Monongahela National Forest

United States
Department of
Agriculture

Forest Service

September
2006

Final
Environmental Impact Statement
for
Forest Plan Revision

Final Environmental Impact Statement for the Monongahela National Forest Forest Plan Revision

September, 2006

Barbour, Grant, Greebrier, Nicholas, Pendleton, Pocahontas, Preston, Randolph, Tucker, and Webster Counties in West Virginia

Lead Agency: **USDA Forest Service**
Monongahela National Forest
200 Sycamore Street
Elkins, WV 26241
(304) 636-1800

Responsible Official: **Randy Moore, Regional Forester**
Eastern Region
USDA Forest Service
626 East Wisconsin Avenue
Milwaukee, WI 53203
(414) 297-3600

For Further Information, Contact: **Clyde Thompson, Forest Supervisor**
Monongahela National Forest
200 Sycamore Street
Elkins, WV 26241
(304) 636-1800

Abstract

In July 2005, the Forest Service released for public review and comment a Draft Environmental Impact Statement (DEIS) that described four alternatives for managing the Monongahela National Forest. Alternative 2 was the Preferred Alternative in the DEIS and was the foundation for the Proposed Revised Forest Plan. Alternative 2 was modified for the Final Environmental Impact Statement (FEIS) to address public comments and new information received since the release of the DEIS. A fifth alternative, Alternative 2 Modified (or Alternative 2M), was the result. Alternative 2M is the Preferred Alternative in the FEIS and the foundation for the 2006 Revised Land and Resource Management Plan for the Monongahela National Forest.

This FEIS documents the analysis of the five alternatives developed for the programmatic management of the Monongahela National Forest. The Selected Alternative in the Record of Decision that accompanies this FEIS will be the 2006 Forest Plan that guides all natural resource management activities on the Forest, addresses new information and concerns raised since the 1986 Forest Plan was released, and meets the intent of all applicable federal laws, regulations, and agency policies.

The Selected Alternative, and the rationale for its selection, are described in the Record of Decision for this FEIS.

Preface

The Monongahela National Forest (MNF) was founded in 1920 to help recover lands ravaged by uncontrolled logging, fire, and floods. The U.S. government established a "proclamation boundary" within which parcels of land could be purchased to increase the size and benefits of the Forest. The MNF is now more than 919,000 acres of National Forest System lands located in east central West Virginia. The USDA Forest Service administers the MNF, aided by other agencies, cooperators, contractors, and concessionaires. Forest personnel practice multiple-use natural resource management, providing West Virginia and the surrounding region with wood products, natural gas, improving watersheds, a wide range of recreation opportunities, diverse habitat for wildlife, and protection of unique ecological and wilderness areas.

Under the Multiple-Use Sustained-Yield Act of 1960 and the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976 (NFMA), National Forest System lands are managed for a variety of uses on a sustained yield basis to ensure a continued supply of goods and services. The NFMA specifies that forest plans will be developed for all national forests and should be revised at least every 15 years. The original Land and Resource Management Plan for the Monongahela National Forest was approved in 1986, and since then there have been changes in Forest conditions, laws and policies, public interests, science and technology, and in the way we implement and monitor activities on the Forest. These combined factors are the basis for revision of the Forest Plan.

Following direction from the National Environmental Policy Act, the Forest Service has prepared this FEIS for the revision of the 1986 Forest Plan. The FEIS provides the purpose and need for Plan revision, presents issues addressed, describes management alternatives considered to respond to those issues, and analyzes the potential environmental effects of the alternatives.

The MNF 2006 Land and Resource Management Plan (2006 Forest Plan) accompanies this FEIS and is based on the Preferred Alternative that is described in Chapter 2 of the FEIS. The 2006 Forest Plan describes desired conditions, assigns goals and objectives, and provides standards and guidelines related to achieving the desired conditions. The 2006 Plan also establishes Management Prescription areas that emphasize certain types of management activities and uses, and it outlines a program for monitoring and evaluating the results of plan implementation.

The FEIS is organized into the following chapters and appendices:

Chapter 1 – Purpose and Need of the Proposed Action describes the need for change, decisions made in the Forest Plan, and the issues associated with Plan revision.

Chapter 2 – Alternatives Considered describes the process used to develop alternatives, lists important elements common to all alternatives, depicts each alternative considered in

detail, explains why some alternatives were not considered in detail, provides a summary comparison of the potential environmental effects of the alternatives, and identifies a Preferred Alternative.

Chapter 3 – Affected Environment and Environmental Effects provides the existing condition of the physical, biological, social, and economic resources and discloses potential environmental effects of the five alternatives on those resources in a comparative format. The resources are closely tied to the issues discussed in Chapter 1.

Chapter 4 – List of Preparers lists those who participated in preparation of the DEIS or FEIS.

Chapter 7 – Index is an index of key terms used in the FEIS and where to find them.

Appendix A – Public Involvement and Recipients of the DEIS provides a description of the public involvement process associated with preparing the FEIS, and the list of agencies, organizations, and individuals who received the DEIS for review and comment.

Appendix B – Analysis Processes discusses the primary processes used in determining the outputs and effects associated with the timber and socio-economic resources.

Appendix C – Roadless Area Inventory and Wilderness Evaluation describes the process used for determining Inventoried Roadless Areas on the Forest and provides the information used to evaluate those areas for their wilderness potential.

Appendix D - Terrestrial Species Viability Evaluation lists the terrestrial species that were evaluated for viability concerns during the Plan revision process and shows the criteria that were used to evaluate them.

Appendix E - Aquatic Species Viability Evaluation lists the aquatic species that were evaluated for viability concerns during the Plan revision process and shows the criteria that were used to evaluate them.

Appendix F – References lists the literature cited in the preparation of the FEIS.

Appendix G – Glossary defines terms and acronyms used in the FEIS.

Appendix H – Biological Assessment for Threatened and Endangered Species provides the detailed evaluation of potential effects to federally threatened and endangered species, including a determination of effects for each species relative to the Preferred Alternative.

Appendix I – Responses to Comments summarizes the public comments received on the DEIS and Proposed Revised Forest Plan, along with the Forest Service responses. The comments are presented in the form of public concern statements.

Table of Contents

Chapter 1 – Purpose and Need of the Proposed Action

Chapter 2 – Alternatives Considered

Chapter 3 – Affected Environment and Environmental Effects

Chapter 4 – List of Preparers

Chapter 5 – Index

Chapter 1

Purpose and Need of the Proposed Action

Table of Contents

Changes to Chapter 1 Between the Draft and Final EIS

Purpose and Need - We added a list of decision criteria to help clarify how the Preferred Alternative was ultimately chosen.

Issues Analyzed in Detail – We revised some of the issue indicators to make them more consistent with those found in Chapter 3.

Issues Not Analyzed in Detail – We expanded the description for Candidate Research Natural Areas to clarify which areas have been retained and which have been added in the transition from the 1986 Plan to the 2006 Plan.

THE PROPOSED ACTION

The Forest Service proposes to revise the Land and Resource Management Plan (hereafter referred to as "Forest Plan" or the "2006 Plan") for the Monongahela National Forest. The Forest Plan was originally approved and released in 1986, and includes 6 significant amendments that have occurred since. The 2006 Forest Plan establishes direction for managing resources on National Forest System lands within the proclaimed boundaries of the Monongahela National Forest.

This Final Environmental Impact Statement (FEIS or Final EIS) describes four alternatives for revising the Forest Plan and discloses the potential environmental effects of these alternatives. The FEIS is guided by the implementing regulations of the National Environmental Policy Act (NEPA) found in the Council of Environmental Quality Regulations, Title 40, Code of Federal Regulations, Part 1500. The companion document to this FEIS is the 2006 Forest Plan, a detailed presentation of the preferred alternative described in Chapter 2 of this FEIS.

FOREST PLAN DECISIONS

National Forest System management decisions are made in two stages. The first stage is the Forest Plan, which establishes direction and prescription areas that guide the overall management and allocation of resources and land conditions on the Forest. The second stage is the analysis and approval of project proposals at a more site-specific level.

The Forest Plan does not compel the agency to undertake any site-specific project; rather it provides goals and objectives for the Forest to strive to meet in order to achieve desired physical, biological, social, and economic conditions. The Forest Plan also establishes limitations on what actions may be authorized, and what conditions must be met, during project-level decision making.

The authorization of site-specific actions within the Forest Plan area occurs through project decision making, which is the implementation stage of forest planning. Project decisions must comply with NEPA procedures and must be consistent with the Forest Plan.

The six key decisions made in forest planning for long-term management of the Forest are:

1) Establishment of Forest-wide multiple-use goals and objectives, including a description of the desired future condition of the Forest (36 CFR 219.11[b]).
2) Establishment of Forest-wide standards and guidelines to fulfill the requirements of 16 USC 1604 (NFMA) applying to future activities (36 CFR 219.13 to 219.27).
3) Establishment of management areas and direction applying to future activities in those management areas (36 CFR 219.11[C]).
4) Identification of lands not suited for timber production (16 USC 1604[k] and 36 CFR 219.14) and the allowable sale quantity (ASQ) determination for timber that may be sold from the suited timber base during each decade (36 CFR 219.16[a]).
5) Establishment of monitoring and evaluation requirements that will provide a basis for a periodic determination of the effects of management practices (36 CFR 219.11[d]).

6) Recommendation to Congress of areas for wilderness classification where 36 CFR 219.17(a) applies.

The 2006 Forest Plan includes much of the direction and many of the prescriptions found in the 1986 Plan and its amendments. The 2006 Plan also proposes new direction and management prescriptions, based on the Need For Change described in this chapter. The 2006 Plan will replace the 1986 Plan and amendments once the Responsible Official signs the Record Of Decision for this plan revision.

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 Monongahela Forest Supervisor. Based on the analysis in the FEIS, the Regional Forester has identified a preferred alternative to become the 2006 Forest Plan. This alternative includes the six key Forest Plan decisions noted above.

FOREST PROFILE

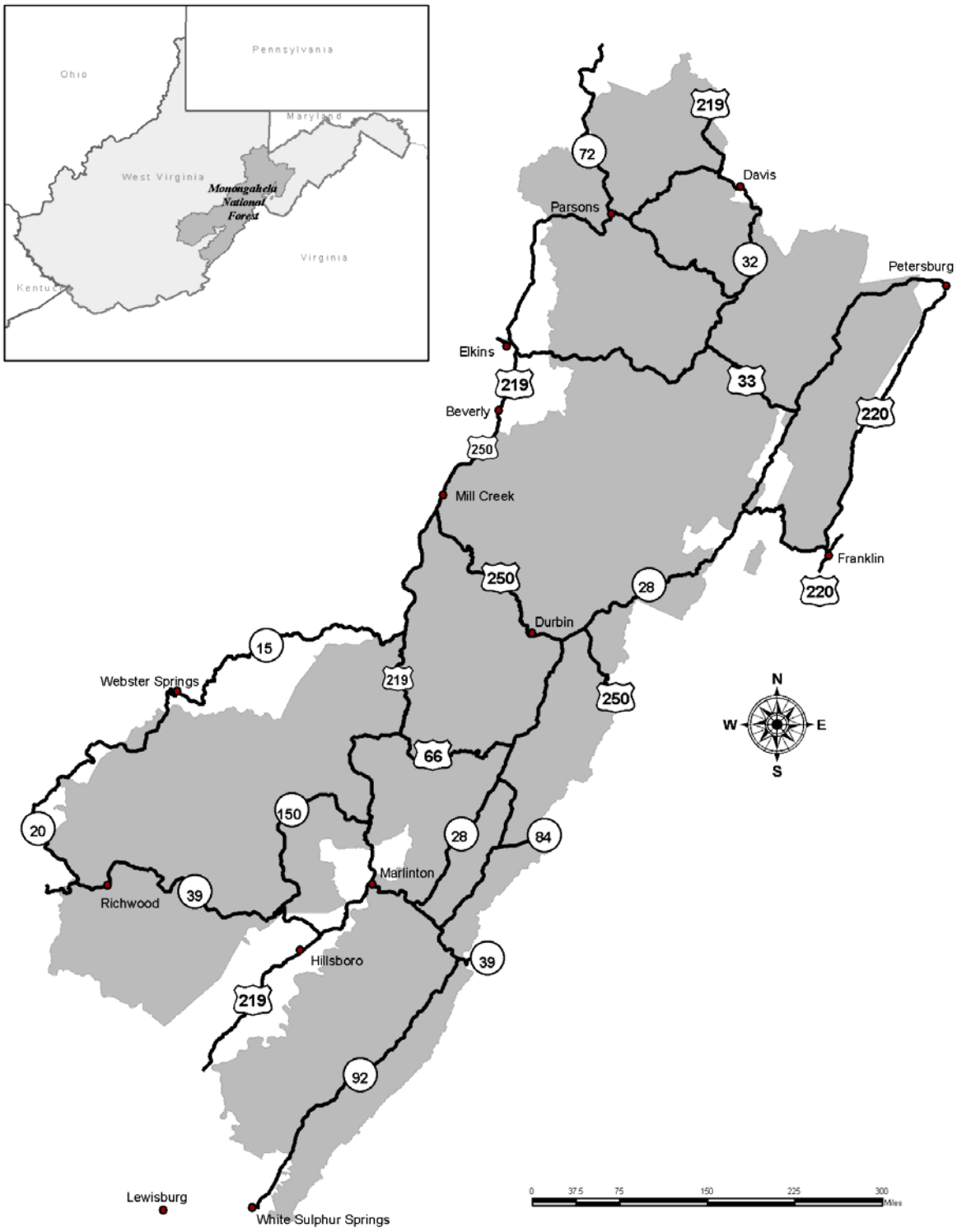
The Monongahela National Forest comprises over 919,000 acres of National Forest System lands in West Virginia. It is by far the largest expanse of public land in the State. The Forest is located primarily in Grant, Greenbrier, Nicholas, Pendleton, Pocahontas, Randolph, Tucker, and Webster Counties, with minor portions in Barbour and Preston Counties. It is administratively divided into four Ranger Districts: Cheat-Potomac, Gauley, Greenbrier, and Marlinton-White Sulphur Springs. The Forest lies within 400 miles of an estimated 96,000,000 people.

The geology of the area features steep north-south mountain ridges and deep river valleys, with elevations ranging from 900 feet near Petersburg to 4,863 feet atop Spruce Knob, West Virginia's highest point. Temperatures can vary from near 100 degrees Fahrenheit in summer to well below zero in winter. Annual precipitation ranges from about 60 inches on the west side of the Forest to less than half that amount on parts of the east side.

The headwaters of six major rivers—the Cheat, Elk, Gauley, Greenbrier, Potomac, and Tygarts Valley—are found on the Forest, as well as four impounded lakes—Lake Sherwood, Lake Buffalo, Summit Lake, and Spruce Knob Lake. The Forest has an estimated 600 miles of coldwater streams, providing more than 90 percent of the high-quality trout waters in the State. Many communities use water that flows from the Forest for all or part of their water supplies.

Due to its geographic location, elevation range, and complex geology, the Forest has great vegetative diversity. There are over 70 species of trees, mostly hardwoods, but conifer species add to the visual variety. Many of the tree species have high value for timber sawlogs and other products. The Forest offers and sells timber for harvest as a way to help achieve vegetation and habitat objectives and support local and regional economies.

Figure 1-1. Vicinity Map for the Monongahela National Forest



Many rare plants and plant communities are found on the Forest, with some at their northern- or southern-most limit of their ranges. Currently 4 plant species are listed by the US Fish and Wildlife Service as threatened or endangered. There are 17 Botanical Areas established on the Forest, and rare plants or communities are also protected in seven National Natural Landmarks, three Scenic Areas, four candidate Research Natural Areas, and five Wildernesses.

The Forest has 10 or less reported wildfires each year, with the average size less than an acre. Over 90 percent of the reported or suppressed fires are human-caused. Research indicates that fire played an important role in maintaining plant communities in fire-adapted portions of the Forest. Major insect pests include the gypsy moth and hemlock wooly adelgid. The major disease concern at present on the Forest is beech bark disease complex.

The Forest provides habitat for hundreds of animal species—including reptiles, amphibians, birds, and mammals—and an estimated 87 fish species. Currently, 5 of the wildlife species are currently listed as threatened or endangered. The Forest affords excellent opportunities for wildlife viewing, hunting, and fishing. About 7,000 acres on the Forest are open to permitted livestock grazing.

The 57,200-acre Spruce Knob-Seneca Rocks National Recreation Area is a major recreation attraction. Developed recreation opportunities are offered at over 40 campgrounds and picnic areas across the Forest. There are over 850 miles of hiking trails, including the Allegheny National Recreation Trail and the Greenbrier Historic Trail. The Forest manages five designated Wildernesses, totaling over 78,000 acres. In addition, many large backcountry areas provide semi-primitive recreation opportunities. Three Scenic Areas—Dolly Sods, Gaudineer, and Falls of Hills Creek—offer a variety of visual attractions in natural settings.

The Forest provides the setting for 40-50 natural gas wells and a natural gas storage field, which are regionally important energy sources. Other mineral resources include commercial quantities of coal, limestone, and gravel. Limestone geologies also contain numerous caves that are popular for recreation, and some that provide habitat for rare species.

The Forest transportation network has an estimated 1,752 miles of classified roads that 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. Others are closed for resource protection or management reasons. The Forest is accessed by U.S. Highways 33, 219, and 250, and by State Routes 4, 28, 39, and 92.

PURPOSE AND NEED FOR THE PROPOSED ACTION

Purpose

The purpose of the Proposed Action is to provide a revised Plan that will:

- Guide resource management activities on the Forest,
- Address changed conditions and direction since the 1986 plan was released,
- Emphasize adaptive management over the long term,

- Meet the objectives and requirements of federal laws, regulations, and policies,
- Maintain or restore long-term ecosystem and watershed health and integrity,
- Contribute to the economic and social needs of people, cultures, and communities,
- 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.

Management direction and monitoring in the 2006 Forest Plan is designed to meet the purpose statements above. Overall management emphasis will largely be determined by selecting a management alternative that best achieves a combination of the following decision criteria:

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

- The extent 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, endangered, sensitive, and management indicator species.

- The extent the alternative maintains or restores forest vegetation to a healthy condition with reduced risk of damage from fires, insects, diseases, and invasive species.

- The extent the alternative provides settings for a variety of recreation opportunities, including backcountry or use within a semi-primitive non-motorized recreation setting.

- The extent the alternative provides a variety of uses, values, products and services for present and future generations by managing within the capability of sustainable ecosystems.

Need

The Forest Supervisor and Regional Forester initiated revision of the Forest Plan based on a number of factors, including legal requirements and other needs for change described below.

Legal Requirements

Regulations implementing the National Forest Management Act (NFMA) (1976) require the Regional Forester to revise forest plans and provide the basis for revision. In 1982, instructions to revise forest plans were formulated in the Code of Federal Regulations at 36 CFR 219. The regulations were being revised when our forest plan revision began. The Responsible Official therefore decided to complete plan revision for the Forest under direction provided by the 1982 regulations. Specific instructions found at 36 CFR 219.10(g) state:

> "A forest plan shall ordinarily be revised on a 10-year cycle or at least every 15 years. It also may be revised whenever the Forest Supervisor determines that conditions or demands in the area covered by the plan have changed significantly, or when changes in RPA policies, goals, or objectives would have a significant effect on forest level programs."

The Forest Supervisor determined that revision was warranted due to the time period allotted for revision, and because significant changes had occurred in conditions and demands. These changes are summarized in the Need For Change section below.

Need For Change

The Monongahela National Forest began evaluating the need for changing the Forest Plan in 2001, anticipating that the Forest Plan would be revised beginning in 2002. A preliminary evaluation began with the assessment of new information and changed conditions that occurred during implementation of the current Forest Plan. Sources of information for this effort include:

- Meetings with Forest Service employees on each Ranger District;
- Discussions with non-governmental partners and interest groups;
- Discussions with other federal and state agencies, and county officials;
- Review of major decisions that were influenced by the current Forest Plan;
- Review of issues raised in appeals and litigation;
- Results of monitoring and evaluation;
- Changes in law and policy that are relevant to planning and management; and
- Relevant new scientific information.

The Forest adopted a five-step process to identify revision topics. The five steps were:

1. Identify preliminary topics through internal scoping and discussion,
2. Gather public input on the preliminary topics through meetings and the NOI scoping,
3. Document, categorize, and consider public input,
4. Refine revision topics as a result of considering public input, and
5. Review the need for change topics against the Analysis of the Management Situation (AMS). Adjust topics or AMS as needed.

Topic identification was used to develop a framework, which served as a basis and focus for public comment, discussion, and evaluation of the 1986 Plan. Via initial scoping, several indicators suggested a need for revising the 1986 Forest Plan. These indicators were:

Land conditions and public demands have changed.

Increasing demand for Forest commodities such as game wildlife and outdoor recreation opportunities suggested needed changes. Recognition of the importance of long-term ecosystem health has also risen, especially with an increase in forest age and associated insect and disease effects. There was a need to revise the Forest Plan to recognize these changes in conditions and demands and to evaluate their effects on ecological sustainability, including social and economic aspects of a sustainable and healthy forest ecosystem.

Laws, policies, and forest planning protocols have changed since 1986.

