

# Buchanan State Forest Resource Management Plan



**pennsylvania**  
DEPARTMENT OF CONSERVATION  
AND NATURAL RESOURCES



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**Data Note: Unless otherwise noted in text or caption, all data summarized in this document were compiled between February 2017 and March 2018.**

## Preface

The state forest system of Pennsylvania, approximately 2.2 million acres of forest land, comprise 13 percent of the forested area in the commonwealth. The Bureau of Forestry is the steward of this land, and part of the bureau's mission is to manage state forests under sound ecosystem management, to retain their wild character and maintain biological diversity while providing pure water, opportunities for low-density recreation, habitats for forest plants and animals, sustained yields of quality timber, and environmentally sound utilization of mineral resources. Article 1, Section 27 of the Pennsylvania Constitution provides that, "Pennsylvania's public natural resources are the common property of all the people, including generations yet to come," and it sets forth that the Commonwealth has trustee responsibility for these resources. The bureau carries out this constitutional mandate by implementing it in both its long-term planning and every-day actions. To carry out its stewardship and trustee responsibilities for state forest lands, the bureau develops and implements planning documents that assure that the overarching goal of state forest management – ensuring sustainability – is achieved for the benefit of all the people. In 2016, the bureau revised its State Forest Resource Management Plan (SFRMP), which is the primary instrument that the bureau uses to plan, coordinate, and communicate its management of the state forest system. The SFRMP sets forth broad policies, as well as more focused goals and objectives about state forest resources and values, to ensure that the overarching goal of state forest management – ensuring sustainability – is achieved.

State forest management is a coordinated effort involving central office program areas and field staff in 20 forest districts located throughout Pennsylvania. Each district is responsible for managing wildland fire, destructive insects, and disease on all lands throughout the district – public and private. The district staff promote wild plant conservation and private forest land conservation and stewardship. The staff also provide for the protection, administration, and management of state forest lands within the district.

Building upon the 2016 state-wide SFRMP, the bureau has developed District State Forest Resource Management Plans to provide district-level resource information and district- and landscape-level management priorities. This Buchanan State Forest Resource Management Plan provides an overview of the district and its operations on state forest land and sets forth a framework for future management of Buchanan State Forest. The planning horizon for this District SFRMP is approximately 5-10 years, after which time it will be revised to reflect changing conditions and priorities.

The bureau also creates District Activity Plans that describe the management activities the bureau will take within each district that may affect the public's use of state forest land. These are implementation plans that address how goals and objectives in the SFRMP and District SFRMPs are being achieved. The District Activity Plans are written at the start of each calendar year and revised mid-way through the year. They are posted on District webpages so that the public may review and comment upon them.

This Buchanan SFRMP is comprised of a District Overview, a listing of District Priority Goals, and a collection of landscape management unit (LMU) plans, which are described further below.

## Executive Summary

The Buchanan State Forest Resource Management Plan provides an overview of the district, its operations on state forest land and sets forth priorities for future management of Buchanan State Forest within the broad framework of the 2016 statewide State Forest Resource Management Plan (SFRMP). The statewide SFRMP is the primary instrument that the Bureau of Forestry uses to plan, coordinate, and communicate its management of the entire state forest system. This District-level SFRMP for Buchanan State Forest focuses on local resources, opportunities, and areas of emphasis for management. The planning horizon for this District SFRMP is approximately 5-10 years, after which time it will be revised to reflect changing conditions and priorities.

The Buchanan State Forest consists of approximately 72,000 acres of state forest lands and 9 Landscape Management Units (described below and on page 76), some of which may span boundaries with neighboring state forest districts. The Buchanan Forest District consists of Fulton, Bedford, and western Franklin Counties in southcentral Pennsylvania. Most of the district is in the Ridge and Valley ecoregion. Landforms, geology, and totality of ecosystem factors have made this forest district notable for: mixed oak timber production, agricultural development, trout populations, and a high population density of human beings. Generally, soils and growing conditions on state forest lands here are of good quality in terms that impact biomass production.

Major historic impacts to the forests here have included: deforestation, uncontrolled wildfires, farming and the abandonment of agricultural lands, and various introduced pests and diseases.

Currently, most of the forest in this district is of uniform age class and structure because of widespread deforestation in the past followed by a lack of periodic disturbance. For many reasons, this uniformity places limitations on the forest's ability to regenerate optimally and provide the best benefit for multiple ecosystem factors, including human values. Additionally, the forest is under continuous threat from damaging plants, animals, and diseases, and the forest's role amidst a dynamic set of social circumstances is continuously evolving.

As part of a public trust, the Buchanan Forest District is charged with ensuring the long-term health, viability, and productivity of the commonwealth's forests and conserving native wild plants. The overarching management goal on Buchanan State Forest lands is to implement practices that enhance the sustainability of multiple ecosystem factors, including economic, environmental, and social dimensions.

Currently, most of the forest communities here are of the dry oak-heath plant communities. The district manages for the maintenance and regeneration of these communities through routine silvicultural practices and overall forest health promotion.

This district's annual timber harvest goal is around 400 acres. This goal is part of a long-term, systematic plan to provide benefit for the ecosystem and to bring a continuous supply of high-quality timber to Pennsylvania's economy. Prescribed fires, invasive species treatments, deer exclosures, and other techniques are also important land management tools in this district.

Additionally, the Bureau of Forestry is the jurisdictional agency for the conservation of native wild plants, and this district bears custodial responsibility for managing some outstanding communities and/ or ecosystems, including the Pine Ridge and Sweet Root Natural Areas, the Martin Hill Wild Area, as well as some specific plant populations of special concern.

Many wildlife species utilize the forest communities managed in the Buchanan State Forest. By managing multiple forest communities for a diversity of age classes, the district routinely provides a suite of habitat factors that benefits a broad diversity of wildlife. However, the district may implement special management that targets specific wildlife because of some custodial responsibility, a mandated protection status, a wildlife's

identity in the State Wildlife Action Plan, or the wildlife's recreational/ cultural value to people. This district practices targeted management for woodcock and grouse, northern flying squirrel, and various song birds.

Recreation is a major forest use on the state forest system and in this district. The State Forest's proximity to developed areas has provided a conspicuous island of rugged forest land where people can experience a wild sense of place amidst the noise of surrounding development. Popular recreational uses of this state forest include: hiking, biking, picnicking (4-picnic areas), horseback riding, ATV riding, snowmobiling, cross-country skiing, trout fishing, and hunting.

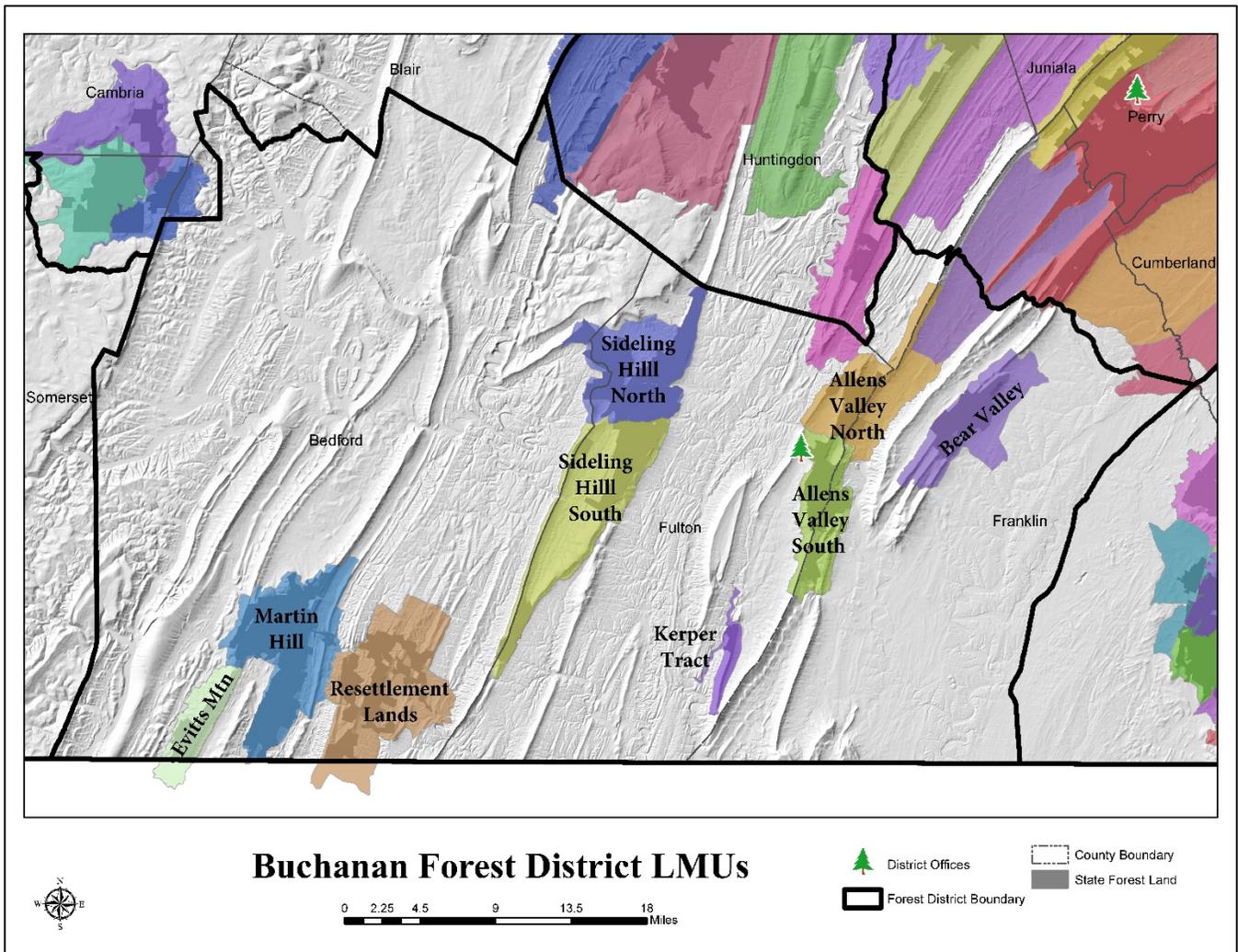
Additionally, the district seeks to couple some recreation opportunities with education and interpretation. This district manages multiple educational features, including: Resource Management Center (RMC), interpretive trail, wayside exhibits, and trailhead kiosks.

To facilitate land management objectives and meet public use demands, the district manages an array of infrastructure, including but not limited to: 93 miles of public use roads, 123 miles of administrative roads, 325 miles of boundary line, 125 gates, 258 miles of trails, 950 culverts, and 9 bridges. The district is divided into (3) maintenance divisions that serve as bases for work crews and equipment. Due to universal weathering, infrastructure is always in various stages of disrepair, so maintenance is an ongoing and important operation.

District-wide priority management goals are the following (which are not in priority order):

- Communications
- Timber and Forest Products
- Native Wild Plants
- Wildlife
- Water Resources
- Soils
- Geologic Resources
- Wildland Fire
- Forest Health
- Recreation
- Infrastructure
- Cultural Resources

To facilitate consistent, structured, and integrated resource management and planning across large landscape units, state forest lands and adjoining lands are organized by Landscape Management Unit (LMU) (described in more detail starting on page 76). LMUs are the "building blocks" of the Buchanan State Forest Resource Management Plan, as such, targeted plans for each individual LMU comprise the bulk of the district plan. Each LMU plan contains an overview narrative of the LMU features, a profile that summarizes relevant data about the LMU, and a list of priority goals for which that LMU is well-suited. There are (9) LMUs in the Buchanan Forest District (Figure i). LMU plans for this district begin on page 76.



**Figure i:** LMUs for the Buchanan Forest District

List of LMUs in Buchanan State Forest

- Allens Valley North Landscape Management Unit
- Allens Valley South Landscape Management Unit
- Bear Valley Landscape Management Unit
- Evitts Mountain Landscape Management Unit
- Kerper Tract Landscape Management Unit
- Martin Hill Landscape Management Unit
- Resettlement Lands Landscape Management Unit
- Sideling Hill North Landscape Management Unit
- Sideling Hill South Landscape Management Unit

## District Priority Goals

The 2016 SFRMP set forth Principles, Goals, and Objectives that focus on the variety of resources, uses, and values of state forest land. These Principles, Goals, and Objectives were organized around 12 Resource Chapters:

- Communications
- Timber and Forest Products
- Native Wild Plants
- Wildlife
- Water Resources
- Soils
- Geologic Resources
- Wildland Fire
- Forest Health
- Recreation
- Infrastructure
- Cultural Resources

The Principles, Goals, and Objectives in the SFRMP apply universally across all of state forest land. Due to their broad application, they were written in relatively general terms. This District SFRMP provides an opportunity to prioritize goals that are more specifically applicable at the district level. The District Priority Goals that follow provide points of emphasis for state forest land management within Buchanan State Forest over the next 5-10 year planning horizon.

## Resource Management

**Continue to improve forest management of Buchanan State Forest using sustainable practices at Landscape Management Unit (LMU) levels to protect and improve wildlife habitat, forest health, age class management, water resources and supply local wood industries with high quality wood products.**

The following will be the primary focus of Resource Management activities:

- **Timber management:** Timber management will be done to meet the district's timber allocation goal following guidelines by FSC/SFI with priority given to forest health, such as wildfire, gypsy moth defoliation, and tree diseases. During this process ecological sustainability, age class, water resources and wildlife habitat will all be considered using silvicultural practices that may include timber harvesting, fencing, herbicide application, DMAP, prescribed fire, and artificial planting.
- **Invasive species:** Continue to identify, monitor and treat new invasive species on state forest land, by using new and more selective controls to include chemical, biological, other control methods. Our priority is to control the spread of invasive species along roadsides and trails by using herbicides and in larger infested areas using more biological controls to reduce our use of chemicals on state forest land and watersheds.
- **Wildlife management:** Continue to use native species on all of the districts plantings (retired haul roads/landings, herbaceous openings) to improve wildlife habitat and less maintenance required. Continue to improve wildlife management for all game and non-game species.
- **Education:** Improve education to the public about our projects by using the lobby at the RMC and by onsite displays such as kiosks, brochures, maps, and others.

## Infrastructure

**The District will continue to use equipment and training to maintain: the dirt and gravel road system; the trail system; the boundary lines; the equipment; and the buildings to include picnic areas. Currently there are three maintenance divisions, separated geographically by long distances. The divisions have some of the same features such as picnic areas, roads, bridges, vistas and parking lots, but two divisions have ATV trails. Although the maintenance routines, projects, staffing, buildings and equipment are basically the same, each division has its own unique features and qualities as discussed in the LMU sections. We will evaluate our culvert pipes and bridges for structural integrity and to determine if they impair the movement of aquatic organisms. Also, we will make every reasonable effort to provide access or opportunity for all forest visitors to feel welcome.**

- We will use Best Management Practices (BMP's) and Environmentally Sensitive Maintenance (ESM) to ensure the road system is functional and not harmful to the environment.
- DCNR Bureau of Forestry has adopted the North Atlantic Aquatic Connectivity Collaborative (NAACC) stream crossing survey protocol to evaluate Aquatic Organism Passage (AOP) at State Forest stream and road crossing sites at culverts and bridges. We will conduct the surveys.
- We will provide facilities and equipment designed to improve public safety, health and welfare and employee: safety; efficiency; health and welfare; and work results.
- We will continue to update and improve boundary line, trails, picnic areas, and latrines.
- We will continue to provide quality visitor services in a timely and professional manner.

## Safety

**Provide for public safety and protection of the natural resources. Provide adequate safety equipment, training, and preparation for all employees who will be responding to various daily activities including emergency situations.**

- The District will enforce rules, regulations, and safety protocols to reduce risk to the public's safety and protect natural resources.
- The Districts staff will give programs that will highlight a variety of topics including safe use of ATV's, wildfire prevention, wildland safety.
- The District will respond to search and rescue incidents on Buchanan State Forest.
- The District will continue to train and improve staff safety knowledge and practices in their daily work areas and facilities.
- The District will provide and maintain all safety equipment including signage, First Aid kits, AED's, fire extinguishers, and other employee personal protective equipment.
- The District will ensure safety standards are met while training and executing various tasks for wildland fire.

## Public Outreach & Education

**Continue to provide forestry assistance to private landowners and agencies other than the Bureau of Forestry. Provide educational programs and information about Buchanan State Forest to the general public. Continue to engage in partnerships with other federal, state, and local agencies.**

- Educate the public on the goals and mission of our agency with materials displayed on kiosks and buildings, disseminating maps and guides, and educational programs such as Camp Cadet, Envirothon, Smokey Bear, job fairs, and ATV safety demonstrations.
- Provide interpretive areas to educate the public on state forest history and forestry practices based on the priorities outlined in the district's interpretive plan.
- Cooperate with local, state and federal agencies to develop more riparian forest buffers in the district, bird habitat improvement, and the Chesapeake Bay Initiative.
- Increase riparian forests in both Bedford and Fulton Counties, with a priority on higher quality streams.
- Cooperate with internal and external history organizations to celebrate the rich history in Buchanan Forest District.
- Offer assistance to local conservation groups and communities.

## Wildland Fire Prevention, Suppression, and Use:

**The District will continue to provide high quality and substantive training to/for/with employees, local Forest Fire Wardens/Crews, and local Volunteer Fire Companies (VFC's). The intent of the training is to: improve wildland firefighter and public safety; improve situational awareness; organize and standardize operations and plans; and to communicate and establish leader's intent so firefighters can make informed decisions. We will educate the public on the purpose of prescribed fire as a silvicultural tool and its role to help eliminate competing vegetation, invasive species, and leaf litter enhancing the possibility of oak regeneration. Our goal is to sustain a healthy forest stand. The District will also continue to assist with providing awareness for applications for grants and funding and to provide tools and equipment. This combination of activities will**

**help ensure and improve our abilities to protect Commonwealth private and public lands from the ravages of unwanted wildland fires.**

- We will educate the public on wildfire prevention and prescribed fire use
- We will promote and adhere to the Incident Command System (ICS) and National Wildfire Coordination Group (NWCG) training and qualification standards.
- We will assist local VFC's with wildland fire suppression, investigations, and prevention (Smokey Bear) programs.
- We will report District involvement with suppression and prevention activities and programs.
- We will conduct and support surrounding Forest Districts and PA Game Commission (PGC) staff for wildfire suppression and prescribed fire programs.

## Recreation

**Buchanan State Forest provides a multitude of recreational experiences and opportunities for all. The Buchanan Forest District maintains and improves opportunities for low-density dispersed recreation while protecting the wild character of the state forest. We will also continue to provide a quality recreational experience and maximize opportunities for multiple user groups.**

- Balance improving recreation infrastructure with the ability to maintain it.
- Encourage Conservation Volunteers to become more active through volunteer work days and friends group activities.
- Continue to provide shared use trails to maximize opportunities for multiple user groups.

Provide quality recreational experiences using a trail maintenance rotation, kiosks, picnic areas, scenic vistas, trailheads, maps, primitive campsites, and signage.

# District Overview

## 1) Location and Description

The Buchanan State Forest (Forest District # 2) is in south central Pennsylvania and is situated along the border with Maryland. It covers in 71,895 acres in western Franklin, Fulton, and Bedford counties. The major tracts of land are Bear Valley in Franklin County; Allen's Valley, Kerper Tract, and Sideling Hill in Fulton County; and Martin Hill, the Evitts Mountain Tract and the Resettlement or "Land Use" (LU) Lands in Bedford County.

It is comprised primarily of second-growth mixed oak stands and is managed to provide a source of low density dispersed public recreation, timber products, water, and a variety of habitats for wildlife. This district contains a well-maintained state forest road system interspersed with township roads that allows visitors easy access to many parts of the district. Recreation opportunities include hiking, biking, horseback riding, ATV riding, snowmobiling, cross-country skiing, trout fishing, and many varieties of hunting.

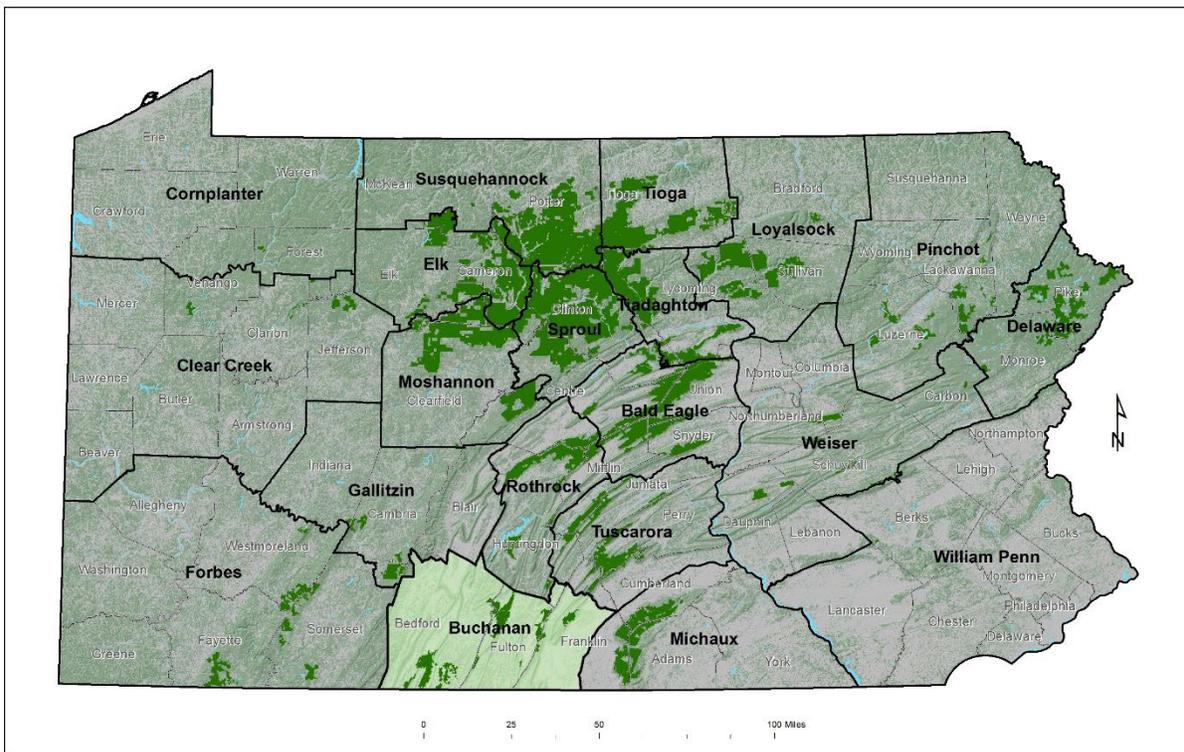
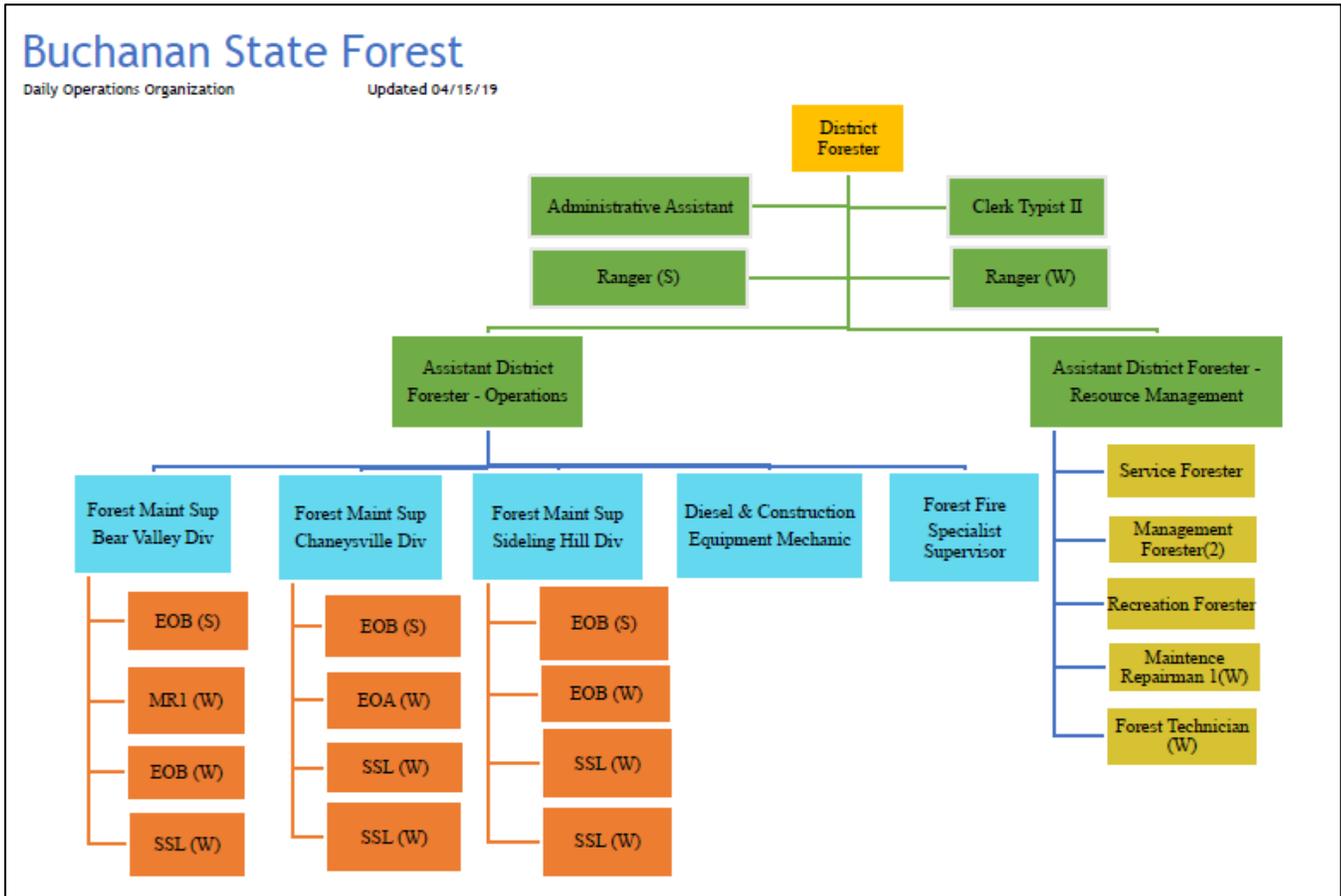


Figure 1-1. Location of Buchanan Forest District with state forest land (dark green).

## 2) District Organization and Human Resources

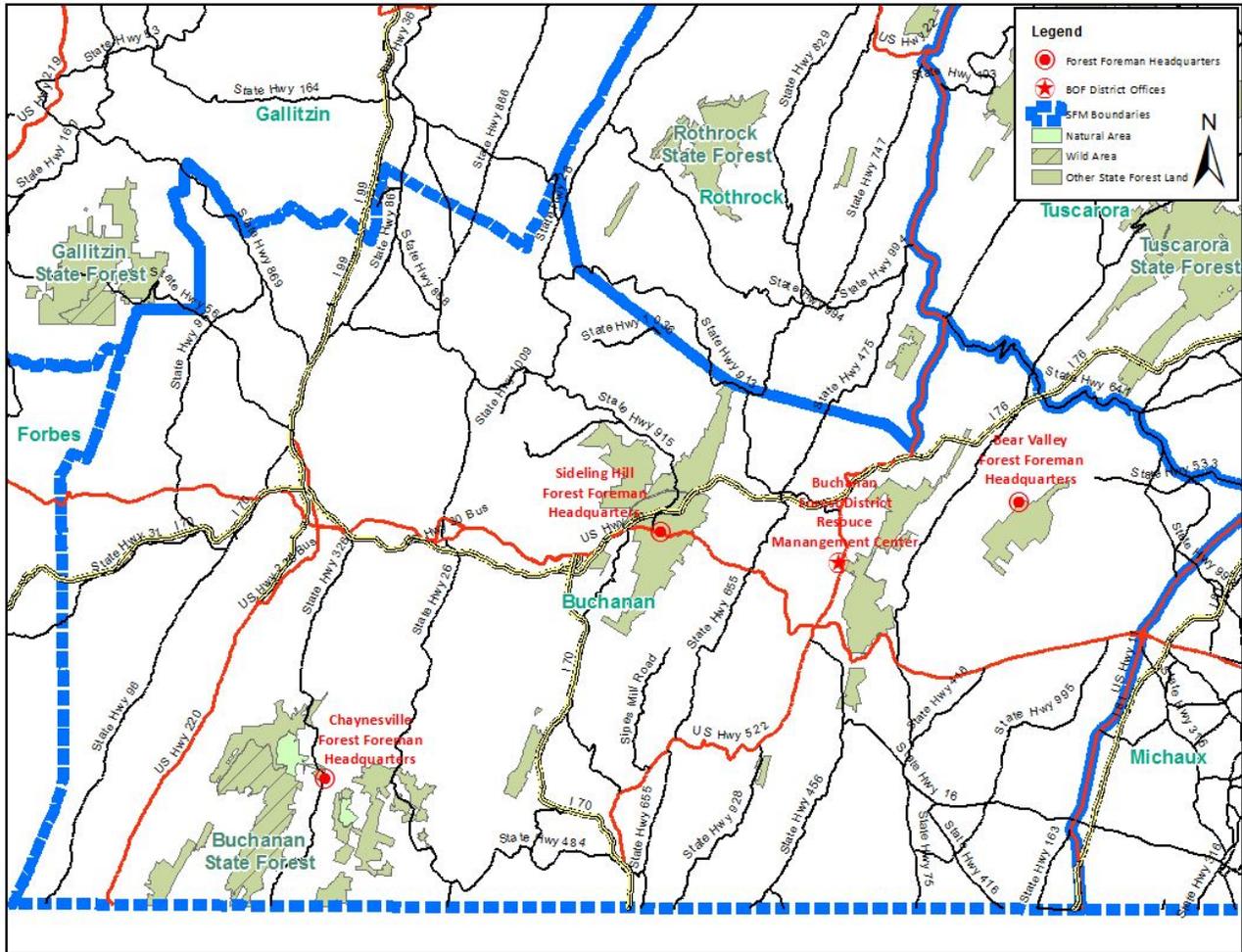
The Buchanan State Forest is one of the 20 state forests administered by the Pennsylvania Department of Conservation and Natural Resources, Bureau of Forestry. It comprises just over 3% of the 2.2 million-acre state forest system. Within the bureau, the administrative responsibility of the Buchanan State Forest is delegated to the District Forester, 25185 Great Cove Road, McConnellsburg, Pennsylvania 17233. The District Forester is responsible for executing all the sections of the State Forest Resource Management Plan with the assistance of a

staff of 2 Assistant Forest Managers, 1 salary and 1 wage Ranger, and 2 Administrative positions. One of the Assistant Forest Managers oversees the Resource Management staff that consists of 2 management foresters, a recreation forester, a service forester, a forest technician, and a maintenance repairman. The other Assistant Forest Manager oversees a Forest Maintenance staff that includes a forest fire specialist supervisor, a diesel mechanic, and 3 maintenance foremen, who each manage distinct geographic locations across the district with staff of equipment operators and laborers.



**Figure 2-1.** Organizational chart for Buchanan F

The Resource Management Center (RMC) houses the district managers, foresters, forest fire specialist, rangers and the administrative staffs. This facility opened in 2017 and is located at 25185 Great Cove Road, McConnellsburg, PA 17233. The three Forest Maintenance Headquarters are located as follows:



**Figure 2.2.** Map of Buchanan State Forest District.

*Bear Valley Forest Forman Headquarters, Franklin County*  
 13249 Keefer Road  
 Upper Strasburg, PA 17265

*Sideling Hill Forest Foreman Headquarters, Fulton County*  
 3017 Lincoln Highway  
 Breezewood, PA 15533

*Chaneyville Forest Foreman Headquarters, Bedford County*  
 4377 Chaneyville Road  
 Clearville, PA 15535

Bureau of Forestry works to sustain a program that fosters effective communications among internal and external stakeholders on bureau policies, programs, services, resource management, and research. The staff of the Buchanan Forest District communicates with forest users, local people and others interested in the forest in

many ways. Public meetings are held to discuss the resource plan and activities on the forest. Local officials, forest industry, recreational users, environmentalists, public agencies and the general public are invited. Fire wardens and volunteer fire company officers are invited to an annual fire warden training session. Staff members attend volunteer fire company annual meetings each year. Smokey Bear and fire prevention handouts are made available for fire company parades and other events whenever possible. Training sessions on forest fire suppression are conducted regularly. District employees help with Camp Cadet, county and state Envirothon, job shadowing, and career day programs to teach young people about forest conservation and bureau programs. Whenever possible we attend meetings of organizations such as the Conservation Districts, the Fulton County Ag Partnership, the Southern Alleghenies Resource Conservation and Development Council, the Bedford County Deer Damage Committee as well as some with Township and law enforcement officials, conservancy and recreational groups. The service forester prepares news articles and assists the local woodland owners' association in educating landowners about good forest conservation practices. Other news releases are put out by the district office. Conservation volunteers, both individuals and groups such as PA Cleanways are used and assisted on various projects. Staff people host or assist with forest hikes scheduled to instruct the public on plant, flower, bird or tree identification or to talk about and enjoy the forest. The Service Forester and Forest Fire Specialist Supervisor are regularly invited to speak at stakeholder groups. All district personnel interact with the general public to answer questions about State Forest operations, general forest questions, and forest health issues. All district personnel are familiar with general recreation issues and bureau policies.

### 3) Historical Land Use and Disturbance

#### *Original Forest Type of the Buchanan State Forest*

The Buchanan State Forest lies within the Ridge and Valley Section of the Oak-Chestnut Region. According to Lucy Braun's *Deciduous Forests of Eastern North America*, "The Ridge and Valley Section reaches its greatest width in Pennsylvania."

Most of the ridges are covered with secondary forests; in only a few places are there remnants of primary stands. Oaks prevail in most of these secondary communities. Hemlock and white pine do occur, often forming dense pure stands. Sweet birch is dominant on many rocky upper slopes. Several distinct oak communities are seen; red oak, white oak, chestnut oak, and scarlet oak are the principal dominants in the several oak communities. Chestnut was a constituent of most of the oak communities, both primary and secondary, but in what proportion it is now impossible to determine, for this area is near to the original center of infection by chestnut blight, and by 1930, 100 percent of the trees were infected and 51 to 100 percent dead (Fronthingham and Stuart, 1931, map, page 50, prepared by Office of Forest Pathology, Bureau of Plant Industry). Beech is almost absent even in the more mesophytic communities, although it is a constituent of forests of ravine slopes cut below the Harrisburg peneplain.

Where the valleys between the ridges are narrow, or where the old valley floor has been considerably dissected, the slopes of ravines of the latest erosion cycle may not always be readily distinguished from the mountain slopes. The forests of these lowest slopes are essentially mixed mesophytic communities. They may contain a large proportion of hemlock and white pine, or may be prevailingly or entirely deciduous, with beech, basswood, sugar maple, tuliptree, ash, red maple, and red oak among the canopy species. In the abundance of hemlock

and white pine, and in the lesser number of canopy species usually present, these mixed mesophytic communities are transitional to the northern forests of the Appalachian Plateau to the north.

The most mesic community of the mountain ranges of this part of the section occupies the higher mountain valleys; it is a hemlock or hemlock-white pine community in which *Rhododendron* is abundant or dominant in the undergrowth. This is represented by numerous secondary and disturbed stands. This is not the prevailing forest type, nor is there any indication that it is the regional climax. White pine formerly was abundant on some of the mountain slopes, and there is evidence that a mixed oak-chestnut-white pine community was widespread especially on northerly slopes. Some such areas are now occupied by poor secondary stands of oaks, red maple, birch, and tuliptree. Hemlock, too, is scattered through the mixed oak forests of northerly slopes. The mixture of white pine and hemlock is more noticeable in the northern part of the section and suggests the transition to the Hemlock-White Pine-Northern Hardwoods of the Appalachian Plateau adjacent to the north.

The red oak-birch and red oak-basswood communities as are seen in some mountain areas vary with exposure and position on the slopes; birch is more abundant on the uppermost slopes, becoming dominant in some situations. *Acer spicatum* and *Acer pennsylvanicum* are common species of the undergrowth. Lower, birch drops out, red oak increases, and white oak enters, together with a variety of species including hickories, ash, and tuliptree.

The general impression is one of oak slopes interrupted here and there by groves of pine and by hemlock or red maple ravines. A variety of oak communities include mixed oak, white oak-chestnut oak, chestnut oak-scarlet oak-black oak, scarlet oak or scarlet oak-pitch pine, chestnut oak, and bear oak. Those in which white oak or scarlet oak are abundant are usually at lower elevations; dogwood is abundant in the under story in white oak communities. Chestnut was a constituent of all these communities.

The scarlet oak or scarlet oak-pine communities occupy the driest slopes, often with westerly or southerly exposure. Heaths (*Kalmia*, *Vaccinium*, *Gaylussacia*, *Gaultheria*, and *Epigaea*) are common. In denser stands, especially those of sprout origin, the undergrowth is very sparse.

The white oak communities are generally on less steep or northerly slopes. White oak may be dominant, or one of the species in mixed oak communities in which white oak, chestnut oak, black oak, red oak, scarlet oak, and red maple are associated. These may or may not have an ericaceous layer; *Hamamelis virginiana*, *Viburnum acerifolium*, and *Corylus cornuta* occur frequently. Many of the younger secondary or sprout forests have almost no undergrowth.

Typical chestnut oak communities occupy exposed and rocky mountain slopes and somewhat soil-covered rock slides. Some of these are primary stands; the low-branching, broad-crowned trees of such sites were not desirable to the lumberman. Chestnut oak is the dominant species; chestnut, as indicated by old stumps, was second in abundance. Among other species of this chestnut oak community are sweet birch, red oak, red maple, gum, and white pine. The young tree layer is composed of the same species (with chestnut oak dominant), and *Acer pennsylvanicum* almost always present. The continuity of the ericaceous layer (made up chiefly of *Kalmia*, *Vaccinium*, and *Gaylussacia*) is conspicuous in all except the denser stands, and the paucity of species pronounced. The secondary chestnut oak community (of similar sites) is marked by the dominance of uniform-sized chestnut oaks; its shrub layer is much less continuous because of the more even and closed canopy of the secondary stand. Some mixed oak stands in which chestnut oak is the dominant species occupy less exposed sites. These usually have a thick leaf litter (chestnut oak leaves decompose very slowly) and very poor shrub layer, herbaceous plants are almost lacking.

A dwarf tree community (about 10 feet in height) in which scrub oak is dominant occupies some of the sandstone ridge-tops. These communities tend to be fire dependent and are comprised of scrub oak, dwarf chestnut oak, chestnut, sassafras, witch hazel, pitch pine, and a scattering of smaller ericaceous shrubs.

The sweet birch rock-slide community occupies the most tumbled rocky slopes where no soil has accumulated. There is no shrub layer, although there may be a few scattered individuals of *Kalmia*, *Acer pennsylvanicum*, and *Acer spicatum*. The birch pioneers in such situations and retains dominance of maturity. Chestnut oak enters in the most favorable spots. This, together with the fact that the chestnut oak community frequently occupies partially soil-covered rockslides indicates the gradual replacement of the birch community by chestnut oak.

Pine communities are represented by small groups of old trees - white pine and pitch pine - and by secondary Virginia pine (*P. virginiana*) communities with which pitch pine and pignut hickory are associated. Except for occasional smaller individuals there is no undergrowth other than a few herbaceous plants (such as *Danthonia spicata*, *Antennaria plantaginifolia*, *Potentilla simplex*), cushion mosses and Cladonia.

The hemlock forest type of ravines is represented by dense second-growth stands of almost pure hemlock, hemlock-white pine, hemlock-red maple, or hemlock-rhododendron communities. The best of these occupy broad flat-bottomed ravines in which the stream is but slightly entrenched. In primary stands white oak grows with the hemlock, while on slightly higher bordering slopes it is the dominant species.

Some abandoned farm lands in southern Bedford County (Resettlement Lands) have seeded in naturally to Virginia pine on what is predominantly shallow shale soils. There are also small communities of Table Mountain pine. In 1850, when Fulton County was organized, it was "heavily timbered with fine oak and pitch pine," according to a 1930 newspaper story. After the cutting of the virgin forest, a seedling and sprout oak-chestnut forest became established. Some small diameter trees from this second growth forest were cut for tanbark, hoop poles, and hoop straps.

Lack of railroad transportation prevented the location of extensive wood using industries such as charcoal or chemical wood on much of the present Buchanan State Forest. However, iron furnaces were located near parts of the forest and according to District Forester Billy Byers report of 1907. A tannery near Rainsburg operated until about 1900. Much chestnut oak bark was used in the tannery with the logs left to rot in the woods.

## *Biotic and Abiotic Influences on the Buchanan State Forest*

### *Early Major Influences*

The oak-American chestnut community, the predominant original forest type, developed into an American chestnut-scarlet oak-chestnut oak forest following the cutting that occurred in the late 1800s and early 1900s. Since its origin, this second growth forest has been subjected to a series of catastrophic events. The first of these was the severe forest fires that occurred periodically from the 1890's through the 1930's. These fires burned over most of the mountain area, with much of the forest burning repeatedly. Extremely severe fires destroyed vast acreages during the 1890's and the years 1914, 1915, and 1930. Scrub oak and pitch pine replaced the American chestnut and the more valuable oaks on the heavily burned areas.

The next major influence was the invasion of the chestnut blight in 1911. By 1920 the blight had infected every living chestnut, leaving a forest of predominantly chestnut oak.

### *White-Tailed Deer*

The young tree growth that covered the forest around the turn of the century provided ideal food and cover for the deer herd. The "Buck Law" passed in 1907 protected female deer from hunting and enabled the herd to increase to the point where between 1920 and 1930 considerable damage occurred to the developing forest. Natural tree reproduction was over-browsed. During some periods in the past 40 years, forest openings have regenerated naturally. However, by the mid-1990s it had become necessary to fence regeneration harvests throughout most of the forest.

### *Climate and Weather Events*

South-central Pennsylvania has a climate classified as humid continental which essentially means that there are 4 distinct seasons. The south-central region of the state, including Buchanan State Forest, has warm and humid summers with temperature highs averaging near 85°F, and winters that are cold with average temperature lows around 25°F. The average annual precipitation for this region is 41 inches and it is generally well distributed throughout the year. Average annual snowfall is 31 inches, occurring from late November through March. Most of the Buchanan State Forest falls in Plant Hardiness Zone 6b. The length of the growing season averages 140 to 150 days annually. This combination of abundant precipitation, long growing season, and relatively moderate temperatures is conducive to growing high quality hardwood trees.

Drought years occurred in 1930 and from 1962-1966, which was the driest period on record for this area. The five-year precipitation deficiency was approximately 50 inches. These droughts seriously reduced tree growth rates and reduced seedling establishment, particularly Virginia pine.

A storm of heavy wet snow accompanied by high winds caused uprooting and breakage of many trees on about 3,000 acres in the eastern part of the Buchanan State Forest during 1993. Many of these trees were removed through timber salvage sales.

The narrow mountain valleys are susceptible to late spring frosts, and frosts frequently occur after leaf emergence in mid-May.

### *Insects and Diseases*

Leaf-eating insects such as the forest tent caterpillar, oak leaf roller, cankerworms, and orange-striped oak worm, have defoliated areas of the forest. The red oak group has been affected by oak wilt. At one time, the Pennsylvania Department of Agriculture had an active oak wilt control program in Bedford, Franklin, and Fulton Counties. Many red oak stands in the Buchanan State Forest have had some trees affected by oak wilt.

The first gypsy moth defoliation occurred in the Buchanan State Forest in 1981. The gypsy moth spray program began in the Buchanan State Forest in the spring of 1982 when private lands in Franklin County, state forest lands in Fulton County and state forest, state parks and private lands in Bedford County were sprayed. The following year, state forest and state park lands in western Franklin, Fulton and Bedford Counties, plus private lands in Fulton and Bedford Counties were sprayed. District personnel sprayed parts of the forest annually until the early 1990's when gypsy moth populations fell dramatically. The Buchanan District sustained heavy oak mortality in the 1982-1985 period because of the combined effects of gypsy moth defoliation and persistent drought conditions. In 1999 populations again increased and considerable acreage was sprayed in 2000 and 2001. The populations rose to very high levels again in 2006 and 2007. The district was able to spray in 2007 and 2008, but once again experienced high level of mortality. Much of this timber was salvaged through commercial timber sales. The severity of the gypsy moth problem varies from year to year. Tree mortality from defoliations is difficult to predict.

Sporadic attacks by the pit-making oak scale have seriously affected, and in some areas, killed chestnut oak. Those trees able to survive the scale attack were left badly stag-headed and in extremely low vigor.

Hemlock woolly adelgid has impacted most of the hemlocks stands of the district, with mortality ranging from mild to severe. Several study sites with Division of Forest Health personnel involving predator beetle release and soil injection with insecticide were conducted in 2002 and 2003. Hemlock mortality in the Sweet Root Natural Area has eliminated all the old growth hemlock from this once pristine area. Populations fluctuate over the district from year to year, and efforts continue to maintain as much of this valuable species as possible.

In 2007 the Emerald Ash Borer was discovered and confirmed along US Route 70 just south of Breezewood, PA. Survey effort began, and a quarantine was enacted, but by 2018 this insect has caused the mortality of nearly all ash in the district. Seed collections were sent to the US Department of Agriculture Seed Bank to preserve species genetics for possible population supplements later in the future.

Recently the Spotted Lantern Fly was discovered in the Bucks County. This species has the potential to impact the orchard and vineyards of the area as well as impact some forest tree species. Despite the quarantine this population is spreading out from its initial detection and was last found as far west as Dauphin County. It is anticipated that it will impact the district during this management plan.

#### *Fragmentation and Connectivity*

Forest fragmentation complicates resource management and has the potential to contribute to isolated populations of species and communities, thus threatening biological diversity. The Forest District will work to reduce and limit forest fragmentation and promote connectivity of high canopy forests by maintaining fluid corridors throughout the state forest. Certain activities including timber harvesting, minerals development, road construction, and others may cause temporary, short-term forest fragmentation. The Bureau of Forestry has developed policies and guidelines for these activities that promote connectivity of high canopy forests.

## 4) Acquisition History

Prior to Europeans settling Pennsylvania, dense forests nearly covered the entire state, except for a few natural meadows in the lowlands and scattered rocky areas in the highlands. These seemingly inexhaustible timber tracts provided the early settlers with raw materials to produce charcoal for the iron and steel industries, ties for railroads, fuel wood and chemical distillation wood, as well as lumber for homes, buildings, furniture, barrels and boxes. The settlers never envisioned that such forests could ever disappear. However, as Pennsylvania's increasing population turned forest land into farms, and as expanding industries consumed more and more wood, the amount of standing timber grew smaller. Then, in the late 1800s, awareness began to grow that the forests were not inexhaustible. Large tracts of land once covered with virgin forests had been cutover and abandoned by the owners. Forest fires burned uncontrolled throughout much of the cutover area. Between 1860 when Pennsylvania led the nation in lumber production and 1900 when it had to import lumber to fill its needs, various efforts were made to halt the depletion of the forests. The future wood supply and the restoration of once-forested areas greatly concerned conservation-minded citizens.

In 1887, the Pennsylvania General Assembly authorized the governor to appoint a committee to examine and consider the subject of forestry in Pennsylvania and report its findings at the next regular session of the legislature. In 1888 a Governor's Commission was appointed to study the forest situation. Authorized by the legislature once again, the governor appointed a second commission in 1893. Because of these studies, in 1895,

Dr. J. T. Rothrock was appointed Commissioner of Forestry in the newly created Division of Forestry in the Pennsylvania Department of Agriculture.

In 1897 the legislature passed an act authorizing the purchase of unseated lands for forest reservations, thus marking the beginning of the Pennsylvania State Forest System. This act provided for the acquisition of not less than 40,000 acres in the headwaters of each of the main rivers of Pennsylvania, mainly the Delaware, Susquehanna, and Ohio, providing the land selected shall be of a character better suited to the growth of trees than to mining or agriculture, and that 50% of the area have an elevation of not less than 600 feet above sea level. In 1898, 7,500 acres of land in Clinton County became the first land purchased under this new act.

The Buchanan State Forest was named in honor of James Buchanan, fifteenth President of the United States, who was born at Stoney Batter in Franklin County. The first purchase of land for the Buchanan Forest was made in 1902 when 1,375 acres in the Bear Valley area of Franklin County were purchased from J. G. Dillon for \$2,751.57. On September 27, 1902, Howard Cessna of Rainsburg, Bedford County, sold 5,300 acres to the commonwealth for \$2.32 per acre. Within the next five years, Cessna and his brother, Walter, would convey title for several additional tracts on the Martin Hill-Evitts Mountain area totaling 10,000 acres. Cessna was the nephew of Thomas Cessna, one of the founders of the Cessna Aircraft Corporation at Wichita, Kansas. The next major purchase was in Allen's Valley where 3,746 acres were acquired September 28, 1904 from George W. Skinner for \$2.00/acre. In 1906 an additional 2,554 acres, comprising five additional tracts, were acquired in Allen's Valley. By 1917 the Bedford County Reserves totaled 10,564 acres and the Buchanan State Forest (formerly Loudon Reserve) in western Franklin and Fulton Counties, contained approximately 11,000 acres, less than one-sixth of the present Buchanan State Forest Acreage.

In 1921 Gifford Pinchot became Forestry Commissioner and reorganized the Pennsylvania Department of Forestry. He divided the State into 26 administrative districts with a professional forester in charge of each. Pinchot's goal was to improve all phases of forest fire protection on all forested areas. This reorganization included what is known today as the Buchanan State Forest District. It combined the old Bedford State Forest (on Martin Hill) and the former Buchanan State Forest (Loudon Reserve). In 1928, 1,081 acres near James Buchanan's birthplace were purchased from R. V. Bridendolph.

Acquisition acreage on Sideling Hill did not begin until February 5, 1929, when the William L. Woodcock Warrant in Wells Township containing 1,449 acres, and a 950-acre tract from John W. Detrick were recorded. On May 8, 1930, deeds for more than a dozen tracts in Fulton County, all purchased from the Reichley Brothers Lumber Company, were recorded in the courthouse at McConnellsburg. The parcels, located in six townships, totaled 9,362 acres for a total of \$21,491 or \$2.29 per acre. Added to other purchases in 1930, total acquisition in Fulton County amounted to 14,860 acres, at a total cost of \$34,956. More than twenty percent of the state forest land on the Buchanan District today was acquired in 1930. Considerable credit for the 1930 purchases must be given to W.H. Cunard, Guy Sipe and J.A. Broadwell, the men who surveyed these lands for the Commonwealth of Pennsylvania.

Virtually all the existing state forest on Sideling Hill and Rays Hill was acquired between 1929 and 1933, the year President Franklin D. Roosevelt created the Civilian Conservation Corps (CCC). Roosevelt was inaugurated on March 21, 1933 and by the end of June three CCC Camps were in operation on the Buchanan State Forest.

In addition to Roosevelt's CCC project, the Buchanan State Forest benefited from still another anti-depression program, called the Resettlement Administration by New Dealers. This federal agency offered farmers in selected areas of sub-marginal soils the opportunity to sell their lands to the U. S. Government. Southern

Bedford County soils and terrain between Chaneyville, Clearville, and Artemas are generally ill suited for cultivation because of the shale and steep slopes. Consequently, when offered market value for their properties, most of the landowners sold out and moved either to the city or better farms. This program resulted in the Soil Conservation Service (SCS) becoming the caretaker for 10,099 acres of worn out, erosion-prone farms. Soon thereafter, the SCS designated the Pennsylvania Department of Forests and Waters as caretaker for the Resettlement Lands. By 1951, 70,000 trees had been planted by forestry and SCS employees. On July 29, 1955 the LU Lands were deeded to the Commonwealth and became state forest lands.

In 1934 Mr. Edmond Kerper, a retired Cincinnati lawyer purchased a 472-acre forest and farm tract on the west slope of Dickeys Mountain, just south of Big Cove Tannery. Kerper died in 1958, leaving a will that bequeathed the entire tract to the Department of Forests and Waters. Thus, "Redbud Valley", as Kerper had named his land, became a part of the Buchanan State Forest.

The decade of the seventies marked an era of additional small land acquisitions. Several land exchanges with the Pennsylvania Game Commission (PGC) and private individuals were successfully negotiated during this period. As a result, Buchanan State Forest lands on Sideling Hill and in the Fort Loudon area were consolidated. In 1973, the U.S. Department of the Interior deeded 1,100 acres in Franklin County to the Commonwealth. This was surplus land from the Letterkenny Army Depot. It included land taken from the state forest when the depot was established.

Acreage remained fairly stable until the early 2000's. A 30-acre parcel located on Town Hill was purchased from the Schriever family in 2001. In 2003, an inholding was purchased on Sideling Hill. At the end of 2007 and early 2008, the Buchanan State Forest added 586 acres in Fulton County and 122 acres in Bedford County and when the Glatfelter Pulpwood Company chose to divest itself of lands. With the help of the Western Pennsylvania Conservancy, Donald Swartzwelder sold 99 acres that were added to Sweet Root Natural Area in February 2013, and another large acquisition consolidated the state forest lands located on Evitts Mountain with the 2014 purchase of 1769 acres from the Hardwood Trails Development Co. and the 2017 purchase of 156 acres from William Mitchell Welsh. The Buck Run area along Route 16 received a 107-acre addition from the James E. Hawbaker purchase. The 2017 2-acre purchase from John A. Cunard rounded out the current era of additions, bringing the total acreage of the Buchanan State Forest to 71,903 acres.

### *Infrastructure and Development on the Buchanan State Forest*

Following the initial acquisition of state forest land, the primary tasks were to reduce the number of forest fires and to reforest the burned areas. To help achieve these objectives, early efforts were devoted to road construction for access, tree planting in burned and open areas, and the establishment of a staff of forest rangers headed by a professional forester. Most of these early roads have been improved and are included in our current road system.

Many of the original plantings established in burns failed, particularly those that sprouted with hardwood regeneration. However, some old-field plantings survived, and these plantations still exist today.

### *Civilian Conservation Corps Influence*

The next major era of forest development came with the establishment of the Civilian Conservation Corps (CCC) in 1933. Five CCC camps were located on the Buchanan State Forest (Allen's Valley, Bear Valley, Oregon, Sweet Root, and Martin Hill). Their major activities included road construction and improvement, trail and bridge

construction, building construction, and recreational area development. Many of the existing facilities on the Buchanan State Forest were developed during this period.

*District Organization*

After the land purchases of the 1920's and 1930's the district was divided into six forest ranger divisions. As the years passed these divisions were consolidated. In the late 1960's, the Martin Hill Division became part of the Chaneyville Division. In the mid 1970's the Allen's Valley Division became part of the Bear Valley Division, and in 1984 the Oregon Division became part of the Sideling Hill Division. At present, the district is divided administratively into three Foreman Divisions: Bear Valley, Sideling Hill and Chaneyville.

*Other Infrastructure Development*

Since the mid 1970's, considerable work was done to improve the infrastructure throughout the district. The Capital Road and Key 93 programs financed road renovation. Building construction and maintenance was carried out with the help of job programs such as the YCC, YACC, Title X, CETA, SBA and PCC. These programs resulted in the construction of pole sheds for equipment storage, renovation of the foremen headquarters, and improvements to four state forest picnic areas. These programs also provided funding for labor intensive projects such as day lighting roads, brushing trails, building vistas, etc.

In 2017 the Buchanan Forest District Resource Management Center (RMC) opened its doors 5 miles north of McConnellsburg replacing the former district office. The former office had been the home of district operations since it was leased in 1967, purchased in 1984, and upgraded in 1996. The Resource Management Center is a huge asset for district and bureau staff by incorporating green construction methods to create an energy efficient office that provides more space and organization, as well as collocating the operations of the South-Central Region Forest Heath staff. Additionally, the conference room and educational displays at the RMC are frequently utilized and have been an asset to the local community organizations.

## 5) Cultural and Historic Resources

**Table 5-1: Cultural Resources in Buchanan State Forest**

Cultural Features	Count of Feature
CCC Camp	5
Charcoal Hearth	95
Homestead	56
Logging RR Grade	2
Mill Site	4
Old Building Foundation	56
Spring Water Collection Site	9
American Chestnut > 10 dbh	1
Cemetery	6
Quarry	4
Spring	35

Buchanan Forest District is a region of historic interest and scenic beauty. In Bedford County, there is a saltpeter cave within the Sweet Root Natural Area where saltpeter had been produced for gunpowder before and during the American Revolution. Close by are the Resettlement Lands, containing several old cemeteries that date back to pre-Civil War days.

Winding through Allens Valley and westward over Sideling Hill in Fulton County are traces of an early military highway known as the Forbes or Forbes-Burd Road, built by General John Forbes and Colonel James Burd. This served as a link between Carlisle and Pittsburgh and provided the British with the means to carry military supplies to their western outposts at Fort Pitt and Fort Duquesne.

Cowans Gap marks the home site of one of the earliest settlers, British Major Samuel Cowan who farmed the area which is now Cowans Gap State Park.

Further south near Cove Gap, is Buchanan's Birthplace Historical Park, the birthplace of James Buchanan. The site, formerly known as Stoney Batter, is marked by an imposing stone pyramid surrounded by Norway spruce trees.

On Sideling Hill Mountain, along old logging trails bearing such names as Hinish and Sproat, there are remnants of logging railroad spurs built at the turn of the century. Nestled at the foot of the western slope of Sideling Hill, near Oregon Creek, is the site of the former CCC Camp No. S-52 which was built in 1933. During the Great Depression, several hundred young men lived here and constructed most of the forest roads and trails which still exist near this area.

In 1940 this camp became quarters for Conscientious Objectors, draftees who were excused from bearing arms during World War II. In 1944 the site was surrounded with a high barbed wire fence and used again by the Army to house German prisoners of war. Today, the observant visitor can still find evidence of the P.O.W. and CCC Camp facilities. CCC Camps were located on Oregon Road, Wertz Road, Bear Valley, and across from the Sweet Root Picnic Area. One building remains at the Oregon site. Several buildings and pavilions remain at Bear Valley.

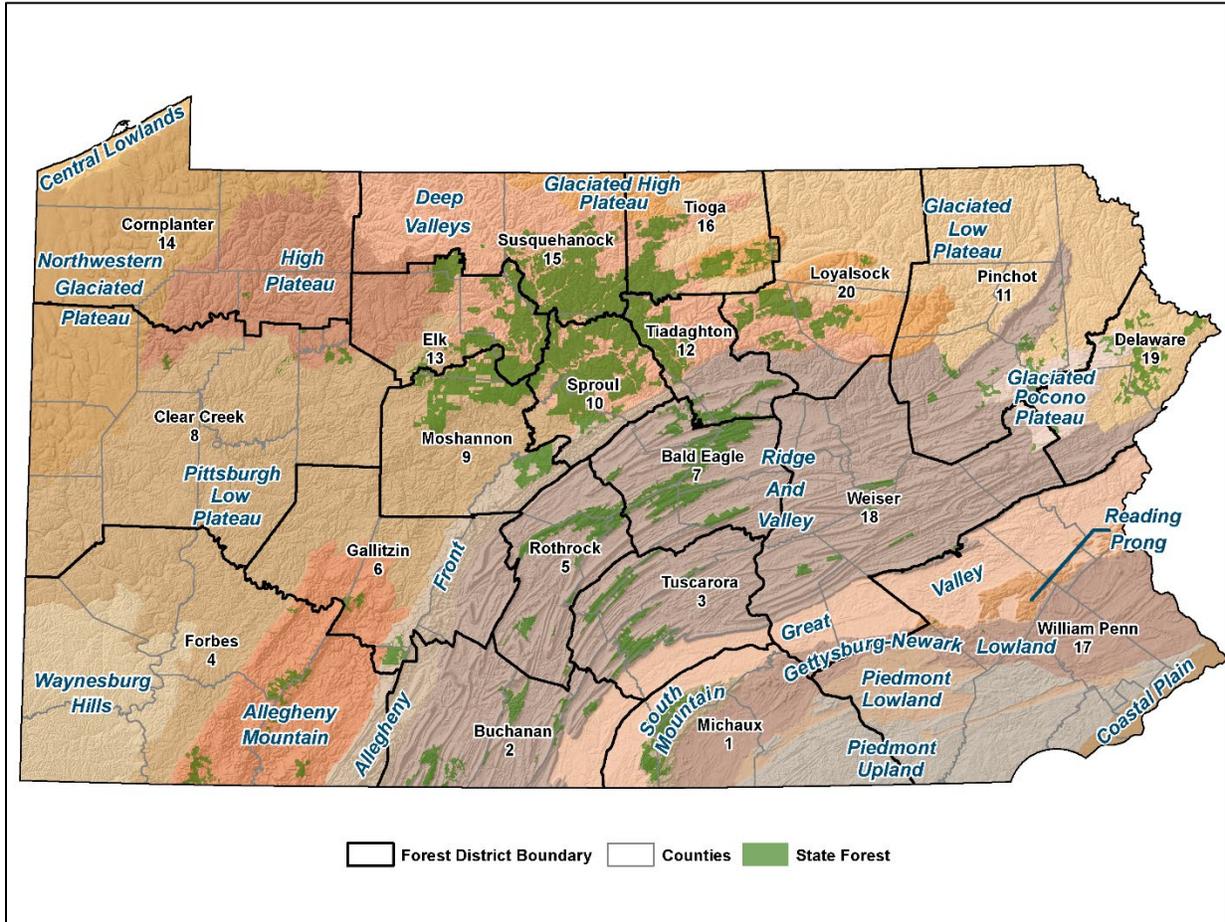
Less than a quarter mile from the Oregon Camp is the unused west portal of the Pennsylvania Turnpike Sideling Hill Tunnel. This tunnel and the Rays Hill Tunnel were completed in 1939. Millions of vehicles passed through these portals until a bypass was constructed over the two mountains in 1967. There is still another interesting bit of history from the Oregon area.

Almost hidden in Woodridge Hollow is an aqueduct or culvert, a masterpiece of native sandstone measuring approximately 6 feet in diameter by 180 feet in length. It was constructed by several hundred stone masons and laborers brought in from Sicily in 1904 and meant to carry the waters of Woodridge Run beneath the South Penn Railroad, which would have traversed northern Fulton County via tunnels through Sideling Hill and Rays Hill. The South Penn line was never finished but much of the route, including the tunnel was utilized by the Pennsylvania Turnpike which opened in 1939.

## 6) Ecoregions, Physiography, and Land Cover

The Buchanan State Forest lies in the Ridge and Valley Eco-region (DCNR, Bureau of Forestry). Long, narrow ridges and broad to narrow valleys with some karstic terrain characterizes this region. Local relief ranges from 301 to greater than 1,000 feet and elevations range from approximately 300 feet to 3,135 feet. Underlying rock

types include a wide variety of sedimentary rocks, including sandstone, siltstone, shale, conglomerate, limestone, dolomite, and others. This region has trellis, angulate, and some karstic drainage patterns



**Figure 6-1.** Ecoregions of Pennsylvania.

Buchanan state forest lands lie within the Ridge and Valley province, near the southern state border. Contiguous forest land extends southward into Maryland

### *Physiography*

The Buchanan State Forest lies within the Appalachian Mountain Section of the Ridge and Valley physiographic province. Defining the western boundary of the Ridge and Valley province is a prominent structural declivity known as the Allegheny Front, formed in the area by the steep or over turned west limb of the frontal anticlines.

