High Conservation Value Forests 3.1

Old Growth Forests

Management & Monitoring Framework

**HCV 3:** Forest areas that are in or contain rare, threatened or endangered ecosystems.

**HCVF 3.1** – Old Growth Areas

**FSC Definition of Old growth:** (1) the oldest seral stage in which a plant community is capable of existing on a site, given the frequency of natural disturbance events, or (2) a very old example of a stand dominated by long-lived early- or mid-seral species. The onset of old growth varies by forest community and region. For example, in the Pacific Coast region, old growth often begins around 200-250 years of age, whereas in the Northeast old growth is generally begins at 150-200 years after stand-replacing disturbances. Depending on the frequency and intensity of disturbances, and site conditions, old-growth forest will have different structures, species compositions, and age distributions, and functional capacities than younger forests. Old-growth and late successional stands and forests include: A) **Type 1 Old Growth:** stands that have never been logged and that display late successional/old-growth characteristics. B) **Type 2 Old Growth:** stands that have been logged, but which retain significant late-successional/old-growth structure and functions.

The department has long-recognized the value and need for protecting old-growth communities on state forest land. As early as 1908, the department recommended preserving several virgin hemlock communities that had been left by lumbermen because of inaccessibility. These virgin tracts were designated as forest monuments in 1921. In 1970, the forest monuments were re-designated as natural areas.

During the development of the 1970-85 State Forest Resource Management Plans, all unique or unusual biological areas, including virgin and old growth tracts, were inventoried for possible natural area designation. All known virgin areas on state forest lands are currently in the state forest natural area and high conservation value forest systems.

As our second- and third-growth forests continue to mature, there is an increased interest in promoting old-growth forested ecosystems. All forest seres or systems are important components of managing state forest lands under an ecosystem management approach. Thus, a strategy to incorporate the development of old-growth forested systems within the state forests is necessary.

An understanding of the components of old-growth forests is a necessary first step in the development of a strategy to conserve or enhance these systems. It is generally agreed that old-growth forests are "biologically" old and have experienced relatively little human disturbance. However, no generic definition of old growth enjoys wide acceptance. This is especially true concerning eastern deciduous forests.

Each ecosystem or biological community is unique due to its biological and physical components, the natural processes acting upon it and the influence of human impacts. Thus, developing regional or local definitions of old growth is the best way to characterize these systems.
Attempts to quantify or characterize old growth can truly be accomplished only on existing systems. As stated previously, there are relatively few of these systems remaining in Pennsylvania. Efforts are currently underway to define existing old-growth systems in some regions of the state.

However, one cannot conclusively define the character of potential old-growth systems that will develop from our second- and third-growth forests. These forests originated under different conditions than did our pre-European settlement forests. They continue to develop under dissimilar natural processes and unprecedented influences such as the chestnut blight, the gypsy moth, fire history, high populations of white-tailed deer, air pollutants and other anthropogenic stresses. Nevertheless, there are several components or criteria that are usually considered when discussing old growth forests including: age (biologically mature, late successional, etc.), structure (species composition, dead and down material, canopy gaps, etc.), disturbance (extent of human influences) and size (self-sustaining, allows natural processes and functions).

Perhaps the best way to discuss or describe old-growth forests is in the context of late-successional biological communities or habitats. Although some professionals use the terms "steady state" or "stable communities," old-growth systems, like all systems, are constantly shifting or changing and thus, are unable to be defined.

**Description of HCV Area and Location:**

Each High Conservation Value Forest management plan shall contain the location as well as a description of the delineated area including the reason it was selected, importance to the surrounding landscape, acreage, land use history, stand layer information and any other known plant and/or animal composition or information.

**Management Objectives (as defined in the State Forest Resource Management Plan):**

*To protect existing old growth systems on state forest lands.*

Objectives:

- Protect all existing virgin or old growth remnant forests by including these areas in the state forest natural area system and incorporating them into the High Conservation Value Forest system.
- Promote research and study on existing virgin and old growth remnant forests to fully understand the characteristics of these systems.

**Management Recommendations:**
Since current old growth areas are included in the natural areas system in order to allow them to continue in a natural pattern, management of these High Conservation Value Forests will follow those management principles.