Some examples of these changes include: the Government Performance and Results Act Strategic Plan (1998, 2004) affecting management priorities, the National Heritage Strategy affecting cultural resource management, the Roadless Area Conservation Rule (2001) affecting roadless areas, Forest Policy Statements on Ecosystem Management (1992) affecting Forest management in general, Scenery Management System (1999) affecting scenery management, and the Strategic Fire Plan (2000) and the Healthy Forests Restoration

Act (2003) affecting vegetation and fire management. These changes have shifted the course of agency goals and programs since 1986, and need to be addressed in Forest Plan revision.

Results of monitoring and evaluation suggest the need for revision.

Annual Forest Plan implementation, monitoring and evaluation results show that it is not always possible to implement plan direction and still achieve the plan's desired future conditions and projected outputs.

New information has become available.

New scientific information has been released since 1986, including the Southern Appalachian Assessment, State/EPA listings of 303(d) water bodies, new or updated conservation assessment or recovery plan information, research findings on riparian buffer effectiveness, improved data and historical estimates of forest types and conditions, updated ROS and IRA mapping for the Forest, to name a few. This type of new information should be incorporated into Forest Plan revision.

Through this initial process, five preliminary issues were identified and published in the NOI in May 2002. These preliminary issues were:

- Watershed Health
- Ecosystem Health
- Vegetation Management
- Visitor Opportunities and Access
- Land Allocations

In May 2002, the Forest conducted public scoping on the Forest Plan revision. A Notice of Intent (NOI) to prepare an EIS to revise the Forest Plan was published, which initiated a 90-day public scoping period. Six open houses were held across the Forest during this time. The purpose of the scoping period was to gather public input on the draft preliminary issues to identify additional, or refine existing, Need for Change topics. A total of 705 responses were received, of which 412 were form letters. A content analysis of the comments was completed in April 2003 to provide an impartial summary of the comments received.

All public suggestions related to Need for Change topics were considered. Criteria were then developed to identify key factors or conditions that must be met to determine Need for Change topics or to refine revision topics listed in the NOI.

The criteria were:

1. Is the suggested change relevant to one of the six decisions made in the Forest Plan?
   - Forest-wide multiple-use goals and objectives
   - Forest-wide management requirements (standards and guidelines)
   - Management prescriptions and direction
   - Lands suited and not suited for timber production, and ASQ
   - Monitoring and evaluation plan
   - Evaluation of roadless areas in order to make wilderness recommendations
2. Is the suggested need for change consistent with national law and policy?

3. Is the suggested need for change within the Forest Service's decision-making authority?
4. Is the suggested need for change a Forest Plan implementation issue or site-specific analysis?
5. Is the suggested need for change already adequately addressed in the current Forest Plan?
6. Can the suggested need for change be adequately addressed through the Forest Plan or is it outside the scope of Forest Planning?

If the answers to questions 1-3 were yes, and the answers to questions 4-6 were no, and the issue engendered high interest or controversy with employees and/or the public, the issue was considered a major need for change topic, to be fully analyzed in the Plan Revision EIS. If the suggested need for change was of narrow scale and scope, or without much public concern, or widely supported, or considered an improvement or clarification, it was labeled a minor need for change that would be addressed typically with changes to management direction.

Some of the suggestions concerning need for change in the Forest Plan will not be addressed during Forest Plan revision. In most cases, the reasons those suggestions are not being addressed is due to the application of the evaluation criteria discussed above. Some of the more common reasons include:

- The suggestion is already adequately addressed in the Forest Plan or recent decision;
- Sufficient information or rationale is not available to support a change in the Plan;
- The suggestion is outside the mission or authority of the Forest Service; or
- The suggestion is an implementation item that is more appropriately addressed at the project level.

Other suggestions—like ATV travel management, WSR suitability studies, and an NRA Plan—were also too time-consuming to take on during revision. Because the Forest has been given limited time and resources to devote to the revision process, the Forest Leadership Team decided that Forest Plan Revision would only address those issues that are most critical and best meet the criteria described above. Other issues would be addressed through ongoing plan maintenance and amendments, or separate planning processes.

Need for Change Topics

The Revision Team reviewed and refined the preliminary NFC topics as a result of the evaluation criteria used with the content analysis. The final major NFC topics were:

- Backcountry Recreation
- Vegetation Management
- Timber Supply
- Soils and Water

These topics were carried forward to become major Need for Change topics or issues for the DEIS and FEIS. The Backcountry Recreation topic is addressed in the Recreation and Wilderness issue described in the Issues Analyzed in Detail section, below. The Timber Supply and Vegetation Management topics are covered under the Timber Supply and Vegetation Management issues, below. The Soil and Water topic is covered primarily under the Soil Resource issue, below, although additional information related to this topic can be found in the Air Quality and Watershed, Riparian, and Aquatic Resources issues.

- ~~Percent of federally owned natural gas acres available for exploration and development,~~
- ~~Billions of cubic feet of potential natural gas resources available for production from the MNF.~~

Recreation and Wilderness

Issue: Forest Plan management strategies may affect the amount of backcountry recreation areas offered by the Forest, including areas recommended for wilderness.

Background: The 1986 Forest Plan emphasizes backcountry recreation on approximately 124,500 acres of primarily semi-primitive non-motorized (SPNM) landscapes, as described for MP 6.2. Over 78,000 acres of congressionally designated Wilderness (MP 5.0) also support this type of management emphasis. The combined MP 6.2 and 5.0 areas that emphasize backcountry recreation make up an estimated 22 percent of the Forest.

As one of the six decisions made in Forest Plan revision, the Forest re-inventoried its roadless areas in order to evaluate those areas for wilderness potential. The Roadless Area Inventory process looked at all existing MP 6.2 areas, Roadless Area Review and Evaluation (RARE II) areas, areas inventoried for the Roadless Area Conservation Rule and any area 5,000 acres or greater with less than ½ mile of improved road per 1,000 acres to determine if they qualified as Inventoried Roadless Areas (IRAs). The inventoried areas provide the best opportunities for 6.2 management, as well as the best pool for potential Wilderness recommendations. As there are no recommended Wilderness areas in the 1986 Forest Plan, a new MP (5.1) was created for Forest Plan revision to represent Wilderness Study Areas.

This issue explores the question of whether the current mix of management emphasis associated with backcountry recreation is an appropriate amount and distribution across the Forest. It also looks at how much if any area should be recommended for wilderness study.

Indicators: The indicators used to measure effects on this issue are:
- Acres of MP 6.2 (Backcountry Recreation) by alternative,
- Acres of MP 8.1 SPNM (backcountry recreation within the NRA) by alternative,
- Acres of MP 5.1 (Recommended Wilderness) by alternative,
- Total Acres of Backcountry Recreation opportunity (5.0, 5.1, 6.2, 8.1 SPNM) by alternative,
- Recreation Opportunity Spectrum (ROS) Class distribution by alternative,
- Percent contribution to backcountry recreation opportunities in West Virginia by alternative.

Scenic Environment

Issue: Forest Plan management strategies may affect the scenic environment.

Background: No major issues directly related to scenic resources were identified during public involvement or the Need For Change analysis process. However, many comments received did indicate an interest in the Forest's scenery and how management activities may affect that scenery. Management activities have the potential for directly, indirectly, and cumulatively affecting scenic resources through vegetation management, restoration, or development

activities. These activities are related to many of the Need For Change topics, and could be implemented under any of the alternatives. Disturbance events of insect infestations and wildfire events can also affect scenic resources.

Indicators: The following indicators reflect the potential relative change under each alternative based on anticipated levels of management activities that could have substantial effects on the scenic environment:

- Acres of even-aged harvest by alternative,
- Acres of intermediate harvest treatments by alternative,
- Acres of prescribed fire use by alternative.

The potential for ecological disturbance events (insects, disease, wildfire) to affect the scenic environment is also discussed.

Road Transportation System

Issue: Forest Plan management strategies may affect the road transportation system and the public access that the roads provide.

Background: Management of National Forest System roads is an issue of national concern. Public interest in the roads within National Forests is increasing, and few natural resource issues in recent years have attracted as much public scrutiny as road management. Concerns linked to the roads within National Forests include public access, resource damage, habitat loss, maintenance capabilities, and economics. Yet some level of road development is needed to produce the goods and services that Americans expect from their National Forests.

Comments received both externally and internally reflected two components: the number of amount of Forest roads that are developed, and the access they provide to the public. A number of comments focused on the amount of roads that should be maintained as part of the system. Comments were divided between those expressing the need to maintain current access and roads for resource management and recreation needs and those supporting a smaller road system to reduce impacts of roads on other resources. Some comments expressed concerned that overall access to the Forest was decreasing. Other comments expressed concern about concentrating public use on fewer and fewer acres, thus causing increased resource damage. Still other comments questioned the merits of reducing the road system in the face of expanding recreation use and access needs. Opposing comments favored a policy of “no new roads”, especially in areas that are currently classified as unroaded.

Indicators: The following indicators are used to measure the effects of management strategies on Forest roads on the Forest by alternative:

- Potential change in forest classified roads related to timber harvest by alternative,
- Potential change in public motorized access related to Management Prescription allocation by alternative.

~~**Potential natural gas resources available for production from the MNF by alternative** – Table 2-34 shows how the amount of federally owned gas available for exploration and development affects the potential natural gas production from the federal oil and gas estate within the Forest. Under Alternatives 1 and 2M, there is a 19 percent chance for discovery and production of 195 Bcf of natural gas. Alternative 2 has an estimated 199 Bcf due to an additional 12,000 more acres available for exploration in Alternative 2. Under Alternative 3, the acres unavailable (204,000) have resulted in less gas production potential of 30 Bcf than Alternative 1. Under Alternative 3, 73 percent of the total federal gas potential could be produced. Under Alternative 4, which has 31,000 acres more than Alternative 1 available, the most – 209 Bcf or 92 percent of the total federal gas potential – gas production could occur as compared to the other alternatives.~~

~~**Table 2-34. Potential Natural Gas Production from the MNF by Alternative**~~

~~Gas Production Potential~~	~~Alt. 1~~	~~Alt. 2~~	~~Alt. 2M~~	~~Alt. 3~~	~~Alt. 4~~
~~Potential (19 percent chance) for Production from federally owned oil and gas within the MNF (in billion cubic feet)~~	~~195~~	~~199~~	~~195~~	~~165~~	~~209~~
~~Percent of total potential federal gas production if only wilderness were unavailable~~	~~86%~~	~~88%~~	~~86%~~	~~73%~~	~~92%~~

Recreation and Wilderness

Acres of backcountry recreation areas by alternative – The total backcountry recreation opportunities on the Forest are calculated by adding up the amount of land allocated to MPs 5.0 (Designated Wilderness), 5.1 (Recommended Wilderness), 6.2 (Backcountry Recreation), and 8.1 Semi-Primitive Non-Motorized areas in the Spruce Knob-Seneca Rocks NRA. Lands emphasizing backcountry recreation vary by alternative as seen in Table 2-35.

Table 2-35. Total Backcountry Recreation Opportunity Acres by Alternative

Recreation Opportunity Area	Alt. 1	Alt. 2	Alt. 2M	Alt. 3	Alt. 4
Designated Wilderness (5.0)	78,700	78,700	78,700	78,700	78,700
Recommended Wilderness (5.1)	0	27,700	27,700	99,400	0
Backcountry Recreation (6.2)	124,500	97,500	106,800	225,900	51,000
SPNM Acres within NRA (8.1)	0	24,900	24,900	13,000	24,900
Total Acres	**203,200**	**228,800**	**238,100**	**417,000**	**154,600**
Percent of Forest	**22%**	**25%**	**26%**	**45%**	**17%**

Alternative 3 would have the most total area, primarily because it has nearly twice the amount of MP 6.2 area than Alternative 1, the current condition. Alternative 2 would provide backcountry recreation opportunities in about 3 percent more (25,600 acres) of the entire Forest than

Alternative 1, Alternative 2M would provide backcountry recreation opportunities in about 4 percent more (34,900 acres) of the entire Forest than Alternative 1. Alternative 4 would have 5 percent less of the Forest in backcountry recreation emphasis than the current condition as represented by Alternative 1.

Acres of areas recommended for wilderness study by alternative - MP 5.1 emphasizes maintaining wilderness character in a SPNM setting. Direction for this MP includes strong constraints on management actions that could detract from the SPNM setting or the wilderness character of each area. Evidence of development is expected to be extremely low. MP 5.1 allocations were made from the pool of the 18 Inventory Roadless Areas identified and described in detail in Appendix C to this EIS. The allocations vary by alternative as seen in Table 2-36.

Table 2-36. Recommended Wilderness (5.1) Areas by Alternative

Alternatives 1 and 4		Alternatives 2 and 2M		Alternative 3	
Area	**Acres**	**Area**	**Acres**	**Area**	**Acres**
None	0	Cheat Mountain	7,955	Big Draft	5,395
		Cranberry Expansion	12,165	Cheat Mountain	7,955
		Dry Fork	739	Cranberry Expansion	12,165
		Roaring Plains West	6,825	Dry Fork	739
				East Fork Greenbrier	10,153
				Gaudineer	6,727
				Middle Mountain	12,197
				Roaring Plains West	6,825
				Seneca Creek	24,974
				Spice Run	6,171
				Turkey Mountain	6,111
Areas	**0**	**Areas**	**4**	**Areas**	**11**
Total Acres	**0**	**Total Acres**	**27,700**	**Total Acres**	**99,400**

Recreation Opportunity Spectrum (ROS) Class distribution by alternative - Assigning 5.1, 6.2, and 8.1 SPNM MPs directly affects how much land is available for other MPs on the Forest, and indirectly affects how these lands would be managed over the planning period, and what other types of recreation opportunities may be available. The recreation settings and opportunities can be estimated to a relative degree by comparing the ROS class distribution that would be created by alternative. The existing condition percentages lean rather heavily toward the RN and SPM Classes due primarily to the legacy of roads, most of which were created during the extensive logging period of 70-120 years ago. The desired conditions recognize that many roads will continue to disappear or be decommissioned over time. Thus, all alternatives would have more potential SPNM Class in the future. The amount, as seen in Table 2-37, differs by alternative, reaching a high point of 54 percent of the Forest in Alternative 3, and a low point of 34 percent in Alternative 4. Conversely, there is less SPM Class than present in all alternatives, ranging from 13 percent in Alternative 3 to 21 percent in Alternative 4.

Table 2-37. ROS Class Distribution by Alternative in Percent of Forest

ROS Class	Existing Condition	Alt. 1 Desired Condition	Alt. 2 Desired Condition	Alt. 2M Desired Condition	Alt. 3 Desired Condition	Alt. 4 Desired Condition
Primitive	0	0	0	0	0	0
Semi-Primitive Non-Motorized	21%	40%	40%	41%	54%	34%
Semi-Primitive Motorized	35%	19%	18%	18%	13%	21%
Roaded Natural	44%	41%	42%	41%	33%	45%
Rural	<1%	<1%	<1%	<1%	<1%	<1%
Urban	0	0	0	0	0	0

In terms of recreational opportunities, SPNM would provide the potential for more challenging and non-motorized experiences in essentially undeveloped settings, whereas RN would provide the potential for both motorized and non-motorized experiences in a natural setting that would also have signs of development. SPM would restrict motorized opportunities but there may still be signs of development, such as recent timber harvest. Alternatives 1, 2, and 2M all show a relative balance between the RN and SPNM ROS Classes, with Alternative 2M showing a virtual one-to-one relationship. Alternative 3 would provide more backcountry recreation opportunities than any other alternative, while Alternative 4 would have the highest percentage of RN opportunities for those more interested in motorized recreation.

Percent contribution to backcountry recreation opportunities in West Virginia by alternative - The alternatives would contribute anywhere from 92 percent (Alternative 4) to 97 percent (Alternative 3) of the backcountry recreation settings on public lands in West Virginia. Under any of the alternatives considered, the Monongahela NF would continue to be the primary provider of backcountry recreation settings and opportunities in the State of West Virginia.

Scenic Environment

Acres of even-aged harvest, intermediate thinning, and prescribed fire - Table 2-38 compares activities by alternative that could affect visual quality on the Forest over the next two decades, using annual averages from the model. It should be noted that Scenic Integrity Objectives are designed to mitigate any long-term effects to the landscape's scenic integrity.

Table 2-38. Maximum Potential Activities That May Affect Scenic Integrity by Alternative
(Estimated annual average of acres for the first two decades, based on Spectrum outputs)

Activity Group	Maximum Annual Activity Acres				
	Alt. 1	Alt. 2	Alt. 2M	Alt. 3	Alt. 4
Acres of Regeneration Harvest	3,450	3,650	3,600	2,670	4,450
Acres of Intermediate Thinning	2,120	870	860	1,610	740
Acres of Prescribed Fire	300	3,000	3,000	300	7,500
Totals	**5,870**	**7,520**	**7,460**	**4,580**	**12,690**

Overall, Alternative 3 would have the least amount of visual impacts based on the activity groups above, followed in ascending order by Alternatives 1, 2M, 2, and 4.

Road Transportation System

Relative potential change in Forest Classified Roads by 2015 related to timber harvest by alternative - New road construction over the planning period is most likely to be associated with timber harvest. Estimated acres of timber harvest by alternative are shown in Table 2-39.

Table 2-39. Acres of Projected Maximum Timber Harvest by Alternative in the First Planning Decade

Estimated Maximum Harvest Acres for the Next Decade by Alternative				
Alternative 1	**Alternative 2**	**Alternative 2M**	**Alternative 3**	**Alternative 4**
54,821	45,297	45,338	40,764	51,573

Potential change in Forest Classified Roads related to harvest distance from roads by alternative - Table 2-40 shows maximum acres harvested and associated roads that may be needed for the first decade of the planning horizon, while Table 2-41 shows the same information for the fifth decade (40-50 years from now) of the planning horizon.

Table 2-40. Miles of Road by Alternative for Decade 1 Based on Maximum Harvest Levels and Harvest Distance From Roads

Indicator	Distance to Road (Miles)	Alt. 1	Alt. 2	Alt. 2M	Alt. 3	Alt. 4
Maximum Acres Harvested	0 to 3/8	44,911	42,133	42,349	39,154	45,460
	3/8 to 6/8	7,328	3,060	2,989	1,057	5,316
	6/8 to 9/8	1,482	80	0	553	500
	> 9/8	1,100	24	0	0	288
	Totals	54,821	45,297	45,338	40,764	51,573
Harvest Using New and Existing Maintenance Level 3, 4, and 5 Roads, and Reconstructing Existing Maintenance Level 1 and 2 Roads	0 to 3/8	0.0	0.0	0.0	0.0	0.0
	3/8 to 6/8	15.4	6.4	6.4	2.3	11.3
	6/8 to 9/8	3.4	0.4	0.0	1.5	1.1
	> 9/8	2.6	0.4	0.0	0.0	0.8
	Totals	21.4	7.1	6.4	3.8	13.1
Harvest Using New Maintenance Level 3, 4, and 5 Roads, and Reconstructing Existing Maintenance Level 1 and 2 Roads	0 to 3/8	0.0	0.0	0.0	0.0	0.0
	3/8 to 6/8	15.4	6.4	6.4	2.3	11.3
	6/8 to 9/8	6.8	0.8	0.0	3.0	2.3
	> 9/8	7.9	1.1	0.0	0.0	2.3
	Totals	30.0	8.3	6.4	5.3	15.8
Estimated Range of Road Miles for the Decade		21 - 30	7 - 8	6 - 6	4 - 5	13 - 16

Chapter 3

Affected Environment and Environmental Effects

Table of Contents

Page No.

Changes to Chapter 3 Between the Draft and Final EIS

All Resource Sections – For each resource section, we added an effects analysis for Alternative 2 Modified that was developed between the Draft and Final. We also updated tables to include more recent information where we had available data.

Air Quality – We added emission factors for helicopter harvest to the effects analysis.

Soil Resource – We added a discussion (Management Implications) in the Cumulative Effects section on the challenges and options for addressing potential cumulative effects from managing on sensitive soils.

Water, Riparian, and Aquatic Resources – We expanded the analysis for aquatic MIS.

Threatened and Endangered Species – We expanded the affected environment descriptions to include more information on the animal species and their habitats. We also expanded the effects sections to provide more detailed analyses that we carried forward into the Biological Assessment.

Timber Supply – In response to comments on the DEIS, we added a Table TR-6 showing timberland in West Virginia by ownership, and we added volume harvested to Table TR-4.

Recreation and Wilderness – In response to comments on the DEIS, we added recent information on the economic impacts of tourism in West Virginia. We explained a discrepancy in MP 5.0 wilderness acres used in the FEIS vs. DEIS. We refined and expanded the ROS analysis to better describe changes expected by Management Prescription area. We added more detailed tables to show differences in MP 6.2 and 8.1 SPNM areas by alternative. We incorporated two new IRAs into the Inventoried Roadless Area analysis.

Road Transportation System – In response to comments on the DEIS, we added as section that compares potential road miles needed for timber harvest, based on harvest area distances from existing roads.

Social and Economic Environment – In response to comments on the DEIS, we revised the county profiles to include more accurate information and added total full-time and part-time employment, and we added State statistics on employment to provide a State-wide context to the economic impacts in the MNF 10-County Region. We also re-ran all of the modeled employment and income outputs by alternative with updated budget and revenue inputs.

