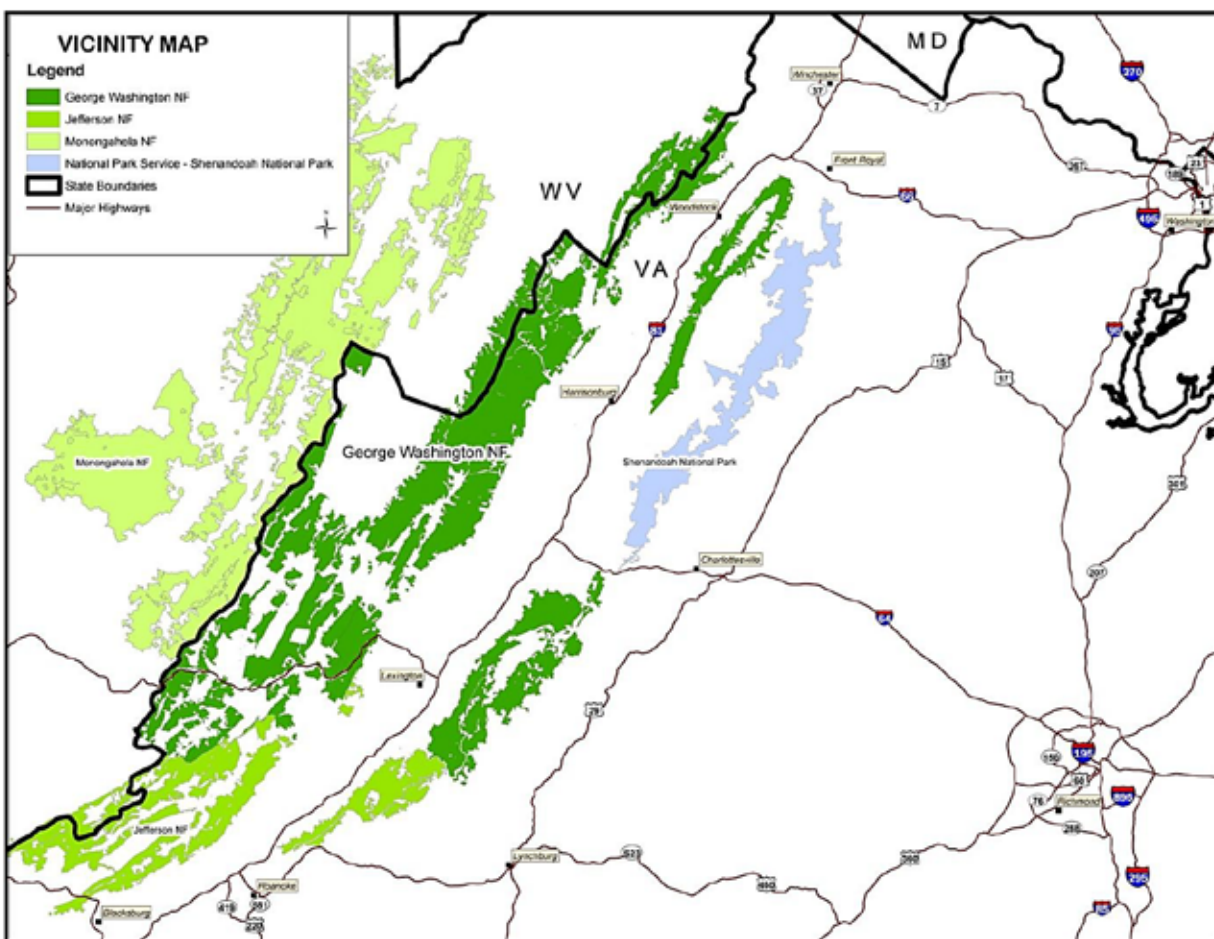


Figure 1-1. Vicinity Map

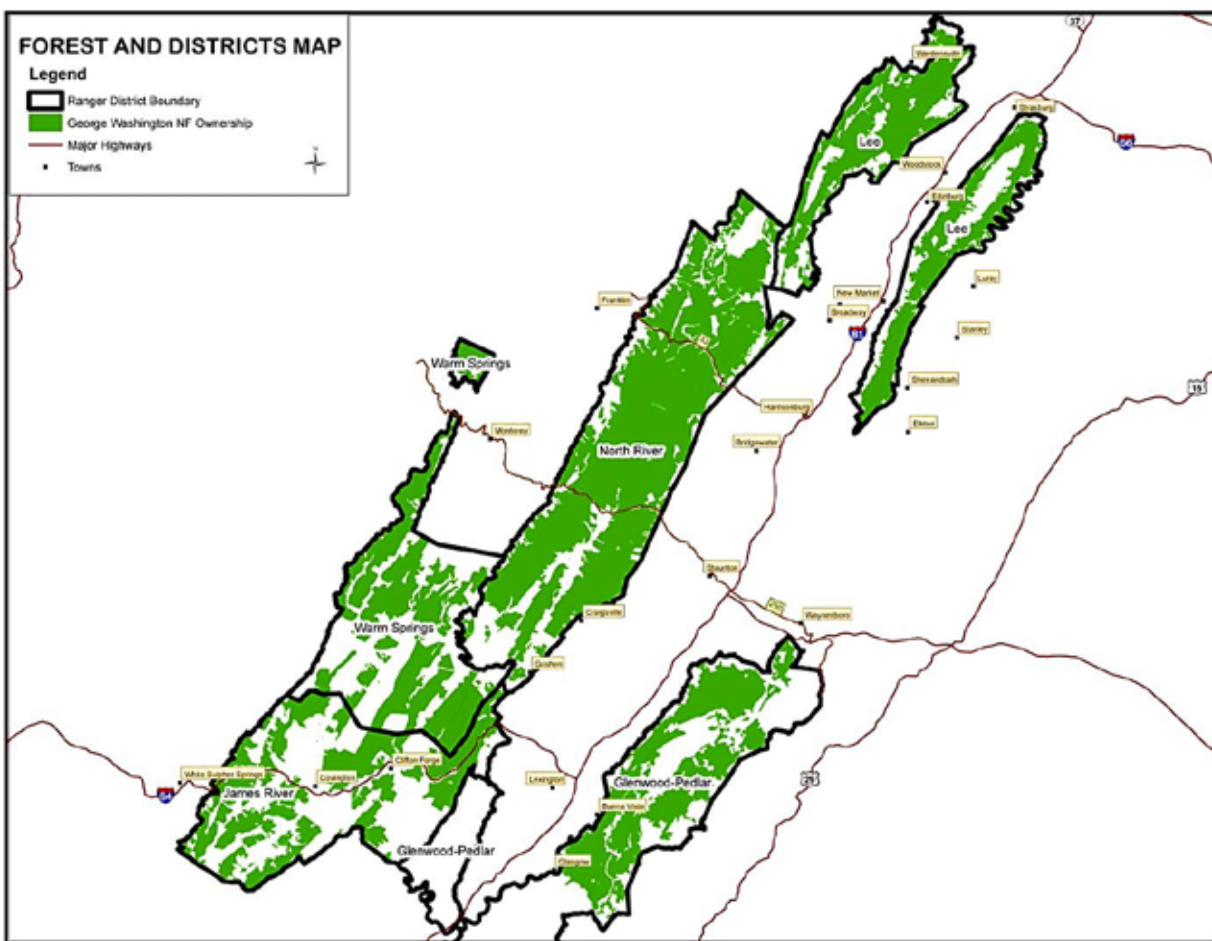


Figure 1-2. Ranger Districts on the George Washington National Forest

## PROPOSED ACTION

The proposed action is to revise the 1993 Land and Resource Management Plan for the George Washington National Forest. The proposed action also includes the determination of the National Forest System lands that will be administratively available for oil and gas leasing, as well as the associated stipulations. The Forest Service considers the leasing availability decision to be separate from planning decisions, but it is closely linked to planning decisions. Therefore, the leasing availability decision is also evaluated within this Final Environmental Impact Statement.

## PURPOSE AND NEED

The regulations implementing the National Forest Management Act of 1976 (NFMA) instruct the Regional Forester to make periodic revisions to forest plans and to provide the basis for any revision. The following section describes the need to change the 1993 Forest Plan and presents the basis for the proposed changes within the context of the regulatory requirements. The instructions to revise forest plans, the basis for revision, are found in Code of Federal Regulations 36 CFR 219.10(g), using the 1982 planning regulations as allowed in the 2012 and 2000 Planning Rules.

The purpose for revising the Forest Plan is to provide a revised Plan that will:

- Guide resource management activities on the Forest for the next 10 to 15 years;
- Address changed conditions and direction since the 1993 Plan was prepared;
- Assure the production and protection of high quality water for National Forest resources and downstream water users;
- Maintain or restore long-term ecosystem health and integrity;