The Appalachian Mountain Section consists of successions of narrow ridges and broad or narrow valleys, whose trends are generally northeastward. The surface expression of the area is the result of multiple base level erosion sequences followed by recent uplift. The effect of the uplift was to renew the stream’s power to erode and down cut. As a result, the more resistant rocks (shales and carbonates) have been beveled to form valleys. Some of the ridges have elevations exceeding 2,300 feet, while adjacent valleys lie as much as 1,000 feet below. The highest point in the forest appears to be 2,700 feet on Martin Hill in Bedford County. Conversely, the lowest point occurs where Great Tonoloway Creek crosses the Maryland State line at an elevation of 420 feet. Therefore, the total relief for the forest is 2,280 feet.

The eastern-most portion of the Buchanan State Forest District lies in the Great Valley section of the Ridge and Valley province. Cambro-Ordovician carbonates and shales underlie it. The elevations in the carbonate region range generally between 550 and 650 feet while within the shale region the elevations are usually 100 to 150 feet higher. The large permanent streams of the Great Valley Section are restricted to the shale area, generally flowing in small steep-walled valleys, whereas, streams in the broad, gently rolling limestone areas are usually small and impermanent.

The geology of the state forests will be considered in state forest management operations. The mineral resources on state forest lands will be managed and utilized by exploration and development using wise and sound conservation practices for the long-term good of the citizens of the Commonwealth of Pennsylvania.

### *Stratigraphy*

The rocks exposed in the forest district range in age from Cambrian to Pennsylvanian. The oldest rocks at the surface are the Cambro-Ordovician carbonates. The most ancient of these limestones and dolomites, the Conococheague Group, whose age probably exceeds 550 million years, crops out in the core of an unnamed anticline located near the eastern border of the district. The youngest rocks in the district belong to coal-bearing Monongahela and Conemaugh Formations of Pennsylvanian Age (280 M.Y. old) whose outcrops are preserved in the Broad Top syncline (Broad Top coal field).

The geology of the forest district is dominated by the Roaring Spring anticline, which is most likely a southern extension of the prominent Nittany anticline. The erosion of this structural feature has exposed a sequence of rocks, which range in age from Upper Cambrian (the oldest) through Ordovician and Silurian to Middle Devonian (the youngest). The Cambro-Ordovician carbonate rocks exposed in the core of the Roaring Spring anticline floor the fertile valleys of Morrison Cove and Friends Cove. These truncated folds are known as breached anticlines.

The Lower Devonian Oriskany Sandstone, which has produced natural gas in many fields on the Plateau, crops out in the axis of the Schellsburg Dome near the western border of the forest district. The Upper Devonian Catskill redbeds and Marine beds underlie the largest portion of the forest district, primarily in the central and northwestern regions. The Pocono sandstones of Mississippian age form some of the lower ridges in the district such as Scrub Ridge, Sideling Hill, and Rays Hill.

The youngest rocks in the district are the coal-bearing Monongahela, Conemaugh, Allegheny, and Pottsville Formations, which crop out in the Broad Top coal field. Allegheny and Pottsville rocks are also found along the western border of Bedford County as part of the northernmost extension of the Wellersburg coal basin.

### *Structural Geology*

The predominant structural features in the forest district are a series of folds, which cross the region, trending generally northeastward. The Valley and Ridge is characterized by relatively narrow steeply dipping and complexly folded anticlines and synclines. Many of the beds dip 30° to 40° and in some places; western limbs are rotated past the vertical and dip eastward at an altitude of 70° to 80°. Many of these folds east of the Allegheny Front are also complicated by faults. The major up folds that cross the district include: Deer Park, Wills Mountain, Roaring Springs, Jacks Mountain, Black Log, McConnellsburg and Tuscarora Mountain anticlines. The major down folds include: Bedford, Broad Top and East Broad Top synclines. There are many minor and unnamed folds, which cross the forest district.

Many cross or transverse faults are found within the forest district. These faults cut across the regional trend (northeastward) of the structure. The cross fault at Cowan Gap is nearly vertical and has both dip-slip and strike-slip displacement; meaning movement occurred both in a horizontal (strike) direction as well as in a near vertical (dip) direction, thus, the net relative movement was oblique. The northeast side of the Cowan Gap fault has moved 1,500 feet up and approximately 2,500 feet northwest relative to the southwest side.

The Tuscarora fault is exposed on the side of Tuscarora Mountain east of McConnellsburg. This is a bedding-plant fault of considerable length with a displacement (parallel to bedding), which may be measured in miles. This fault is easily located in the field by the presence of a black mylonite rock. This rock was created by the milling action of rocks during movement on fault surfaces. In this case it was derived from black, graphitic shale.

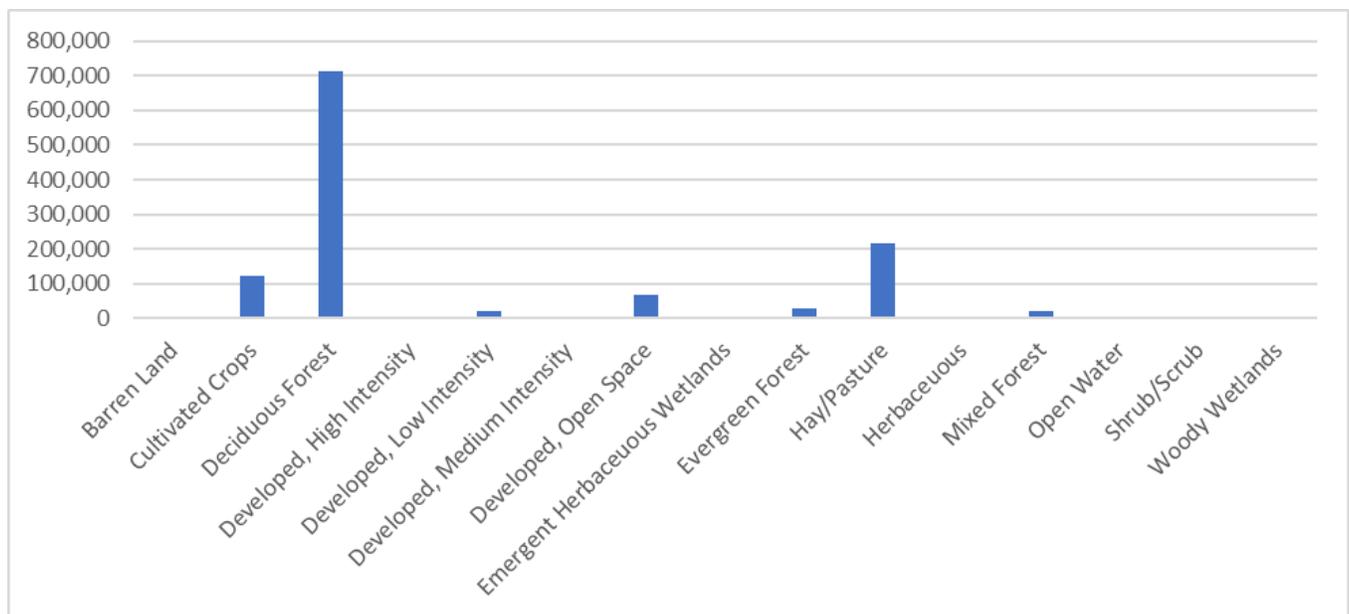
Most folds and high-angle faults in the area are part of structures which can be traced into deformed Carboniferous (Mississippian and Pennsylvanian) rocks and, therefore, most of the deformation of rocks within the forest district is referred to the Allegheny Orogeny, which occurred toward the end of the Paleozoic Era.

Soil and its ecosystem is an integral part of the larger forest ecosystem. The productivity of the forest depends on soil health. The Bureau of Forestry pro-actively manages the soil resource and its important role in the forest ecosystem. The Bureau of Forestry currently uses digital Soil Surveys published by the NRCS when planning activities on state forest land.

### Land Cover

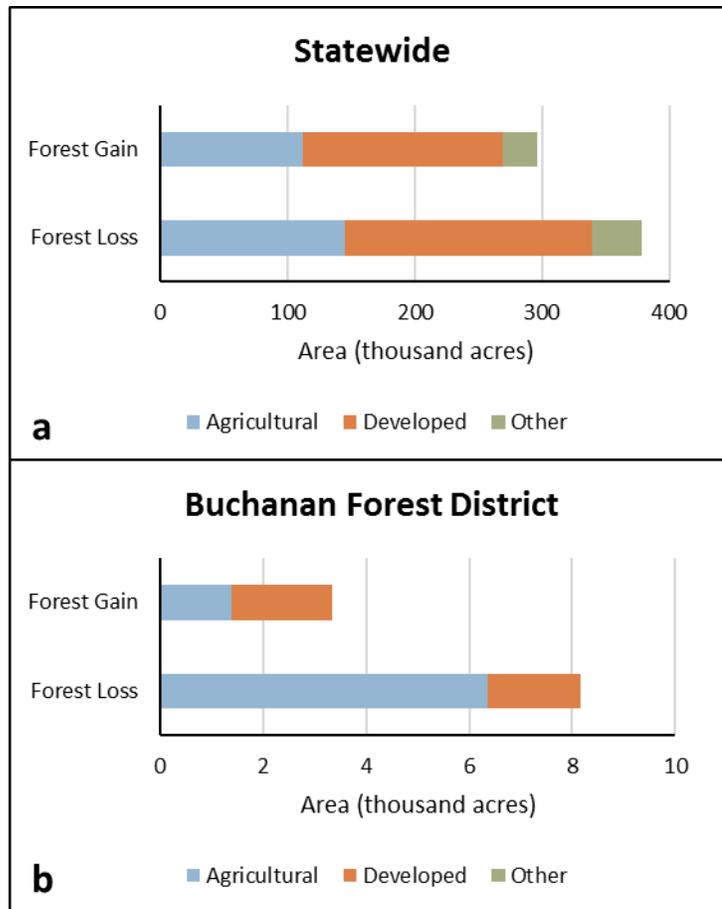
The duty of the Bureau of Forestry is to sustain the health, resilience, and public benefits that accrue from thriving forests across the Pennsylvania landscapes as well as to specifically manage the forested acres within the state forest system.

A critical understanding in forest management is that forests grow and change over time as interconnected, living systems. And they provide the assorted benefits we value them for through interactions with other vegetation cover types and land use practices.



**Figure 6-2.** Acres of land cover types from National Land Cover Database for entire district.

In the Buchanan Forest District, deciduous forests are the predominant land cover. Agricultural activities of hay/pastureland or cultivated crops make up a majority of the remaining land base.



**Figure 6-3.** Gross forest loss and forest gain 2011-2016 (based on US Forest Service FIA plot data: <https://www.fia.fs.fed.us/>) by land-use categories for (a) the entire state; and (b) within Buchanan Forest District.

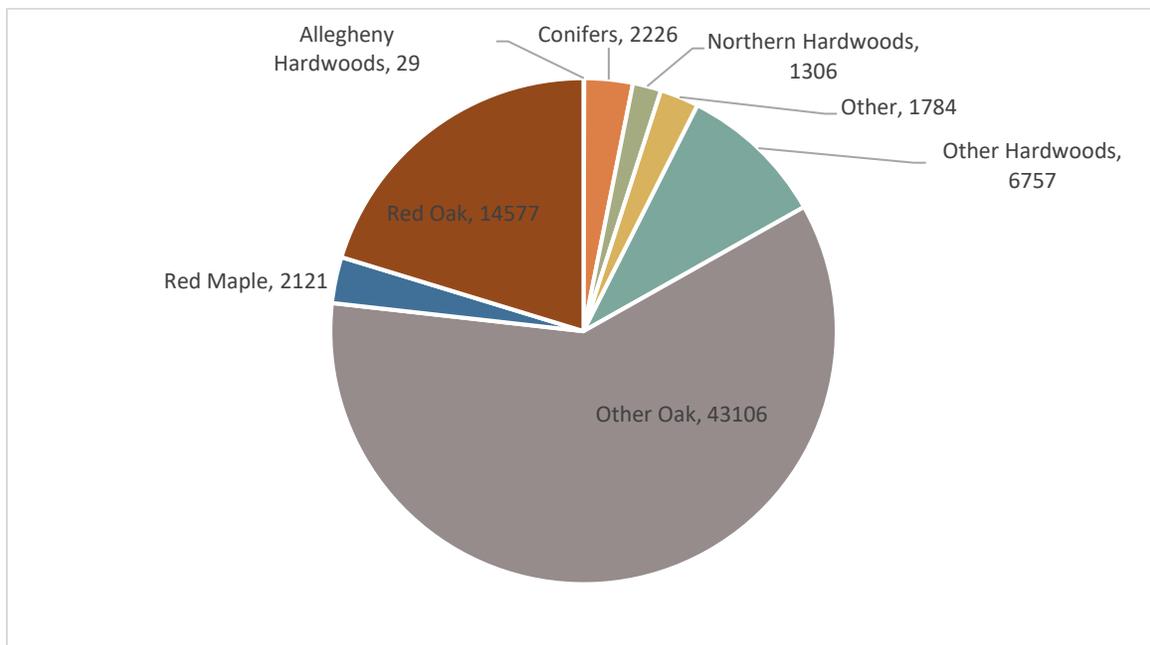
The US Forest Service Forest Inventory and Analysis (FIA) program characterizes the areas of the State using several use categories which are generalized to the following broad classes: forest, agriculture (including pasture and cropland), developed land (including residential and commercial areas, and rights-of-way), water, and other non-forest land. Estimates for land use are produced from all measured plots in an inventory cycle (i.e. these estimates are based on plot expansions, not on a cell by cell analysis of landcover, as in the NLCD shown in various maps in this document). However, these data can be useful in understanding land-use changes dynamics, which allows land managers to make informed policy decisions. The categories in forest gain represent the type of land cover from which the forestland came (e.g. agricultural could be an old farm field that gained enough tree cover in that period to now be classified as forest). Similarly, colors in forest loss represent the categories to which forestland was converted (e.g. agricultural could be a forest that was cut and converted to pasture). To read more about this nationwide forest inventory program, visit <https://www.fia.fs.fed.us/>

## 7) Vegetation Communities and Native Flora

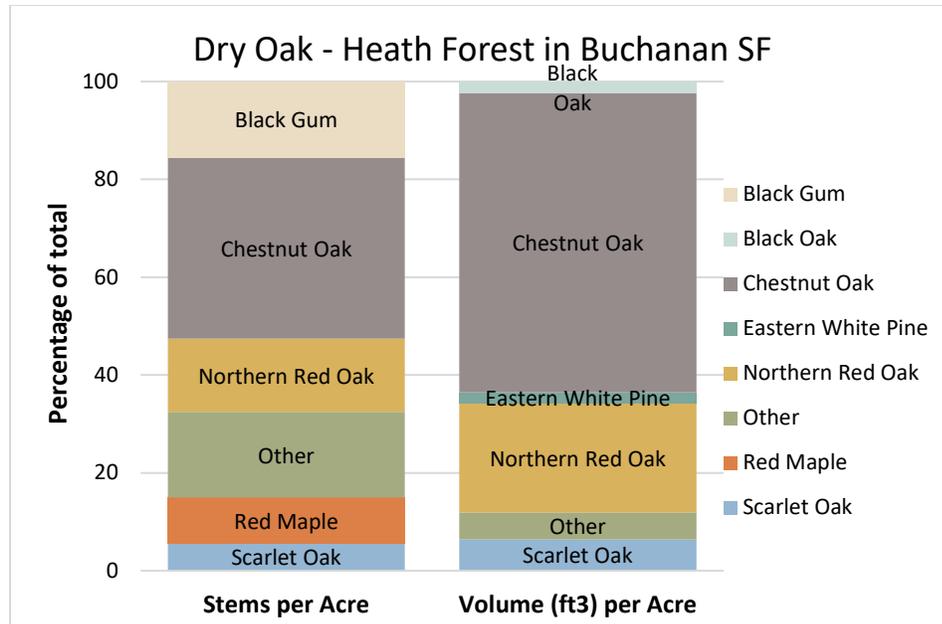
On state forest land, more than 50 typed plant communities have been identified in accordance with the bureau’s typing manual. The bureau recognizes seven aggregated forest types on state forest land, and each forest type includes one or several dominant plant communities (see Table 7-1). For definitions and characteristics of each plant community, see <http://www.naturalheritage.state.pa.us/communities.aspx>.

**Table 7-1.** Dominant plant communities of each aggregated forest type.

Aggregated Forest Type	Dominant Plant Communities
Allegheny hardwoods	Black cherry-northern hardwood forest
Northern hardwoods	Northern hardwood forest Sugar maple-basswood forest
Red oak	Red oak-mixed hardwood forest
Other oak	Mixed oak — mixed hardwood forest Dry oak — heath forest
Red maple	Red maple forest
Conifers	Dry white pine (hemlock) — oak forest Hemlock (white pine) — northern hardwood forest Hemlock (white pine) — red oak — mixed hardwood forest Red pine — mixed hardwood forest Spruce plantation
Other	Aspen-Grey (paper) birch forest Pitch pine-mixed oak forest Tuliptree-maple forest Black gum ridgetop forest



**Figure 7-1.** Acreage of state forest land in this district by aggregated forest type. The forest types are described on p. 108 of the 2016 SFRMP. The Buchanan State Forest is dominated oak forest types. Most of these stands are medium to low quality. The forests in Bedford County contain most of the conifer stands found in the district.



**Figure 7-2.** Species composition (top 5 species) of all stems over 4.5 inches dbh in the forest communities that have over 15 Continuous Forest Inventory (CFI) plots in a district. Buchanan State Forest has over 37,000 acres of dry oak-heath forest, which comprises about 52% of the total state forest acreage in this district. For more information and summaries of the Bureau's CFI data, see the online interactive tool here: [https://pa-forestry.shinyapps.io/cfi\\_explorer/](https://pa-forestry.shinyapps.io/cfi_explorer/)

### Common Communities in Buchanan State forest

#### AH Dry Oak - Heath Forest:

These forests occur on xeric to moderately dry, acidic sites, often on shallow or sandy soils and/or steep slopes. In this oak dominant community, the determining factor for this type is the ericaceous shrub layer, which is typically greater than 30% relative cover. The most characteristic tree species for this type are chestnut oak (*Quercus montana*), usually occurring with a mix of black oak (*Quercus velutina*), scarlet oak (*Quercus coccinea*), and/or white oak (*Quercus alba*). Other tree species often include sassafras (*Sassafras albidum*), black-gum (*Nyssa sylvatica*), sweet birch (*Betula lenta*), red maple (*Acer rubrum*), pignut hickory (*Carya glabra*), pitch pine (*Pinus rigida*), Virginia pine (*Pinus virginiana*), and eastern white pine (*Pinus strobus*). Total cover by conifers does not exceed 25% of the overstory. American chestnut (*Castanea dentata*) stump sprouts are occasionally present.

The shrub layer is dominated by ericaceous species — common species typically include: mountain laurel (*Kalmia latifolia*), sheep laurel (*Kalmia angustifolia*), black huckleberry (*Gaylussacia baccata*), lowbush blueberry (*Vaccinium pallidum*), low sweet blueberry (*Vaccinium angustifolium*), and in more open areas, sweet fern (*Comptonia perigrina*).

Owing largely to the thick oak/ericaceous leaf litter, the herbaceous layer is generally sparse. Common constituents often include teaberry (*Gaultheria procumbens*), Pennsylvania sedge (*Carex pensylvanica*), fibrous-root sedge (*Carex communis*), trailing arbutus (*Epigaea repens*), wild sarsaparilla (*Aralia nudicaulis*), bracken fern (*Pteridium aquilinum*), Indian cucumber-root (*Medeola virginiana*), cow-wheat (*Melampyrum lineare*) and pink lady's-slipper (*Cypripedium acaule*).

AR Red Oak - Mixed Hardwood Forest: This forest type is common in much of Pennsylvania. It occurs on fairly mesic sites and is quite variable in composition. northern red oak (*Quercus rubra*) is the dominant overstory species in these stands with greater than 40% of the total basal area. Associated tree species typically include red maple (*Acer rubrum*), Chestnut oak (*Quercus montana*), black oak (*Quercus velutina*), white oak (*Quercus alba*), mockernut hickory (*Carya tomentosa*), shagbark hickory (*Carya ovata*), sweet birch (*Betula lenta*), yellow birch (*Betula alleghaniensis*), white ash (*Fraxinus americana*), American beech (*Fagus grandifolia*), and/or tuliptree (*Liriodendron tulipifera*). The shrub layer often includes northern arrow-wood (*Viburnum recognitum*), maple-leaved viburnum (*Viburnum acerifolium*), smooth serviceberry (*Amelanchier laevis*), shadbush (*Amelanchier arborea*), striped maple (*Acer pensylvanica*), hornbeam (*Carpinus caroliniana*), hop-hornbeam (*Ostrya virginiana*), witch hazel (*Hamamelis virginiana*), and spicebush (*Lindera benzoin*). Ericaceous shrubs such as mountain laurel (*Kalmia latifolia*), low sweet blueberry (*Vaccinium angustifolium*) and lowbush blueberry (*Vaccinium pallidum*) may also be present but are not abundant. The herbaceous layer is highly variable. Representative species may include sessile-leaved bellwort (*Uvularia sessilifolia*), false Solomon's-seal (*Maianthemum racemosum*), may-apple (*Podophyllum peltatum*), pipissewa (*Chimaphila maculata*), teaberry (*Gaultheria procumbens*), partridge berry (*Mitchella repens*), white wood aster (*Eurybia divaricata*), Indian cucumber-root (*Medeola virginiana*), squaw-root (*Conopopholis americana*), wood ferns (*Dryopteris* spp.), and hay-scented fern (*Dennstaedtia punctilobula*).

#### *Unique Plant Communities:*

A unique plant community of note in Buchanan are shale barrens and rare species that utilize that habitat type such as purple bedstraw (*Galium latifolium*), shale barren pussytoes (*Anntenaria virginica*) and showy goldenrod (*Solidago speciosa* var. *speciosa*). The type of shale barrens present in Buchanan state forest is called Virginia pine-mixed hardwood shale woodlands that is often referred to as shale barrens characterized by patches of stunted scrubby trees occurring on steep, south-facing slopes of weathering shale. These sites are actively eroding, and very dry, at least at the surface. Surface temperatures are very hot in the summer, and the combination of heat and dryness tends to limit the development of vegetation. Those plants that can survive in these extreme conditions comprise a distinctive set of species, some of which are globally rare and are found only on shale barrens. Uncommon plant species characteristic of shale barren sites which have been observed here include Burk's smooth rockcress (*Arabis laevigata* var. *burkii*), mountain nailwort (*Paronychia fastigiata* var. *pumila*), smallflower phacelia (*Phacelia dubia*) and downy arrow-wood (*Viburnum rafinesquianum*).

There are three wild plant sanctuaries within Buchanan state forest, which receive various active management and treatments to benefit the native wild plants present there.

## 8) Forest Health

One constant in forest management is that change is always happening. Buchanan State Forest is currently impacted by a myriad of issues that have the potential to continue the change paradigm. It is a goal of every forest manager to be a proactive as possible and to assist in building resiliency into the forest ecosystems that we manage. The health of state forest ecosystems will be managed through monitoring, prevention, and suppression of destructive forest agents.

## *Invasive Plants*

An invasive plant is a non-native species that grows aggressively, spreads, and displaces native plants. Most were introduced accidentally through gardening and agriculture practices. In their natural range, these plants are limited by factors that keep them in balance including pests, herbivores, or diseases. However, when introduced into an area where these limitations are absent, many of these species become invasive. Invasive plants can be trees, shrubs, vines, grasses or flowers. They reproduce by roots, shoots, seeds, or all three. Invasive plants tend to appear on disturbed ground, and the most aggressive can invade existing ecosystems. Invasive plants are generally undesirable because they are difficult to control and can dominate whole areas. Ecological impacts of invasive plants include: cause changes to the availability of nutrients, light and water for native plants; disruption of native plant-pollinator relationships; serve as host reservoirs for plant pathogens; replace nutritious native plant foods with lower quality sources; kill trees and shrubs through girdling; cause changes in the rate of soil erosion; and cause changes to natural ecological processes, such as plant community succession. Invasive plants reduce habitat for native wildlife. Invasive plants often emerge earlier in the spring and push natives out through fast reproduction. This limits habitat available for native wildlife. Invasive plant infestations can be extremely expensive to control, as well as environmentally destructive.

The number of invasive plants impacting the Buchanan Forest District is daunting. Some are too well established to ever hope to eradicate them. The following invasive plants are currently the most problematic for our ecosystem management activities:

- *Ailanthus*
- Mile-a-Minute
- Japanese Stiltgrass
- Japanese Barberry
- Poison Hemlock
- Japanese Honeysuckle
- Bush Honeysuckle
- Garlic Mustard
- Oriental Bittersweet
- Multi-flora rose
- Autumn olive
- Winged Euonymus
- Japanese Knotweed

The Buchanan Forest District conducts an ongoing herbicide program to minimize the impacts of these species to the ecosystem and our other management activities such as timber production and recreation. Spraying begins in early spring before green-up with preemergent herbicides at targeted locations and continues through the fall. We have also released several bio-controls for species that have that option. Mile-a-minute weevils have been introduced across the district, but despite thriving populations the scale of the mile-a-minute invasion makes seeing their impacts difficult. Buchanan staff also monitors the forest continually to watch for other known invaders. This gives us the ability to be proactive and minimize the risk of adding to our long list of problem species. The most notable species on our current watch list are Wavyleaf basket grass and Japanese Angelica Tree.

More information on invasive plant species, including fact sheets for each, can be found at:

<https://www.dcnr.pa.gov/Conservation/WildPlants/InvasivePlants/Pages/default.aspx>

### *Invasive Insects and Diseases*

Forest insects and diseases are serious threats to the health and sustainability of the forest ecosystem. As trees age or are stressed by external factors, they become less able to fight off insects and disease-causing pathogens, eventually succumbing to insect infestations and diseases that help finish off the declining tree. External factors that can stress trees include drought, excessive precipitation, abnormal temperatures, and wind. Some insects and diseases are native to our area but there are several insect and diseases that were introduced into our area and into the United States from foreign countries. The non-native, invasive pests are usually much more destructive to our forest ecosystem since there are no natural biological controls in place.

The chestnut blight and Dutch elm disease were introduced into the United States and changed the makeup of the forests during the early part of the last century. Since then a number of other species have impacted the forest to varying degrees.

### **Gypsy Moth**

Gypsy moth was accidentally introduced at Medford, Massachusetts in 1869 and first discovered in Luzerne County, Pennsylvania in 1932. Since then, periodic outbreaks have defoliated and caused tree mortality in Pennsylvania's woodlands. Our ecologically and economically valuable oak species are susceptible and therefore a major concern along with hundreds of other species that are hosts. Oaks provide both hard mast and nutritious foliage and buds for many wildlife species to feed on. Every year the Bureau of Forestry conducts an aerial survey of both state and private forests in the district to detect gypsy moth outbreaks and other damage causing agents. Several gypsy moth defoliations have killed hundreds of acres of oaks in the Buchanan State Forest. To date there have been two cycles of defoliation severe enough to cause wide spread mortality in Buchanan: the late 1980's-early 1990's and then again in 2006 through 2008. Most of the oak killed by the gypsy moth has since been salvaged through timber sales. Small populations of gypsy moth have since occurred across the entire Buchanan State Forest but the gypsy moth nucleopolyhedrosis virus (NPV) and *Entomophaga maimaiga* fungus have kept the populations in check.

### **Emerald Ash Borer**

The emerald ash borer (EAB) is a half-inch long metallic green beetle. Larvae of this beetle feed under the bark of ash trees and eventually girdle and kill the entire tree. Emerald ash borer was first identified in North America in southeastern Michigan in 2002. Emerald ash borer feeds exclusively on ash trees in North America. Tens of millions of ash trees have been lost to this pest, which usually kills ash trees within 3-4 years of infestation. EAB was first detected in Pennsylvania in 2007 on the northern edge of the Forbes Forest District. It was found in Buchanan Forest District in 2010. EAB spread rapidly and most of the ash trees in the Buchanan State Forest and statewide are dead or dying. Ash seeds were collected in the Buchanan Forest District and across the state to be sent to the national seed bank in the hopes of preserving the species diversity for the future. District staff continue to survey for lingering ash and report locations to the Division of Forest Health.

### **Hemlock Woolly Adelgid**

The hemlock woolly adelgid, is a serious pest of eastern hemlock in the eastern states. This insect was first reported in southeastern Pennsylvania in the late 1960's. The hemlock woolly adelgid sucks sap from the young branches which results in premature needle drop, branch dieback, and eventual tree death. Hemlocks have

been infested on the Buchanan for possibly two decades or more, and thousands of trees have died. One of the most notable impacts on the Buchanan State Forest was to the Sweet Root Natural where huge old-growth hemlocks used to line the stream. Nearly all the hemlocks in this area perished despite efforts to treat many of these trees with insecticides. Across the Buchanan Forest District pockets of hemlocks still survive, especially seedlings and saplings along with some larger unhealthy-looking trees. Insect predators the adelgid have been released to aid in long-term control of this pest.

### **Spotted Lanternfly**

A recent arrival on to Pennsylvania is the Asian native spotted lanternfly (SLF). It was discovered in Berks County in September 2014 and was almost immediately placed under quarantine. This invasive planthopper is a sap sucking insect that greatly weakens the host to other stressors though it generally does not kill the host outright, but the resulting excrement covers the lower limbs and ground with honeydew. This honeydew and fungal growth, known as sooty mold, reduces salability of fruits. This species is spreading despite the quarantine and affects over 70 plant species that occur in Pennsylvania, including grapes, hops, fruit trees, conifers and hardwood species. The current strategy for SLF management is to slow the spread. Because the Spotted Lanternfly is a poor flyer, the main method of movement over long distance is from human transportation making it critical to not move firewood and inspect vehicles and recreational aids.

### **White Pine Decline**

White pine decline is characterized by chlorosis, premature needle drop, branch flagging, branch or trunk cankers, and tree death are the symptoms of several fungal pathogen causal agents of white pine decline. The amount of precipitation has been linked to severity of outbreaks of these diseases. An increase in precipitation during the months of May, June and July, the months when white pine needles are elongating, is positively correlated with damage from needle blight pathogens. However, as is the case with many conifer needle pathogens, that effect has a one-year delay. There are no known management or practical treatment options for use in a forested setting. Maintaining vigorously growing trees may reduce the impact of these foliar pathogens.

### **Thousand Cankers Disease**

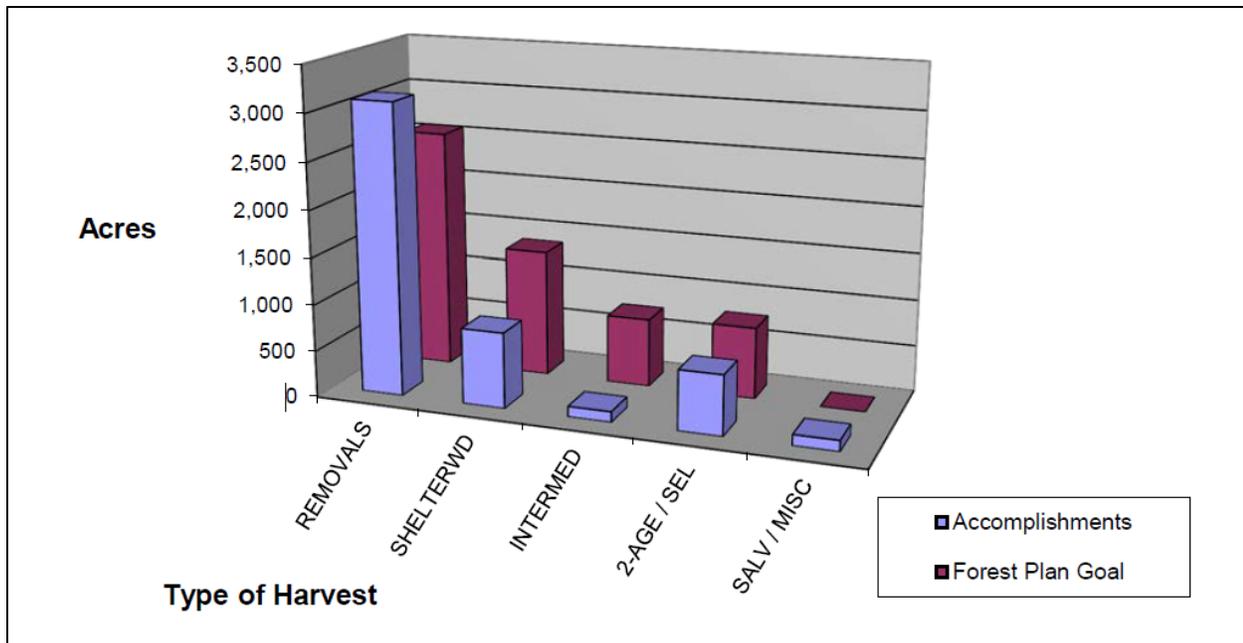
Thousand cankers disease (TCD) is the dieback and mortality of eastern black walnut (*Juglans nigra*) from an interaction of a fungus and tiny reddish-brown bark beetle called the walnut twig beetle that is native to Arizona, California, and New Mexico. The walnut twig beetle creates galleries beneath the bark of affected branches and the main stem, resulting in fungal infection and canker formation from the pathogen *Geosmithia morbida*. The large number of cankers found on infected stems suggests the disease's name, thousand cankers disease. TCD was found in southeastern Pennsylvania in 2011. There is a quarantine in place for southeastern Pennsylvania. Visually inspecting walnut trees for dieback is currently the best survey tool for detecting TCD in the eastern United States. In addition traps are used to capture the walnut twig beetles.

### **Oak Wilt**

Oak wilt is fungus that clogs the xylem, or water-moving system of a tree, which rapidly kills the infected tree. This disease primarily impacts red oak trees. This disease symptom usually occurs in late spring or summer but can be difficult to diagnose. Oak wilt fungus also spreads from tree to tree through root grafts among neighboring red oak trees. Buchanan State Forest has a few spots of past infestation that were treated by tree removal. Efforts to monitor for this disease are ongoing across the district.

## 9) Timber Management and Forest Regeneration

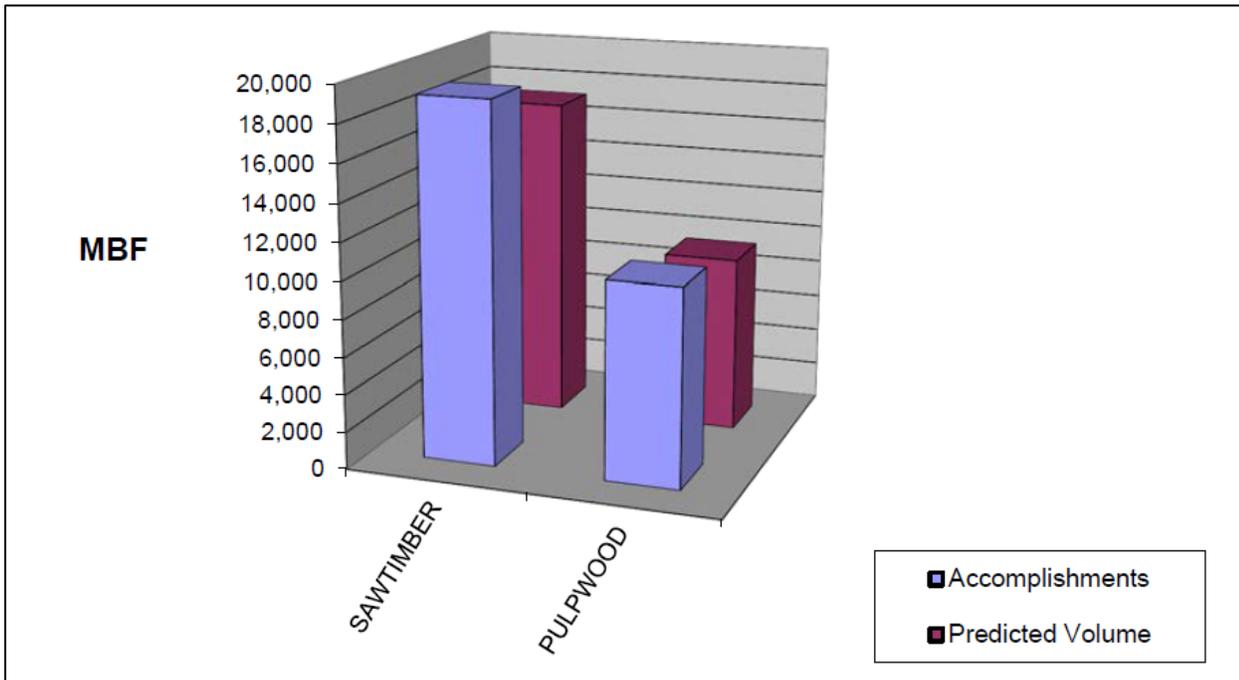
The bureau created a harvest allocation model that sets timber harvest schedules for state forest land in each district. The goals of the model are to promote and maintain desired landscape conditions, create a diversity of successional stages and native forest communities, balance the age class distribution, and provide a sustained yield of quality timber. The model uses the bureau’s forest inventory data, economic information, bureau policies, and desired ending target forest conditions to develop timber harvest schedules that best meet the bureau’s silvicultural and timber management goals. A detailed discussion of the harvest allocation model can be found in the 2016 SFRMP, beginning on page 93.



**Figure 9-1.** Chart comparison between actual harvest acreage accomplishments and harvest allocation model goals from the first decade of the harvest allocation model implementation. Rows from left to right represent: Overstory Removals (even-age), Shelterwoods (even-age), Intermediate Treatments (even-age), Two-age and Uneven-age Buffer Treatments, and Salvage / Miscellaneous Treatments.

**Table 9-1.** Comparison between actual harvest accomplishments and harvest allocation model goals from the first decade of the harvest allocation model implementation.

<b>HARVESTED AREA (ACREAGE)</b>							
	All Planned Forest Treatments					Salvage/ Misc.	All Harvests
	Removals (Even-aged)	Shelterwood (Even-aged)	Intermediate (Even-aged)	Two-Age & Uneven-Age Buffer Treatments	Total		
Executed Contracts '04-'14	3,113	813	112	642	4,680	116	4,796
Forest Plan Goal '04-'14	2,568	1,361	737	770	5,436	0	
% of Plan Goal Achieved	121%	60%	15%	83%	86%		



**Figure 9-2.** Chart comparison between actual harvest volume (thousand board feet – MBF) accomplishments and harvest allocation model goals from the first decade of the harvest allocation model implementation for sawtimber and pulpwood.

**Table 9-2.** Comparison between actual harvest volume (thousand board feet – MBF) accomplishments and harvest allocation model goals from the first decade of the harvest allocation model implementation.

<b>TIMBER VOLUMES (MBF OR MBF EQUIVALENT)</b>								
<b>All Planned Forest Treatments</b>			<b>Salvage/Misc.</b>			<b>All Harvests</b>		
<b>Sawtimber</b>	<b>Pulpwood</b>	<b>Total</b>	<b>Sawtimber</b>	<b>Pulpwood</b>	<b>Total</b>	<b>Sawtimber</b>	<b>Pulpwood</b>	<b>Total</b>
19,197	10,565	29,762	272	448	720	19,469	11,013	30,482
17,229	9,432	26,661	0	0	0			
111%	112%	112%						

Timber harvesting treatments on the Buchanan State Forest varied a bit from the model to respond to unexpected salvage operations caused by gypsy moth mortality. Overstory Removals were the bulk of these salvage treatments due to the pervasive nature of the mortality. Shelterwoods were well under the goal to allow for the response to this act of nature and to capitalize on other areas of natural regeneration. Intermediate treatments were also below goal mostly due to the lack of commercially viable stand in which to apply this type of treatment. As future models are tweaked both shelterwood and intermediate treatments will likely be altered to reflect the actual utility and need for these types of treatments.

The Bureau started the second decade of the allocation model and the Buchanan State Forest Goals for this period are listed in the following table.

**Table 9-3.** Target shelterwood (Shelt), overstory removal (OR), intermediate (Int), and buffer treatment acreages for the second decade of the timber harvest schedule, aggregated by forest type, site class, and treatment. Additional shelterwood treatments for 3 or more stage shelterwoods are not represented in these targets.

<b>Aggregated Forest Community Type</b>	<b>Site 1</b>		<b>Site 2</b>		<b>Site 3</b>		<b>Totals</b>			
	<b>Shelt</b>	<b>OR</b>	<b>Shelt</b>	<b>OR</b>	<b>Shelt</b>	<b>OR</b>	<b>Shelt</b>	<b>OR</b>	<b>Int</b>	<b>Buffer</b>
Northern Hardwoods	0	0	0	0	0	0	0	0		
Allegheny Hardwoods	0	0	0	8	0	0	0	8		
Red Oak	43	199	866	1,368	0	0	910	1,568		
Other Oaks	0	158	860	247	51	217	911	623	670	700
Red Maple	0	0	0	0	0	0	0	0		
Other Hardwoods	0	57	12	11	56	56	68	125		
Conifers	0	0	0	0	0	0	0	0		
<b>Totals</b>	<b>43</b>	<b>415</b>	<b>1,738</b>	<b>1,635</b>	<b>107</b>	<b>274</b>	<b>1,889</b>	<b>2,323</b>	<b>670</b>	<b>700</b>

## Forest Regeneration

Without successful regeneration of forest trees, no silvicultural system is possible. Past and current managers of the Buchanan state forest must consider a range of challenges to the regeneration of healthy forest stands during silvicultural treatments. The following lists both historic and currently emerging challenges to successful regeneration.

- **White-tailed Deer:** Deer populations vary across the Buchanan Forest District. Currently, deer densities in the Bear Valley, Allens Valley, Sideling Hill, Martin Hill and Evitts Mountain areas seem to be low enough to allow oak regeneration to become established. All the resettlement lands still have populations that are impacting the regeneration and the habitat. This is likely because of the interspersed private land and agricultural fields located at the edges of the forest. To mitigate the effects of deer on sale areas, the Buchanan Forest District has erected 95 fences covering 1,802 acres. These fences have allowed the natural regeneration to grow out of the reach of deer browsing impacts. Once this goal is met the fence is removed. Currently only 3 fences remain on 81 acres of the forest and all are scheduled to be removed in the next few years.
- **Seed production, germination, depredation:** Chestnut oak is the only member of the oak group that has frequent large acorn crops on the forest. Red oak produces good crops in the district sporadically especially in the Martin Hill area. Tree-of-Heaven and striped maple seem to produce lots of seed annually. Most of the conifers present on the forest produce good seed crops often enough to make pine regeneration dependable if deer and competing vegetation can be controlled. Deer, turkeys, chipmunks, mice, acorn weevils and other creatures can and often do wipe out small seed crops especially acorns.
- **Competing vegetation (woody and herbaceous):**
  - **Tree-of-Heaven (*Ailanthus altissima*):** This exotic tree species has invaded the district in large numbers. Sales with this species require several years of pretreating by basal spraying and then several years of follow up post sale activities. In Bedford County even this intensive treatment regime is not as effective as it once was, as we are seeing massive flushes of seedling origin trees immediately post-harvest. Researches from WVU are studying treatment options.
  - **Striped Maple (*Acer pennsylvanicum*):** This native understory tree, is a problem on many sites in the Buchanan. Cutting in these areas tends to greatly increase the problem, as the dense, low level shade of the “released” stripe maple layer makes it virtually impossible for other forms of desirable vegetation, including seedlings of desirable tree species to become established. The district has tried a small-scale prescribed burn and a small area of cutting and stump spraying large striped maple. Several treatments of this species have been conducted in the district with mixed success.
  - **Other Tree Competition:** Low value tree species such as black birch, red maple, black gum and black locust often out compete the more valuable oak, poplar, and sugar maple in this part of the state. We are incorporating spray requirements into sale contracts where these species are present in quantities that may affect regeneration in large parts of the sale area. While this serves to lower the value of the sales it ensures that the work is completed at the optimal time to ensure growing space for the preferred species.
  - **Ferns:** While not as big a problem as in northern PA, Hay-scented Fern (*Dennstaedtia punctilobula*) is a problem in some stands. Local treatments have occurred, and a contract spray is scheduled during the upcoming management period.

- **Greenbrier (*Smilax rotundifolia*):** This is species causes issues where it exists in thick patches. Most of these are found in parts of Bedford County. Woven wire deer exclosures protect greenbrier from deer and can make the problem worse.
- **Other competition:** Species such as mile-a-minute, Japanese honeysuckle, oriental bittersweet and autumn olive, Japanese stiltgrass all are creating impacts on regeneration at various locations in the district. Many areas have been treated with herbicide to control the effects of these species at least long enough to get regeneration established.
- **Other factors affecting regeneration:** These include frost, drought, the remnant effects of acidic deposition, and a variety of forest pests and diseases that limit host seed availability and viability.

## 10) Wildlife

The Buchanan State Forest manages all its forest habitat to diversify community types, balance age class, and create landscape level patch size diversity to maximize the ecological diversity and biological productivity of the forest, stream, and wildlife communities today and for future adaptability. The Buchanan State Forest is dominated by mixed oak forest which lends itself to management for a wide variety of native wildlife. Over the years many actions have been incorporated into our routine forest management to maximize our benefit to native species. Foresters on the Buchanan utilize native seed mixes on nearly all timber sale haul roads and landings to benefit pollinators, native insect, and bird species. Sales are marked with a variety of patch sizes and edges to allow for the best utilization by songbirds, turkeys, and small mammals. Wildlife species such as white-tailed deer, ruffed grouse, woodcock, eastern cottontail, black bear, and countless song birds thrive in the early successional forest created by regeneration treatments. Certain trees are retained in sales to protect den and roosting habitat. Streams are buffered to keep natural temperature regimes in place and allow for natural in stream woody debris to accumulate. In addition to all these routine actions several species and areas are highlighted for specific or more intensive management.

### *Species of Special Concern for Buchanan Forest District*

The Buchanan State Forest is home to several species that are threatened, endangered, imperiled or at risk to become so. Buchanan State Forest has populations of Allegheny woodrat (*Neotoma magister*) which is a native rat that is characterized by its large eyes, naked ears, long whiskers, and a long hair covered tail. The Allegheny woodrat is listed as threatened and protected under the Game and Wildlife Code. It is a priority species in the state Wildlife Action Plan. Buchanan staff place an activity buffer around all known population sites, and protects and looks for additional potential habitat.

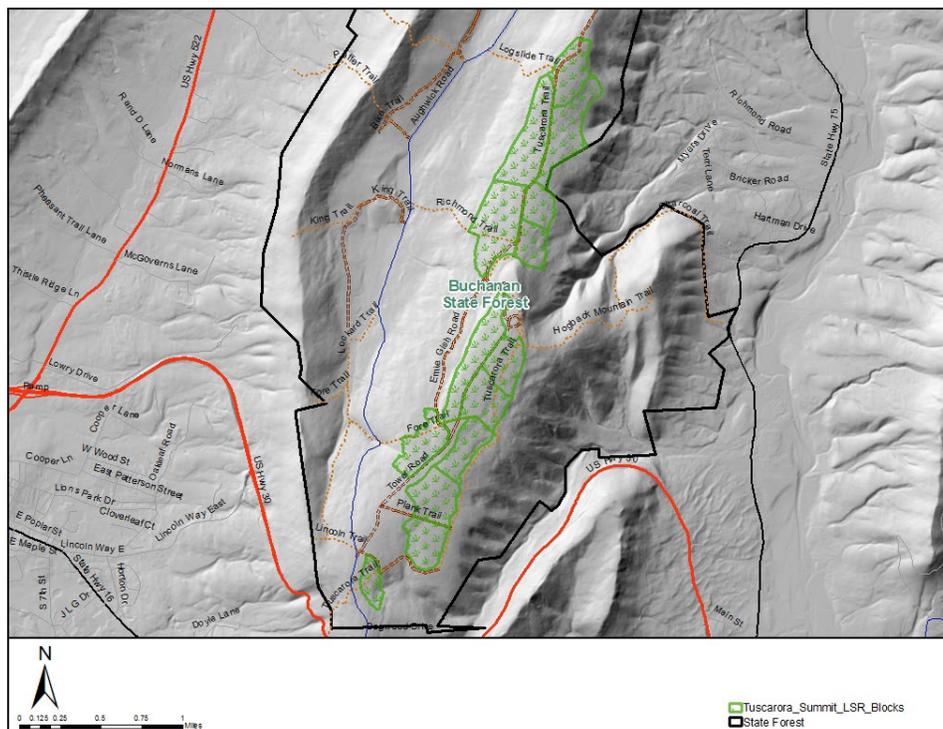
The Timber Rattlesnake (*Crotalus horridus*) is a native venomous snake that has historic, symbolic, medical, and ecological importance. It is currently a candidate species of special concern in Pennsylvania that is regulated by the PA Fish & Boat Commission (PFBC) (PA Code, Title 58, Chapter 75). Rattlesnakes are also classified as being a reptile Species of Greatest Conservation Need in the PA Wildlife Action Plan (PGC-PFBC 2015). Timber rattlesnakes play a critical role within forested ecosystems by eating a variety of small rodents thus helping to control rodent populations. Left unchecked, small rodents can hinder forest regeneration by damaging young seedlings. Large rodent populations also contribute to the spread of diseases like Hantavirus through their droppings, and Lyme disease by carrying ticks.

Many bats (*Myotis* spp.) are also of special concern across the state and the Buchanan State Forest. Impacted by habitat loss, fragmentation, and most recently by white-nose syndrome, many Pennsylvania native bats,

especially the little brown bat and the northern long-eared bat, continue to decline. Bats live in a variety of habitats, including wetlands, fields, forests, cities, and suburbs. On the Buchanan forest management and timber harvesting have the potential to impact the foraging, roosting, maternity colony, spring staging, fall swarming and migratory habitat. However, forest management and prescribed burns also help to create foraging habitat which is beneficial to bats. To avoid impacts to the greatest extent possible and mitigate them where they might occur, the Bureau of Forestry is working with the U.S. Fish and Wildlife Service (USFWS) in developing a Habitat Conservation Plan (HCP) for the Indiana bat and northern long-eared bat. Currently Pennsylvania Natural Heritage searches alert foresters working in the Buchanan State Forest to the potential of local populations and best management practices are followed such as protecting snags with loose bark and managing timing of harvest are used to benefit the populations in this area.

*Tuscarora Summit Landscape Restoration Project*

With help from grants for landscape scale restoration and the Ruffed Grouse Society, the Tuscarora Summit Landscape Restoration (LSR) project will create early successional forest and shift the stand to a pitch pine and scrub oak barrens community. This forest type is more beneficial to a variety of species under threats from shrinking habitat. The areas in this project have been impacted by several gypsy moth defoliation events, the reduction of a natural fire regime, and poor soils. This has created stagnant stands of timber with lower benefits to wildlife.



**Figure 10-1.** Location Map of Tuscarora Summit Landscape Scale Habitat Restoration.

The project area consists of approximately 615 acres on Tuscarora Mountain in Fulton and Franklin counties. The stand changes will promote better habitat for species such as ruffed grouse, American woodcock, golden-winged warbler, white-tailed deer, and many migratory song birds, as well as all early successional species. The use of multiple forestry operations such as timber sales, forestry mowing, and combinations of the two along

with prescribed fire will be employed in the establishment and maintenance of this early successional habitat. Each of these operations will be evaluated to determine the most cost-efficient combination of forestry operations to achieve the desired outcome for the project.

### *Important Bird Areas*

The National Audubon Society has a mission of protecting birds and the places that they need, today and tomorrow. As part of that mission they host a list of Important Bird Area (IBA) where habitat conservation can benefit a wide variety of bird species. In 1996, Pennsylvania developed the first statewide IBA program in the country. The Buchanan Forest District has two designated Important Bird Areas located within its boundaries. Buchanan foresters manage for a variety of forest successional stages to aid a wide variety of bird species within and outside the IBAs.



**Figure 10-2.** National Audubon Society Important Bird Area map. Red sites are global IBA and green sites are statewide IBAs.

### **The Kittatinny Ridge IBA**

This IBA is located along the western side of the Cumberland valley and is a global IBA. This IBA is the premier raptor migration corridor in the northeastern U.S. and one of the leading sites in the world. However, this area benefits more than just raptors, it is also habitat for Cerulean Warbler, Golden Winged Warbler, American Woodcock, and many others. Over 150 species are recorded during fall migration generally following the ridgeline. Common sightings include Sharp-shinned Hawk, Cooper's Hawk, American Kestrel, Red-shouldered Hawk, Merlin, and Broad-winged Hawk, Ruby-throated Hummingbirds, many forest interior birds and Monarch Butterflies. The variety of forest habitats provided on the Buchanan State Forest aid nearly all these species.

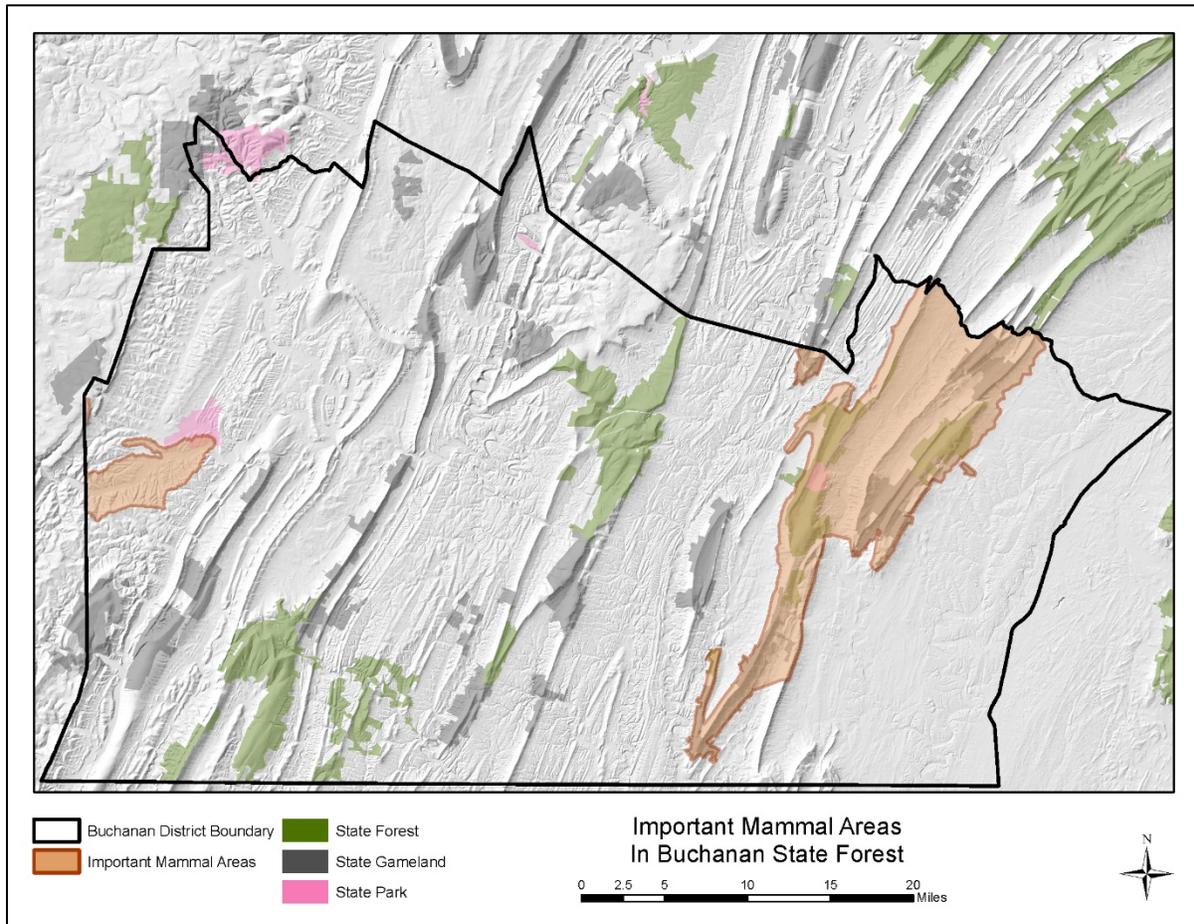
### **The Allegheny Front IBA**

This IBA covers parts of Bedford, Blair, Cambria, Centre, Clearfield, Somerset and is a statewide IBA. This another ridge line providing important migratory habitat for many species. The Allegheny Front is known for the large numbers of Golden Eagles spotted during fall and spring migrations. This habitat also benefits many songbirds.

### *Important Mammal Areas*

Patterned after the IBA, the Pennsylvania Important Mammal Areas (IMA) Project was initiated in 2001 to promote the conservation of mammals by identifying sites or regions that include habitats critical to their

survival, and to educate the public about mammals and their needs. The program is administered by the Pennsylvania Game Commission but covers both public and private lands and serves to focus attention on and protect mammal species and their habitat.



**Figure 10-3.** Map of Tuscarora/Blue Mountain South IMA.

Buchanan Forest District contains part of the Pennsylvania Important Mammal Area (IMA) #21: Tuscarora/Blue Mountain South. This IMA is in parts of Franklin, Fulton, Juniata, and Perry counties and is dominated by mixed coniferous deciduous forests, these ridges have numerous rock outcrops interspersed with forests. This site was selected for its potential to protect and improve habitat for Allegheny woodrats, eastern small-footed myotis, Indiana myotis, and northern myotis.

*Reptile and Amphibian Protection Areas*

Pennsylvania is home to many species of frogs, toads, lizards, snakes, turtles, and salamanders. These species provide critical ecosystem values and have been impacted by habitat fragmentation and loss. To assist with maintaining and improving habitat for these species areas statewide have been designated as a Reptile and Amphibian Protection Areas. The Buchanan State Forest’s Sweet Root Natural Area is one of these areas. Sweet Root provides a wide range of habitats from wetlands to rock outcrops as such it can host a large variety of reptile and amphibian species native to Pennsylvania. Because it is a Natural Area, Sweet Root is not impacted as much by even temporary fragmentation and habitat change.

## *Deer Management*

White-tailed deer are an important part of the history of Pennsylvania's forest. The recovery of deer populations from near extinction in the late 1800's to their present abundance provides opportunities for hunting and recreation. However, it has been well documented that deer can cause damage to tree seedlings and plants. Deer can also cause regeneration failure requiring expensive fencing around recently harvested areas, and dramatically reduce habitat for other wildlife. When the white-tailed deer population is out of balance with habitat, it impacts state forests and parks by browsing tree seedlings, shrubs, and wildflowers beyond their capacity to reproduce, impacting the ability to sustain a healthy, fully functioning forest. Excessive browsing of early forest regeneration can suppress certain tree species and promote the expansion of unpalatable or resilient species, further slowing the regeneration process. By exhausting their major food source and obstructing forest regrowth, deer in high numbers can cause a forest's ability to support future deer populations to decline.

Establishing young forests enhances the mix of forest habitat and is good for other wildlife and overall forest health. Out-of-balance deer populations impact other wildlife and frustrate efforts to establish healthy, young forests. The Bureau of Forestry recognizes the ecological importance and considerable influence of white-tailed deer on commonwealth forests and is dedicated to maintaining a healthy forest plant community in balance with a healthy deer population. To accomplish its mission of conserving Pennsylvania's forests, DCNR manages deer on its lands and promotes sustainable deer management on all commonwealth forest lands.

The Deer Management Assistance Program (DMAP), established by the PGC, gives DCNR an additional tool to promote forest regeneration by focusing hunters on specific areas of state forestland impacted by deer. These areas provide hunters with additional harvest opportunities for antlerless deer which helps to promote a sustainable forest and diverse wild plant community. The Buchanan State Forest established a DMAP area on state forest land in the Resettlement Lands LMU located in Bedford County.

To add to the complicated nature of the deer forest balance, Chronic Wasting Disease (CWD) has been discovered in both wild and captive deer populations in Pennsylvania. CWD affects the brain and nervous system of infected deer and elk and is always fatal to the animal. In response to the detection of this disease, the Pennsylvania Game Commission established disease management areas (DMA) to reduce the risk of spreading CWD to other parts of the state. Three DMAs currently (2019) exist in Pennsylvania; however, newly confirmed cases can alter the boundaries. The current DMAs include: DMA 1 on a captive deer farm in Adams County in 2012 (DMA 1 has since been eliminated); DMA 2 includes multiple free-ranging deer in Bedford, Blair, Cambria, and Fulton counties, as well as captive deer farms in Bedford, Franklin, and Fulton counties; DMA 3 includes two captive deer farms in Jefferson County and a free-ranging deer in Clearfield County; and DMA 4 contain a captive deer at a facility in Lancaster County.

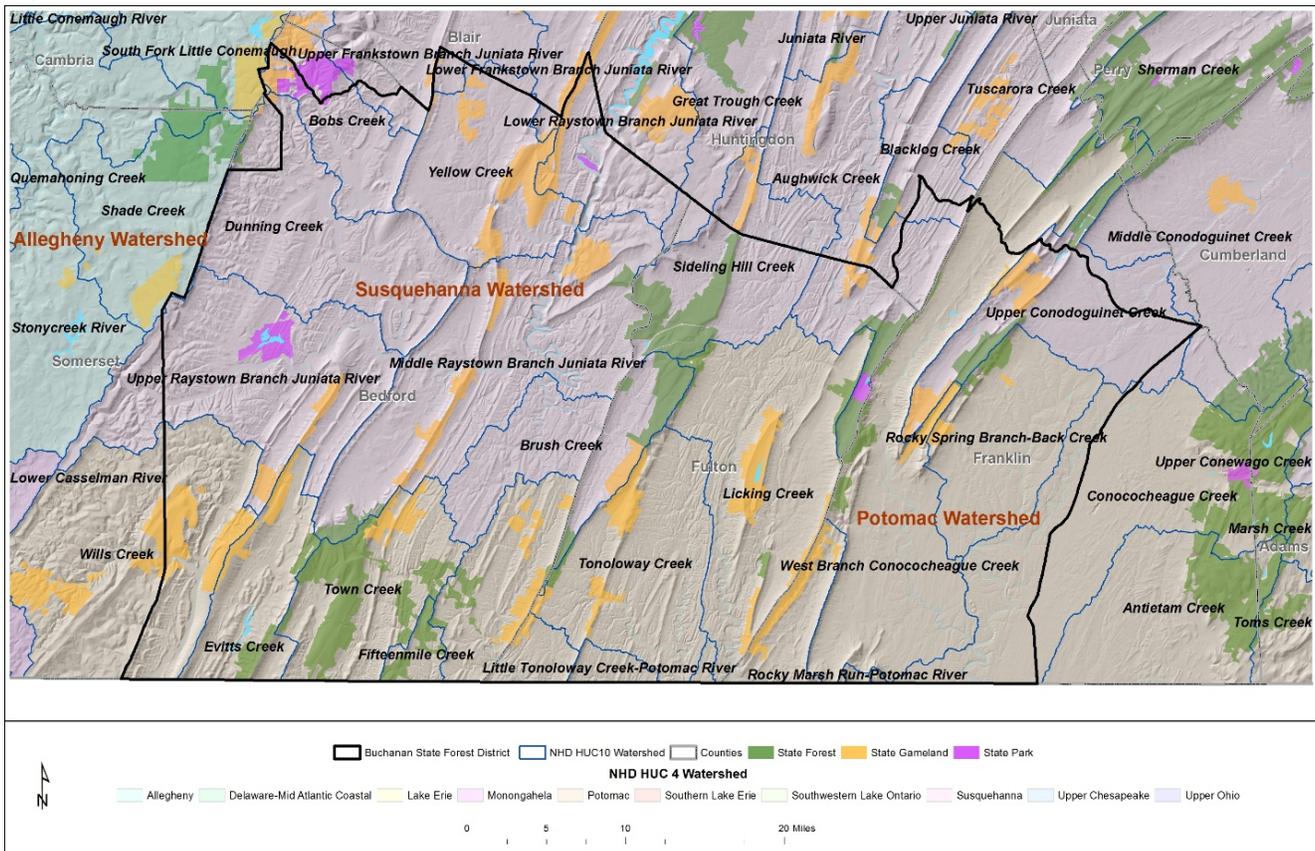
All or portions of the Michaux, Buchanan, Gallitzin, Tuscarora and Rothrock State Forests as well as several State Parks fall within DMA 2. A portion of Clear Creek State Forest is located within DMA 3 and William Penn State Forest is located within DMA 4.