Introduction

PURPOSE AND CONTENT

Chapter 3 describes the physical, biological, social, and economic resources of the environment that may be affected by the alternatives presented in Chapter 2, as well as the effects that the alternatives may have on those resources. Affected environment and environmental effects have been combined into one chapter to give the reader a more concise and connected depiction of what the resources are and what may happen to them under the different alternatives. The environmental effects analysis forms the scientific and analytic basis for the comparison of alternatives that appears at the end of Chapter 2.

CHAPTER ORGANIZATION

The remainder of Chapter 3 is organized by resource, focusing on those resources that are related to major issues described in Chapter 1. Each resource section is organized and presented in the format described below. The first three elements of this format define the affected environment, and the last three elements define the environmental consequences.

Affected Environment

Issues and Indicators – This section is divided into three parts for each issue: (1) a brief issue statement, (2) a background section that describes the origin and various aspects of the issue in detail, and (3) the indicators used to measure effects from the alternatives on the issue.

Scope of the Analysis – Briefly describes the geographic area or areas affected for the resource-related issues. Areas may differ for direct, indirect, and cumulative effects. Affected areas may also vary in size depending on the resource, issue, or anticipated activities. This section also describes the time frame over which effects were assessed.

Current Conditions – Describes the current conditions of the resources related to the issues and indicators. This section may also include history, development, past disturbances, natural events, and interactions that have helped shape the current conditions.

Environmental Consequences

Effects Common to All Alternatives – Describes the general type of effects that may occur to the resource from implementation of the alternatives, including any mitigating effects from Resource Protection Methods.

Direct and Indirect Effects – Analyzes the amount and intensity of direct and indirect effects by alternative on the resource-related issues and indicators. Direct effects are caused by an action and occur at the same time and place as that action. Indirect effects are caused by an

action but occur later in time or farther removed in distance. This section also looks at the relationship of temporary (0-3 years), short-term (3-10 years), and long-term (>10 years) effects.

Cumulative Effects – Analyzes the cumulative effects to the resource that may result from the incremental impacts of the alternatives when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes the other actions.

ANALYSIS CALCULATIONS

In the modeling and analysis included throughout Chapter 3, the numbers for Management Prescriptions, road miles, acres of timber harvest, etc. are all best estimates based on the latest available information. The modeling and analysis conducted for this EIS are intended and designed to indicate relative differences between the alternatives, rather than to predict absolute amounts of activities, outputs, or effects.

MANAGEMENT PRESCRIPTION BASED ANALYSIS

The Forest Plan and the EIS alternatives do not authorize implementation of management activities described in the effects analyses. The Forest Plan sets the stage for what future management actions are needed to achieve desired outcomes (desired conditions, goals, and objectives), and it provides the sideboards (standards and guidelines) under which future activities will operate in order to manage risks to biophysical resources and the social and economic environments.

To actually implement site-specific projects, project-level planning, environmental analysis, and decisions must occur. For instance, the Forest Plan may contain direction to close or obliterate roads in order to benefit biophysical resources and to increase management efficiency, but a site-specific analysis and decision must be made for each proposal that involves any specific road closures or obliteration. This process is referred to as "staged decision-making" because a second stage of decisions are necessary to carry out projects as site-specific needs, priorities, locations, conditions, and public concerns become evident.

Each EIS alternative provides a different mix of management prescriptions (MPs). The mix of MPs provides an indication of the management goals (i.e., desired outcomes) that subsequent site-specific projects would strive to meet or move toward. Thus, the mix of MPs allocated under each alternative is often used in the EIS effects analyses as a means to differentiate between and compare alternatives. The MP-based effects analyses compare potential effects from various management activities that could occur under various combinations of MPs represented by the alternatives. These effects are modeled based on assumptions about the type, amount, and intensity of management activities that would be allowed or emphasized under each MP. As stated above, the modeled effects in the EIS are designed to show relative differences in alternatives—not to accurately predict the amount or location of management activities that would occur during the planning period should that alternative be selected for implementation.

Recreation and Wilderness

INTRODUCTION

The Monongahela National Forest (MNF) holds a key position, both geographically and socially, in the preservation of the mountain ecology and culture important to the Appalachian region. It is revered in West Virginia as a special place. The motto of the State of West Virginia is, "Mountaineers are always free." The mountains of the Monongahela, in a literal sense, define the character of the State embodied in that motto. The Forest consists of the largest expanse of undeveloped public land in West Virginia, and stands in sharp contrast to other areas of the State that have been impacted by extractive industries. In this sense, the Monongahela is a place where nature has been relatively free to exist without industrial intrusion for the past 70 years. In a human sense, the freedom of the mountaineers is represented by the unconfined, unrestricted recreation opportunities available on the Forest, which is a natural and inviting escape for those seeking dispersed or developed recreation in a natural setting.

The national importance of the recreation resource of the Monongahela has been recognized through the designation of the Spruce Knob–Seneca Rocks National Recreation Area (NRA), the first NRA in the Forest Service, National Scenic Byway status for the Highland Scenic Highway, five Congressionally designated Wildernesses, and seven National Natural Landmarks.

The desired condition for recreation management on the Monongahela, as specified in the 2006 Forest Plan, is to offer a wide spectrum of recreational opportunities. The Management Prescriptions (MPs) in the Forest Plan provide for a variety of recreational settings, from semi-primitive backcountry, to roaded areas with motorized access, to developed recreation complexes that include campgrounds, picnic areas, boating facilities, and visitor centers. Dispersed recreation opportunities abound for hiking, backpacking, fishing, hunting, mountain biking, horseback riding, and so on. Developed sites provide the tourism destination facilities and base camps important to the efforts of local convention and visitor bureaus, local communities, and other non-government agencies.

The Monongahela strives to be a good neighbor in our cooperation with surrounding communities and counties. The Forest supports tourism and recreation marketing efforts through partnerships, accessible recreation programs, and recreation opportunities in concert with the ecological capability of the land. This support benefits the economic and social fabric of the small communities that make up our local neighborhood. These efforts help enable the Forest to manage for quality recreation opportunities within the sustainable capabilities of the ecosystem, as in the Vision Statement of the National Recreation Agenda.

Need For Change

One of the major Need For Change topics that helped generate Forest Plan revision for the Monongahela was Backcountry Recreation. When asked to identify issues or concerns for revision during the scoping process, many people focused on opportunities to recreate in a backcountry setting. Some people were supportive of this type of use and wanted to see more

opportunities in the future, including large areas of the Forest recommended for Wilderness designation. Others felt that there were more than enough backcountry opportunities on the Forest now, and that Wilderness recommendation and designation would prevent them from using and enjoying the Forest in the traditional ways they have in the past.

Issues and Indicators

Issue Statement

Forest Plan management strategies may affect the amount of backcountry recreation areas offered by the Forest, including areas recommended for Wilderness.

Background

The 1986 Forest Plan emphasizes backcountry recreation on approximately 124,500 acres of primarily semi-primitive non-motorized (SPNM) landscapes, as described for MP 6.2. Over 78,000 acres of congressionally designated Wilderness (MP 5.0) also support this type of management emphasis. The combined MP 6.2 and 5.0 areas that emphasize backcountry recreation make up an estimated 22 percent of the Forest.

As one of the six decisions made in Forest Plan revision, the Forest re-inventoried its roadless areas in order to evaluate those areas for wilderness potential. The Roadless Area Inventory process looked at all existing MP 6.2 areas, Roadless Area Review and Evaluation (RARE II) areas, areas inventoried for the Roadless Area Conservation Rule and any area 5,000 acres or greater with less than ½ mile of improved road per 1,000 acres to determine if they qualified as Inventoried Roadless Areas (IRAs). We also reviewed other areas between 1,000 and 5,000 acres and not adjacent to existing Wilderness, but these areas were not evaluated in detail because they typically had a combination of characteristics that resulted in inadequate settings and opportunities for a wilderness experience. These characteristics included narrow or amoeba-like shape, miles of improved roads, and proximity to the sights and sounds of development.

The inventoried areas provide the best opportunities for 6.2 management, as well as the best pool for potential Wilderness recommendations. As there are no recommended Wilderness areas in the 1986 Forest Plan, a new MP (5.1) was created for Forest Plan revision to represent Wilderness Study Areas.

This issue explores the question of whether the current mix of management emphasis associated with backcountry recreation is an appropriate amount and distribution across the Forest. It also looks at how much if any area should be added to that mix in the form of recommended Wilderness. Finally, the analysis explores how backcountry recreation opportunities under each alternative would fit into and affect the overall context of recreation opportunities on the Forest and within the State of West Virginia.

Indicators

The indicators used to measure effects on this issue are:

- Acres of MP 6.2 (Backcountry Recreation) by alternative
- Acres of MP 8.1 SPNM (backcountry recreation within the NRA) by alternative
- Acres of MP 5.1 (Recommended Wilderness) by alternative
- Total Acres of Backcountry Recreation opportunities (5.0, 5.1, 6.2, 8.1 SPNM) by alternative
- Recreation Opportunity Spectrum (ROS) Class distribution by alternative
- Percent contribution to backcountry recreation opportunities in West Virginia by alternative.

Scope of the Analysis

The affected area for direct and indirect effects to recreation opportunities, including backcountry and Wilderness, are the lands administered by the MNF in West Virginia. This area represents National Forest System (NFS) land where backcountry recreation opportunities may occur, depending on MP allocations in the Forest Plan. The affected area for cumulative effects includes all public lands within the State of West Virginia that may provide backcountry recreation opportunities. Cumulative effects of backcountry opportunities on other public lands are addressed to lend a broader perspective to the importance of the opportunities and settings on the Forest. Effects are assessed for the next planning period (10-15 years) but may extend for longer duration, depending on future management or Congressional decisions.

CURRENT CONDITIONS

The affected environment includes an overview of national, regional, and local recreation trends, the ROS, and existing recreation opportunities and facilities available on the Forest.

Leisure and Outdoor Recreation Trends

National Recreation

By far the most popular forms of outdoor leisure are those that can be enjoyed close to home and that do not usually require large outlays of time and money or high levels of specialized skills. These forms of outdoor activity have remained popular for years. Only consumptive activities (such as hunting) have decreased in popularity (Cordell and Overdevest 2001). Based on the 2002 National Visitor Use Monitoring (NVUM) Report, over 214 million visits occurred on NFS land in 2001. Additionally, there were an estimated 215 million occasions of people viewing National Forest scenery from non-Forest Service roads.

Recently, there have been a number of new forms of outdoor recreational activities as well as acceleration in the growth of activities that have been popular for decades. The fastest growing outdoor recreation activities are hiking, backpacking, birding, off-road driving, snowmobiling, downhill skiing, walking, and swimming. New activities are often the result of advances in outdoor equipment technology and an increased interest in risk and sense of adventure. Overall, trends point to much greater interest in viewing and learning activities, trail activities, winter sports, motorized participation, and high technology activities. Among the four regions of the country, growth in recreation participation is highest in the South, next highest in the Northeast, and slowest in the North-Central (Cordell and Overdevest 2001).

The demographic makeup of outdoor recreation participants has been shifting. In part, these shifts reflect changes in the makeup of the U.S. population. However, some demographic changes also represent a shift in group preferences. Across demographic groups, Americans took more trips for outdoor recreation in the 1990s than the 1980s. Across a variety of activities, the percentage of participants who took trips away from home increased from 21 to 37 percent, and the number of trips taken per person has risen dramatically. During recreational trips from home, the number of places visited on the trip has also increased (Cordell et al. 1997). National participation trends among 21 selected outdoor recreation activities from 1983 to 2000 are displayed in Table RE-1.

Table RE-1. National Participation Trends in Outdoor Recreation Activities, 1983-2000
(In millions of participants 16 years and older)

Activity	1983	1995	2000	Change (1983-2000)	Percent Change (1983-2000)
Backpacking	8.8	15.2	27.9	19.1	217%
Bicycling	56.5	57.4	86.2	29.7	53%
Bird watching	21.2	54.1	38.2	17	80%
Boating (overall)	49.5	58.1	76.7	27.2	55%
Camping (developed)	30	41.5	41.3	11.3	38%
Camping (primitive)	17.7	28	25.8	8.1	46%
Cross-country skiing	5.3	6.5	8.8	3.5	66%
Downhill skiing	10.6	16.8	19.3	8.7	82%
Fishing	60.1	57.8	67.9	7.8	13%
Hiking	24.7	47.8	69.8	45.1	183%
Horseback riding	15.9	14.3	23.1	7.2	45%
Hunting	21.2	18.6	20.9	-0.3	-1%
Motorboating	33.6	47	48.2	14.6	43%
Off-road driving	19.4	27.9	35	15.6	80%
Picnicking	84.8	98.3	118.3	33.5	40%
Sailing	10.6	9.6	10.9	0.3	3%
Sightseeing	81.3	113.4	108.6	27.3	34%
Snowmobiling	5.3	7.1	10.7	5.4	102%
Swimming (river, lake, ocean)	56.5	78.1	94.8	38.3	68%
Walking	93.6	133.7	172.3	78.7	84%
Water skiing	15.9	17.9	15.7	-0.2	-1%

National Wilderness

Wilderness is an important component in global health, contributing to clean air and water, protecting ecosystems and gene pools, and helping to regulate world climates. In 1993 there were a total of 3,576,656 square miles of protected areas in the world. This represents about 6.3 percent of the total world land base. Hectares of wilderness represent 9 percent of the total protected areas and 0.6 percent of the total world land base.

Since passage of the Wilderness Act in 1964, the National Wilderness Preservation System has grown from about 9 million acres to 104 million acres in the United States. The National Park Service manages 43 million acres (45%), the Fish and Wildlife Service 21 million acres (20%), the Forest Service 35 million acres (29%), and the Bureau of Land Management 5 million acres (5%). The Forest Service manages an estimated 63 percent of the Wilderness in the lower 48 states, with almost 400 of the 630 units in the system. One acre in six of the National Forest System is now in the National Wilderness Preservation System. Wilderness and the most remote recreational opportunities are heavily concentrated in the Western United States. Due to fewer people and more wild lands, the effective availability of Wilderness and the majority of remote recreational opportunities are about 15 times greater in the West than the East.

National Forest Wilderness recreation use is predicted to grow from about 9 million visits in 1990 to an estimated 24.5 million visits in 2030 (Cordell 1999). Growth in recreation use of Wilderness is expected to be slow to moderate between 1990 and 2010, with an increase of 6 million visits over this 20-year period. The National Forest Visitor Use Monitoring (NVUM) Report indicates that there were 12.7 million visits to NFS-administered Wildernesses in 2002. This number represents about 6 percent of the total Forest Service recreation use. Recreation is one of the many values associated with Wilderness areas. Other values include but are not limited to long-term environmental monitoring, scenic backdrops for tourism, watershed protection, and fish and wildlife refugia.

Regional and Local Recreation

Table RE-2 shows the percentage of U.S. and Regional populations (16 years and older) participating in different types of land-based outdoor recreation activities in 1983 and 1995.

The West Virginia Department of Tourism Annual 2001 Report indicates that 22 million visitors traveled to the State and spent over $3.1 billion dollars, with a total economic impact of $4.86 billion. Included were 8.6 million visitors who stayed overnight, with an average stay of 3.72 days/person. Leisure expenditures were $69.50/person/day. The 2001 Report included:

- The most popular outdoor recreation activities that visitors participated in were: Site-seeing (20%), Visiting Parks (17.8%), Hiking/Mountain Biking (15.5%), Visiting Historic sites (10.1%), Hunting/Fishing (8.6%), and Camping (6.8%).

- Visitors to West Virginia were primarily from the following states: Ohio (16.4%), Virginia (9.3%), Pennsylvania (8.1%) Maryland (7.5%), Kentucky (5.4%), North Carolina (4.9%) and Florida (4.65).

- The top five overnight metropolitan markets were: Washington D.C., Cleveland, Pittsburgh, Charlotte, and Columbus.

- The MNF is within a day's drive of one third of the United States population.

An Economic Impact of Travel on West Virginia from 2000-2004, completed by Dean Runyan and Associates and published in June 2005, indicates that travel in 2004 generated $3.4 billion,

which is equivalent to $9.3 million dollars per day. This is an increase of about 65 percent from the $2.2 billion generated in 2000. The study also indicates that 49% of dollars spent was for day travel, 32% for hotels, motel, and resort, 16% for private homes, 2% for vacation homes, and 1% for campgrounds. The Arts, Entertainment and Recreation category generated about $315 million in 2003. The Potomac Highlands Region, which includes most of the Monongahela National Forest, increased from about $195 million in 2000 to about $239 million in 2004.

Table RE-2. National and Regional Participation in Outdoor Recreation Activities, 1983 and 1995

Activity	Percent in 1983 National	Percent in 1983 Regional	Percent in 1995 National	Percent in 1995 Regional
Walking	53%	49%	67%	64%
Sightseeing	46%	41%	57%	54%
Picnicking	48%	40%	49%	45%
Swimming	32%	30%	39%	37%
Fishing	34%	39%	29%	32%
Boating (overall)	28%	24%	29%	29%
Bicycling	32%	27%	29%	25%
Bird watching	12%	27%	8%	26%
Motorboating	19%	18%	24%	24%
Hiking	14%	9%	24%	19%
Camping (developed)	17%	14%	21%	17%
Camping (primitive)	17%	14%	21%	17%
Off-road driving	11%	9%	14%	15%
Hunting	12%	15%	9%	11%
Water skiing	9%	10%	9%	9%
Horseback riding	9%	8%	7%	7%
Downhill skiing	6%	3%	8%	6%
Backpacking	5%	3%	8%	6%
Sailing	6%	4%	5%	4%
Snowmobiling	3%	0%	4%	1%
Cross-country skiing	3%	0%	3%	1%

The 2001 visitor survey (Shifflet 2002) indicates that one of the primary attractions of West Virginia is outdoor recreation activities, while areas of concern identified by visitors are the quality of restaurants and accommodations.

The MNF provides over 50 percent of the public land available for outdoor recreation in the State of West Virginia.

In 2001 over one million hunting and fishing licenses provided over $15.5 million in revenues to the State, including 71,201 conservation stamps to non-residents.

There are 9 State forests and 41 State parks totaling over 200,000 acres in West Virginia. In general, State managed parks have significant development and provide more developed

recreation and leisure activities than most MNF facilities. Some State parks and forests have fairly large tracts of lands that currently offer backcountry recreation opportunities in a natural setting. However, the vast majority of these lands are available for timber harvest and other revenue-generating activities for the State.

Regional and Local Wilderness

As the remainder of the country becomes increasingly populated, it is reasonable to assume that the relatively uncrowded State of West Virginia will become more attractive for those seeking to recreate in a more remote and natural setting.

In West Virginia, NFS lands, and to a lesser extent State lands, are almost the exclusive providers of public SPNM recreation opportunities.

Designated Wilderness (MP 5.0) - The MNF contains five Wildernesses totaling over 78,000 acres, or about 8.6 percent of the entire Forest. Only Congress can create or change Wilderness status; therefore, all alternatives have the same amount of Designated Wilderness. Table RE-3 shows the official acres for each Wilderness as described in the 1986 Plan.

Table RE-3. Designated Wilderness for all Alternatives

Wilderness	Cranberry	Dolly Sods	Laurel Fork North	Laurel Fork South	Otter Creek	Total
Acres	35,864	10,215	6,055	5,997	20,000	78,131

For Forest Plan revision, we have consistently measured Dolly Sods to have about 550 acres more than the official figure shown above. We believe this is likely due to a mapping error that occurred when this area was originally designated. Apparently, the Scenic Area and General Forest Area within the Wilderness boundary were included in the original official acreage but two Special Areas (Fisher Spring Run Bog and Rohrbaugh Plains Bog) were not. These two areas comprise approximately 550 acres. We feel that because these areas are inside the Wilderness boundary they should be acknowledged and managed as Wilderness, so we have included them in our wilderness-related calculations for Forest Plan revision. Thus, the MP 5.0 acres are measured and rounded to 78,700, even though the official Wilderness acres are 78,131.

National Visitor Use Monitoring (NVUM) was completed on the Forest from October 1, 2002 to September 30, 2003. The results indicate an estimated 38,590 visits to the five Wildernesses on the Forest, which is about 3 percent of the total recreation use.

Semi-Primitive Non-Motorized (SPNM) Opportunities - There are currently 78,700 acres of the Forest in MP 5.0 (Designated Wilderness) and roughly 124,500 acres in MP 6.2 (Backcountry Recreation). Both of these prescriptions emphasize SPNM recreation opportunities, and together they represent about 22 percent of the Forest's land base.

Recreation Opportunities and Facilities on the Monongahela National Forest

The MNF is a major outdoor recreation attraction in the State of West Virginia. Visitor use estimates indicate that the Forest received about 1.3 million visits in fiscal year 2003. The Forest provides over 50 percent of the forested public recreation lands in the State of West Virginia. Forest Plan revision does not identify any major new developments, although existing facilities may be rehabilitated or reconstructed to meet visitor expectations and demand, correct health and safety issues, and provide accessible facilities. Many of the Forest's recreation facilities and activity units are listed in Table RE-4.