- Contribute to the economic and social needs of people, cultures and communities;
- Meet the objectives and requirements of federal laws, regulations, and policies;
- Provide consistent direction at the Forest level that will assist managers in making project decisions at a local level in the context of broader ecological and social considerations.

The need for this proposed action is to meet the intent of 36 CFR 219.10(g) that land management plans are ordinarily revised on a 10 to 15 year cycle. The existing Forest Plan for the George Washington National Forest (GWNF) was approved on January 21, 1993. Since then, changes have occurred in resource conditions, environmental stresses and threats, societal demands, and our current state of scientific knowledge.

The following have been identified as items to be evaluated as needs for change from the current Plan. Changes are needed in management direction for maintaining or restoring healthy, resilient forest ecosystems due to the recognition that: vegetation conditions (structure, composition, and function) for some ecosystems have declined (e.g. oak regeneration, fire dependent pine regeneration); forest conditions indicate a substantial departure from natural fire regimes; stresses and threats from insects, diseases, and non-native invasive plant and animal species are increasing; and potential effects from climate change are uncertain. By restoring and maintaining the key characteristics, conditions, and functionality of native ecological systems, the GWNF should also provide for the needs of the diverse plant and animal species on the forest. The issue of vegetation management (where, how much, what type) is closely related to this topic because it is one of the tools by which the desired conditions and objectives for ecological health and sustainability can be accomplished.