Hunters who harvest deer within in a DMA should be aware that special [rules and regulations](#) apply and should have their deer tested for the disease. Additional information on Chronic Wasting Disease, testing, and [approved processors](#) can be found on the [Pennsylvania Game Commission website](#)

<https://www.pgc.pa.gov/Wildlife/Wildlife-RelatedDiseases/Pages/ChronicWastingDisease.aspx>

# 11) Water

## Major Watersheds



**Figure 11-1.** Map of major (Hydrologic Unit Code 4) and minor (Hydrologic Unit Code 8) watersheds within entire district.

Defined by the Department of Environmental Protection’s State Water Plan, the Buchanan State Forest lies within two major watersheds: the Potomac River Basin (Potomac River Sub-basin) and the Susquehanna/Chesapeake Basin (Lower Susquehanna River Sub-basin). Both river systems drain into the Chesapeake Bay, a vitally important ecological and economical resource in the mid-Atlantic region.

## Major Municipal Supplies

Water is one of the most valuable resources of the Buchanan State Forest. Water, like timber, is a renewable resource when properly managed. Through careful planning and management, forests can produce clean water while at the same time providing many other resources. Currently there are 6,560 acres of the Buchanan State Forest in municipal watersheds serving five communities. This represents approximately 10% of the entire state forest acreage. There are no municipal impoundments located within the Buchanan State Forest. However, there are five reservoirs on private lands adjacent to the state forest land whose watersheds partially lie within the Buchanan State Forest.

- Bear Valley Water Authority
- Cumberland, Maryland
- Letterkenny Army Depot

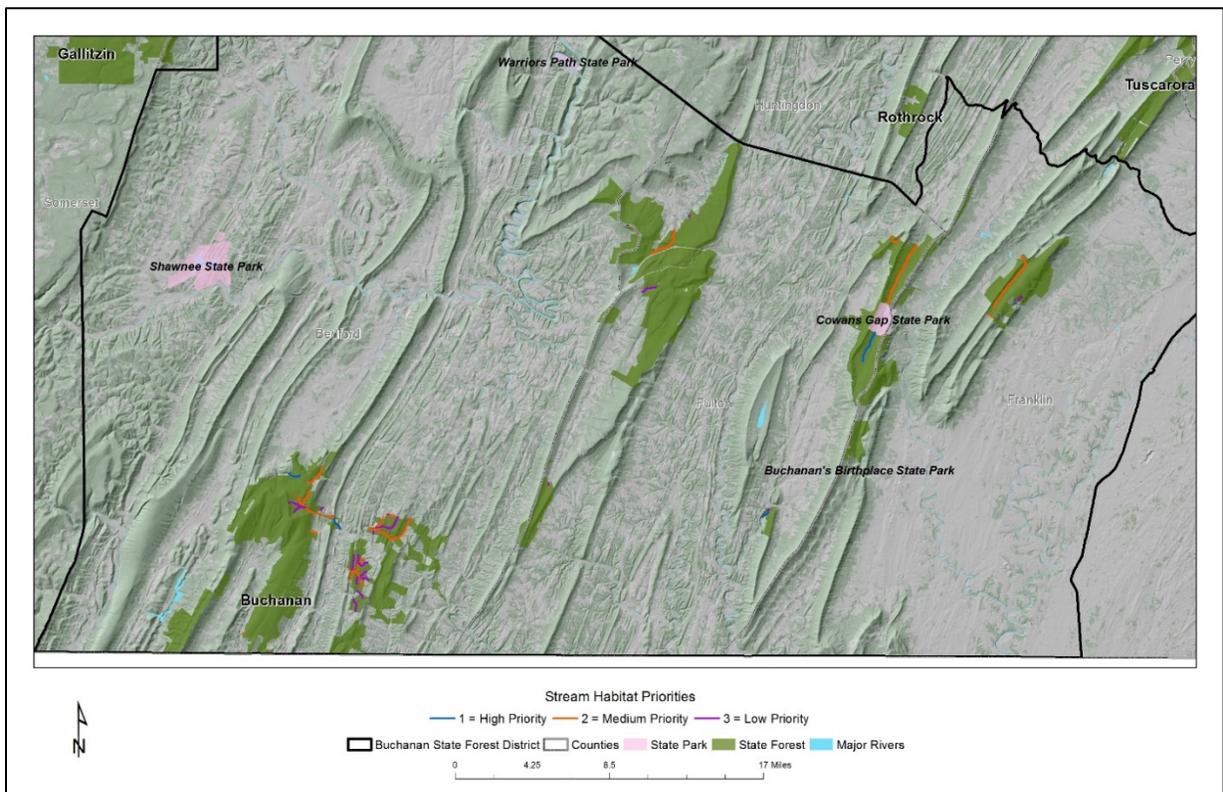
- Mercersburg
- Rainsburg

Only in the case of the Mercersburg Reservoir does state forest land make up a significant portion of the watershed

### Ground Water

Due to the rural nature of the landscapes in the Buchanan Forest District many residents are served by wells rather than municipal water supplies. The Bureau of Forestry uses the Groundwater Information System (PaGWIS), developed by Pennsylvania Topographic and Geologic Survey, to garner ground water information when planning management activities on state forest land that have the potential to affect ground and surface water resources. In the future, these data may help identify new sources of potable water as demand increases.

### Fish and Boat Commission Stream Habitat Prioritization



**Figure 11-2.** Streams within the district prioritized for aquatic habitat improvement projects based on PFBC Stream Habitat Improvement Prioritization Tool.

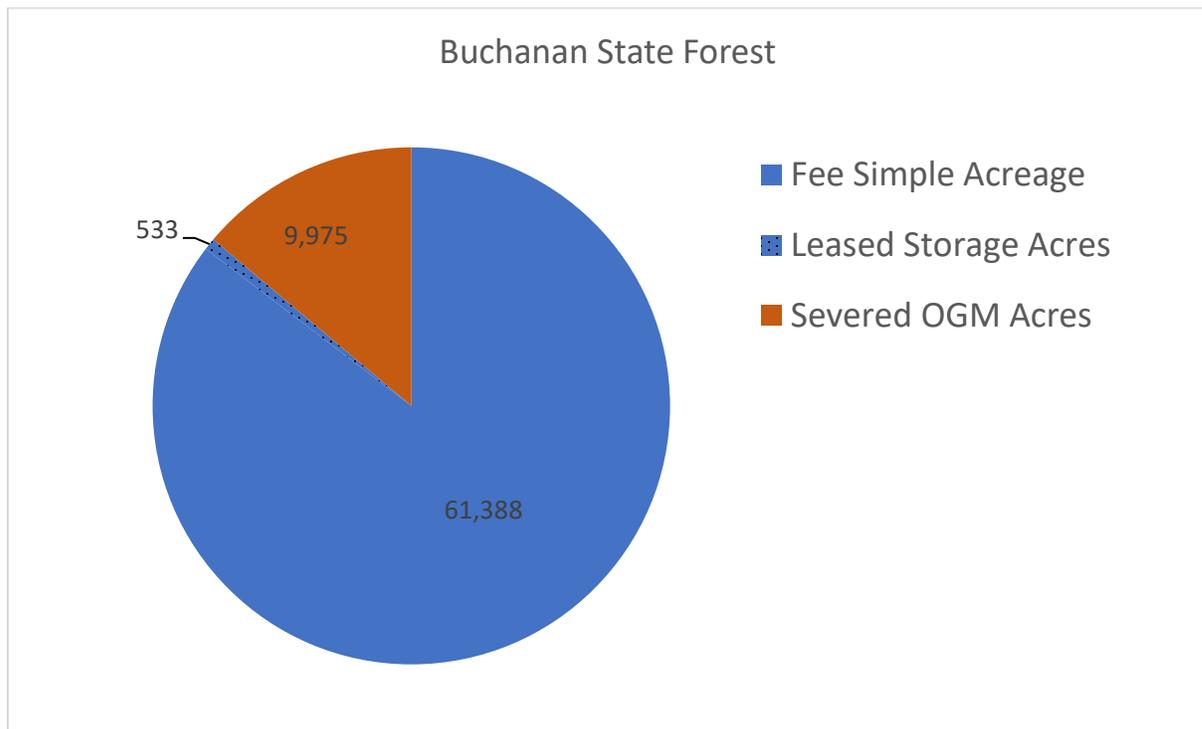
Buchanan State Forest has several streams listed as high priority for habitat improvement by the PFBC Prioritization Tool including:

- Franklin County – 12.8 Miles
  - Broad Run
  - Tributaries to the Dennis Creek
  - Tributaries to the Conodoguinet
- Fulton County – 6.3 Miles
  - Little Brush Creek

- Ninemile Run
- Sideling Hill Creek
- Bedford County – 44.7 Miles
  - Blue Gap Run and tributaries
  - Cove Creek
  - Georgetown Branch and tributaries
  - Sweet Root Creek and tributaries
  - Sweet Root Run and tributaries
  - Wilson Run and tributaries

There are currently no projects in the works, but over the course of this plan staff in Buchanan State Forest will examine the potential to increase management in these and the other medium and low priority streams recommended by the tool. The habitat improvements could benefit both brook and brown trout populations as well as other species.

## 12) Oil, Gas, and Mineral Resources



**Figure 12-1.** Acres of subsurface ownership/status on state forest land within the district. Acreage figures are derived from bureau GIS data, not acreages specified in lease or subsurface agreements. Severed Gas Rights Acres include only severed rights lands where the subsurface ownership has been verified. Partially severed areas that have been leased are counted as DCNR Issued Lease Acres, as opposed to Severed Gas Rights Acres.

The following is a short summary of each mineral product that has been mined or quarried within the Buchanan Forest District.

The minerals industry has not significantly affected the Buchanan State Forest. Early mineral development was mostly limited to mining iron ore; however, unlike other state forests, iron deposits in the Buchanan State Forest

played only a minor role in the early settlement of the area. Today, mineral activities in the area are limited mostly to storing natural gas and limited shale quarrying.

Two early iron furnaces, located at Carrick Valley and Richmond Furnace, operated in the mid-1800's. The quality of iron ore was rather poor, and these furnaces operated for only a short time. The forests around these iron furnaces (presently state forest land) were harvested to manufacture charcoal, which was used as fuel for the furnaces.

Mr. Grifford Imler operated a stone quarry on Buchanan State Forest in Letterkenny Township, Franklin County, at a location known as Clarks Knob from 1977 to 1982. Mr. Raymond Zeek originally opened the quarry in 1954. The product being quarried was high quality red and white variegated ornamental sandstone from the Lower Silurian Tuscarora formation. The Tuscarora sandstone (known locally as Roxbury stone, for the town near which it was quarried) was used for building purposes. Its pink color made it popular with local builders. The quarry for this stone was closed in 1990.

Many shale pits are also located throughout the forest and supply the material for maintaining the forest roads.

Economic gas production has been obtained from the Devonian age Oriskany sandstone in several gas fields within this forest district. Buchanan State Forest land has produced Oriskany gas from wells in the Five Forks, Artemas and Big Mountain gas fields in southeastern Bedford County. The Five Forks and Artemas Oriskany gas fields have been converted to gas storage fields. In these two gas storage fields, Columbia Gas Transmission Corporation, the gas storage lessee, injects natural gas into the Oriskany sandstone at a depth of approximately one mile down in the ground during the "low demand" months, and withdraws it during the "high demand" winter months. Annual gas withdrawals from these two fields amounts to approximately six billion cubic feet of gas, enough to provide the annual heating needs for approximately 40,000 homes. There are 2,336 acres of Buchanan State Forest land within the "in pool" and buffer zones of these two fields. Gas storage operations on the state forest lands are covered by the terms of the Five Forks Artemas Gas Storage Lease between Columbia and the department.

One well was drilled on the Buchanan State Forest in 1963, the #1 Tract 122 Oriskany gas well in the Five Forks gas field, Bedford County. It was drilled into the Oriskany sand at a total depth of 5,720'. Five other gas wells drilled on private land in the Five Forks and Artemas gas field were unitized with nearby state forest land. Two additional storage wells were drilled on the state forest in 1999, one on Gabriel Knob and the other along Jess Road.

The Federal Government retained three-fourths of the oil, gas, and mineral rights on the L.U. Land when it was transferred to the Commonwealth. The Sweet Root and Pine Ridge Natural Areas include some L.U. Land. The same arrangement is in effect on the Letterkenny Tract in Franklin Co.

## 13) Wildland Fire

### *Wildfire Suppression*

The Division of Forestry was created in 1895 in response to unregulated logging, widespread deforestation, devastating wildfires, and flooding. Spurred by unquestionable environmental damage in the late 1800s and early 1900s, visionary leaders such as Gifford Pinchot and Dr. Joseph Rothrock lobbied for laws to protect our streams, forests, and communities. In 1915, legislation was passed to create a system of Forest Fire Wardens, who have specifically legislated powers and duties and are officially recognized agents of the Commonwealth.

These laws established a system comprised of three types of Wardens: Local Forest Fire Wardens, District Forest Fire Wardens (District Forest Manager), and a Chief Forest Fire Warden (Chief of the Division of Forest Fire Protection-DFFP). All appointed Wardens have some level of responsibility and perform the following duties under the direction of a District Warden, on all lands, public and private:

- Detecting, extinguishing, reporting and investigating wildfires.
- Assembling, leading, and training a crew of wildland firefighters.
- Promoting and conducting wildfire prevention programs.
- Attending and assisting with the training as needed.

The Local Wardens perform these duties and report to the District Warden. The District Warden collects reports such as investigations and billing, approves/confirms accuracy and forwards the information collected, to the Chief Forest Fire Warden. The Chief Forest Fire Warden collects the information, develops reliable filing systems, pays bills and develops a budget to ensure adequate funding to keep the system functioning for each Forest District, as well as developing and implementing policy. One such policy was the Bureau of Forestry (BoF) adopting the Incident Command System (ICS), a nationally recognized system of managing incidents. The ICS is designed much like the US Military format, identifying a person's position within the organization and the level of responsibility. With proper training, experience, and desire, most people could be "plugged in" anywhere.

The District Forest Manager directs the Local Fire Wardens and the District staff. Although, not all staff are appointed as Fire Wardens, all field staff working in the Buchanan State Forest are trained and expected to participate in wildland fire activities, to various degrees, according to their qualifications. All training and qualifications are designed and conducted to meet National Wildfire Coordinating Group (NWCG) standards. NWCG is recognized as the national standard and provides national leadership to enable interoperable wildland fire operations among federal, state, local, tribal, and territorial partners. The overall goal is to ensure that all NWCG activities contribute to safe, effective, and coordinated national wildland fire operations, using ICS. Wildland fire fighting is inherently dangerous and risky. Training, experience, and qualification standards help to improve the wildland fire fighter's ability to recognize hazards and take proactive steps to reduce the exposure to the risks. The Bureau of Forestry and the Buchanan Forest District provide the same level and quality training to the Local Fire Wardens, their crews, and to local volunteer fire companies, as well as funding and tools and equipment. Although, DCNR is responsible for wildfire suppression on all lands, the Buchanan Forest District has about 23 Volunteer Fire Companies (VFC) that respond to and manage most of the wildfires that occur within the District. The VFC's are the reason most fires are kept small and manageable with relatively no loss of human life and very little personal property damage, and often without assistance from the Forest District. However, there are occasions when the wildfire incidents exceed the capabilities of the volunteer fire company either because of the size or location of the wildfire or the number of incidents that influence the availability of personnel and equipment.

The Buchanan Forest District has a staff of about 25 people qualified to participate in wildland fire operations at every level from the basic firefighter using hand tools on the fire line, to a Nationally Qualified Type II Safety Officer and Type III Incident Commander. We also have a very cooperative working relationship with the South-Central Region of the PA Game Commission to help suppress wildfires on PGC lands. Most fires that occur in this district are of very simple complexity and short-lived; meaning small fires, needing few personnel and equipment, and are easily extinguished. Most wildland fires that start in the Northeastern US and Pennsylvania typically occur in the "spring" after the winter snows melt and dead dry vegetation is available to burn. Once tree leaves start to grow and vegetation "greens up", the chances of wildfires starting, and spreading is

significantly reduced. In addition to fully trained and qualified wildland firefighters, the Buchanan Forest District also has several pieces of specialized equipment:

Buchanan Forest District specialized equipment:

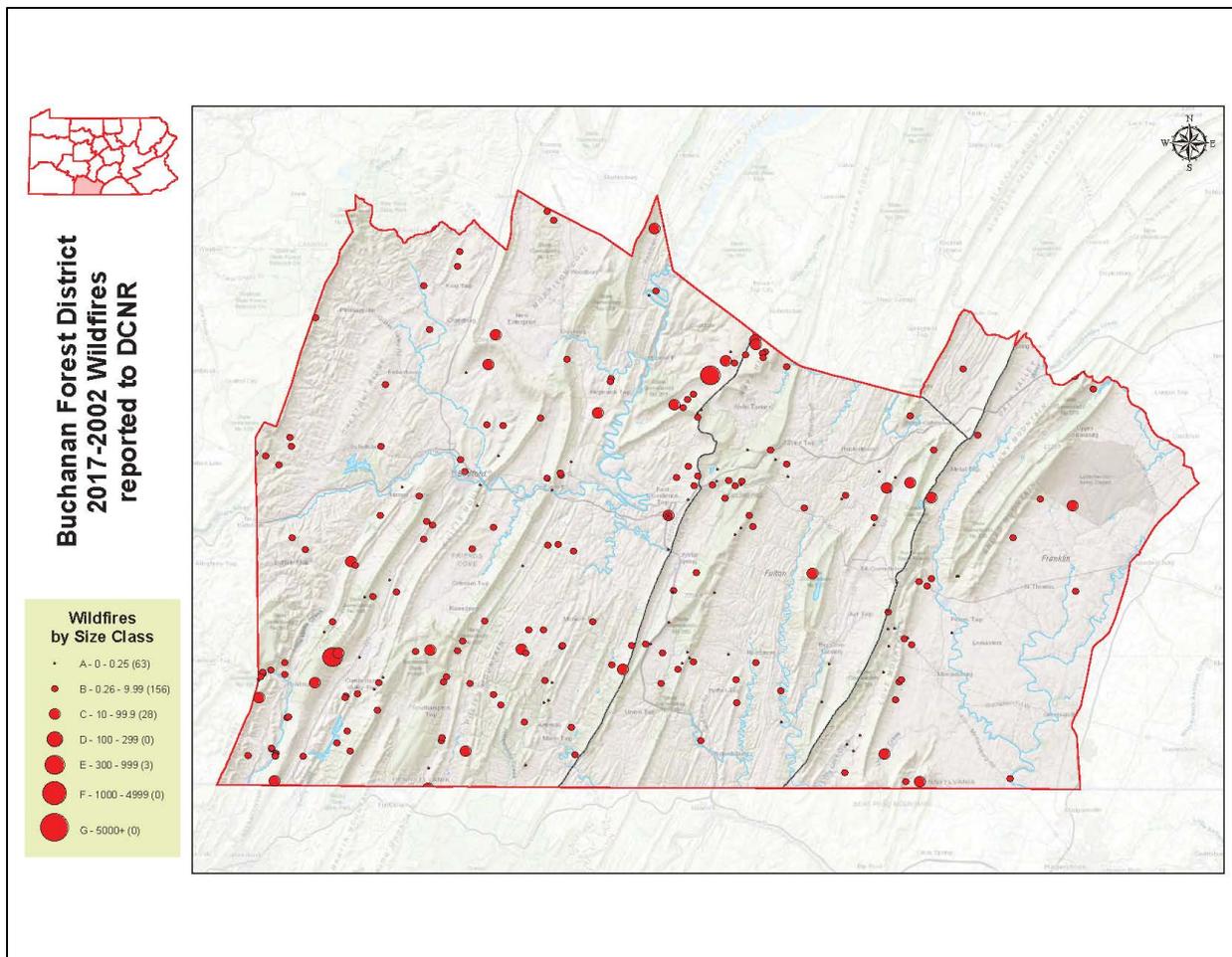
- 1 Type 4 Wildland Fire Engine (military 6x6).
- 2 Type 6 Wildland Fire Engines.
- 7 Type 7 Wildland Fire Engines & 2 UTV's.
- 2 Type 3 Dozers.
- Numerous;
  - Chainsaws.
  - Backpack leaf-blowers.
  - Backpack water tanks.
  - Various power/hand-tools.
  - Portable pumps.
  - Thousands of feet of different diameter hoses and appliances.
    - All 2" diameter hose is ¼ turn.
    - All 1½" is NH.
    - All 1" is NPSH.
    - All ¾" is garden hose.

Buchanan Forest District maintains a current Forest Fire Control and Resource plan, which provides the district with a standard, constantly revised, action and resource study assembled in one place to facilitate the dispersion of information.

The Buchanan Forest District has had the following Reported Fires, since 1979:

<u>SPRING:</u>		<u>FALL:</u>		<u>TOTAL:</u>	
<u>#FIRES</u>	<u>ACRES</u>	<u>#FIRES</u>	<u>ACRES</u>	<u>#FIRES</u>	<u>TOTAL</u>
<b>566</b>	<b>4,171</b>	<b>383</b>	<b>1,175</b>	<b>949</b>	<b>5,346</b>

- 29% of those fires were caused by Debris Burning and consisted of 23% of total acreage.
- 24% of those fires were caused by Incendiary/Arson and consisted of 42% of total acreage.
- 17% of those fires were caused by Miscellaneous/Unknown for 12% of the total acreage.
- The rest were caused by: lightning, equipment uses, powerlines, camp/warming fires, and children.



**Figure 13-1.** The map depicts wildfire occurrences, locations, and size from 2002-2017 occurring in the Buchanan Forest.

**Table 13-1.** Large fires over the last 10 years in the Buchanan Forest District.

Fire Name	County	Date	Size (acres)	Cost	Cause
Claim	Bedford	4/2-4/2008	54	\$4,575	Debris Burning
Claim	Bedford	4/18-19/2008	42	\$7,710	Power line
Power line	Franklin	2/12/2009	30	\$233	Power line
Whitetail	Franklin	4/7-8/2010	33	\$23,912	Unknown
Bear Den	Bedford	4/19-26/2014	888	\$200,448	Incendiary
Blankley Road	Bedford	11/6-11/2015	50	\$6,288	Incendiary
Maple Run	Bedford	3/19-22/2016	345	\$57,415	Incendiary
Scrub Ridge	Fulton	11/20-30/2016	58	\$20,616	Warming Fire

### Prescribed Fire

Prescribed fire is used on the Buchanan Forest District for a variety of treatments including: reducing competing vegetation, promoting desirable regeneration, controlling invasive species, reducing thick duff to promote seed germination, fuel reduction, and creating wildlife habitat. Detailed plans are written in advance for every prescribed fire where objectives and parameters are set and followed in hopes to achieve goals in the safest and most effective way possible. We will continue to use prescribed fire in the future for these treatments and

possibly others. It is a valuable and cost-effective tool compared to costlier herbicide and mechanical treatments. District staff also gain valuable experience and training for wildfire suppression.

## 14) Infrastructure and Maintenance

Infrastructure refers to buildings, equipment, roads, and other capital assets, tools, and resources used to meet an organization's goals and objectives. Successful accomplishment of the bureau's mission cannot happen without proper inventory, planning, and administration of these assets. The bureau uses infrastructure to perform management activities and to provide for state forest use by others, including private industry and the general public. This requires accurate inventories, acquisitions, management, evaluation, maintenance, and retirement of infrastructure, as well as adequate funding to make all of these tasks possible.

### *Infrastructure Inventory*

- **Roads:** There are 79 miles of public use (Z1) roads on the Buchanan State Forest that are maintained to standards that are fit for travel by automobile. An additional 17 miles are woods roads (Z2) maintained periodically and suitable for travel by trucks and 4-wheel drives. There are also 123 miles of timber sale haul roads (Z3) and other old abandoned roads on the forest that are gated or barricaded. Maintenance is done on these roads only when erosion becomes a problem or when they are used again for timber sales. Nearly all the mileage of this last class of roads are used as trails and included in that mileage.
- **Trails:** There are 258 miles of roads and trails maintained by the district including 29 miles which are designated state hiking trails. Buchanan State Forest opens 32 miles of trails to ATVs and 93 miles are designated for snowmobile use. 81 miles are considered suitable for cross country skiing and 6.59 mapped and designated for this use. Mountain bikes are allowed on 209 miles of trails, 70 miles of which are mapped and rated for difficulty. Horses are permitted on 318 miles of trails.
- **Campsites:** There are 81 designated campsites. Of these sites 69 sites are designated for motorized camping and the remaining 12 are designated for primitive use. These sites are marked by a brown campsite number but generally do not have any other amenities.
- **Gates:** There are approximately 152 gates on the Buchanan State Forest.
- **Department owned bridges and culverts:** There are 9 bridges and box culverts on the state forest on roads open to public travel; 2 bridges behind closed gates; and 1 bridge on private ground (Kinton Tower Rd). There are about 950 culverts on roads used by the public.
  - i) Stream culverts:

The Bureau of Forestry conducts stream culvert assessments using the North Atlantic Aquatic Connectivity Collaborative (NAACC) protocol. Assessed culverts yield data on the condition of stream crossings on state forest land regarding aquatic organism passage (AOP). The data is used to determine if the crossing is a barrier to organism passage, and if so, to what extent. This information assists the bureau prioritize culverts for replacement or repair. The end goal is for the road to not impact the stream. This District has approximately 90 culverts that have been assessed using the NAACC protocol.
- **Leased tower sites:** 28
- **Archaeological and historical sites:** There are 4 sites on the state forest where CCC camps once existed plus one site in Cowans Gap State Park. Parts of the old Reichley Brothers logging railroad can be seen in the Sideling Hill area. A portion of the pre-revolutionary Forbes Road can still be found in Allens Valley. This road also crossed the state forest on Sideling Hill but in that area its path is apparently now on

modern roads. There are several old cemeteries and old home sites that can be found on the resettlement lands. In 1932 thirteen hemlock trees were planted near the Sideling Hill picnic area in recognition of the 13 original Colonies. Most of the trees from this planting still survive, and it is planned to replace the others.

- **Buildings:** There are 39 buildings on the Buchanan State Forest not counting the fire tower and 5 leased camps. Included in the count are picnic area pavilions and restrooms.
- **Boundary lines:** 325 miles.
- **Fire towers:** The district has 1 inactive fire tower on Kinton Knob on leased land.
- **Radio and communications towers:** 800mh radio towers are located on Martin Hill, Sideling Hill and Tuscarora Mountain. The current radio system has repeater towers on Kinton Knob and Tuscarora Mountain. Over the coming years this system will be replaced with the P25 radio system.
- **Oil and gas wells (active and abandoned) and ROWs:** There are 4 active gas storage wells on the forest all in the Artemas area. Numerous gas, electric, and telephone lines cross the state forest.
- **Water wells:** In addition to the water wells at leased camp sites, we are aware of 12 other wells on the state forest. There are wells at each of the 3 foremen headquarters sites, the RMC, and the future Chaneyville Headquarters location. Because the wells at the picnic areas never tested “safe”, they were abandoned and capped. No water is available at the picnic areas.
- **Parking lots, size acreage, facilities, capacity:** There are 7 parking lots on the forest that have crushed limestone surfaces and ramps for unloading ATVs and/or snowmobiles. Each of them is ½ to 1 acre in size. They are at the Martin Hill/Beans Cove Road intersection, the Blankley Road/Route 326 intersection, Blankley Road/Refuge Trail intersection; along Childers Ridge Road; 2 lots along Cove Road south of Wells Tannery (one with a restroom), and at the Martin Hill Road/Tower Road intersection.
- **Developed permits for springs:** There are 4 agreements for use of springs on the forest. These agreements are held by Silver Spring Water Association in Hamilton Township, Franklin County; Ulysses Keefer in Ayr Township, Fulton County; Bruce Harris in Brush Creek Township, Fulton County; and Ronald Wade in Broadtop Township, Bedford County.

## 15) Special State Forest Designations

### *Public Wild Plant Sanctuaries*

The Wild Resource Conservation Act also provides that the department may protect wild plant species that are in jeopardy of population decline by acquiring or designating areas previously acquired as public wild plant sanctuaries. Any area of publicly owned land that supports a viable population of native plant species of special concern, or contains suitable habitat for viable growth of native plant species of special concern and is known to have historically supported such species, or the areas contains suitable habitat for viable growth and reproduction of native plant species of special concern which may be transplanted or the area supports an exemplary Pennsylvania native wild plant community may be nominated as a public wild plant sanctuary. To date 30 Public Wild Plant Sanctuaries have been nominated and will be designated on completion of the Resource Plan. There are three plant sanctuaries to date on the Buchanan State Forest:

- Bear Gap Run
- Polish Mountain
- Fifteen Mile Creek

### *High Conservation Value Forests*

Pennsylvania state forests are certified under the Forest Stewardship Council (FSC) standards. FSC certification prioritizes the protection of particularly valuable forest characteristics by requiring certified landowners to identify high conservation value forests (HCVFs) on their land and plan for sustainable management and monitoring of these areas. FSC recognizes six types of HCVFs:

- HCV 1: HCV forest areas that contain globally, regionally, or nationally significant concentrations of biodiversity values (protected areas, rare or threatened species, endemic species, and seasonal concentrations of species)
- HCV 2: Globally, regionally, or nationally significant large landscape-level forests
- HCV 3: Forest areas that are in or contain rare, threatened, or endangered ecosystems
- HCV 4: Forest areas that provide basic services of nature in critical situations (protection of watersheds and protection against erosion and destructive fire)
- HCV 5: Forest areas fundamental to meeting basic needs of local communities
- HCV 6: Forest areas critical to local communities' traditional cultural identity

In 2011, the bureau followed FSC's HCVF guidance to identify, designate, and manage for areas of high conservation value. The areas which have been identified as HCVFs are managed in a manner that will maintain and/or enhance the values for which they have been designated and conversion of forest land to a "non-forested use" is prohibited.

Sub-categories of HCVFs occurring on state forest land are as follows:

- **1.1:** areas legally protected or managed primarily for concentrations of biodiversity values that are significant at the ecoregion or larger scale
- **1.2:** areas with significant concentrations of rare, threatened or endangered species or rare ecological communities, endemic
- **2.1:** significant large landscape-scale forest where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance
- **2.2:** areas significant to biodiversity conservation at the ecoregion scale because it contains landscape-scale biodiversity values that are not present on other forests due to landscape-scale habitat modifications on surrounding lands
- **3.1:** old growth stands
- **3.2:** roadless area >500 acres in size or that has unique roadless area characteristics
- **3.3:** rare, threatened, or endangered ecosystem
- **4.1:** areas providing a source of community drinking water
- **4.2:** areas protecting community drinking water supplies
- **4.3:** extensive floodplain or wetland forests that are critical to mediating flooding or in controlling stream flow regulation and water quality
- **6.2:** areas with cultural features created intentionally by humans

More information about HCVFs can be found in the LMU descriptions of this plan and in the SFRMP, p. 64.

**Table 15-1.** Acres of High Conservation Value Forest by category.

HCVF SubCategory	LMU Name	Acres
1.1	Martin Hill	257
	Resettlement Lands	40
<b>1.1 Total</b>		<b>297</b>
2.1	Martin Hill	17,376
	Unspecified	6,751
<b>2.1 Total</b>		<b>24,127</b>
2.2	Martin Hill	17,376
	Unspecified	6,751
<b>2.2 Total</b>		<b>24,127</b>
3.1	Martin Hill	1,341
<b>3.1 Total</b>		<b>1,341</b>
4.1	Allens Valley South	42
	Bear Valley	50
<b>4.1 Total</b>		<b>92</b>
6.2	Resettlement Lands	1
<b>6.2 Total</b>		<b>1</b>

### *Wild and Natural Areas*

The objective of a **natural area** is to protect areas of scenic, historic, geologic or ecological significance, which will remain in an undisturbed state, with development and maintenance being limited to that required for health and safety. Natural 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. Natural areas are maintained in a natural condition by allowing physical and biological processes to operate, usually without direct human intervention. Any unique or unusual biologic, geologic or historic areas can be considered for designation as natural areas. In addition to the ‘unique’ or ‘unusual,’ representative examples of all major forest types occurring in this Commonwealth were also included in the proposed natural area system. The size of these areas is generally small but may be as large as several thousand acres.

The objective of **wild areas** is to set aside certain areas of land where development or disturbance of permanent nature will be prohibited, thereby preserving the wild character of the area. In Pennsylvania's state forest system, certain areas that retain an undeveloped, wild character are designated as Wild Areas to assure that this primitive character is perpetuated. A wild area is defined as an extensive area which the general public will be permitted to see, use and enjoy for such activities as hiking, hunting, fishing, and the pursuit of peace and solitude. Development of a permanent nature will not be permitted to retain the undeveloped character of the area. Because of the restrictions imposed on wild areas, careful consideration must be given to alternative uses before additional areas are so designated. The size of the area should be no less than 3,000 acres and seldom

more than 15,000 acres. They should be located where there are few public roads or other human-made developments such as campsites, rights-of-way, etc. Only areas where the department owns sufficient subsurface rights to preclude development will be considered.

**Table 15-2.** Total acreage of Wild and Natural Areas on state forest land within Buchanan State Forest.

<b>Buchanan</b>	<b>Name</b>	<b>Acreage</b>
<b>Natural Areas</b>	Pine Ridge Natural Area	583.2
	Sweet Root Natural Area	1,526.5
	<b>Natural Area Total</b>	<b>2,109.7</b>
<b>Wild Areas</b>	Martin Hill Wild Area	11,675.8
	<b>Wild Area Total</b>	<b>11,675.8</b>
<b>Total</b>		<b>13,785.5</b>

### **Sweet Root Natural Area**

The Sweet Root Natural Area, located near Chaneyville in Bedford County, was officially designated by the State Forest Commission in 1970 to be "preserved for scientific, scenic, and educational values" where no motorized activity is permitted. Originally consisting of a 69-acre virgin "Hemlock-cove Hardwood" stand along scenic Sweet Root Run, the natural area has since been enlarged to 1400 acres with the addition of second growth oak and oak-hard pine stands. The gorge area can be reached from Blankley or Martin Hill Roads by using Tarkiln Trail, Mid-State Trail or Sweet Root Road. An unofficial trail at the gap leads to an abandoned saltpeter cave, which is reported to have been used to make gunpowder during the American Revolution. The natural area is bounded on the east by the state forest boundary, on the north by Sweet Root Road, on the west by Blankley and Martin Hill Roads and on the south by a telephone line.

Joseph Powell, one of the county's earliest settlers, started a trading post on the Little Sweet Root Creek about 1734. It was along this creek, which runs between Martin Hill and Tussey Mountain, that George Powell, brother of Joseph, discovered the saltpeter cave previously mentioned. From this cave, Elisha Huff of Black Valley mined the saltpeter for use by the Continental Army during the American Revolution. Huff fulfilled his military obligation in this manner since he would not take an active part in the struggle itself.

In 1979 the natural area was designated for amphibian and reptile protection; whereby "the taking, catching, killing, and possession of naturally occurring species of amphibians or reptiles, are prohibited."

A revolutionary war saltpeter cave is located just north of the Sweet Root Gap. This, along with the remnants of a Civilian Conservation Corps (C.C.C.) camp, an early sawmill and one of the rustic trading posts in Bedford County, makes the Sweet Root Natural Area rich in history and well worth visiting, a cool walk on any hot summer day.

### **Pine Ridge Natural Area**

Pine Ridge is a 568-acre area located approximately two miles southeast of Chaneyville in southern Bedford County. The Abey Road bounds it on the west; the north by township road T 133; the east by the state forest boundary; and the south by the Hez Trail.

Pine Ridge is part of a state-owned tract known as the "Resettlement Lands", which originally were small farms. During the depression of the 1930's, the Federal government purchased 13,000 acres of these marginally productive farms to encourage the families involved to "Resettle" on more productive farm land. The Bureau of Forestry (then Department of Forests and Waters) was appointed caretaker of the area until it was deeded to the Commonwealth. The abandoned pastures and fields have been reforested by pine plantings and by the natural regeneration of Virginia pine. These pine stands, intermixed with the original oak-hickory timber type, make this a unique area in Pennsylvania.

This natural area was established to demonstrate early successional changes following the cessation of cultivation and pasturing. The area originally consisted of several farms with cultivated fields, pastures, and woodlots. Active farming ceased prior to 1930.

Today, the remains of the farm settlements can still be seen. The foundations of a barn and other outbuildings, a walled in spring, an old granary that is still standing, and old fences suggest that this was once a successful farm settlement. However, the poor, rocky, shale soil reveals why these hills are not now under cultivation.

The area contains a variety of tree species. Perhaps the most notable is the Virginia pine that has encroached upon the old fields. A small stand of cove hardwoods occupies one side of a narrow, moist ravine. The mixed-oak type is found on most of the area that was not cultivated. A few large oaks and pines are scattered throughout the area on the better sites. A plantation of red pine and white pine was established on 75 acres near the northern boundary of the area during the CCC years.

An old cemetery at the intersection of the Wm. Bowman Road and Township Road T-333 contains two engraved tombstones. Several unmarked field stones are scattered nearby. The engraved tombstones mark the final resting place of Asa and Catherine Howsare and some of their children. The fieldstones are thought to mark the graves of slaves.

The Natural Area contains various trails for hiking and old foundations of barns and houses can still be found. There is an intact granary- on one farm site and several apple trees are still in evidence.

### **Martin Hill Wild Area**

For those who enjoy a quiet experience or the opportunity to commune with nature on a one to one basis, this is for you. And for the real rugged hunter who still likes to hunt without heavy competition, you too will enjoy using this wildland.

This 11,500-acre area located in southern Bedford County includes all the State Forest Land south of Martin Hill, which connects Tussey Mountain with Evitts Mountain. An all-wheel drive road from Martin Hill Tower Road on the east and extending west for five miles along this ridge provides access to the Bean's Cove portion. The southern portion, on the Tussey Mountain, may be reached from an access road extending south from a parking lot on Bean's Cove Road (LR 05002) and Martin Hill Road. Both roads are gated and used by bikers, horseback riders, and hikers.

The area is decidedly wild and rugged. Some timber harvesting has been done in recent years, but it represents only a small portion of the entire area. The forests were originally harvested in the late 1800's or early 1900's and have regenerated satisfactorily.

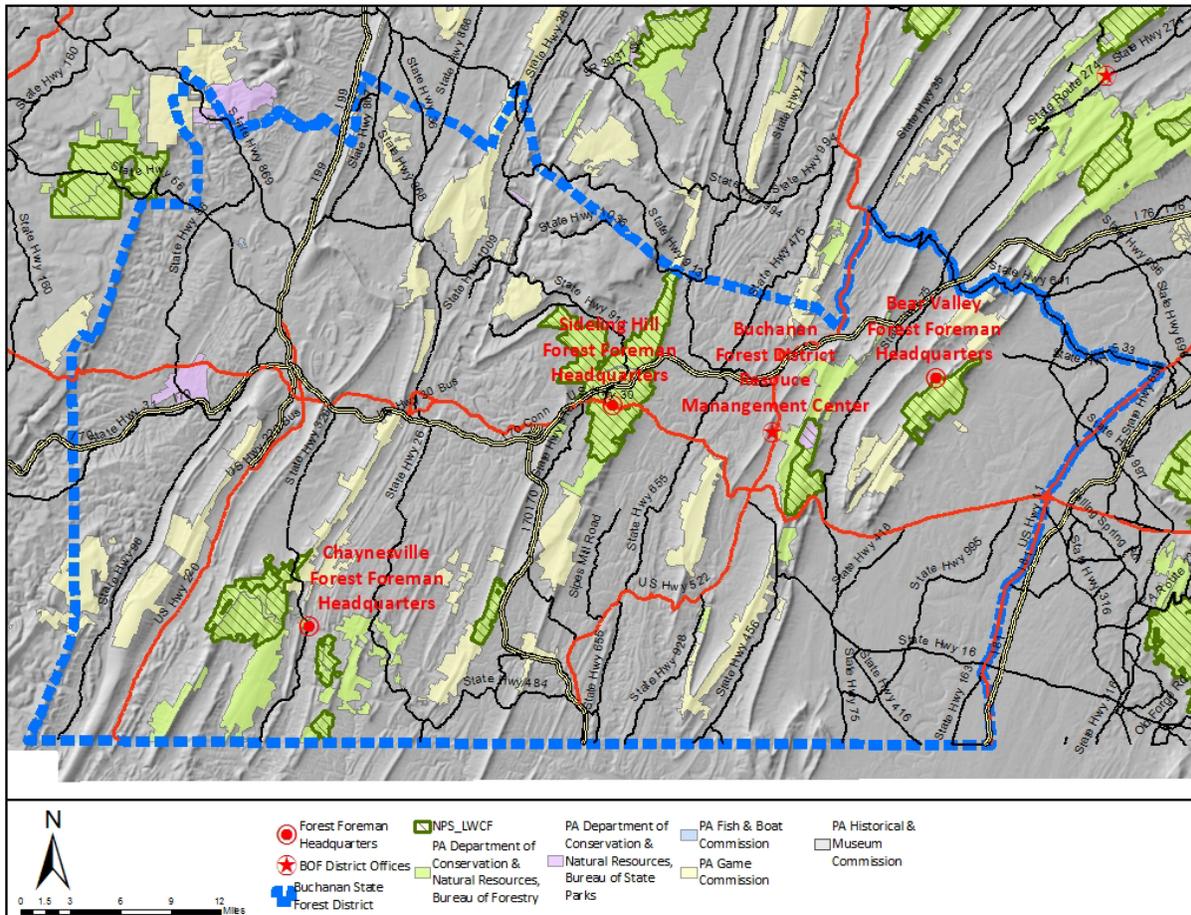
Two small vernal ponds called Big Pond and Little Pond provide an attractive watering area for wildlife. Three small man-made ponds add to the attractiveness of the area. Deer and turkey are plentiful. Occasionally a

native bobcat is spotted, and black bear make infrequent appearances. The area is known to support a population of rattlesnakes.

No motorized traffic is permitted inside the boundaries of this area. The aim is to keep it as wild and rugged as possible for the future.

Unlike most State Forest Wild Areas, some of the gas and oil rights to this land are privately owned.

*Land and Water Conservation Fund*



**Figure 15-1.** Land and Water Conservation Fund protected lands within entire district.

Created by Congress in 1964, the Land and Water Conservation Fund (LWCF) was a bipartisan commitment to safeguard natural areas, water resources and our cultural heritage, and to provide recreation opportunities to all Americans. The idea behind the fund was to use revenues from the depletion of one natural resource - offshore oil and gas - to support the conservation of another precious resource - land and water. The Act states unequivocally that grant-assisted areas are to remain forever available for "public outdoor recreation use," or be replaced by lands of equal market value and recreation usefulness. The LWCF Manual indicates property acquired or developed with LWCF assistance shall be operated and maintained to appear attractive and inviting to the public; to maintain sanitary facilities in accordance with applicable health standards; properties shall be kept reasonably open, accessible, and safe for public use; Fire prevention, lifeguard, and similar activities shall be maintained for proper public safety; buildings, roads, trails, and other structures and improvements shall be kept in reasonable repair throughout their estimated lifetime to prevent undue deterioration and to encourage

public use; the properties and facilities shall be kept open for public use at reasonable hours and times of the year, according to the type of area or facility; a posted LWCF acknowledgement sign shall remain displayed at the project site. The Buchanan State Forest has a significant portion of land covered by LWCF. In addition to following state guidance for maintaining recreation opportunities and access, we also operate and maintain the LWCF areas in accordance with the regulations.

### *Core Forest Index*

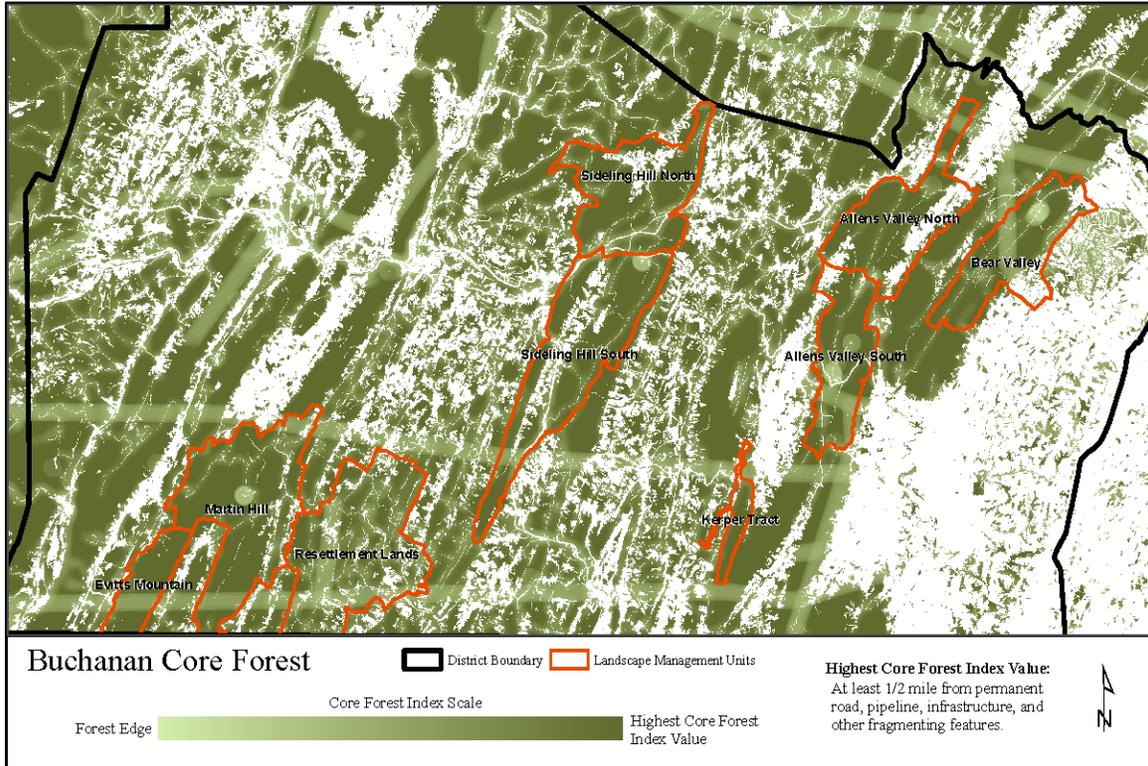
As described in the 2016 State Forest Resource Management Plan, the purpose of Core Forest Focus Areas (i.e. LMUs within the top 20% of core forest index scores) is to assist in the inventory, management, maintenance, and monitoring of the most significant core forest tracts in the state forest system and to conserve the ecological values associated with interior forest conditions and unfragmented landscapes.

While the Bureau of Forestry manages for these values across the entire state forest system, Core Forest Focus Areas will serve as a means to ensure the appropriate balancing of these values in landscape-level forest management decisions. As such, special management guidelines will apply to these Core Forest Focus Areas. The following preliminary guidelines will guide the development of expanded management guidelines during the planning cycle.

#### **Preliminary Guidelines**

1. No permanent conversion of forest land will occur in these areas, including roads, pipelines, recreational parking lots, natural gas infrastructure pads, and other activities that permanently convert forest to non-forest.
2. The most restrictive, underlying Management Zones still apply in Core Forest Focus Areas. Wild and Natural Area guidelines apply in designated areas. Timber harvesting and other active management that does not involve permanent conversation is allowed per Management Zoning.
3. The temporary disturbances associated with timber harvesting and other forms of habitat management are allowed per state forest Management Zoning. Special consideration should be given in Core Forest Focus Areas to reducing the amount of haul roads, ensuring appropriate restoration, and maintaining closed canopy conditions in haul road corridors.
4. Where the Bureau of Forestry does not own mineral rights beneath Core Forest Focus Areas, it will work cooperatively with operators to avoid forest conversion.
5. When possible, the Bureau of Forestry will strategically purchase and/or exchange real estate interests to protect Core Forest Focus Areas where mineral rights are currently severed.
6. The Bureau of Forestry will consider, when available, acquiring key tracts that ensure connectivity of and expand and protect existing Core Forest Focus Areas.
7. The Bureau of Forestry will continually monitor the status of Core Forest Focus Areas. Deviation from these guidelines requires a State Forest Environmental Review and state forester approval.
8. The Bureau of Forestry will identify regionally important core forest Landscape Management Units. In these identified landscapes, long-term management goals and conditions will emphasize the promotion core forest conditions. When balancing uses and values in these landscapes, management decisions and plans will favor the promotion of these values.

The core forest analysis was based on the density of fragmenting features within a given area, which includes roads, pipelines, well pads, certain large rivers (large enough to show up on NLCD), etc. Based on fragmentation of an LMU, each LMU was given an index score between 0-100, representing the density of fragmenting features with a higher score representing a less fragmented area. As expected, all of state forest land across the state scored very high relative to more developed areas of the state. Because the scores were very similar, a rank/percentile was assigned to each LMU based on their Core Forest Index relative to all other LMUs.



**Figure 15-2.** Map of core forest index in the region of Buchanan Forest District.

**Table 15-3.** Core forest index value for state forest land in this forest district by LMU. The core forest index is a rating value out of 100 that expresses the proportion of the area within the LMU that is increasingly far away from dense areas of fragmenting features. The yellow highlighted LMUs are Core Forest Focus Areas (i.e. LMUs within the top 20% of core forest index scores state-wide).

LMU Name	Statewide Percentile	Core Forest Index Value
Evitts Mountain	99%	99.13
Allens Valley North	74%	96.66
Martin Hill	72%	96.63
Kerper Tract	59%	95.72
Sideling Hill North	37%	94.12
Bear Valley	34%	93.93
Sideling Hill South	34%	93.74
Allens Valley South	33%	93.67
Resettlement Lands	21%	91.54

In order to address Core Forest, Fragmentation, and Connectivity Objective 1.5 (pg. 38, SFRMP 2016), the top 20% of LMUs in terms of core forest index received the standard Core Forest Priority Goal as one of their LMU goals. Goals were kept intentionally broad so that they apply across SFL. Districts could further tailor the goal to address their specific plans for any Core Forest-related values in the LMU. For more discussion of Core Forest focus areas (LMUs) see the 2016 SFRMP, pgs. 34-38.

### *Other Designations*

#### **Redbud Valley/Kerper Tract**

Birdwatchers and wildflower lovers should enjoy visiting Redbud Valley, a 514-acre tract of the Buchanan State Forest, situated along PA Route 928, just south of the Big Cove Tannery in Fulton County.

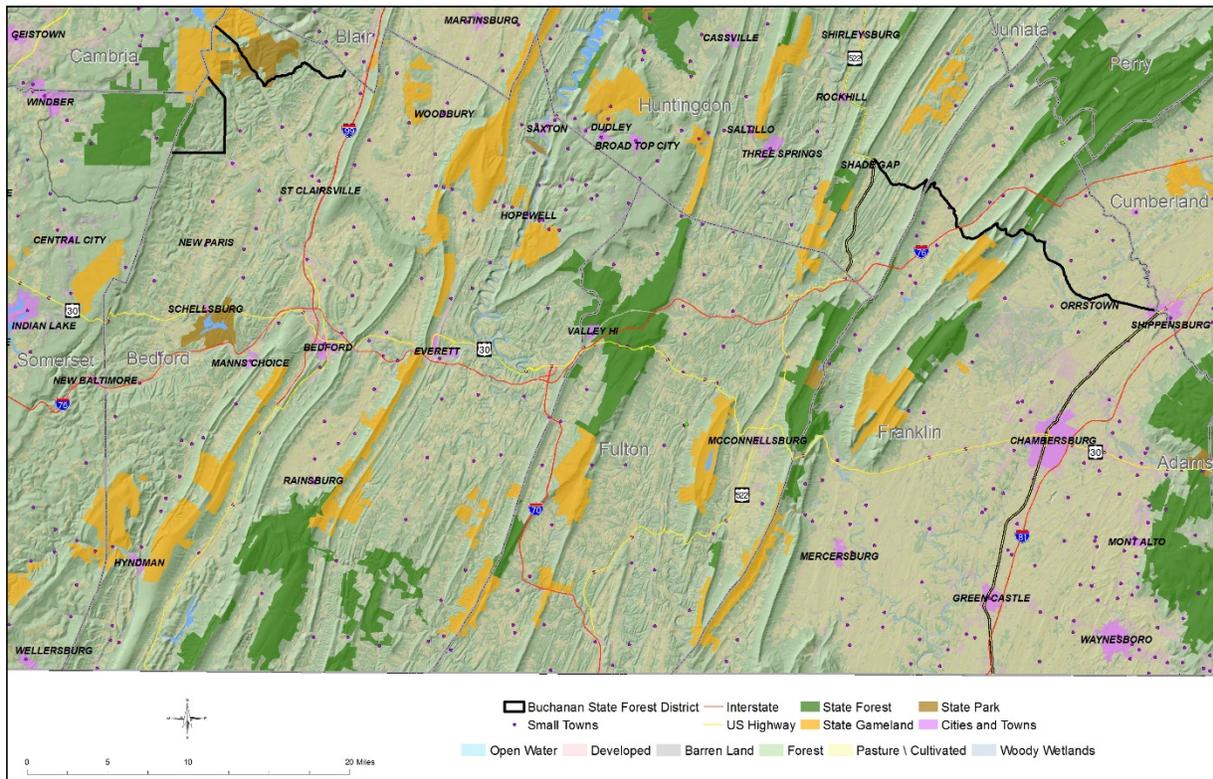
Redbud Valley, otherwise known as the Kerper Tract, was originally the property of Ohio-born lawyer and amateur naturalist Edmund Kerper who purchased the property in 1934 and built a frame house with native materials.

Most of the bottom land was under cultivation when Kerper moved there but one of his goals was to create a sanctuary for song birds, and each spring he hired temporary workers to plant trees, flowers, and flowering shrubs, thus creating a kind of botanical garden and arboretum.

Kerper's dream was to come true in that the area today probably boasts more species of song birds than any other spot in Fulton County. The once beautiful, well-manicured gardens, however, have become wild jungle-like havens for many species of wildlife.

Cove Creek, a stocked trout stream, flows thru the tract for 0.5 mile. The PA Fish and Boat Commission has designated this stream section as well as an adjoining 0.5 mile on private land as a delayed harvest area. It is heavily fished throughout the year.

## 16) Ownership and Population Centers



**Figure 16-1.** Map of public lands, population centers, and land use types (aggregated from National Land Cover Database).

Buchanan Forest District contains a variety of large and small communities. The larger population centers in the district are the communities of Chambersburg (pop. 20,700), McConnellsburg (pop. 1,050), Breezewood (pop. 1,403), Everett (pop. 1,745), and Bedford (pop. 2,725). In addition to the local communities, Buchanan State Forest lands are also frequently used by the nearby urban areas of Hagerstown (pop. 40,450), Cumberland (pop. 19,980), and Fredrick (pop. 70,060), MD as well as Washington, D.C. which lies only about 1.5 to 2 hours south of the district.

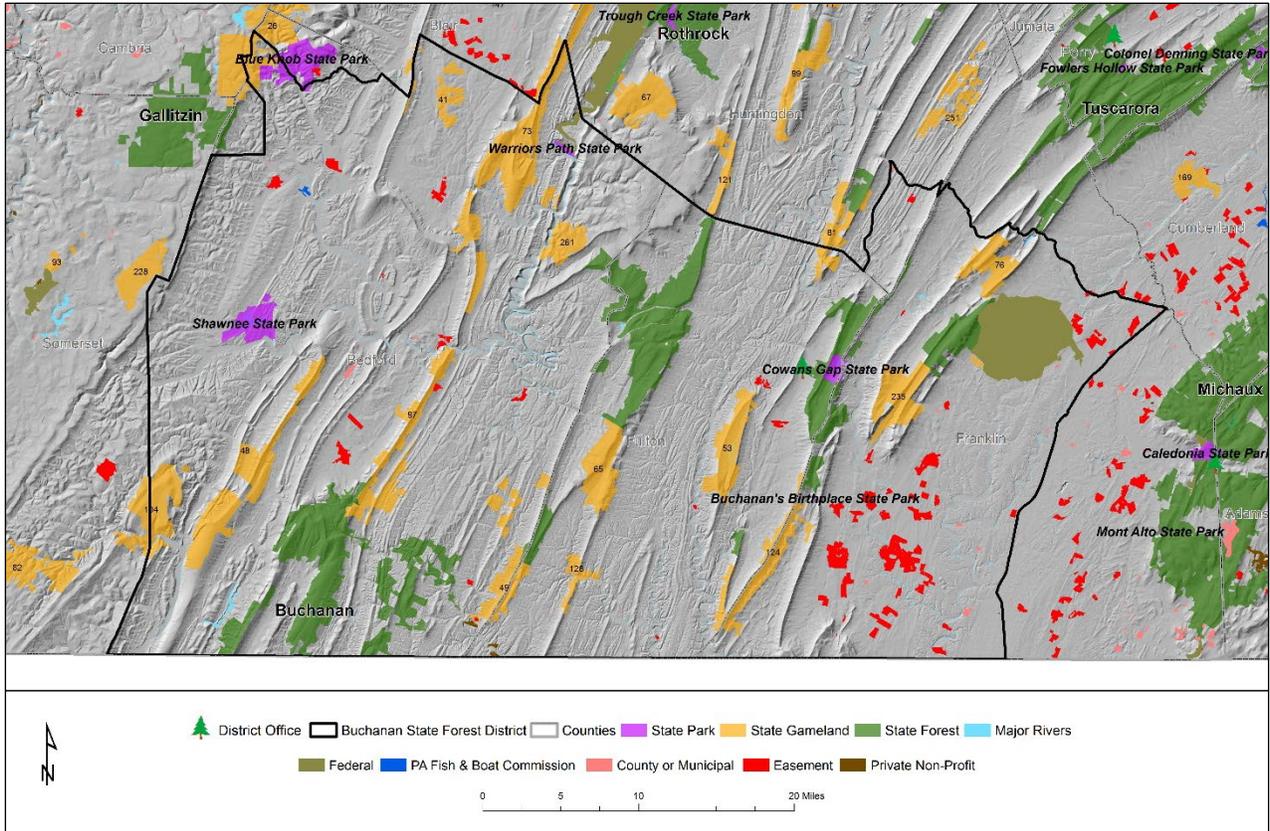
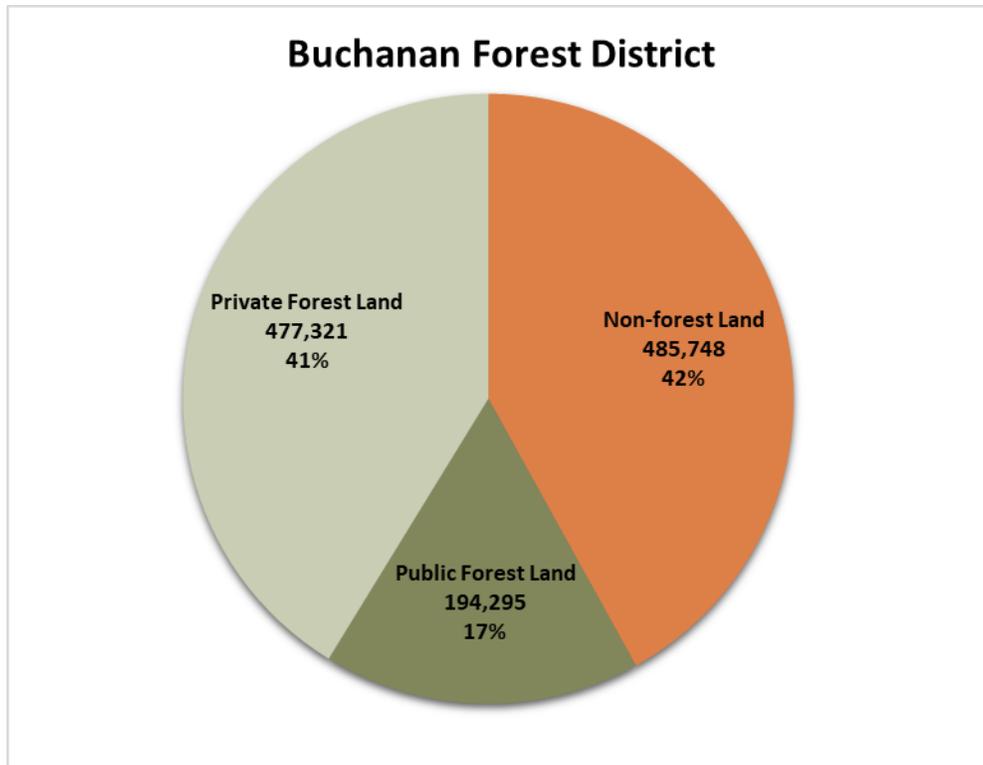


Figure 16-2. Public/conserved lands within entire district.

Table 16-1. Acreage of conserved lands by ownership type within the Buchanan Forest District.

Land Ownership Type	Acres
State Forest	71,895.51
State Parks	5,195.01
State Gamelands	92,846.17
Federal	18,363.31
Local/Municipal	97.19
Conservation Easements	13,134.13
<b>Total Acres</b>	<b>201,531.32</b>

Because ecological processes ignore political boundaries, an ecosystem management approach to state forest land requires forest managers to look beyond state forest land boundaries when making management decisions. To practice ecosystem management, the Bureau of Forestry must consider the nature and character of adjoining lands when managing state forest lands. This approach requires partnerships between agencies, municipalities, private landowners, and other publics.