Table RE-4. Recreation Facilities and Activity Units on the Forest

Facility, Unit, or Activity	Number
Campgrounds	29
Picnic Areas	14
Information/Observation Sites	24
Trailheads	79
Developed Fishing Sites	4
Cabins	1
Visitor Centers	2
Developed Dispersed Sites	44
Scenic Highway	1
General Forest Areas (Concentrated Use Areas)	60
General Forest Areas (Individual Sites)	250
Caves	257
Significant Caves	11
Wilderness Areas	5
Official Wilderness Acres	78,131
Trails (total miles)	852
Trails (miles in Wilderness)	148
Trails (miles of motorized)	0
Recreation Special Uses	78
Eligible Wild and Scenic Rivers	12
Eligible Wild and Scenic Rivers (miles)	260

Recreation activity participation statistics in Table RE-5 are the results of the NVUM Program. The numbers are averages based on surveys completed on the MNF in fiscal year 2003. Only the top 10 activities have been listed.

Table RE-5. Most Popular Recreation Activities on the Forest

Activity	Percent Participation
1. Viewing Natural Features (scenery, flowers, etc)	59%
2. Viewing Wildlife, Birds	55%
3. Hiking/Walking	47%
4. General/ Other (relaxing, hanging out, escaping noise and heat)	46%
5. Driving for Pleasure	35%
6. Fishing	26%
7. Nature Center Activities	20%
8. Camping, Developed Sites	15%
9. Picnicking	15%
10. Downhill Skiing	11%

Note. Bicycling (mountain biking) was 5.1%, and horseback riding was 0.25%.

The Recreation Opportunity Spectrum (ROS) is a national recreation-planning framework that combines physical, social, and managerial settings to help define a range of outdoor recreation conditions, activities and opportunities. Table RE-6 summarizes the general recreation opportunities and settings expected by ROS Class. Complete descriptions are located in the 1982 ROS Planning Guide, pages 6-8.

Table RE-6. ROS Class Setting Descriptions

ROS Class	Description of Recreation Opportunity Setting
Primitive (P)	Very high probability of solitude, closeness to nature, challenge and risk; essentially unmodified natural environment; minimal evidence of others; few restrictions evident; non-motorized access and travel on trails or cross country.
Semi-Primitive Non-Motorized (SPNM)	High probability of solitude, closeness to nature, challenge and risk; predominantly natural or natural-appearing environment; some evidence of others; minimum of subtle, on-site controls; non-motorized access and travel on trails, some primitive roads or cross-country.
Semi-Primitive Motorized (SPM)	Moderate probability of solitude, closeness to nature, and degree of challenge and risk when using or not using motorized equipment; predominantly natural-appearing environment; few users but evidence on trails; minimum of subtle, on-site controls.
Roaded Natural (RN)	Opportunity to be with other users in developed sites, little challenge or risk; predominantly natural-appearing environment as viewed from sensitive roads and trails with moderate evidence of human sights and sounds; moderate concentration of users at campsites; some obvious user control; access and travel is standard motorized vehicles; resource modification and utilization practices are evident but harmonize with the natural environment.
Roaded Modified (RM)	Opportunity to get away from other users, easy access, little challenge or risk; substantially modified environment (roads, timber harvest units, slash, etc.); little evidence of other users except on roads; little regulation of users except on roads; standard motorized use.
Rural (R)	Opportunity to be with others is important as is facility convenience; little challenge or risk except for activities like downhill skiing; natural environment is culturally modified; high interaction among users; obvious on-site controls; access and travel facilities are for intensified motorized use.

ROS Class	Description of Recreation Opportunity Setting
Urban (U)	Opportunity to be with others is very important as is facility and experience convenience, challenge and risk are unimportant except for competitive sports; urbanized environment that may have a natural appearing backdrop; high interaction among large number of users; intensive on-site controls; access and travel facilities are highly intense motorized use often with mass transit supplements.

The current inventory of ROS makeup (based on 2003 inventory for Forest Plan revision) of NFS land on the Forest is described in Table RE-7 below.

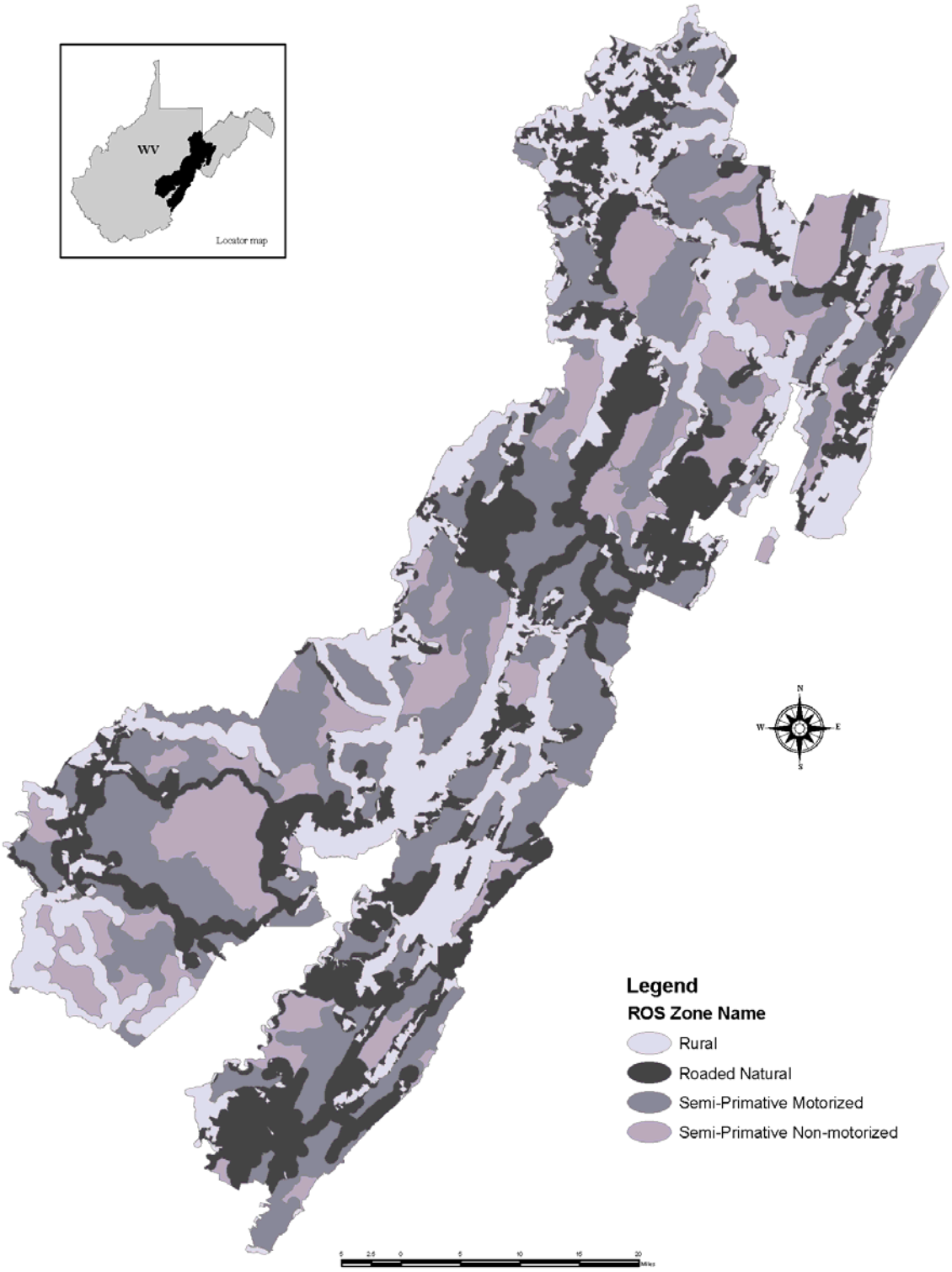
Table RE-7. Current Inventoried ROS Acres on the Forest

ROS Class	Primitive	Semi-primitive Non-Motorized	Semi-primitive Motorized	Roaded Natural	Rural	Urban
Acres	0	188,000	318,000	401,000	8,000	20
Percent of Forest	0%	21%	35%	44%	<1%	<1%

The Monongahela Forest's ROS Inventory currently has little if any lands that qualify as Primitive or Urban under the descriptions below, and only 8,000 acres that are classified as Rural. An estimated 79 percent of the Forest is currently inventoried in ROS Classes that are either Roaded Natural (RN) or Semi-Primitive Motorized (SPM). However, the SPM areas typically have roads that are not open for public motorized use for a variety of reasons, but usually due to wildlife habitat concerns. The estimated 56 percent of the Forest that is classified as SPNM or SPM offer semi-primitive recreation opportunities in settings where motorized use is either absent or very low.

Figure RE-1 displays the current ROS classes on the Forest, representing the existing conditions of the ROS settings described in Table RE-6, above. The map shows all lands within purchase units and the proclaimed boundary of the Forest, including private lands, which are primarily depicted by the Rural ROS Class. As noted in Table RE-7, there are only about 8,000 acres of Rural settings on NFS land within the Forest boundaries. Thus, almost all of the Rural settings (lightest shade on the map) are on private lands.

Figure RE-1. Current ROS Classes Within the Monongahela Forest Boundaries



Backcountry Recreation, Inventoried Roadless Areas, and Wilderness

There are currently an estimated 80,858 acres of federally designated Wilderness in West Virginia, including five areas totaling 78,131 acres on the MNF and an estimated 2,727 acres in the Mountain Lake Wilderness administered by the George Washington and Jefferson National Forest in Virginia. An estimated 124,500 acres are in MP 6.2. Management Prescription 6.2 is managed primarily for SPNM recreation opportunities. There are also 123,629 acres of the George Washington and Jefferson National Forests located in West Virginia, with an estimated 12,400 acres currently being managed for SPNM recreation opportunities.

Table RE-8 identifies the areas and acres that are currently being managed primarily for Remote Backcountry Recreation (SPNM). The acres in this table are slightly different than the acres reported for Alternative 1 in the Environmental Consequences section because the acres in the Environmental Consequences section have been rounded off to the nearest 100 acres.

Table RE-8. Backcountry Recreation Areas Under the 1986 Forest Plan

Remote Backcountry Areas (MP 6.2)	Acres
North Fork/Hopeville	4,637
Flat Rock/Roaring Plains	7,772
Cheat Mountain	7,527
Seneca/Gandy Creek	19,644
East Fork of Greenbrier	7,637
Laurel Fork	3,151
Canaan Mountain	13,532
Smoke Hole	2,670
Little Mountain	10,407
Peters Mountain	2,350
Tea Creek Mountain/Turkey Mountain	10,358
Cranberry Backcountry	7,890
Spice Run	7,698
Big Draft	8,006
Upper Middle Mountain	8,175
Laurel Run	3,037
Total MP 6.2 (13.5% of Forest)	124,491
Designated Wilderness (MP 5.0)*	**Acres***
Cranberry Wilderness	35,900
Dolly Sods Wilderness	10,800
Laurel Fork North Wilderness	6,000
Laurel Fork South Wilderness	6,000
Otter Creek Wilderness	20,000
Total Wilderness Acres (8.6% of Forest)	78,700
Total Acres Managed Primarily for Backcountry Recreation Opportunities on the Monongahela NF (22% of Forest)	**203,200**

*Total acres for Wilderness in 1986 were given at 78,131. However, GIS technology now measures the total to be closer to 78,700 (see explanation on page 3-387). We have chosen to use the updated numbers for consistency with the other GIS generated numbers that we are using in plan revision.

ENVIRONMENTAL CONSEQUENCES

Resource Protection Methods

Below are the mitigation or management requirements common to all alternatives that will be used to protect recreation resources and areas, including Wilderness and Backcountry Recreation. Resource protection methods come in the form of laws, regulations, policies, FSM and FSH direction, and Forest Plan direction.

Laws, Regulations, and Policies

Numerous laws, regulations, and policies govern the management of recreation resources on NFS land. National laws and regulations have also been interpreted for implementation in Forest Service Manuals, Handbooks, and Regional Guides. All recreation management activities and facilities must comply with these laws, regulations, and policies, which are not only intended to provide general guidance for implementation, but also protection of recreation-related resources. Some of the more influential laws, regulations, and policies governing recreation management on federal lands are referenced in Table RE-9.

Table RE-9. Major Laws and Regulations Influencing Management and Protection of Recreation Resources on the Forest

Act/Law/Regulation/Policy	Date	Law/CFR/FSM/FSH Number
Organic Administration Act	06/04/1897	30 Stat. 11
Weeks Law	03/01/1911	P.L. 61-435
Granger-Thye Act	04/24/1950	P.L. 81-478
Wilderness Act	09/03/1964	P.L.88-577
Land and Water Conservation Fund Act	09/03/1964	P.L. 88-578
Architectural Barriers Act of 1968	08/12/1968	P.L. 90-480
Wild and Scenic Rivers Act	10/02/1968	P.L. 90-542
National Trails System Act	10/02/1968	P.L. 90-543
Volunteers in the National Forests Act of 1972	05/18/1972	P.L. 92-300
Eastern Wilderness Act	01/03/1975	P.L. 93-622
Code of Federal Regulations for Recreation, Wilderness, and Trail Resources		36 CFR 219.21
General Prohibitions		36 CFR 261
Forest Service Manual, Recreation, Wilderness and Related Resource Management	Updated as needed	FSM 2300
Forest Service Handbook, Recreation, Wilderness and Related Resource Management	Updated as needed	FSH 2300

Forest Plan Direction

Forest Plan direction for the management and protection of recreation resources occurs at two levels, Forest-wide and Management Prescription. For Forest Plan revision, Forest-wide direction has been expanded to include additional goals, and a clearer description of desired

conditions. Objectives, standards, and guidelines have also been rewritten in some instances to provide more concise and clearer direction, and better integration between recreation and other resources. Some 1986 Forest Plan direction has been removed, including items that were process-oriented, or that were repeating existing law or policy, or that conflicted with other resource management. In addition, the Forest will use the ROS system and Scenery Management System (SMS) on a Forest-wide basis to integrate recreation and visual concerns into all Forest management activities.

Direction for all MPs will be applied to help ensure that appropriate recreation settings and opportunities are provided for a wide range of uses and activities. MPs 6.2 and 7.0 are specifically designed to provide areas were recreation resources and uses are emphasized. Management Prescription 6.2 (Backcountry Recreation) emphasizes dispersed recreation opportunities in a predominantly SPNM ROS setting. Management Prescription 7.0 (Developed Recreation) occurs in the 1986 Forest Plan and Alternative 1, but was dropped in the 2006 Forest Plan and incorporated into other prescriptions in Alternatives 2 through 4. It was felt that these relatively small recreation complexes would be managed for developed recreation regardless of which MP encompassed them.

Management Prescriptions 5.0 (Designated Wilderness) and 5.1 (Recommended Wilderness) can also be said to have a recreation emphasis, as recreation is the primary use or activity that is managed within them. These prescriptions contain direction to manage recreation settings to their ROS classifications, to protect recreation resources, and to protect other resources from recreation activities.

Forest Plan Implementation

Almost all management activities and uses of the Forest have the potential to alter recreation settings, resources, and experiences. As a result, effects on the following recreation elements will be assessed during all project proposal analyses:

ROS Classification – Project proposals will be evaluated relative to their consistency with the ROS strategy and maps for the Forest. In most cases, projects will be designed to maintain or enhance the desired ROS classification. When a deciding official accepts a project that is not consistent with the ROS strategy, a determination is made as to whether the effects of the project to the ROS strategy warrant a Forest Plan amendment. The full effects of either of these outcomes will be analyzed.

Recreation Improvements and Developments - Proposed resource projects will be designed to protect developed recreation sites, National Forest System trails, and their associated high-quality recreation experiences. Avoidance of developed sites and improvements during site-disturbing activities will be the preferred mitigation. Facility and trail re-location, decommissioning, or closure may be other options in cases of overriding developments.

Dispersed Use – Potential effects on dispersed recreation experiences will be analyzed during new project design and analysis. When possible, adjustments to proposed activities and uses to protect dispersed recreation experiences will be the preferred mitigation.

Effects Common to All Alternatives

Recreation-related Effects Common to All Alternatives

Recreation opportunities occur on virtually every acre on NFS land. Given this, almost every management activity, as well as a wide array of disturbance events, can potentially affect recreation opportunities and experiences. Effects on these opportunities and experiences are generally the result of changes to recreation settings or level of access, or both. The relative amount of these effects may, in some cases, vary by alternative. However, they are likely to be present to some extent in all alternatives.

Effects from obvious development activities—such as timber harvest, road construction, mineral development, or special use facility construction—are potentially the greatest in areas where no evidence of such activities previously exists. The intensity of the effects also varies greatly with the intensity of the development activity. Concentrated even-aged harvests have a much greater impact on recreational settings, for example, than dispersed individual tree selection cuts. Short-term and temporary effects are created by all such activities during development operations. Effects can include increased noise and dust levels, and increased use of narrow back roads by large equipment and vehicles. Most users are displaced to other locations during these active operation periods. Facility development typically creates long-term effects to recreation settings.

Development with associated road construction also improves access to an area, which can lead to increased use, and displacement of some users who prefer less developed settings and more primitive opportunities. These shifts in opportunities can be long term, as roads are typically long-lasting features. However, actions such as road closures, decommissioning, or travel restrictions can mitigate these shifts to some extent.

Development activities can also have beneficial effects to recreationists. Timber harvests can remove dead and diseased trees, and add diversity to the visual landscape over the long term. They can also provide firewood-gathering opportunities. Improved roads and campgrounds can increase user comfort and safety. New roads and trails can facilitate access into areas for recreation, or create new opportunities for motorized recreation. Prescribed burning can have the temporary effect of displacing users, but it can also reduce understory vegetation and improve sight distances, settings, and off-trail access over the short and long term.

In addition, general effects to and from the Forest's recreation program are highlighted below.

Recreation System Planning - Recreation system planning will continue to emphasize semi-primitive forms of recreation requiring a large land base, and developed sites will continue to be provided to support that use where the private sector is unlikely to meet visitor demand. The ROS system will be the primary tool used for all recreation planning. Recreational settings will be managed to provide a mix of recreation opportunities, protect natural resource values, and promote visitor safety.

Developed Recreation - The Forest will give priority to the rehabilitation and upgrading of existing sites and provide additional recreation facilities where needed and the private sector is not likely to meet the demand. Developed sites will be designed to compliment adjacent ROS settings. Accessible facilities are provided based on the ROS setting and development scale for the area.

General Forest Environment Areas - Management of general forest areas will remain consistent with the 1986 Forest Plan management direction. Camping will be limited to 14 days in a specific location unless approved by the line officer. Dispersed camping will be permitted unless resource damage or visitor conflicts cannot be mitigated. Unacceptable or irresolvable activities may be prohibited by a closure order. Facilities are permitted but will be consistent with the ROS class. Caves are available for public recreation unless prohibited or restricted by a closure order.

Trails - A system of trails that supports a wide variety of recreation opportunities and settings continues to be a goal. The maintenance and/or relocation of existing trails should take priority over new trail construction. The 2006 Forest Plan has a new objective to develop a Forest-wide trail management plan to establish trail classes, permitted uses, and construction, reconstruction, and maintenance priorities. This trail planning is scheduled to occur in 2005 and 2006.

Scenery Management and Recreation Opportunity Spectrum - Landscape Aesthetics, The Scenery Management System Handbook will replace the National Forest Landscape Management Handbook as the primary tool use to manage scenery and landscapes across the Forest. Because the Forest was mapped by scenery concern levels (high, medium, and low) and not by MP, the Scenic Integrity Objectives do not change by alternative. Site-specific scenic effects will be analyzed on a project-level basis. The ROS will continue to be used as the primary tool to manage recreation opportunities and settings across the Forest.

Recreation Special Uses - Recreation special use permit applications will continue to be considered, analyzed, processed and administered consistent with national policy, management direction, and Forest protocols.

Spruce Knob-Seneca Rocks National Recreation Area (NRA) - The NRA will continue to be managed in accordance with the Act of September 28, 1965, with an emphasis to provide a range of high quality recreation opportunities in the appropriate Rural, RN, and SPNM ROS settings. Existing and desired future ROS conditions can be used to manage the area over time.

Effects to Backcountry Recreation Opportunities

Applied to any alternative, MPs 5.0, 5.1 and 6.2 would provide high-quality backcountry recreation opportunities in a SPNM setting. The same can be said for SPNM areas within MP 8.1 (the NRA). Trail systems in most areas facilitate challenging activities such as hiking, backpacking, mountain biking, hunting, orienteering, and equestrian use. Rivers and creeks provide fishing and float-boating opportunities. Tent camping may generally occur throughout these areas with some local restrictions for resource protection.

Other signs and sounds of development activities are generally low to non-existent. Facilities and structures are generally prohibited or absent. Programmed commercial timber harvest and road construction are typically not allowed. For the most part, ecological processes would affect vegetation, although some prescribed burning or low-level restoration treatments could occur under MPs 6.2, 5.1, and 8.1 SPNM. Any treatments would have to be designed so that they do not alter the overall undeveloped character of the area. For those seeking a natural setting in which to recreate, the lack or scarcity of management would be a benefit. However, the vegetation would likely trend toward a decrease in age class diversity and an increase in age, density, and fuels, resulting in increased insect and disease activity, which could negatively affect the visual landscape.

