Appendix B

Old Growth

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INTRODUCTION

This appendix describes the current conditions and potential for old growth on the Monongahela National Forest (MNF), and the approach the Forest is taking to manage old growth. A careful reader of the 2006 Forest Plan will notice that the term “old growth” rarely appears. There are various reasons for its absence. The principal reason is that old growth is not managed as a separate entity or distinct resource, but rather it is integrated into the larger spectrum of vegetation management. On the MNF it currently represents a minimal part, comprising less than one percent of the entire Forest. Where it does exist, old growth is limited to small, scattered patches within a larger matrix of primarily 70- to 90-year-old forests.

Forested vegetation can be classified by successional stage and further distinguished by age. The Forest Plan recognizes 3 successional stages (early, mature, and late); the last of which features old large trees and large standing dead and down trees. It is only during the late successional stage whereby old-growth conditions, as described in this appendix, can develop and be maintained. Viewed in this context, old growth represents the “oldest” subset of the late successional stage, which is one of many types of vegetation the Forest manages.

Over the past 20 years there has been a great deal of nation-wide interest and debate regarding the character and value of old-growth forests. Indeed, the term “old growth” has taken on a life of its own, with numerous definitions inspiring even more perceptions and opinions about its true nature. To many the term conjures up images of strolling through an open forest of towering trees filled with abundant wildlife. Some environmentalists and conservation biologists have touted these forests as the last bastions of biodiversity on the planet. Others consider old growth a waste of good timber and a breeding ground for insects and diseases.

As land managers, the Forest Service neither rhapsodizes nor condemns old growth, but rather evaluates what it means in terms of multiple-use management, including contributions towards biodiversity. Because forests grow older through natural succession, there is always the potential for stands to develop old-growth characteristics once they have reached the late successional stage. In order for forest stands to reach this stage, they must be able to grow older, typically well beyond 100 years of age, without large-scale natural or human-induced events that would remove the old/large tree component. From the land manager’s perspective, the late successional stage has the greatest probability of occurrence in areas receiving relatively little or no vegetation management.

The Environmental Impact Statement that accompanies this Forest Plan states where these areas of little or no vegetation management are most likely to occur (i.e., areas providing the greatest potential for future old growth) and analyzes the effects that would occur on various resources. Generally speaking, these areas would have minimal effects on soil disturbance and erosion, water quality, and backcountry recreation opportunities. On the other hand, they would have fairly major effects on timber growth and yield, associated economic outputs, and opportunities for motorized recreation.

Old-growth forests can display a wide variety of vegetative conditions, depending on factors such as species composition, stand age, environmental conditions (climate, geology, topographic position), and soil productivity. The appearance and function of old growth differs dramatically depending on forest type (e.g., spruce-fir vs. oak-pine vs. mixed mesophytic). Some forest types do not support much plant or wildlife diversity no matter how old they grow. Others can be species rich at a fairly young age and continue to add diversity and complexity as they grow older. For virtually all forests, however, time is a critical factor in the attainment of old-growth characteristics. At the national and Forest levels, certain characteristics that are fairly common to old-growth forests have been identified. Characteristics for old growth on the Monongahela National Forest (MNF) are described below.
OLD GROWTH DEFINITIONS AND CRITERIA

The 1986 MNF Forest Plan and supporting analysis included two definitions of old growth, one more conceptual in nature and one more operational.

In the 1986 Forest Plan (page 55), old growth is defined as: “Stands with large, mature or over-mature trees (both healthy and decadent) comprising a plurality of stocking, usually having a multi-layered canopy in trees of various age classes. Stands include dead trees and relatively large amounts of decaying material on the forest floor.”

In the Glossary for the Final Environmental Impact Statement for the 1986 Forest Plan (page E-22), old growth is defined as: “A stand of trees older than normal rotation age for that timber type. Old growth provides important wildlife habitat conditions not normally found in younger stands.”

Simply defining old growth as a stand of trees older than normal rotation age, while being technically accurate and easy to query in databases, does not adequately capture the complicated aspects of old-growth management. In determining where, when, and why to manage stands as future or potential old growth, the ecological, landscape, and social aspects of old-growth forests need to be considered.

In 1995 the Forest reviewed the 1986 Forest Plan intent for determining old-growth areas (DeMeo et al. 1995 internal report). This report provided a set of criteria to use in identifying areas as old growth, in accord with generic guidelines developed at the national scale. The criteria, described below, are: age, species composition, structural diversity, woody debris, gap formation, patch size, and adjacency.