**Figure 16-3.** Percentage of total acreage within Buchanan Forest District that is forested vs. non-forested. This information is derived from the US Forest Service FIA plot data: <https://www.fia.fs.fed.us/>.

### *Buchanan State Forest Adjoining Land Issues*

#### *Land Acquisition Opportunities with Significant Ecological, Recreational, or Administrative Values*

It is the policy of the Bureau of Forestry to acquire lands that expand public recreational opportunities, reduce administrative costs, protect the wild character of existing state forest land, and conserve biodiversity. The Buchanan Forest District will pursue the acquisition of inholdings, indentures, and other lands that are considered important additions to the state forest system on a willing seller/buyer basis.

#### *Activities on State Forest Land Affecting Adjoining Lands*

Most activities occurring on the Buchanan State Forest have the potential to ecologically, economically, or otherwise affect adjoining land. The perceived effects could be positive or negative in nature. The Buchanan Forest District will consider these effects when planning future activities on state forest land.

The existence of the Buchanan State Forest and activities on it can have several positive effects on adjoining properties. Economic activity is sometimes stimulated by the sale of wood products and by recreational activities on the forest. Adjoining properties are protected from commercial or residential development along their border with the forest. Adjoining and nearby property owners have additional acreage available for hunting, bird watching, gathering of products such as fuelwood, berries and mushrooms and a variety of other recreational pursuits.

On the other hand, adjoining state forest lands block the possibility of expanding private holdings. The sale of wood products can result in noise and increased use of local roads for heavy hauling and can temporarily change the appearance of the area. State forest recreationists can also increase traffic and noise. In addition, users of the state forest will sometimes purposely or by accident stray unto adjoining private property. Wildlife such as deer can damage gardens shrubbery and farm crops belonging to adjoining land owners.

#### *Activities on Adjoining Lands Affecting State Forest Land*

Most activities occurring on adjoining land having the potential to ecologically, economically, or otherwise affect the Buchanan State Forest. The perceived effects could be positive or negative in nature. The Buchanan Forest District will consider these effects when planning future activities on state forest land.

Residential and second home sites are rapidly being developed on land adjoining the Buchanan State Forest. Such development can reduce the “wild” character of the forest. It can lead to increased recreational use: legal such as hiking and bird watching and illegal such as use of snowmobiles and ATVs in undesignated areas. The threat of wildfires and invasive plants entering the state forest is also increased. In some cases, developments along state forest roads results in increased traffic and demands for snow removal and higher standards of road maintenance. Litter and trash dumping on the state forest may also increase.

In places where access to the state forest has traditionally been thru private land it is becoming increasingly difficult to gain permission to cross. This affects the sale of wood products as well as recreational uses such as hiking and hunting. Posting of adjoining property against hunting in general or doe hunting, can create deer havens and increase damage on state land.

Buildings constructed close to state forest boundaries often result in use of the forest being restricted by safety zones and a need to move recreation trails deeper into the forest to prevent conflicts and protect the “wilderness” experience of people using them. This construction also leads to increasing the risk of hazard trees falling and damaging property and using the State Forest as a convenient place to dispose of trash.

## 17) Economy and Forest Products

The economy of the area surrounding the Buchanan State Forest is principally agricultural. Bedford, Franklin, and Fulton Counties' agricultural lands are primarily used for dairy farming.

Unlike north-central or northwestern Pennsylvania, south-central Pennsylvania never supported a large timber industry, even in the late 1800s and early 1900s when the timber industry was at its peak. However, the wood products industry in the areas near the Buchanan State Forest is quite diverse. The principal stumpage markets include lumber, pulpwood, railroad ties, blocking, firewood, and pallet material.

In general, the sawtimber market has been stable, supporting both the small, portable operators, as well as the large, permanent sawmills with debarkers, chippers, and associated equipment.

Pulpwood markets have been good in the region, and Bedford County has a very good market for Virginia pine pulpwood. There are no pulp mills within the Buchanan State Forest District; however, a considerable volume of pulpwood has been hauled to P. H. Glatfelter Company or Pixelle, Spring Grove; the recently closed paper mill in Luke, Maryland (WESTVACO / VERSO); and, Appleton Paper Mills in Roaring Springs.

Water is a valuable resource derived from part of the Buchanan State Forest. Five water supply reservoirs are at least partially dependent upon the Buchanan State Forest as a source of water. Ten percent of the forest is currently in municipal watersheds.

The mineral industry has not played a major role in the development of this area. In the past, a small stone quarry was operated on Clark's Knob in Franklin County for the extraction of building stone.

Since 1962, there has been some interest in oil and gas exploration in southern Bedford County. In 1963, the Felmont Oil Corporation of New York leased two tracts covering 10,766 acres of the Resettlement Lands in Bedford County. Since then, the Felmont Oil Corporation has released all acreage and the contract has been cancelled.

In 1965, two tracts on Sideling Hill in Fulton County covering 6,268 acres were put up for bid and the Consolidated Gas Supply Corporation of Pittsburgh was the successful bidder. No drilling was done, and the lease has been cancelled.

In 1972, a lease was granted to Columbia Gas to store natural gas in the Five Forks field. Two additional storage wells were drilled on state forest land in 1998.

Interest in gas exploration surfaced again in the 1980s. In 1982, 1983, and 1985 over 24,000 acres of the Buchanan State Forest were leased for gas exploration and production. All have since expired. A successful deep gas well in Maryland has led to interest in drilling on the Tussey Mountain area in 2001.

In addition to Cowan's Gap State Park, there are four small picnic areas in the Buchanan State Forest:

- Bear Valley Picnic Area, located in Bear Valley, Franklin County
- Sideling Hill Picnic Area, located on Sideling Hill, Fulton County
- Sweet Root Picnic Area, located in Chaneyville, Bedford County
- Blankley Picnic Area, located in Martin Hill, Bedford County

These small picnic areas are used heavily by the local residents for picnics, reunions, and an occasional wedding.

Hunters, trappers, and fishermen pursue their sports on state forest land, and during the autumn months, thousands of motorists visit the Buchanan State Forest for its fall colors.

Several private campsite developments have been established in the areas adjacent to the Buchanan State Forest. Additionally, there are 69 active campsite leases on the Buchanan State Forest, located mostly in Allen's Valley, and 5 camp leases in state owned buildings.

Interstate highways have made this area readily accessible to the major population centers of Washington and Baltimore. There is a brisk demand for second home sites, resulting in residents of Washington and Baltimore purchasing much of the marginal farmland in the areas near the Buchanan State Forest. Increasingly, these citizens will use the Buchanan State Forest for recreational purposes.

In 2001, the Southern Alleghenies Conservancy was given the rights to 8 miles of abandoned PA Turnpike between Breezewood and the eastern foot of Sideling Hill Mountain. A hiker/bicycle trail was developed, and the Conservancy has transitioned this resource to a Fulton and Bedford County Joint Authority for further development. This site has the potential to bring many recreationists to the area.

### *Timber Products Output Survey*

The Pennsylvania Department of Conservation and Natural Resources, Bureau of Forestry (BOF), along with its partners, led an effort to gain information that reflects the current characteristics of the wood products industry in the state. In 2013, the Bureau of Forestry conducted a Timber Product Output (TPO) survey among Pennsylvania's primary wood processing facilities, collecting information from the 2012 production year and again in 2017, to gather information on the 2016 production year. The survey was reinstated in order to gain insight into volumes, species, uses, products and origins of the wood harvested and processed in PA, as well as information about the facilities operating in PA (employment, age, functions, etc.). The survey process also provided an opportunity for BOF foresters to interact directly with the private facilities located in their districts and enhance vital professional relationships. The survey information can be used by land owners, wood-processing businesses, and other interested parties to plan and adapt to the needs and current condition of the market. In addition, the data collected from such surveys contributes to broader datasets that could be used in long-term trend analysis and assessments of regional dynamics.

More information on the wood products industry in PA and reports from the Pennsylvania Timber Products Output Surveys can be found at: <https://www.dcnr.pa.gov/Business/ForestProducts/Pages/default.aspx>

## 18) Recreation

The Buchanan State Forest offers opportunities for a variety of recreational uses including; picnic areas, scenic drives and vistas, hunting, fishing and trails for hiking, mountain biking, horseback riding, snowmobiling, ATV riding, and cross-country skiing. For more information on all the recreational activities available in the Buchanan State Forest: <https://www.dcnr.pa.gov/Recreation/WhatToDo/Pages/default.aspx>

### *Non-motorized Recreation*

#### *Camping*

Buchanan State forest is committed to a low-density dispersed recreational experience and as such offers various types of camping across the district.

#### *Primitive Backpack Camping*

The Buchanan Forest District has 12 designated primitive campsites scattered across the forest and permits additional primitive camping opportunities at one night per site off many trails throughout the forest. No camping is permitted in Natural Areas, or at picnic areas, vistas or Forest Foreman Headquarters. Campers in Martin Hill Wild Area must be 500 feet from any road open to public travel and 500 feet off Tussey Mountain Road.

#### *Motorized Camping*

The Buchanan Forest District hosts 69 designated motorized campsites scattered across the forest. Motorized camping is not permitted within Natural or Wild Areas, picnic areas, near any vista or near any Forest Foreman Headquarters. Other specific roads or sites are closed to camping from time to time. Contact the District Office for an up to date list of closed areas.

#### *Group Camping*

Group camping is available on a large open area off Oregon Road referred to as the Ball Field. Water and sanitary facilities are not available.

### *Organized Group Camping*

There are no organized group camp leases on the Buchanan State Forest.

In addition to these camping activities on state forest land, an inventory of camping would not be complete without mentioning the nearby state parks. Cowans Gap State Park is internal to state forest land. It offers 233 camping sites, 10 group camp sites for up to 15 people each and 10 cabin sites. Their proximity to state forest lands and many amenities make them excellent starting points for recreational activities on state forest lands.

### *Leased Campsite Users*

There are sixty-nine (69) campsites on the Buchanan State Forest. Most of these, 62, are in Allen's Valley (near Cowans Gap). An additional five state owned buildings are leased to private individuals and used as cabins.

### *Picnicking*

Picnicking is permitted anywhere on state forest land. Four state forest picnic areas are located on the Buchanan State Forest. All are equipped with picnic tables, pavilions, fireplaces, latrines, and parking spaces. Primarily local people use them, and the attendance remains relatively stable from year to year. Sweet Root Gap Picnic Area was developed in 1957. The Civilian Conservation Corps constructed all other facilities during the 1930s.

#### *Bear Valley Picnic Area*

Bear Valley Picnic Area, located in Franklin County approximately 15 miles northwest of Chambersburg, is a beautiful location secluded between Broad Mountain and Kittatinny Mountain away from all the traffic and hubbub. Available are picnic tables, pavilions, fireplaces and grills, horseshoe courts, playground equipment, latrine, and fishing.

#### *Sideling Hill Picnic Area*

Sideling Hill Picnic Area is on Route 30 at the summit of Sideling Hill Mountain, Fulton County. Available are picnic tables, pavilions, fireplaces, horseshoe courts, playground equipment, a large open field, latrine and areas suitable for throwing a frisbee or ball.

#### *Sweet Root Picnic Area*

Sweet Root Picnic Area is along Route 326, one mile north of Chaneyville in southern Bedford County and offers a cool place to enjoy lunch under the tall pines. There are picnic tables, pavilions, latrine, fireplaces and grills available. The picnic area adjoins the 1,526-acre Sweet Root Natural Area. This is a lovely walk along Sweet Root Trail through the Sweet Root Gap to see the remnants of the once majestic hemlocks, lush ferns and rushing mountain brook. This trail also connects to the Mid-State Trail.

#### *Blankley Picnic Area*

Blankley Picnic Area takes us back in the mountains of southern Bedford County. High in the bend of Friends Cove, it can be reached by turning on to Blankley Road from SR 326 south of Rainsburg at the summit of Rainsburg Mountain. Available are picnic tables, pavilions, fireplaces, grills and latrines.

### *Hunting and Trapping*

Hunting and trapping are popular recreation activities on the Buchanan State Forest. The deer herd has remained relatively stable over the past few years. Because most of the Buchanan State Forest is accessible, deer hunting pressure on the state forest lands is quite heavy.

Chronic wasting disease (CWD) is an always fatal disease that affects the brain and nervous system of infected deer and elk. CWD has been detected in some areas of Pennsylvania in both captive and free-ranging deer. Following these detections, the Pennsylvania Game Commission established Disease Management Areas (DMAs) to reduce the risk of spreading CWD to other parts of the state. Two DMAs currently exist in Pennsylvania; however, newly confirmed cases can alter the boundaries. Buchanan State Forest falls within DMA 2.

Hunters who harvest deer within the DMA should be aware that special [rules and regulations](#) apply, and they should have their [deer tested](#) for the disease. Additional information on CWD -- including impacted locations and [approved processors](#) -- is provided by the [Pennsylvania Game Commission](#).

There is a stable bear population here. Bears are taken each year from the Martin Hill and Sideling Hill areas. The first bear reported killed in Fulton County since records have been maintained was harvested in 1998 along King Trail off Aughwick Road. Since 2000 the game commission used the Sideling Hill Forest Headquarters building as a bear check station. This use is expected to continue.

The Buchanan State Forest has a history of being good turkey range and hunting pressure is heavy. Recently the turkey population has been on the upswing and now all divisions of the forest contain turkey. The best turkey range is in the Resettlement lands and Martin Hill in Bedford County.

Because of the even-age timber management creating early successional forest, some quality grouse hunting has developed. Hunting pressure is light, but hunter success is relatively high.

The squirrel population in the forest depends upon the mast crop. In years of heavy mast production, squirrel hunting is good. In years of poor mast crops, most of the squirrels migrate to where food conditions are better. Hunting pressure and success varies with the squirrel population.

### Fishing

The following trout streams are within the Buchanan State Forest:

**Table 18-1:** Trout Streams in the Buchanan State Forest

Streams	Stocked Length (miles)	Fishable Length (miles)
Buck Run	0	1
Cove Creek (Fulton Co)	0.5	0.5
Laurel Fork	0.6	0.6
Laurel Run	0	0.5
Little Brush Creek	1	1
Oregon Creek	3.1	3.1
Peck Run	0	0.6
Pigeon Roost Run	0	1
Roaring Run	0	1.2
S. Branch Little Aughwick Creek	7.6	7.6
Sweet Root Run	0.5	1
Trout Run	0	2
Wild Cat Run	0	1
Wooden Bridge Creek	0	2.2
<b>Totals</b>	<b>13.3</b>	<b>23.3</b>

In addition to the above there are native brook trout in the headwaters of Cove Creek, Bedford Co. About 0.3 miles of this unstocked stream is in the Buchanan State Forest. Streams that are not stocked annually often contain populations of native trout.

In Fulton County, the state forest land known as Kerper Tract has a section of Cove Creek that is a special regulation delayed harvest area.

Cowans Gap Lake in Cowans Gap State Park is the only lake in Buchanan Forest District. This 42-acre lake is stocked with trout several times a season by the Pennsylvania Fish Commission. Use of boats with electric motors is permitted.

There is no warm water fishing on the forest.

### *Hiking*

Hiking trails may be divided into at least five categories: National Scenic, National Recreation Trails, Designated State Forest Hiking Trails, local district trails and interpretive trails. Most of the existing trails on the Buchanan State Forest are suitable for a variety of uses by recreationists in reasonably good physical condition. However, some were originally established as fire breaks and for fire access and are steep and rocky. Most of the more difficult trails are in the Bear Valley and Allen's Valley sections of the State Forest. The following table provides a chart of trails on the Buchanan State Forest that have either been designated for or are open for specific uses.

#### *National Scenic Trail*

There are no National Scenic Trails on the Buchanan State Forest.

#### *National Recreation Trails*

There are no National Recreation Trails on the Buchanan State Forest.

#### *Designated State Forest Hiking Trails*

There are two designated state forest trails: the Tuscarora and the Mid State.

### **Tuscarora Trail**

Length: 13.6 miles on state forest land, 39 miles total in the district.

Terrain: Summit of Tuscarora Mountain, except near Cowans Gap State Park where it follows Allen's Valley. Some areas are rocky, but grades are moderate on the state forest portion.

Features: Scenic vistas of Franklin and Fulton Counties, rock outcrops, and a state park.

The Tuscarora Trail is a 250-mile long trail through the Ridge and Valley Appalachians of Virginia, West Virginia, Maryland and Pennsylvania. The Tuscarora Trail leaves the Appalachian Trail in Shenandoah National Park making its way west and north to rejoin the Appalachian Trail atop Blue Mountain, 10 miles south of Duncannon, PA. The trail sign is a blue rectangular paint blaze. These blazes are laced fore and aft like highway markers in the direction of travel. The only variation is a double blaze, which warns the hiker of change in direction.

This trail system was constructed in 1968 because of threats to the Appalachian Trail in Northern Virginia where it ran over large tracts of private land. The Tuscarora-Big Blue system was to be a "bypass" trail and would parallel the Appalachian Trail to the west.

The Tuscarora Trail enters the Buchanan Forest District from the north near Spring Run, travels southwest along the top of the Tuscarora Mountain until it descends to Allen's Valley where it travels along a portion of the old Forbes Road. In Allen's Valley, it passes through Cowans Gap State Park where overnight camping, picnicking and swimming are available. The trail then ascends again to the top of Tuscarora Mountain. It passes a former fire tower site on top of mountain, a spot that offers a fine panoramic view of the surrounding area. It then continues along the top of the mountain, crossing U.S. Route 30 and eventually Route 16 about three miles from the historic site of President James Buchanan's Birthplace and thence south through Pennsylvania State Game Lands into Maryland.

It traverses the Buchanan Forest District for 39 miles and goes from an elevation of 1,300 feet to 2,460 feet at its highest point. The Trail offers an interesting variety of scenic views, historic sites, and a chance for sighting many species of birds and other wild animals.

### **Mid State Trail**

Trail Route: Orange paint blazes are used to guide hikers along the path. The trail enters PA from the south from Maryland's Green Ridge State Forest. It traverses a couple miles of L.U. lands then follows public roads to the base of Tussey Mountain. It enters the Martin Hill Wild Area on Carnes Trail. It follows a variety of forest roads and trails past the former Martin Hill tower site, then goes thru the Sweet Root Natural Area before crossing PA Route 326 and climbing back to the summit of Tussey Mountain. It follows the ridge of Tussey Mountain. and exits the state forest onto Game Land 97. It continues up Tussey Mountain across game lands and private property and leaves the forest district at the Huntingdon County line west of Raystown Lake.

Length: 15.5 miles on state forest land, 75 miles in the district

Terrain: Mountainside, summit, and valley.

Features: Wildlife, mixed-oak forest, scenic mountain streams and ponds, Sweet Root Natural Area and Martin Hill Wild Area.

The Mid State Trail is a relatively new addition to the Buchanan Forest District. It was constructed in the mid 1990's to connect the part of the trail further north in Pennsylvania with the C&O Canal Trail in Maryland.

### *Buchanan State Forest Hiking Trails*

Buchanan State Forest offers a wide variety of local hiking trails. They vary in many ways including destination, difficulty, topography, scenery, and history. Some of the most interesting and popular district trails are listed below.

### **Forbes Road Historic Trail**

Point of Origin: Cowans Gap State Park

Trail Route: Enters Cowans Gap State Park from the Richmond Furnace area, from the park, goes north thru the Buchanan State Forest, then crosses private land to Sideling Hill. Most of the trail is on modern roads and private land. In some areas, the exact location of the original road is uncertain.

Length: 29.0 miles

Terrain: Mountains and valleys.

Features: Traces a portion of the historic "Forbes Road", which was built under the direction of General Forbes, a British General, to move a military force westward toward Pittsburgh to drive out the French during the French and Indian War.

### **Trails in the Martin Hill Wild Area**

A circuit hike with several variations of different lengths can be made on the southernmost portion of Tussey Mountain and the Martin Hill Wild Area in Bedford County. The trail head is at the parking area at the junction of Beans Cove and Martin Hill Roads. You can create loops of varying length and difficulty using the Tussey Mountain Road and the trails on the eastern side of it. These trails are shown on the Buchanan State Forest Public Use Map.

### **Trails in the Sweet Root Natural Area**

A hike from Sweet Root Picnic Area on PA 326 near Chaneyville takes you through Sweet Root Natural Area in Buchanan State Forest. The Sweet Root Trail goes upstream from the picnic area along Sweet Root Run. This trail connects to other trails in the natural area and small loops can be made. Saltpeter had been mined from a cave in Sweet Root for use in gunpowder before and during the American Revolution. The cave can be found in the rocks on the east side of Sweet Root Run.

### **Railroad Arch and South Penn Railroad Trails**

Trail Route: Start just south of point where the overpass of the Old PA Turnpike crosses the Oregon Road. Follow blazes to arch. Return on same route or continue to the South Penn Railroad Trail.

Length: 0.3 miles

Terrain: Stream bottom

Features: 170-foot-long handmade stone arched culvert, built to carry the never finished South Penn Railroad across Woodridge Run. An abandoned dynamite shack is located along the trail. Small native brook trout inhabit Wood Ridge Run. If you continue to the South Penn Railroad Trail, you can also see more of the of the railroad bed and the abandoned turnpike and Sideling Hill tunnel.

#### *Interpretive Trails*

An interpretive trail and area are located along Oregon Road at the former site of the Civilian Conservation Corp Camp. Historical information including maps, photos, a guide to hike around the site, and a kiosk can be found there.

#### *Handicapped Trails*

No trails have been specifically designated, improved, or constructed for use by the handicapped on the Buchanan State Forest. However, a portion of the Rays Hill ATV Trail area is open year around for disabled ATV operators. The old turnpike with its paved roads is an opportunity for persons with disabilities to view adjacent sections of the Buchanan State Forest.

<https://www.dcnr.pa.gov/Recreation/WhatToDo/Hiking/Pages/default.aspx>

### *Bicycling*

Bicycling can be divided into two categories, street or road biking and mountain biking. All roads and trails (except the Mid-State and Tuscarora Trails and the roads and trails in the two natural areas) are legally open to bicycles. The trail system offers a wide variety of difficulty. Use of topographic maps when planning a bike excursion is advised. We are working with volunteers to plan and design designated mountain biking trails in both Franklin and Bedford Counties.

8.5 miles of the abandoned PA Turnpike, east of Breezewood is in the planning stages of being officially opened as a hiking and biking trail Included on this old superhighway, which is bordered by the Buchanan State Forest on both sides for more than half its length, are the Ray's Hill and Sideling Hill tunnels. When open, this will be an excellent path for street bikes and will provide additional access to the state forest for mountain bikes.

<https://www.dcnr.pa.gov/Recreation/WhatToDo/Biking/Pages/default.aspx>

### *Scenic Rivers*

No rivers border or pass through the Buchanan State Forest. The Raystown Branch of the Juniata River passes thru the district but is never closer than 4 air miles from state forest land.

### *Horseback Riding*

Horseback riders use many of the state forest roads and trails. There are no trails specifically designated for horseback riding. However, except for designated state hiking trails and natural areas, horses may be ridden on any state forest road or trail.

<https://www.dcnr.pa.gov/Recreation/WhatToDo/HorsebackRiding/Pages/default.aspx>

### *Cross-Country Skiing*

There is a cross-country ski trail in each of the three counties located in the Buchanan Forest District. Maps are available at the district office. Many other roads and trails are also suitable for this sport. Technically, all roads and trails on the forest are open to this use, but slope and roughness make many areas unsuitable. The Bureau of Forestry website has a listing of snow conditions across the state that is updated twice a week from mid-December through April 1<sup>st</sup>.

<https://www.dcnr.pa.gov/Recreation/WhatToDo/Cross-CountrySkiing/Pages/default.aspx>

### *Birding/Nature Observation*

Bird watching and nature observation are uses that can potentially occur throughout state forest land. The best locations for these activities depend on the habitat requirements of the species involved. The Audubon Society in cooperation with the Bureau of Forestry has designated certain areas of state forest land with unique or unusual bird species as important bird areas. These parts of the state forest have particularly large and unique habitats for some unusual bird species. Most state forest lands have diverse habitats and support great numbers of birds. More information on important bird areas can be found at [www.audubon.org/bird/iba](http://www.audubon.org/bird/iba)

Bird-watchers and wildflower lovers also should enjoy visiting the Buchanan State Forests' Kerper Tract also known as Redbud Valley.

### *Hang Gliding and paragliding*

Much of the Bureau of Forestry's ground is located on steep mountainsides. Few recreation groups prefer this part of state forest land, but one group requires it, hang gliders and paragliders. Hang gliding-and paragliding

sites have been established on three state forests. Hang-gliding on the Buchanan State Forest began in 1983. Two launch sites exist in the Buchanan State Forest. One is located at the heliport along Summit Road on Sideling Hill. The other is located along Fisher Road on Ray's Hill. Written agreements are required prior to improving or utilizing sites for hang-gliding.

## *Motorized Recreation*

### *Scenic Driving*

A large part of the public use of the forest each year is spent in driving forest roads. At almost any time of the year, and especially when the seasons change, many people drive these roads to enjoy the scenery, to look for wildlife, or just to experience the relative quiet and solitude of the forest environment.

Various roads passing through the forest have been designated as scenic drives because of seasonal or year-round features that make driving these roads a pleasurable experience. Several of the best drives in the Buchanan State Forest are highlighted below.

Bear Valley Road traverses Bear Valley thru the state forest for a distance of 4.7 miles. State Route 3007 comprises 3.5 miles of this drive and the rest is state forest road. Wildlife of all kinds, scenic mountain streams and terrain, and the Bear Valley Picnic Area are the principal features of this scenic drive. The road continues south of the forest for several miles thru state game lands.

Allens Valley-Aughwick Road passes through Cowans Gap State Park and follows Little Aughwick Creek for 10 miles. In the spring, mountain laurel blooming along the roadside makes this drive especially pretty. Varying forest types from mountaintop species to cove hardwoods on the lower slopes can be seen. Many wildlife species are also frequently sighted.

PA Route 915 winds for many miles through the mountainous terrain of northern Fulton County, including 4 miles of state forest. The alert observer may get many glimpses of wildlife as well as varying examples of forest cover. An excellent vista is located between the turnpike and Mountain House Road.

The Summit-Enid Road, 8.4 miles long, provides many examples of typical forest cover, vistas of Fulton County, scenic mountain streams, and glimpses of wildlife.

The Blankley-Martin Hill Road travels for 10 miles through southern Bedford County and provides the motorist with a variety of interesting sights. Among these are high mountain streams, scenic vistas, wildlife, and examples of scientific forest management.

The Bark Road (11.8 miles) passes through western Fulton County along the summit of Sideling Hill south of U.S. Route 30. It crosses state forest and game land and includes an excellent vista.

State route 326 in southern Bedford County between Rainsburg and Chaneyville passes through mixed-oak forests and follows a scenic mountain stream, with dense stands of hemlock and rhododendron. Wildlife can often be seen along this road. 1.7 miles of the road is on state forest.

The Abey Road south of Chaneyville runs for 2.3 miles through old abandoned farm land on which Virginia pine has regenerated itself. Mixed-oak stands are also present along the road. This forest cover and scenic stream make this quiet valley an ideal place to observe wildlife. The Pine Ridge Natural Area is adjacent to and east of the Abey Road.

### *Snowmobiling*

Properly registered snowmobiles may operate on state forest roads and trails posted open for snowmobiling. Some roads are designated as "joint use". This means they are open to both motor vehicles and snowmobiles. Some roads are designated for snowmobiles only. Some trails are also open for snowmobiles. The list of roads and trails open for snowmobiling may vary slightly from year to year. For a current list, consult the website. The Bureau of Forestry website has a listing of snow conditions across the state that is updated twice a week from mid-December through April 1<sup>st</sup>. Snowmobile trail maps for Bear Valley, Sideling Hill, and Martin Hill are available at the forest district office and the forest foreman headquarters or on the website.

<https://www.dcnr.pa.gov/Recreation/WhatToDo/Snowmobiling/Pages/default.aspx>

### *All-Terrain Vehicle Riding*

Properly registered all-terrain vehicles (ATVs) may operate on state forest trails and roads posted "open" specifically for their use. Two trails are presently designated on the Buchanan State Forest.

Eighteen miles of trail are in the Martin Hill area. Most of this trail occupies old roads, trails, logging roads and skid trails. Access to the trail is from the parking area located on PA 326 two miles south of Rainsburg.

Fifteen miles of trail are in the Wells Tannery area on Rays Hill. This trail also uses old roads, trails, logging roads and skid trails. Access is from Cove Road or Childers Ridge Road.

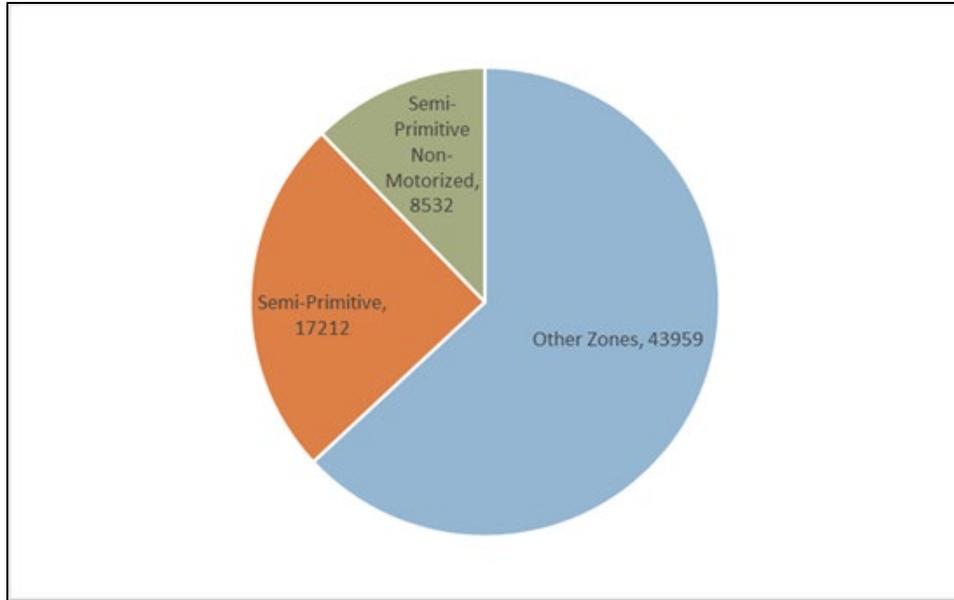
<https://www.dcnr.pa.gov/Recreation/WhatToDo/ATVRiding/Pages/default.aspx>

### *Trailbike Riding*

Trail bikes licensed under the motor vehicle code are permitted on all state forest roads open to public motor vehicle use. Licensed and unlicensed trail bikes may only be operated on state forest trails posted as being "open" specifically for their use. No such trails are presently designated on the Buchanan State Forest.

### *Other Uses*

The Buchanan State Forest accommodates almost every activity suited to a rather large, publicly owned land base. Mushroom hunting is popular in parts of the forest where morels grow. Other uses not mentioned in the inventory include astronomy, dog sledding, geocaching, jogging, orienteering, photography, rock climbing, rappelling, sleigh riding, sledding, snowboarding, snowshoeing, and swimming. All these and more are permitted uses of state forest land. Many of these sports are not actively managed, but nonetheless they are enjoyed in the wild and peaceful setting of state forest land.



**Figure 18-1.** Acres of state forest land in this district by Recreation Opportunity Spectrum (ROS) classifications (2012). ROS is an inventory system developed by the U.S. Forest Service, to characterize land by types of recreation experiences. ROS is described on p. 42 of the 2016 SFRMP. “Other Zones” refers to Semi-Developed and Developed zones.

This chart shows the breakdown of the Buchanan State Forest in association with its proximity to public access roads. The designations become more primitive the further state land is located from a public road.



**Figure 18-2.** Graphical depiction of ROS zones and their characteristics.

## *Planned Group Use and Events*

One of the key policies in place to sustain “low density, dispersed recreation” within the state forest system is the requirement that any planned event by parties of ten or more individuals need to secure a Letter of Authorization (LOA) from local district managers prior to engaging in the event. Securing a LOA requires that the event organizer fill out a risk assessment form to identify potential types of risk to participants or other forest users resulting from the event and to sign an indemnification form freeing the Commonwealth from liability. For larger events, or events that charge a participation fee, a Special Activities Agreement (SAA) or Commercial Activities Agreement (CAA) is required which is a contractual document reviewed and approved by the Attorney General’s office.

## 19) Communication, Education, and Interpretation

The bureau disseminates and receives information to and from various destinations via various channels. Recipients of bureau content include researchers, government agencies, the public, and various stakeholders. The bureau contributes articles for publications; it reports to government agencies and shares data with interested parties; and it develops educational content for broad use by the public. The bureau is also a source of unbiased, credible information on Pennsylvania forests and native wild plants, and it shares its data regularly.

**Communication** - Effective communication is vital to conservation agencies, where efforts are tied to resource stewardship on the parts of individuals and communities. The bureau employs effective communication and public outreach to foster stewardship and convey a message of environmental sustainability. Central to the bureau’s communication strategy is to inform visitors and stakeholders about the timing and siting of management activities, the availability of various recreation opportunities, and the importance of forest resources. Bureau staff remain available to engage in thoughtful dialogue with stakeholders, to answer questions, field concerns, and provide information.

**Education** - Public education and outreach is an essential component of the bureau’s mission. DCNR’s enabling legislation mandates it to “promote forestry and the knowledge of forestry” throughout the commonwealth. The bureau’s mission further states that it will accomplish this by “advising and assisting other government agencies, communities, landowners, forest industry, and the public in the wise stewardship and utilization of forest resources.” This is especially important with youth. The bureau serves as the state sponsor for Project Learning Tree, an international forest education program. Most forest districts participate in numerous educational opportunities with stakeholders from Envirothon, to fire prevention and Smokey programs, to forest resource programming with schools.

**Interpretation** – Interpretation is as a mission-based communication process that forges emotional and intellectual connections between the interests of the audience and the meanings inherent in the resource. The bureau of forestry provides interpretive wayside panels located at various locations including trailhead parking areas, along trails, at district offices, and other areas of the high use by the public.

The Buchanan Forest District developed a draft Interpretive plan with the following goals.

- To foster an awareness and encourage sustainable use of resources by communicating, promoting and modeling good stewardship and best management practices
- Encourage exploration and participation in low impact recreation within the Buchanan State Forest.

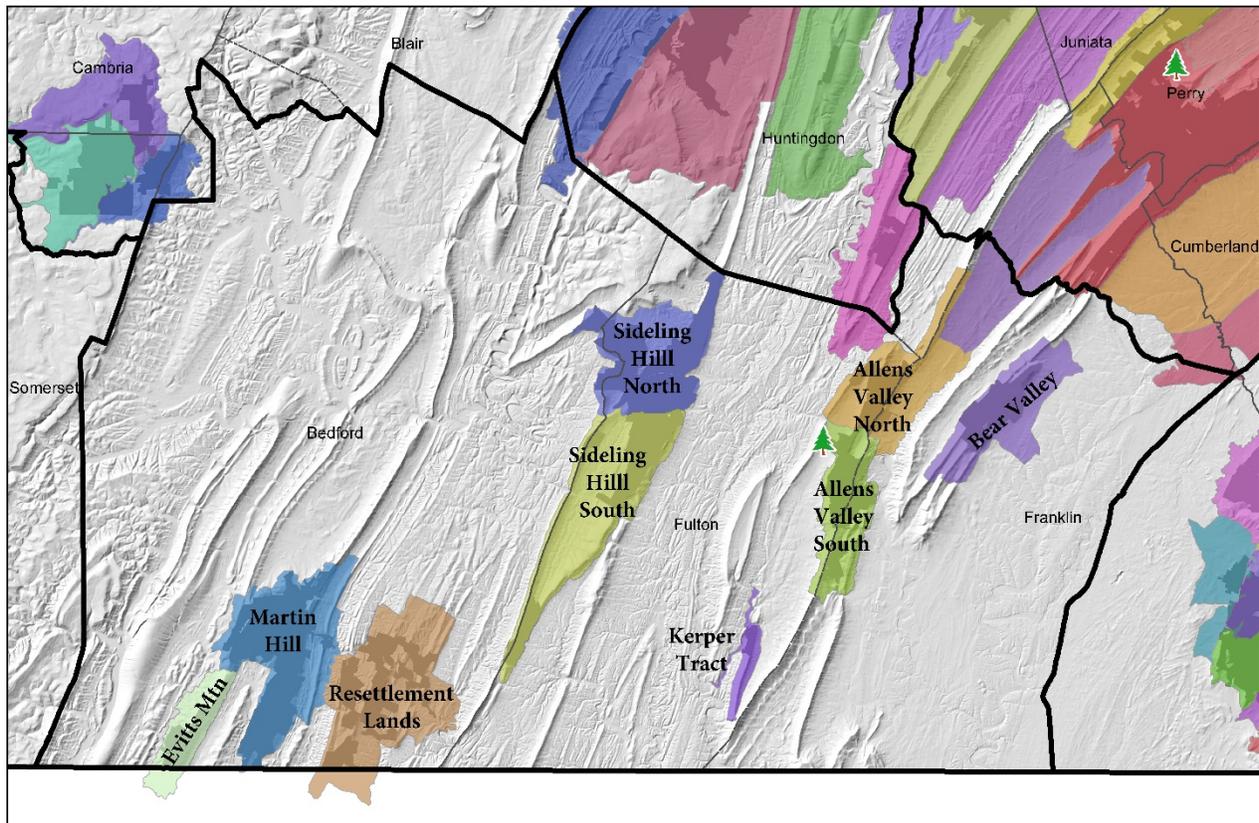
- To protect unique historic features or unusual feature in the landscape for future generations and share their stories.
- Support effective partnerships with local communities that benefit the community, the resource and the visitor.
- To foster an appreciation and understanding of the history of Pennsylvania's forests and their role in our lives.

# Landscape Management Unit Plans

With the 2016 revision of the SFRMP, the bureau introduced the LMU concept to facilitate consistent, structured, and integrated resource management and planning across large landscape units on state forest and adjoining lands. LMUs were delineated for all state forest land in 2016-2017. The LMU, which complements other ecological delineations, now serves as the primary unit for landscape-level planning and management on state forest lands. LMUs help the bureau facilitate planning on a landscape scale that has ecological context, incorporate multiple forest uses and values, and promote ecological analysis. The units also serve as a tool to facilitate cooperative management with adjoining forest districts, landowners, and agencies. An explanation of how LMUs were delineated is found in the 2016 SFRMP on page 62.

The bureau has developed LMU Plans for every LMU containing state forest land. The LMU Plans for LMUs within the Buchanan Forest District are found below. Each LMU Plan contains three elements:

- Overview – a 1-2-page narrative describing the LMU and its important features;
- LMU Priority Goals – a list of points of emphasis for state forest land management within the LMU, like the District Priority Goals, but at the LMU level; and
- Profile – tables, charts, and accompanying text that more fully describe the LMU’s characteristics.



**Buchanan Forest District LMUs**



0 2.25 4.5 9 13.5 18 Miles

 District Offices  
 County Boundary  
 Forest District Boundary  
 State Forest Land

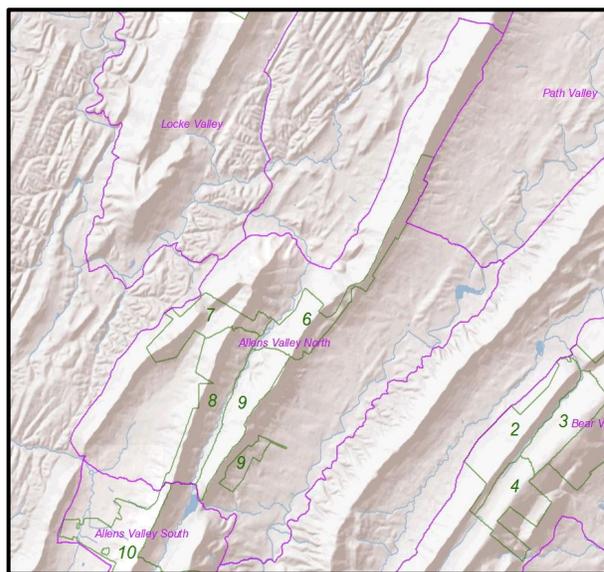
# Allen's Valley North

## Landscape Management Unit

Revision Date: May 2018

### Overview

The Allen's Valley North LMU is 20,611 acres in size located in the Appalachian Mountain Region of the Ridge and Valley Province. This land is situated in the western Franklin County and Eastern Fulton County. This is typical ridge and valley topography of steep side hills with knobs and hollows and valleys with farmland mixed with small wood lots. The lands held by Buchanan State Forest make up about a 22% of the land base and the remaining acres are privately held though still mainly forested. The private land positioned lower on the slopes have been cleared for agriculture and homesites. This ridge tops in this landscape have some areas with rock outcroppings. Nearly all the state forest land in this LMU was cut over in the late 1800 and early 1900's to create charcoal to fuel the nearby iron furnaces, Mount Pleasant and Richmond Furnace. The remnants of many charcoal hearths can be found across the landscape. The trees that weren't used for charcoal were harvested for lumber and by 1907 most of this landscape completely stripped of trees and then sold to the Commonwealth. Allen's Valley was home to a Civilian Conservation Corp Camp S-54 from 1933 to 1942 staffed by Company 305. This crew was instrumental in creating the infrastructure for Cowan's Gap State Park and other roads and trails in this area.



The waterflow from this landscape feeds into both the Potomac River Basin and the Susquehanna River Basin in about equal proportion. Both basins eventually lead to the Chesapeake Bay. The South Branch of the Little Aughwick Creek flows through this landscape. This creek is exceptional value south of Cowan's Dam but it is high quality in this landscape because it is north of the recreational use lake and dam. This landscape has few wetlands except along the creek. However, in the farmlands and lower elevations there are several man-made ponds.

The forests in this landscape are comprised mostly (87%) of the oak forest types. The mix of these oak types are 49% Dry Oak-Heath Forest, 23 % Red Oak-Mixed Forest, and 15% Mixed Oak – Mixed Hardwoods Forest. There is very little conifer cover in this landscape and most of it exists immediately adjacent to the creek. The overall health of this landscape is generally good. This landscape north of the park has experienced less Gypsy Moth impact and generally experiences a higher site quality except for the extreme ridge tops. The hemlocks in this LMU have been impacted by Hemlock Woolly Adelgid but less mortality has been noticed here perhaps due to the early release of biocontrols.

There are many invasive species present in this LMU but so far most are present in treatable amounts. Japanese Barberry has been under management in this LMU for several years and its presence on the landscape are

drastically reduced. *Ailanthus*, *Paulownia*, and stilt grass have all been treated as part of timber sale activities. Mile-a-minute is present in several distinct populations. The most worrisome occurrence is along the ridge top containing the Standing Stone trail as this area is nearly impossible to treat and recreational use has the potential to spread this to other parts of the landscape. Mile-a-minute has been treated along Sharpe Trail and Mellott Road where smaller populations were found during sale operations. Biocontrols were released in the adjacent landscape and appear to have moved over into this area but buildup of these populations will take time and control is far from a reality. This landscape is exposed to heavy amounts of recreational traffic year-round and it should be monitored to keep in check any new cases of invasive species being introduced.

Due to the quality habitat this landscape has an abundance of game and non-game species of wildlife including deer, turkey, bear, coyotes and small game. This area has not been included in the DMAP program and annual deer surveys indicate that there is not currently a high deer population. There is the possibility that Eastern Timber Rattlesnake and Allegheny Woodrat may be found in this landscape as there is adequate suitable habitat. Since these rocky areas are usually not included within a timber sale, their habitat should remain buffered and protected from disturbance.

Recreational use is an important aspect of this landscape and use varies throughout the year. This area is easily accessed from Route 75, 522, and 30 allowing easy access residents from all surrounding towns and villages. Hiking, fishing, hunting, and mushroom picking are the most common recreation activities in this LMU. Fishing is popular in this area with the South Branch of the Little Aughwick Creek providing a high quality cold waters fishery that contains both native and stocked trout. The Tuscarora Trail is a designated state forest hiking trail that cuts through this landscape running north and south and is part of the national Great Eastern Trail. The Standing Stone Trail (formerly the Link Trail) also runs through this landscape and is also part of the Great Eastern Trail. Many local and through hikers use these trails year-round. This LMU contains a Potomac Appalachian Trail Club cabin located on private land and the Burd Run Trail Shelter located on state forest land that serve those hiking the Tuscarora Trail. In addition to these state-wide trails there are also many district hiking trails present on this landscape that help create loops with the statewide trails. These trails include Forbes Road, Horseshoe Trail, Fox Trail, Sharp Trail, Todd Trail, Loop Trail, Cowan's Trail, Burd Trail, Heath Trail, Allen Trail, Ellesic Trail, and Burd Run Trail. Many of these trails were constructed in the early 1900's to serve as fire breaks. The Forbes Road is an old military road built in 1758 under the direction of the British General Forbes to move a military force and transport materials westward from Carlisle to Fort Pitt to drive out the French during the French and Indian War. There are also numerous state forest lease and private cabins in this landscape.

There are several rights-of-way in this landscape. The Pennsylvania Turnpike has one for the tunnel and for a radio antenna on top of the ridge. They have an access road for the tower that runs very close to the tunnel that is gated at the bottom. The Fannettsburg T.V. Cable Company has an antenna that is located right beside the power line and has access using the power line right-of-way. There are two power line rights-of-way that are in the southern end of the landscape.

Compartments: 6, 7, 8, 9

## Priority Goals

### A. Silviculture:

- Continue to target areas of natural regeneration to work towards balancing the age class distributions of the forest. This will include resolving access issues for the Narrows and Jones Tracts.
- Manage for and around the areas having a notable decline in oaks. Many white oaks in this area have been impacted. Assessment by forest health staff concluded that it is decline due to a variety of factors including age and environmental stress.
- Mitigate, control and eradicate as possible the many invasive species found in this LMU. Evaluate and manage trouble spots in all areas of active management. Specific targets for treatment in this LMU are the Japanese Barberry along the stream corridor and the Japanese Stiltgrass along the Tuscarora and Standing Stone Trails as well as the associated timber activities. As well as monitoring for Paulownia that was found and treated in patches on two sale areas,
- Increase the dispersion of biocontrols for Mile-a-minute; and find a way to control on high use areas that have the greatest spread potential.
- Monitor the spread of the PSU inoculated a patch of Ailanthus off Carrick Valley Road. The Narrows and Carrick Valley are the highest concentration areas in this LMU.

### B. Water:

- Develop plans to conserve and enhance the vernal ponds found around Sharpe Trail in this LMU above the typical buffering from sales and maintenance activities.
- Maintain and improve water quality by working to ensure stream cover as hemlocks continue to die off from HWA infestations.

### C. Recreation:

- Increase the recreational experience by continuing to maintain the multi-use trail system via the 5-year rotation and continuing to develop trail reroutes for sustainability and usability.
- Recruit volunteers to assist with trail maintenance and improvements where possible. Current projects include working with the Tuscarora Trail and Standing Stone Trail to maintain and improve access to the statewide trail systems and the associated district connector trails. Switchbacks are currently proposed for Fox Trail.
- Continue yearly inspections of the cabins found in this LMU and work to ensure that all the cabins maintain compliance with established standards.
- Add interpretation to the Forbes Road to highlight the history of this trail.

### D. Wildlife:

- Maintain or improve as needed the habitat areas that benefit wood rat and rattlesnake populations.
- Work with the PA Game Commission to increase awareness of Chronic Wasting Disease and implementing measures to slow the spread across the LMU.

### E. Infrastructure:

- Continue to watch for strategic land acquisitions. High priority areas include the old Carrick Valley Road Area for access to the Jones Tract and parcels near the Narrows tract to fix access issues there as well.

### F. Public Education and Outreach

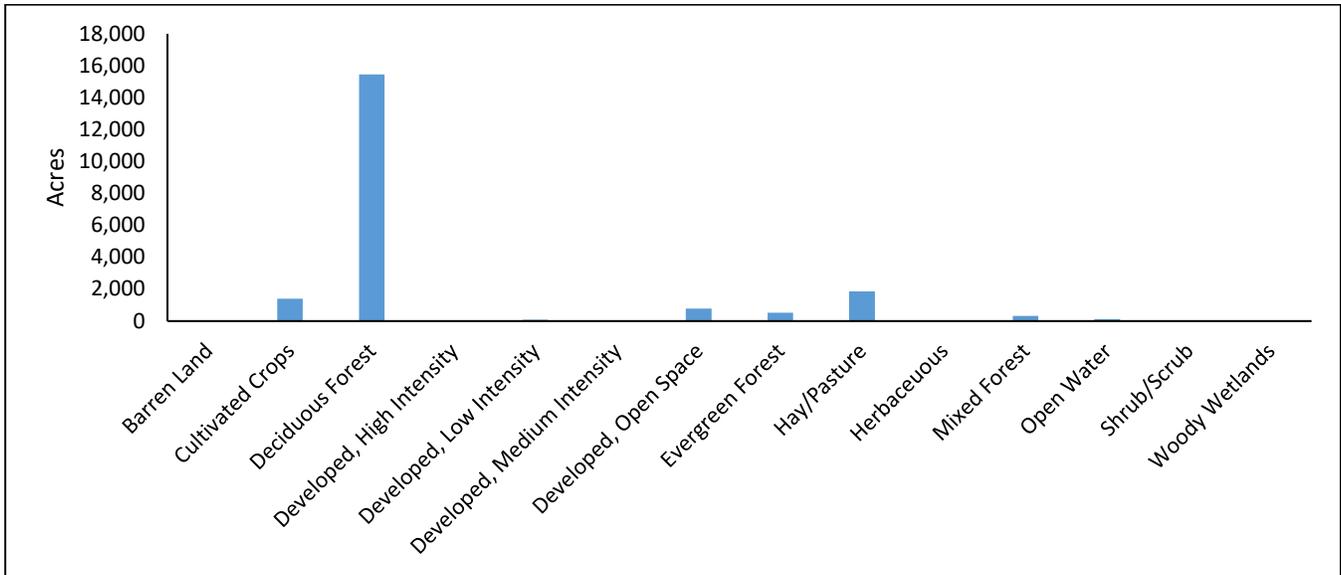
- Reduce the amount of high grading and other questionable forest practices that occur on neighboring lands.

## Profile

**Table 1.** LMU acreage: total and state forest land only.

	Acres
State Forest Land	4,526
LMU Total	20,611

**Ecoregion:** Ridge and Valley



**Figure 1.** LMU acreage by land cover categories from the National Land Cover Dataset for the entire LMU.

As you can see from the figure above the majority of the LMU is forest, mostly deciduous. The remaining uses are farms and houses. The amount of forests is beneficial for this landscape and its associated watersheds. This area is very well suited to its use as a working forest and recreational area.

**Table 2.** Miles of roads by category on state forest land in this LMU. Road categories are described on p. 199 of the 2016 SFRMP.

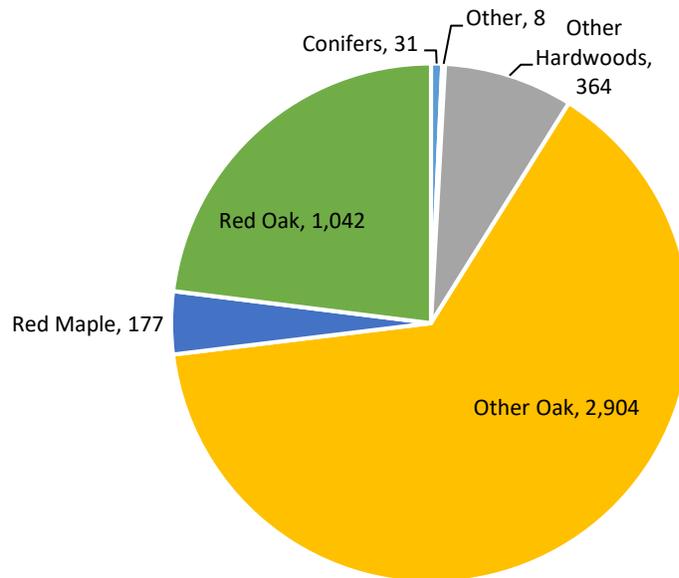
Road Category	Total Miles
Z1 - Public Use Road	5
Z3 - Administrative Road (gated)	10
<b>Total</b>	<b>15</b>

The main access to the recreational opportunities and timber resources in this landscape are from the paved road owned by the PA Department of Transportation, Aughwick Road, that runs along the valley floor. Along this road are several parking areas and pull offs that provide access to the administrative roads and trails that lead up the ridges. The remnants of the Forbes Road are now classified as a Z3 road, but primarily used as a trail. The remaining Z3 roads were put in to access timber resources and do not offer connection or an enjoyable ride.

**Table 3.** Miles of trails on state forest land in this LMU open to various types of recreational use. Note that miles are not additive, and a single trail may be open to multiple use types. Shared-use trails, which make up the majority of trails on state forest land, are open to hiking, biking, horseback riding, and cross-country skiing.

Trail Category	Total Miles
Hiking	19
Biking	8
Equestrian	8
X-Skiing	8
ATV I	0
ATV II	0
Snowmobile/ Joint Use Road	0

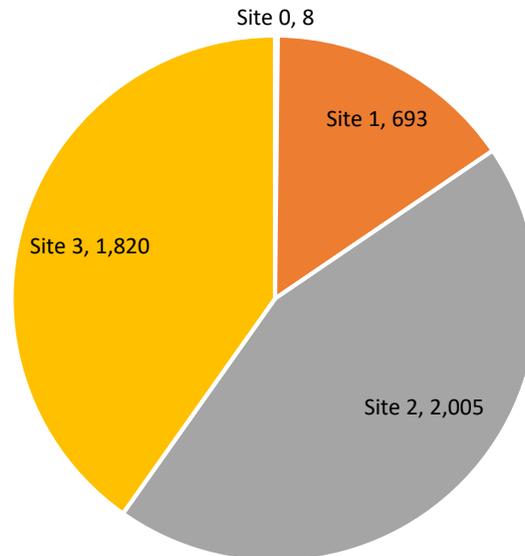
The Tuscarora Trail and the Standing Stone Trail both run north south the two ridges in this LMU and are both designated as hiking only trails. All the other trails in the Allens Valley North LMU are open for multiple uses, but most were created as fire breaks and they tend to run straight up the hillsides creating some challenging walks through the landscape. Once you hike up these district trails you can hit the one of the statewide trails and hike either up or down the ridge to the next trail creating nice loops that can be easily hiked in a day.



**Figure 2.** Acreage of state forest land in this LMU by aggregated forest type. The forest types are described on p. 108 of the 2016 SFRMP.

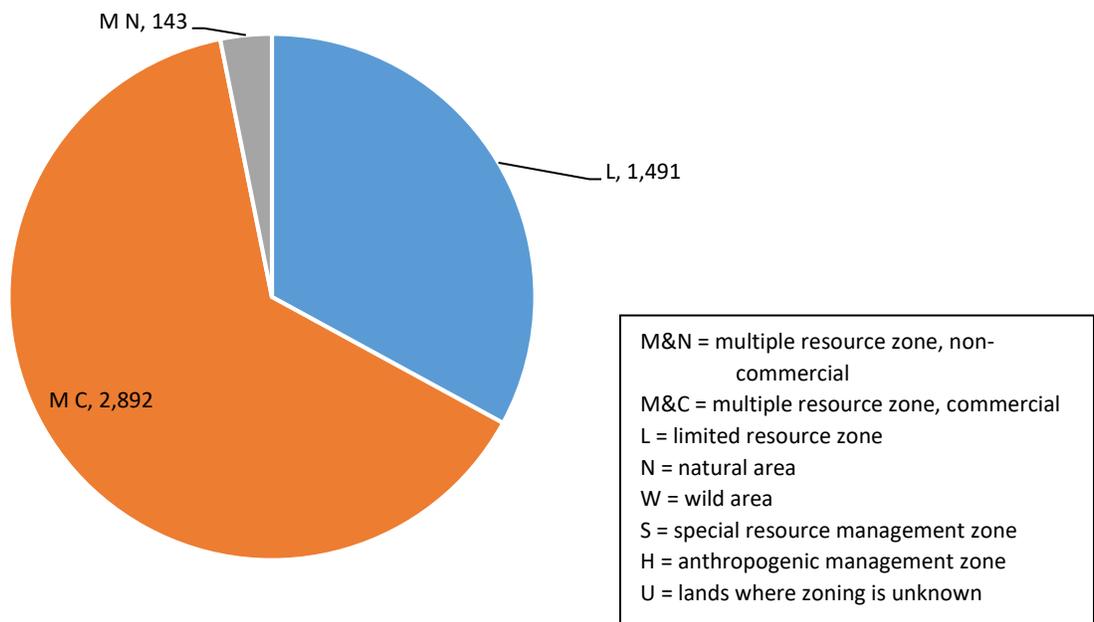
Most of the stands in the forested landscape are comprised of mixed oak. But this landscape does contain some of highest quality red oak stands. Due to this high oak composition, these stands are susceptible to impact from

gypsy moth and other such insects and diseases. There is a distinct lack of conifer cover in this LMU and efforts to increase this component are part of the goals for this area especially along the stream corridors.

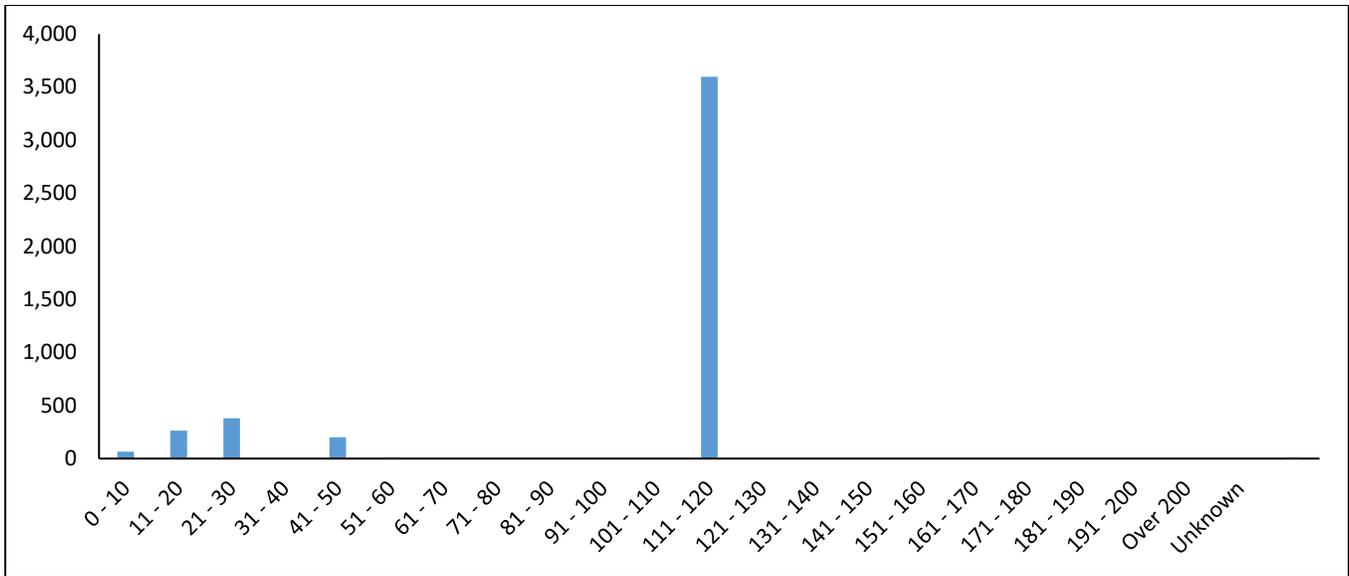


**Figure 3.** Acreage of state forest land in this LMU by site class. Site classes denote the potential quality of the growing site. “Site 0” indicates non-forested lands or forested lands where the vegetation has not yet been typed. Other site classes are described on p. 53 of 2016 SFRMP.

This LMU is nearly evenly split by site class 2 and 3, but also contains some of the best site 1 stands in the Buchanan Forest District. The site 1 areas are found extending further upslope from our usual site 1 stream corridors which provides the potential to have some active management in this LMU. The site 2 acreage remains primarily where we can conduct most of our silvicultural treatments to obtain balanced age classes. Many very good quality site 2 stands exist in this area to work with and regeneration tends to thrive at these sites. Site 3 exists primarily on the ridge tops and rocky slopes so management of these areas is either challenging or impossible.



**Figure 4.** Acreage of state forest land in this LMU by management zone. Management zone is dictated by primary land use and land capability. Further descriptions of commerciality and zoning are found on p. 54 of the 2016 SFRMP. About 64% of the state forest land in this LMU is available for management activities. The other areas are generally too steep, too rocky, or too wet and sensitive for operations.



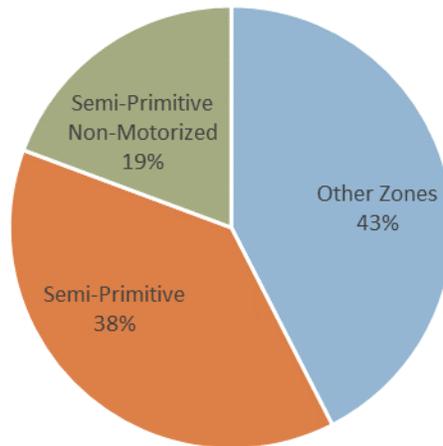
**Figure 5.** Acres of state forest land in this LMU by forest age classes.

Between sale activities and gypsy moth impacts progress is being made towards spreading the age classes across several decades. Based on the acreage available for commercial activities we should be able to balance at least 60% of the acreage across the appropriate rotation for the primarily oak species found here.

**Table 4.** Miles of stream by classification within entire LMU. Department of Environmental Protection stream classifications are described in Chapter 93 Water Quality Standards of Title 25 in the Pennsylvania Code.

Class	Total (miles)
Undesignated	14
Warm Water Streams	2
High Quality Waters	8
Perennial Cold-Water Streams	22
<b>Total</b>	<b>45</b>

There are several significant high-quality streams in this LMU including the South Branch of the Little Aughwick that leaves Cowan’s Gap lake and then runs down the middle of the valley floor through the state forest lands in this LMU. This stream is an important highlight of the area and boasts both stocked and native trout. Many of the other streams on this landscape originate off state forest land and thus are only minimally impacted by our regulations and activity. The private streams should be examined for their buffering potential to meet statewide goals.



**Figure 6.** Acres of state forest land in this LMU by Recreation Opportunity Spectrum (ROS) classifications (2012). ROS is an inventory system developed by the U.S. Forest Service, to characterize land by types of recreation experiences. ROS is described on p. 42 of the 2016 SFRMP. “Other Zones” refers to Semi-Developed and Developed zones.

A high proportion of this LMU is easily accessed from the main PA DOT roads. The lack of other open roads creates the semi and semi-primitive non-motorized designations. This LMU is surrounded by farmlands and homesites which create up the other zones in this area. The proximity to Cowan’s Gap and to several population areas provide the potential for high recreation use.

