

## 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

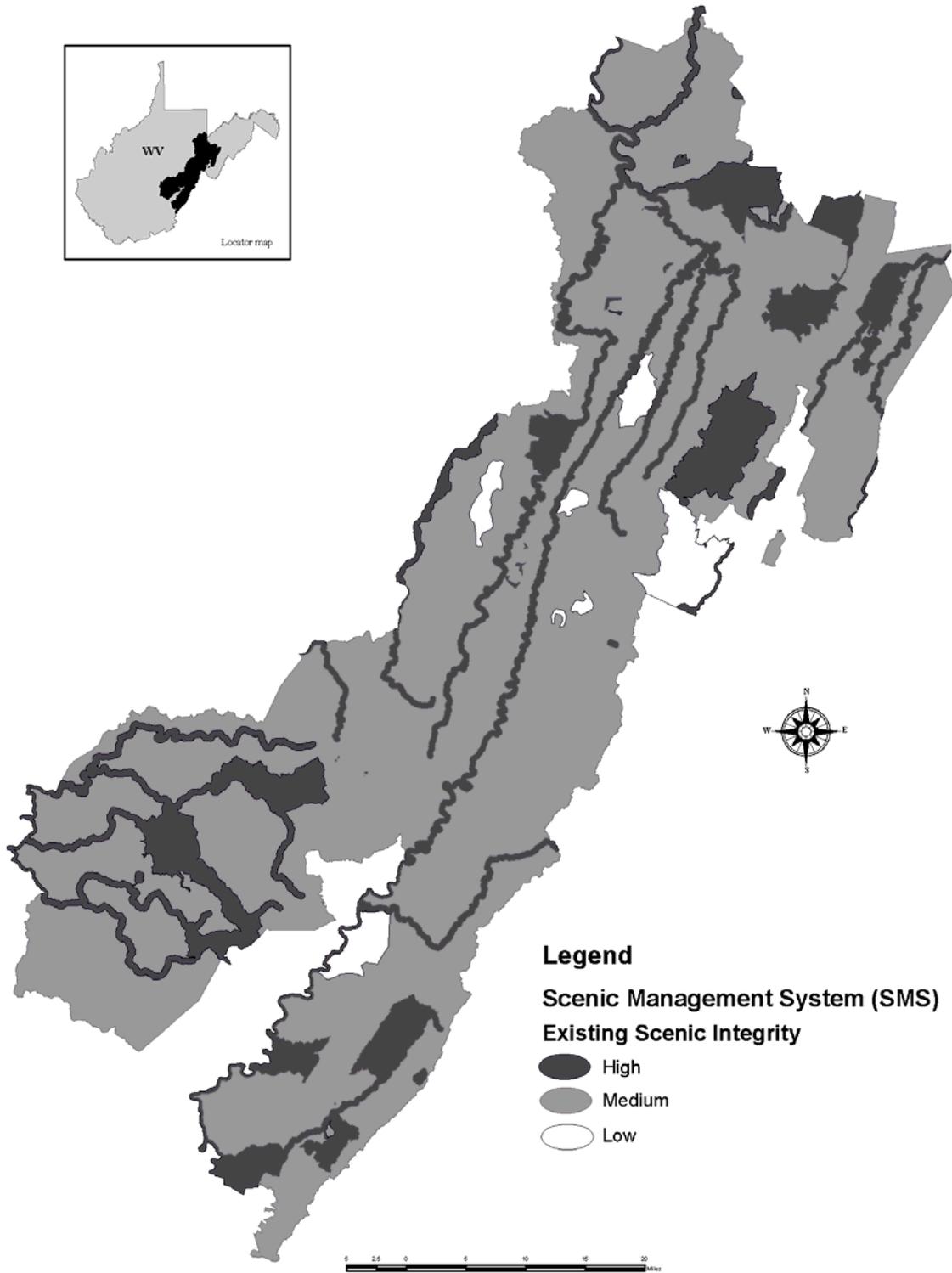
### Scenic Integrity Objectives

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 mixed<sup>1</sup> 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         |
| <b>Totals</b>                  | <b>5,870</b>                  | <b>7,520</b> | <b>7,460</b> | <b>4,580</b> | <b>12,690</b> |

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.

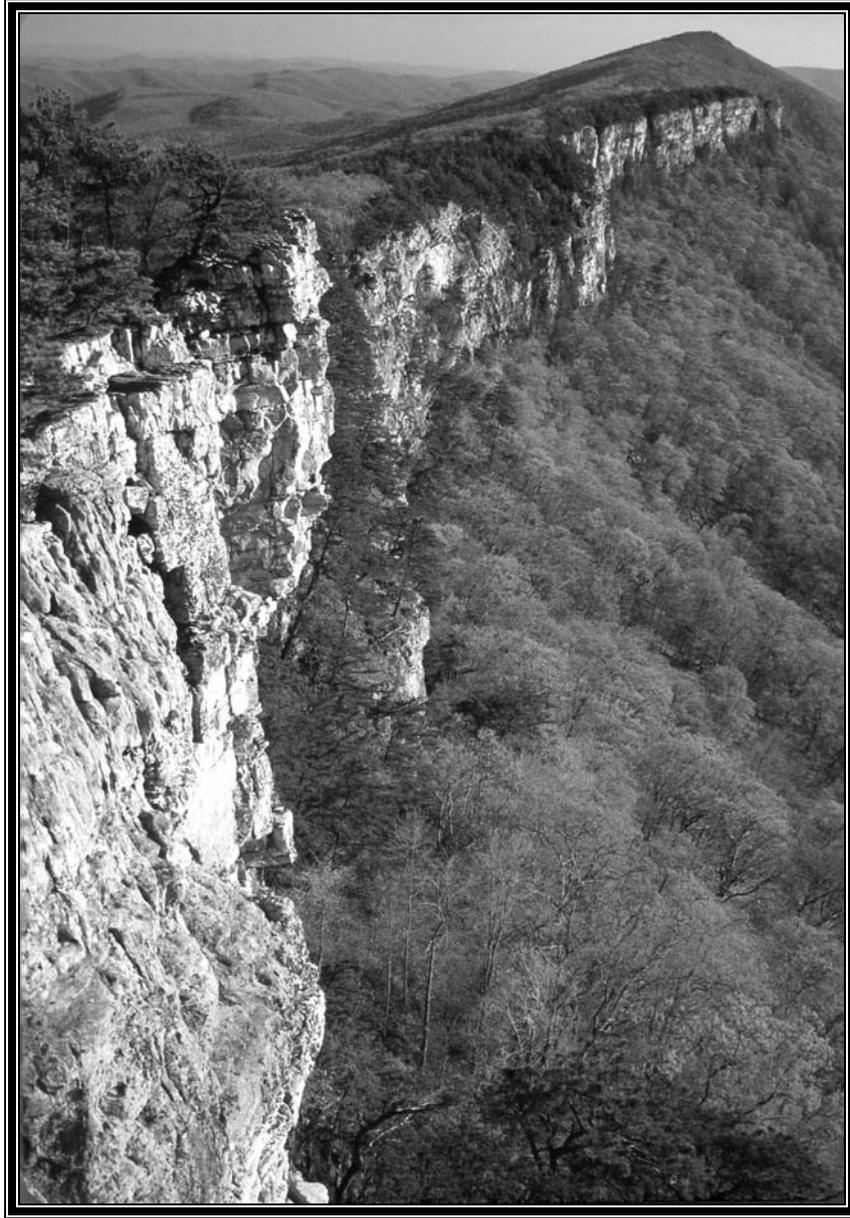
### **Cumulative Effects**

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**