Public motorized use would not occur. Very low levels of intermittent administrative motorized use may occur in MPs 5.1, 6.2, and 8.1 SPNM areas. The amount of NFS lands in 5.0, 5.1, 6.2, and 8.1 SPNM MPs indirectly affects the amount of NFS lands that are available for public motorized use elsewhere on the Forest.

Range allotments and cattle grazing are largely non-existent in current and proposed backcountry recreation areas. Mineral exploration and development have been withdrawn from MP 5.0 areas, although these activities may occur in MPs 5.1, 6.2, and 8.1 areas, particularly where mineral rights are privately owned. Federal gas and oil leasing is subject to a no surface occupancy stipulation that would greatly reduce the potential for surface disturbance from mineral activities. Special use authorizations may occur but should be designed to be consistent with the recreation emphasis and direction of the area. Watershed and most wildlife management improvements are generally small and localized, and would have a negligible effect on undeveloped character or wilderness attributes. Maintained wildlife openings may have an impact, particularly during maintenance operations.

All of the above effects are assumed to be long term, in that the prescription allocations should last at least through the planning period, 10-15 years, and potentially much longer. It is possible that Congress could designate MP 5.1 areas, or even some MP 6.2 areas, as Wilderness during this period. However, this designation would not substantially change the landscape character or resource protection provided by the current prescriptions. Designation, however, would affect certain uses or forego potential values. For example, bicycling would be considered a non-conforming use, and any potential value from timber harvest or federal mineral leasing would not be realized.

Direct and Indirect Effects by Alternative

Effects to Backcountry Recreation Opportunities

This assessment focuses on those areas that, based on their overall size and management emphasis, would provide the best opportunity for backcountry recreation on the Forest. They are divided into three MP categories below: 6.2, 8.1 SPNM areas, and 5.1.

Management Prescription 6.2

Table RE-10. MP 6.2 Areas by Alternative

Alternative 1		Alternative 2		Alternative 2M		Alternative 3		Alternative 4	
Area	**Acres**	**Area**	**Acres**	**Area**	**Acres**	**Area**	**Acres**	**Area**	**Acres**
Big Draft	8,006	Big Draft	5,395	Big Draft	5,395	Big Draft	2,611	Cheat Mtn.	7,955
Canaan Mountain	13,532	Canaan Loop	7,850	Canaan Loop	7,850	Beaver Lick Mountain	18,611	Cranberry Expansion	12,165
Cheat Mountain	7,527	Dolly Sods North	7,215	Dolly Sods North	7,215	Canaan Mountain	13,532	Dolly Sods North	7,215
Cranberry Backcountry	7,890	East Fork Greenbrier	10,153	East Fork Greenbrier	10,153	Cranberry Backcountry	5,127	Dry Fork	739
East Fork of Greenbrier	7,637	Gaudineer	6,727	Gaudineer	6,727	Dolly Sods North	7,215	Roaring Plains North	3,119
Laurel Fork	3,151	Gauley Mtn. East	7,780	Gauley Mtn. East	7,780	Falls of Hills Creek	5,474	Roaring Plains West	6,825
Laurel Run	3,037	Gauley Mtn. West	6,624	Gauley Mtn. West	6,624	Gaudineer	6,773	Seneca Creek	13,001
Little Mountain	10,407	Middle Mountain	12,197	Lower Laurel Fork	3,177	Gauley Mtn. East	7,780		
North Fork/ Hopeville	4,637	Seneca Creek	13,001	Middle Mountain	12,197	Gauley Mtn. West	6,624		
Upper Middle Mountain	8,175	Spice Run	6,171	Roaring Plains North	3,119	Glady Fork	2,759		
Peters Mountain	2,350	Tea Creek Mountain	8,272	Roaring Plains East	2,962	Greathouse Hollow	9,729		
Flat Rock/ Roaring Plains	7,772	Turkey Mountain	6,111	Seneca Creek	13,001	Kennison Mountain	23,717		
Seneca Creek/ Gandy Creek	19,644			Spice Run	6,171	Laurel Fork	1,172		
Smoke Hole	2,670			Tea Creek Mountain	8,272	Laurel Run	3,032		
Spice Run	7,698			Turkey Mountain	6,111	Little Allegheny	6,155		
Tea Creek/ Turkey Mtn.	10,358					Little Mountain	8,072		
						Lockridge Mtn. North	8,169		
						Lockridge Mtn. South	6,541		
						Lower Laurel Fork	3,177		
						Marlin Mtn.	9,347		
						McGowen Mtn.	10,522		
						Meadow Creek North	9,682		
						Meadow Creek South	5,465		
						Middle Mtn.	12,197		
						Peters Mtn.	2,347		
						Roaring Plains East	2,962		
						Roaring Plains North	3,199		
						Spice Run	1,527		
						Tea Creek	8,272		
						U. Shavers Fork East	8,218		
						U. Shavers Fork West	5,975		
Areas	**16**	**Areas**	**12**	**Areas**	**15**	**Areas**	**31**	**Areas**	**7**
Total Acres*	**124,500**	**Total Acres**	**97,500**	**Total Acres**	**106,800**	**Total Acres**	**225,900**	**Total Acres**	**51,000**

*Rounded to the nearest 100

MP 6.2 areas emphasize backcountry recreation in a SPNM setting. Direction for these areas includes numerous constraints on management actions in order to maintain undeveloped character and backcountry recreation opportunities. Evidence of development is expected to be very low. The MP 6.2 allocations vary by alternative as seen in Table RE-10.

Alternative 1 - Allocations for the No Action Alternative 1 are based on the 1986 Forest Plan MP 6.2 allocations (see Table RE-8), and total 124,500 acres.

Alternative 2 – Allocations are based on a new Roadless Area Inventory that was conducted as part of the Need for Change in Forest Plan revision (see Appendix C to the EIS). The new inventory identified the 16 IRAs shown in Table RE-11 in the DEIS. Four of the 2006 IRAs are assigned the 5.1 MP (see Recommended Wilderness section). Eleven of the 2006 IRAs are assigned the 6.2 MP under this alternative. The remaining IRA is Seneca Creek. The portion of the Seneca Creek IRA outside of the NRA (13,001 acres) is assigned a 6.2 MP. The portion within the NRA 8.1 MP would be managed as SPNM, with similar management direction as 6.2. In addition, the North Fork Mountain (9,391 acres) and Smoke Hole (3,567 acres) areas, which did not qualify for the 2006 inventory, would also be managed as SPNM within the 8.1 MP.

A number of areas managed as MP 6.2 in the 1986 Forest Plan have been assigned a different MP under this alternative. Peters Mountain, (2,350 acres), Little Mountain (10,404 acres), Lower Laurel Fork (3,151 acres), and Laurel Run (3,037 acres) are assigned a 6.1 MP, and Roaring Plains North (3,119 acres) and Cranberry Backcountry (7,890 acres) are assigned a 4.1 MP. Roaring Plains East (2,962 acres) is assigned a combination of MP 4.1 and MP 6.1. However, MP 6.2 also has several new areas that were not in the 1986 Plan, including Dolly Sods North (7,215 acres), Gaudineer (6,727 acres), Gauley Mountain East (7,780 acres), and Gauley Mountain West (6,624 acres).

Alternative 2 Modified – Alternative 2 was modified between the Draft and Final EIS based on public comments to create Alternative 2M. Thus, Alternative 2M has all of the 6.2 and 8.1 SPNM areas as Alternative 2, plus three additional areas. Roaring Plains North and Roaring Plains East were added to the Roadless Area Inventory and assigned a 6.2 MP. Although each of these areas is well under 5,000 acres, they are located on a high-elevation plateau where the sights and sounds of nearby development would be moderated by the topography. They are also buffered from development to the south and west by Roaring Plains West and to the north by Dolly Sods Wilderness. Lower Laurel Fork did not qualify for the Roadless Area Inventory, but is assigned a 6.2 primarily because of the eligible Wild and Scenic River corridor that occupies much of the area. These three areas add over 9,200 acres to MP 6.2 in Alternative 2M compared to Alternative 2.

Alternative 3 - Because this alternative emphasizes backcountry recreation, it includes the maximum potential acres and areas of MP 6.2 based on the 1986 Forest Plan areas, the 2006 Roadless Area Inventory described above in Alternative 2, and areas identified by interest groups as potential roadless areas. Eleven of the 2006 IRAs are assigned MP 5.1 (see Recommended Wilderness section) and seven of the 2006 IRAs are assigned the 6.2 MP under this alternative. In addition, the North Fork Mountain and Smoke Hole areas, which are not in the 2006 Inventory, would be managed as a SPNM ROS classification within the 8.1 MP. Areas managed

as MP 6.2 in the 1986 Forest Plan that were not included in the 2006 Inventory include Peters Mountain, Laurel Fork, Little Mountain, Cranberry Backcountry, and Laurel Run, but they would be managed as MP 6.2 under Alternative 3. Additional areas are listed in Table RE-10.

Alternative 4 – This alternative emphasizes vegetation restoration and has the least amount of MP 6.2 because it does not include any of the 1986 areas that did not qualify for the 2006 roadless inventory. Seven (Cheat Mountain, Cranberry Expansion, Dolly Sods North, Dry Fork, Roaring Plains North, Roaring Plains West, Seneca Creek) of the eighteen 2006 IRAs are assigned MP 6.2 under this alternative. No areas are assigned MP 5.1 (see Recommended Wilderness section, below). The breakdown for the remaining 12 IRAs is a follows; three areas (Middle Mountain, Big Draft, Spice Run) are assigned a 6.1 MP, seven (Canaan Loop, Gaudineer, Gauley Mountain East, Roaring Plains East, East Fork Greenbrier, Tea Creek, Turkey Mountain) are assigned a 4.1 MP, and one area (Gauley Mountain West) is assigned 3.0 MP. The remaining IRA is Seneca Creek, which would be managed as MP 6.2 outside of the NRA and as MP 8.1 SPNM within the NRA. In addition, the North Fork Mountain and Smoke Hole areas, which are not on the 2006 Inventory, would also be managed as SPNM within 8.1.

Management Prescription 8.1 SPNM

A minor Need For Change identified for Forest Plan revision was assigning the Spruce Knob – Seneca Rocks National Recreation Area (NRA) its own Management Prescription in order to highlight its national, regional, and local importance. Thus, under the action alternatives, the NRA has an 8.1 MP, but under the No Action Alternative it is represented by a mix of MPs.

The action alternatives also have MP 8.1 SPNM areas that emphasize backcountry recreation in a SPNM setting. Management direction for these areas includes numerous constraints on management actions in order to maintain undeveloped character and backcountry recreation opportunities. Evidence of development is expected to be very low, and the areas would be managed similarly to MP 6.2 (see management direction for MP 8.1 SPNM in the 2006 Forest Plan). The MP 8.1 SPNM allocations vary somewhat by alternative as seen in Table RE-11.

Table RE-11. MP 8.1 SPNM Acres by Alternative

Alternative 1		Alternative 2		Alternative 2M		Alternative 3		Alternative 4	
Area	**Acres**	**Area**	**Acres**	**Area**	**Acres**	**Area**	**Acres**	**Area**	**Acres**
None	0	Seneca Creek	11,973	Seneca Creek	11,973	North Fork Mountain	9,391	Seneca Creek	11,973
		North Fork Mountain	9,391	North Fork Mountain	9,391	Smoke Hole	3,567	North Fork Mountain	9,391
		Smoke Hole	3,567	Smoke Hole	3,567			Smoke Hole	3,567
Total Acres	**0**	**Total Acres**	**24,900**	**Total Acres**	**24,900**	**Total Acres**	**13,000**	**Total Acres**	**24,900**

Alternative 1 – The NRA does not have a separate prescription under Alternative 1, so the SPNM areas within the NRA have their original 6.2 MP allocation and are described under the MP 6.2 section below.

Alternatives 2, 2M, and 4 - MP 8.1 SPNM allocations for these alternatives are based on the three areas within the NRA that have a 6.2 MP under the 1986 Plan. Both North Fork Mountain and Smoke Hole have expanded acres compared to the 1986 Plan areas. Thus there are about 5,700 more acres that emphasize backcountry recreation in the NRA under Alternatives 2 and 2M than under Alternative 1, which represents the 1986 Plan as amended.

Alternative 3 – This alternative has two areas in MP 8.1 SPNM, totaling around 13,000 acres. The Seneca Creek area is assigned a 5.1 MP (Recommended Wilderness) under Alternative 3. Both North Fork Mountain and Smoke Hole have expanded acres compared to the 1986 Plan areas. Thus there are about 5,700 more acres that emphasize backcountry recreation in the NRA under Alternatives 3 and 4 than in Alternative 1.

Management Prescription 5.1 (Areas Recommended for Wilderness Study)

Recommended Wilderness by Alternative - MP 5.1 emphasizes maintaining wilderness character in a SPNM setting. Direction for this MP includes strong constraints on management actions that could enhance the SPNM setting or the wilderness character of each area. Evidence of development is expected to be extremely low. Although MP 5.1 does not prohibit certain activities that may be considered non-conforming under a wilderness designation, like mountain biking or wildlife opening maintenance, this allocation may increase the likelihood that these areas are eventually designated by Congress, at which time prohibitions or restrictions would apply. Appendix C includes a general effects assessment of a Wilderness vs. a non-Wilderness designation. The MP 5.1 allocations were made from the pool of the 18 Inventory Roadless Areas listed in Table RE-13. The allocations vary by alternative as seen in Table RE-12.

Table RE-12. Recommended Wilderness (MP 5.1) Areas by Alternative

Alternatives 1 and 4		Alternatives 2 and 2M		Alternative 3	
Area	**Acres**	**Area**	**Acres**	**Area**	**Acres**
None	0	Cheat Mountain	7,955	Big Draft	5,395
		Cranberry Expansion	12,165	Cheat Mountain	7,955
		Dry Fork	739	Cranberry Expansion	12,165
		Roaring Plains West	6,825	Dry Fork	739
				East Fork Greenbrier	10,153
				Gaudineer	6,727
				Middle Mountain	12,197
				Roaring Plains West	6,825
				Seneca Creek	24,974
				Spice Run	6,171
				Turkey Mountain	6,111
Areas	**0**	**Areas**	**4**	**Areas**	**11**
Total Acres	**0**	**Total Acres**	**27,700**	**Total Acres**	**99,400**

Alternative 1 – The No Action alternative represents no change from the 1986 Forest Plan, which has no Wilderness recommendation. Thus, 0 acres are recommended for Wilderness study under Alternative 1.

Alternatives 2 and 2M – As part of the Need for Change for plan revision, a new Roadless Area Inventory was conducted to determine the best pool of wilderness potential areas on the Forest. As noted above, 18 areas qualified for the inventory. Four of those areas are recommended for Wilderness study under Alternatives 2 and 2M, totaling an estimated 27,700 acres. This represents a potential 35 percent increase over existing Wilderness. Two of the areas, Dry Fork and Cranberry Expansion, would have the added effect of expanding contiguous Wilderness areas if they are designated by Congress. Roaring Plains West, though not contiguous with Dolly Sods Wilderness, would contribute to a block of MPs 5.0, 5.1, and 6.2 SPNM land of nearly 30,000 acres in that portion of the Forest.

Alternative 3 – Allocations are based on the theme of the alternative, which is maximum backcountry. Allocations include all areas in the latest IRA inventory that were considered to have good wilderness potential. The rest of the IRAs were given a 6.2 MP to help maintain their roadless attributes over time. The total of 99,400 acres recommended in 11 areas represents 11 percent of the Forest, and would more than double the amount of Wilderness that currently exists on the Forest should Congress designate all of the areas.

Alternative 4 – No areas are recommended for Wilderness under this alternative, which emphasizes vegetation restoration. Additional Wilderness was considered to be an impediment to achieving the vegetation restoration objectives of this alternative, due to constraints on road-building and timber harvest in a Recommended Wilderness MP, and the added difficulty of conducting prescribed burns without road-related access and fuel breaks.

Roadless Area Inventory and Wilderness Evaluation

A Roadless Area Inventory and Wilderness Evaluation were completed as part of the Forest Plan revision process (see Appendix C). Forty-one areas (326,539 acres) were initially identified and evaluated against the eight criteria for potential Wilderness in the East. Eighteen areas met all eight criteria and became the new Roadless Area Inventory. These 18 areas (143,234 acres) were evaluated based on their availability, capability and need for potential Wilderness. The 18 areas and their acreages are listed in Table RE-13.

Table RE-13. The Monongahela National Forest 2006 Inventoried Roadless Areas

Area	Acres	Area	Acres
Big Draft	5,395	Gauley Mountain West	6,624
Canaan Loop	7,850	Middle Mountain	12,197
Cheat Mountain	7,955	Roaring Plains North	3,119
Cranberry Expansion	12,165	Roaring Plains East	2,962
Dolly Sods North	7,215	Roaring Plains West	6,825
Dry Fork	739	Seneca Creek	24,974
East Fork Greenbrier	10,153	Spice Run	6,171
Gaudineer	6,727	Tea Creek Mountain	8,272
Gauley Mountain East	7,780	Turkey Mountain	6,111

Seven inventoried areas (Canaan Loop, Dolly Sods North, Gauley Mountain East, Gauley Mountain West, Roaring Plains East, Roaring Plains North, and Tea Creek Mountain) were not recommended for Wilderness under any alternative at this time due to: 1) their relatively lower values for wilderness attributes, and/or 2) their well-established pattern of non-conforming uses, and 3) the preferred alternative assigns them a 6.2 MP that would help maintain their roadless attributes over time. These values represent the relative development potential for managing the area based solely on its allocated MP. Specific information, and development potential for each area by alternative, are located in Appendix C – Roadless Area Inventory and Wilderness Evaluation. Appendix C also includes a general effects assessment of a Wilderness vs. a non-Wilderness designation, which is incorporated here by reference.

Table RE-14 displays the management disposition in the Roadless Area Inventory and Wilderness Evaluation, for each alternative in estimated acres. As the table numbers indicate, Alternatives 2, 2M, and 3 would have very low potential for developing any of the Inventoried Roadless Areas. Alternative 1 would have moderate potential for development, and Alternative 4 would have relatively high potential for development, as this alternative is designed to actively restore oak ecosystems, which comprise all or parts of a number of the roadless areas.

Table RE-14 . Management Disposition by Alternative for the 2006 Roadless Area Inventory Areas

Management Disposition	Alt. 1	Alt. 2	Alt. 2M	Alt. 3	Alt. 4
Recommended Wilderness (MP 5.1)	0	27,700	27,700	99,400	0
Very low potential for development (MP 6.2, 8.1, 8.2, 8.3, 8.4, 8.5 Candidate Research Natural Areas)	104,500	115,600	115,600	43,900	63,100
Low to moderate potential for development (4.1, 6.3, 7.0)	12,700	0	0	0	48,400
Available for full range of development (2.0, 3.0, 4.0, 6.1, 8.6)	26,100	0	0	0	31,900

Note: Acres are rounded to the nearest 100 acres

Effects to the Forest Recreation Opportunity Spectrum (ROS)

Assigning 5.1, 6.2, and 8.1 SPNM MPs directly affects how much land is available for other MPs on the Forest, and indirectly affects how these lands would be managed over the planning period, and what other types of recreation opportunities may be available. The recreation settings and opportunities can be estimated to a relative degree by comparing the ROS class distribution that would be created by alternative.

See Table RE-6 in the Current Conditions section for summary descriptions of each ROS Class. The following assumptions were used to determine the desired condition percentages by ROS Class in Table RE-15. These assumptions were based on professional judgment, current and desired conditions, and the types of activities and ROS objectives emphasized by each MP. They have been refined from the broader assumptions presented in the DEIS.

- There are no Primitive ROS acres on the Forest due to existing and future road patterns.
- There are little or no Urban ROS acres of the Forest due to the general lack of urban-type development.
- There are some Rural ROS acres, but they are not associated with any particular MP, and any estimates by MP would be too small to register as a whole percentage.
- MPs 2.0, 3.0, and 4.0: 100% RN; primarily suited lands with a high degree of development.
- MP 4.1: 20% RN (suited lands), 40% SPM, 40% SPNM.
- MPs 5.0, 5.1, 6.2, and 8.1 SPNM: 100% SPNM.
- MP 6.1: 50% RN (suited lands), 25% SPM, 25% SPNM.
- MP 6.3: 33% RN, 33% SPM, 33% SPNM.
- MP 8.1 outside of SPNM: 70% SPM, 30% RN due to patches of development.
- MPs 8.2, 8.3, 8.4: 100% SPM; lands are largely undeveloped but are too small to be SPNM.
- MP 8.5 Fernow and Loop Road Research Areas: 50% RN, 50% SPM.
- MP 8.5 CRNAs: Pike Knob (1,950 ac.) is SPNM, the remaining areas (290 ac.) are SPM.
- MP 8.6: 100% SPM; areas features management but are not suited lands, many closed roads.

Table RE-15 provides a summary of existing and desired condition changes to the ROS by alternative, based on MP allocation.