Specific items needing to change include:

- Better definition of desired conditions and objectives to maintain the resilience and function of identified ecological systems and determination of the desired structure and composition of those ecosystems;
- Management direction to provide habitat for maintaining species viability and diversity across the forest;
- Evaluation of new or expanded existing Special Biological Areas to protect and restore rare communities and species;
- Recognition of the role of fire as an essential ecological process;
- Incorporation of the use of wildfires for achieving ecological objectives;
- Incorporation of management direction for controlling, treating or eradicating non-native invasive plant and animal species;
- Update of the Management Indicator Species (MIS) list;
- Update of the direction for management of old growth to meet guidance for the Southern Region;
- Incorporation of adaptive management strategies for addressing climate change;
- Identification of the importance of maintaining the high quality of water for drinking water and for aquatic life;
- Evaluation of the riparian corridor distance definition and updating the standards for riparian area protection to incorporate the best available science;
- Strengthening of the management direction for groundwater and karst areas;
- Re-evaluation of the oil and gas leasing availability designations;
- Re-evaluation of the appropriate mix of recreational experiences that is sustainable and responsive to user demand;
- Evaluation of areas for recommendation of congressional designation, such as wilderness or national scenic area;

- Identification of uses suitable for specific areas of the forest (e.g. timber production, road construction, wind energy development, prescribed fire);
- Determination of the mix of vegetation management (where, how much, what type) as one of the tools by which the desired conditions and objectives for ecological health and sustainability can be accomplished;
- Determination of the allowable sale quantity of timber;
- Evaluation of road access needs.

In 2008, an inventory of Potential Wilderness Areas was completed that identified 37 areas (totaling about 370,000 acres) that meet the definition of wilderness in section 2(c) of the 1964 Wilderness Act. This inventory included almost all of the remaining 2001 Inventoried Roadless Areas. An evaluation based on the capability (degree to which each area contains the basic natural characteristics that make it suitable for wilderness designation), the availability (value of and need for the wilderness resource compared to the value of and need of each area for other resources) and the need (degree that the area contributes to the local and national distribution of wilderness) for additional wilderness has been conducted for these areas (Appendix C).

## FOREST PLAN DECISIONS

National Forest System resource allocation and management decisions are made in two stages. The first stage is the Forest Plan, which allocates lands and resources to various uses or conditions by establishing management areas and management prescriptions for the land and resources within the plan area. The second stage is approval of site-specific project decisions.

Forest plans do not compel the agency to undertake any site-specific projects; rather, they establish overall goals and objectives (or desired resource conditions) that the individual national forest will strive to meet. Forest plans also establish limitations on what actions may be authorized, and what conditions must be met, during project decision making. Project decision making must comply with National Environmental Policy Act (NEPA) procedures and must be consistent with the Forest Plan.

The primary decisions made in a Forest Plan include:

1. Forest multiple-use goals and objectives that include a description of the desired conditions of the forest and an identification of the quantities of goods and services that are expected to be produced or provided [36 CFR 219.11(b)].
2. Establishment of multiple-use prescriptions for each management area, including proposed and probable management practices [36 CFR 219.11(c)].
3. Establishment of management requirements, including associated standards and guidelines that would apply to implementation of the Forest Plan [36 CFR 219.11(c), 219.13 to 219.27].
4. Descriptions of lands suitable or not suitable for specific resource activities, including timber production [(16 USC 1604(k) and 36 CFR 219.14)].
5. Establishment of the Allowable Sale Quantity (ASQ) of timber to ensure a sustained yield of wood products in perpetuity [16 USC 1611 and 36 CFR 219.16].
6. Identification of lands as preliminary administrative recommendations for inclusion in the National Wilderness Preservation System [36 CFR 219.17; FSH 1909.12, Chapter 73.11].
7. Identification of Research Natural Areas (RNAs), which are examples of important forest, shrubland, grassland, alpine, aquatic, and geologic types that have special or unique characteristics of scientific interest and importance and that are needed to complete the national network of RNAs [36 CFR 219.25].
8. Identification of river segments that are suitable for inclusion in the National Wild and Scenic Rivers System [PL 90-542; 36 CFR 219.2(a)].

9. The monitoring and evaluation requirements needed to ensure that Forest Plan direction is carried out and to determine how well outputs and effects were predicted [36 CFR 219.11(d)].

In addition to the analysis needed for Forest Plan decisions, this EIS also includes the analysis needed to make the decision on lands available for oil and gas leasing. The lands administratively available to leasing decision for the Revised Forest Plan was developed based on the law and the implementing regulations (36 CFR 228E) as well as the wide range of laws applicable to National Forest System lands.

## THE RESPONSIBLE OFFICIAL

The Regional Forester is the responsible official for the analysis and decisions in this Forest Plan revision. Conducting analysis, developing alternatives, and preparing the FEIS were done at the local Forest level under the direction of the Forest Supervisor for the George Washington and Jefferson National Forests.

## SUPPORTING ENVIRONMENTAL ANALYSES

The following documents contain environmental analyses that are not repeated in this EIS, but provide supporting documentation for some of the Forest Plan decisions.