**Age.** Age is an important component of an old-growth definition, as it helps explain forest stand origin and dynamics. While large, old trees epitomize an old-growth ecosystem and may be the ultimate goal of old-growth management for wildlife species or scenic values, a mix of young-, mid- and old-aged trees typically comprise old-growth stands. Old-growth conditions often develop through ongoing gap-phase dynamics as stands age and move toward uneven-aged or multi-aged structures.

**Species Composition.** Species present in old growth vary by forest type, dependent on a number of environmental (site) and disturbance factors. Most importantly, species composition greatly controls the structure and appearance of old growth. For example, in moist nutrient-rich coves sheltered from wind and fire, large, long-lived, moisture-loving trees (yellow poplar, white ash, and basswood) can develop. In contrast, dry, nutrient-poor ridge tops might only support smaller-sized, fire-adapted species (oaks and pines). In general, shade-intolerant, pioneer species such as black locust, aspen, or hawthorn are absent or a minor component in older forests on the MNF. Old-growth forests are described by the tree species that either currently exist or are expected to dominate the site over time.

**Structural Diversity.** Old-growth stands are normally characterized by multiple tree layers with diverse understories of forbs and shrubs. Tree diameter and height can range greatly according to component species and site conditions. For example, tree and canopy development will be slower on dry, nutrient-poor sites than on moist, nutrient-rich sites. The distribution of tree sizes in an old-growth forest is often skewed due to its complex history of stand dynamics. Knowledge of past disturbances and stand origin, coupled with age data, can help determine if size distribution represents true uneven-aged structural development.

**Woody Debris.** Old-growth forests are often characterized by large-diameter logs on the forest floor and standing dead trees called snags. These components are vital to old-growth function as they...
provide habitat for flora, fauna, and fungi that perform much of the decomposition and nutrient turnover. Standing dead trees also provide habitat for larger fauna such as cavity-nesting birds and mammals. Woody debris may not be abundant in some cases; for instance in fire-adapted old-growth forests that continue to experience recurrent fire.

**Gap Formation.** Old-growth forests in pre-settlement West Virginia probably regenerated through combinations of frequent, small-scale wind events (Runkle 1982), low intensity surface fires, and insect or disease outbreaks. Large stand-replacing events, like blowdown from microbursts or hurricanes, occurred but were much less frequent. Small-scale disturbances resulted in canopy gaps that released growing space, which spurred tree regeneration and eventual gap closure. Over time, a shifting mosaic of multi-aged groups of trees developed across the landscape.

**Patch Size.** Considerable research has focused on the minimum area necessary to maintain viable old-growth structure and function (Ranney et al. 1981, Hansson 1992, Smith 1989). A small patch may contain the species composition, structural diversity, canopy layers, and other characteristics of old growth and yet lose viability over time because it is too small to maintain itself. For example, large windstorms can destroy the entire overstory.

Large patches (greater than 10,000 acres) should ensure the integrity of ecological functions and the distribution of old-growth conditions at the sub-regional scale. Medium-sized patches of old growth, ranging from 150 to 10,000 acres, can supplement the spatial distribution of large-scale patches across the landscape. Small patches typically protect existing old growth. They can also represent forest communities that are underrepresented or that normally occur in isolated fragments, or they can serve to connect or augment large or medium patches.

Large patch sizes have a higher proportion of interior conditions, and small patch sizes tend to have proportionately more edge, which is the boundary between two ecosystem states. Edge generates microclimatic and biological effects, such as increased sunlight, wind velocity, plant species invasion, and altered habitat for birds (Temple 1984) across an edge width. Edge width based on sunlight penetration in certain eastern forests is about 15 meters (Ranney et al. 1981), but about 100 meters based on bird habitat requirements (Temple 1984). Forest patch size minus the edge width gives interior area. Interior area is important in assessing old-growth viability, as areas with little or no interior can be substantially altered by relatively small disturbance events that result in loss in of patch integrity and function.

**Adjacency and Scale.** Vital to old-growth management is consideration of neighboring forest stands relative to the size of old-growth patches. In the eastern United States, old-growth patches are not widely distributed across the landscape. One objective for managing old growth is to identify and protect remnant patches so that over time they remain viable. A related objective is to promote future old growth by identifying older adjacent second-growth patches that can eventually develop into old growth and thereby expand the effective size and function of the remnant patches.