**Table 5.** Cultural and Ecological Summary.

Row Labels	Count of Feature
<b>Cultural</b>	<b>48</b>
Charcoal Hearth	47
Spring Water Collection Site	1
<b>Grand Total</b>	<b>48</b>

This table show the mapped highlights of cultural or ecological significance located within this LMU. These features play a role in the management of this area. The abundance of charcoal hearth illustrates the impact that past activities have had on the landscape and influence how we manage this area today.



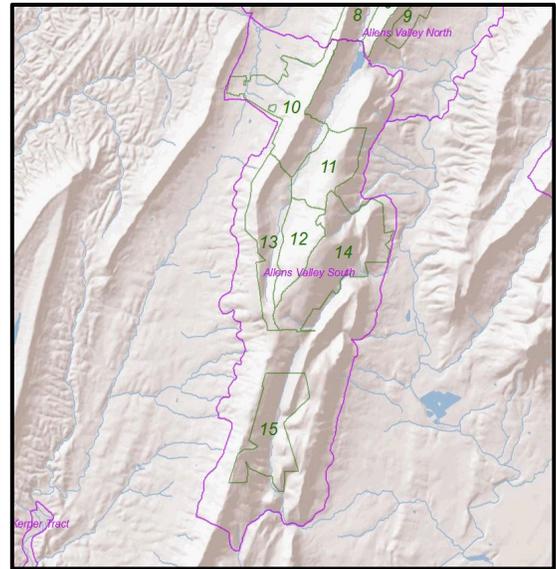
# Allen's Valley South

## Landscape Management Unit

Revision Date: May 2018

### Overview

The Allens Valley South LMU is 15758 acres in size located in the Appalachian Mountain Region of the Ridge and Valley Province. This land is situated in the western Franklin County and Eastern Fulton County. It contains Cowans Gap State Park, the Buchanan State Forest Resource Management Center, the Knobsville Tract, southern Allens Valley, Buck Valley, and Buchanan's Birthplace State Park.



This area is typical ridge and valley topography of steep side hills with knobs and hollows and valleys with farmland mixed with small wood lots. The lands held by Buchanan State Forest make up about a 44% of the land base. The remaining public lands are comprised of State Park Lands 7% for Buchanan's Birthplace and Cowans Gap State Parks and 2% for a portion of State Game Land 124. The remaining acres are privately held though still mainly forested. The private land positioned lower on the slopes have been cleared for agriculture and homesites. The Mercersburg Water authority also has a large parcel of property surrounding their reservoir. Ridge tops in this landscape have some areas with rock outcroppings, including our very popular vista along Tower Road that overlooks Path Valley and into portions of the Cumberland Valley. Nearly all the state forest land in this LMU was cut over in the late 1800 and early 1900's to create charcoal to fuel the nearby iron furnaces, Mount Pleasant and Richmond Furnace. The remnants of many charcoal hearths can be found across the landscape. The trees that weren't used for charcoal were harvested for lumber and by 1907 most of this landscape completely stripped of trees and then sold to the Commonwealth. Allen's Valley was home to a Civilian Conservation Corp Camp S-54 from 1933 to 1942 staffed by Company 305. This crew was instrumental in creating the infrastructure for Cowan's Gap State Park and other roads and trails in this area.

The access in this LMU varies greatly. The Knobsville tract and the RMC are easily accessed via Route 522. The Allen's Valley portion can be reached from Aughwick and Tower Roads. The Buck Run area lacks infrastructure for easy access, and the newest addition, the Hawbaker Tract, can be accessed from Route 16 but so far is lacking safe parking places. Land uses are limited due to access and steep terrain but there is some timber harvesting and a good deal of recreation that take place in this landscape.

The waterflow from this landscape feeds into both the Potomac River Basin and the Susquehanna River Basin though a larger portion heads to the Potomac. Numerous tributaries begin in this landscape and feed into the West Branch of the Conococheague Creek, Buck Run, and Cove Creek. These all feed the Potomac River Basin. The South Branch of the Little Aughwick Creek flows through Allen's Valley and feeds the Susquehanna River Basin. This creek is exceptional value in this landscape south of Cowan's Dam. Both basins eventually lead to the Chesapeake Bay. This landscape has few wetlands except along the creek. However, in the farmlands and lower elevations there are several man-made ponds, and the Mercersburg reservoir is also located in this LMU.

The overall health of this landscape is fair to good. The forests in this landscape are comprised mostly (74%) of the oak forest types. Conifers make up around 6% of the forest and can mainly be found immediately adjacent to the creek though some pine exists on the ridge tops. The hemlocks in this LMU have been impacted by Hemlock Woolly Adelgid but less mortality has been noticed here perhaps due to the early release of biocontrols. The dry ridge tops in this landscape have mostly Chestnut Oak and Black Gum while the wetter hollows have a mix of Tulip Poplar, Aspen, Red Maples, and Beech. This area south of the park has experienced more Gypsy Moth impact and generally experiences a lower site quality (61% Site 3) except for areas right next to the stream. Many stands were reset through the 2007/2008 outbreaks. Both the private lands and public land have had timber sales in response to the past Gypsy moth infestation. These stands are also subjected to frequent ice that has caused damage in past years.

There are many invasive species present in this LMU but so far most are present in treatable amounts. Japanese Barberry has been under management in this LMU for several years and its presence on the landscape are drastically reduced. Ailanthus, Paulownia, and stilt grass have all been treated as part of timber sale activities. Mile-a-minute is present in several locations. The most worrisome occurrence is along the Ernie Gish Road which serves as part of the Tuscarora Trail where recreational use has the potential to spread this to other parts of the landscape. Mile-a-minute has been treated along this corridor for many years but control has not yet been achieved. This landscape is exposed to heavy amounts of recreational traffic year-round and it should be monitored to keep in check any new cases of invasive species being introduced.

Due to the quality habitat this landscape has an abundance of game and non-game species of wildlife including deer, turkey, bear, coyotes and small game. This area has not been included in the DMAP program and annual deer surveys indicate that there is not currently a high deer population. There is the possibility that Eastern Timber Rattlesnake and Allegheny Woodrat may be found in this landscape as there is adequate suitable habitat. Since these rocky areas are usually not included within a timber sale, their habitat should remain buffered and protected from disturbance. Efforts are being made in this landscape to transition some of the poorer sites to Pitch Pine – Scrub Oak Barrens to benefit early successional wildlife species such as Golden Winged Warbler and Ruffed Grouse.

Recreational use is an important aspect of this landscape and use varies throughout the year. This area is easily accessed from Route 75, 522, and 30 allowing. Hiking, fishing, hunting, and mushroom picking are the most common recreation activities in this LMU. The state forest lands east of Aughwick Road and Cowans Gap are managed under the Nation Park Service Land and Water Conservation Fund. Portions of this landscape are comprised of steep rough terrain that concentrate the recreation in certain areas. Fishing is popular in this area with the South Branch of the Little Aughwick Creek providing a high quality cold waters fishery that contains native and stocked trout. Cowan's Lake is also available as a warm water fishery for fishing, boating, canoeing, and kayaking. The Tuscarora Trail is a designated state forest hiking trail that cuts through this landscape running north and south and is part of the national Great Eastern Trail. The Standing Stone Trail gets its start in Cowans Gap and heads to the hillside onto state forest land. Many local and through hikers use these trails year-round. This LMU contains the Big Mountain Trail Shelter located on state forest land that serve those hiking the Tuscarora Trail. There are also many district hiking trails present on this landscape such as Cameron, Charcoal, Creek Crossing, Fore, Forney, Geyer, Gray Birch, Hogback Mountain, King, Knobsville, Logslide, Lincoln, Lockard, Knobsville, Nagle, Peffer, Plank, Richmond and the newly opened Chad Strait. Many of these trails were constructed in the early 1900's to serve as fire breaks. There is also a designated bike trail that goes from the state forest into the state park. There is a population of birders that frequents this landscape and highlights

include viewing raptors from the vistas. The hunting pressure is high in response to the good grouse and deer populations. Additionally, this landscape contains our highest density of leased camp sites.

There are several rights-of-way and leases in this landscape. The Texas Eastern Pipeline is an active pipeline that runs through the Buck Run area. The Sunoco pipeline crosses Allens Valley near Route 30 but it is not currently pressurized. There are several tower sites near and along Tower Road that provide key communications links. A quarter mile radius clearing exists around an FAA Omnisite that sends signals to planes to assist them to find their bearings.

Compartments: 10, 11, 12, 13, 14, 15

## Priority Goals

### A. Silviculture:

- Implement the Tuscarora Summit Landscape Scale Rehabilitation. This area is actively being managed via the use of timber sales, mowing contracts, and prescribed fire to create a Pitch Pine Scrub and Oak barrens community type in the low timber value areas around Ernie Gish and Tower Roads. This community type is favorable to ruffed grouse and golden winged warbler as well as other early successional species.
- Manage for and around the areas having a notable decline in oaks. Many white oaks in this area have been impacted. Assessment by forest health staff concluded that it is decline due to a variety of factors including age and environmental stress.
- Mitigate, control and eradicate as possible the many invasive species found in this LMU. Evaluate and manage trouble spots in all areas of active management. Specific targets for treatment in this LMU are continuing treatment of Ailanthus patches in the Knobsville Tract, continuing to monitor biocontrols release at the large mile-a-minute infestation on the Knobsville Tract, continue Japanese Barberry spot treatments along the stream corridor, and treatment of Japanese Stiltgrass along Gish Road and Tuscarora Trail.

### B. Water:

- Develop plans, beyond the typical buffering from sales and maintenance activities, to conserve and enhance the vernal ponds found near the park and additional wet areas along the Aughwick and Buck Run stream corridors.
- Preserve water quality by ensuring stream cover and maintain the overall health of watersheds in this area. Aughwick is an exceptional value stream through this LMU and remains such until it enters the lake at Cowans Gap. Fishing is a high recreational value in this area. Additionally, the Buck Run part of the LMU feeds the Mercersburg Water Authority watershed. HWA has been in this area for a long time and remains a concern though population levels do seem to be lower than before. Beetle releases occurred early in the valley and may still be present. Maintaining Hemlock in this area is critical for stream health.

### C. Recreation:

- Increase the recreational experience by continuing to maintain the multi-use trail system via the 5-year rotation and continuing to develop trail reroutes for sustainability and usability. Current projects include assessment of ways to create better loops with the Tuscarora Trail.
- Maintain and mitigate vandalism around the Tower Road Vista.
- Recruit volunteers to assist with trail maintenance and improvements where possible.

- Continue yearly inspections of the leased campsites found in this LMU and work to ensure that all the sites maintain compliance with established standards. This LMU contains most of the district’s leased camps.

**D. Wildlife:**

- Implement the Tuscarora Summit Landscape Scale Rehabilitation plan to promote favorable habitat for ruffed grouse and golden winged warbler and other early successional species. This is consistent with the Wildlife Action Plan for our area.
- Maintain or improve as needed the habitat areas that benefit wood rat and rattlesnake populations.
- Work with the PA Game Commission to increase awareness of Chronic Wasting Disease and implementing measures to slow the spread across the LMU.

**E. Infrastructure:**

- Monitor and work with lessees to maintain the many tower leases located along the top of the ridge. These towers provide communication and data needs for many citizens / agencies.
- Continue to watch for strategic land acquisitions. High priority areas include the access to the Buck Run Tract.

**F. Public Education and Outreach**

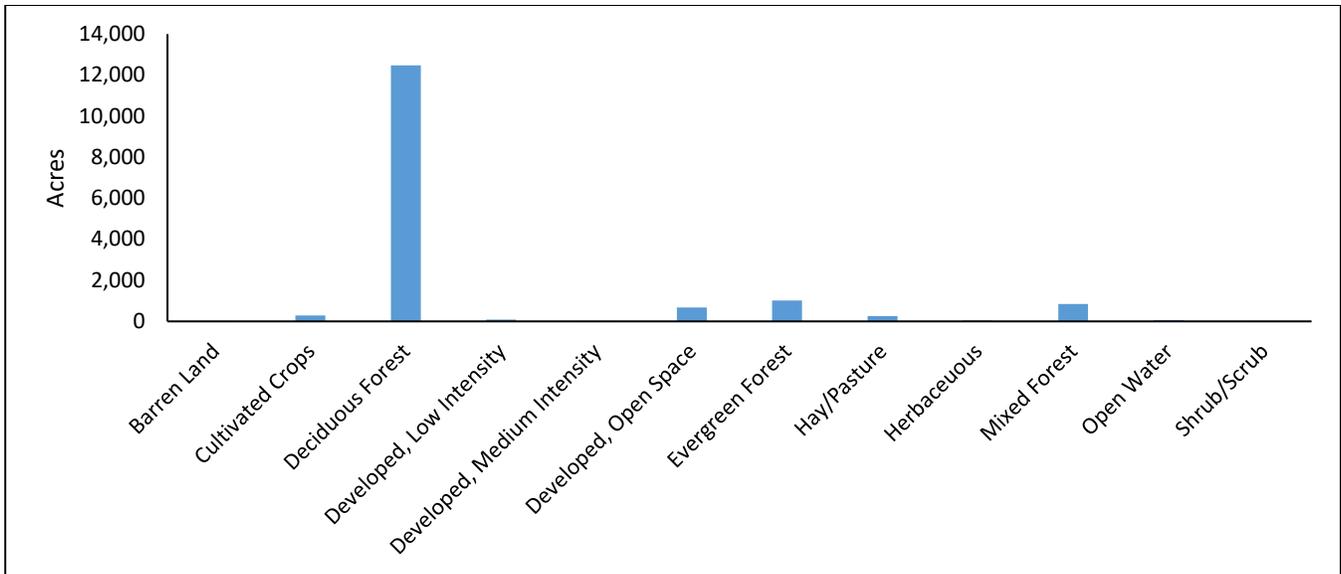
- Utilize the area in and around the Resource Management Center to create a living classroom. The newly dedicated Chad Strait Trail has the potential for topics like nontimber forest products (princess pine, stone, etc.; sink holes and Karst topography; history of homesteads and old field conversion; rain gardens; plant identification and dendrology.
- Promote the Route 75 entrance to the Buchanan and the Charcoal Trail. Develop a trail brochure or interpretation for this trail area to promote local history.

## Profile

**Table 1.** LMU acreage: total and state forest land only.

	Acres
State Forest Land	6,913
LMU Total	15,758

**Ecoregion:** Ridge and Valley



**Figure 1.** LMU acreage by land cover categories from the National Land Cover Dataset for the entire LMU.

As you can see from the figure above the majority of the LMU is forest, mostly deciduous though there are at least a few areas with conifers. The remaining uses are farms and houses. The amount of forests is beneficial for this landscape and its associated watersheds. The Buck Run portion of this landscape directly feeds the Mercersburg Reservoir.

**Table 2.** Miles of roads by category on state forest land in this LMU. Road categories are described on p. 199 of the 2016 SFRMP.

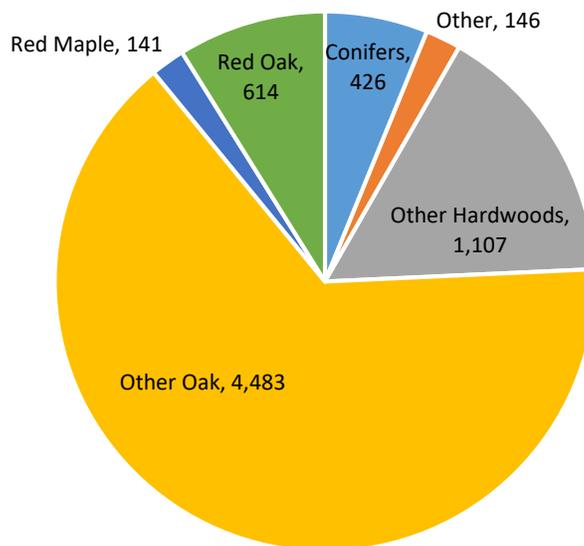
Road Category	Total Miles
Z1 - Public Use Road	8
Z3 - Administrative Road (gated)	13
<b>Total</b>	<b>21</b>

The main access to most the recreational opportunities and timber resources in this landscape are from the paved road owned by the PA Department of Transportation, Aughwick Road, that runs along the valley floor. Additional access exists along Route 75, Route 522 for the Knobsville Tract and RMC, Route 16 for the Hawbaker and Buck Run areas. There are several developed parking areas in this landscape and several more planned for future development. Most of the Z3 roads were put in to access timber resources and do not offer connection or an enjoyable ride.

**Table 3.** Miles of trails on state forest land in this LMU open to various types of recreational use. Note that miles are not additive, and a single trail may be open to multiple use types. Shared-use trails, which make up the majority of trails on state forest land, are open to hiking, biking, horseback riding, and cross-country skiing.

Trail Category	Total Miles
Hiking	28
Biking	16
Equestrian	16
X-Skiing	16
ATV I	0
ATV II	0
Snowmobile/ Joint Use Road	0

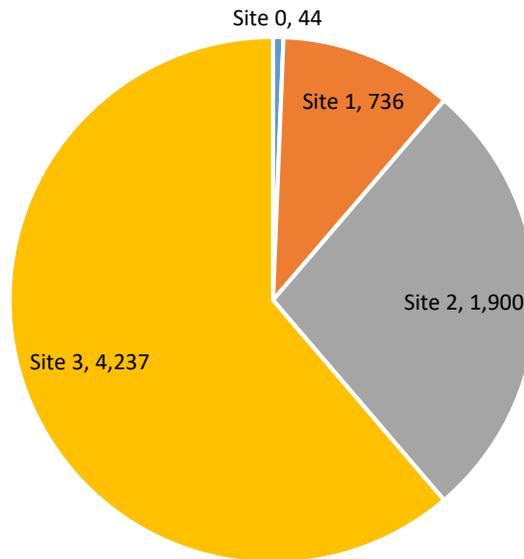
The Tuscarora Trail runs north south the along the ridge in this LMU and Standing Stone gets it start in Cowans Gap State Park. Both designated as hiking only trails. All the other trails in the Allens Valley South LMU are open for multiple uses. Most of the trails were created as fire breaks and they tend to run straight up the hillsides creating some challenging walks through the landscape. The RMC has a Fitness Path around the grounds of the RMC that was created using TSA and provides visitors of all abilities the chance to see some fantastic scenery. The Chad Strait Trail was dedicated in 2017 to honor one of our former employees who lost a battle with cancer; it exists to connect others with the resource in which he loved to work.



**Figure 2.** Acreage of state forest land in this LMU by aggregated forest type. The forest types are described on p. 108 of the 2016 SFRMP.

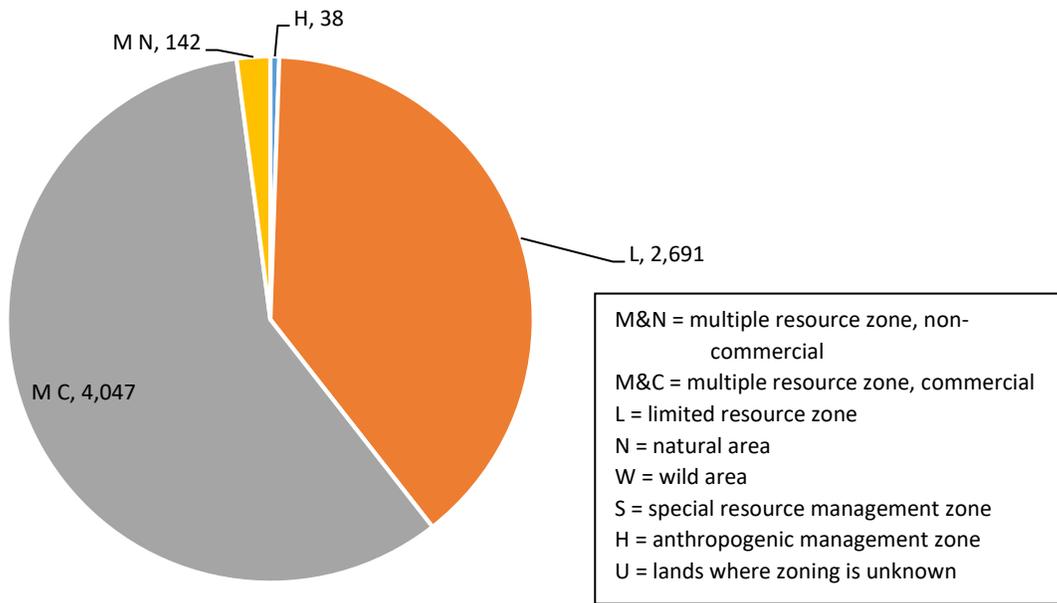
Most of the stands in the forested landscape are comprised of mixed oak. Due to this high oak composition, these stands are susceptible to impact from gypsy moth and other such insects and diseases. There are efforts to protect and increase the conifer cover in this LMU. A significant portion of the forest has species that are less

desirable for timber management. Some of these stands are being examined for their ecological potential for wildlife or as candidates for managing to target certain groups of species.



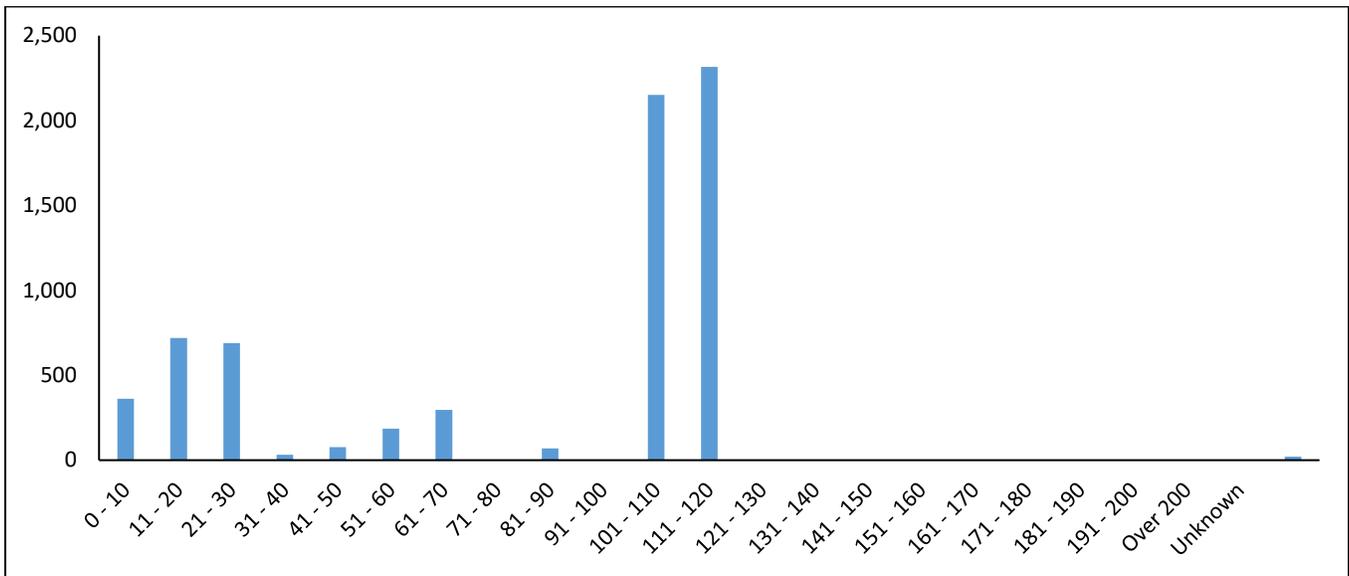
**Figure 3.** Acreage of state forest land in this LMU by site class. Site classes denote the potential quality of the growing site. “Site 0” indicates non-forested lands or forested lands where the vegetation has not yet been typed. Other site classes are described on p. 53 of 2016 SFRMP.

This LMU is comprised of about 2/3 site 3 stands and pose some challenges to managing for timber resources. Many of these sites are steep and rocky, but some do offer potential to manage for other activities such as recreation and wildlife. The site 2 acreage remains primarily where we can conduct most of our silvicultural treatments to obtain balanced age classes.



**Figure 4.** Acreage of state forest land in this LMU by management zone. Management zone is dictated by primary land use and land capability. Further descriptions of commerciality and zoning are found on p. 54 of the 2016 SFRMP.

About 58% of the state forest land in this LMU is available for management activities. The other areas are generally too steep, too rocky, or too wet and sensitive for operations. There is a high proportion of areas that are difficult to access due to terrain constraints.



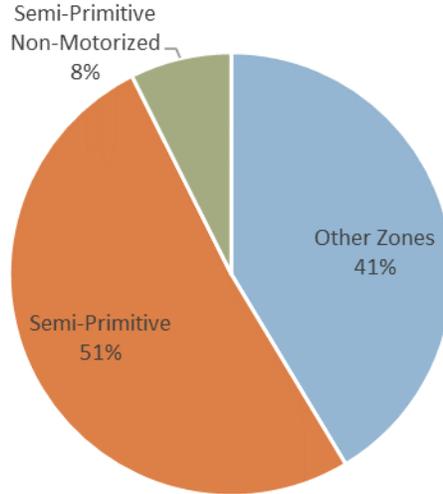
**Figure 5.** Acres of state forest land in this LMU by forest age classes.

Between sale activities and gypsy moth impacts progress is being made towards spreading the age classes across several decades. Based on the acreage available for commercial activities we should be able to balance at least 60% of the acreage across the appropriate rotation for the primarily oak species found here.

**Table 4.** Miles of stream by classification within entire LMU. Department of Environmental Protection stream classifications are described in Chapter 93 Water Quality Standards of Title 25 in the Pennsylvania Code.

Class	Total (miles)
Undesignated	14
High Quality Waters	13
Perennial Cold Water Streams	10
Exceptional Value Waters	7
<b>Total</b>	<b>44</b>

The South Branch of the Little Aughwick head waters are in this landscape and are designated as Exceptional Value until it reaches Cowans Gap Lake where recreational impacts change the designation to high-quality. Many tributaries to the Potomac watershed originate on state forest lands and then cross private land before reaching the main waterways heading south to the Bay. The private streams should be examined for their buffering potential to meet statewide goals.



**Figure 6.** Acres of state forest land in this LMU by Recreation Opportunity Spectrum (ROS) classifications (2012). ROS is an inventory system developed by the U.S. Forest Service, to characterize land by types of recreation experiences. ROS is described on p. 42 of the 2016 SFRMP. “Other Zones” refers to Semi-Developed and Developed zones.

A high proportion of this LMU is accessible from the main PA DOT roads (75, 16, Aughwick, 522). The lack of other open roads creates the semi and semi-primitive non-motorized designations. This LMU is surrounded by farmlands and homesites which make up the other zones in this area. The proximity to Cowan’s Gap and to

Row Labels	Count of Feature
<b>Cultural</b>	<b>27</b>
CCC Camp	1
Charcoal Hearth	23
Homestead	2
Old Building Foundation	1
<b>Ecological</b>	<b>8</b>
Quarry	1
Spring	2
Vernal Pool	5
<b>Grand Total</b>	<b>35</b>

**Table 5.** Cultural and Ecological Summary.

This table show the mapped highlights of cultural or ecological significance located within this LMU. These features play a role in the management of this area. The abundance of charcoal hearth illustrates the impact that past activities have had on the landscape and influence how we manage this area today. The CCC Camp at Cowans Gap had a significant impact on our ability to access and recreate in this area.



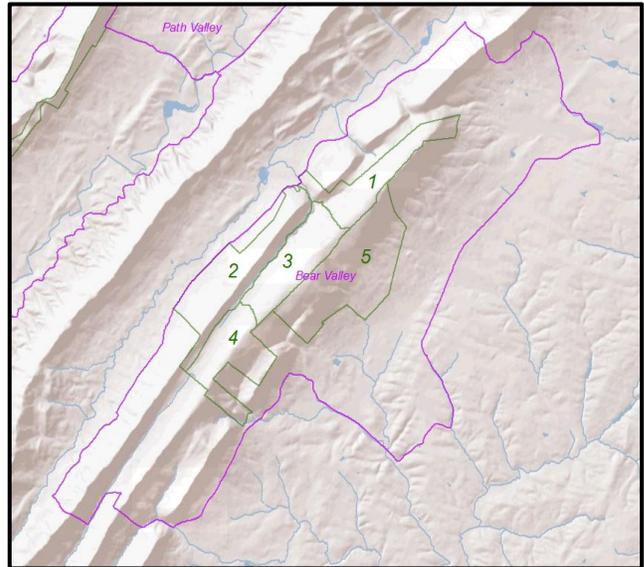
# Bear Valley

## Landscape Management Unit

Revision Date: May 2018

### Overview

The Bear Valley LMU is 18500 acres in size and is located at the eastern edge of the Appalachian Mountain Region in the Ridge and Valley Province. This land is situated in the western part of Franklin County and the eastern most part of the Buchanan State Forest. The lands held by Buchanan State Forest make up about a  $\frac{1}{4}$  of the land base, portions of State Game Lands 76 and 235 make up another  $\frac{1}{4}$ , and the remaining half is privately held though still mainly forested. A significant portion of the state forest land was acquired in 1902 as the first purchase for the Buchanan State Forest. Nearly all of the state forest land in this LMU was cut over in the late 1800's. Bear Valley was home to the Civilian Conservation Corp Camp S-109 from 1933 to 1937. Company 1325 was instrumental in creating the infrastructure in this area including most of the roads, bridges, and trails as well as the area that is now the Bear Valley Picnic Area.



This area has a direct impact on several water supplies. It feeds into areas managed by the Bear Valley Water Authority and it supplies a few other small local drinking water organizations, Sandy Hook Water Association & Abe's Spring for Gilbert Rd. The area surrounding these water sources are managed as part of the high conservation value forest. The waterflow from this landscape feeds into both the Potomac River Basin and the Susquehanna River Basin and both eventually lead to the Chesapeake Bay.

The health of the landscape is generally good; though the stands have experienced high gypsy moth populations in the past. Also affecting the future health of these stands is that this landscape is loaded with about any and every invasive species. Ailanthus, mile-a-minute, and garlic mustard are just some of the higher density species. Certain stands in this landscape are so infected by these species that control options are extremely limited and stand manageability is essentially nonexistent. This landscape is exposed to heavy amounts of recreational traffic year-round and it should be monitored to keep in check any new cases of invasive species being introduced.

The forest here are primarily comprised of oak species, but the gypsy moth infestations in the late 1980's and early 2000's have created stands of black birch and black gum. This landscape had an abundance of game and non-game species of wildlife. Deer surveys that are scheduled annually indicate that there is not a high deer population. Also, this area has not been included DMAP area in the past. There is the possibility that Eastern Timber Rattlesnake and Allegheny woodrat may be found in this landscape as there is some suitable habitat.

All the state forest land in this LMU is managed under the Nation Park Service Land and Water Conservation Fund that provided matching grants to States and local governments for the acquisition and development of public outdoor recreation areas and facilities and ensures that these lands stay protected for outdoor recreation and open for use. Hunting, mushroom picking and hiking are the most common recreation activities of this

landscape. The recreational use is consistent throughout this area. Bear Valley Picnic Area is a popular weekend destination especially in summer. There are regular users, especially scenic drivers, but peak activity is the hunting season. This LMU boasts a snowmobile trail that creates a large loop and provides easy winter recreational opportunities for both Chambersburg and Fort Loudon residents, but use is somewhat hampered by lack of regular snow.

This LMU also hosts a few man-made features that impact the management of the area. There is an old stone quarry located in this area. There has not been any recent activity to cut stone, but the potential still exists, and the site is a unique place to visit. The ridge top along Broad Mountain Road is home to several tower leases including a PA Turnpike communication tower, Public Broadcasting, and a Game Commission Tower. In addition, the LMU is bisected by a Dominion Pipeline.

Compartments: 1, 2, 3, 4, 5

## Priority Goals

### A. Silviculture:

- Look at potential for additional cut-stump treatments to access areas where we can treat by that method to help balance age classes
- Mitigate, control and eradicate as possible the many invasive species found in this LMU. Evaluate and manage trouble spots in all areas of active management.

### B. Water:

- Develop plans to conserve and enhance the 20-22 vernal ponds found in this LMU above the typical buffering from sales and maintenance activities.
- Maintain and improve water quality to support the 3 public drinking water supplies – Bear Valley Water Authority, Gilbert Road’s Abe’s Spring Association, and the Sandy Hook Association.

### C. Recreation:

- Continue to maintain the multi-use trail system via the 5-year rotation. Recruit volunteers to assist with this maintenance where possible.
- Work with interested constituents and friends for targeted trail improvements. Current projects include evaluating areas for increase bike access.
- Maintain and interpret the area around the Bear Valley Picnic Area including highlighting the CCC history.
- Increase the recreational experience by creating a driving tour, and continuing to develop trail links and loops such as the recently opened Steep Mutha Snowmobile connector

### D. Wildlife:

- Rehabilitate the old food plots to native species seed mixes that will benefit a wide variety of wildlife including deer, pollinators, turkey, and ruffed grouse. Specific targets in this LMU are the Smith Trail Food Plot, and the retired Letterkenny wind turbine site.
- Maintain or improve as needed the habitat areas that benefit wood rat and rattlesnake populations.
- Work with the PA Game Commission to increase awareness of Chronic Wasting Disease and implementing measures to slow the spread across the LMU.

### E. Infrastructure:

- Monitor and work with lessees to maintain the tower leases located along the top of the ridge. These towers provide communication and data needs for many citizens / agencies.

- Preserve or Rehabilitate the old Bear Valley Headquarters, and highlight the CCC component for this area
- Create interpretation for the old pink limestone quarry.
- Continue to watch for strategic land acquisitions. High priority areas include the old Gilbert Road area, and near the Gilbert and Broad Mountain intersection.

**F. Public Education and Outreach**

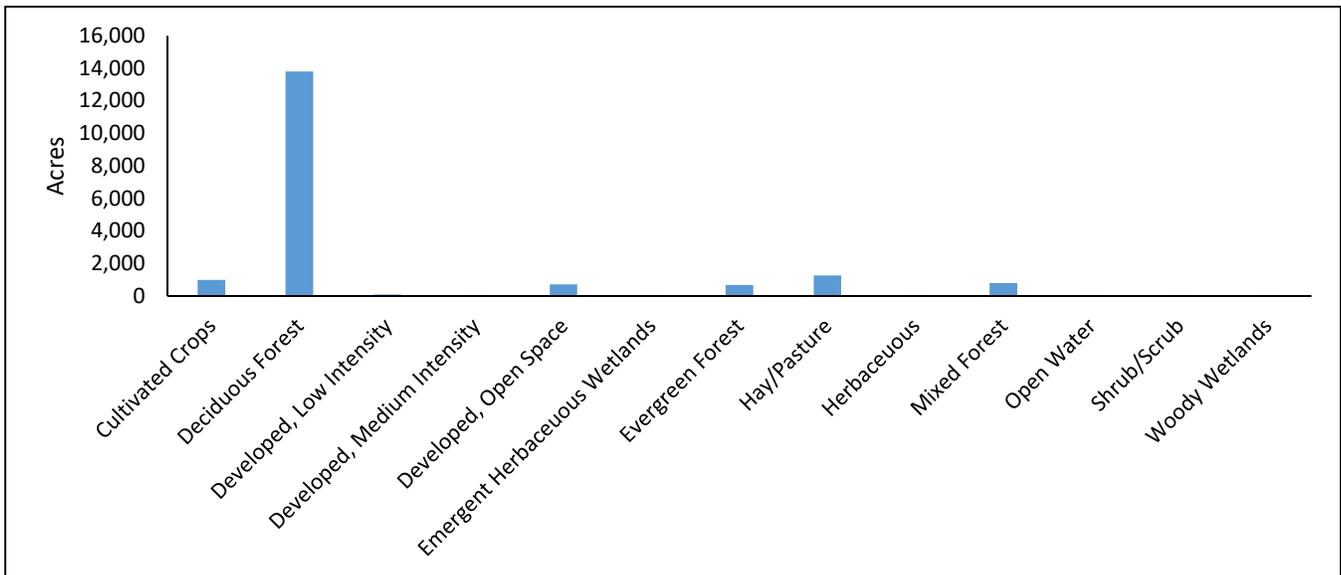
- Reduce the amount of high grading and other questionable forest practices that occur on neighboring lands in cooperation with Michaux service foresters.
- Work to control the many invasive species found on this landscape both public (BOF, PGC, Letterkenny) and private.

## Profile

**Table 1.** LMU acreage: total and state forest land only.

	Acres
State Forest Land	5,164
LMU Total	18,500

**Ecoregion:** Ridge and Valley



**Figure 1.** LMU acreage by land cover categories from the National Land Cover Dataset for the entire LMU.

As you can see from the figure above the majority of the LMU is forest, mostly deciduous. The remaining uses are farms and houses. The amount of forests is beneficial for this landscape and its associated watersheds. Though both public and private land in this LMU have issues with invasive species and the mix of these ownerships create issues for controlling these pests. The adjacent farms and households are good neighbors, but some of these uses create locally high populations of white-tailed deer that can impact regeneration.

**Table 2.** Miles of roads by category on state forest land in this LMU. Road categories are described on p. 199 of the 2016 SFRMP.

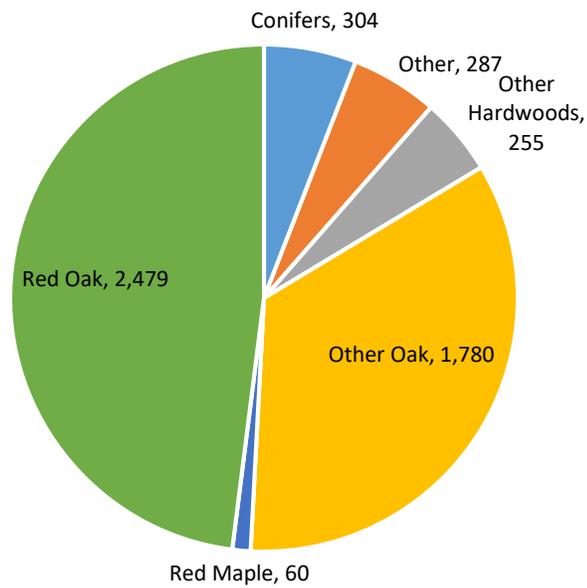
Road Category	Total Miles
Z1 - Public Use Road	14
Z3 - Administrative Road (gated)	11
<b>Total</b>	<b>25</b>

There is a good mix of open roads in this LMU. There are six state forest public use roads located in this LMU including Bear Valley Road, Broad Mountain Road, Clarks Knob Road, Gilbert Road, Keefer Road, and Shearer Road. Most of the Z3 roads are retired portions of the original road system that were constructed in a way that made them unable to sustain the increased traffic of the modern era. The remaining Z3 roads were put in to access timber resources and do not offer connection or an enjoyable ride.

**Table 3.** Miles of trails on state forest land in this LMU open to various types of recreational use. Note that miles are not additive, and a single trail may be open to multiple use types. Shared-use trails, which make up the majority of trails on state forest land, are open to hiking, biking, horseback riding, and cross-country skiing.

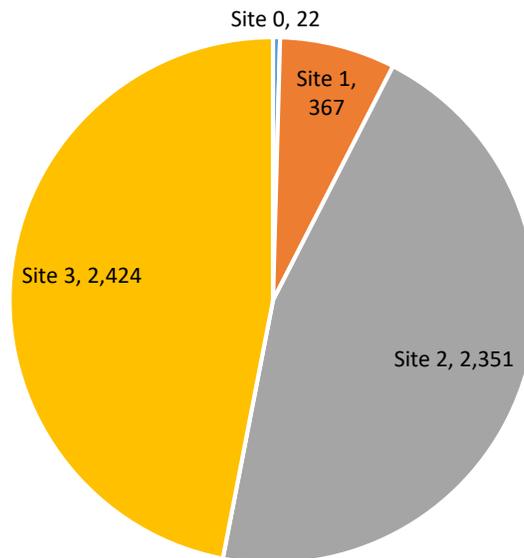
Trail Category	Total Miles
Hiking	21
Biking	21
Equestrian	21
X-Skiing	21
ATV I	0
ATV II	0
Snowmobile/ Joint Use Road	16

All the trails in the Bear Valley LMU are open for multiple uses. Many of trails in the Bear Valley LMU were created as fire breaks and they tend to run straight up the hillsides creating some challenging walks through the landscape. Luckily the ridges in this valley have trails or roads that run along the tops and the bottoms so you can hike up one trail and hit the road or trail and walk over and down the next trail creating nice loops that can be easily hiked in a day.



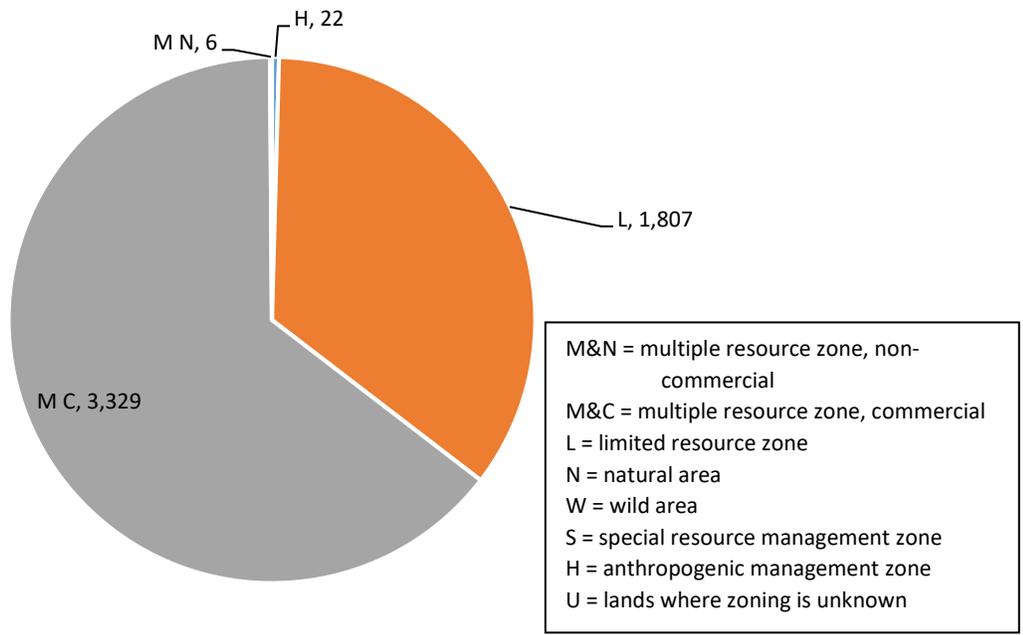
**Figure 2.** Acreage of state forest land in this LMU by aggregated forest type. The forest types are described on p. 108 of the 2016 SFRMP.

Most of the stands in the forested landscape are comprised of mixed oak. These stands are susceptible to impact from gypsy moth and other such insects and diseases. The species present in the “other” category on this landscape are primarily black birch and other junk forests that have resulted from past gypsy moth impacts. Many of the conifer stands in this LMU provide critical cover for streams and enable the best habitat for aquatic species and help ensure that drinking water supplies are healthy.



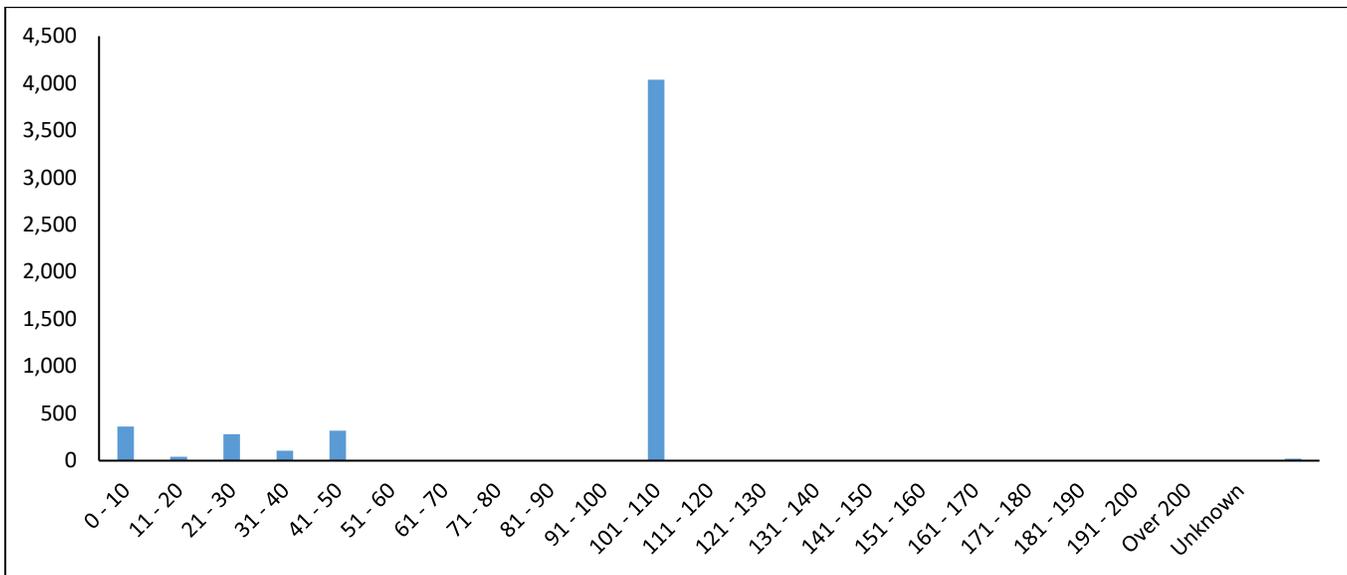
**Figure 3.** Acreage of state forest land in this LMU by site class. Site classes denote the potential quality of the growing site. “Site 0” indicates non-forested lands or forested lands where the vegetation has not yet been typed. Other site classes are described on p. 53 of 2016 SFRMP.

This LMU is nearly evenly split by site class 2 and 3. Site 3 exists primarily on the ridge tops and management of these areas are either challenging or impossible. The site 1 areas are nearly all found along the stream corridor and the management available in these areas are limited by the watershed effects and stream habitat considerations. The site 2 acreage is where we can conduct most of our silvicultural treatments to obtain balanced age classes.



**Figure 4.** Acreage of state forest land in this LMU by management zone. Management zone is dictated by primary land use and land capability. Further descriptions of commerciality and zoning are found on p. 54 of the 2016 SFRMP.

A little over half of the state forest land in this LMU is available for management activities. The other areas are generally too steep or too wet or sensitive for operations.



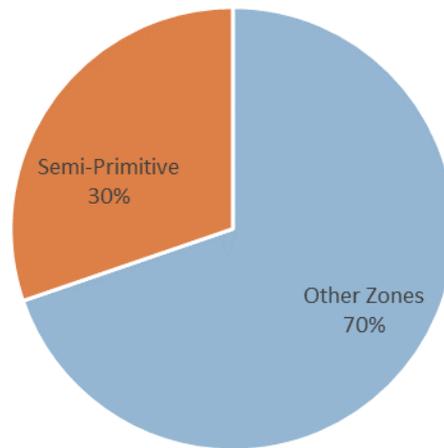
**Figure 5.** Acres of state forest land in this LMU by forest age classes.

Between sale activities and gypsy moth impacts progress is being made towards spreading the age classes across several decades. Based on the acreage available for commercial activities we should be able to balance at least half of the acreage across the appropriate rotation for the primarily oak species found here.

**Table 4.** Miles of stream by classification within entire LMU. Department of Environmental Protection stream classifications are described in Chapter 93 Water Quality Standards of Title 25 in the Pennsylvania Code.

Class	Total (miles)
Undesignated	25
Warm Water Streams	1
High Quality Waters	9
Perennial Cold-Water Streams	23
<b>Total</b>	<b>58</b>

The streams on this LMU serve several drinking water supplies. It is critical that the water sources and timber resources in this area are managed keeping in mind these end users. There are several significant high-quality streams in this LMU including Bear Valley Run that feeds into the Conodoguinet Creek, and Broad Run that feeds into the Bear Valley Water Authority treatment plant. There are also several perennial cold-water tributaries that feed into the Dennis Creek which is a popular local fishing stream.



**Figure 6.** Acres of state forest land in this LMU by Recreation Opportunity Spectrum (ROS) classifications (2012). ROS is an inventory system developed by the U.S. Forest Service, to characterize land by types of recreation experiences. ROS is described on p. 42 of the 2016 SFRMP. “Other Zones” refers to Semi-Developed and Developed zones.

A high proportion of this LMU is easily accessed with public use roads. Despite being bisected with these roads the character here is decidedly wild. This LMU is rather small and surrounded by farmlands and homesites. In addition, its proximity to several population areas provide the potential for high recreation use. Despite this, many days you can find peace and solitude in abundance.

**Table 5.** Cultural and Ecological Summary.

<b>Row Labels</b>	<b>Count of Feature</b>
<b>Cultural</b>	<b>4</b>
CCC Camp	1
Spring Water Collection Site	3
<b>Ecological</b>	<b>21</b>
Quarry	1
Vernal Pool	20
<b>Grand Total</b>	<b>25</b>

This table show the mapped highlights of cultural r ecological significance located within this LMU. These features play a role in the management of this area. The CCC camp is the foundation of recreational activity for Bear Valley. The vernal pools found here are critical habitat for a variety of amphibious species.



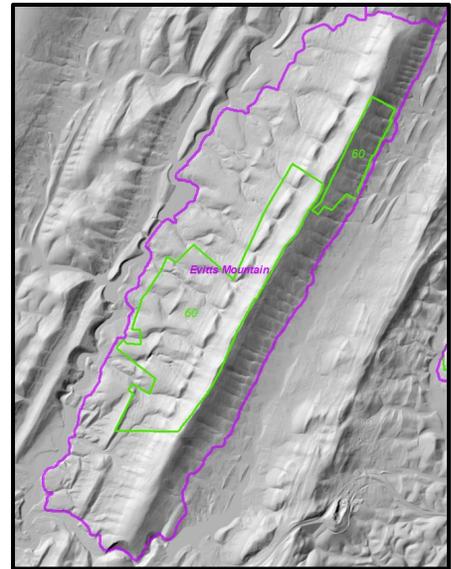
# Evitts Mountain

## Landscape Management Unit

Revision Date: May 2018

### Overview

The Evitts Mountain LMU is a unique landscape in the southwestern portion of Buchanan State Forest in western Bedford County. This LMU is 9444 acres and is in the Appalachian Mountain Region of the Ridge and Valley Province. This area is typical ridge and valley topography of steep side hills with knobs and hollows and valleys with farmland mixed with small wood lots. It contains 2,440 acres of State Forest Land, 1478 acres of Evitts Creek Water Company Land, and borders Lake Koon and Lake Gordon. The Evitts Mountain LMI is about 26% state forest, 16%



water company, and the rest are privately held though still mainly forested. The State Forest Land was added to the Buchanan Forest District as three separate purchases the original purchase from the early 1900's, the Hardwood Trails acquisition in 2015, and the Welsh Acquisition in 2017. This LMU had a varied past as farms and forest, but recent users have mainly been timbering and hunting opportunities. The features that help define this area are the adjacency to the Evitts Creek Property and the direct impacts on the Cumberland Watershed; the variety of significant forest cover and micro-site differences that offer interesting and perhaps challenging management opportunities; and the potential to design and develop this large area for recreation use utilizing the many roads, trails, landscape features and user needs as well as the ability to develop this area as an interstate recreational connection. There are many unique features on the state forest land including interesting sink holes, a Memorial Plow for the member of the Houseworth Hunting club that was once located on this land, and several old home or cabin foundations.

The waterflow from this landscape feeds into the Potomac River Basin and eventually to the Chesapeake Bay. The west half of the landscape flows into Evitts Creek, and the east half eventually flows into Town Creek. Both Evitts and Town Creeks are designated High Quality-Cold Water Fisheries by the Department of Environmental Protection. The 220-acre Lake Koon and 120-acre Lake Gordon are directly adjacent to the landscape and the 243-acre Lake Habeeb surrounded by Rocky Gap State Park is close. There are no designated wetlands located in the landscape, but many of the hollows provide drainage to significant areas of land and are sensitive to activity.

The forests in this landscape are comprised of 57% oak forest types which is lower than many of our other state forest lands. There is very little conifer cover in this landscape and most of it exists on the very steep ridge tops or in the wet hollows. The remaining forest lands are comprised of a wide mix of desirable and undesirable hardwoods though the latter generally outweighs the former. The overall health of this landscape is generally good except for the poor species composition in certain areas that resulted after harvest. These areas may be candidates for future rehabilitation.

There is a glut of invasive species found on this landscape in both the public and private lands. It is in the interest of all the landowners in the area to act against tree-of-heaven and mile-of-minute. There are large

areas of mile-a-minute found on the initial survey of the Hardwoods Trails acquisition and biocontrols were ordered and released in several of these patches in 2016. Hopefully these populations will continue to expand enough to have an impact on the mile-a-minute infestation. Other species found on the landscape are Ailanthus, Paulownia, Japanese Barberry, Japanese Stiltgrass, Garlic mustard, multiflora rose, and several others in lower densities. As recreation is developed on the landscape it will be important to address these species in the initial planning phase and plan to treat at least the travel corridors. Other than the biocontrols the only other treatment to date has been spraying Ailanthus along the main roadway. The City of Cumberland conducts periodic surveys for invasive aquatic species on Lake Koon. To date, none have been found. It also appears that the Evitts Creek Water Company may have interest in working jointly to develop cooperative management strategies for some of these species.

Despite some of the challenges in species composition and invasion there is a significant amount of quality habitat on this landscape that has an abundance of game and non-game species of wildlife including deer, turkey, bear, coyotes and small game. This area has not been included in the DMAP program and is currently excluded from annual deer surveys. Plans are underway to add extra deer survey plots in this area, but currently forester observations indicate that the deer population is low to moderate. There is the possibility that Eastern Timber Rattlesnake and Allegheny Woodrat may be found in this landscape as there is adequate suitable habitat. Since these rocky areas are usually not included within a timber sale, their habitat should remain buffered and protected from disturbance.

Recreational use will grow over time as we continue to examine and develop roads, trails, and other infrastructure to make this area more accessible to our constituents. The main access to the state forest land in this area is by taking Evitts Creek Road to the newly upgraded Hanging Jeep Road. It is important to point out that this area though very rural this area can provide a wonderful recreation opportunity to the local residents including those in Cumberland, MD. In addition to the development of the trail system on state forest land the Evitts Creek Water Company also has several gated roads crossing their land that they allow hikers and hunters to utilize. Hiking, fishing, hunting are currently the most common recreation activities in this LMU.

The main right-of-way through the state forest land on this landscape is the pipeline that cuts through the southern edge of the landscape along the Mason-Dixon Line. There are road use agreements that allow access through adjacent landowners to the state forest lands and it is important that we locate and maintain our presence in these areas.

Compartments: 60

## Priority Goals

### A. Silviculture:

- Evaluate the state forest lands in this LMU for the potential to conduct sales for balancing age classes across the landscape. Potential is limited based on topography, watershed sensitivity, and past sale activity before the acquisition of these properties. Rehabilitate any stands that are not regeneration to their potential.
- Mitigate, control and eradicate as possible the many invasive species found in this LMU. Evaluate and manage trouble spots in all areas of active management. Specific targets for treatment in this LMU are to increase the dispersion of biocontrols for Mile-a-minute and to evaluate the infestation level of all invasive species in this LMU.

### B. Water:

- Preserve water quality by ensuring stream cover and maintain the overall health of watersheds in this area. This area is critical to watershed management as it directly feeds the public drinking water facility for Cumberland, MD. There are many drainages, sink holes and vernal ponds that need special attention in this LMU.
- Create plans for managing and maintaining the health of the several ponds and wet areas wet areas to promote multifunction ecological values.

**C. Recreation:**

- Evaluate the many trails and old roads exist on the landscape and develop a strategic plan for inclusion, improvement and retirement. Add the designated trails into the multi-use trail system and include them into the 5-year rotation.
- Continue work with Rocky Gap State Park and the Friends of Buchanan to develop connecting hiking, biking, and horse trails.
- Recruit volunteers to assist with trail maintenance and improvements where possible.
- Develop a maps and informational brochures for this area.

**D. Wildlife:**

- Maintain or improve the habitat areas that benefit wood rat and rattlesnake populations.
- Work with the PA Game Commission to increase awareness of Chronic Wasting Disease and implementing measures to slow the spread across the LMU.
- Prioritize the maintenance and promotion of core forest conditions and values.

**E. Infrastructure:**

- Continue to develop the parking and public access.
- Continue to watch for strategic land acquisitions. A high priority for this area is the connection to Rock Gap State Park.

**F. Public Education and Outreach**

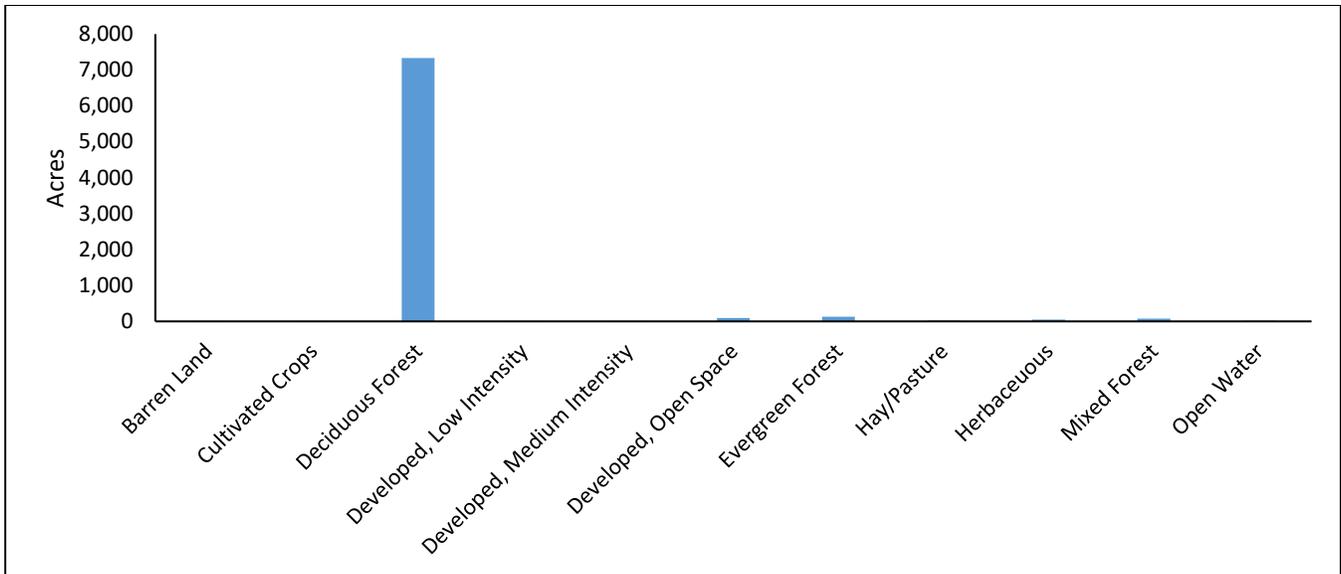
- Evaluate this landscape for potential outreach opportunities.

## Profile

**Table 1.** LMU acreage: total and state forest land only.

	Acres
State Forest Land	2,440
LMU Total	9,444

**Ecoregion:** Ridge and Valley



**Figure 1.** LMU acreage by land cover categories from the National Land Cover Dataset for the entire LMU.

As you can see from the figure above the majority of the LMU is forest, mostly deciduous. The remaining uses are mostly home sites. The amount of forests is beneficial for this landscape and its associated watersheds. This area is very well suited to its use as a working forest and recreational area.

**Table 2.** Miles of roads by category on state forest land in this LMU. Road categories are described on p. 199 of the 2016 SFRMP.

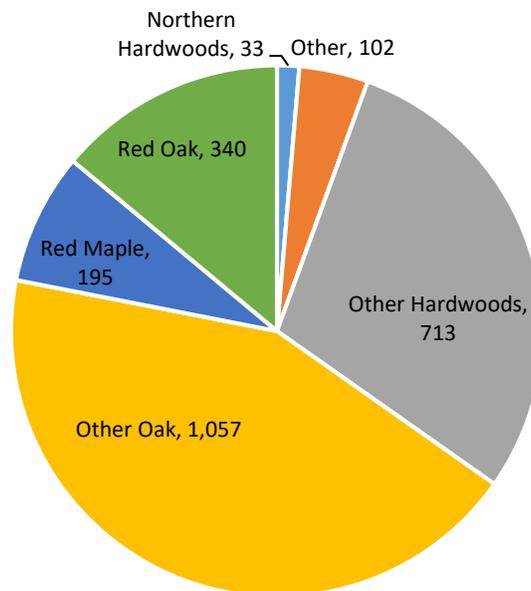
Road Category	Total Miles
Z1 - Public Use Road	0
<b>Total</b>	<b>0</b>

In 2017, the Buchanan maintenance staff upgraded the existing road to handle more traffic and provide a parking area for public use. This area was open to the public during hunting season and additional upgrades to the road or roads will be needed to turn it into a true public use road. We hope to upgrade several additional roads that exist on the landscape to be a Z3 road providing administrative and safety access for district staff and upgraded trail experience especially for horse use.

**Table 3.** Miles of trails on state forest land in this LMU open to various types of recreational use. Note that miles are not additive, and a single trail may be open to multiple use types. Shared-use trails, which make up the majority of trails on state forest land, are open to hiking, biking, horseback riding, and cross-country skiing.

Trail Category	Total Miles
Hiking	0
Biking	0
Equestrian	0
X-Skiing	0
ATV I	0
ATV II	0
Snowmobile/ Joint Use Road	0

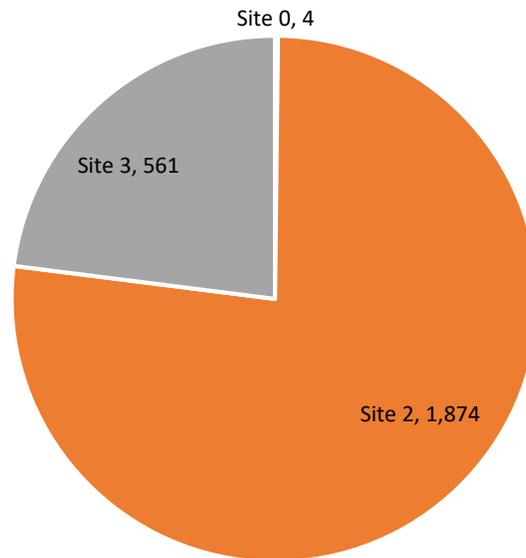
There are numerous roads and trails that were present on the state forest land of this LMU when the new purchases were acquired. They have been surveyed and we are in the process of evaluating what may be incorporated into the recreation plans and goals for the Buchanan Forest District. We are working with Maryland’s Rocky Gap State Park to try to create interstate connections and with horse, hiking and biking enthusiasts to design a good non-motorized trail system on the both old and new state lands in this landscape.



**Figure 2.** Acreage of state forest land in this LMU by aggregated forest type. The forest types are described on p. 108 of the 2016 SFRMP.