- Final Environmental Impact Statement for *Gypsy Moth Management in the United States: a Cooperative Approach* (Washington, DC: USDA Forest Service and APHIS, 5 volumes. November, 1995)
- Final Supplemental Environmental Impact Statement for “Gypsy Moth Management in the United States: a Cooperative Approach” (Newtown Square, PA, USDA Forest Service and APHIS, 4 Volumes, August, 2012)
- Final Environmental Impact Statement for the *Suppression of the Southern Pine Beetle* (Atlanta, Georgia: USDA Forest Service, Southern Region, April 1987)
- Final Environmental Impact Statement for *Vegetation Management in the Appalachian Mountains* (Atlanta, Georgia: USDA Forest Service, July 1989)
- Environmental Assessment for *Management of the Federally Endangered Indiana Bat* (Roanoke, VA: USDA Forest Service, George Washington and Jefferson National Forest, March 1998)
- *Conservation Assessment For The Cow Knob Salamander 1994*

## PLANNING PROCESS

Forest planning occurs within the overall framework provided by implementing the regulations of NFMA and NEPA. National, regional, and forest planning form an integrated three-level process. This process requires a continuous flow of information and management direction among three Forest Service administrative levels.

Planning actions required by the NFMA and used in this planning process are:

- Identification of issues, concerns, and opportunities;
- Development of planning criteria;
- Inventory of resources and data collection;
- Analysis of the Management Situation;
- Formulation of alternatives;
- Estimation of effects of alternatives;
- Evaluation of alternatives;
- Recommendation of preferred alternative;
- Approval and implementation;
- Monitoring and evaluation.

The results of these planning steps are described in this document. Refer to Appendix B-*Analysis Process*, for more detail on the results of some of these steps.

## SUMMARY OF SIGNIFICANT ISSUES

Public involvement is a key part of the planning process. Providing for public comment helps identify what people want from the national forests in the form of goods, services, and environmental conditions. Issues submitted by the public, as well as from within the Forest Service and other federal and state agencies, guided the need to change current management strategies. A detailed account of the public involvement process is in Appendix A-*Summary of Public Involvement*.

The following significant issues were used to formulate alternatives, prescribe mitigation measures, or analyze environmental effects among alternatives.

### Access

**ISSUE STATEMENT:** Forest management strategies may affect the balance between public and management needs for motorized access to Forest lands (for recreation, hunting, management activities, fire suppression) and protection of soil and water resources, wildlife populations and habitat, aesthetics, forest health, and desired vegetation conditions.

**BACKGROUND:** System roads are the primary means of motorized access to the national forest. However, they are also a source of concerns including the environmental effects of roads (on water quality, soil erosion, and habitat) and the social effects on remote settings. Some people would like to see the motorized access to the national forests increased, especially during hunting seasons for big game, for other recreational uses, or to meet forest management needs. Other people, however, feel that road construction should be limited and some existing roads decommissioned. Other comments were made that new roads should not be constructed for the purposes of logging or for off-highway vehicle use. The amount of motorized access will need to be balanced with wildlife habitat needs, the need to provide both motorized and non-motorized recreational opportunities, the need to protect the soil and water resources, the need to have management access, and the financial capability of maintaining safe and environmentally secure roads.

### Watersheds, Soil and Water Quality, Riparian Resources and Aquatic Diversity

**ISSUE STATEMENT:** Management activities may affect soil quality, water quality (surface and groundwater) and riparian resources, including drinking water watersheds and those watersheds with streams impaired due to activities off the Forest. Management activities may affect the maintenance and restoration of aquatic biodiversity and may affect species with potential viability concerns.

**BACKGROUND:** Providing favorable flows of water was the main objective of the Organic Administration Act that created the forest reserves and of the Weeks Law that allowed the purchase of lands for National Forests in the eastern U.S. Water continues to be one the most important resources produced on the Forest. A number of communities in Virginia and West Virginia obtain their drinking water from the National Forest, whether their water supply watershed is completely within the Forest boundary or their supply is a river that is downstream from the Forest. The Forest is also an important component of the Chesapeake Bay watershed. There are streams within and downstream of the Forest that have impaired water quality, although most of these impairments are due to acid deposition or to agriculture and none have been attributed to management activities on the Forest. Water quality and aquatic systems can be affected by acid deposition, roads, trails, past storm events, insects and disease, non-native invasive species and other disturbances. Streams on the forest provide habitat for a number of species at risk, including brook trout and the James spiny mussel. The projections for climate change in this area indicate an increase in temperature, which could affect aquatic species, especially trout populations. Climate change projections are more uncertain on whether precipitation will increase or decrease in the southeast over the next 30-100 years but droughts or extreme weather events

each would have impacts to future water quantity and quality conditions. Climate change could also increase acid deposition effects on soil productivity. Currently, the biggest concerns for aquatic habitats on the Forest are sedimentation, future sources of large woody debris for self-maintaining diverse habitat components, canopy cover to maintain water temperature regimes, impacts from roads, and acid deposition.

## Terrestrial Biological Diversity

**ISSUE STATEMENT:** Forest Plan management strategies may affect the maintenance and restoration of the diverse mix of terrestrial plant and animal habitat conditions and may affect species with potential viability concerns.