This list of seven criteria may be used as a conceptual definition for old growth on the MNF to determine if an existing area should be considered old growth, or the list may be used as guidelines for designating stands as future old growth. We do not expect to find large areas of true old growth on the Forest because of past land management. An arbitrary age, patch size, amount of woody debris, or other measure of the criteria listed above should not be used to define old growth. For example, a 100-year-old stand may not be identified and managed as future old growth if it is a small isolated patch surrounded by private land, but an 80-year-old stand adjacent to wilderness might be identified as future old growth because it has better potential for contributing to a large old-growth patch in the future. Definitions of old growth may
continue to be refined, even described for different forest types and disturbance regimes. These changes would be incorporated in the Forest’s management of existing and potential future old growth areas.

The USDA Forest Service, Eastern Region has not developed operational definitions of old growth as has the Southern Region. Instead, the Eastern Region has compiled information on old-growth forests by forest type groups for reference (Tyrrell et al. 1998). The Southern Region operational definitions include minimum ages, minimum basal area per acre, and largest tree diameter at breast height by broad forest type groups (USDA Forest Service, Southern Region 1997). With these definitions, Southern Region Forests used database queries to identify stands or patches meeting the criteria. Not having operational definitions of old growth available, the MNF can continue to identify existing old-growth patches through project-level analyses, other analyses, searches initiated by the Forest Ecologist, or through public contacts. These candidate or possible old-growth areas would be compared to the data and descriptions of other known old-growth forests as described in Tyrrell et al. (1998) and applicable Southern Region definitions.

EXISTING AND POTENTIAL OLD GROWTH ON THE MNF

In order to see how the MNF intends to provide for old growth, it is important to understand the two different types of old growth that are considered: 1) existing old growth, and 2) potential old growth. Existing and potential old growth are described in more detail below.

Existing Old Growth

Existing old growth on the MNF is limited to small, scattered patches within a larger landscape of 70 to 90 year old forests. The value in protecting these patches is in the protection of the rareness of the older trees and associated communities, even though these patches may continue to be influenced by surrounding younger forests.

Few areas are considered true old growth on the MNF due to turn of the 20th century logging and associated burning. As noted above, time is a critical element in the development of old growth characteristics, and not enough time has elapsed on the MNF to allow for old growth characteristics to manifest themselves in most cases. The remaining known old-growth areas have been identified and protected by Botanical Area, National Natural Landmark, or Scenic Area designation, and are managed through specific Forest Plan direction. These areas total an estimated 318 acres and include the Gaudineer Scenic Area (140 acres), Shavers Mountain Spruce-Hemlock stand (68 acres), Virgin White Pine area (13 acres), North Fork Mountain Red Pine Botanical Area (10 acres), and the Fanny Bennett Hemlock Grove (70 acres). One other area has been documented on the Forest—the North Spruce Mountain old growth site of an estimated 17 acres. Other old-growth patches may exist in areas already protected from active management such as Cranberry Bogs and the Smoke Hole-North Fork Mountain area of the National Recreation Area. Undoubtedly there are small areas on the Forest like this where timber harvest did not take place due to poor access, terrain, or timber quality.

Gaudineer Scenic Area is also a National Natural Landmark. Direction for this area includes a goal to “maintain virgin forest characteristics” and standards that restrict timber products from being removed from the area and certain types of vegetation management. This area provides a fine example of what old growth looks like in a spruce-hardwood ecosystem. Large trees are present but not in great abundance, as many older trees have died and fallen to the ground, creating forest gaps and a profusion of logs, broken snags, and woody debris that make off-trail walking difficult.
The Shavers Mountain Spruce-Hemlock Stand is a National Natural Landmark. Management direction includes a goal to “maintain the old growth/mature forest ecosystem” and standards that prohibit timber harvest, road and facility construction, livestock grazing, and motorized use. Much of this area is also inside the Otter Creek Wilderness, which has similar prohibitions.

The Virgin White Pine Botanical Area has a goal to “emphasize the preservation of virgin forest” and standards that prohibit commercial timber harvest, road and facility construction, and firewood gathering.

The Fanny Bennett Hemlock Grove and North Fork Mountain Botanical Areas have similar goals to, “Emphasize the preservation of virgin forest”, and standards that prohibit commercial timber harvest, road and facility construction, and motorized travel.