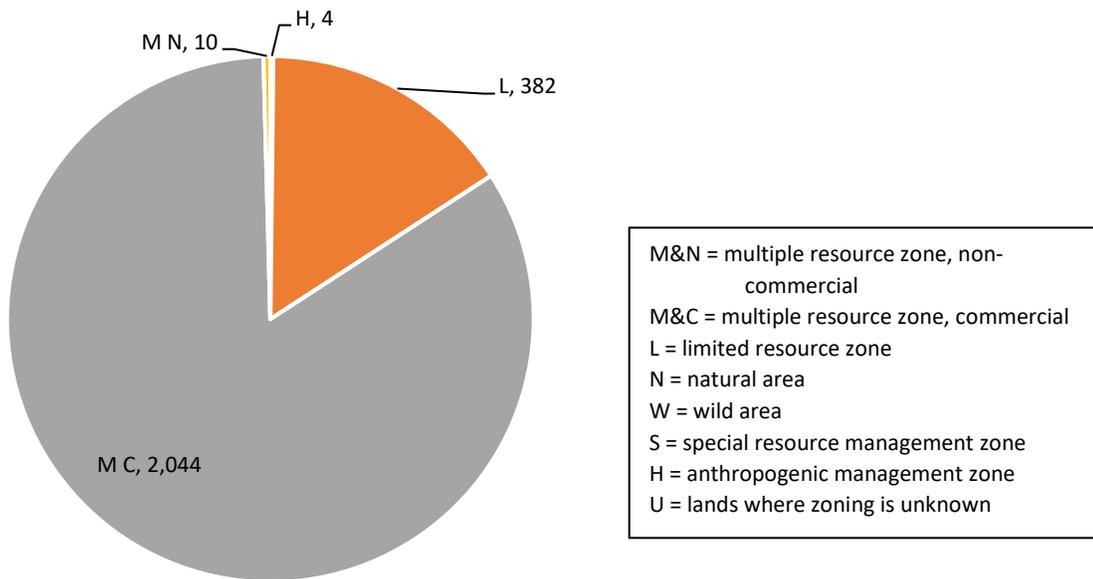
The state forests in LMU are a bit of a mixed bag. About 57% of the stands in the forested landscape are comprised of mixed oak. Another 41% is made up of random hardwood species some of which are desirable for

this area like Yellow Poplar and others like Red Maple that are not. There is a small amount of Northern Hardwoods in this area that lacks the health and vigor that you expect when you encounter a Northern Hardwoods stand in the northern part of the state. There is a distinct lack of conifer cover in this LMU and efforts to increase this component are part of the goals for this area especially along the stream corridors.



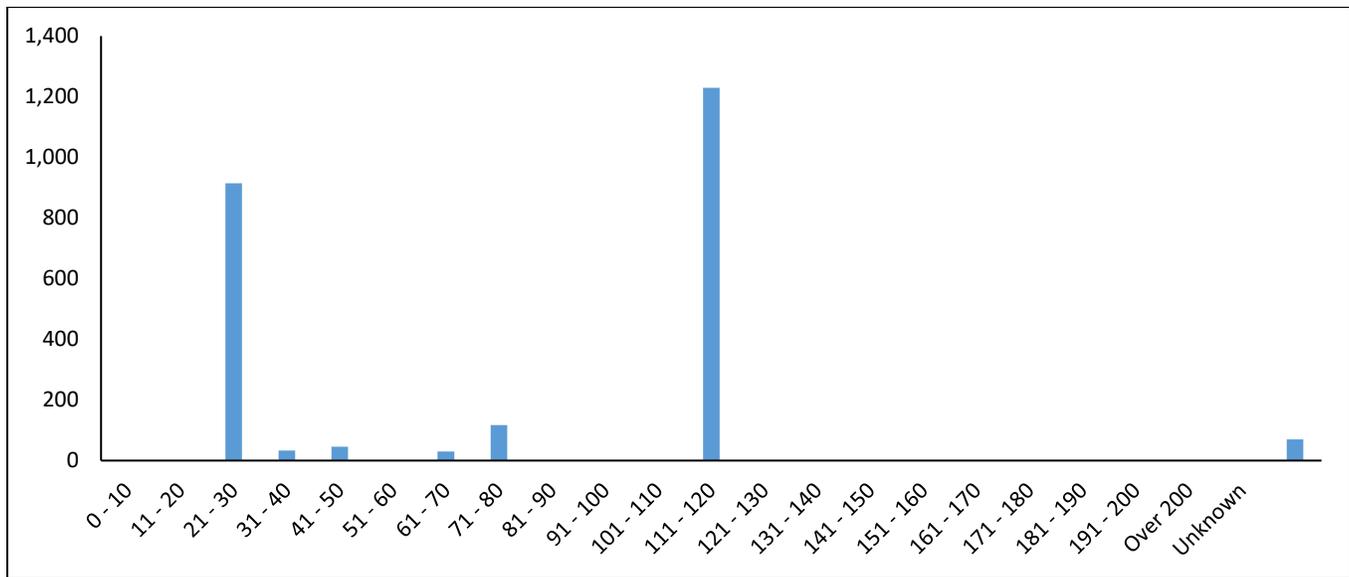
**Figure 3.** Acreage of state forest land in this LMU by site class. Site classes denote the potential quality of the growing site. “Site 0” indicates non-forested lands or forested lands where the vegetation has not yet been typed. Other site classes are described on p. 53 of 2016 SFRMP.

This state forest lands in this LMU are about 77% site 2 and 23% site 3. The site 2 acreage is the primarily location where we could conceivably conduct our silvicultural treatments to obtain balanced age classes. Many of these areas have had some treatments already and others have been invaded with undesirable species that will need treatment prior to harvesting operations. There are many challenges and opportunities in this area to pursue as we continue to develop and examine these lands. The Site 3 stands exist primarily on the ridge tops and rocky slopes, so management of these areas is either challenging or impossible.



**Figure 4.** Acreage of state forest land in this LMU by management zone. Management zone is dictated by primary land use and land capability. Further descriptions of commerciality and zoning are found on p. 54 of the 2016 SFRMP.

About 84% of the state forest land in this LMU is available for management activities. The other areas are generally too steep, too rocky, or too wet and sensitive for operations.



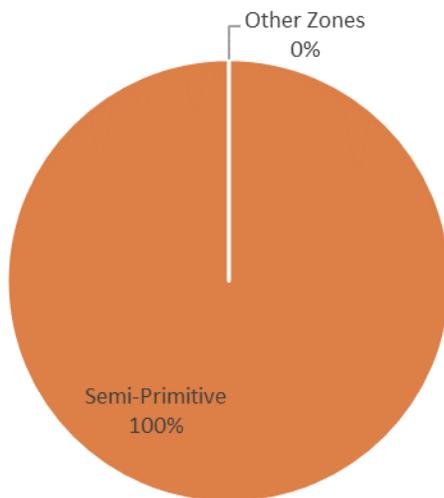
**Figure 5.** Acres of state forest land in this LMU by forest age classes.

Most of the state forest land in this area was recently acquired and came with many areas that had already received a variety of harvest cuts and have regenerated with varying success. The remaining lands are mostly too wet, steep, or rocky for easy harvest and have remained untouched or regrown from mass harvesting at the turn of the 20<sup>th</sup> century. Balancing age classes on this land base will be a long-term effort and will require some significant rehabilitation and invasive treatments to manage.

**Table 4.** Miles of stream by classification within entire LMU. Department of Environmental Protection stream classifications are described in Chapter 93 Water Quality Standards of Title 25 in the Pennsylvania Code.

Class	Total (miles)
Undesignated	0
High Quality Waters	27
<b>Total</b>	<b>27</b>

There are many unnamed tributaries that are designated high-quality this LMU. Most of the waterflow feeds directly into the high-quality Lake Gordon. The private streams should be examined for their buffering potential to meet statewide goals.



**Figure 6.** Acres of state forest land in this LMU by Recreation Opportunity Spectrum (ROS) classifications (2012). ROS is an inventory system developed by the U.S. Forest Service, to characterize land by types of recreation experiences. ROS is described on p. 42 of the 2016 SFRMP. “Other Zones” refers to Semi-Developed and Developed zones.

Most of this landscape has been isolated from public use for much of the recent past. The area lends itself to the low density dispersed recreation that we strive to provide the users of Buchanan State Forest. The recreational goals of the Evitts Creek Water Company land that is directly adjacent to the state forest lands are

also to use their property for these low density dispersed types of activities. Much of the state lands have been inaccessible to the public without strenuous effort. Though our goals include expanding the access to these lands we intent to make changes gradually over time and to intentionally design the recreation to maintain the wild character of this region.

**Table 5.** Cultural and Ecological Summary.

Row Labels	Count of Feature
<b>Cultural</b>	<b>0</b>
Pending Survey	0
<b>Ecological</b>	<b>0</b>
Pending Survey	0
<b>Grand Total</b>	<b>0</b>

This table show the mapped highlights of cultural or ecological significance located within this LMU. We know that there are several old home sites and other features that will need to be mapped in the near future to accurately depict what this landscape holds and offers to our constituents or ecosystems.



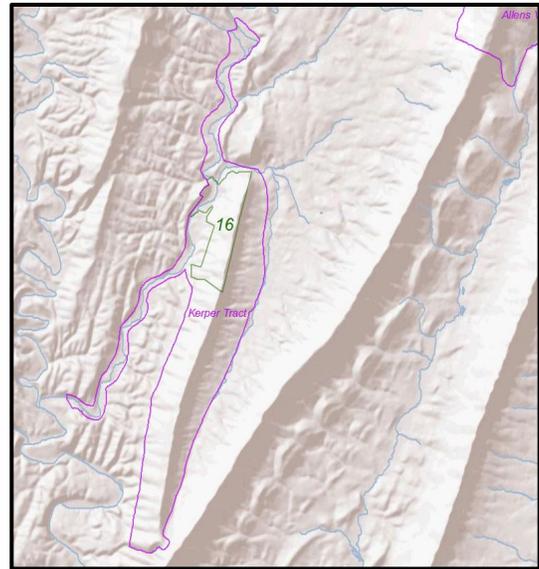
# Kerper Tract

## Landscape Management Unit

Revision Date: May 2018

### Overview

The Kerper Tract LMU is 3,562 acres in size located in the Appalachian Mountain Region of the Ridge and Valley Province. This land is situated in Eastern Fulton County. It contains all of Dickey's Mountain and the stream at its base. This area is typical ridge and valley topography of steep side hills with knobs and hollows and valleys with farmland mixed with small wood lots. The lands held by Buchanan State Forest make up about a 13% of the land base, 20% is State Game Lands 124 and the remaining acres are privately held. The private land is a mix of forest and farm land depending on slope position. Because the mountain is so steep and rugged with areas of large rock outcroppings, no roads attempt to cross the top and very few go far up. The lower slopes and valley floor have been cleared for agriculture and homesites. And have been for the past hundred years or so. Conservationists today consider most of the activities here poor farming practices: livestock have had free access to the creek, little or no buffers on creeks from cropping, etc. The fact that there is a limestone derived soil here allows for a healthy stream system with a vibrant ecosystem.



The state forest land in this landscape is known as Redbud Valley or the Kerper Tract. The Kerper Tract is designated as a Special Use Area, because Mr. Edmund Kerper wrote in his will that he wanted the timber on these tracts of land to be “kept intact except for really necessary cutting”. The Bureau has determined the special use for this area is to serve as an outdoor education area for youth, and cutting is restricted to safety and educational treatments. The Bureau has never conducted a sale in this area so most of the forest is second growth after the harvesting for charcoal hearth at the turn of the century and clearing for agriculture occurred.

The waterflow in this entire landscape feeds into Potomac River Basin and eventually to the Chesapeake Bay. Cove Creek flows through this landscape and meets up with Licking Creek. Cove Creek is designated as an exceptional value stream and is a fishing destination. This landscape has numerous wet areas along Cove Creek due to the topography and geology

The forests in this landscape currently typed as mostly mixed oak forest types (87%), but many of the acres have a lot of tulip poplar and maple. The typing may change in the upcoming cycle of compartment exams. The remaining forest type is the sycamore/box elder floodplain forest and is located along the flood plain of the Cove Creek. The Fulton County Natural Heritage Inventory has designated this flood plain forest as the Kerper Floodplain Biodiversity Area to protect this sycamore box-elder floodplain forest as the community type is uncommon in Pennsylvania largely due to the conversion of floodplains to agricultural use. Floodplain forests provide vital habitat to a wide range of animal and plant species as well as provide critical ecosystem services such as flood control and surface water protection.

There is very little conifer cover in this landscape. The only conifer stand on the state forest land of this landscape is a small Virginia pine stand which probably started in the 1950's after Mr. Kerper's death as old fields reverted to forest. Unfortunately, most of these pines are now starting to die out and are being replaced with the mixed hardwoods of the area. There is a bit of white pine and some random larch trees that were planted in this area as well, but increasing conifer cover over the landscape could be beneficial.

The overall health of this landscape is generally good. This landscape has not experienced much Gypsy Moth impact probably due to the high proportion of tulip poplar. The area generally experiences a high site quality except for the extreme ridge tops.

This LMU has been heavily invaded by many exotic invasive species including Ailanthus, Japanese stilt grass, mile-a-minute, Oriental bittersweet, garlic mustard, multiflora rose, Japanese barberry, Japanese honeysuckle, bush honeysuckles, Norway maple, burning bush, and several other exotic species, many of which Mr. Kerper directed to be planted many years ago before they were considered invasive plants. Most of these are found mainly in the bottom land along the creek, but ailanthus and mile-a-minute are found throughout the landscape on public and private land. Recently, mile-a-minute was discovered to be growing several locations on top of Dickey's Mountain which will make treatment nearly impossible. Biocontrols were released at the infestation along the powerline right-of-way and we are hopeful that the population will build and spread to adjacent properties and the ridge top. Biocontrols are probably the only viable option for this area as the bottom land is all in the flood plain of Cove Creek and spring floods bring nutrient loads and seeds from all the upstream properties. The state forest land west of Cove Creek has a Weed Management Plan. The plan was written in early 2005, and it was designed to be in a maintenance phase by 2017, but additional infestations and lack of funding and time have extended the treatment window for the plan. This landscape is exposed to heavy amounts of recreational traffic year-round and it should be monitored to keep in check any new cases of invasive species being introduced.

Due to the quality habitat this landscape has an abundance of game and non-game species of wildlife including deer, turkey, bear, coyotes, small game, and many song birds. The Kerper Tract was enrolled in the Game Commission's DMAP program from the fall of 2004 until the fall of 2006, three seasons. This yielded one additional doe per year shot on the property. Based on field observations in the spring of 2007, it was determined that the DMAP program should no longer be employed at the Kerper Tract. The ongoing surveys indicate that there is not currently a high deer population. There is the possibility that Eastern Timber Rattlesnake and Allegheny Woodrat may be found in this landscape as there is adequate suitable habitat.

Recreational use is an important aspect of this landscape and access to most of the LMU is usually achieved from US 522, SR 928, and Ravensburg Road. Fishing, hiking, and hunting are the most common recreation activities in this LMU. This area is unique to the Buchanan Forest District in that it possesses a PA Fish and Boat Commission Special Regulation Area (artificial lures only) for the section which passes through SFL. This creates a fair amount of traffic throughout the year, but especially the summer months. There are district hiking trails present on this landscape that provide access to the unique features in this area. These trails include Bridge Trail and Deshong Trail located west of the road providing easy access to the floodplain area, and Dickey's Mountain Trail which creates a large sometimes challenging loop from the parking area up the ridge and back.

There is a power line right-of-way which passes through SFL north to south, near the creek. There are numerous invasive species found in the right-of-way, but it is particularly polluted with mile-a-minute.

Compartments: 16

## Priority Goals

### A. Silviculture:

- Manage within the educational restrictions of the deed to create demonstration harvest as appropriate for the forest and as needed for public education.
- Mitigate, control and eradicate as possible the many invasive species found in this LMU. Specific targets for treatment in this LMU are to continue to manage under an updated management plan specific to this area.
- Increase conifer cover on this landscape to benefit stream habitat and wildlife.

### B. Water:

- Preserve water quality by ensuring stream cover and maintain the overall health of watersheds in this area. Fishing is a high recreational value in this area.
- Evaluate this area for potential additions of large woody debris to provide additional in stream habitat and mitigate flooding damage potential.

### C. Recreation:

- Increase the recreational experience by continuing to maintain the multi-use trail system via the 5-year rotation and continuing to develop trail reroutes for sustainability and usability.
- Recruit volunteers to assist with trail maintenance and improvements where possible.

### D. Wildlife:

- Maintain or improve as needed the habitat areas that benefit wood rat and rattlesnake populations.
- Maintain and improve habitat for song birds and pollinators for use in the living classroom settings.
- Work with the PA Game Commission to increase awareness of Chronic Wasting Disease and implementing measures to slow the spread across the LMU.

### E. Infrastructure:

- Work to improve ADA access to the living classroom and fishing areas.
- Restore and maintain the bridge providing access to the both sides of the creek.
- Continue to watch for strategic land acquisitions.

### F. Public Education and Outreach

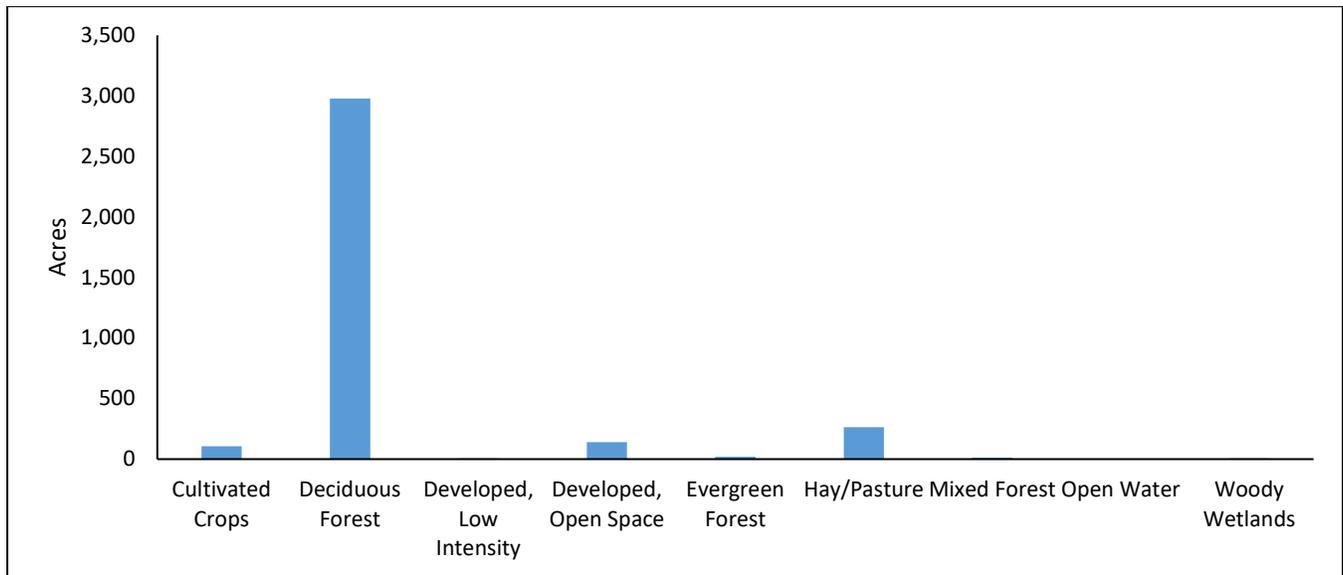
- Enhance the educational opportunities on this site by creating a living classroom. The potential classrooms topics are nontimber forest products (wild flowers, mushrooms, pawpaw, etc.), stream habitat and health, history of homesteads and old field conversion, plant identification and dendrology. Explore the possibility of creating a sugar bush demonstration. Any sales need to be demonstrations and interpreted.
- Create a wayside exhibit to highlight the history of this tract and conservation ideas.
- Reduce the amount of high grading and other questionable forest practices that occur on neighboring lands especially. Neighboring properties create nutrient loading for the stream and seed bank issues especially regarding invasive species.

## Profile

**Table 1.** LMU acreage: total and state forest land only.

	Acres
State Forest Land	479
LMU Total	3,562

**Ecoregion:** Ridge and Valley



**Figure 1.** LMU acreage by land cover categories from the National Land Cover Dataset for the entire LMU.

As you can see from the figure above the majority of the LMU is forest, mostly deciduous. The remaining uses are farms and houses. The lack of conifers present in this landscape is also very apparent. This area is a great feature in the landscape as the forested floodplain is an asset to mitigating flood damages. Unfortunately, it is also a deposit for silt and many seeds from the upstream neighbors.

**Table 2.** Miles of roads by category on state forest land in this LMU. Road categories are described on p. 199 of the 2016 SFRMP.

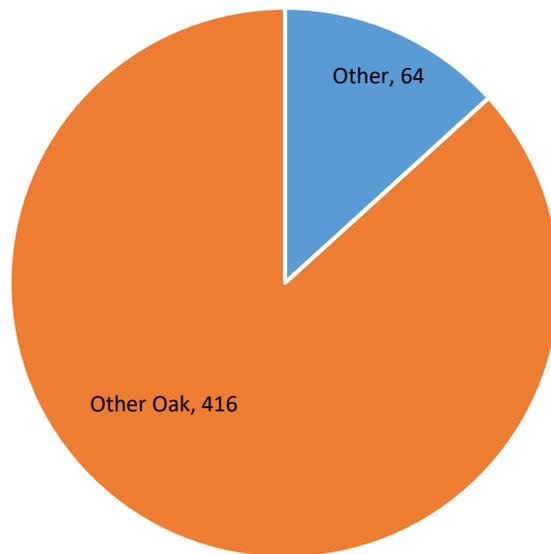
Road Category	Total Miles
Z1 - Public Use Road	0
<b>Total</b>	<b>0</b>

The main access to the recreational opportunities and educational resources in this landscape are from the paved road owned by the PA Department of Transportation, Route 928, that runs along the valley floor and bisects the property owned by the Buchanan Forest District. Along this road are several parking areas that provide access to the trails that lead up the ridge and across the creek.

**Table 3.** Miles of trails on state forest land in this LMU open to various types of recreational use. Note that miles are not additive, and a single trail may be open to multiple use types. Shared-use trails, which make up the majority of trails on state forest land, are open to hiking, biking, horseback riding, and cross-country skiing.

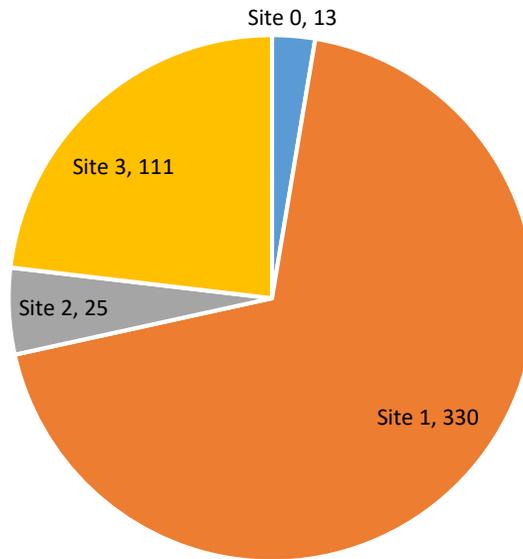
Trail Category	Total Miles
Hiking	2
Biking	1
Equestrian	1
X-Skiing	1
ATV I	0
ATV II	0
Snowmobile/ Joint Use Road	0

The district trails in this landscape provide critical infrastructure for the educational programs and other recreational uses. The west side along the creek is open for multi-use while the Dickey’s Mountain Trail is designated as hiking only.



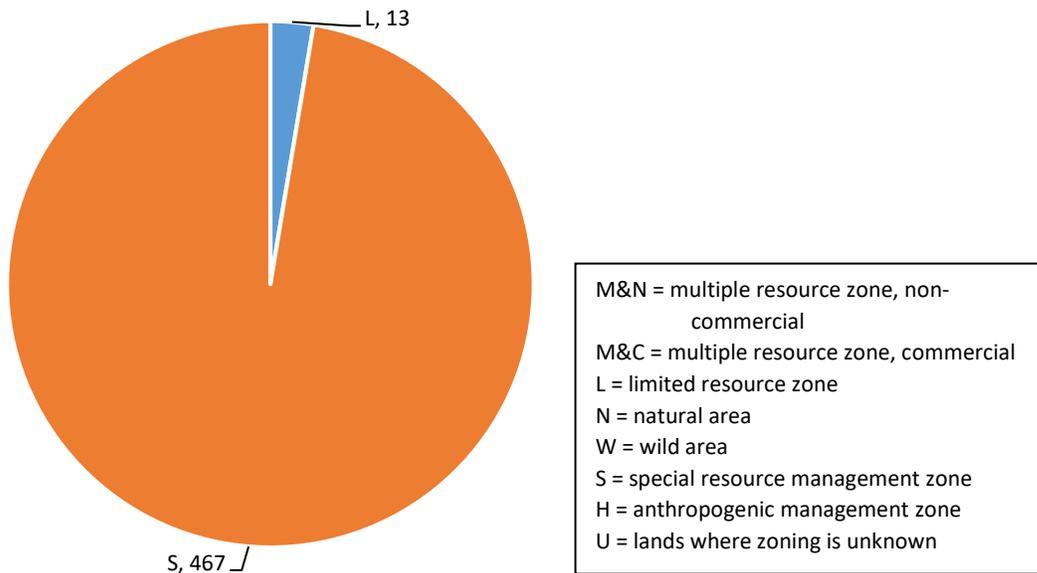
**Figure 2.** Acreage of state forest land in this LMU by aggregated forest type. The forest types are described on p. 108 of the 2016 SFRMP.

Most of the stands in the forested landscape are comprised of mixed oak. But tulip poplar makes up a significant portion of the stands and typing may be changed in the during the next compartment exam. This species variety has helped minimize the impact of gypsy moth on this area. The Sycamore / Box Elder flood plain forest is listed as a Fulton County Biodiversity Area and truly contains critical habitat. There is a distinct lack of conifer cover in this LMU and efforts to increase this component must be part of the long-term goals for this area.



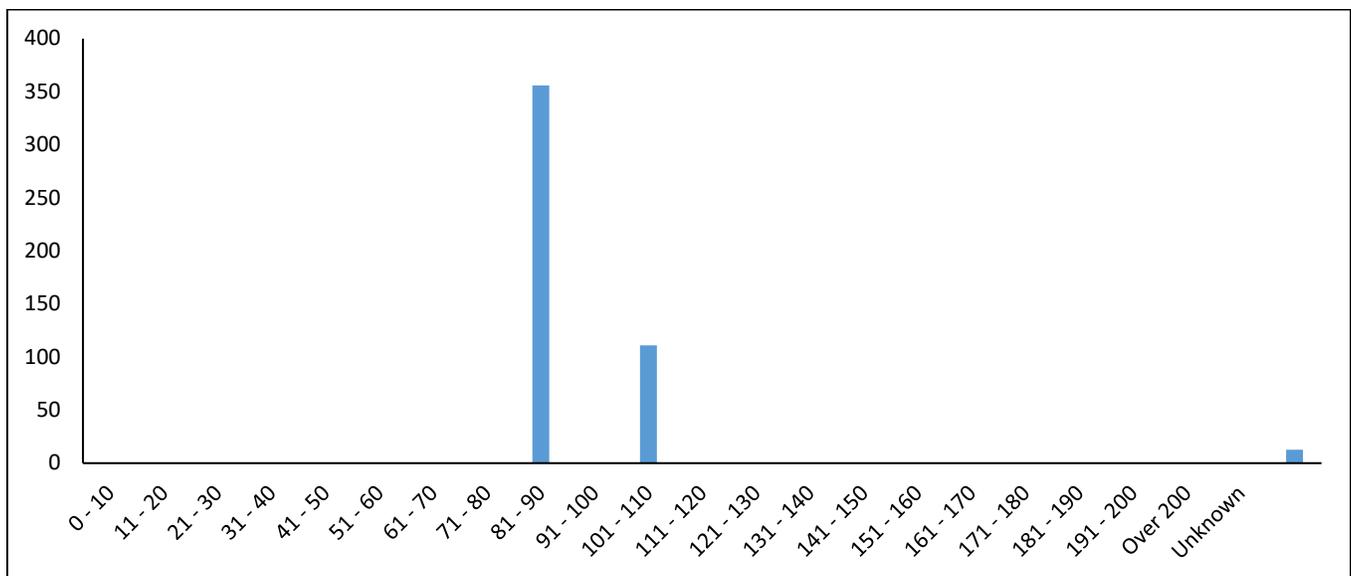
**Figure 3.** Acreage of state forest land in this LMU by site class. Site classes denote the potential quality of the growing site. “Site 0” indicates non-forested lands or forested lands where the vegetation has not yet been typed. Other site classes are described on p. 53 of 2016 SFRMP.

This LMU is mostly site 1 along the stream and along the lower slopes but quickly transitions through site 2 to site 3 stands on the ridge. There is some potential for small demonstration sales to be conducted in this area based on the stand quality but plans and interpretation would need to accompany any such endeavor to remain true to the spirit of Mr. Kerper’s wishes.



**Figure 4.** Acreage of state forest land in this LMU by management zone. Management zone is dictated by primary land use and land capability. Further descriptions of commerciality and zoning are found on p. 54 of the 2016 SFRMP.

Nearly all the area is designated as special use except for a few areas that are limited but slope and rock as to be inoperable. Though there is some potential for demonstration sales in the future there is no pressing need to harvest in this area. The educational opportunities in this special use area are well suited to the terrain and forests that exist here.



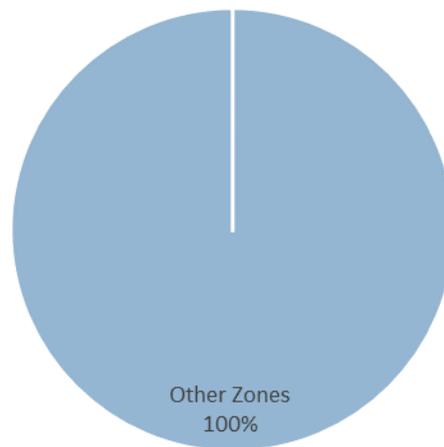
**Figure 5.** Acres of state forest land in this LMU by forest age classes.

Because this area is managed as a special use area there has been no harvesting completed on the State Forest Land in this landscape. The age classes are based on turn of the century harvesting for charcoal and the later reversion from agricultural fields. Either way the stands are mature and succession will occur overtime. There are a few spots that could lend themselves to demonstration areas to create additional educational opportunities and create varied habitats for the wildlife species that make their homes in this forest

**Table 4.** Miles of stream by classification within entire LMU. Department of Environmental Protection stream classifications are described in Chapter 93 Water Quality Standards of Title 25 in the Pennsylvania Code.

Class	Total (miles)
Undesignated	4
High Quality Waters	0
Perennial Cold Water Streams	1
Exceptional Value Waters	9
<b>Total</b>	<b>14</b>

Cove Creek is designated as exceptional value it is fed by many small tributaries of varying quality, and the Esther Creek a perennial cold-water stream. The fishing opportunities here are extensive and the state forest land has a section of a PA Fish and Boat Commission Special Regulation Area (artificial lures only). The private streams should be examined for their buffering potential to meet statewide goals.



**Figure 6.** Acres of state forest land in this LMU by Recreation Opportunity Spectrum (ROS) classifications (2012). ROS is an inventory system developed by the U.S. Forest Service, to characterize land by types of recreation experiences. ROS is described on p. 42 of the 2016 SFRMP. “Other Zones” refers to Semi-Developed and Developed zones.

A high proportion of this LMU is easily accessed from the main PA DOT roads creating a high proportion of “other” zones in this landscape. Moving up the ridge from the access points provides the semi primitive and

non-motorized areas. The area feels more remote than it actually is and can still provide excellent opportunity for solitude and recreation.

**Table 5.** Cultural and Ecological Summary.

<b>Row Labels</b>	<b>Count of Feature</b>
<b>Cultural</b>	<b>26</b>
Charcoal Hearth	25
Old Building Foundation	1
<b>Ecological</b>	<b>1</b>
Spring	1
<b>Grand Total</b>	<b>27</b>

This table show the mapped highlights of cultural or ecological significance located within this LMU. These features play a role in the management of this area. The abundance of charcoal hearth illustrates the impact that past activities have had on the landscape and influence how we manage this area today. The foundation of Mr. Kerper’s home remains of the ground providing a unique look into the history of this area. We hope to add additional information to the kiosk and map about these resources in the future.



# Martin Hill

## Landscape Management Unit

Revision Date: May 2018

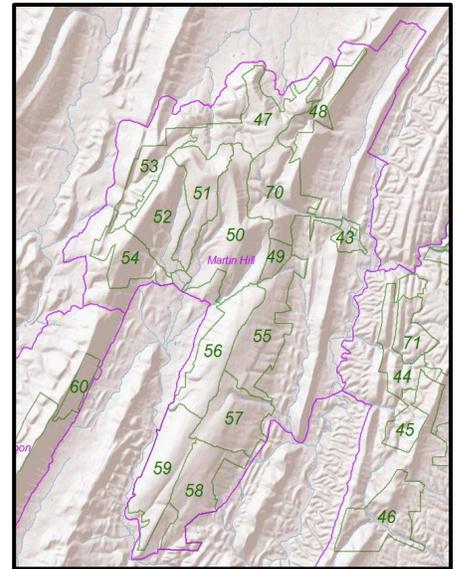
### Overview

The Martin Hill LMU is 31351 acres size located in the Appalachian Mountain Region of the Ridge and Valley Province. This land is situated in southern Bedford County at the western edge of the Buchanan Forest District. It contains the 17,798 acres of State Forest Land including Martin Hill Wild Area, Sweet Root Natural Area, the Martin Hill ATV and Snowmobile Trails, a 257-acre Wild Plant Sanctuary called Bear Gap Run, two state forest picnic areas: Blankley and Sweet Root, and two former CCC camps. Civilian Conservation Corp Camp S-154 (Martin Hill) was

open from July 1935 to October 1937 and was comprised of all black crews. They constructed many miles of roads and trails and the facilities for the Blankley Picnic Area. The other camp was S-142 (Sweet Root) which operated from July 1933 to October 1935. It was erected originally to provide room, board, and work for itinerants and WWI veterans but was abandoned soon after the CCC program began and most of the men were transferred to Martin Hill. The members of this camp constructed the Sweet Root Picnic Area.

This area is typical ridge and valley topography of steep side hills with knobs and hollows and valleys with farmland mixed with small wood lots. The ridge tops in this landscape are rugged and have some areas with significant rock outcroppings. Generally, the ridge tops in this area have experienced high mortality from repeated gypsy moth outbreaks while the richer side slopes have been spared some of the devastation. The state forest land is about 57% of the land base and the remaining portions are 6% PA Game Commission, 37% privately held. The land base is 93% forested most with about 89% deciduous forest and 4% conifer cover. The remaining land is 3% developed home and business sites and 4% agricultural lands generally located at the base of the ridge. Most of the land in the Martin Hill LMU was acquired in 1902 from the Cessna family after being harvested. The resulting forest is similar over much of this LMU, but sections are managed differently based on designated uses. The Martin Hill Wild Area is 11676 acres that is managed for wild character. The Sweet Root Natural Area is 1526 acres that was designated originally to highlight the old growth Hemlocks that were located along Sweet Root Run. Most of the old growth hemlocks have succumb to hemlock wooly adelgid, but the forest around Sweet Root Run is still being managed to highlight natural processes. The remaining 4596 acres are under active management.

Most of the water flow from the Martin Hill LMU contributes to numerous watersheds that feed into the Potomac River Basin. But a small portion of the LMU comprising about 52% of the manageable acres flows north to feed the Susquehanna River Basin. Both basins contribute to the Chesapeake Bay. A local citizen group called the Ridge and Valley Streamkeepers was formed in 1999 to direct efforts to water quality issues in the Town Creek, Fifteenmile Creek and Sideling Hill Creek watersheds. There are few wetlands in the landscape; however, there are ponds just off Tussey Mountain Road that provide excellent habitat and potential fire reserves.



The state forests in this landscape are comprised mostly (88%) of the oak forest types. The mix of these oak types are 79% Dry Oak-Heath Forest, 17 % Red Oak-Mixed Forest, and 4% Mixed Oak – Mixed Hardwoods Forest. There is very little conifer cover (3%) in this landscape and most of it exists immediately adjacent to the creeks and a few small plantations. The 11676 acres of state forest located in the Martin Hill Wild area and 1526 acres of Sweet Root Natural Area are designated non-commercial. The remaining 4596 acres of state forest land is designated about 82% multiple resource commercial, 17% limited resource and 1% anthropogenic. Unsurprisingly, 88% of the forests in this area are in the 80-100+ year old category. However, in the 25% land that is not protected by designation progress has been made towards balancing age classes with 14% in 0-20 years, 67 % in 20-40 years, and 18% 40-60 years. The overall health of this landscape is generally good except where we are dealing with the influences of past gypsy moth populations, and high populations of Hemlock wooly adelgid.

This LMU has all the normal invasive species found in our district: Mile-a-minute; Ailanthus, Japanese Stiltgrass, and Japanese Barberry. Ailanthus and stilt grass have all been treated as part of timber sale activities. Mile-a-minute is being managed along the ATV trails, road ways, and sale areas but is otherwise too common to treat. Biocontrols were released in the largest population along the ATV trail and appear to be thriving but not making much of a dent in the population. This motorized recreation in this landscape ensures that the area is exposed to heavy amounts of recreational traffic year-round and it should be monitored to keep in check any new cases of invasive species being introduced.

Due to the quality habitat this landscape has an abundance of game and non-game species of wildlife including deer, turkey, bear, coyotes and small game. This landscape is also a good habitat for rattlesnakes, woodrat, grouse and many other small animals. Eastern Timber Rattlesnake and Allegheny Woodrat are the only known species of concern on state forest land in this landscape. This area is not currently in a district managed DMAP area and annual deer surveys indicate that there is not currently a high deer population. This area is highly hunted for Black Bears, White-tailed Deer, and Turkey. CWD is present on the landscape and is a concern for future deer population management and hunter participation. We have several older wildlife plots, but maintenance has been limited to occasional mowing. Most of the recent timber sale haul roads are seeded with a native mix that has wildlife benefit after retirement. There are possible areas to do wildlife improvement projects in this landscape when time and funds come available.

Recreational use is an important aspect of this landscape and use varies throughout the year. Hunting, hiking, and riding ATV's are the most common recreation activities within this landscape. This area is highly hunted for bear, deer, and turkey. The Martin Hill ATV Trail is in this landscape. Many ATV riders use this 17-mile trail during the summer months when it is open. The Martin Hill Snowmobile Trail is also located in this landscape. Snowmobiles are permitted on Evitts Mountain Road, Blankley Road, and Martin Hill Road when snow conditions are favorable. The entire snowmobile trail system on Martin Hill is approximately 19 miles. The Mid-State Trail, a designated State Forest Hiking Trail, enters the state from Maryland at the southern portion of this LMU. It winds its way through this LMU before heading north through most of Pennsylvania. The Mid-State Trail is a popular trail for both through and local hikers. It is also part of the Great Eastern Trail, which is a national trail spanning a large portion of the eastern United States. The district state forest hiking trails in this landscape are Bear Gap Trail, Burnt Mills, Cabin Trail, Carnes Trail, Evitts Trail, Fairview Trail, Fetters Trail, Frank Beck Trail, Gap Trail, Gum Springs, Jackson Trail, Johnston Trail, May Trail, Morris Trail, Oak Trail, Pigeon Roost Road, Refuge Trail, Rose Trail, Shaffer Trail, Somerlot Trail, Sweet Root Trail, Tarkiln Trail, Verbal Trail, and Wasson Trail. There are two state forest picnic areas in the Martin Hill LMU, Sweet Root and Blankley Picnic Areas, both of which are well used.

Access to parts of the LMU are restricted based on the wild and natural area designation and geographic location. Tussey Mountain Road is a gated State Forest Road that provides foot access to the Wild Area and can be reached from one of two township roads: Beans Cove Road and Flintstone Creek Road. Access to the remainder of the Martin Hill LMU is easily achieved by way of several well-maintained public use roads: Martin Hill Road, Blankley Road, Tower Road, and State Route 326. Evitts Mountain Road, a gated road for most of the year, is opened after ATV season for improved hunting access. There are two vistas along Blankley Road as well, the closest one to Route 326 has a view of Rainsburg Gap and the second has a view of Friend's Cove.

There are few operational agreements in the landscape. Several towers are clustered around the former site of the Martin Hill Fire Tower whose uses include the Bedford County 911 system, a radio antenna tower. There are 4 leased campsites in this LMU and a state-owned camp. There are several power line rights-of-way one located along the boundary of the wild area that serves the towers and the nearby leased camps and one off of Wertz Road that serves the state-owned cabin.

Compartments: 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 70

## Priority Goals

### A. Silviculture:

- Conduct sales to balance age classes across the manageable acres in this landscape. Only a portion of the acreage is available to manage due to the protected nature of the Wild and Natural area.
- Mitigate, control and eradicate as possible the many invasive species found in this LMU. Evaluate and manage trouble spots in all areas of active management. Specific targets for treatment in this LMU are to increase the dispersion of biocontrols for Mile-a-minute and finding ways to control on high use areas that have the greatest spread potential such as along the ATV Trail; and managing the spread of Japanese stiltgrass to mitigate invasion along the ATV Trail, Mid State Trail and sale areas.
- Work to evaluate the Bear Gap Wild Plant Sanctuary located in this LMU to determine if active management is required.
- Mitigate the effects of the areas with general oak decline including monitoring and treating where appropriate.

### B. Water:

- Create plans for managing and maintaining the health of the several ponds and wet areas wet areas to promote multifunction ecological values.
- Preserve water quality by ensuring stream cover and maintain the overall health of watersheds in this area.

### C. Recreation:

- Increase the recreational experience by continuing to maintain the multi-use trail system via the 5-year rotation and continuing to develop trail reroutes for sustainability and usability. Current projects include working on projects proposed for the Mid State Trail.
- Continue to work with FDC to execute the grant for ATV bridge rehabilitation and relocation.
- Develop a loop trail in the Natural Area that highlights the old mill and the saltpeter cave.
- Recruit volunteers to assist with trail maintenance and improvements where possible.
- Continue to maintain the vistas in this LMU.
- Continue yearly inspections of the leased campsites found in this LMU and work to ensure that all the sites maintain compliance with established standards.

- Prioritize the maintenance of wild character and promote opportunities for primitive recreation experiences.

**D. Wildlife:**

- Maintain or improve the habitat areas that benefit wood rat and rattlesnake populations.
- Continue to utilize the potential of the Sweet Root Natural Area for and highlight its designation as a reptile and amphibian protection area.
- Rehabilitate the old food plots to native species seed mixes that will benefit a wide variety of wildlife including deer, pollinators, turkey, and ruffed grouse. Specific targets in this LMU are Stuarts Meadow and small plot off Blankley Road.
- Work with the PA Game Commission to increase awareness of Chronic Wasting Disease and implementing measures to slow the spread across the LMU.

**E. Infrastructure:**

- Monitor and work with lessees to maintain the tower leases located along the top of the ridge. These towers provide communication and data needs for many citizens / agencies.
- Highlight, protect and maintain the many cultural resources in this LMU including the CCC camp sites, saltpeter cave, old mill site, Indian caves, and the old PGC “game refuge” boundaries.
- Continue maintenance and improvements for the Martin Hill ATV and Snowmobile Trails.
- Continue maintenance and improvements for the 2 picnic areas found in this LMU: Blankley and Sweet Root.
- Continue to watch for strategic land acquisitions. High priority areas include connections for the snowmobile trail.

**F. Public Education and Outreach**

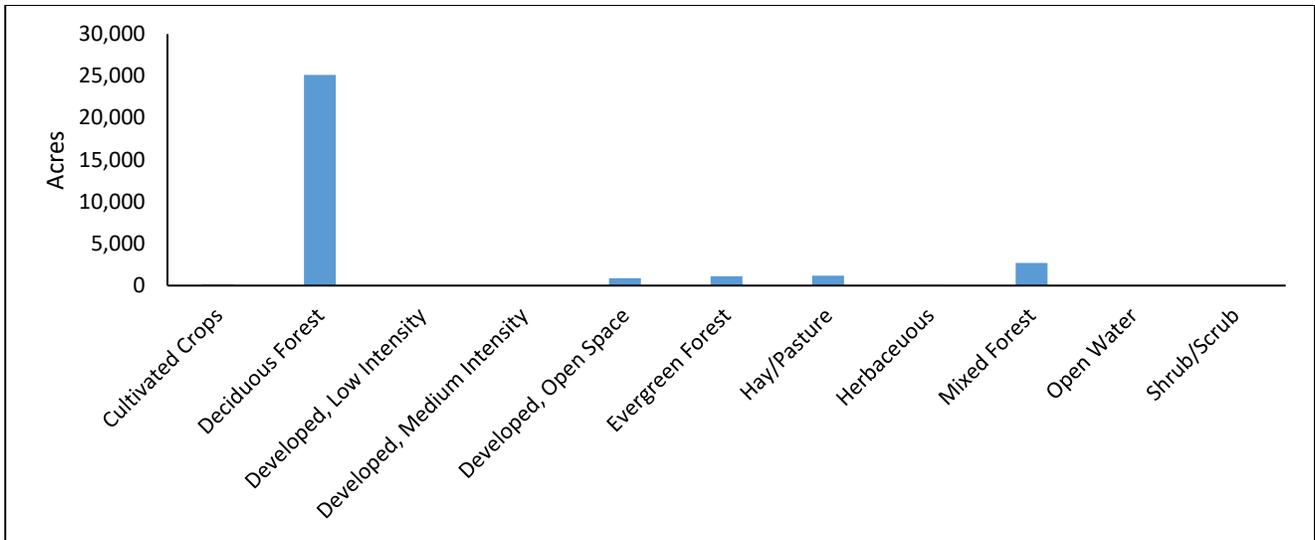
- Celebrate local history by develop interpretation for the area around the former CCC Camp, the old fire tower site, and the old mill site at Sweet Root.
- Create a driving tour and pamphlet to highlight the rich local history found in this LMU and the neighboring Resettlement Lands LMU.

## Profile

**Table 1.** LMU acreage: total and state forest land only.

	Acres
State Forest Land	17,798
LMU Total	31,351

**Ecoregion:** Ridge and Valley



**Figure 1.** LMU acreage by land cover categories from the National Land Cover Dataset for the entire LMU.

As you can see from the figure above the majority of the LMU is forest, mostly deciduous. The remaining uses are farms and houses. The amount of forests is beneficial for this landscape and its associated watersheds. This area is very well suited to its use as a working forest, recreational area, and providing wild character.

**Table 2.** Miles of roads by category on state forest land in this LMU. Road categories are described on p. 199 of the 2016 SFRMP.

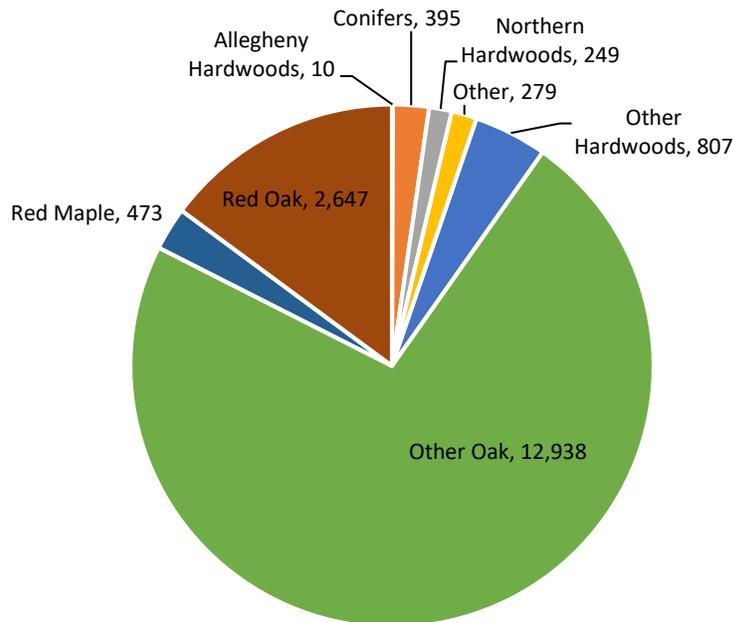
Road Category	Total Miles
Z1 - Public Use Road	18
Z2 - Drivable Trail	1
Z3 - Administrative Road (gated)	21
<b>Total</b>	<b>40</b>

The main access to the recreational opportunities and timber resources in this landscape via State Route 326 to the Blankley and Martin Hill public use roads. Along this road are several parking areas and pull offs that provide access to the administrative roads and trails that wind across the ridges. The Z3 roads were mainly put in to access timber resources but most continue their use as hiking access, ATV or Snowmobile trails.

**Table 3.** Miles of trails on state forest land in this LMU open to various types of recreational use. Note that miles are not additive, and a single trail may be open to multiple use types. Shared-use trails, which make up the majority of trails on state forest land, are open to hiking, biking, horseback riding, and cross-country skiing.

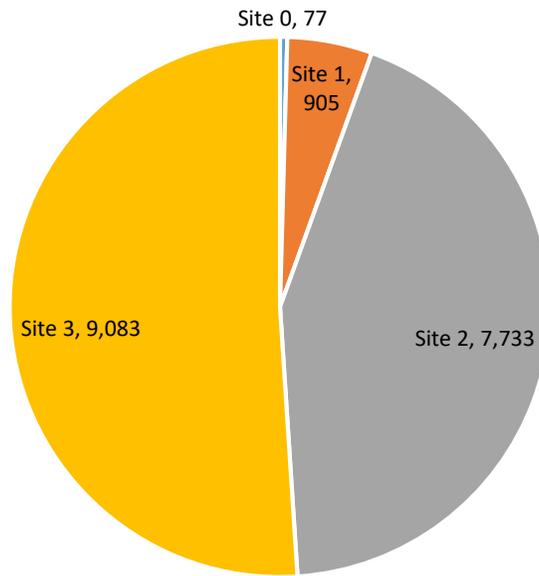
Trail Category	Total Miles
Hiking	65
Biking	52
Equestrian	52
X-Skiing	52
ATV I	17
ATV II	17
Snowmobile/ Joint Use Road	21

The Mid-State Trail runs north south along Martin Hill. It is designated as hiking only trails along with all of the trails in the Sweet Root Natural Area. All the other trails in the Martin Hill LMU are open for multiple uses, but many were created as fire breaks and run straight up the hillsides creating some challenging walks through the landscape.



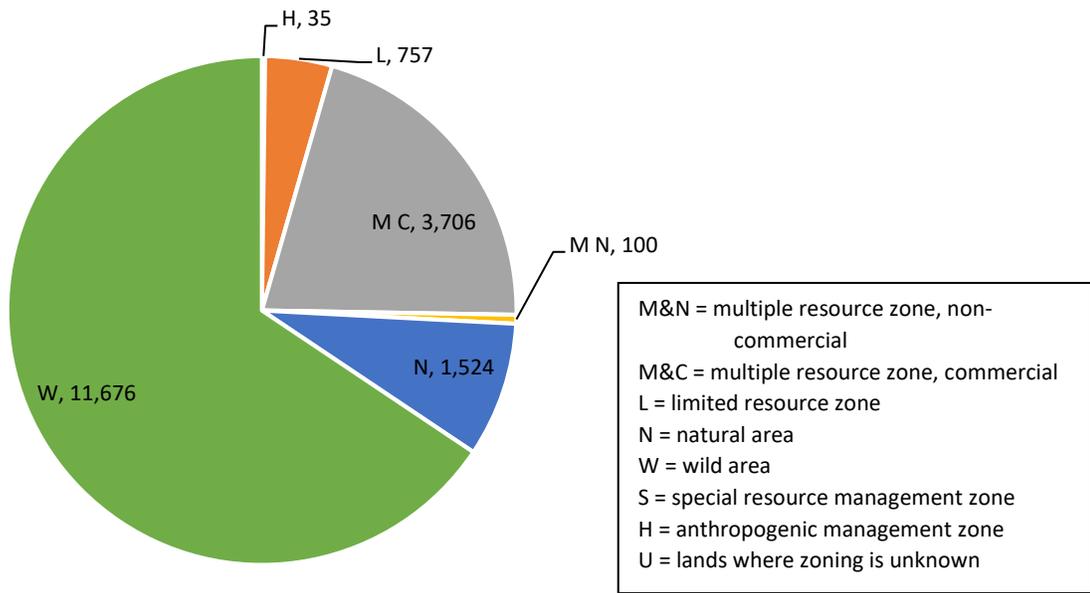
**Figure 2.** Acreage of state forest land in this LMU by aggregated forest type. The forest types are described on p. 108 of the 2016 SFRMP.

Most of the stands in the forested landscape are comprised of mixed oak. Due to this high oak composition, these stands are susceptible to impact from gypsy moth and other such insects and diseases. There is a lack of conifer cover in this LMU and efforts to increase this component are part of the goals for this area. Of the 17,798 acres of Buchanan State Forest Lands only about 3,700 acres are available for timber harvesting activities.



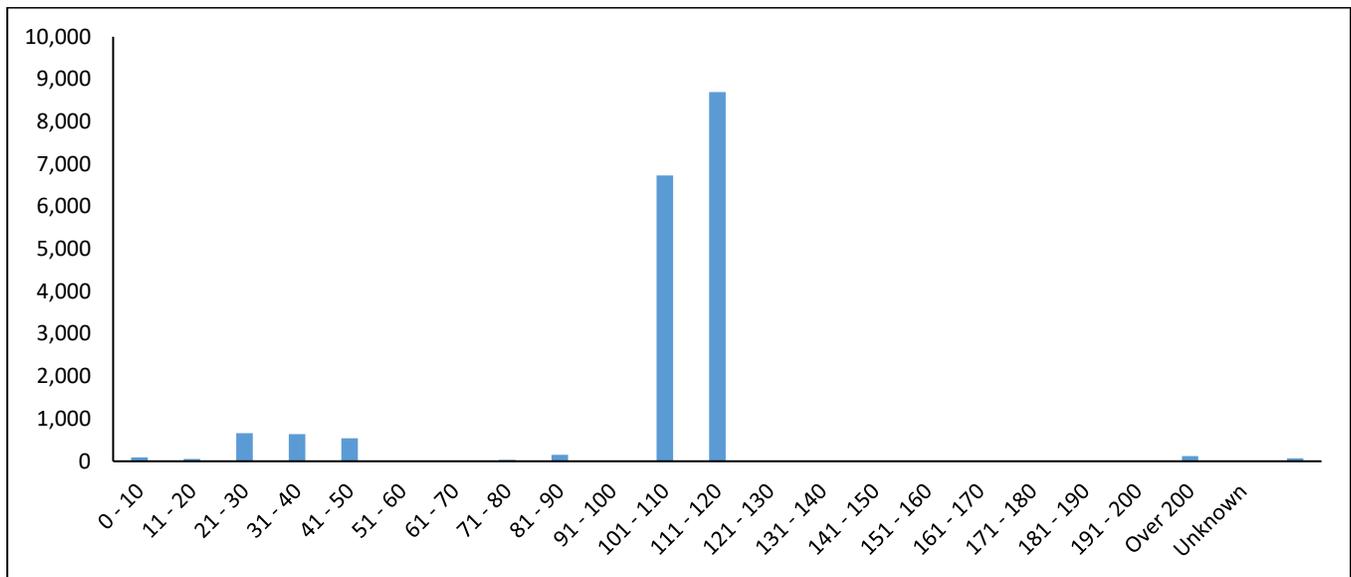
**Figure 3.** Acreage of state forest land in this LMU by site class. Site classes denote the potential quality of the growing site. “Site 0” indicates non-forested lands or forested lands where the vegetation has not yet been typed. Other site classes are described on p. 53 of 2016 SFRMP.

This LMU is nearly evenly split by site class 2 and 3, but also contains some small areas of site 1 stands mainly in the hollows and near the picnic areas. The site 2 acreage remains primarily where we can conduct most of our silvicultural treatments to obtain balanced age classes. There are challenges from invasive species, ferns and competing vegetation in many of these stands. Site 3 exists primarily on the ridge tops and rocky slopes, so management of these areas is either challenging or impossible.



**Figure 4.** Acreage of state forest land in this LMU by management zone. Management zone is dictated by primary land use and land capability. Further descriptions of commerciality and zoning are found on p. 54 of the 2016 SFRMP.

About 20% of the state forest land in this LMU is available for management activities. The other areas are protected by designation of wild or natural area or are too steep, rocky, or wet for operations.



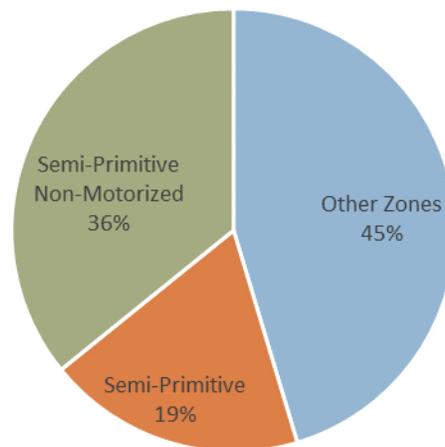
**Figure 5.** Acres of state forest land in this LMU by forest age classes.

Between sale activities and gypsy moth impacts progress is being made towards spreading the age classes of the manageable acres across several decades. Based on the acreage available for commercial activities we should be able to balance a mere 20% of the acreage across the appropriate rotation for the primarily oak species found here. The wild and natural areas sport stands that are well over 80 years with many stands that are declining and transitioning.

**Table 4.** Miles of stream by classification within entire LMU. Department of Environmental Protection stream classifications are described in Chapter 93 Water Quality Standards of Title 25 in the Pennsylvania Code.

Class	Total (miles)
Undesignated	1
High Quality Waters	82
Exceptional Value Waters	10
<b>Total</b>	<b>93</b>

The exceptional value waters are mostly unnamed tributaries in the northern part of the LMU that feed into Cove Creek, which remains EV through this LMU. All these streams eventually the Susquehanna River Basin. These have the most potential to be impacted or protected by our management activities and policies as they all occur where our limited management acres are found in the Martin Hill LMU. The high-quality waters that exist on state forest land are also mainly tributaries that feed various HQ watershed streams and all flow to the Potomac River Basin. The named HQ streams are: Amorine Branch, Bear Gap Run, Black Valley Branch, Elk Lick Creek, Laurel Branch, Little Bear Gap Run, Little Pigeon Roost Run, Pigeon Roost Run, Pond Branch, Sweet Root Creek, Sweet Root Run, Town Creek, Twig Hollow, and Wildcat Run. The private streams should be examined for their buffering potential to meet statewide goals.



**Figure 6.** Acres of state forest land in this LMU by Recreation Opportunity Spectrum (ROS) classifications (2012). ROS is an inventory system developed by the U.S. Forest Service, to characterize land by types of recreation experiences. ROS is described on p. 42 of the 2016 SFRMP. “Other Zones” refers to Semi-Developed and Developed zones.

The Wild and Natural Areas are listed as semi-primitive and semi-primitive non-motorized. Though both areas can feel primitive, isolated, and rugged in character the ROS system measures distance from impacting sources without regard to elevation change. All the management acres in the LMU are listed as “other zones” based on the motorized trails: ATV and Snowmobile. The ease of access provided by the public use road that bisect the management acres also play a role in their designation. The feel of isolation in this LMU is much greater than any of the designations imply.

**Table 5.** Cultural and Ecological Summary.

<b>Row Labels</b>	<b>Count of Feature</b>
<b>Cultural</b>	<b>13</b>
CCC Camp	2
Homestead	3
Mill Site	2
Old Building Foundation	4
Spring Water Collection Site	2
<b>Ecological</b>	<b>6</b>
Spring	5
Vernal Pool	1
<b>Grand Total</b>	<b>19</b>

This table shows the mapped highlights of cultural or ecological significance located within this LMU. The history of the area and the relatively long tenure of state ownership give this area combine to play a significant role in the management of this area.

# Resettlement Lands

## Landscape Management Unit

Revision Date: May 2018

### Overview

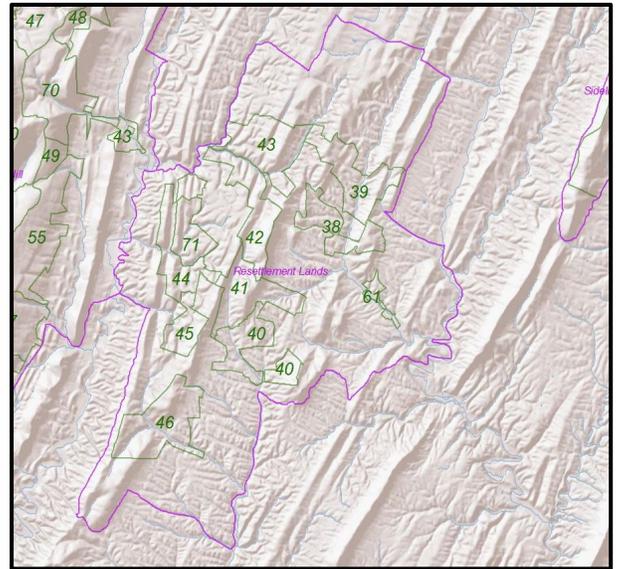
The Resettlement Lands LMU is 35350 acres in size located in the Appalachian Mountain Region of the Ridge and Valley Province. This land is situated in south central Bedford County and is a truly unique landscape characterized by shale slopes, an abundance of hard pine both natural and

plantations, and its blend of forest edge and private land. The amount of forest edge here creates quite the management challenge with respect to invasive control and deer populations. Most of the state forest land was added to the State Forest system in 1955 by way of the Federal Government's Resettlement program that bought out marginal farms and stabilized the soil concerns by replanting most of them with trees. There are numerous old homesteads and wells found throughout the landscape and at least 5 identified cemeteries. Additional acreage was added to this LMU in a 2008 land purchase from Glatfelter. The Resettlement Lands LMU contains the 583-acre Pine Ridge Natural Area that was set aside in 1970 to show the transition from field to forest via natural processes. It also contains two Wild Plant Sanctuaries: the 40-acre Martin Hill Plant Sanctuary and the 75-acre Fifteen Mile Creek Wild Plant Sanctuary.

This area contains ridge and valley topography of steep side hills with knobs and hollows. In this area, there are lots of knobs and hollows. The valley floor contains farmland mixed with small wood lots. The lands held by Buchanan State Forest make up about a 28% of the land base and the remaining acres are privately held though still mainly forested. The private land positioned lower on the slopes have been cleared for agriculture and homesites. Much of the state forest land in this LMU were harvested for lumber or cut and cleared for farms in the late 1800 and early 1900's. Due to the topography and soils many of these areas were not well suited to farming and have reverted to forest through the Resettlement Lands program or naturally over time.

The waterflow from this landscape feeds into the Potomac River Basin and eventually into the Chesapeake Bay. Most of the streams coming from state forest land are unnamed tributaries that have high quality designations. This landscape has few designated wetlands but there are many moist bottomlands along the various streams.