Table RE-15. ROS Class Distribution by Alternative in Percent of Forest

ROS Class	Existing Condition	Alt. 1 Desired Condition	Alt. 2 Desired Condition	Alt. 2M Desired Condition	Alt. 3 Desired Condition	Alt. 4 Desired Condition
Primitive	0	0	0	0	0	0
Semi-Primitive Non-Motorized	21%	40%	40%	41%	54%	34%
Semi-Primitive Motorized	35%	19%	18%	18%	13%	21%
Roaded Natural	44%	41%	42%	41%	33%	45%
Rural	<1%	<1%	<1%	<1%	<1%	<1%
Urban	0	0	0	0	0	0

The existing condition percentages lean rather heavily toward the RN and SPM Classes due primarily to the legacy of roads, most of which were created during the extensive logging period of 70-120 years ago. The desired conditions recognize that many roads will continue to disappear or be decommissioned over time. Thus, all alternatives would have more potential SPNM Class in the future. The amount, however, differs by alternative, reaching a high point of 54 percent of the Forest in Alternative 3, and a low point of 34 percent in Alternative 4. Conversely, there is less SPM Class than present in all alternatives, ranging from 13 percent in Alternative 3 to 21 percent in Alternative 4. The RN Class is substantially associated with suited timberlands as well as roads, and it therefore varies in rough proportion to the suited lands by alternative.

In terms of recreational opportunities, SPNM would provide the potential for more challenging and non-motorized experiences in essentially undeveloped settings, whereas RN would provide

the potential for both motorized and non-motorized experiences in a natural setting that would also have signs of development. SPM would restrict motorized opportunities but there may still be signs of development, such as recent timber harvest. Alternatives 1, 2, and 2M all show a relative balance between the RN and SPNM ROS Classes, with Alternative 2M showing a virtual one-to-one relationship. Alternative 3 would provide more backcountry recreation opportunities than any other alternative, while Alternative 4 would have the highest percentage of RN opportunities for those more interested in motorized recreation.

It is difficult to predict what effects the alternatives' ROS opportunities would have on recreation use or tourism. People recreate all over the Forest for many different reasons. Although an increase in backcountry recreation opportunities could attract those who prefer to camp and hike in undeveloped settings, it could also have a negative effect on those who enjoy motorized recreation or who want more motorized access for hunting or other activities. More discussion on visitor use related to backcountry recreation can be found in the Cumulative Effects section.

Effects to tourism are even more problematic to address, as potential influences on tourism patterns are complex and are not necessarily connected to Forest management activities or opportunities. For example, tourists may drive through the Forest on their way to nearby or distant destinations or events that have nothing to do with the Forest. We received comments on the DEIS to the effect that the visual effects from timber harvest would have a detrimental effect on tourism. However, in order to have any significant effect on the scenic backdrop of the Forest, very large amounts of harvest would have to occur in concentrated areas of visual sensitivity, and this scenario is highly unlikely to occur under any alternative due to management constraints in the 2006 Forest Plan and public involvement in Forest proposals under NEPA.

Cumulative Effects

Total Backcountry Recreation Opportunities

The total or cumulative backcountry recreation opportunities on the Forest are calculated by adding up the amount of land allocated to MPs 5.0 (Designated Wilderness), 5.1 (Recommended Wilderness), 6.2 (Backcountry Recreation), and the 8.1 areas that would be managed for a SPNM setting within the Spruce Knob-Seneca Rocks NRA. The totals for these areas are displayed in the Table RE-16, along with the percentage of NFS land they represent.

Table RE-16. Total Backcountry Recreation Opportunity Acres by Alternative

Recreation Opportunity Area	Alt. 1	Alt. 2	Alt. 2M	Alt. 3	Alt. 4
Designated Wilderness (5.0)	78,700	78,700	78,700	78,700	78,700
Recommended Wilderness (5.1)	0	27,700	27,700	99,400	0
Backcountry Recreation (6.2)	124,500	97,500	106,800	225,900	51,000
SPNM Acres within NRA (8.1)	0	24,900	24,900	13,000	24,900
Total Acres	**203,200**	**228,800**	**238,100**	**417,000**	**154,600**
Percent of Forest	**22%**	**25%**	**26%**	**45%**	**17%**

Results range from 17 percent of the Forest under Alternative 4, to 45 percent of the Forest under Alternative 3. Alternatives 2 and 2M represent modest increases (25,600 acres and 34,900 acres, respectively) over the current opportunities portrayed by Alternative 1. Dispersed recreation enthusiasts would find more than twice the backcountry lands in Alternative 3 than are available under Alternative 1. People who favor road-related recreation would find the most opportunities available under Alternative 4.

As noted previously, there are additional backcountry recreation opportunities in the State of West Virginia provided primarily by State parks and Forests, and NFS land on the GW-Jefferson National Forests. Tables RE-17 through RE-21 compare the cumulative acres of national forest and state backcountry recreation opportunities, and the Monongahela contribution to those opportunities by alternative. For this exercise, backcountry recreation opportunities were considered SPNM areas such as MP 5.0, 5.1, 6.2, or 8.1 SPNM allocations.

Table RE-17. Backcountry Recreation Potential in West Virginia for Alternative 1

Indicator	Total Acres Public Land	Backcountry Acres (Desired Condition)	Percent of Total Backcountry Acres
Municipal/ County Backcountry	22,050	0	0%
West Virginia State Park/Forest Backcountry	416,863	0	0%
GW-Jefferson NF Wilderness Backcountry	123,629	12,400	6%
National Park Service Backcountry	66,159	0	0%
Army Corps of Engineers Backcountry	168,109	0	0
Monongahela NF 5.0, 5.1, 6.2, 8.1 Areas – Alternative 1	916,700	203,200	94%
Total Acres	1,713,510	215,600	100%
Percent of Total WV Public Lands with Backcountry Recreation Settings			12.6%

Table RE-18. Backcountry Recreation Potential in West Virginia for Alternative 2

Indicator	Total Acres Public Land	Backcountry Acres (Desired Condition)	Percent of Total Backcountry Acres
Municipal/ County Backcountry	22,050	0	0%
West Virginia State Park/Forest Backcountry	416,863	0	0%
GW-Jefferson NF Wilderness Backcountry	123,629	12,400	5%
National Park Service Backcountry	66,159	0	0%
Army Corps of Engineers Backcountry	168,109	0	0
Monongahela NF 5.0, 5.1, 6.2, 8.1 Areas – Alternative 2	916,700	228,800	95%
Total Acres	1,713,510	241,200	100%
Percent of Total WV Public Lands with Backcountry Recreation Settings			14.1%

Table RE-19. Backcountry Recreation Potential in West Virginia for Alternative 2M

Indicator	Total Acres Public Land	Backcountry Acres (Desired Condition)	Percent of Total Backcountry Acres
Municipal/ County Backcountry	22,050	0	0%
West Virginia State Park/Forest Backcountry	416,863	0	0%
GW-Jefferson NF Wilderness Backcountry	123,629	12,400	5%
National Park Service Backcountry	66,159	0	0%
Army Corps of Engineers Backcountry	168,109	0	0
Monongahela NF 5.0, 5.1, 6.2, 8.1 Areas – Alternative 2	916,700	238,100	95%
Total Acres	1,713,510	250,600	100%
Percent of Total WV Public Lands with Backcountry Recreation Settings			14.6%

Table RE-20. Backcountry Recreation Potential in West Virginia for Alternative 3

Indicator	Total Acres Public Land	Backcountry Acres (Desired Condition)	Percent of Total Backcountry Acres
Municipal/ County Backcountry	22,050	0	0%
West Virginia State Park/Forest Backcountry	416,863	0	0%
GW-Jefferson NF Wilderness Backcountry	123,629	12,400	3%
National Park Service Backcountry	66,159	0	0%
Army Corps of Engineers Backcountry	168,109	0	0
Monongahela NF 5.0, 5.1, 6.2, 8.1 Areas – Alternative 3	916,700	417,000	97%
Total Acres	1,713,510	429,400	100%
Percent of Total WV Public Lands with Backcountry Recreation Settings			25.1%

Table RE-21. Backcountry Recreation Potential in West Virginia for Alternative 4

Indicator	Total Acres Public Land	Backcountry Acres (Desired Condition)	Percent of Total Backcountry Acres
Municipal/County Backcountry	22,050	0	0%
West Virginia State Park/Forest Backcountry	416,863	0	0%
GW-Jefferson NF Wilderness Backcountry	123,629	12,400	7%
National Park Service Backcountry	66,159	0	0%
Army Corps of Engineers Backcountry	168,109	0	0
Monongahela NF 5.0, 5.1, 6.2, 8.1 Areas – Alternative 4	916,700	154,600	93%
Total Acres	1,713,510	167,000	100%
Percent of Total WV Public Lands with Backcountry Recreation Settings			9.7%

Based on the tables above, the alternatives would contribute anywhere from 93 percent (Alternative 4) to 97 percent (Alternative 3) of the backcountry recreation settings on public lands in West Virginia. As there are no comparable opportunities on private lands within the State, these figures apply equally to the entire State land base. Under any of the alternatives considered, therefore, the Monongahela would continue to be the primary provider of backcountry recreation settings and opportunities in the State of West Virginia.

The total acres contributed by each alternative would result in a much wider percentage range of backcountry recreation areas available in West Virginia. Alternative 1, which represents the 1986 Forest Plan as amended, would contribute to backcountry areas comprising an estimated 12.6 percent of all the public lands in the State. Alternatives 2 and 2M would raise the percentages to 14.1 and 14.6 respectively, Alternative 3 would effectively double the percentage to 25.1, and Alternative 4 would lower the current percentage to 9.7. People seeking backcountry recreation opportunities in West Virginia would have the most SPNM settings available by far in Alternative 3. Backcountry opportunities in Alternatives 2 and 2M would be substantially more than what they are currently (Alternative 1). Alternative 4 would lower the current backcountry recreation settings in the State by a substantial amount, which would likely be perceived as a step backward by Wilderness and other backcountry recreation enthusiasts, and a step in the right direction by those who feel the Forest and State already have more than enough backcountry recreation opportunities.

ROS and Visitor Use

The MNF Niche Statement describes the Forest as "the largest expanse of public land in West Virginia" and states that "the Forest provides the best opportunities for challenging and remote dispersed recreation in the State." The desired condition for Recreation Resources on the Forest is to offer "a wide spectrum of recreation opportunities," which includes settings ranging from SPNM to Rural.

National Visitor Use Monitoring (NVUM) was conducted on the MNF in 2003. The results indicate that about 16 percent (207,000 site visits) of the 1,303,000 annual site visits to the Forest are for activities primarily associated with backcountry recreation. These activities include 100 percent of primitive camping, backpacking and other non-motorized activities, and an estimated percentage of other activities that can occur either within or outside of backcountry areas. These estimated percentages include 50 percent of nature study and wildlife viewing, 25 percent of fishing, 20 percent of hunting, and 58 percent of hiking, walking, mountain biking and equestrian use. These percentages may be generous, as backcountry recreation areas comprise about 22 percent of the Forest, and opportunities for these types of activities exist throughout the Forest.

Wilderness use accounted for about 38,600 visits or 3 percent of the total Forest recreation use, and about 19 percent of the 207,000 backcountry site visits. Responding to the 2003 NVUM questions about crowding in Wilderness, visitors on the average felt that there were few people there. Nobody said the Wilderness they visited was overcrowded and 17.4 percent said there was hardly anyone there. User mean perception of General Forest Areas indicated that visitors who use the current backcountry areas felt that the areas were not overcrowded, and about 28 percent said that hardly anyone was there. Based on these findings, it appears that the Forest's

existing Wilderness and backcountry recreation opportunities are meeting the current supply and demand of our visitors.

Projections for outdoor recreation participation by activity through 2050 show that activities associated with backcountry are expected to increase at a rate of 0.5 percent to 1.5 percent per year. These projections also indicate that many activities associated with non-backcountry recreation opportunities—such as developed camping, sightseeing, picnicking, visitor centers, etc.—along with activities that can occur in all ROS settings, are expected to increase at about this same overall average rate (Cordell 1999).

All acres of backcountry areas are not used the same. Some are more popular than others, many are seasonal, and most use is concentrated on trails and adjacent use areas. Because recreation use is not spread equally over backcountry areas and acres, specific areas such as Dolly Sods, Cranberry or Otter Creek are likely to see larger increases in visitation than areas like Middle Mountain, Spice Run, and other lesser-known areas. More popular areas may experience more crowding, but lesser known areas can supply opportunities for individuals seeking more solitude and semi-primitive recreation. These trends are likely to occur in non-backcountry areas as well.

The 1986 Forest Plan's current existing ROS classes are based on a 2003 ROS mapping exercise. The Forest currently provides for about 188,000 acres in a SPNM setting, about 318,000 acres in SPM and 401,000 acres in a RN setting. Based on the above NVUM information, this make-up of various ROS settings is meeting existing demand for recreational use.

Table RE-22. Projected Visitors Per 1,000 Acres of Backcountry Over Time

Alternative	Acres of Backcountry (MA 5.0, 5.1, 6.2, and 8.1 managed as SPNM	2003 Backcountry Visitors per Year per 1,000 Acres (estimated 207,000 site visits)	2013 Backcountry Visitors per Year per 1,000 Acres (estimated 229,000 site visits)	2023 Backcountry Visitors per Year per 1,000 Acres (estimated 253,000 site visits)	2033 Backcountry Visitors per Year per 1,000 Acres (estimated 279,000 site visits
1	203,200	1,019 (2.8 per day)	1,127 (3.1 per day)	1,245 (3.4 per day)	1,373 (3.8 per day)
2	228,800	905 2.5 per day	1,001 2.7 per day	1,105 3.0 per day	1,219 3.3 per day
2M	238,100	869 (2.4 per day)	962 (2.6 per day)	1,062 (2.9 per day)	1,172 (3.2 per day)
3	417,000	496 (1.4 per day)	549 (1.5 per day)	607 (1.7 per day)	669 (1.8 per day)
4	154,600	1,339 (3.7 per day)	1,481 (4.1 per day)	1,636 (4.5 per day)	1,805 (4.9 per day)

Table RE-22 compares annual visitors per 1,000 acres based on use projections over time by alternative. This assessment assumed an average annual increase of 1.0 percent. The acres are based on backcountry MP desired conditions for SPNM ROS settings. The range of use

concentration varies considerably by alternative, with Alternative 3 having less than half the use predicted than Alternative 4. For those recreationists seeking a semi-primitive uncrowded experience, Alternative 3 would provide the best overall opportunities, followed in descending order by Alternatives 2, 1, and 4. However, even under Alternative 4, the maximum projected use—4.9 visitors per 1,000 acres a day by 2033—would be relatively uncrowded. Even at double the use, or with a 6-month season of use factored in, maximum visitation is projected at less than 10 people per 1000 acres a day, still relatively low. Based on visitor use projections, visitor responses to crowding, and land allocations in the alternatives, it is likely that overall backcountry supply will meet demand over the next two to three decades for all alternatives.

Scenic Environment

INTRODUCTION

The scenery visible to people visiting the Monongahela National Forest (MNF) constitutes the scenic environment. Scenery is described as the general appearance of a place or landscape, or the features of a landscape. The visual condition varies by location and is dependent on human developments and natural features such as geology, vegetation, and landforms.

The MNF provides some of the highest quality scenic landscapes in the East. Enjoyment of these scenic resources is an integral part of many recreation experiences, both on and near the MNF, and these scenic attractions have contributed to making a number of locations on the Forest nationally recognized recreation destinations. As an example, the Spruce Knob-Seneca Rocks National Recreation Area (NRA) was established in 1965 based on, among other things, the preservation of the high-quality scenic environment as a backdrop for recreational pursuits.

Issues and Indicators

Issue Statement

Forest Plan management strategies may affect the scenic environment.

Background

No major issues directly related to scenic resources were identified during scoping or the Need For Change analysis process. However, many comments received did indicate an interest in the Forest's scenery and how management activities may affect that scenery. Management activities have the potential for directly, indirectly, and cumulatively affecting scenic resources through vegetation management, restoration, or development activities. These activities are related to many of the Need For Change topics, and could be implemented under any of the alternatives. Disturbance events of insect infestations and wildfire events can also affect scenic resources.

Indicators

The following indicators reflect the potential relative change under each alternative based on anticipated levels of management activities that could have substantial effects on the scenic environment:

- Acres of even-aged harvest by alternative,
- Acres of intermediate treatment by alternative,
- Acres of prescribed fire use by alternative.

The potential for ecological disturbance events (insects, disease, wildfire) to affect the scenic environment will also be discussed.

Scope of the Analysis

The affected area for direct and indirect effects to the scenic environment is land administered by the Forest. This area represents the National Forest System (NFS) lands where the scenic environment exists, and the lands where those resources could receive impacts from both management activities and disturbance events. The affected area for cumulative effects includes the lands administered by the Forest, and lands of other ownership both within and adjacent to the Forest boundaries. Cumulative effects to resources on other land ownerships are addressed to lend a broader perspective to the importance of scenic resources on the Forest and to recognize the inter-relationships with those lands. Temporal effects are discussed in terms of temporary (1-12 months), short-term (1-5 years), and long-term (over 5 years) time frames.

CURRENT CONDITIONS

The present landscape is a result of the interactions of existing vegetation and landforms on line, form, color, and texture of the viewed scenery. Visual conditions vary by location and are dependent on such influences as geology, water, vegetation, landforms, and human developments and activities. The scenic landscape is a dynamic medium and is continuously modified by both human and natural forces. Much of the landscape that comprises the Forest has been altered by human developments and activities as well as recent disturbance events such as small-scale wildfires and insect infestations. Some of these altered landscapes are not obvious to casual viewers because they still present natural-appearing landscapes.

The Scenery Management System (SMS) is a management tool that determines scenic values and establishes allowable levels of human-caused change to the scenic environment. This system is used in the context of Forest management to inventory and analyze effects to scenery, assist in developing resource goals and objectives, monitor scenic integrity, and ensure that attractive landscapes are sustained for the future. More details regarding the System can be found in Agriculture Handbook Number 701, Landscape Aesthetics, A Handbook for Scenery Management and the Monongahela National Forest Scenery Management Analysis (2004).

Landscape Character

The Monongahela National Forest is mountainous. This has important implications on how the Forest is seen and how the people feel about living, recreating, and working within it. The public involvement that took place when the 1986 Forest Plan was being written made it clear that the entire Forest is a special place to West Virginia residents. Its presence is regarded as a contrast to the remainder of West Virginia where the impacts of extractive industries and urban developments are relatively more common. Threats to its well-being are taken seriously. Individuals and communities also identify with specific smaller locations within the Forest.

Being a mountainous Forest, the Monongahela puts management activities up as on an easel for all to see. When compared to a national forest with flatter topography, management activities are more visible and more difficult to screen from public view. As a general rule, residents and

visitors travel in the open valleys and the Forest forms a backdrop on the mountains and ridges behind the houses and beside the roads. Also because it is a mountainous area, the Forest offers outstanding recreation opportunities ranging from the dispersed to the developed. Visitors penetrate the Forest on foot and in vehicles, potentially becoming close-up viewers of all that happens. Changes are seen.

In order to establish a baseline against which to measure and evaluate changes within the landscape, a description of the existing landscape character is needed. Landscape character is a reflection of the physical, biological, and cultural attributes in the landscape, and the beliefs, values and attitudes that people assign to these attributes. The existing landscape character has its origins in and is informed by early settlement patterns and land uses that have taken place over the years. These early and continuing influences affect the attitude toward landscape uses today. It is the physical appearance and cultural context of a landscape that gives it an identity and a "sense of place." The descriptions below create images of the landscape. The narratives include landform patterns, water characteristics, vegetative patterns, and cultural elements. The descriptions are based on an ecological framework developed by the Forest ecologist and others.

The Landscape Character descriptions are divided into the four ecological zones: Red Spruce, Northern Hardwood, Red Oak/Sugar Maple, and Mixed Oak. These four ecological zones are described briefly below. Full descriptions are available in the Monongahela National Forest, Scenery Management System Guide.

Red Spruce Zone

The existing landscape character of the red spruce zone is found in several areas across the Forest, generally on the high-altitude mountain tops and ridges and extending only a short distance down slope. Mountaintops are often relatively flat to gently rolling. In other locations, the red spruce zone is found on moderately dissected plateaus with steep slopes and narrow valleys. Elevations range from around 3800 feet to over 4000 feet. Soils are acidic. When seen from vantage points outside the zone, the red spruce usually appears as a dark, finely textured cap on an otherwise hardwood-clothed mountain. For visitors within the red spruce zone, views are usually of the enclosed foreground type but, because of the location on top of the mountains, this zone offers more than the average number of panoramic background views. Special places within the red spruce zone include Dolly Sods Wilderness and Scenic Area, Gaudineer Scenic Area, Otter Creek Wilderness, the Upper Shavers Fork River valley, Canaan Mountain, Cheat Mountain Fort (a civil war encampment site), and portions of the Cranberry Wilderness.