Virtually all of the existing old-growth patches on the MNF are small and adversely affected by surrounding second growth or open edge, which may beg the question why the Forest strives to protect them. The value in protecting these patches is in preserving the rareness of the stands of older trees and their associated communities, which adds to the overall diversity of the Forest. They may also contribute to larger patches of old growth as the forests around them age and develop old-growth characteristics.

**Potential Old Growth as a Result of Alternative 2 Modified**

Potential old growth is defined as forest stands or patches that currently do not exhibit the suite of old-growth characteristics described above, but that have the potential to develop the characteristics in a reasonable length of time if left unmanaged. Some areas, such as fire-adapted oak forests, may benefit from management activities that emulate natural processes, such as prescribed fire and thinning, in order to achieve desired ecological conditions. All areas would likely continue to age and change through predominantly natural processes, thereby providing the potential for old-growth characteristics to develop in the future. The largely unmanaged states are identified in the 2006 Forest Plan through a combination of Management Prescription (MP) allocation and management direction.

**Management Prescriptions.** Management Prescriptions where active manipulation of vegetation is not allowed or is expected to be minimal include MP 5.0 (Designated Wilderness), MP 5.1 (Recommended Wilderness), MP 6.2 (Backcountry Recreation), and many MP 8.0 areas, including National Natural Landmarks, Scenic Areas, Ecological Areas, and Candidate Research Natural Areas. All of these MPs have management direction that prohibit or restrict timber harvest and new road construction. Estimated acres for these areas are displayed in Table B-1.

Patch sizes for MP 5.0, 5.1, and 6.2 units are generally over 5,000 acres each, with many exceeding 10,000 acres. The 10,000-acre and above areas correspond to, and can function as biological reserves, as described in the Ecological Diversity analysis in Chapter 3 of the Forest Plan Revision EIS. The numerous 8.0 areas are mostly small- to medium-sized patches (Table B-1), but several are adjacent to a 5.0, 5.1, or 6.2 MP units, which have the additive effect of expanding the old growth potential of each area. Also, there are two SPNM areas within the Spruce Knob-Seneca Creek NRA that are a combined 21,500 acres. These areas would also feature little or no vegetation management.

**Management Direction.** Within the MPs that promote commercial timber harvest and allow new road construction (MPs 3.0, 6.1, and portions of 4.1), there are many areas where these activities are prohibited or limited by Forest Plan standards and guidelines due to other resource concerns. These restricted areas include:

- Buffer areas around stream channels, lakes, and wetlands that extend anywhere from 25 to 100 feet around these features. See Forest-wide direction in the Soil and Water section.
- Corridors for eligible Wild and Scenic Rivers that have a Wild or Scenic classification.
• Suitable habitat for West Virginia northern flying squirrel, a federally listed species.
• Primary range, hibernacula and key areas for Indiana bat, a federally listed species.
• Corridors or buffer zones for areas with a Very High Scenic Integrity Objective.

Direction for these areas of restricted management can be found in a number of resource sections of the Forest-wide Management Direction section in Chapter II of the Forest Plan. Estimated acres for these restricted areas are listed in Table B-1, below.

In additions to the areas listed above, the MPs associated with suited timberlands also have Desired Conditions for late successional stages that would maintain lands for future old growth potential.

Patch sizes and shapes of the areas vary widely, from 25-foot linear buffers on either side of an ephemeral stream channel to very large blocks of WVNFS suitable habitat. Some of the larger blocks exceed 10,000 acres, and others exceed this threshold when combined with adjacent 5.0, 5.1 or 6.2 MP units.