**BACKGROUND:** Ecological communities provide the foundation for biological diversity. Ecosystems identified on the Forest include ecological communities that predominate on the landscape (e.g. Central Appalachian Dry Oak-Pine Forest); communities that are declining, rare, or unique (e.g. Caves and Karstlands); and communities that provide habitat for species with potential viability concerns (e.g. Special Biological Areas). For the GWNF, management of ecological communities primarily involves the use of timber harvest and fire to influence vegetation composition and structural diversity of habitats. Some comments were concerned about the current age class distribution on the forest being too skewed toward the mid- to late-successional habitats and that management is needed to provide a mosaic of habitats, especially early successional habitat, which is needed by many species. They cited bird and animal species in decline that require early successional habitat at some point in their life cycle. Others thought the focus on the GWNF should be on providing habitat for species requiring late successional habitat or large home ranges since these conditions are rarer on private lands. They stated that private lands can provide for early successional habitat needs and natural disturbances can create openings on the Forest. Some comments identified the importance of the oak-hickory community in the Central and Southern Appalachians for species diversity and are concerned about oak regeneration and the continuity of future hard mast production.

## Old Growth

**ISSUE STATEMENT:** Forest management strategies may affect the potential biological and social values associated with the abundance, distribution and management of existing and future old growth.

**BACKGROUND:** Nearly all the lands that became the George Washington National Forest had been cut over at least once before becoming National Forest System lands. However, there are stands of trees that have reached the ages and structural conditions that qualify as “old growth” under the current definitions used in the Southern Region of the Forest Service. Old growth provides both biological and social values. Old growth communities provide large den trees for wildlife species such as black bear, large snags for birds and cavity nesters, and large cover logs for other wildlife. Ecologically, old growth provides elements for biologic richness, gene conservation, and riparian area enhancement. Old growth areas provide for certain recreational experiences, research opportunities, and educational study. Other areas have associated historical, cultural, and spiritual values. Some people may never visit an old growth site but receive satisfaction from just knowing that it exists. On the other hand, old growth areas can be a source of large-diameter, high-value hardwoods, which are limited in supply and in high demand for such products as furniture and finish construction work. Others say that insect and disease risk can be relatively high in old growth stands and could (for some community types) threaten the retention of those stands as old growth. There is concern that fire exclusion could favor a buildup of fire-intolerant, but shade-tolerant, species that could eventually replace the original old growth forest type. Another view is that active management, including timber harvest and prescribed fire, could be used to accelerate the development of old growth attributes.

## Forest Health

**ISSUE STATEMENT:** Forest Plan management strategies may affect the spread and control of non-native invasive species, forest pests, and pathogens, all of which have the potential to affect long-term sustainability, resiliency, and composition of forest ecosystems.

**BACKGROUND:** While the term “Forest Health” can have several meanings, it is used here to identify the effects of forest pest problems and non-native invasive species. It is a dynamic concept that considers the conditions of our forested ecosystems when subjected to insect and disease organisms and/or invasive species that may otherwise contribute to poor development. While not all non-native species are known to disrupt native ecosystems, of particular concern are those that are successful at invading and rapidly spreading through natural habitats. These include a wide variety of organisms such as the chestnut blight fungus, gypsy moth, hemlock woolly adelgid, didymo algae, and Ailanthus. In addition to these non-native pests, it also includes the native pine bark beetles. Invasive plants create a host of harmful environmental effects to native ecosystems including: displacement of native plants; degradation or elimination of habitat and forage for wildlife; extirpation of rare species; impacts to recreation; affecting fire frequency; altering soil properties; and decreasing native biodiversity. Invasive plants spread across landscapes, unimpeded by ownership boundaries. Control of existing populations, prevention of the spread of known pests, mitigation of existing problems, and prevention of the introduction of new pests are all components of this issue.

## Wind Energy

**ISSUES STATEMENT:** Responding to opportunities to develop wind energy generation may result in effects on a wide variety of resources (including birds, bats, scenery, trail use, soils on ridgetops, water, noise, remote habitat, local communities/economies, and social values).

**BACKGROUND:** Wind energy is renewable and can reduce the use of fuels generating carbon gases and positively affect climate change. The USDA Forest Service and National Renewable Energy Laboratory (2005) identified 35,810 acres (primarily ridgetops) of the GWNF with a high potential for wind area development. The GWNF is in close proximity to growing population centers that would benefit from additional and clean energy production. However, there are concerns about the effects to water, birds, bats, views, visuals, aesthetics (height of towers), noise, carbon sequestration, and fragmentation of habitat. These concerns relate to both construction and operation of the wind turbines and the associated infrastructure development to support the turbines (roads, distribution grid). Some people believe that this need for wind energy development can and should be met on private lands, or are concerned that the power would not be used to solve local needs. Other people believe that the public lands should contribute to the development of renewable resources and green energy.

## Oil and Gas Leasing

**ISSUE STATEMENT:** Use of National Forest System lands to support energy needs through federal oil and gas leasing may affect forest resources and impact adjacent private lands.