The forests in this landscape are comprised mostly (62%) of the oak forest types. There is about 8% conifer cover in this landscape. The conifer stands are mostly natural and planted hard pine stands comprised mainly of pitch and Virginia pine. The landscape also sports some conifer cover immediately adjacent to the creek. We actively manage in the hard pine stands to ensure that we are maintaining or increasing this unique resource on the Buchanan State Forest. This area is also unique in the amount of Allegheny and Northern Hardwoods stands. The sensitive side slopes have accumulated soils that have supported the development of these hardwood communities. The best sugar maple sites in the Buchanan State Forest are found in this LMU.



The overall health of this landscape is generally good. The hemlocks in this LMU are currently experiencing varying degrees of stress from the woolly adelgid and are expected to succumb to this insect. Gypsy moth have adversely impacted the oak stands of the Resettlement LMU through multiple past defoliation events. The impacts seem to be less in this LMU compared to the impacts in the ridgetop communities found in the other LMU's. This area supports a variety of understory plants including some of the rare species that led to the designation of two wild plant sanctuaries in this LMU. Regeneration is mixed as well containing mixed oak, hickory, conifers with some red and sugar maples and birch. General understory conditions are favorable with limited undesirable species competition. Also affecting the future health of these stands, is that this and neighboring landscapes have significant amounts of ailanthus and other invasive species.

Ailanthus, Japanese Barberry, Japanese Stiltgrass, and mile-a-minute are all present in this landscape at population levels that are causing management concerns. Other invasive species are present within this landscape but in varying amounts and in spotty locations. Ailanthus, Japanese Barberry, Japanese Stiltgrass, and mile-a-minute have all been treated as part of timber sale activities. Many of the ailanthus sites have been treated multiple times, but this species is not responding to treatment in this area as well as in other areas of the district. We are not certain why these differences exist, but several timber sales have exploded after harvest with seed sourced ailanthus. The 02-2014BC04 Paddy Mountain sale is one of the locations where this happened and Kristen Wickert, from WV University, is studying possible treatment options here. Compounding the management issues on our land is the high level of forest edge touching infestations of invasive species on the interspersed neighboring properties.

The habitat in this landscape supports good populations of game and non-game species of wildlife. Deer impacts are measured annually through vegetation impact protocol plots. These annual surveys indicated that the deer populations in this area continue to be high enough to impact the forest regeneration and the quality of the habitat. All the state forest land in this landscape is included in our DMAP area 1884 that has been enrolled since 2011. Timber sale haul roads are seeded with a wildlife mix and other beneficial grasses after retirement. These haul roads are also mowed periodically to try to maintain plant species attractive to wildlife. Other than the inclusion of these wildlife mixes we are not managing any areas designed to congregate wildlife. This area is in the PA Game Commissions Disease Management Area 2 for Chronic Wasting Disease (CWD) and contains a partially overlapping CWD DMAP area. CWD has been found in several captive farms and in the wild.

Hunting, fishing, horseback riding, hiking and mushroom picking are the favored recreation activities in this LMU. Much of the adjacent private land is posted and the recreation is minimal on these sites except by the landowners. Access to the state forest lands in this LMU is through a network of township, PA DOT, and Bureau of Forestry public roads. Some of the PA DOT roads like State Route 26 and Millers Corners and a few of the township roads are paved and receive winter maintenance, but most of the township roads and Buchanan State Forest roads have little to no winter maintenance. The main road for access to the state forest land in this LMU are Abey Road, Artemas Road, Big Mountain Road, Blackberry Lick Road, Blues Gap Road, Clingerman Road, Colonel Fetters Road, Covered Bridge Road, Days Road, Elbensville Road, Howsare Road, Imes Road, Jess Road, Kinser Ridge Road, Millers Corner Road, Mt. Zion Road, Mountain Road, Pine Grove Road, Piney Creek Road, Pine Ridge Road, Raccoon Ridge Road, Ragged Mountain Road, Ridge Road, Robinson Road, Shaffer Road, Northcraft Road, Perrin Road, Redinger Road, and State Route 26. This network of roads provides excellent access to the many district hiking trails present on this landscape. These trails include Ash Road, Arnold Trail, Banks Trail, Bowman Ridge Trail, Big Mountain Trail, Buxton Trail, Conrad Trail, Crawford Trail, Dan Road, Fetters Trail, Heiferlick Trail, Hez Trail, Hines Trail, Hinkle Trail, Hiram Trail, Hook Trail, Imes Trail, Jasper Trail, Jay Trail, Lawhead Trail, Lester Trail, Miller Trail, Nester Circle Trail, Old Big Mountain Trail, Pine Ridge Trail, Polish

Mountain Trail, Red Pine Trail, Rob Trail, Rocky Hollow Trail, Ruby Trail, Sally Trail, Sawmill Trail, Shipley Trail, Silas Trail, Smith Trail, Thomas Trail, Tewell Road, and W. M. Bowman Trail.

There are no state forest lease cabins in this landscape. But there are many old home sites showing the history of the Resettlement lands. The Pine Ridge Natural area contains a partially preserved granary and a small cemetery enhancing its main mission of showing the transition of farm to forest.

There are several rights-of-way in this landscape mostly involving the Columbia Gas pipeline, and the electric and telephone drops that are needed to service the interspersed home sites. The Artemas Natural Gas storage field is also located in this LMU.

Compartments: 38, 39, 40, 41, 42, 43, 44, 45, 46, 71, 72

## Priority Goals

### A. Silviculture:

- Conduct sales to balance age classes across the landscape. This area has mixed potential for regeneration sales.
- Work to maintain the hard pine component across the landscape as it is a unique resource on Buchanan State Forest.
- Mitigate, control and eradicate as possible the many invasive species found in this LMU. Evaluate and manage trouble spots in all areas of active management. Ailanthus is a huge issue on this LMU and we have been actively treating many patches for years but struggle with spread neighboring properties. Additionally, we have recently begun having seedling explosions in treated areas that were harvested. Specific targets for treatment in this LMU are to continue fighting Ailanthus especially in sale areas, beginning to manage Japanese Barberry along Redinger Road, and treating areas of Japanese stiltgrass where spread potential is greatest.
- Participate with Ecological Services section and WVU researcher to facilitate an ailanthus study on Paddy Mountain
- Work to mitigate the legacy effects of converting old homesites back to forest.
- Evaluate Wild Plant Sanctuary plans for ways to increase active management of the areas.

### B. Water:

- Participate with the Ridge and Valley Streamkeeper to help provide expertise and insight on the Town Creek, 15 Mile and Sideling Hill waterways. Preserve water quality by ensuring stream cover and maintain the overall health of watersheds in this area.
- Continue to utilize the compartment examinations to identify sensitive hollows. This area has unique topography and soils compared to the rest of our district. There are many hills and hollows that have challenges with a loose black soil and drainages that make mitigating the effects of soil disturbance nearly impossible.

### C. Recreation:

- Increase the recreational experience by continuing to maintain the multi-use trail system via the 5-year rotation and continuing to develop trail reroutes for sustainability and usability
- Recruit volunteers to assist with trail maintenance and improvements where possible.

### D. Wildlife:

- Participate in DMAP to mitigate the effects of locally high pressure from deer. This section of SFL is unique in that it was cobbled together from parcels bought from landowners and turned into state forest land with lots of edge and many adjacent and internal private landowners.
- Work with the PA Game Commission to increase awareness of Chronic Wasting Disease and implementing measures to slow the spread across the LMU.

**E. Infrastructure:**

- Maintain the five old family cemeteries found in this landscape to keep them all looking honored and respectable.
- Continue to watch for strategic land acquisitions. High priority areas are connections amongst tracts and any that reduce boundary line.

**F. Public Education and Outreach**

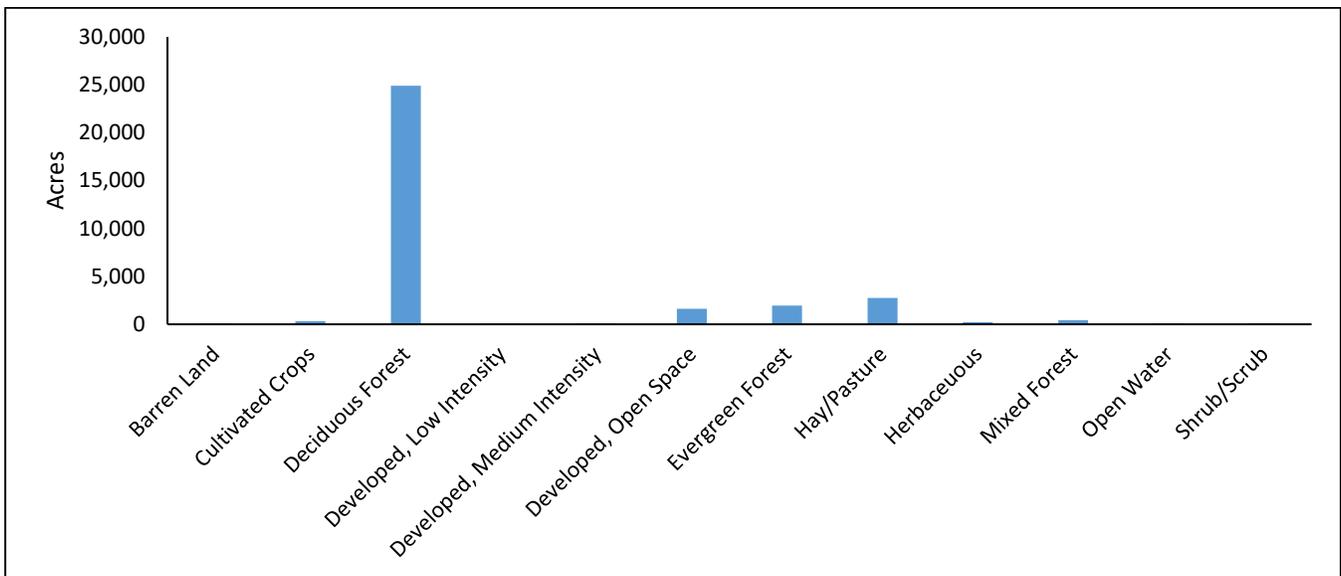
- Increase the recreational experience by creating a driving tour,
- Evaluate some of the various homesteads for possible educational opportunities.
- Create a field to forest wayside at or near Pine Ridge Natural area to highlight the ecosystem changes over time.

## Profile

**Table 1.** LMU acreage: total and state forest land only.

	Acres
State Forest Land	9,824
LMU Total	35,350

**Ecoregion:** Ridge and Valley



**Figure 1.** LMU acreage by land cover categories from the National Land Cover Dataset for the entire LMU.

As you can see from the figure above the majority of the LMU is forest, mostly deciduous, but there is a significant portion of the conifer stands. The remaining uses are farms and houses. The amount of forests is beneficial for this landscape and its associated watersheds. This area is very well suited to its use a working forest and recreational area.

**Table 2.** Miles of roads by category on state forest land in this LMU. Road categories are described on p. 199 of the 2016 SFRMP.

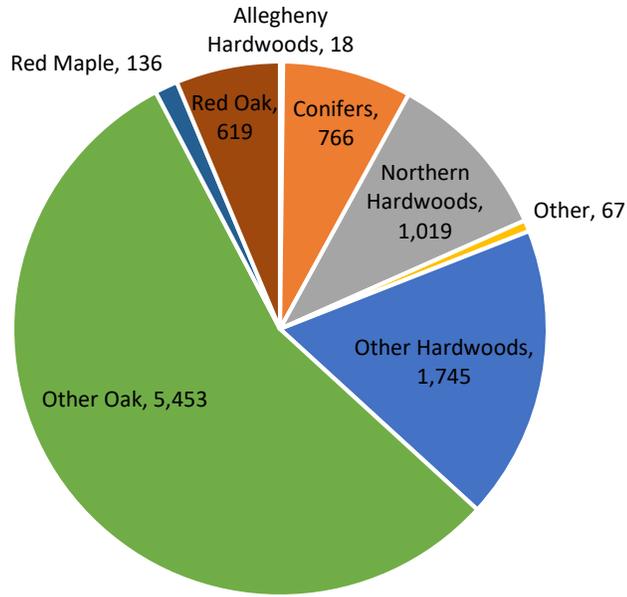
Road Category	Total Miles
Z1 - Public Use Road	33
Z2 - Drivable Trail	1
Z3 - Administrative Road (gated)	19
<b>Total</b>	<b>53</b>

The main access to the recreational opportunities and timber resources in this landscape are from the paved road network of Township and PA Department of Transportation roads. State Route 26 bisects the middle of the lands of this LMU. The townships also have many forest roads that interspersed with our forest road network. Regardless of ownership many of the roads have small pull offs along the berms that allow for parking and access to the state lands. Many scenic driving opportunities in this are

**Table 3.** Miles of trails on state forest land in this LMU open to various types of recreational use. Note that miles are not additive, and a single trail may be open to multiple use types. Shared-use trails, which make up the majority of trails on state forest land, are open to hiking, biking, horseback riding, and cross-country skiing.

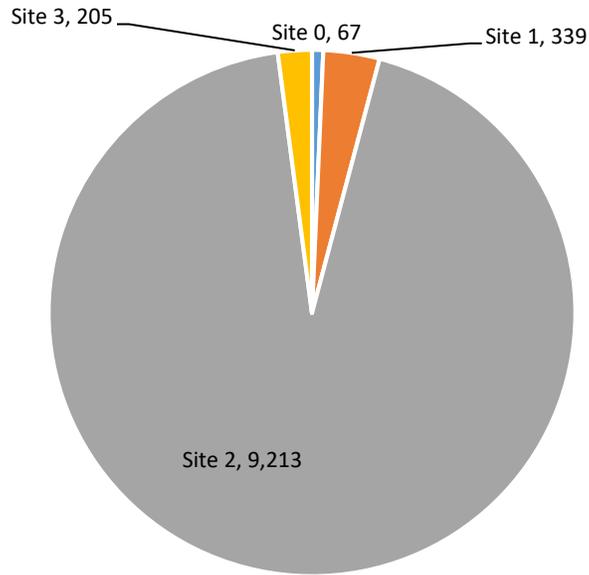
Trail Category	Total Miles
Hiking	27
Biking	23
Equestrian	23
X-Skiing	23
ATV I	0
ATV II	0
Snowmobile/ Joint Use Road	0

This area has many small trails that provide access from trail heads to the larger portions of the of lands that make up this landscape. Due to the cobbled together tracts, variety of road ownerships, and the high amounts of edge found in this LMU, no motorized trails are part of the current or planned uses for this area.



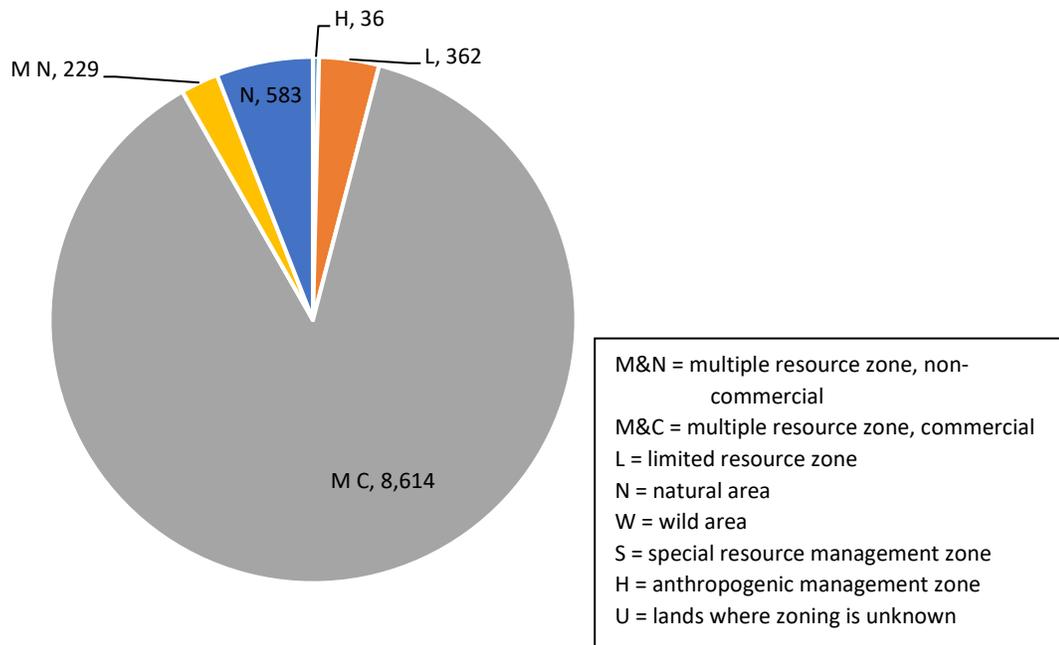
**Figure 2.** Acreage of state forest land in this LMU by aggregated forest type. The forest types are described on p. 108 of the 2016 SFRMP.

Most of the stands in the forested landscape are comprised of mixed oak. However, this landscape does contain the district’s highest concentration of conifer cover and the best hard pine stands. Some of these stands were planted as part of the rehabilitation for the resettlement lands, but other stands are natural. One of the highest priority goals for this landscape is management to maintain a rotation of this hard pine. This area also had some of the only areas in the district that are classified as Northern or Allegheny Hardwoods



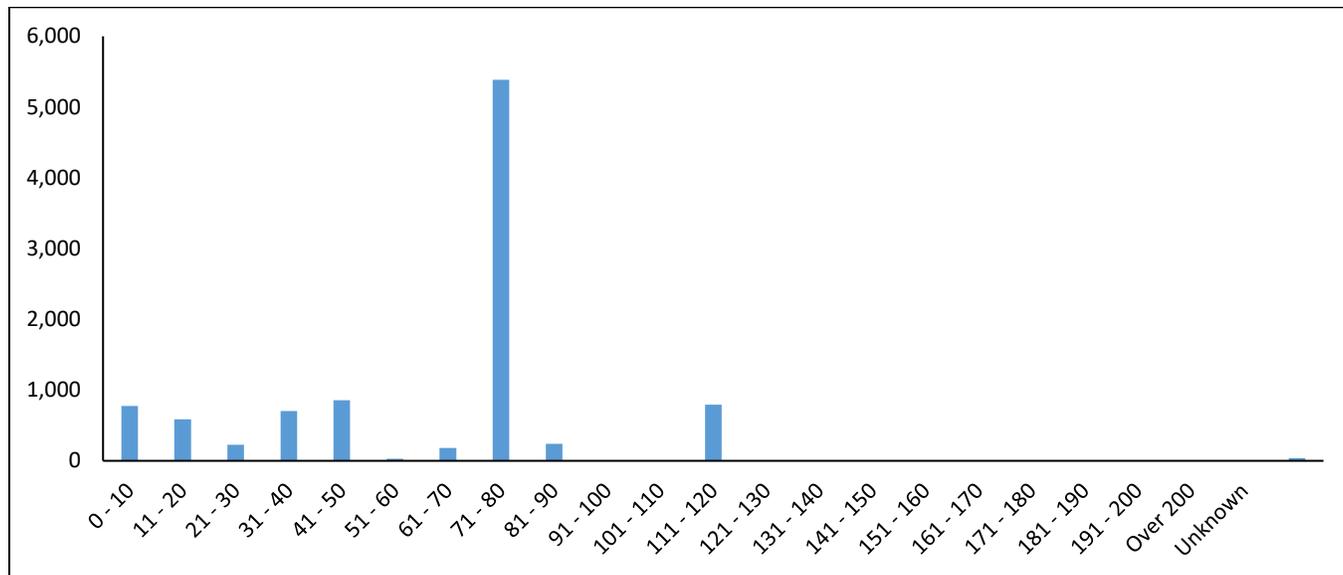
**Figure 3.** Acreage of state forest land in this LMU by site class. Site classes denote the potential quality of the growing site. “Site 0” indicates non-forested lands or forested lands where the vegetation has not yet been typed. Other site classes are described on p. 53 of 2016 SFRMP.

This LMU is almost entirely comprised of site class 2. The small amounts of site 1 are found along stream bottoms. The site 2 acreage remains primarily where we can conduct most of our silvicultural treatments to obtain balanced age classes. However, in this area many of the site 2 side slopes are comprised of soil type that are very sensitive to management activities. Site 3 exists primarily on the ridge tops and shale slopes, so management of these areas is either challenging or impossible.



**Figure 4.** Acreage of state forest land in this LMU by management zone. Management zone is dictated by primary land use and land capability. Further descriptions of commerciality and zoning are found on p. 54 of the 2016 SFRMP.

About 88% of the state forest land in this LMU is available for management activities. However, many of the side slopes in this area are comprised of soil types that are very sensitive to management activities. The most sensitive areas have been moved to either Limited or Non-commercial. The other restricted areas are generally too wet and sensitive for operations.



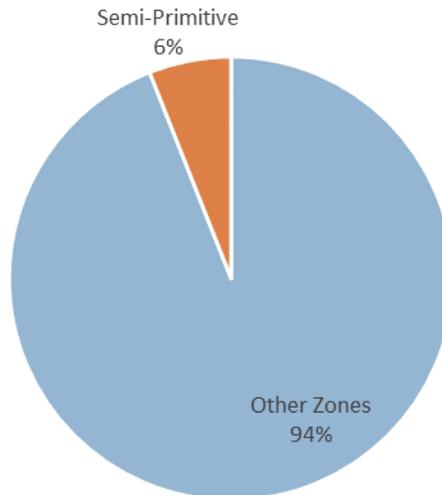
**Figure 5.** Acres of state forest land in this LMU by forest age classes.

Between sale activities and gypsy moth impacts progress is being made towards spreading the age classes across several decades. Based on the acreage available for commercial activities we should be able to balance at least 80% of the acreage across the appropriate rotation for the oak and hard pine species found here.

**Table 4.** Miles of stream by classification within entire LMU. Department of Environmental Protection stream classifications are described in Chapter 93 Water Quality Standards of Title 25 in the Pennsylvania Code.

Class	Total (miles)
Undesignated	21
Warm Water Streams	19
High Quality Waters	42
Exceptional Value Waters	59
<b>Total</b>	<b>142</b>

The interspersed nature of state and private land makes managing the state lands with watersheds in mind critical. The private streams should be examined for their buffering potential to meet statewide goals.



**Figure 6.** Acres of state forest land in this LMU by Recreation Opportunity Spectrum (ROS) classifications (2012). ROS is an inventory system developed by the U.S. Forest Service, to characterize land by types of recreation experiences. ROS is described on p. 42 of the 2016 SFRMP. “Other Zones” refers to Semi-Developed and Developed zones.

A high proportion of this LMU is easily accessed from public use roads. The proximity of these roads causes the ROS designation to fall into the Other Zones category. However, this designation is certainly not indicative of the wild character found in this LMU. A few steps off of nearly any road still feel remote and isolated. This state lands are interspersed with the surrounding farmlands, homesites, and small wood lots that add to the rural and scenic feel of this landscape. The easy access to the forest provide the potential for high recreation use.

**Table 5.** Cultural and Ecological Summary.

<b>Row Labels</b>	<b>Count of Feature</b>
<b>Cultural</b>	<b>99</b>
Homestead	51
Mill Site	1
Old Building Foundation	47
Cemetery	6
<b>Ecological</b>	<b>20</b>
Spring	14
<b>Grand Total</b>	<b>119</b>

This table show the mapped highlights of cultural or ecological significance located within this LMU. These features play a role in the management of this area. The abundance of human infrastructure that was left as part of the transition of this land from private to government ownership has created a unique treasure of history. Though most of these features don't play a large part in how we manage the forest; they are protected and provide a unique look at land use and habitat changes over time.

# Sideling Hill North

## Landscape Management Unit

Revision Date: May 2018

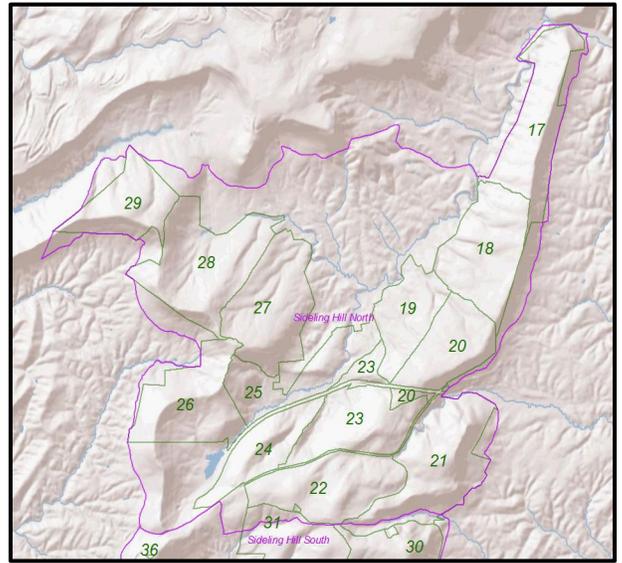
### Overview

The Sideling Hill North LMU is 23,668 acres in size located in the Appalachian Mountain Region of the Ridge and Valley Province. This land is situated in the western Fulton and eastern Bedford Counties. It contains the Buchanan State Forest lands north of US Route 30 including the lands around Wells Tannery, PA.

This area is typical ridge and valley topography of steep side hills with knobs and hollows and valleys with farmland mixed with small wood lots. The lands held by Buchanan State Forest make up about a 67% of the land base and the remaining acres are privately held. Part of the private land is in developments: Breezewood Park, a development in which the lots are 2 to 3 acres, and Valley-Hi Borough, which is designed with all the residences located around Valley-Hi Lake but the “Borough” is about 500 acres in size.

This area is rich in history. In 1758, General Reginald Forbes of the British Army built a road from Carlisle to Pittsburgh through this area. Construction of the South Penn Railroad, as it is called today, was started in 1884, and halted in 1885. This left a short section of railroad bed, a 200 foot-long, hand-made stone culvert, and two incomplete tunnels. Most of this LMU was logged by the Reichley Brothers between 1900 and 1930, using a narrow-gauge railroad. Most of the lands on Sideling Hill and Rays Hill were then acquired by the Commonwealth between 1929 and 1933. Just after the land transfers occurred the CCC program was initiated by the Federal Government and many camps began placement across the Commonwealth. Oregon Camp began in 1933 as a CCC Camp, and then at the start of World War II, became housing for conscientious objectors. After this, the camp was converted to a prison camp to hold German POWs. The Pennsylvania Turnpike also used this area to help house workers constructing the Turnpike constructed through the area. The nation’s first superhighway used roughly the same path as the South Penn Railroad, including the tunnels that were started 50 years earlier through Sideling Hill and Rays Hill. This era came to an end rather quickly when the tunnels and twelve miles of turnpike were bypassed in 1969. The abandoned section of old Turnpike and the tunnels still exist on the landscape, but are now held by a conservancy.

The majority of the waterflow from this landscape feeds into the Susquehanna River but a small portion of the eastern side heads towards the Potomac River. Both basins eventually lead to the Chesapeake Bay. This landscape has a few wetlands and vernal ponds. Work is still in progress to record the location of the vernal ponds and spring seeps. There is a small 5-acre wetland in the headwaters of Wooden Bridge Creek next to the PA Turnpike. The water may be ponded due to its proximity to the turnpike; nevertheless, it lays wet most of the year. This area is currently typed as a hemlock-tuliptree-birch forest. The 30-acre wetland known as the Oregon Swamp is also present in this LMU and contains several species of special concern. The Valley High lake is also present on this landscape but it is on private land surrounded by homesites.



The forests in this landscape are comprised mostly (86%) of the oak forest types. There is only about 1% conifer cover in this landscape. Much of the conifer that exists on the landscape is scattered except for planted (1930's) Norway Spruce, Red Pine, and White Pine in the Oregon Camp and turnpike areas, natural pure white pine stands in Oregon Swamp, and a piece of a red pine plantation on Mountain House Road. White pine is regenerating, especially to the east of Oregon Camp. The hemlocks in this LMU have been impacted by Hemlock Woolly Adelgid.

The health of the landscape is moderate overall. Due to the heavy oak component this area has been heavily impacted by past Gypsy Moth infestations. The Wells Tannery area was the hardest hit in the 1980's and those salvage sales did not regenerate back into much oak. Significant effort will be required to rehab some of these sites in the future. The other areas were all impacted by both the 1980's and the 2007/2008 infestations. Many areas that received spray treatments have recovered, but a sizeable portion of acres had to be harvested and some other areas still have standing mortality. The regeneration treatments from the 2007/2008 round caught an acorn crop and are regenerating better than was anticipated. The lingering effects of these mass mortality events continue to impact our management as many stands have a mid-story layer of undesirable species such as striped maple, black gum, birch, and red maple that require treatment to ensure oak regeneration. Several Oak Wilt sites have been found in the western part of this landscape. These have been treated following conventional wisdom, but these sites should be watched to avoid further spread. Also affecting the future health of these stands, are the numbers of invasive species present in the landscape.

There are many invasive species present in this LMU including Ailanthus, Mile-a-minute, bush-honeysuckles, Japanese stiltgrass, Japanese barberry, Oriental bittersweet, multiflora rose, spotted knapweed, and others. Neighboring properties such as the abandoned turnpike corridor and many other adjacent land owners serve as a repository for seed and make management efforts quite difficult. Japanese stiltgrass can be found throughout the landscape along most road ways and we are starting to see more encroachment into the forest. Ailanthus is scattered throughout the landscape and treated regularly as part of sale management. Mile-a-minute is present in several distinct populations including along the ATV Trail and several roads in Wells Tannery, and along the north end of Summit Road including Thermostat Road. Mile-a-minute biocontrols have been released but buildup of these populations will take time and control is far from a reality. Japanese Barberry has been under management in this LMU for several years and its presence on the landscape is slowly being reduced though many years of further treatment will be required. Bush-honeysuckles (probably *Lonicera mackii*) can be found scattered around the landscape but several clusters exist along Route 915 where it has become a big problem by seeding in all the SFL downhill toward Oregon Camp. It is also a large issue in Sindeldecker Hollow. A small patch (about 1/10th acre) of jetbead, a relatively uncommon invasive shrub, has been located in the southwestern part of the landscape along US Route 30. Jetbead is an attractive shrub in the rose family (*Rosaceae*) that was introduced from Central China, Korea and Japan in 1866. Once established, it shades out native plants in the ground layer and inhibits native tree generation. It spreads by seed and by vegetative means. A control project had been underway for several years and it is anticipated that several more will be needed to eliminate this species from the site. This landscape is exposed to heavy amounts of recreational traffic year-round and it should be monitored to keep in check any new cases of invasive species being introduced.

Due to the quality habitat this landscape has an abundance of game and non-game species of wildlife including deer, turkey, bear, coyotes and small game. This area has not been included in the DMAP program and annual deer surveys indicate that the population is low to moderate on the state forest land. This area is part of the Game Commission's Chronic Wasting Disease management area 2. As such hunters are required to dispose of

deer parts properly and dumpsters have been provided for this disposal and for free testing. There is the possibility that Eastern Timber Rattlesnake and Allegheny Woodrat may be found in this landscape as there is suitable habitat. Since these rocky areas are usually not included within a timber sale, their habitat should remain buffered and protected from disturbance. Several species of concern have been found by the Western Pennsylvania Conservancy in Oregon Swamp. Additionally, the area around Oregon Swamp supported many beavers at one time, but they are believed to be trapped out currently. Planting quaking aspen around the edges of the swamp may be beneficial to this and other species. In the past this area had a few food plots that could benefit from revitalization with low maintenance native plant species.

Many recreation activities are available on this landscape: hunting, fishing, ATV riding, Snowmobile riding, biking, horseback riding, mushroom picking, and hiking. All the state forest land in this LMU is managed under the Nation Park Service Land and Water Conservation Fund that provides matching grants to States and local governments for the acquisition and development of public outdoor recreation areas and facilities and ensures that these lands stay protected for outdoor recreation and open for use.

The Sideling Hill ATV Trail is a 15-mile summer trail located in this landscape that provides recreational opportunities for many ATV riders. The Sideling Hill Snowmobile Trail System is also located in this landscape providing recreational use for snowmobilers on the rare occasions that snow is present in this southern district. The Snowmobile Trail is divided into two disconnected sections that are separated by the privately owned abandoned turnpike and the active PA Turnpike. The larger section of the Sideling Hill Snowmobile Trail has a pinch point at Route 915 as it provides the only available place for the trail to cross the Turnpike.

Public roads in the landscape are the PA Turnpike I 76, U.S. Route 30, State Route 915, Mountain House Road, Mountain Chapel Road (Township), Oregon Road (State Forest Class 1 Road), Garlick, Cove Road, Horton Road, Enid, Summit Roads Laidig Spring Trail (State Forest Drivable Trail), Jerry Park Trail ,King Trail (State Forest Drivable Trail), and the several roads through the two housing developments.

The district hiking trails located in this landscape are Warsing Trail, Childers Ridge Trail, Waterflat Trail, Moseby Trail, The Sideling Hill ATV Trail, Huckleberry Trail, Meredith Trail, Tarkiln Trail, Red Bank Trail, Sproat Trail, Woodridge Road, Big Fill Trail, Railroad Arch Trail, South Penn Railroad Trail, Snowfield Trail, Duvall Trail, Reichley Railroad Trail, Tunnel Trail, Waltz Trail (the Old Forbes Road, Old Oregon Road), Laidig Spring Trail, Jerry Trail South, Jerry Trail North, Jerry Road North, Sciotha Trail, King Trail, Deep Hollow Trail, Winter Trail, Old Railroad Grade Trail, Hinish Trail, Prop Trail, Cabin Trail, Ross Road, Anderson Trail, Woodcock Trail, Rocky Face Trail, Keith Trail, Gracey Trail, and Vista Trail. Prior to 1969 Jerry Road and Deep Hollow Trail were much more useful thoroughfares. That was when the Pennsylvania Turnpike was able to bypass the Sideling Hill and Rays Hill Tunnels, thereby creating these two dead ends. Also, the potential exists to add additional portions of the railroad grade made by the Reichley Brothers, who logged the area using a narrow-gauge railroad, circa 1900 through 1930.

This landscape also boasts several vistas. The Vista Trail leads to a vista that faces the valley to the east, and is located at the northern end of the landscape. The Summit Road has a vista that serves as a location for licensed hang gliders to launch and a helispot for emergency evacuations or treatment of forest resources. The Fisher Road also has a vista that serves as a backup location for hang gliding. Also, along Route 915, near Snowfield Trail, there is a small pull off with a vista overlooking the Woodridge Hollow area.

There is also a corridor of privately owned land that was the abandoned turnpike that also has recreation potential. This land has been the recipient of several studies and has the potential to be developed. The

Southern Alleghenies Conservancy owns the land and started a process called Pike 2 Bike that floundered due to lack of funding. More recently this area was rebranded as TOPP (The Old Pennsylvania Pike), and feasibility studies to add parking, lighting, and rehab trail surfaces are in progress. It remains to be seen what will happen in this area, but recreational planning in this landscape must consider this area of potential activity.

There are only a few Leased Forest Campsites in this landscape. One along State Route 915 near the Turnpike has virtually no impact on management activities because it is in a narrow patch of woods which has already been heavily influenced by these two roads. Another is the only building still standing from the original Oregon CCC Camp. Because it used to be part of the Oregon Forest Foreman Headquarters, the lessee still gets occasional visitors who stop and ask directions.

There are several power line rights-of-way in this landscape mainly along road edges. A Sun Pipeline passes through the landscape from east to west roughly parallel to U.S. Route 30, but it has not been pressurized in many years. It is passable by ATV and is useful for access to this steep, remote area.

Compartments: 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29

## Priority Goals

### A. Silviculture:

- Conduct sales to balance age classes across the landscape. This area has mixed potential for regeneration sales. The Summit Road and Jerry Road areas have many stands with good regeneration potential and response to harvest. The Wells Tannery Area has lower quality sites (soil, aspect, history of gypsy moth, etc.) that may need rehabilitation to reach productive potential.
- Continue to treat sales with prescribed fire or cut stump treatments in the contract to facilitate treating the many areas that have competing mid-story.
- Maintain the American Chestnut Plantation that has been established in this area and monitor the natural chestnut regeneration found in many sales of this LMU.
- Mitigate, control and eradicate as possible the many invasive species found in this LMU. Evaluate and manage trouble spots in all areas of active management. Specific targets for treatment in this LMU are to increase the dispersion of biocontrols for Mile-a-minute and finding ways to control on high use areas that have the greatest spread potential such as along the ATV Trail; and continuing the management of Japanese Barberry where years of management have noticeably reduced populations.

### B. Water:

- Preserve water quality by ensuring stream cover and maintain the overall health of watersheds in this area. This LMU contains the headwaters of Sideling Hill and Woodbridge Creeks and other wet areas (Oregon / adjacent Wishart swamp). Create plans for managing and maintaining the health of the Oregon Swamp and other nearby wet areas to promote multifunction ecological values rather than just buffer these areas from sales.

### C. Recreation:

- Increase the recreational experience by continuing to maintain the multi-use trail system via the 5-year rotation and continuing to develop trail reroutes for sustainability and usability. Current projects include working with the Friends of Buchanan to create additional trail loops, and those designed with special uses (bike, horse) in mind.
- Recruit volunteers to assist with trail maintenance and improvements where possible.

- Continue working with The Old Pennsylvania Pike (TOPP - formerly Pike2Bike) program to assist them and ensure our needs are in the mix.
- Continue to maintain the vistas in this LMU (Route 915, Summit Road Helispot, Fisher Road Hang glider launch). Many users come for the view of the landscape and two of these spots offer trained users the ability to hang-glide or parasail.
- Continue yearly inspections of the leased campsites found in this LMU and work to ensure that all the sites maintain compliance with established standards.

**D. Wildlife:**

- Rehabilitate the old food plots to native species seed mixes that will benefit a wide variety of wildlife including deer, pollinators, turkey, and ruffed grouse. Specific targets in this LMU are the Hinish Trail Landings, and areas around Jerry Road.
- Work with the PA Game Commission to increase awareness of Chronic Wasting Disease and implementing measures to slow the spread across the LMU.

**E. Infrastructure:**

- Continue maintenance and improvements for the Sideling Hill ATV and Snowmobile trails as well as the Jerry Springs pavilion.
- Maintain the Oregon Road Ballfield site which is a destination for many horse campers, boy scout gatherings, and other large group venues.
- Continue to watch for strategic land acquisitions. High priority areas include connections for the snowmobile trail.

**F. Public Education and Outreach**

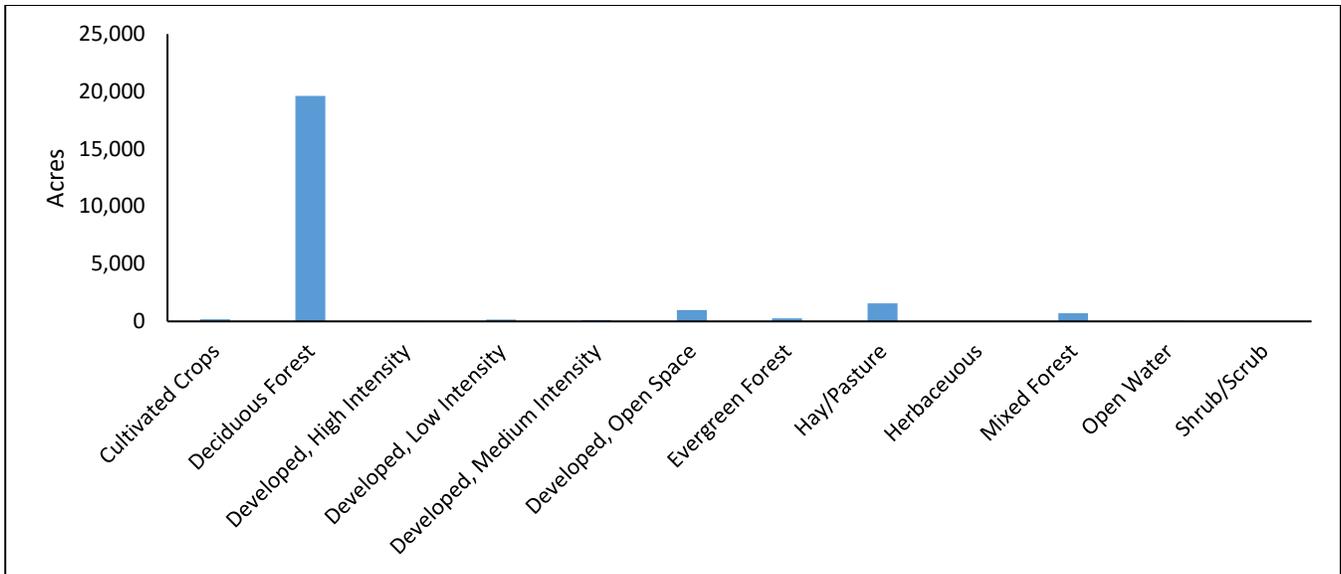
- Maintain the area around the CCC Camp and continue to develop the interpretation for this site.
- Create short term interpretation at sale locations to educate the public about the cut stump treatments used to treat the undesirable and competing mid story species.
- Add interpretation for Railroad Trestles and Forbes Road (915/ Bill’s Place) to highlight the rich local history found in this LMU and examine the potential to create driving and walking tours for these highlights.

## Profile

**Table 1.** LMU acreage: total and state forest land only.

	Acres
State Forest Land	15,803
LMU Total	23,668

**Ecoregion:** Ridge and Valley



**Figure 1.** LMU acreage by land cover categories from the National Land Cover Dataset for the entire LMU.

As you can see from the figure above the majority of the LMU is forest, mostly deciduous. The remaining uses are farms and houses. This area is very well suited to its use a working forest and recreational area. Natural regeneration is abundant in many areas. Increasing conifer cover would be beneficial for the habitat of the area.

**Table 2.** Miles of roads by category on state forest land in this LMU. Road categories are described on p. 199 of the 2016 SFRMP.

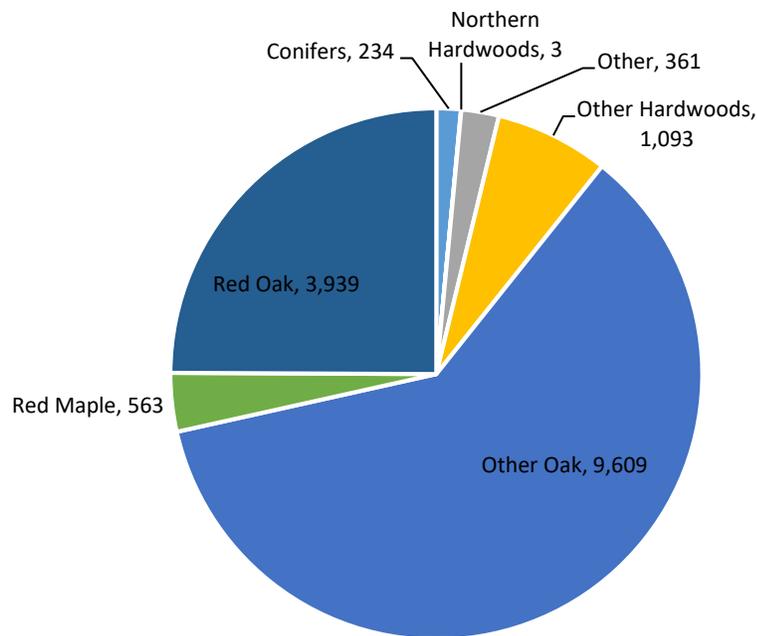
Road Category	Total Miles
Z1 - Public Use Road	30
Z2 - Drivable Trail	9
Z3 - Administrative Road (gated)	25
<b>Total</b>	<b>63</b>

This LMU has excellent access for recreational and timber resources over most of the state forest land. US Route 30, PA Rout 915 and several paved and unpaved township roads lead to the Bureau’s public use roads. The public use roads in this area are heavily traveled by the public for recreational uses. Many of the Z3 roads are used by recreationalist as trails to access the interior portions of this Landscape.

**Table 3.** Miles of trails on state forest land in this LMU open to various types of recreational use. Note that miles are not additive, and a single trail may be open to multiple use types. Shared-use trails, which make up the majority of trails on state forest land, are open to hiking, biking, horseback riding, and cross-country skiing.

Trail Category	Total Miles
Hiking	61
Biking	61
Equestrian	61
X-Skiing	61
ATV I	15
ATV II	15
Snowmobile/ Joint Use Road	31

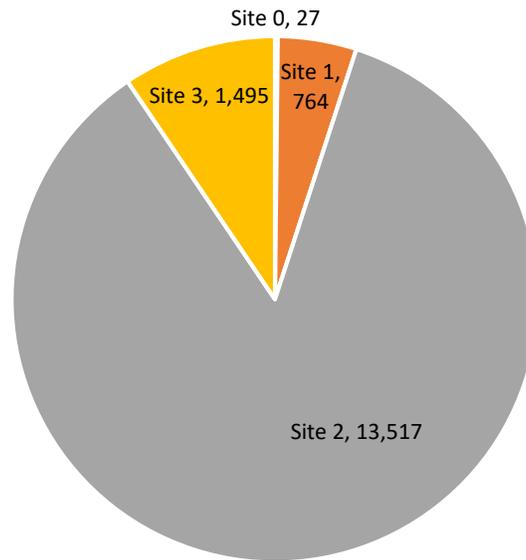
There are many district trails in this landscape some created by the CCC, others installed as firebreaks, and some designed for motorized activity. There are several trails in this area with unique historical features.



**Figure 2.** Acreage of state forest land in this LMU by aggregated forest type. The forest types are described on p. 108 of the 2016 SFRMP.

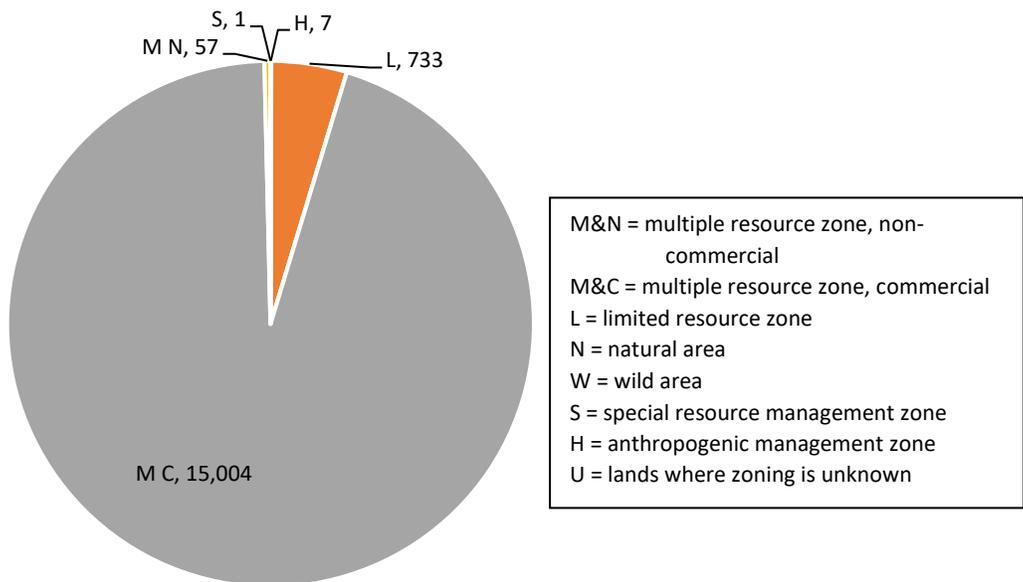
Most of the stands in the forested landscape are comprised of mixed oak. Due to this high oak composition, these stands are susceptible to impact from gypsy moth and other such insects and diseases. The Wells Tannery area was hard hit in the 1980's and did not regenerate well. The area around Jerry Springs was especially hard hit in the 2007-2008 infestation, but many of those sites are showing signs of good oak percentages in the new

stands. Conifer cover in this LMU is rather low and efforts to increase this component are part of the goals for this area especially along the stream corridors.



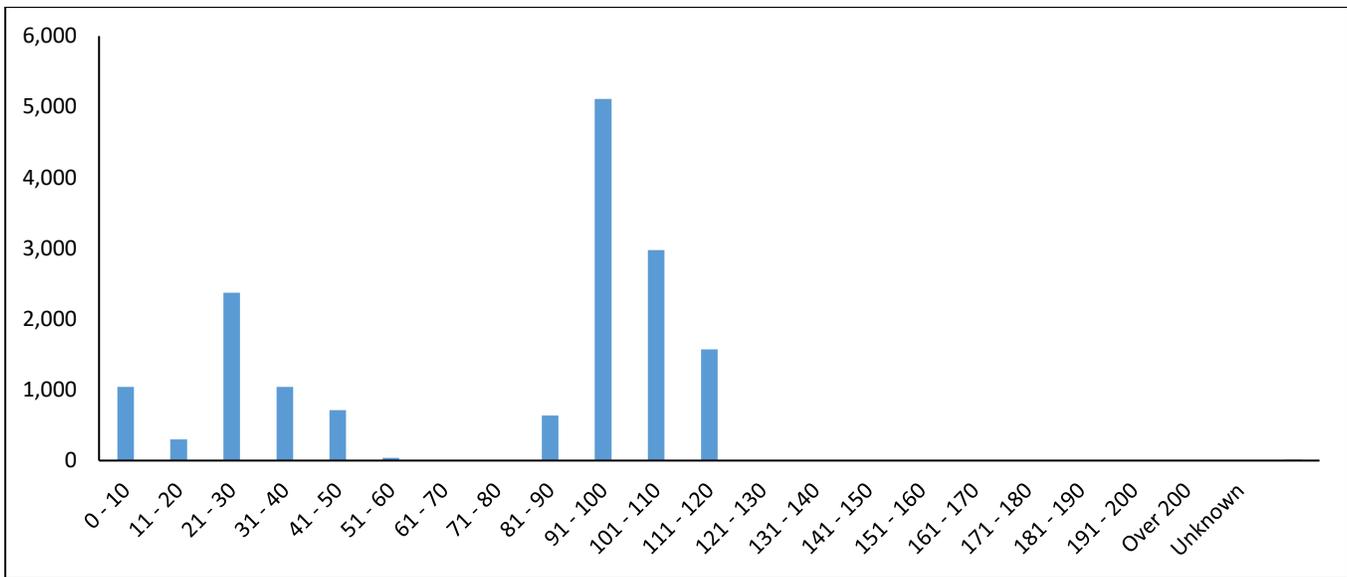
**Figure 3.** Acreage of state forest land in this LMU by site class. Site classes denote the potential quality of the growing site. “Site 0” indicates non-forested lands or forested lands where the vegetation has not yet been typed. Other site classes are described on p. 53 of 2016 SFRMP.

This LMU is mostly site 2 and is a prime location for district timber management as oak regeneration is often abundant. The site 3’s stands are generally in the tip of the ridge along Ray’s Hill and have many issues with species composition and invasive species interference.



**Figure 4.** Acreage of state forest land in this LMU by management zone. Management zone is dictated by primary land use and land capability. Further descriptions of commerciality and zoning are found on p. 54 of the 2016 SFRMP.

About 95% of the state forest land in this LMU is available for management activities. The other areas are generally too steep, too rocky, or too wet and sensitive for operations.



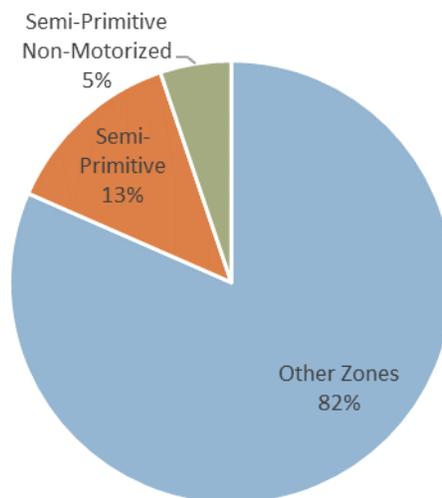
**Figure 5.** Acres of state forest land in this LMU by forest age classes.

Between sale activities and gypsy moth impacts progress is being made towards spreading the age classes across several decades. Based on the acreage available for commercial activities we should be able to balance most of the acreage in this LMU across the appropriate rotation for the primarily oak species found here.

**Table 4.** Miles of stream by classification within entire LMU. Department of Environmental Protection stream classifications are described in Chapter 93 Water Quality Standards of Title 25 in the Pennsylvania Code.

Class	Total (miles)
Undesignated	0
Warm Water Streams	1
High Quality Waters	65
Perennial Cold Water Streams	2
<b>Total</b>	<b>68</b>

Oregon Creek, Wooden Bridge Creek, Sideling Hill Creek, Meredith Run, and Laurel Fork are the main streams for this LMU. These streams and their basins are designated as a High Quality-Cold Water Fisheries by DEP. They Sideling Hill Creek eventually flows into the Juniata River and contribute to the Susquehanna River Basin. There are also a few tributaries on the east side of Sideling Hill that flow from state forestland and head south to the Potomac. Valley High Lake and Oregon Swamp are two other notable water features in the landscape. The private streams should be examined for their buffering potential to meet statewide goals.



**Figure 6.** Acres of state forest land in this LMU by Recreation Opportunity Spectrum (ROS) classifications (2012). ROS is an inventory system developed by the U.S. Forest Service, to characterize land by types of recreation experiences. ROS is described on p. 42 of the 2016 SFRMP. “Other Zones” refers to Semi-Developed and Developed zones.

A high proportion of this LMU is easily accessed from the main PA DOT roads which allows for ease of use but impacts the ROS zones. The PA Turnpike, US Route 30, and PA Route 915 all run through the area carving it up into chunks. Coupled with the motorized trails that run through this landscape wild character can be somewhat compromised. Even with all this activity the scenery and recreational opportunities are a big draw to the area.

**Table 5.** Cultural and Ecological Summary.

Row Labels	Count of Feature
<b>Cultural</b>	<b>8</b>
CCC Camp	1
Logging RR Grade	2
Mill Site	1
Old Building Foundation	2
Spring Water Collection Site	2
<b>Ecological</b>	<b>12</b>
Quarry	1
Spring	10
Vernal Pool	1
<b>Grand Total</b>	<b>20</b>

This table show the mapped highlights of cultural or ecological significance located within this LMU. These features play a role in the management of this area. The CCC and Railroad history have had a huge impact on the forest and management opportunities and resources available today.



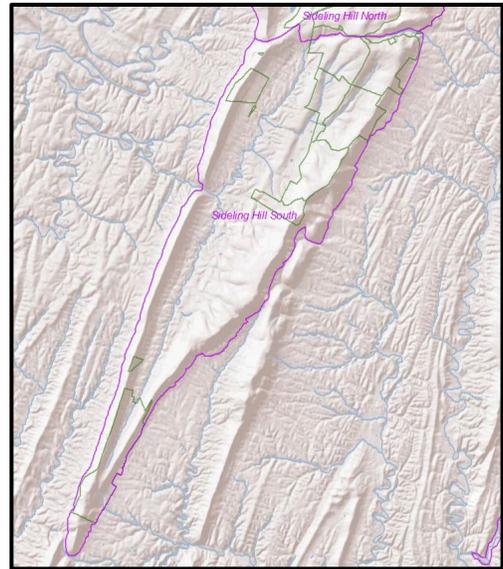
# Sideling Hill South

## Landscape Management Unit

Revision Date: May 2018

### Overview

The Sideling Hill South LMU is 30598 acres in size located in the Appalachian Mountain Region of the Ridge and Valley Province. This land is situated in the western Fulton County and eastern Bedford County and in the center of the Buchanan Forest District. This area is typical ridge and valley topography with knobs, hollows, and valleys and farmland mixed with small wood lots. It contains the 8800 acres of State Forest Land south of US Route 30 including the Town Hill Tract and the Sideling Hill Picnic Area. The



state forest land is about 29% of the land base and the remaining portions are 12% PA Game Commission, 59% privately held. The land base is 82% forested most with about 80% deciduous forest and 2% conifer cover. The remaining land is 6% developed home and business sites and 12% agricultural lands generally located at the base of the ridge. Nearly all the state forest land in this LMU was cut over in the late 1800 and early 1900's. Most of the land in the Sideling Hill area was purchased by the Commonwealth between 1929 and 1933.

The waterflow from this landscape feeds mostly into the Susquehanna River Basin but about a quarter drains into the Potomac River Basin. Both basins eventually lead to the Chesapeake Bay. Nearly all the streams on state forest land are classified as high-quality streams including: all branches of Roaring Run, Bruch Creek, Little Brush Creek, Laurel Run and Barton Run. This landscape has very few wetlands due to the high elevation areas and slope, but there are several farm ponds, a few wet areas near Roaring Run, and a few confirmed vernal ponds.

The state forests in this landscape are comprised mostly (87%) of the oak forest types. The mix of these oak types are 37% Red Oak-Mixed Forest, and 50% Mixed Oak – Mixed Hardwoods Forest. There is less than 1% conifer cover on the state forest lands in this landscape most of which is found adjacent to the creeks. The age class of the mature forest is around 80-100 years. Most (94%) of the state forest in this LMU is classified as M and C, this availability for treatment has allowed us to make significant progress towards balancing the age classes across the entire LMU. The overall health of this landscape is generally good. However, this LMU has experienced some impact from Gypsy Moth infestations in the 1980's and the early 2000's. Some have resulted in salvage harvest that did not regenerate back to their historic composition and some areas now have an undesirable mid-story of red and striped maple, black birch, or black gum that require treatment during or before current sales.

There are several invasive species present on the landscape including ailanthus, Japanese stilt grass, Japanese Barberry, and Mile-a-minute. Ailanthus is being treated on the LMU as it is discovered or prior to site disturbance. This LMU has the lowest concentration of this species in the district. It also happens to be the area least impacted by mile-a-minute as well, and we treat mile-a-minute as it is located. Japanese stiltgrass is growing throughout the landscape and we are testing various treatments and evaluating the best options to

create a treatment rotation to limit the spread of this species into the forest. Japanese barberry is also low in density over this LMU but it is moving into some old timber sale landings from private land. There is a severe problem with bittersweet along Welsh Road. Several times we have attempted to contract treatments for this area, but the terrain and density make this unappealing for contractors and prohibitively expensive to treat so currently the treatment plan is keep it from impacting the road and culvert pipes.

This landscape has an abundance of game and non-game species of wildlife including deer, turkey, bear, coyotes and small game. This area has not been included in the DMAP program and annual deer surveys indicate a low to moderate deer population. There is the possibility that Eastern Timber Rattlesnake and Allegheny Woodrat may be found in this landscape as there is some suitable habitat. There are no food plots here but some of the timber sale haul roads are seeded with a grass and wildlife mix after retirement. There are possible areas to do wildlife improvement projects in this landscape when time and funds come available.

Recreational use is a key function of this landscape. It's not uncommon to see SFL visitors just out for a peaceful, undisturbed walk enjoying nature. The Sideling Hill Picnic Area is heavily used by state forest visitors and by those just passing through on US Route 30. The Bark Road Vista is a short drive south from the Picnic Area and many visitors stop to look out over Fulton County. Hunting, hiking, mountain bike riding, horseback riding, and snowmobile riding are the most prevalent recreation activities in this landscape. There are many roads within this LMU that can be used to access the various parts of the state forest land including U.S. Route 30, Bark Road, Pittman Road, Betsy Road, Akersville Road, Welsh Road, and Indian Grave Road. Once there many district hiking trails permit access to the internal parts of the forest and create loops to traverse the area. These trails include Mitchell Trail, Ensley Trail, Cliff Trail, Roaring Run Trail, Tower Trail, Fire Line Trail, Bald Hill Trail, Jackson Trail, Peck Trail, Roaring Run Road, and Barton Trail. Despite the general ease of access here there are several small tracts of land in this LMU that are difficult to access due to "landlock" issues. This LMU also boast some motorized recreational opportunities as Bark Road and several adjacent trails are part of the Sideling Hill Snowmobile Trail. Plans are slowly in the works to connect sections of old haul road to create a loop or alternate trail to the riding the busy joint use Bark Road.

There are no leased campsites in this area; however, there is a small privately-owned cabin colony along Bark Road and in recent years some owners have chosen to use these as year-round residences. There are several power line rights-of-way mostly located in the northern part of the landscape around US Route 30. There are also several towers clustered around the former site of the Sideling Hill Fire Tower whose uses include FCC, PA Turnpike, and Texas Eastern communications.

Compartments: 30, 31, 32, 33, 34, 35, 36, 37

## Priority Goals

### A. Silviculture:

- Conduct sales to balance age classes across the landscape. This area has excellent potential for regeneration sales.
- Continue to treat sales with prescribed fire or cut stump treatments in the contract to facilitate treating the areas that have competing mid-story.
- Mitigate, control and eradicate as possible the invasive species found in this LMU. Evaluate and manage trouble spots in all areas of active management. Specific targets for treatment in this LMU are to continue treatment of Mile-a-minute and Ailanthus at the Town Hill Tract and continuing to test management options for Japanese stiltgrass especially along Akersville Road.

**B. Water:**

- Develop plans to conserve and enhance the few known vernal ponds found in this LMU above the typical buffering from sales and maintenance activities
- Preserve water quality by ensuring stream cover and maintain the overall health of watersheds in this area. This area is the location for the headwaters of Brush Creek and Roaring Run. Fishing is a high recreational value here and increasing conifer cover would be beneficial for fish habitat and water quality.

**C. Recreation:**

- Increase the recreational experience by continuing to maintain the multi-use trail system via the 5-year rotation and continuing to develop trail reroutes for sustainability and usability. Current projects include working with the Friends of Buchanan to create additional trail loops, and those designed with special uses (bike, horse) in mind.
- Work with interested constituents and friends for targeted trail improvements. Upcoming projects include working towards Snowmobile Trail improvements that will reduce user conflicts.
- Continue to maintain the Sideling Hill Picnic Area and Bark Road Vista while mitigating user conflicts and graffiti.

**D. Wildlife:**

- Work with the PA Game Commission to increase awareness of Chronic Wasting Disease and implementing measures to slow the spread across the LMU.

**E. Infrastructure:**

- Monitor and work with lessees to maintain the tower leases located along the top of the ridge. These towers provide communication and data needs for many citizens / agencies.
- Continue to watch for strategic land acquisitions. High priority areas include access for isolated tract by the Turnpike, and the small tract near Town Hill.