### Table B-1. Potential Old Growth Acres* on the Monongahela National Forest

<table>
<thead>
<tr>
<th>Management Prescription Areas with Little or No Commercial Harvest Potential</th>
<th>Estimated Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>MP 5.0 – Designated Wilderness</td>
<td>78,700</td>
</tr>
<tr>
<td>MP 5.1 – Recommended Wilderness</td>
<td>27,700</td>
</tr>
<tr>
<td>MP 6.2 – Backcountry Recreation (SPNM Emphasis)</td>
<td>106,800</td>
</tr>
<tr>
<td>MP 8.1 – NRA Semi-Primitive Non-Motorized Areas</td>
<td>24,900</td>
</tr>
<tr>
<td>MP 8.2 – National Natural Landmarks</td>
<td>2,000</td>
</tr>
<tr>
<td>MP 8.3 – Scenic Areas that are not also NNLs</td>
<td>2,200</td>
</tr>
<tr>
<td>MP 8.4 – Ecological Areas that are not also NNLs</td>
<td>1,100</td>
</tr>
<tr>
<td>MP 8.5 – Candidate Research Natural Areas</td>
<td>2,200</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>245,600</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Areas within Suitable Mgt. Prescriptions with Little or No Commercial Harvest Potential</th>
<th>Estimated Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiana Bat Primary Range, Hibernacula, and Key Areas</td>
<td>146,100</td>
</tr>
<tr>
<td>West Virginia Northern Flying Squirrel Habitat</td>
<td></td>
</tr>
<tr>
<td>Perennial and Intermittent Stream Channel Buffers</td>
<td></td>
</tr>
<tr>
<td>“Wild” or “Scenic” Wild and Scenic River Corridors</td>
<td>152,600</td>
</tr>
<tr>
<td>Very High and Distinct Scenic Integrity Areas</td>
<td></td>
</tr>
<tr>
<td>Other Areas Tentatively Unsuitied Areas (Non-forested, unstable soils, etc.)</td>
<td></td>
</tr>
<tr>
<td><strong>Total Acres</strong></td>
<td><strong>544,300</strong></td>
</tr>
</tbody>
</table>

*Acres are rounded to the nearest 100 and based on Alternative 2M for Forest Plan Revision.

This acreage represents nearly 60 percent of the entire Forest. These numbers are believed to be conservative, based on the following factors:

- WVNFS suitable habitat and Indiana bat habitat areas may increase over time.
- There could be additional MP 8.0 designations in the future.
- Buffers for ephemeral stream channels and wetlands were not included in the estimates.
- Forests continue to age over time, which means that any area that the Forest Service does not actively manage for timber should continue to age as well, and the Forest Service rarely if ever manages every acre that is available to manage, even suitable timberland acres.
The Ecosystem Diversity (Coarse Filter) section of Chapter 3 of the EIS includes an extensive analysis of minimum dynamic area (MDA) reserves for all alternatives. The MDAs serve as potential old growth and are based on areas with MPs and other direction that will prohibit or greatly limit large-scale even-aged timber management. MDAs are defined for the Monongahela as at least 10,000 acres in size and total 390,000 for Alternative 2M, or over 40 percent of the Forest. The representation of ecological communities in these MDAs by alternative was used as an indicator of effects in the analysis.

IDENTIFICATION AND DISTRIBUTION OF OLD GROWTH AREAS

“Rather than transferring western ideas to the east, scaled down in some subjective fashion, eastern concepts of old growth should reflect the size and longevity of eastern species and the successional pathways, disturbance regimes, and perhaps even the extent of past human disturbance” (Tyrell et al. 1998).

In response to external and internal interest regarding old growth, the Forest Plan has been revised to incorporate a new approach for the identification and management of old growth. This section describes the overall approach, which has two essential parts:

1) Identify and preserve existing patches of old growth forest.
2) Identify and maintain areas of potential old growth that can add to the size and efficacy of existing old growth over time.

The MNF did not adopt the strategy, as some other Forests have, of designating or allocating lands across the Forest to a specific management prescription of old growth areas or preserves. This approach can provide a sense of security for some—especially those that have a devotion to old growth and an inherent mistrust of the agency—that old growth will be protected in perpetuity. In reality, there are very few old growth stands on the Forest now, and the Forest cannot guarantee that old growth stand conditions will develop on any given area in the future. Even in the absence of management-related disturbance, natural disturbances may occur in unpredictable patterns. Therefore, the MNF has developed the following management strategies to address the old growth issue:

1) The Forest has identified and preserved existing small patches of old growth within National Natural Landmark (8.2), Scenic Area (8.3), and Ecological Area (8.4) Management Prescriptions.
2) The Forest should continue to look for and preserve existing old-growth stands, as stated in Forest-wide objective VE03. This objective also describes the need to identify potential old growth.
3) The Forest has allocated Management Prescriptions with little or no emphasis for vegetation management (5.0, 5.1, 6.2, portions of 8.0 and 4.1). These MPs should serve as potential areas for future old growth. These areas are referred to as minimum dynamic area (MDA) reserves in the EIS.
4) Within MPs that emphasize vegetation management (3.0, 6.1, and portions of 4.1), the Forest Plan has management direction for specific areas that restrict vegetation management. These areas include listed species habitat, stream channel and wetland buffers, eligible WSR corridors with a Wild classification, and very high Scenic Integrity Objective areas. They would provide additional areas where potential old-growth conditions could develop over time.
5) Within MPs that emphasize vegetation management (3.0, 6.1, and portions of 4.1), there are desired conditions for late successional forests. Where these desired conditions are fairly low, such as 5-10
percent, they can likely be met with the areas described under part 4), above. Where desired conditions for late successional forests are more extensive, additional areas can be selected during watershed and project assessments. These forests would provide additional areas where potential old growth conditions could develop over time.