Northern Hardwood Zone

The northern hardwood zone consists of the dissected Appalachian Plateau at its juncture with the ridge and valley section. Landforms are rolling to steeply sloped mountains with narrow, winding valleys. Elevations range from 2800 to over 4000 feet. Visitors encounter mostly enclosed, foreground views; but a few distant panoramas do exist. Special places within the northern hardwood zone include portions of the Seneca Creek Backcountry, Bickle Knob, and Camp Pocahontas 4H Camp. Water is an important element visually and for recreation. Spruce Knob Lake, an impoundment, is a popular fishing site, as are Laurel Fork, Gandy Creek, and

Seneca Creek. Streams in the zone have steep gradients, are swift flowing, clear, and normally have horizontally fractured, dark brown rock beds.

Red Oak/Sugar Maple Zone

The red oak/sugar maple zone lies at lower elevations, down slope from the red spruce. It forms the even-textured, light green hardwood backdrop against and in contrast with which the dark spruce is seen. The landforms of the zone vary from gently rolling, highly dissected low hills to steep-sided, massive mountains. Valleys are narrow to very narrow and winding. Visitors encounter enclosed landscapes with foreground detail views. Views of the near middle-ground are common, but background vistas are rare. In the northern portion of the Forest, the red oak/sugar maple zone is generally found on the mid to lower slopes. In the south, the zone ranges from the valleys to the ridgelines in many areas. Mauch Chunk soils, found within the zone, are the most productive on the Forest, but are highly erosive. Special places within the red oak/sugar maple zone include the Falls of Hills Creek, Whitaker Falls, Summit Lake, portions of the Cranberry Wilderness and Backcountry, Cranberry Glades, and Highland Scenic Highway.

Mixed Oak Zone

The mixed oak zone lies in three large portions of the Forest. In the ridge and valley section, narrow valleys divide the long northeast-southwest trending ridges. In the Tygart River Valley the landform includes terraces and foothills. Riparian valleys are found along the Tygart and Potomac Rivers. Visitors find that views are not as enclosed as in the other zones, but panoramic, background views are rare. The lowest elevations on the Forest are found within this zone. Many special places are found within the mixed oak zone. The Seneca Rocks portion of the Spruce Knob-Seneca Rocks NRA is a particularly important area. The Smokehole Valley, Hopeville Gorge, and much of the Greenbrier River Trail are found within the mixed oak zone.

Landscape Visibility

Landscape visibility is the accessibility of the landscape to viewers, referring to one's ability to see and perceive landscapes. It is a function of many essential interconnected considerations including; context of viewers, duration of view, degree of discernible detail, seasonal variations, and the number of viewers. Landscape visibility consists of three elements; travel and use areas, Concern Levels, and Distance Zones. The existing landscape visibility for the MNF was mapped in 2004 and is based on topography, not vegetation. Distance Zones were produced in Arc View by using an offset algorithm. Once the maps were produced, actual seen areas were substituted for a few key areas where Forest employees determined major areas could not be actually seen. The landscape visibilities are:

> **Foreground** – Within 0 feet and ½ mile. The foreground is a detailed landscape where people can distinguish small boughs of leaf clusters, tree trunks, large branches, individual bushes, and medium size animals.

Middleground – Within ½ to 4 miles. This is usually the predominant distance zone at which Forest landscapes are seen. At this distance people can distinguish individual tree forms, large boulders, flower fields and small openings.

Background – From 4 miles to horizon. At this distance people can distinguish groves or stands of trees and large openings in the Forest.

Seldom Seen – These landscapes are not visible in the foreground, middleground, or background from any selected viewpoint, travel way, or use area.

The following table shows the existing Landscape Visibility on the Forest.

Table SE-1. Landscape Visibility on the Monongahela National Forest

Landscape Visibility	Estimated Acres and % of National Forest System Lands	Estimated Acres and % of All Other Ownership Lands Within the Proclamation Boundary	Estimated Total Acres and % Within the Proclamation Boundary
Foreground (Fg)	380,000 - 42%	120,000 - 14%	500,000 - 29%
Middleground (Mg)	420,000 - 46%	370,000 - 45%	790,000 - 45%
Background (Bg)	30,000 - 03%	130,000 - 15%	160,000 - 9%
Seldom Seen (Ss) Areas	85,000 - 09%	220,000 - 26%	305,000 - 17%
Total	915,000 - 100%	840,000 - 100%	1,755,000 - 100%

Note: Acres have been rounded to the nearest 5,000

Scenic Attractiveness

Scenic Attractiveness is the importance of the landscape based on human perceptions of the intrinsic beauty of landform, rock form, water form, and vegetative pattern. There are three categories of Scenic Attractiveness:

A – Distinctive: Refers to extraordinary or special landscapes. These landscapes are attractive, and they stand out from common landscapes.

B – Typical: Refers to prevalent, usual, or widespread landscapes within a landscape province. It also refers to landscapes with ordinary or routine scenic attractiveness.

C – Indistinctive: Landscapes with no scenic attractiveness.

The Scenic Attractiveness layer for the Forest was developed using Wilderness, buffered lakes and rivers, Inventoried Roadless Areas, Scenic and Special Areas and remote backcountry for Distinctive (A). The remaining NFS lands were mapped a Typical (B) because no Indistinctive (C) lands were identified. The following table identifies Forest acres by Scenic Attractiveness.

Table SE-2. Scenic Attractiveness on the Monongahela National Forest

Scenic Attractiveness	Estimated Acres and % of National Forest System Lands	Estimated Acres and % of All Other Ownership Lands Within the Proclamation Boundary	Estimated Total Acres and % Within the Proclamation Boundary
A = Distinctive	245,000/ 27%	155,000/ 18%	400,000/ 23%
B = Typical	670,000/ 73%	685,000/ 82%	1,355,000/ 77%
C= Indistinctive	0	0	0
Total	915,000/ 100%	840,000/ 100%	1,755,000/ 100%

Note: Acres have been rounded to the nearest 5,000

Scenic Classes

Scenic Classes are classifications that prioritize land based on their importance and scenic value. Scenic Classes were inventoried and mapped for the Forest by considering 1) the scenic attractiveness of the land and 2) visibility from travel ways, use areas and water bodies with different levels of concern by the public. Concern Levels describe the relative importance of scenery to the public. Sometimes it is impossible to separate emotional attachments to a landscape from the perceived beauty, so the Forest used several determining factors to assign Concern Levels to roads, trails, developed recreation sites, many lakes and streams, designated areas such as Wilderness or the NRA, and other use areas.

The components of Scenic Class are Scenic Attractiveness and Landscape Visibility as described above. Agriculture Handbook Number 701, Landscape Aesthetics, A Handbook for Scenery Management, provided the primary direction for the scenic inventory. Table SE-3 summarizes the inventory process. This coverage was created by manuscripting areas and scanning them from old Variety Class maps and then editing them as necessary using digital orthoquads as background. Additional information regarding this process can be found in the Monongahela National Forest, Scenery Management Analysis, December 2004.

Table SE-3. Scenic Class Matrix

Scenic Attractiveness Concern Levels	Distance Zones											
	Fg1	Mg1	Bg1	Fg2	Mg2	Bg2	Fg3	Mg3	Bg3	Ss1	Ss2	Ss3
A - Distinctive	1	1	1	2	2	2	2	3	3	1	2	3
B - Typical	1	2	2	2	3	4	3	5	5	2	3	5
C - Indistinctive	1	2	3	2	4	5	5	6	7	3	5	7

*Scenic Integrity Classes = (1) Very High, (2) High), (3) Moderate to High, (4) Moderate, (5) Moderate to Low, (6) Low, (7) Very Low

Specific information regarding this table can be found in the Scenery Management System, Agriculture Handbook Number 701, Chapter 4, pages 15-16.

Scenic Integrity

Scenic Integrity is an indication of the state of naturalness or, conversely, the state of disturbance created by human activities or alteration. More importantly, it measures how closely the landscape approaches the character desired over the long term. It is stated in degrees of deviation from this desired character. Landscape character with a high degree of Scenic Integrity has a sense of wholeness or being complete. In the SMS process, Scenic Integrity is managed in degrees ranging over seven levels from Very High to Very Low. Scenic Integrity Levels are:

Very High – Landscape is unaltered
High – Landscape appears unaltered
Moderate to High – Landscape appears slightly altered
Moderate – Landscape appears moderately altered
Low to Moderate – Landscape appears moderately to heavily altered
Low – Landscape appears heavily altered
Very Low – Landscape is heavily altered

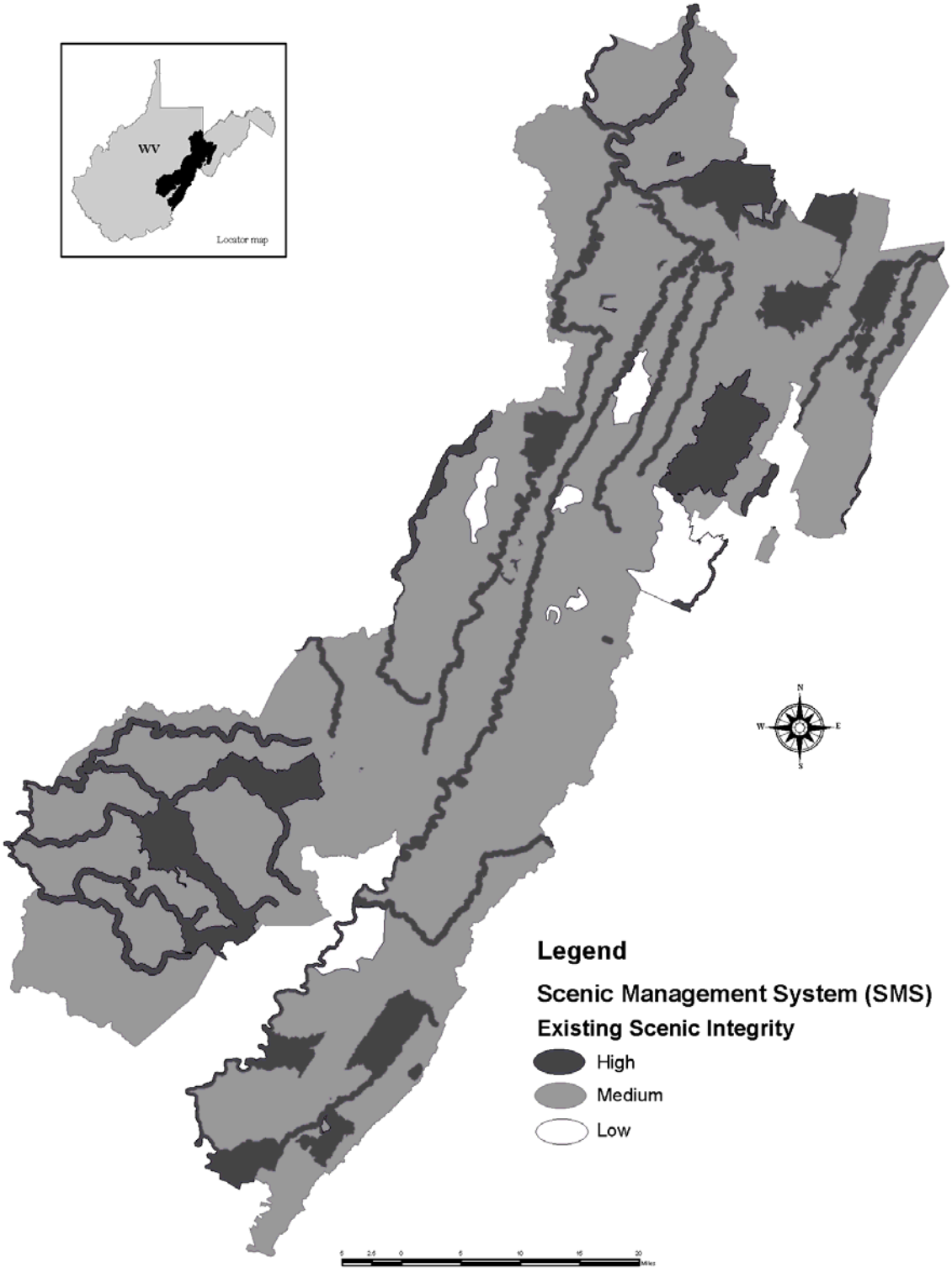
Scenic Integrity Objectives

Scenic Integrity Objectives (SIOs) are measurable accomplishments noting changes to the visual landscape over time. The adopted objectives are an expression of the likelihood for deviations from the desired landscape character. It is important to note that interim or short-term integrity levels may be necessary to reach a long-term character goal. Once that goal is achieved, the integrity may actually be higher than present. Once achieved, on-going management should maintain the ability to perpetuate the vegetation within the parameters of the assigned SIO. The assigned SIO describes the appearance of the desired landscape condition. Using an example of regeneration harvest, a SIO of High describes the appearance of the long-term outcome of the harvest, not the original timbered condition or the immediate operation of timber harvesting. Figure SE-1 maps the existing scenic integrity of the Forest into the three categories seen in Table SE-4.

Table SE-4. Acres and Percent of Existing Scenic Integrity for the Forest

Existing Scenic Integrity	Estimated Acres and % of National Forest System Lands	Estimated Acres and % of All Other Ownership Lands Within the Proclamation Boundary	Estimated Total Acres and % Within the Proclamation Boundary
Very High, High	240,000 - 26%	140,000 - 17%	380,000 - 22%
Moderate to High, Moderate, Low to Moderate	630,000 - 69%	670,000 - 80%	1,300,000 - 74%
Low, Very low	45,000 - 5%	30,000 - 3%	75,000 - 4%
Totals	915,000 - 100%	840,000 - 100%	1,755,000 - 100%

Figure SE-1. Existing Scenic Integrity on the Monongahela National Forest



ENVIRONMENTAL CONSEQUENCES

Resource Protection Methods

Management area goals and prescriptions have been considered together with existing scenic resources and values to produce scenic environment direction and SIOs. In most cases, the original inventoried Visual Quality Objectives have been adopted as the management direction. Some have been modified to compliment unique circumstances, such as Recommended Wilderness. Forest Plan direction will direct rehabilitation, enhancement of visual quality, integration of aesthetics in resource planning, and efforts to vary stand densities to create vegetation diversity. As such, the SIOs are used in project design to protect important scenic values, while allowing an acceptable level of landscape change where appropriate. The SIOs are established for all areas within the Forest, reflecting sensitive areas of high visual concern as well as areas of low scenic priority. Project proposals are designed or modified to meet the established SIOs. Examples of mitigation efforts commonly used to help meet the SIOs include revegetating disturbed sites, choosing materials and colors for structures that reduce their visibility, placing utility lines underground, designing timber harvest units to blend with the natural-appearing landscape, and using locations that provide vegetation screening.

Effects Common to All Alternatives

General Effects

Scenery is an integral component of all national forest settings, and contributes to the quality of the visitor's experience. It has also been altered in numerous locations across the Forest by both human and natural forces. Obvious effects on visual resources arise from a variety of resource management activities and public uses such as logging, mining, and utility corridors that alter vegetation and landscape appearances. The relative amount of these activities and uses may, in some cases, vary by alternative. However, they are likely to be present to some extent in all alternatives.

Visual effects of management activities and disturbance events are seldom limited to the specific location of the activity or the event. As seen from a travel route or use area, such alterations can affect the visual appearance of the entire viewed landscape or "viewshed".

Activities that have the potential to affect the scenic environment may include timber harvest; road construction, reconstruction, and decommissioning; prescribed fire; facility relocation and modification; fish habitat improvement; streambank stabilization; slope stabilization; and mining reclamation. Their effects are described in greater detail below.

Timber Harvest - Effects can vary depending upon the quantity and type of timber removed, logging methods, and the setting. Generally, timber removal—and any associated roads, skid trails and slash treatments—results in adverse effects to the scenic environment arising from vegetation change or removal and ground disturbance. These impacts are usually the most

dramatic in areas where no visible evidence of human development activities has previously occurred. Thinning and selection harvests usually have lower impacts and are also evident for a shorter duration than overstory removals, shelterwood harvests, and clearcuts. Helicopter logging does not create skid trails or yarding corridors that contribute to the visual impacts of ground-based and cable logging systems. Timber management may also be used to improve scenic quality, particularly where there are opportunities to enhance scenic views, to provide a landscape associated with the public's expectation, and to achieve timber stand characteristics that are more visually appealing.

Roads and Trails - Construction, reconstruction, and decommissioning can all affect the scenic environment. Road construction and reconstruction are usually associated with timber harvest, facility development, utility corridors, telecommunications sites, mineral and energy development, and recreation activities. Roads and trails create a long-term visual impression on the landscape from associated vegetation clearing and ground disturbance activities. These effects are usually magnified by the linear nature of the pattern of disturbance, especially in forested landscapes. The extent of the impact depends upon topography, service type, soils, geology, and the nature of surrounding vegetation. The visual impact from trails is usually somewhat less due to their smaller width, which reduces the level of ground disturbance and makes impacts easier to mitigate in most cases. Road and trail decommissioning includes a variety of management actions ranging from simple closures to complete obliteration. Obliteration can often eliminate the visual impacts of a road or trail over the long term as vegetation matures in former road or trail locations; however, temporary or short-term effects of ground disturbance are often greater than closures.

Mineral and Energy Exploration, Development, and Reclamation – Exploration and development activities can result in both short-term and long-term effects from associated structures, vegetation clearing, and ground-disturbing activities. The effects on scenic resources vary depending largely on the scale and location of development and mineral ownership. Small-scale developments of a few acres, or underground mining, would have very limited impacts, while large-scale surface mining operations typically have major effects on the scenic quality of the surrounding area. Mining reclamation activities can also result in temporary or short-term effects to the scenic environment, but these effects are generally no worse than the conditions being reclaimed, and reclamation results in long-term improvement to the visual landscape. In that the level of mineral exploration and development is largely driven by market forces and regulated by existing mining law, there would be little difference between the alternatives in effects on the scenic environment. Reclamation activities may vary depending on differences in alternative restoration emphasis.

Facilities and Structures – These include a broad array of physical developments and structures, such as administrative facilities, dams and diversions authorized under special use authorizations, and mining facilities. Usually, there are both short-term and long-term visual effects from structures, vegetation clearing, and ground disturbance activities. These effects vary depending on the scale and nature of the development, as well as the setting. Road construction for installation and/or maintenance purposes can contribute to the impacts of the facility.

Utility Developments – These developments include pipelines and overhead power-line clearings that can result in both short-term and long-term effects from associated permanent structures, reflective materials, vegetation clearing, and ground-disturbance activities. These effects are usually magnified by the linear nature of the pattern of disturbance, especially in forested landscapes. Road construction for installation and/or maintenance purposes often contributes to the impacts of the utility line. Site-specific analysis would be required prior to approval or implementation of any utility corridor development.

Telecommunications Sites - Communications developments can result in both short-term and long-term effects from associated permanent structures, vegetation clearing, and ground disturbance activities. These effects are usually localized at individual sites that cover a few acres or less in size. However, communication sites often must be located on highly visible peaks or along well-traveled corridors that make mitigation of visual impacts difficult if not impossible. Road construction for installation and/or maintenance purposes can contribute to the impacts of the telecommunication site. Site-specific analysis would be required prior to approval or implementation of any telecommunication site development.

Recreation - Activity impacts to the scenic environment depend on recreation uses and levels, and soil and vegetation types. Off-road and off-trail travel and dispersed camping can cause erosion, ground disturbance, or loss of vegetation. Although all forms of travel have potential to cause these types of impacts, effects associated with most forms of motorized travel are usually the most pronounced due to the combination of vehicle weights, widths, and their creation of continuous track lines. Off-road and off-trail traffic is currently prohibited on the Forest.

In addition to the visible effects of activities, recreation developments can contribute to the loss of natural-appearing landscape character by introducing numerous vehicles, groups of buildings, and conspicuous structures. As with other structures and facilities, the effects range from short to long term in duration and can vary depending on the scale and nature of the development, as well as the setting.

Scenic Byways – One State Back-way and one federally designated Scenic Highway cross NFS lands. This designation is an indicator that scenic resources along these routes are especially attractive and important to the public. SIOs for these corridors will reflect the heightened importance and provide sufficient protection to maintain their high scenic values.

Spruce Knob-Seneca Rocks National Recreation Area – The law that established the NRA emphasized 1) public outdoor recreation benefits; 2) conservation of scenic, scientific, historic, and other values contributing to public enjoyment; and 3) such management, utilization, and disposal of natural resources which will promote and does not significantly impair the purposes for which the recreation area was established.

Range Management - Livestock grazing and range improvements may result in an altered landscape appearance. Changes to the landscape appearance may include differences in the type and amount of vegetation on the land, vegetation trampling, and range improvement structures. Effects from grazing depend largely on the intensity and timing of forage utilization. Normally, allotment management plans require permittees to move their livestock so that they do not

concentrate in sensitive areas, like meadows and riparian areas. Although there could be effects from seasonal trampling and heavy utilization of the forage, the potential for change to the scenic environment is relatively slight, especially as livestock grazing only occurs on less than one percent of the Forest. Structural improvements, such as fences, may be visually evident and can detract from the natural-appearing landscape. Mitigation may include relocating or redesigning fences where possible, or removing them where they are no longer needed. Generally, improvements are small and localized, and have a minor effect on the scenic quality of the surrounding area.

Watershed Improvements - A broad array of physical alterations may include streambank and channel stabilization structures (rock gabions, rock riprap, etc.), road reconstruction (culvert replacements, road re-alignment, etc.), slope stabilization structures, and revegetation. Some structural improvements can be visually evident and detract from the natural-appearing landscape character. Duration of effects from these types of structures ranges from short term to long term and also depends on the scale of the structures themselves. Generally, most improvements are small and localized, and have a minor effect on the scenic quality of the surrounding area.