**BACKGROUND:** Energy production has long been a component of National Forest System management and gas development provides energy to meet national needs. There are no active gas wells currently in production on the Forest and only about 10,200 acres are currently under lease for gas and oil. A particular type of gas well operation is the development of gas deposits within the Marcellus shale formations, through horizontal drilling and the use of hydraulic fracturing at numerous locations throughout the horizontal bore holes. Concerns about hydraulic fracturing include the quantity of water needed in the process, negative effects on water quality (ground and surface), wildlife, air quality, viewsheds, forest fragmentation, and ecotourism. Some public comments identified that developing Marcellus shale gas is okay when it is properly regulated and that National Forest System land should be available for leasing Marcellus shale so that people can maintain their standard of living and meet energy needs. Development of the Marcellus shale would bring jobs and income to the local economy. Other comments stated that there must be an effects analysis for hydraulic fracturing or that there should be a moratorium on development until federal/state regulations are in place and an on-going EPA study is complete. Other comments are opposed to this development or want limitations on where it could be used.

## Fire

**ISSUE STATEMENT:** The management of fire to achieve goals related to protection of property, wildlife habitat, ecosystem diversity and fuels management may affect air quality, non-native invasive species, recreation, water quality, wildlife, and silviculture.

**BACKGROUND:** Fire is acknowledged as an important part of some ecosystems on the Forest. Aggressive control of wildfire (unplanned ignitions) throughout much of the twentieth century resulted in changes to these ecosystems. Management of wildfires and prescribed fire can serve to restore and maintain these ecosystems, while also protecting National Forest and adjacent lands from the negative effects of fire. Some people support the continued use, and advocate an increase in the use, of prescribed fire to restore ecosystems, create habitat, encourage oak regeneration and reduce fuels. Some comments support the proposed increase in use of prescribed fire, but caution that fire does not replace timber harvest as a management tool; rather it should be considered an additional option for timber management. Some comments identified concerns with the burning program including impacts on adjoining private land, carbon emissions, impacts on native vegetation, opening up habitat for non-native invasive plants, stream sedimentation, and air pollution. Some comments indicated support for using lightning ignited fires to achieve ecosystem restoration goals.

## Recreation

**ISSUE STATEMENT:** Forest management strategies should determine an appropriate mix of sustainable recreational opportunities (including trail access) that responds to increasing and changing demands and also provides for public health and safety and ecosystem protection (such as soil and water resources, nesting animals, riparian resources and spread of non-native invasive species).

**BACKGROUND:** The Forest is within a day's drive for a large population of people in the eastern U.S. Local and regional visitors use the forest for a variety of recreational opportunities, from primitive hiking and camping to developed recreation sites and motorized travel. Developed recreation is not a significant issue; however, demand for long-distance trails for special recreation events, such as long-distance mountain bicycling, equestrian endurance rides and runner marathons, has increased in recent years. The demand is greatest among the equestrian and mountain biking communities. The public demand for motorized trail opportunities exceeds the national forest supply. Private lands are not a measurable provider at this time. Some comments stated that off-highway and all-terrain vehicle use is not appropriate at all on the Forest due to the noise, potential environmental damage, and the need could be met commercially on private lands.

## Wilderness/Roadless

**ISSUE STATEMENT:** Forest management strategies may affect the balance between the desires for permanent protection of remote areas and the desires for management flexibility and ability to respond to changes in ecological, social and economic conditions when identifying areas to be recommended for Wilderness and determining how potential wilderness areas and other remote areas should be managed.

**BACKGROUND:** Management of remote areas on the Forest continues to be one of the most prominent issues raised in comments. Remote areas include existing Wilderness, the Inventoried Roadless Areas identified in the 1993 GW Forest Plan Revision (and incorporated into the 2001 Roadless Area Conservation Rule), and the Potential Wilderness Areas (identified as areas meeting the definition of wilderness that need to be evaluated in the current revision process). Public rationale for additional wilderness includes: ecological values of remote, intact areas; recreational values; proximity of large masses of people to the Forest; protection of watersheds through permanent protection; carbon sequestration; ability for latitudinal range adjustments for species due to climate change; future scientific reference; and a need to bring the amount of wilderness on the Forest more in line with amounts on other National Forests. Public rationale opposing wilderness includes: lack of balance of forest age classes (many species are threatened without early successional habitat); limitations on recreation use by those less physically fit; limitations on group size for recreation events; limitations on special use events; prohibiting all motorized and mountain bike access; restrictions on treatment of invasive species;

limitations on meeting energy resource demands; limitations on emergency access; firefighting restrictions; and limiting options as conditions or future demands change.

The GWNF has 23 Inventoried Roadless Areas (IRAs) with a total of 242,278 acres. As part of the revision process, the Forest has identified 37 areas as Potential Wilderness Areas (PWAs) with a total of 372,631 acres. The PWA inventory includes all of the IRAs, with the exception of Southern Massanutten and The Friars. For the remote areas in the PWA inventory that are not identified for Recommended Wilderness Study by Congress, some people would like to see them managed according to the direction in the 2001 Roadless Area Conservation Rule (RACR) and others would like to see them actively managed for wildlife habitat and timber production.