The *Ecological Considerations when Identifying Future or Potential Old Growth* section, below, provides components to consider when determining if an area is a good candidate for designation of future or potential old growth and are not meant to determine if old growth conditions are present. However, there may be other considerations for where late successional forests are managed for on the landscape (recreation, visual, wildlife habitat, etc.).

This approach should provide abundant areas where old-growth conditions could develop over time. Because these areas are well distributed across the landscape, it is expected that potential old growth would be well represented in the major forest types and Ecological Subsections on the Forest.

**Ecological Considerations when Identifying Future or Potential Old Growth**

The seven criteria listed under the Old Growth Definitions and Criteria section above can be used as a conceptual definition. When applying these criteria, site limitations should be kept in mind. For example, a dry site that is inherently infertile will not produce large trees at the same rate and dimensions as a moist, fertile site. The disturbance patterns and history of the site should also be considered. Because most of the lands that became the MNF were intensively logged at the turn of the 20th century and subsequently burned and grazed, the current forests date from this era and are mainly even-aged. The introduction of exotic pests and diseases has greatly impacted, and will continue to impact, forest composition. For example, American chestnut once dominated eastern West Virginia before the introduction of chestnut blight largely eliminated this species. More recently, hemlock wooly adelgid, beech bark disease, and gypsy moth are known to cause decline or mortality in the MNF and surrounding private forests.

The role of fire in oak-dominated forests should also be considered when maintaining old-growth patches. Oaks are fire adapted and in some areas are being replaced by more shade tolerant trees through fire suppression. However, their current dominance in some stands may reflect the altered disturbance regimes caused by the large-scale clearcuts, fires, grazing, and the elimination of American chestnut in the 1920s and 1930s.

At the project level, knowing the forest types and landtype associations (LTAs) of the project area can help determine the physical environment and disturbance regimes that helped create the current forest, as well as the forces likely to affect the forest in the future. Descriptions of the LTAs can be found in the *MNF Ecological Classification User’s Guide* (USDA Forest Service 2002), including the distinguishing features, disturbance regimes, and management implications for each LTA on the MNF.

Historic disturbance regimes focus mainly on the occurrence of fire in an LTA. Other natural disturbances, such as wind, ice, or snow damage, drought, pests and pathogens, occur at various spatial scales. These disturbance agents have not yet been identified at the LTA scale. However, site factors such as climate, soil types, and elevation can give clues to the natural disturbance factors likely for the site or LTA. These disturbance factors and the likely scale they historically operated within should be considered when identifying existing or potential old growth.

The likely successional path of a current stand can also help in determining its suitability as potential old growth. Current vegetation may not represent the potential natural vegetation of the site. Care should be taken to ensure that conditions that historically drove old-growth dynamics are maintained at the proper
spatial scales (especially fire in fire-dependent communities), otherwise old-growth preservation may lead to degraded systems.

At the site level, potential natural vegetation predictions in the Forest’s Terrestrial Ecological Units database can be used as an estimate of the future dominant tree species. The potential natural vegetation should be reviewed, on the ground if possible, and considered when determining the suitability of an area for meeting old-growth objectives.

Another tool is the MNF Fire Adapted Vegetation model and predicted fire regime condition class (FRCC) map. This model, based on potential natural vegetation and existing vegetation, summarizes at the landscape scale the fire adaptability of the forest communities across the Forest. This tool is useful in determining if areas with late successional forest are fire adapted or dependent, what fire regime and condition class they are in, and whether prescribed fire may be a tool to maintain or create the desired forest structure. One example of this would be in areas dominated by some oak species. Depending on the LTA, fire may be necessary to retain oak dominance and to avoid slow conversion to maple dominance.

REFERENCES


Gaudineer Scenic Area