A natural area is an area of unique scenic, historic, geologic or ecological value, which will be maintained in a natural condition by allowing physical and biological processes to operate, usually without direct human intervention. These areas are set aside to provide locations for scientific observation of natural systems, to protect examples of typical and unique plant and animal communities, and to protect outstanding examples of natural interest and beauty.

The guidelines governing the administration of natural areas are as follows:

1. No human habitation is permitted, except that primitive type backpack camping may be permitted in designated areas only. Existing Forest Camp leases will be permitted to remain in Natural Areas. If a cabin on a Forest Camp Lease is destroyed by fire, storm, flood or other natural causes the lease will be relocated to a site outside of the Natural Area or terminated according to the wishes of the lessee.
2. Access for all but essential administrative activities is restricted to foot travel and non-motorized watercraft, except in designated areas.
3. Buildings and other improvements are restricted to the minimum required for public health, safety and interpretive aids.
4. Timber harvesting is not permitted except as may be required for maintenance of the public safety.

Leases and mineral development are prohibited; however, subsurface oil and gas rights may be leased where no surface use or disturbance of any kind will take place on the natural area. New rights-of-way are prohibited except for designated utility corridors in the Bucktail Natural Area.

**Activities**

- Natural areas will be left undisturbed with natural succession allowed to occur. Intervention will only be permitted when man-caused activities or events threaten its natural value.
- A 600-foot wide management buffer will be maintained around Natural Areas except when a road, pipeline or power line serves as a boundary in which case a 300 foot wide buffer will apply.
- Existing right-of-way expansion will be considered on an individual case basis. Expansion approval will be considered when the project will not harm the feature for which the area was designated and is justified as the alternative that will result in the least overall ecological damage to state forest lands.
- Aerial spraying of herbicides to maintain rights-of-way within and bordering natural areas will be prohibited. Vegetation on these rights-of-way may be cut and controlled by direct spray application to cut stems.
- Insect and disease control will be considered on an individual case basis. Control measures will be considered if the feature for which the area was designated is in jeopardy.
- Fire control is permitted as per normal operating procedures of the Bureau of Forestry.
- Horseback riding and handicapped apparatus equipped with electric motors may be permitted on designated, maintained trails. No artificial regeneration will be permitted in natural areas.
• Hunting and fishing will be permitted in natural areas unless otherwise posted.
• The state forester must approve any management or requested activity on natural areas that will result in some form of disturbance. An environmental review must be submitted for these activities.
• Signs will be erected at access points and where needed along roads bordering natural areas. Signs will indicate the name of the natural area, why the area was set aside and any special restrictions, which might apply.
• The bureau and the Pennsylvania Fish Commission have designated certain natural areas as protection areas for reptiles and amphibians. Signs will be maintained stating that the taking, catching, killing or possession of any reptile or amphibian within the area is prohibited. (see Fauna Section)

Monitoring:

Monitoring of HCV 3 areas will be addressed through the bureau’s Wild and Natural Area Inventory as well as the Landscape Exam process.

For further information on the protocol of this monitoring effort, please reference the Natural Areas Inventories Preliminary Report.

Timeline:

A portion of HCVF 3 areas will be monitored annually. Additional spatial monitoring by the Resource Planning Section will take place on a semi-annual basis to assess the current HCVF conditions.

Threat Evaluation:

Any perceived threat to the composition and integrity of the intent of the Natural Areas shall be evaluated and included in the report. Types of threats may include but would not be limited to:

- Invasive plants
- Invasive insects or animals
- Anthropogenic impacts
- Adjacent land use

Conclusions and Recommendations:

After a site evaluation has been conducted, the findings should be documented in a manner that outlines any potential threats or recommendations for improvement. These findings and recommendations should be forwarded to the district forester for further planning and action and may be submitted for an environmental review for actions that need to be taken to protect the value for which it was designated.

Map:

An appropriate to scale map shall be provided for each Natural Area containing inventory locations. In instances where a threat has been documented or recommendations for
improvement have been made these areas shall be identified and included on the map to be maintained with the specific HCVF management plan.