## Timber Harvest

**ISSUE STATEMENT:** Forest Plan management strategies may affect: a) the amount and distribution of land suitable for the sustainable harvest of timber products; b) the amount of timber offered by the Forest; c) the role of timber harvest in benefitting local economies and other multiple use objectives; and d) the methods used to harvest the timber. If the Forest responds to needs for biomass for energy production, whole tree harvesting may affect nutrient cycling, wildlife habitat, and soil productivity and stability. Timber harvest may have effects on other resources.

**BACKGROUND:** Timber harvest is one of the tools used to manage vegetation on the Forest to create a diversity of habitat conditions. It also produces wood products that benefit local economies. The ecological, social, and economic effects of the timber management program on the GWNF, both positive and negative, are of great importance to many. Some people state that the forest should reduce the acres suitable for harvest, reduce the Allowable Sale Quantity (ASQ), and decrease the commercial timber program due to adverse impacts to: water quality, competition with private lands, air quality, scenery, ecological habitats such as large areas of intact forest (fragmentation), and a wide variety of other ecological/environmental resources. Some indicate that commercial timber harvest on the Forest is not economically viable and competes with privately held timber, that demand for timber can be met on private land, or that the level of the timber sale program should be based on reasonable budget expectations. Other people support an expanded timber program because of the positive impacts on: balancing age classes and reducing acres of an aging forest, maintaining species composition, wildlife habitat, responding to an increased demand for wood products (including small diameter utilization), reduction of hazardous fuels, and benefits to local economies. Therefore, there should be an increase in suitable acres and Allowable Sale Quantity.

The potential use of forest wood and fiber as biomass for energy production raises concerns on the effects on carbon sequestration and on the removal of too much organic material which could increase soil erosion and/or remove too many nutrients from the site, particularly in low site index areas or areas affected by acid deposition. Some people believe that the Forest should contribute to this green energy demand while meeting other resource needs (fuels reduction and wildlife habitat), that this will produce green jobs and wood products, and that it is better to burn the trees for fuel rather than burning them as part of prescribed burns. Other people don't believe that biomass fuels are a green source of energy, don't believe that energy should take precedence over forest health, or believe that biomass will compete with pulpwood and drive up prices.

## Economics and Local Community

**ISSUE STATEMENT:** 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.

**BACKGROUND:** Some outputs from management activities can be readily valued, such as timber, firewood, and recreation fees. Ecosystem services are 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", such as

wildlife habitat and diversity, watershed services, carbon storage, and scenic landscapes. These outputs and services can all be important to many of the rural communities in and around the National Forest. Several categories of activities identified as important to local communities include tourism (family-based nature activities, recreation events, all-terrain riding opportunities, equestrian and mountain bike use, wilderness, new trails), habitat management that increases diversity for wildlife viewing and game populations for hunting, and timber production that supports the logging industry.

## Climate Change

**ISSUE STATEMENT:** Changes in climate may require adaptation strategies that facilitate the ability of ecosystems and species to adapt to changes in conditions (such as stream temperature, community vegetation composition, and invasive species). Forest management activities may exacerbate the impacts of climate change or mitigate the impacts through adding to or sequestering carbon or enhancing opportunities for alternative energy sources (wind, biomass, solar).

**BACKGROUND:** In developing management strategies to deal with a changing climate, it has been recognized that forests can play an important role in both mitigating and adapting to climate change. Mitigation measures focus on strategies such as carbon sequestration by natural systems, ways to increase carbon stored in wood products, ways to provide renewable energy from woody biomass to reduce fossil fuel consumption, and ways to reduce environmental footprints. Adaptation measures address ways to maintain forest health, diversity, productivity, and resilience under uncertain future conditions so that forest resources can better adapt to change. Based on current projections, the primary regional-level and state-level predicted effects of climate change that would impact the GWNF include: (1) warmer temperatures; (2) extreme weather events; and (3) increased outbreaks of insects, disease, and non-native invasive species. Comments suggested that the Plan should address reducing current threats to forest conditions, such as from non-native invasive species, pests and pathogens, acid deposition, and human uses of forest resources. Some comments identified the need to provide migration corridors, which include altitudinal gradients, for plant and animal species, especially those most vulnerable to changing climate conditions. Other comments requested that we evaluate how management activities may exacerbate, mitigate or enhance effects of a changing climate. Others identified the importance of the forest's role in carbon sequestration.

## SUMMARY OF ISSUES DETERMINED TO BE INSIGNIFICANT

### Water Demand

**ISSUE STATEMENT:** Granting requests for water withdrawals to meet increasing water needs may affect stream systems, water quality and groundwater dependent resources.

**BACKGROUND:** Demand for water, particularly high quality water is expected to increase in areas around the National Forest. This includes groundwater and surface water for drinking and opportunities for hydroelectric power. Many of these needs can likely be met downstream from National Forest System lands. Actual requests for access to develop drinking water sources have been very limited.

**REASON FOR NON-SIGNIFICANT ISSUE:** While water is becoming increasingly important in the eastern U.S., the Forest has not seen an increase in requests for water use. So this issue is of limited extent on the Forest. Provisions for addressing this issue in the future would occur through the environmental analysis that would accompany any request for a special use to allow water withdrawal.