Fish and Wildlife Habitat Improvements - A broad array of physical alterations may include vegetation manipulations (maintained wildlife openings, browse species plantings, etc.), prescribed burning, and habitat improvement structures. Some structural improvements may be visually evident and can detract from the visual landscape, but are infrequently used. Others may be designed to improve the scenic environment over time. Negative impacts may be mitigated through design and location considerations, and vegetative cover plantings where possible. Generally, improvements are small and localized, and have a minor effect on the scenic quality of the surrounding area.

Disturbance Events – Scenic resources comprise a dynamic environment. Changes to scenery will occur with or without human activity. Wildland fire, insects, disease, landslides, and other disturbances can greatly affect scenic resources, especially when the scale of the events is large.

Insect and disease outbreaks can result in large areas of dead trees. Stands of predominantly dead trees can then become fire hazards, for a period of time, indirectly increasing the potential for wildfire effects to scenic resources. In some cases, salvage logging is used to capture economic value in large areas of tree mortality, but additional or different visual long-term impacts may occur from new roads and salvage harvest units.

The visual effects from wildfire depend upon the severity, intensity, and magnitude or scale of the fire. A low to moderate intensity fire of mixed severity can result in a vegetation mosaic across the landscape producing a long-term positive visual benefit by increasing the diversity of vegetative species, structure, size and age classes, snags, and coarse woody debris. On the other hand, large-scale burning, ground scorching, and tree and shrub mortality can alter the scenic values associated within an area and reduce the inherent visual complexity and scenic values of a landscape. The large-scale loss of vegetation can have short-term negative impacts from burned landscapes, as well as long-term impacts in the form of a more simplified landscape mosaic. Additionally, many people find burned landscapes visually unappealing and unattractive. Fires

that burn with uniformly high intensity and severity across large areas have the greatest impacts on visual resources and are long term in duration. Wildland fire usually also results in temporary visibility impairment from smoke. Smoke from fires can partially or completely obscure the high-value scenic attractions that characterize much of the Forest. It is difficult to predict how or where or when these changes might occur due to influential variables such as vegetation patterns, disturbance regimes, climate, and topography.

Wildfire Suppression – Fire suppression activities produce effects to the scenic environment both directly and indirectly. Some firefighting activities, such as mechanical fire line and safety zone construction, can result in direct, long-term effects from vegetation clearing and ground disturbance. In the case of fire line construction, these effects are usually magnified by the linear nature of the pattern of disturbance. In some vegetation types, fire suppression can and has produced vegetative conditions that would not be present had fire occurred at historical levels. To some extent, this has resulted in landscapes with less visual diversity than what would be present in the absence of fire suppression.

Prescribed Fire – Prescribed fire can result in temporary visibility impairment from smoke. Smoke from fires can partially or completely obscure the high value scenic attractions that characterize much of the Forest. Prescribed fires usually also result in both short-term and long-term visual effects in the form of landscapes having burned appearances. In many cases, fires are designed to mimic historical fires in post-fire appearance over time. However, many people find the post-fire appearance of burned vegetation to be unattractive. Prescribed fire is generally used in areas comprised of vegetation characterized by non-lethal or mixed1 fire regimes to reduce ladder fuels and restore or maintain desired vegetative conditions. In these circumstances, fire intensity, severity, and scale are generally lower and smaller, and result in less visual impacts of shorter duration than wildland fire events. In some cases, fire may be used to improve scenic quality. For instance, fire can be used to reduce slash or to achieve timber stand characteristics that are more visually appealing, such as open stands of large trees.

Direct and Indirect Effects by Alternative

Under any alternative, proposed projects that may affect scenery would be accompanied by a site-specific assessment of their potential impacts on the scenic environment. The Scenery Management System, which is used to develop SIOs, is based on the concept that a natural-appearing landscape character is preferred. As such, SIOs provide a means of measuring the greatest acceptable deviation from a natural appearance. The SIOs are used to design management activities so that projects do not exceed the recommended threshold of change to the scenic environment.

In general, SIOs are established from consideration of the combination of scenic values, human sensitivities, and the needs for management of other resources. All of these factors vary by location across the Forest, which results in varied levels of each SIO class. SIOs can constrain management activities to protect scenic resources. In some cases, management decisions are made that constrain activities to levels below those allowed by established SIOs to protect other resource values. This is a benefit to scenic resources in that it is always desirable from a scenic environment perspective to retain more of the natural-appearing landscape character.

Individual projects are tailored to fit the SIOs established in the Forest Plan. Once established, the SIOs become a fixed obligation or criteria for project level performance and must be constraining enough to limit changes to the visual landscape to an acceptable level. At the same time, SIOs must also be consistent with the attainment of the established multi-resource goals and objectives stated in the Forest Plan.

Activities Affecting The Scenic Environment

Some of the alternatives present considerable differences in the amounts and types of activities that would occur across the landscape. Some activities would have relatively minor potential to cause noticeable change in the landscape, while others have the potential to cause very noticeable changes. The actual social impact of such changes in the landscape will vary according to the visibility of activities, the surrounding landscape setting, and the visual sensitivity of the travel route or use area from which the activities might be viewed. The assignment of SIOs helps to control the magnitude and intensity of such changes across the landscape in some areas and all alternatives have the same SIOs. While in other areas, other factors, such as the presence of listed species or high levels of water quality concern, may play an even greater role in controlling the magnitude and intensity of changes to the landscape.

While the specific effect of an individual activity is dependent on many site-specific variables, the overall amount of various activities can be used as a gross indicator of the overall changes that could occur across the landscape and how they would vary by alternative. For this analysis, it is assumed that alternatives with greater amounts of vegetation treatments would, as a general rule, result in landscape settings that appear more manipulated or altered to the casual viewer.

Groupings of similar activities for tracking such potential changes by alternative were made in order to simplify and capture those activities that have the most potential for affecting change on the landscape. Three different activity groupings were made:

Even-Aged Regeneration Harvest - This activity grouping consists of clearcut with reserve trees, seed tree regeneration, and shelterwood harvests. These activities have the greatest potential of all vegetation treatments to create very noticeable short- and long-term changes in the forested landscape from the removal of substantial portions of the forested canopy.

Intermediate Vegetation Treatments - This grouping consists of commercial thinning, selection harvest, and pre-commercial thinning. While there is a wide range of potential effects due to the variability in the intensity of tree removal, generally the change is subtle and does not dominate the landscape. Temporary visual effects generally would occur from ground disturbance and logging residue from harvest operations. Short-term and long-term visual effects would occur from the reduction in forested cover density and a more open forested appearance. Treatments would typically result in more open stands characterized by large trees with reduced understories. These treatments are likely to have much lower visual impacts than even-aged regeneration harvests, and may be perceived by many as an enhancement to the scenic environment over the long term.

Prescribed Fire - This activity consists of using prescribed fire for achieving management goals. Visual impacts can vary considerably with the magnitude and intensity of the fire. The effects are often dominant on the landscape immediately following the activity and for a few following years. With accelerated regrowth of herbaceous and understory vegetation, the major visual effects are usually temporary or short term. Often these effects may be perceived as resulting from the natural occurrence of fire in the landscape. Long-term visual effects are subtler, resulting in more open stand conditions, again depending on the intensity of the fire. As noted above under *General Effects*, fire intensity, severity, and scale are generally lower and smaller in prescribed fire than in wildland fire. As a result, prescribed fires usually produce visual impacts of shorter duration and reduced severity than large wildfire events. Prescribed fire typically occurs under prescribed conditions that would limit intensity, duration, and severity to acceptable levels.

Alternative Comparison – Timber harvest numbers in Table SE-3 are estimates from SPECTRUM modeling of levels of activities that could occur given certain management constraints (see Appendix B for modeling assumptions and application). These numbers can be used for the relative comparison of alternatives, but are not intended to represent actual acres or miles of projected activities. Table SE-5 compares activities by alternative that could affect visual quality on the Forest over the next two decades, using annual averages from the model. It should be noted that SIOs are designed to mitigate any long-term effects to the landscape's scenic integrity.

Table SE-5. Maximum Potential Activities That May Affect Scenic Integrity by Alternative
(Estimated annual average of acres for the first two decades, based on Spectrum outputs)

Activity Group	Maximum Annual Activity Acres				
	Alt. 1	Alt. 2	Alt. 2M	Alt. 3	Alt. 4
Acres of Regeneration Harvest	3,450	3,650	3,600	2,670	4,450
Acres of Intermediate Thinning	2,120	870	860	1,610	740
Acres of Prescribed Fire	300	3,000	3,000	300	7,500
Totals	**5,870**	**7,520**	**7,460**	**4,580**	**12,690**

Alternative 3 would have the least amount of even-aged regeneration harvest over the next two decades, followed in ascending order by Alternatives 1, 2M, 2, and 4. Alternative 4 would have the least amount of intermediate treatments, followed in ascending order by Alternatives 2M, 2, 3, and 1. Alternatives 1 and 3 would have the least amount of fire use acres, followed by Alternatives 2 and 2M, and then Alternative 4. Overall, Alternative 3 would have the least amount of visual impacts based on the activity groups above, followed in ascending order by Alternatives 1, 2M, 2, and 4.

A comparison of the alternative potential impacts to scenic resources is complicated by the fact that the effects are not the same for each activity group. Visual effects of intermediate treatments cannot be considered on an equal basis with even-aged regeneration harvests. The visual effects of even-aged regeneration harvests are likely to be obvious and longer term. Intermediate treatments are likely to be subtler in appearance and more short term in duration.

Similarly, the effects of fire treatments would generally be much shorter in duration than those of even-aged regeneration harvests. The alternatives presenting the highest levels of potential visual effects are likely to be the ones that present the highest levels of even-aged regeneration harvest. Actual effects to the landscape scenery will need to be evaluated on a project level since the location of activities, the visibility and scenic integrity, cannot be determined at a forest plan level analysis.

With the highest levels of even-aged regeneration harvest, Alternative 4 could have the greatest long-term changes to the Forest landscape. Alternative 4 would produce the highest levels of short-term impacts from prescribed fire treatments, 25 times the amount from Alternatives 1 and 3. However, these effects might be offset to some extent, by reductions over time in the risk of large wildfires, which could create more visual impacts than those of prescribed fire.

Because tree and understory vegetation re-establishes itself quickly and densely on the Forest, most visual impacts would be largely indistinguishable within 10 years of a harvest or prescribed burn. Within the next 10-year period, a maximum of 5 percent of the Forest could be affected by those activities under Alternative 3, 6 percent under Alternative 1, 8 percent under Alternatives 2 and 2M, and 14 percent under Alternative 4.

It should also be noted that this analysis is not spatial and does not incorporate potential mitigation that would be used in project implementation. Some of the treatments are likely to occur in areas with low visual sensitivity or areas that allow vegetative or topographic screening techniques, which can greatly reduce visual impacts. Because mitigation potential is determined spatially on a site-specific basis, it cannot be predicted accurately in a programmatic analysis. However, it is important to note that under all alternatives, management requirements and mitigation measures would be used to address potential effects to the scenic environment. Depending on the activities proposed, these measures would include the following:

- Management activities would be designed to be consistent with the SIOs for the area.
- Areas of high scenic sensitivity would generally be avoided or screened from activities that would not meet the SIOs.
- Areas of even-aged timber management would be regenerated with tree vegetation within a maximum of five years, and openings would return to full canopy stands within 10-15 years.
- Areas of disturbed and exposed soils—such as mine sites, skid trails, or temporary roads—would typically be scarified, seeded, and mulched to promote vegetation regeneration.
- New road construction associated with timber harvest may be offset or exceeded by opportunities to decommission and obliterate old roads at the project level.
- Prescribed fire would only occur during conditions that allow for good smoke dispersal, and fires would be designed to burn understories rather than tree crowns.

The cumulative effect of these and any additional measures applied would be to keep effects from management activities on the scenic environment small in extent and short term or temporary in duration.

Changes Related To Disturbance Events

While extremely difficult to predict or model with any degree of reliability, disturbance events can have a considerable effect on the scenic landscape. Two of the most widespread landscape disturbances, insect and disease outbreaks and wildfire, were evaluated for the relative propensity to influence visual changes in the landscape. For evaluating visual effects, we will focus on those disturbance elements in forested vegetation because that is where the more long-term visual effects of these disturbance agents generally occur. Changes that occur in non-forested vegetation are usually more subtle and temporary or short term.

Insect and Disease Pathogens - Damage from insect and disease pathogens means that tree mortality can be expected to be higher than normal. The actual impact to visual resources is highly variable and dependent on a wide range of variables such as visual sensitivity of the area observed, as well as the magnitude, scale, and intensity of mortality. Impact potential generally increases with increasing tree size and density. There are also unpredictable environmental factors such as rainfall and drought conditions that could dramatically affect the actual levels of infestation and mortality. Because there are no quantifiable estimations expressed in acreages, the predicted impact on visual resources can only be expressed as function of comparative risk between alternatives.

Generally a forested setting has the ability to absorb endemic levels of mortality such that the visual impacts would be fairly minor. However, larger-scale epidemic levels of tree mortality from pathogens can result in very noticeable changes and visual effects that are usually considered negative. The perceived sensitivity to this change is also dependent on variables such as the location and visibility of areas of mostly continuous mortality. The most dramatic visual impact occurs during the first few years following stress and mortality when leaves and needles of affected trees discolor or die while the vegetation around them remains green and healthy. Once the leaves and needles fall, the visual effect is reduced somewhat, particularly in middleground or background viewing distances.

Potential pathogen impacts are expected to increase in all alternatives over time compared with the current condition. This is primarily a result of increasing stand age and density, which increases the susceptibility of trees to pathogen infestation and damage. It is expected that the lands managed with vegetation treatments that thin or regenerate stands will have lower risk of impacts, while untreated stands of high density and advanced age will have higher impact risk.

Based on suitable acres available for vegetation treatments, Alternative 3 has the highest risk of impacts from pathogens, while Alternative 4 has the lowest. Because the variations between alternatives are relatively minor, it is expected that there would be minor visual differences between alternatives related to mortality. The amount of visual change from mortality could be expected to increase somewhat. It is likely there could be an increase in localized epidemic infestations due to increased areas that have a higher level of propensity for such infestations.

Wildfire - Wildfire events affect scenic quality in the short and long term depending on the severity, intensity and scale of the event. In considering the results of this analysis, the preceding analysis addressing management activities should also be taken into consideration. For example, alternatives presenting the lowest risk for wildfire may be the result of vegetation treatments that also have visible effects on the scenic environment. In the cases of intermediate vegetation treatments and fire use, the long-term visual effects are likely to be less than those of wildfire.

The risk of pathogen infestation is expected to increase in all alternatives over time compared with the current condition. This is primarily a result of increasing stand age and density, which increases the susceptibility of trees to infestation and damage. Although uncharacteristic fire is not currently occurring on the Forest to any noticeable degree, an increase in fuel loading, particularly from dead fuels, can increase the likelihood of larger fires with more intensity occurring in the future, particularly under drought conditions.

It is expected that the lands managed with vegetation treatments that thin or regenerate stands with harvest and prescribed fire will have lower risk, while untreated stands of high density and advanced age will have higher levels of risk. Based on this assumption, Alternative 3 would have the highest risk for increasing visual landscape changes due to wildfire, followed in ascending order by Alternatives 1, 2M, 2, and 4.

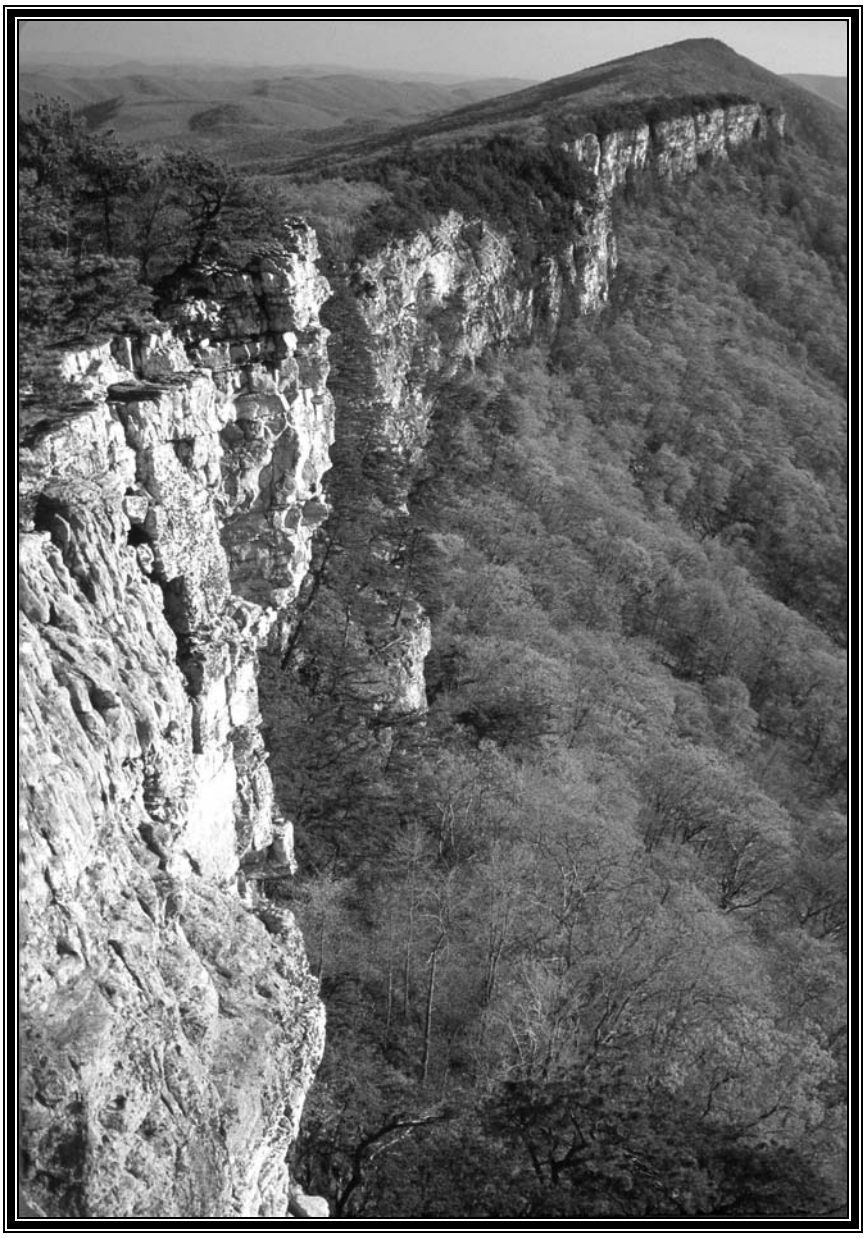
Cumulative Effects

Smoke emanating from off-Forest agricultural burning and wildfires can result in or contribute to visibility impairments in Forest areas. Normally, on-Forest prescribed fire activities are restricted whenever off-Forest sources are causing adverse effects within the vicinity. Visibility impairments due to smoke from wildfires and prescribed fire use are temporary but can affect relatively large areas.

In areas of interspersed ownership within NFS lands, there is potential for combined effects to visual resources from Forest activities and those evident on other ownership lands. In many highly scenic locations within the Forest, NFS lands are mingled with those of private lands and other government agencies. Management activities on other lands that do not blend into the landscape can negatively affect the experiences of Forest users who are viewing scenery. Although, most land management agencies follow some type of scenery management policy, no constraints apply to private lands to preserve visual qualities. Development and timber harvest on private lands adjacent to Forest are often accomplished with different objectives than on public lands. Harvest types vary on commercial private timberlands, and harvest levels generally tend to increase as federal timber supplies decrease, given stable or improving market conditions. Effects to visual resources may or may not be a consideration in the management or developments of these private lands, potentially resulting in developments that can contribute to the loss of natural-appearing landscape character.

Another recent development trend is the conversion of adjacent agricultural land to rural residences. Private land development trends generally run parallel to national economic trends, and increased with the strong economy in the late 1990s. The development of these private lands has affected the scenic quality of the landscape of the Forest as well as the experiences of scenery viewers. This development includes signs, utility lines, access roads, timber harvests, residences, and business structures. Some homeowners cut or thin their timber stands to provide views. Much private land occupies drainage bottoms and travel routes. Public desires to live in a rural, mountain environment have resulted in urbanization of some adjacent ownership. Development of agricultural lands to rural residences can result in pastoral landscapes changing to rural or, in higher density developments, near-urban landscapes. In some areas, summer home developments are defining the Forest boundaries. When structures are designed to blend into the landscape, the visual effect can be minimal. Structures and development that do not blend with the landscape can have more severe impacts. These effects are likely to vary under any alternative with the economy.

Another issue related to urbanization is the desire of property owners to preserve their scenic views of the surrounding Forest. Private lands near the Forest generally are more valuable when there is a scenic view of NFS land from the property. If management activities detrimentally alter the Forest scenery, there is potential to result in lower property values. Thus, property values may increase or decrease adjacent to the Forest depending, to some extent, upon the quality of the scenic environment.



North Fork Mountain