### Air Quality

**ISSUE STATEMENT:** Management actions, especially fire management, may affect air quality, including Class I and non-attainment areas. Air pollution from sources outside the Forest, such as ozone and acid deposition, may affect forest resources, like soil and water quality, nutrient cycling, and air pollution impacts to vegetation.

**BACKGROUND:** Forest resources are affected by air pollutants, such as ozone and acid deposition, from outside the Forest. Acid deposition has affected many of the Forest's sensitive watersheds and acidified streams. Some forest management activities, such as prescribed burning and wildfire management, can contribute to air pollution, particularly with fine particulates in smoke.

**REASON FOR NON-SIGNIFICANT ISSUE:** Impacts of management activities is partially addressed by law (Clean Air Act). The impacts of air pollution on forest resources will be addressed as management needs or current conditions. It is unlikely that alternatives will address responses to air quality in different ways, aside from different levels of activities. The effects of activities on air quality will be addressed in the analysis.

## Scenery

**ISSUE STATEMENT:** Various management activities could affect scenic resources across the forest through changes in vegetation and road and facilities construction.

**BACKGROUND:** Scenery is a key resource and much of the high use that the GW receives is due to pleasing scenery.

**REASON FOR NON-SIGNIFICANT ISSUE:** Scenery is a key component of the Forest. It is unlikely that alternatives will address scenery in different ways. All alternatives would require that scenic integrity objectives would be met.

## Geology/Karst

**ISSUE STATEMENT:** Management activities may affect karst areas, ground and surface water, and biodiversity associated with karst areas and caves. Management activities may affect or be affected by geologic hazards.

**BACKGROUND:** Karst areas are landscapes formed in areas of carbonate rocks such as limestone or dolomite. These landscapes often have caves or sinkholes and the relationship of the area to groundwater is extremely important. Geologic hazards are potentially safety concerns related to the type, structure or location of geologic features. They include landslides, rock falls, floods and abandoned mines.

**REASON FOR NON-SIGNIFICANT ISSUE:** In all alternatives, measures will be prescribed to protect karst resources.

## Lands

**ISSUE STATEMENT:** The acquisition, disposition and exchange of National Forest System lands may affect access, trespass, fragmentation, and management activities.

**BACKGROUND:** Lands management includes acquisition of lands, exchange of federal lands for private lands, and the marking and maintenance of boundary lines.

**REASON FOR NON-SIGNIFICANT ISSUE:** This issue is limited in extent across the Forest and is unlikely to vary by alternative.

## Grazing

**ISSUE STATEMENT:** Concern about impacts of grazing on water quality and inhibiting restoration of bottomland hardwoods in floodplains.

**BACKGROUND:** Grazing currently occurs on five areas covering about 250 acres of the Forest. Four of the areas are along the South Fork of the Shenandoah River. Grazing is used on these areas to maintain open, pastoral settings.

**REASON FOR NON-SIGNIFICANT ISSUE:** This issue is limited in extent on the Forest since grazing occurs on less than 1,000 acres.

## User Fees

**BACKGROUND:** Some comments addressed the need for additional user fees on the forest or questioned why hunters and anglers were required to purchase a National Forest Stamp when other users were not required to pay a fee to enjoy their activities on the National Forest.

**REASON FOR NON-SIGNIFICANT ISSUE:** The issue of user fees will not be considered further in the revision effort for the following reasons. Congress passed a law (Federal Lands Recreation Enhancement Act, also referred to as REA) that provided limits on areas and sites where recreation fees can be charged. The Act prohibits certain fees for 1) general access to the national forest; 2) horseback riding, walking through, driving through, or boating through areas where no facilities or services are used; 3) access to overlooks or scenic pullouts; and 4) undesignated parking areas where no facilities are provided for; picnicking along roads or trails. The REA was signed into law December 8, 2004 and expires 10 years from that date unless renewed by the U.S. Congress.

The agency did not create the "National Forest Stamp" for hunters and anglers; the states created the laws that charge these recreationists for hunting and fishing on the National Forest.

## Law Enforcement

**BACKGROUND:** Some comments were received regarding the need for more law enforcement activities on the National Forest.

**REASON FOR NON-SIGNIFICANT ISSUE:** While law enforcement is a critical part of managing the National Forests, the level of law enforcement funding and specific activities of law enforcement officers are not forest plan decisions and so are outside the scope of this analysis.

## Education

**BACKGROUND:** Some comments were received regarding the importance of providing environmental education opportunities on the Forest.

**REASON FOR NON-SIGNIFICANT ISSUE:** The level of activity provided for education is not a component of the Forest Plan and is outside the scope of the analysis. While environmental education is not a plan component, it is important to highlight the need for more emphasis on environmental education and to acknowledge the tremendous opportunities that the Forest provides to meet the need to educate youth about the Forest's resources.

## PLANNING PROCESS RECORDS

The Forest's Interdisciplinary Team is responsible for developing the Revised Forest Plan. Efforts were made to provide detailed explanations of each step of the revision in the form of process (or planning) records. This FEIS contains summaries of the process records and includes references to the parent records. Process records are on file in the Forest Supervisor's Office. To review these records, contact:

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