**F. Public Education and Outreach**

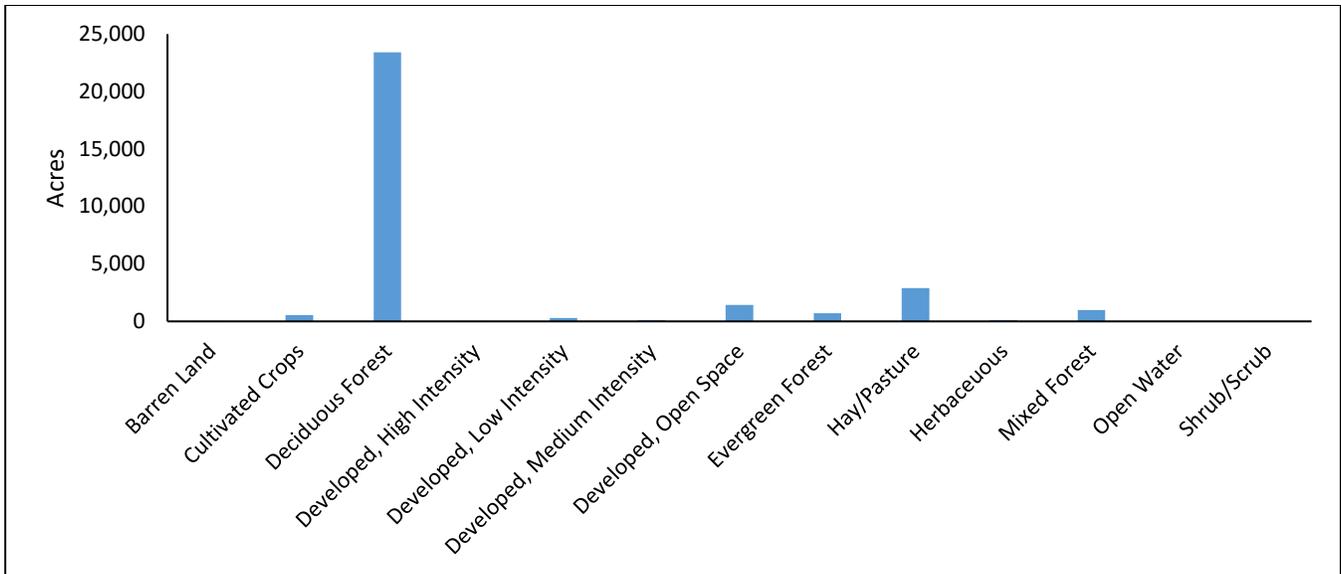
- Reduce the amount of high grading and other questionable forest practices that occur on neighboring lands.

## Profile

**Table 1.** LMU acreage: total and state forest land only.

	Acres
State Forest Land	8,800
LMU Total	30,598

**Ecoregion:** Ridge and Valley



**Figure 1.** LMU acreage by land cover categories from the National Land Cover Dataset for the entire LMU.

As you can see from the figure above the majority of the LMU is forest, mostly deciduous. The remaining uses are farms and houses. The amount of forests is beneficial for this landscape and its associated watersheds. This area is very well suited to its use as a working forest and recreational area.

**Table 2.** Miles of roads by category on state forest land in this LMU. Road categories are described on p. 199 of the 2016 SFRMP.

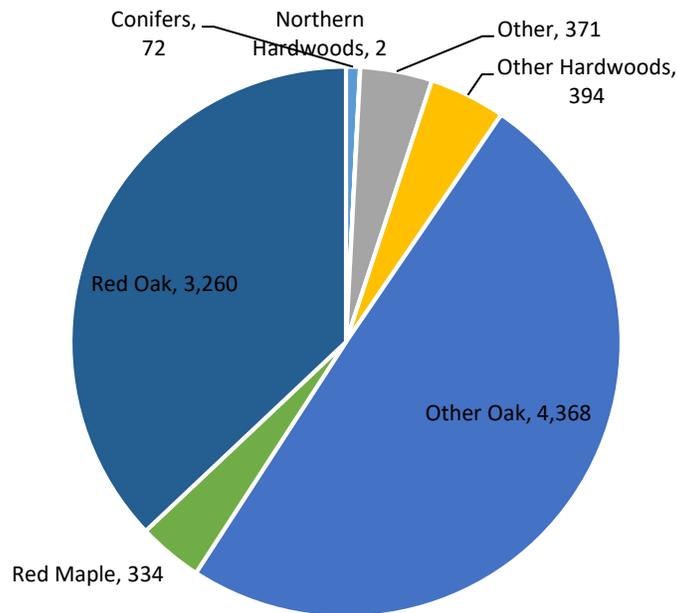
Road Category	Total Miles
Z1 - Public Use Road	13
Z2 - Drivable Trail	5
Z3 - Administrative Road (gated)	9
<b>Total</b>	<b>27</b>

This area is easily accessible via the many public use roads and drivable trails that run the ridges or create connectors across. These roads provide access for recreational uses as well as access to the many acres of working forest that exist in this LMU. The remaining administrative roads were put in to access timber resources and are not suitable for much public access other than as trails.

**Table 3.** Miles of trails on state forest land in this LMU open to various types of recreational use. Note that miles are not additive, and a single trail may be open to multiple use types. Shared-use trails, which make up the majority of trails on state forest land, are open to hiking, biking, horseback riding, and cross-country skiing.

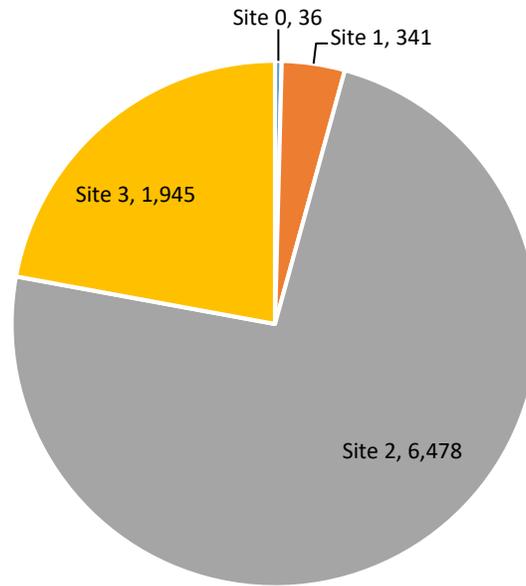
Trail Category	Total Miles
Hiking	24
Biking	24
Equestrian	24
X-Skiing	24
ATV I	0
ATV II	0
Snowmobile/ Joint Use Road	16

There are numerous shared use trails on this LMU that provide easy access to the resources and traverse a wide variety of habitats and terrain. Because this area is a large part of our commercial land base there are numerous improved trails that were used initially to haul timber but have been repurposed to provide loops and connections throughout the landscape.



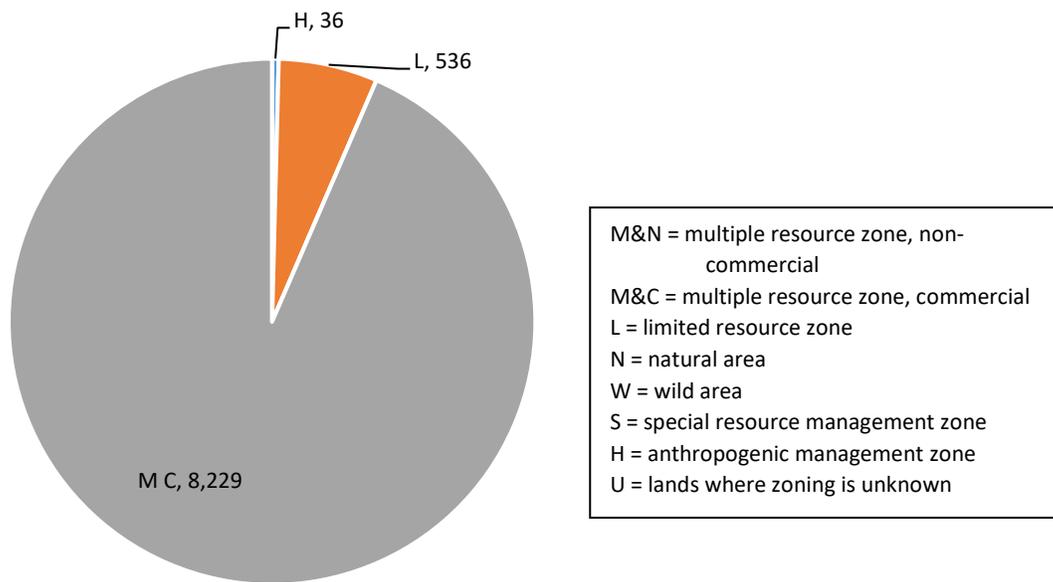
**Figure 2.** Acreage of state forest land in this LMU by aggregated forest type. The forest types are described on p. 108 of the 2016 SFRMP.

Most of the stands in the forested landscape are comprised of a variety of oak species. Due to this high oak composition, these stands are susceptible to impact from gypsy moth and other such insects and diseases. There are a few other stands of red maple and birch that mostly resulted from the regeneration of stands that were harvested due to gypsy moth mortality. There is a distinct lack of conifer cover in this LMU and efforts to increase this component are part of the goals for this area.



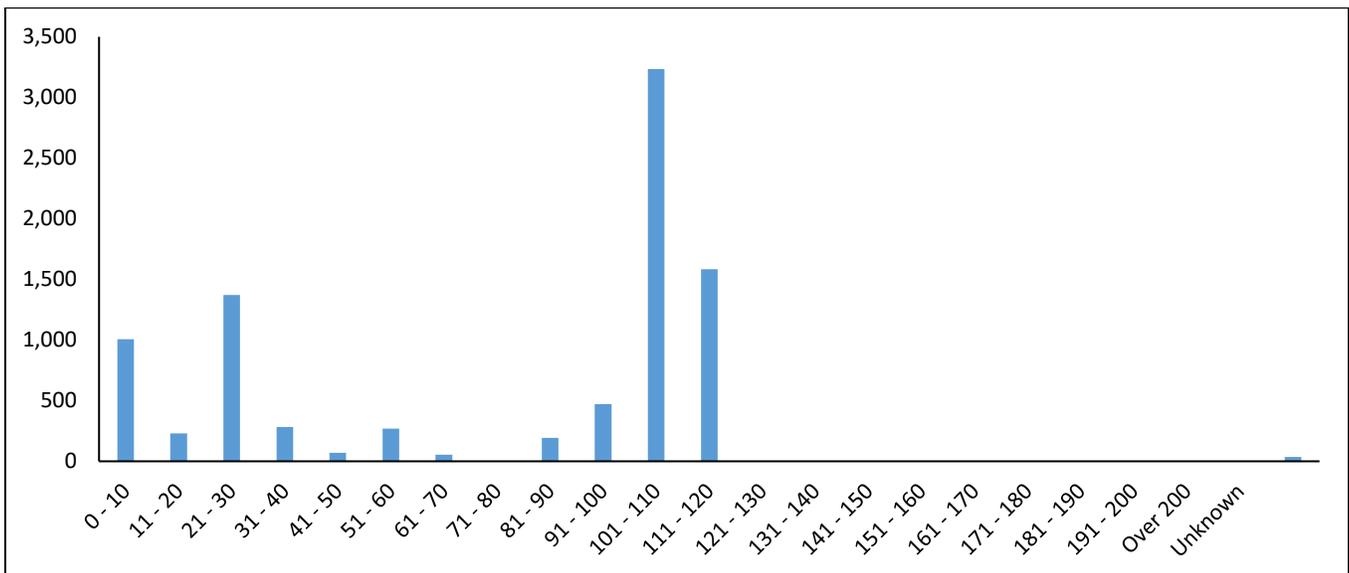
**Figure 3.** Acreage of state forest land in this LMU by site class. Site classes denote the potential quality of the growing site. “Site 0” indicates non-forested lands or forested lands where the vegetation has not yet been typed. Other site classes are described on p. 53 of 2016 SFRMP.

This LMU is predominantly site 2 except for the very tops of the ridge where it transitions to site 3. The very limited amounts of site 1 areas are found immediately adjacent to drainages and are generally unavailable to harvest. Many of the site 2 stands in this area have natural regeneration that tends to thrive post-harvest. Even the site 3 stands in this area are generally workable though often they have an undesirable mid-story that requires treatment during harvest.



**Figure 4.** Acreage of state forest land in this LMU by management zone. Management zone is dictated by primary land use and land capability. Further descriptions of commerciality and zoning are found on p. 54 of the 2016 SFRMP.

About 94% of the state forest land in this LMU is available for management activities. The other areas are generally too steep, too rocky, or too wet and sensitive for operations.



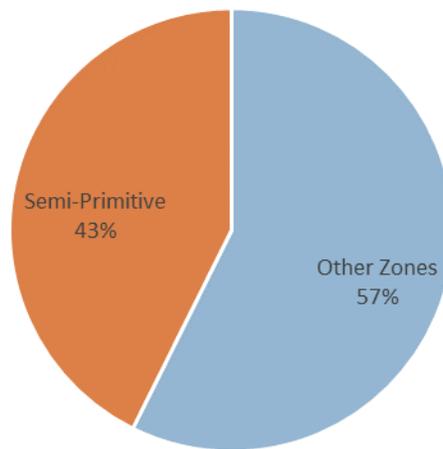
**Figure 5.** Acres of state forest land in this LMU by forest age classes.

Between sale activities and gypsy moth impacts progress is being made towards spreading the age classes across several decades. Based on the acreage available for commercial activities we should be able to balance at least 90% of the acreage across the appropriate rotation for the primarily oak species found here.

**Table 4.** Miles of stream by classification within entire LMU. Department of Environmental Protection stream classifications are described in Chapter 93 Water Quality Standards of Title 25 in the Pennsylvania Code.

Class	Total (miles)
Undesignated	3
Warm Water Streams	1
High Quality Waters	67
Perennial Cold Water Streams	3
Exceptional Value Waters	0
<b>Total</b>	<b>75</b>

Nearly all the streams in this LMU are classified as high quality, the management of our forest buffers is critical to maintaining these healthy streams. The private streams should be examined for their buffering potential to meet statewide goals.



**Figure 6.** Acres of state forest land in this LMU by Recreation Opportunity Spectrum (ROS) classifications (2012). ROS is an inventory system developed by the U.S. Forest Service, to characterize land by types of recreation experiences. ROS is described on p. 42 of the 2016 SFRMP. “Other Zones” refers to Semi-Developed and Developed zones.

A high proportion of this LMU is easily accessed from the public use roads. The interior of the forest is where there is a lack of open roads creating the semi-primitive non-motorized designations. This LMU is surrounded by farmlands and homesites which make up the other zones in this area. Regardless of the designation this area is an excellent location for recreation and having forests with ease of access can outweigh the vast remoteness of some of the more primitive zones especially for a quick getaway to the woods.

**Table 5.** Cultural and Ecological Summary.

<b>Row Labels</b>	<b>Count of Feature</b>
<b>Cultural</b>	<b>2</b>
Old Building Foundation	1
Spring Water Collection Site	1
<b>Ecological</b>	<b>11</b>
American Chestnut > 10 dbh	1
Quarry	1
Spring	3
Vernal Pool	6
<b>Grand Total</b>	<b>13</b>

This table shows the mapped highlights of cultural or ecological significance located within this LMU. These features play a role in the management of this area. The chart shows the value of this forest for aquatic habitat as several springs and vernal pools are present on this landscape.



## Glossary of Terms and Acronyms

### Terms:

**Acceptable Regeneration** – Seedlings or saplings of specific tree species deemed appropriate by forest manager to replace larger trees removed by timber harvesting on an individual stand basis. Appropriate species often include species that currently exist in the overstory, species of desirable trees for the area/region, or native species that can thrive in the ecosystem of the site.

**Acid Deposition** — Acid deposition occurs when acid-forming substances are transferred from the atmosphere to the surface of the earth (into the soil), often through precipitation. The deposited materials include ions, gases, and particles typically resulting from power generation and heavy manufacturing. Research has shown that acid deposition can cause slower growth, injury, or death of trees, particularly sugar maple and red spruce. Acid deposition generally causes stress to trees by interfering with calcium and magnesium nutrition and the physiological processes that depend on these elements.

**Age Class** — An interval into which the age range of trees or forest stands is divided for classification or use (e.g., 0–10 years, 10–20 years).

**Basal Area** — The area of the cross section of a tree stem, including the bark, generally at breast height (4.5 feet above the ground).

**Buffer Treatment (harvesting)** – A management activity that happens within a vegetated strip or management zone of varying length and width maintained along a road, stream, wetland, lake, or other special feature. Buffer areas are managed differently than other zones of state forest land for many reasons, including aesthetics, water quality, or ecological resource protection or enhancement. Some buffers are no-management (i.e. tree cutting) zones, and others require at least a partial canopy be maintained. In general, timber harvesting within buffers is more limited than in other zones and the width of the buffer depends on the feature which is being surrounded.

**Charcoal Hearth** - Excavated area where wood fuel was stacked, covered with soil, and lit on fire to produce charcoal.

**Clearcut** — The removal of the overstory in the absence of advance regeneration. Regeneration may be dependent on natural seed, root suckers, stump sprouts or from artificial plantings. The differentiating factor that sets this cut apart from an overstory removal is that less than 50% of the site is stocked with adequate advanced regeneration and relies on seedlings or sprouts that will become established after the cut. For clearcuts, as with overstory removals on State Forest Lands, 10-20 square feet per acre of basal area must be reserved per acre. Clearcuts on State Forest Lands can be referred to as “clearcuts with residuals.”

**Climate Change** — The long-term fluctuations in trends in temperature, precipitation, wind, and all other aspects of the earth’s climate.

**Core Forest Index** - The core forest analysis was based on the density of fragmenting features within a given area, which includes roads, pipelines, well pads, certain large rivers (large enough to show up on NLCD), etc.

Based on fragmentation of an LMU, each LMU was given an index score between 0-100, representing the density of fragmenting features with a higher score representing a less fragmented area.

**Crop Tree Thinning** — Crop tree thinning is done for many of the same reasons as improvement cuts but at a much younger, pre-commercial age. The primary reason for entering a stand in the pre-commercial stage versus waiting until merchantable volume can be extracted is to alter the species composition of the stand prior to the most desirable stems losing positions of competitive advantage. No more than 50 crop trees should be selected per acre and a crown-touch release should be used, cutting all trees that touch the crown on a crop tree on three out of four sides. Co-dominant and intermediate trees should be the focus of crown-touch release treatments. Trees in the dominant stage will most likely be in the stand at the time of commercial thinning and most likely already enjoys dominance over its closest competitors.

**Cultural/ Historic Resources** — A site, structure, object, natural feature, or social account that is or was of significance to a group of people traditionally associated with it. A significant cultural resource is defined as one which is listed or eligible for listing in the National Register of Historic Places. Archaeological sites are important in elucidating information about past cultural behavior.

**Damage-causing Agents** - Something that negatively effects ecosystems such as, non-natural or exotic pests, disease and invasive plants, climate change, inadequate forest regeneration, acid mine drainage, acid deposition, waste and littering, habitat fragmentation, overabundant deer populations and wildfire.

**Deer Management Assistance Program (DMAP)** — DMAP is a Pennsylvania Game Commission program that provides additional means for landowners to meet land-use goals by allocating additional antlerless deer tags to reduce deer populations in specific areas.

**Defoliation** – the destruction or causation of widespread loss of leaves usually by insects or disease.

**Early Successional Habitat** – The period in forest development, soon after establishment, in which the growing forest is not yet dominated by tree canopies. This stage is characterized by high productivity, high structural and spatial complexity and provides habitat with vigorously growing grasses, forbs, shrubs and trees that usually require full sun exposure. Early successional habitat provides excellent food and cover for wildlife but needs disturbance to arrest forest succession and prevent the site from progressing to a more mature stage of stand development.

**Ecoregion** — A contiguous geographic area having a relatively uniform macroclimate, possibly with several vegetation types, and used as an ecological basis for management or planning.

**Ecosystem** — A conceptual unit comprised of abiotic factors and biotic organisms interacting with each other and their environment, having the major attributes of structure, function, complexity, interaction and interdependency, temporal change, and no inherent definition of spatial dimension.

**Ericaceous Plants** – Plants in the heath family, such as mountain laurel, rhododendron, and blueberry, that do not grow well in alkaline or basic soils (soils that have a high pH).

**Even-aged Stand** - is a given area of a forest in which the trees are within 20 percent of a given age, relative to the rotation length. Rotation length is the segment of time that forest trees are grown before they are

cut, and a new regeneration cycle starts.

**Extirpated** — A species is eliminated from a certain geographic area, while it still exists elsewhere.

**Fee Simple Ownership** — An ownership situation whereby the landowner owns both the surface and subsurface rights.

**Fire Adapted Ecosystem** — Natural communities or ecosystems that have evolved with a regular fire interval and can rebound readily and benefit from fire that is consistent with the regimes to which they are adapted. A “fire regime” describes the frequency at which fires in a given forest type typically burn, the season(s) in which they burn, and the amount of vegetation killed.

**Fire Dependent** — Natural communities or ecosystems requiring one or more fires of varying frequency, timing, severity, and size to achieve optimal conditions for population survival or growth.

**Forest Fragmentation** — The process by which a forest landscape is converted into islands of forest within a mosaic of other land uses.

**Forest Type** — A category of forest community usually defined by its vegetation, particularly its dominant vegetation as based on percentage cover of trees. All delineated stands on State Forest Land are coded with a ‘forest type’. Most vegetated types are based on the plant community types recognized in *Terrestrial & Palustrine Plant Communities of Pennsylvania 2<sup>nd</sup> Ed.* Non-vegetated types are based on specific anthropogenic use. See the Bureau of Forestry’s *STATE FOREST RESOURCE DESIGNATIONS, CLASSIFICATIONS AND TYPING MANUAL* for more information

**Fully Stocked** — A quantitative measure of the area occupied by trees, usually measured in terms of well-spaced trees or basal area per hectare, relative to an optimum or desired level of density. A classification of forest land in terms of potential annual cubic-foot volume growth per acre at culmination of mean annual increment in fully stocked natural stands. Stocking is a relative concept - a stand that is overstocked for one management objective may be understocked for another.

**Group Selection** — A treatment in which the desired outcome is to create an uneven-aged or all-aged stand structure over time by performing small group overstory removals or clearcuts, creating patches of younger trees. Through time, the entire stand is removed in groups (3 or 4 harvests spaced 20–30 years apart) creating patches of several age classes throughout the stand.

**Habitat Diversification** — The process by which a forested landscape is broken into a mosaic of seral or successional stages of vegetation types, through management practices and/or natural processes, for utilization by a diversity of organisms.

**Hibernacula** — Latin for “tent for winter quarters” is a place in which a creature seeks refuge, such as a bear using a cave to overwinter. The word can be used to describe a variety of shelters used by many kinds of animals of various species. Behavior other than hibernating can also occur at hibernacula. Often used in description of sites for over-wintering bats.

**High Canopy** — The uppermost vegetative layer of a mature forest. High-canopy species, such as oaks and hickories, have the potential to form the dominant overstory layer of the forest. Species that would NOT be

considered high-canopy species include trees that reach their full potential in the understory or mid-canopy layers, such as dogwood or striped maple.

**General Permits (GP)** – Department of Environmental Protection (Department) permits for Chapter 105 Wetland and Waterway Obstruction and Encroachment.

**Important Bird Areas** – (IBA) As identified by the Audubon Society, these are geographic regions that offer key habitat factors for the occupancy and survivability of some bird species. There are over 80 IBA sites encompassing over two million acres of Pennsylvania’s public and private land. These areas include migratory staging areas, winter roost sites, and prime breeding areas for songbirds, wading birds, and other species.

**Improvement Cutting** — An intermediate treatment (after establishment of the new stand and prior to final harvest) is conducted to remove trees that will improve residual stand composition and improve residual tree quality, and where the intention of the harvest is not to establish natural regeneration. The goal of this treatment is to expedite growth of higher quality trees by allowing more sunlight and nutrients to residual trees by reducing competition. This is a non-reproductive treatment and the stand’s residual basal area should be at least B level stocking or greater. The difference between this and a crop tree treatment is that this type of treatment is performed later in the rotation and through a commercial sale.

**Intermediate (harvest)** – A timber harvest to enhance growth, quality, vigor, and composition of a stand of trees after establishment or regeneration and prior to final harvest.

**Invasive Insects** - is an insect that is not native to a specific location (an introduced species), and that tends to spread to a degree believed to cause damage to the environment.

**Invasive Plants** — Non-native plant species that grow quickly and aggressively, spreading and displacing other native plants. Their establishment causes or is likely to cause economic, environmental or human harm. Invasive plants are usually introduced by people either accidentally or on purpose, into a region far from their native habitat.

**Iron Furnace** - A historic type of blast furnace that is used for smelting to produce industrial metals, generally pig iron, but also others such as lead or copper. Most iron furnaces used large amounts of wood charcoal as fuel.

**Landscape** — A land area of generally large size and commonly a mosaic of land forms and plant communities irrespective of ownership or other artificial boundaries.

**Natural Area** — A Natural Area is a state forest zone that is an area of unique scenic, historic, geologic or ecological value that will be maintained in a natural condition by allowing physical and biological processes to operate, usually without direct human intervention. They 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.

**Natural Regeneration** — A newer age class of trees created from natural seeding, sprouting, or suckering that will serve to replace trees removed from the canopy, either through aging or harvesting.

**Oak Savannah** –A type of savanna, or lightly forested grassland, where oaks are the dominant trees. These savannas were maintained historically through wildfires set by lightning or humans, grazing, low precipitation, and/or poor soil.

**Overstocked** – Is the state of having too many trees in a forested area for the most efficient growth, usually measured in terms of well-spaced trees or basal area. A desirable level of stocking is often considered that which maximizes timber production.

**Overstory** — The portion of the trees, in a forest of more than one story (stratum), forming the upper most canopy layer.

**Overstory Removal** — The complete removal of the overstory to release established advanced regeneration. The differentiating factor between this cut and a “clear cut,” is that advanced regeneration is present and established with at least 50% stocking of the site. On State Forest Lands, 10-20 square feet of basal area per acre must be retained. Overstory removals on State Forest Lands are referred to as “Overstory Removals with Residuals”.

**Pennsylvania Conservation Explorer (Explorer)** — An online tool designed to facilitate conservation planning and environmental review (PNDI) for threatened and endangered species, species of special concern, and other natural resources of concern. The environmental review portion of Explorer screens projects for potential impacts to species under the jurisdiction of PA Game Commission, PA Fish and Boat Commission, PA DCNR, and the US Fish and Wildlife Service. All silviculture and land management activities should be submitted through the PNDI system. The purpose of this system is to call attention to the forester that species of concern, threatened or endangered nature are nearby or within the project area.

**Pennsylvania Natural Heritage Program** — The Pennsylvania Natural Heritage Program (PNHP) is a member of NatureServe, an international network of natural heritage programs that gather and provide information on the location and status of important ecological resources (plants, vertebrates, invertebrates, natural communities and geologic features). Its purpose is to provide current, reliable, objective information to help inform environmental decisions. PNHP information can be used to guide conservation work and land-use planning, ensuring the maximum conservation benefit with the minimum cost. PNHP manages PNDI (see above).

**Pennsylvania Scenic Rivers Program** — Scenic river designations are intended to preserve the primitive qualities the natural, and aesthetic values of a river and to protect the existing character and quality of both the river and its adjacent land environment. They shall be free-flowing and capable of, or under restoration, to support water-based recreation, fish and aquatic life. The view from the river or its banks shall be predominately wild but may reveal some pastoral countryside. The segment may be intermittently accessible by road. The Pennsylvania Scenic Rivers Act of 1982 authorized the statutory designation of outstanding aesthetic or recreational rivers.

**Recreational Opportunity Spectrum Continuum (ROS)** — ROS is an inventory system developed by the U.S. Forest Service, to characterize land by types of recreation and experiences. This version adopted by the Bureau of Forestry defines five recreation classes for the state forests (primitive, semi-primitive non-motorized, semi-primitive, semi-developed, developed).

**Regeneration** — Seedlings or saplings existing in a stand or the act of renewing tree cover by establishing young trees naturally or artificially.

**Regeneration period** — The time between the initial regeneration treatment and the successful re-establishment of a new age class by natural means, planting, or direct seeding.

**Reserve or Residuals trees** — Trees, pole sized or larger, retained after an intermediate or partial timber harvest of a stand.

**Rotation** — In even aged systems, the period between regeneration establishment and final cutting.

**Salvage Harvest** — A timber harvest in which only dead and dying trees are harvested while they still retain a degree of economic value, or in conjunction with other treatments in which the goal is both economic salvage and a silvicultural goal such as salvage-overstory removal, salvage-shelterwood, salvage-improvement, etc. Timber sales in which 20% or more of the volume being removed is dead or dying should be classified as salvage, or salvage along with any other treatment being implemented.

**Seed Tree Cut** — The attempted establishment of a new stand from a partial overstory removal and retention of scattered trees for genetically superior seed production and seedling establishment. Usually less than 40 BA is retained to allow almost full exposure of a site to sunlight. Species that are shade intolerant and wind dispersed usually benefit under this type of cut. Once advanced regeneration is established the seed trees are removed.

**Severed Ownership** — an ownership situation whereby the surface landowner has either partial ownership of the subsurface or the subsurface is owned completely by another entity.

**Shade Tolerance** — The relative capacity of a plant to become established and grow beneath overtopping vegetation, where sunlight is fully or partially obscured.

**Shelterwood (harvest)** — The attempted establishment of a new cohort of natural regeneration from the partial removal of the overstory. A shelterwood harvest may be a single treatment or a series of cuts to ensure that adequate seed source is retained, and light levels are manipulated to allow the establishment or promotion of a target species or group of species. The essential characteristic is that the new stand is being established naturally or artificially under the overstory or the “shelter” of the original stand. The characteristic difference between this cut and a seed tree cut is that a relatively contiguous canopy is retained (approximately  $\geq 40$  BA) and most often species regenerated under this system are moderate to shade tolerant species. Once advanced regeneration is established, the overstory is removed.

**Single Tree Selection (harvest)** — A harvest in which the desired goal is to create an all-aged stand by removing a uniform number of trees from each age class in an uneven-aged stand or size class in an even-aged stand. This leaves an inverse j-shaped curve for diameter distribution, creating space for the establishment of new seedlings and increased growth of remaining trees.

**Silvicultural System** — A planned process whereby a stand is tended, harvested, and re-established. The system name is based on the number of age classes and/or the regeneration method used.

**Site Class** — A classification of growing site quality, expressed in terms of ranges of dominate tree height

at a given age or potential mean annual increment at culmination. For the Bureau of Forestry, site classes are numbered 1 (the best), 2 and 3 (the poorest). These classes are designated as follows:

**0 Non-Forest**

**1 Site 1:** Characterized by moist, well-drained, fairly deep soils that usually occur in protected coves, along streams, or in bottomlands that remain moist throughout the year. On northern exposures, Site 1 may extend higher up a slope than on southern exposures because of more favorable soil moisture conditions. Dominant and codominant total tree heights have the potential to average > 85 feet at maturity.

**2 Site 2:** Characterized by soil intermediate in moisture, depth, drainage and fertility that may dry-out for short periods during the year. This site is usually located on slopes between the ridge tops and the coves and bottomlands. Dominant and codominant total tree heights have the potential to average > 65 feet but < 85 feet at maturity.

**3 Site 3:** Characterized by shallow, rather dry, stony or compact soils which usually occur on ridges or broad flat plateaus. Dominant and codominant total tree heights average < 65 feet at maturity.

**Site Index** – a species-specific measure of actual or potential forest productivity expressed in terms of average height of trees included in a specific stand component at a specific index or base age. Site index curves are created for different regions to show the total height expectations for a certain species given the site conditions (index) and the age of the tree or stand.

**Stand** — A contiguous group of trees sufficiently uniform in age class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable unit.

**State Forest Environmental Review** — SFER is the process used by the bureau to assess impacts to a variety of forest resources for projects that may or will disrupt, alter or otherwise change the environment.

**Stems Per Acre** – a standard measure of the density of trees within a given area, which is given as an average number of stems on an acre. Stem is considered the trunk of an individual tree.

**Stocking Level** – An indication of growing space occupancy relative to a pre-established standard.

**Succession** – The gradual supplanting of one community of plants by another; the aging of the forest from young to mature.

**Sustainability** — The capacity of forests, ranging from stands to ecoregions, to maintain their health, productivity, diversity, and overall integrity, in the long run, in the context of human activity and use.

**Systemic Insecticides** – Pesticide that is absorbed by and permeates some or all host tissues and is more toxic to the target insects and pathogens than to host.

**Two-Aged Harvest** — The final overstory removal or clearcut in a stand in which a significant portion of the stand will be retained until the next rotation. Usually 20 to 30 square feet of BA is retained in oak stands and 10 –20 BA in northern hardwood stands. The residual stand is not removed upon successful regeneration, but instead carried as an older age class (creating two distinct age classes on the same site)

well into the next rotation, and usually removed before the next age class reaches maturity.

**Two-Aged Shelterwood** — This treatment is a preparatory cut for a two-aged harvest. A shelterwood treatment or treatments performed in a stand to establish or promote advanced regeneration, once there is seedling establishment a two-aged harvest will occur.

**Under Stocked** – Is the state of not having enough trees in a forested area for production of most board feet volume in standing trees measured in terms of basal area. A desirable level of stocking is often considered that which maximizes timber production.

**Uneven-aged stand** - is a given area of a forest in which the trees are having at least three distinct tree-age classes. Classic uneven-aged forest management aspires to perpetuate an all-aged stand, with many young trees and progressively fewer older trees.

**Wild Area** — A Wild Area is a state forest zoning category which characterizes an extensive area, which the public will be permitted to see, use and enjoy for such activities as hiking, hunting, fishing, and the pursuit of peace and solitude. No development of a permanent nature will be permitted to retain the undeveloped character of the area.

## Acronyms:

### A

- ACB** – Alliance for the Chesapeake Bay
- ACF** – Association of Consulting Foresters
- ADA** – American Disabilities Act
- AFF** – America Forest Foundation
- AHUG** – Allegheny Hardwood Utilization Group
- ALB** – Asian Longhorn Beetle
- AML** – Abandoned Mine Land
- ANF** – Allegheny National Forest
- APHIS** – Animal and Plant Health Inspection Service
- ARRI** – Appalachian Regional Reforestation Initiative
- ATFS** – American Tree Farm System
- ATV** – All Terrain Vehicle

### B

- BAMR** – Bureau of Abandoned Mine Reclamation
- BCAP** – Biomass Crop Assistance Program
- BMP** – Best Management Practice
- BOF** – Bureau of Forestry
- BRC** – Bureau of Recreation and Conservation
- BSP** – Bureau of State Parks

### C

- CAA** – Commercial Activities Agreement
- CAPS** – Cooperative Agriculture Pest Survey Program

**CAR** – Corrective Action Request  
**CARS** – Cooperative Accomplishment Report System  
**CBF** – Chesapeake Bay Foundation  
**CCC** – Civilian Conservation Corps  
**CFHP** – Cooperative Forest Health Management Program  
**CFI** – Continuous Forest Inventory  
**CFM** – Cooperative Forest Management  
**CHR** – Cultural Historical Resource  
**CLEAR** – Center for Land Use Education and Research  
**CLI** – Conservation Landscape Initiative  
**CREP** – Conservation Reserve Enhancement Program  
**CSP** – Conservation Security Program  
**CWD** – Chronic Wasting Disease  
**CWPP** – Community Wildfire Protection Plans  
**CWWA** – Cooperative Weed Management Area

**D**

**DCED** – Department of Community and Economic Development  
**DCNR** – Department of Conservation and Natural Resource  
**DEP** – Department of Environmental Protection  
**D & G** – Dirt and Gravel  
**DGS** – Department of General Services  
**DHS** – Delaware Highlands Conservancy  
**DMAP** – Deer Management Assistance Program  
**DOI** – Department of the Interior  
**DRBC** – Delaware River Basin Commission

**DVRPC** – Delaware Valley Regional Planning Commission

**E**

**EAB** – Emerald Ash Borer

**E & S** – Erosion and Sedimentation

**EAC** – Environmental Advisory Council

**EDRR** – Early Detection Rapid Response

**EES** – Environmental Education Specialist

**EHS** – Hemlock Elongated Scale

**EMA** – Emergency Management Agency

**EMAC** – Ecosystem Management Advisory Committee

**EPA** – Environmental Protection Agency

**EPLO** – Emergency Preparedness Liaison Officer

**EV** – Exceptional Value

**EQIP** – Environmental Quality Incentives Program

**F**

**FDC** – Facility Design and Construction

**FED** – Federal

**FEMA** – Federal Emergency Management Agency

**FEPP** – Federal Excess Personal Property

**FERC** – Federal Energy Regulatory Commission

**FFA** – Future Farmers of America

**FFP** – Forest Fire Protection

**FFW** – Forest Fire Warden

**FHM** – Forest Health Monitoring

**FHTET** – Forest Health Technology Enterprise Team  
**FIA** – Forest Inventory and Analysis  
**FLAME act** – Federal Land Assistance Management Enhancement  
**FIMS** – Forest Information Management System  
**FMP** – Forest Management Plan  
**FPM** – Forest Pest Management  
**FPUF** – Friends of Pittsburgh Urban Forest  
**FS** – Forest Service  
**FSA** – Farm Service Agency  
**FSC** – Forest Stewardship Council  
**FSP** – Forest Stewardship Plan

## **G**

**GIS** – Geographic Information System  
**GM** – Gypsy Moth  
**GP** – General Permit  
**GWWA** – Golden Wing Warbler

## **H**

**HAM** – Harvest Allocation Model  
**HCVF** – High Conservation Value Forest  
**HDC** – Hardwood Development Council  
**HQ** – High Quality  
**HUD** – Housing and Urban Development  
**HWA** – Hemlock Woolly Adelgid

## I

**IBA** – Important Bird Area

**ICS** – Incident Command System

**IMT** – Incident Management Team

**IPCC** – Intergovernmental Panel on Climate Change

**IPM** – Integrated Pest Management

**IQS** – Incident Qualification System

**ISA** – International Society of Arboriculture

**ITC** – Instructor Training Course

## K

**KTA** – Keystone Trail Association

## L

**LiDAR** – Light Detection and Ranging

**LOA** – Letter of Authorization

**LWCF** – Land Water Conservation Fund

**LMU** – Landscape Management Unit

## M

**MAFFC** – Mid-Atlantic Forest Fire Compact

**MBF** – 1000 Board Feet

**MST** – Mid State Trail

**MTRP** – Municipal Tree Restoration Program

## N

**NAAEE** – North American Association for Environmental Education

**NAASF** - Northeastern Area Association of State Foresters

**NAI** – Natural Areas Inventory

**NASF** – National Association of State Forest

**NGO** – Non-Government Agency

**NLT** – Natural Lands Trust

**NPS** – National Parks Service

**NRCS** – Natural Resource Conservation Service

**NTFP** – Non-Timber Forest Products

**NWCG** – National Wildland Fire Coordinating group

**NWTF** – National Wild Turkey Federation

## O

**OGIT** – Oil and Gas Tracking System

**OGM** – Oil and Gas Management

**OHV** – Off Highway Vehicle

## P

**PABS** – Pennsylvania Biological Survey

**PACD** – Pennsylvania Association of Conservation Districts

**PAFS** – Pennsylvania Forest Stewards

**PA-IMT** – Pennsylvania Incident Management Team

**PALTA** – Pennsylvania Land Trust Association

**PASA** – Pennsylvania Association for Sustainable Agriculture

**PCC** – Pennsylvania Conservation Corps

**PDA** – Pennsylvania Department of Agriculture  
**PEMA** – Pennsylvania Emergency Management Agency  
**PennDOT** – Pennsylvania Department of Transportation  
**PFA** – Pennsylvania Forestry Association  
**PFBC** – Pennsylvania Fish and Boat Commission  
**PFPA** – Pennsylvania Forest Products Association  
**PGC** – Pennsylvania Game Commission  
**PHMC** – Pennsylvania Historical and Museum Commission  
**PHS** – Pennsylvania Horticulture Society  
**PILT** – Payment in lieu of Taxes  
**PLNA** – Pennsylvania Landscape and Nursery Association  
**PLT** – Project Learning Tree  
**PNDI** – Pennsylvania Natural Diversity Inventory  
**PNHP** – Pennsylvania Natural Heritage Program  
**PPFF** – Pennsylvania Parks and Forest Foundation  
**PSP** – Pennsylvania State Police  
**PSSA** – Pennsylvania State Sportsmen’s Association  
**PSU** – Penn State University

**Q**

**QDMA** – Quality Deer Management Association

**R**

**RAC** – Recreation Advisory Committee  
**RAWS** – Remote Automated Weather Station  
**RC&D** – Resource Conservation and Development

**RCF** – Rural and Community Forestry  
**RGS** – Ruffed Grouse Association  
**RMC** – Resource Management Center  
**ROS** – Recreation Opportunities Spectrum  
**ROW** – Right of Way  
**RPF** – Rare Plant Forum  
**RTE** – Rare Threatened Endangered  
**RUA** – Road Use Agreement  
**Rx** – Prescribed

## S

**SAA** – Special Activities Agreement  
**SAF** – Society of American Foresters  
**SAR** – Search and Rescue  
**SCORP** – Statewide Comprehensive Outdoor Recreation Plan  
**SFER** – State Forest Environmental Review  
**SFI** – Sustainable Forestry Initiative  
**SFL** – State Forest Land  
**SFO** – State Forest Officer  
**SFRMP** – State Forest Resource Management Plan  
**SLF** – Spotted Lantern Fly  
**SRBC** – Susquehanna River Basin Commission  
**STC** – Shade Tree Commission

## T

**TACF** – The American Chestnut Association

**TCUSA** – Tree City United States of America  
**TIMO** – Timber Investment Management Organization  
**TMDL** – Total Maximum Daily Loads  
**TNC** – The Natural Lands Trust  
**Topo Geo** – Topographical and Geologic Services  
**TPO** – Timber Products Output Survey  
**TSP** – Technical Service Provider  
**TU** – Trout Unlimited

**U**

**UTC** – Urban Tree Canopy  
**USDA** – United States Department of Agriculture  
**USFS** – United States Forest Service  
**USFWS** – United States Fish and Wildlife Service  
**USGS** – United States Geological Survey

**V**

**VFD** – Volunteer Fire Department  
**VPTC** – Vascular Plant Technical Committee  
**VUM** – Visitor Use Monitoring

**W**

**WHIP** – Wildlife Habitat Incentives Program  
**WOA** – Woodland Owner Association  
**WMU** – Wildlife Management Unit  
**WNA** – Wild and Natural Areas

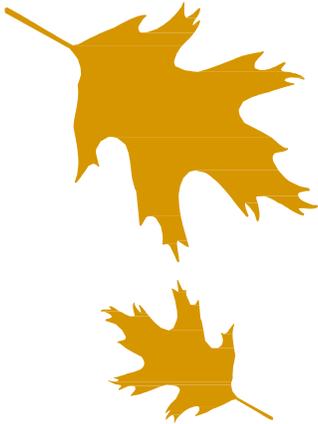
**WPC** – Western Pennsylvania Conservancy

**WRCA** – Wild Resource Conservation Act

**WUI** – Wildland Urban Interface

Appendix:  
District Interpretative Plan

# Buchanan Forest District: Interpretive Plan



Date Completed: September 2017

Planning Team Members:

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**pennsylvania**  
DEPARTMENT OF CONSERVATION  
AND NATURAL RESOURCES

[www.dcnr.state.pa.us](http://www.dcnr.state.pa.us)

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## Introduction

It is the intent of the Bureau of Forestry to have an interpretive plan in place within each state forest district. Once completed, this plan can stand alone or be placed as an addendum to the District Resource Management Plan. This plan is directly linked to the State Forest Resource Management Plan through key messages and guiding principles.

Interpretation is defined as a mission-based communication process that forges emotional and intellectual connections between the interests of the audience and the meanings inherent in the resource. The interpretive plan is a goal driven process that helps us achieve our mission, protect the resource and provide visitors with the best possible interpretive service.

This State Forest District Interpretive Plan uses a thoughtful planning process to identify the stories, management issues and resources that are specific to each state forest district. Completed plans will help us determine which communication strategies are best suited for achieving our goals and setting priorities will help allocate funds for interpretive projects. Resource conservation requires public understanding and support. Interpretation is one tool to help us achieve that goal.

## DCNR and Bureau of Forestry Missions and Key Messages

Both the department and bureau missions and key messages should be present in our interpretive efforts. Keep these in mind as you plan your interpretive projects. If an interpretive project does not address our mission or contain a key message, it should not be considered.

<p><b>DCNR Mission</b></p> <p>We conserve and sustain Pennsylvania's natural resources for present and future generations' use and enjoyment.</p> <p><b>Vision</b></p> <p>As Pennsylvania's leader and chief advocate for conservation and outdoor recreation, we will inspire citizens to value their natural resources, engage in conservation practices and experience the outdoors.</p> <p><b>Goals</b></p> <ul style="list-style-type: none"><li>• Improve stewardship and management of state parks and forests</li><li>• Promote statewide land conservation</li><li>• Build and maintain sustainable and attractive communities</li><li>• Create outdoor connections for citizens and visitors</li></ul> <p><b>DCNR Key Messages</b></p> <ul style="list-style-type: none"><li>• Natural resources are critical to our health, economy, and quality of life.</li><li>• Everyone uses and has the opportunity to enjoy Pennsylvania's vast natural resources.</li><li>• DCNR leads everyday efforts to conserve Pennsylvania's natural resources and connect people to the outdoors.</li><li>• The future of Pennsylvania's natural resources depends on you.</li></ul>	<p><b>The Bureau of Forestry's Mission...</b></p> <p>...is to ensure the long-term health, viability and productivity of the commonwealth's forests and to conserve native wild plants.</p> <p><b>Bureau of Forestry's Key Messages:</b></p> <p>The Bureau of Forestry has developed a set of forest-related key messages that complements the department's communications efforts. The bureau considers and uses these key messages when developing communications products.</p> <p><b>Natural resources are critical to our health, economy, and quality of life.</b></p> <ul style="list-style-type: none"><li>• Forests are Pennsylvania's principal land use.</li><li>• Forests provide vital services to society. They clean our air, purify our water, provide habitat for plants and animals, and support key ecological processes.</li><li>• Forests provide a renewable source of wood products to society.</li></ul> <p><b>Everyone uses and has the opportunity to enjoy Pennsylvania's vast natural resources.</b></p> <ul style="list-style-type: none"><li>• Healthy forests benefit all citizens, no matter where they live.</li><li>• Forests provide nearly boundless opportunities for healthful recreation.</li><li>• Forests serve as a source of inspiration and wonder.</li><li>• There is a forest to explore near you.</li></ul> <p><b>DCNR leads everyday efforts to conserve Pennsylvania's natural resources and connect people to the outdoors.</b></p> <ul style="list-style-type: none"><li>• DCNR Bureau of Forestry leads Pennsylvania in forest and native wild plant conservation and stewardship.</li><li>• DCNR Bureau of Forestry seeks to foster an awareness of the forests' many uses and values and inspire people to conserve them.</li></ul> <p><b>The future of Pennsylvania's natural resources depends on you.</b></p> <ul style="list-style-type: none"><li>• People and communities every day shape the future of Pennsylvania's forests.</li><li>• Sustaining our forests and associated values depends on wise stewardship.</li><li>• We have a responsibility to manage our forests for current and future generations.</li></ul>
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## State Forest Resource Management Plan: Communications Management Principle

This guiding principle for Communication Management is established in our State Forest Resource Management Plan and should assist in setting the direction of interpretive efforts.

<b>Communications Management Principle</b>	
The citizens of Pennsylvania appreciate the forests of Pennsylvania and their resources and values and are engaged in the issues that affect them.	
Goals	Objectives
<b>1. To provide education and interpretive opportunities regarding the values, services, and benefits of sustainable forest management.</b>	1.1 Promote Project Learning Tree with Pennsylvania educators and youth leaders through workshops and material support.
	1.2 Promote forestry and conservation through public education and outreach such as the statewide Envirothon, natural gas tours, ECO Camp, and other public programming partnerships.
	1.3 Provide forest demonstration areas throughout the state forest system that show forest management practices.
	1.4 Create statewide and district interpretive plans and increase the use of interpretive resources.
	1.5 Promote a public stewardship ethic regarding the commonwealth's forests and wild plant resources.
	1.6 Develop state-of-the-art resource management centers to house educational displays and stimulate interest in forest conservation.
<b>2. To provide customer service and information that promote the use and enjoyment of the state forest system.</b>	2.1 Maintain a steady and available supply of our public use maps, guides, and printed materials.
	2.2 Continually update and utilize electronic media, providing information in an engaging format on the bureau and its work.
<b>3. To engage the public and consider input in state forest management decisions.</b>	3.1 Utilize advisory committees to engage stakeholders.
	3.2 Provide information on forests, forest issues, and native wild plants.
	3.3 Plan and coordinate public meetings on specific bureau topics including the SFRMP process and shale-gas management as well as issues of local interest at the district level.
	3.4 Monitor and respond to social media questions and comments.
	3.5 Coordinate responses to public inquiries on state forest management topics.

## Overview of Buchanan Forest District

### Introduction

*(Provide an overview of where your district is located, how it got its name, how large it is, features, etc. You may want to provide a map of the district. This information may be taken directly from the District Management Plan.)* Named in honor of James Buchanan, 15th President of the United States, Buchanan State Forest covers 71,638 acres in Franklin, Fulton and Bedford counties. The largest portion of the Buchanan State Forest was purchased by the Commonwealth between 1904 and the early 1930's when the logging companies were either letting their cutover lands be sold for taxes or selling them to the state for approximately two dollars per acre. Buchanan's woodlands straddle the iconic ridges of south-central Pennsylvania. The tracts of the Buchanan State Forest occupy upper slopes in the southern portion of the ridge and valley region of Pennsylvania. The forests are generally second and third growth mixed oak communities interrupted here and there by groves of pine with hemlock or red maple dominating cooler ravines. The variety of oaks includes white oak, red oak, chestnut oak, scarlet oak and black oak. The major areas are Bear Valley in Franklin County, Allen's Valley and Sideling Hill in Fulton County, and Martin Hill and the Resettlement or "L. U." Lands in Bedford County.

### History

*(Provide an overview of the cultural and ecological history of the district. This may help you identify stories to interpret. Include any key photographs that help to tell the story. Examples include CCC camps, tuberculosis sanatorium, key fires, renown scientists or scientific finds, events that changed the landscape, etc. This information may be taken directly from the District Management Plan.)*

This is a region of historic interest and scenic beauty. The Buchanan Forest District was named in honor of James Buchanan, fifteenth President of the United States, who was born at Stoney Batter in Franklin County. The first purchase of land for the Buchanan Forest was made in 1902 when 1,375 acres in the Bear Valley area of Franklin County were purchased from J. G. Dillon for \$2,751.57. On September 27, 1902, Howard Cessna of Rainsburg, Bedford County, sold 5,300 acres to the commonwealth for \$2.32 per acre. Within the next five years, Cessna and his brother, Walter, would convey title for several additional tracts on the Martin Hill-Evitts Mountain area totaling 10,000 acres. Cessna was the nephew of Thomas Cessna, one of the founders of the Cessna Aircraft Corporation at Wichita, Kansas.

Acquisitions continued piecemeal across the region. There was very little state forestland in Fulton County until the early 1930s. As of January 1929, state forestlands in the county totaled only 6,300 acres, all of it in Allen's Valley in Dublin and Todd Townships. On May 8, 1930, deeds for more than a dozen tracts in Fulton County, all purchased from the Reichley Brothers Lumber Company, were recorded in the courthouse at McConnellsburg. The parcels, located in six townships, totaled 9,362 acres for a total of \$21,491 or \$2.29 per acre. Added to other purchases in 1930, total acquisition in Fulton County amounted to 14,860 acres, at a total cost of \$34,956. More than twenty percent of the state forest land on the Buchanan District today was acquired in 1930. Considerable credit for the 1930 purchases must be given to W.H. Cunard, Guy Sipe and J.A. Broadwell, the men who surveyed these lands for the Commonwealth of Pennsylvania.

Virtually all the existing state forest on Sideling Hill and Rays Hill was acquired between 1929 and 1933, the year President Franklin D. Roosevelt created the Civilian Conservation Corps (CCC). Roosevelt was inaugurated on March 21, 1933 and by the end of June three CCC Camps were in operation on the Buchanan State Forest.

In addition to Roosevelt's CCC project, the Buchanan Forest District benefited from still another anti-depression program, called the Resettlement Administration by New Dealers. This federal agency offered farmers in selected areas of sub-marginal soils the opportunity to sell their lands to the U. S. Government. Southern Bedford County soils and terrain between Chaneyville, Clearville, and Artemas are generally ill suited for cultivation because of the shale and steep slopes. Consequently, when offered market value for their properties, a majority of the landowners sold out and moved either to the city or better farms. This program resulted in the Soil Conservation Service becoming the caretaker for 10,099 acres of worn out, erosion-prone farms. Soon thereafter, the SCS designated the Pennsylvania Department of Forests and Waters as caretaker for the "Land Use" (LU) Lands. By 1951, 70,000 trees had been planted by forestry and SCS employees. On July 29, 1955 the LU Lands were deeded to the Commonwealth and became state forest lands.

Additional parcels including the Redbud Valley deeded to the commonwealth from Mr. Edmond Kerper for educational use, lands acquired from the Department of the Interior on the ridges adjacent to Letterkenny Army Depot, several purchases through partnerships with the Western Pennsylvania Conservancy to acquire tracts bordering Maryland Public lands and the Cumberland Watershed and property divested from Glatfelter have all been strategically added to the Buchanan State Forest since that time bringing the total acreage to 71,638.

Nestled amongst the land base of the Buchanan Forest District are the historic and scenic gems that bring the public to visit our landscape.

In Bedford County there is a saltpeter cave within the Sweet Root Natural Area where saltpeter had been produced for gunpowder before and during the American Revolution. Close by are the Resettlement Lands, containing several old cemeteries that date back to pre-Civil War days.

Winding through Allens Valley and westward over Sideling Hill in Fulton County are traces of an early military highway known as the Forbes or Forbes-Burd Road, built by General John Forbes and Colonel James Burd. This served as a link between Carlisle and Pittsburgh and provided the British with the means to carry military supplies to their western outposts at Fort Pitt and Fort Duquesne. Local Boy Scout troops have reopened approximately five miles of this famous road and clearly marked the trail between Cowans Gap State Park and Burnt Cabins.

Cowans Gap marks the home site of one of the earliest settlers, British Major Samuel Cowan, who farmed the area which is now Cowans Gap State Park.

On Sideling Hill Mountain, along old logging trails bearing such names as Hinish and Sproat, there are remnants of logging railroad spurs built at the turn of the century. Nestled at the foot of the western slope of Sideling Hill, near Oregon Creek, is the site of the former CCC Camp No. S-52 which was built in 1933. During the Great Depression, several hundred young men lived here and constructed most of the forest roads and trails which still exist near this area. In 1940 this camp became quarters for Conscientious Objectors, draftees who were excused from bearing arms during World War II. In 1944 the site was surrounded with a high barbed wire fence and used again by the Army to house German prisoners of war.

Less than a quarter mile from the Oregon Camp is the unused west portal of the Pennsylvania Turnpike Sideling Hill Tunnel. This tunnel and the Rays Hill Tunnel were completed in 1939. Millions of vehicles passed through these portals until a bypass was constructed over the two mountains in 1967. There is still another interesting bit of history from the Oregon area. Almost hidden in Woodridge Hollow is an aqueduct or culvert, a masterpiece of native sandstone measuring approximately 6 feet in diameter by 180 feet in length. It was constructed by several hundred stone masons and laborers brought in from Sicily in 1904 and meant to carry the waters of Woodridge Run beneath the South Penn Railroad, which would have traversed northern Fulton County via tunnels through Sideling Hill and Rays Hill. The South Penn line was never finished but much of the route, including the tunnel was utilized by the Pennsylvania Turnpike which opened in 1939.

## **Key Resources and Events**

*(Highlight any special ecological populations, dams/reservoirs, streams, recreational opportunities, large events. Why do people come to your district?)*

The Buchanan State Forest offers many recreational opportunities including hunting, fishing, camping as well as trails for hiking, biking, horseback riding, ATV riding, snowmobiling, and cross-country skiing. Opportunities for family picnicking are also available in all of the counties covered by the Buchanan Forest District.

Nearly every weekend you can find friends and families using the four State Forest Picnic Areas found in the Buchanan State Forest. These areas provide a scenic place to spend time relaxing or to start and end your daily recreation activities. All of the picnic areas have picnic tables, pavilions, latrines, and grills for the convenience of guests. Bear Valley Picnic Area, located in Franklin County about 10 miles east of Fort Loudon or 3 miles west of Upper Strasburg, is beautiful spot away from all the traffic and hubbub and is nestled between Broad Mountain and Kittatinny Mountain. Sideling Hill Picnic Area is located in Fulton County just east of Breezewood on Route 30 at the summit of Sideling Hill Mountain providing an oasis to many travelers. Sweet Root Picnic Area is located on Route 326, one mile north of Chaneyville in southern Bedford County and adjoins the 1,400-acre Sweet Root Natural Area. Also in Bedford County, the Blankley Picnic Area is located high in the bend of Friends Cove, it can be reached by turning on to Blankley Road from SR 326 south of Rainsburg at the summit of Rainsburg Mountain for a truly secluded picnic destination. In addition to these specific sites, picnicking is permitted anywhere on the state forest.

There are many miles of hiking trails on the Buchanan State Forest most of which are suitable for a variety of uses by recreationists in reasonably good physical condition. However, some were originally established as fire breaks and for fire access so they can be steep and rocky. In addition to the district trails there are portions of several trails with state and interstate connectivity. The Tuscarora Hiking Trail generally follows the crest of the Tuscarora Mountain and eventually passes into Maryland near Hancock where it connects with the Big Blue Trail. This trail continues the southerly journey until it rejoins the Appalachian Trail in the Shenandoah National Park in Virginia. The southern section of the Mid-State Trail connects with Green Ridge Hiking Trail in Maryland at the Mason-Dixon line and traverses north through Rainsburg Gap in Bedford County into Huntingdon County. The Standing Stone Trail connects the Tuscarora and Mid State Trails by departing the Mid State at Greenwood Furnace State Park in Rothrock State Forest and winding its way southward to meet the Tuscarora Trail at Cowans Gap State Park covering portions of the Buchanan State Forest on its journey.

Motorized trails bring visitors to the Buchanan State Forest as well. While snow is not guaranteed to occur in a southern Pennsylvania forest district, when it does there are many local snowmobile enthusiast who enjoy using the trails and joint use roads designated for snowmobiles. The Buchanan Forest District offers Snowmobile Trials in each of the three divisions: Bear Valley, Shieling Hill, and Martin Hill. Two of these areas also have ATV Trails, Sideling Hill and Martin Hill. These trails

are rarely crowded but receive consistent use from locals and visitors. A large part of the public use of the forest each year is spent in driving forest roads. At almost any time of the year, and especially when the seasons change, many people drive these roads to enjoy the scenery, to look for wildlife, or just to experience the relative quiet and solitude of the forest environment.

Hunting and trapping are popular recreation activities on the Buchanan State Forest. The deer herd has remained relatively stable over the past few years, though CWD may cause issues in this area in years to come. There is also a stable bear population here and some are taken each year from the Martin Hill and Sideling Hill areas. The Buchanan Forest District has a good turkey population hunters have found success in all areas of the forest. Due to the even-age timber management, some quality grouse hunting has developed. The squirrel population in the forest depends upon the mast crop. In years of heavy mast production, squirrel hunting is good. In years of poor mast crops, most of the squirrels migrate to where food conditions are better. Hunting pressure and success varies with the squirrel population. There are also several streams located within the Buchanan State Forest for those who prefer to try their hand at fishing.

In addition to the recreational infrastructure there are other points of interest that provide recreational opportunity or historic interest for the Buchanan State Forest. Near Chaneyville is a pioneer cemetery dating back to the mid 1800's. Other cemeteries and the foundations of many old building and home sites are scattered throughout the L.U. lands. Near Oregon is the 170 foot South Penn Railroad handmade stone arch. A Revolutionary War saltpeter cave is located on the north side of the Sweet Root Gap. CCC Camps were located on Oregon Road, Wertz Road, Bear Valley, and across from the Sweet Root Picnic Area. One building remains at the Oregon site. Several buildings and pavilions remain at Bear Valley. Redbud Valley, also known as the Kerper Tract, is located off PA Route 928, just south of the Big Cove Tannery in Fulton County and hosts a bounty of song birds species.

**Goals of Region Wide Interpretive Plans...**

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## Purpose and Goals

### Purpose

*Why does this State Forest exist? What is its purpose?*

Buchanan State Forest is a working forest that exists to supply sustainable wood products while maintaining healthy vibrant ecosystems at all scales and providing for low impact, dispersed public recreational opportunities.

### District Interpretive Goals

Goals state *what it is that you want interpretation to do for your district.*

They should be broad and general. The objectives will get to the specifics.

Many goals may already be written if you have interpretive plans completed for your local Conservation Landscape Initiative such as PA WILDS,

Allegheny Rec Unit, Pine Creek Rec Unit or the Laurel Ridge Comprehensive

Interpretive Plan. You could also check out the interpretive plans for state parks that are located nearby. (For state park interpretive plans, go to: <http://nrintraparks/>, choose Outdoor Programming Services Division, then choose Prospectuses/Interpretive Plans under Interpretive Planning.)

1. To foster an awareness and encourage sustainable use of resources by communicating, promoting and modeling good stewardship and best management practices
2. Encourage exploration and participation in low impact recreation within the Buchanan State Forest.
3. To protect unique historic features or unusual feature in the landscape for future generations and share their stories.
4. Support effective partnerships with local communities that benefit the community, the resource and the visitor.
5. To foster an appreciation and understanding of the history of Pennsylvania's forests and their role in our lives.

## Objectives (outputs, outcomes and impacts)

The objectives provide a measurable way in which the goals will be accomplished.

What we  
do...

**Outputs:** What Buchanan State Forest will do for the visitor: “What we do”  
Link them back to the goals.

1. Develop interpretation for our Civilian Conservation Corps (CCC) sites that foster an understanding of their role in improving the natural resources locally and beyond (Goal 3, 2, 4, 5)
2. Add interpretation to our resource management efforts at several key locations in the district. (Goal 1, 5)
3. Provide and maintain historic, cultural and natural history waysides. (Goal 2, 3, 5)
4. Increase the variety of program offerings (Goal 1, 2, 3, 4, 5)
5. Continue to work cooperatively with local school districts to serve as an outdoor classroom/laboratory (Goal 1, 2, 3, 4, 5)
6. Evaluate each LMU for additional interpretation and education opportunities

...to get the  
visitor to do...

**Outcomes:** The anticipated short-term action resulting from the above outputs – “What the visitor will do.” Link them to the outputs.

1. Volunteerism will increase by 0.5% on Buchanan State Forest (Outputs 1, 7, 9).
2. Vandalism will decrease by 5%.
3. Litter will decrease by 5%
4. School group visitation will increase by 2%.
5. Friends group participation will increase by 2%.

...to benefit  
Buchanan  
Forest  
District this

**Impacts:** The long-term benefits to the state forest as a result of the above outputs and outcomes – What happens long-term. Link these to outcomes.

1. Staff time devoted to litter pick up will decrease by 5% (Outcome 3)
2. Demands on staff time and operational budget required for state forest projects will be re-directed to other needs because of volunteer efforts. (Outcomes 1, 5)

## Audiences and Market Considerations

Who makes up your current audience/visitors? Who are the players involved in the use and stewardship of your state forest? Are there any groups not serviced that you would like to include? Have you provided interpretation for all of your audiences?

- **Current Visitors**
- **Current Web Visitors**
- **Key Audiences**
- **Future Markets and Trends**

## Theme and Subthemes

The theme is a central statement that is the guiding message for all interpretation at the state forest. It defines the approach that interpretation will take. If this theme is correctly interpreted through a variety of media, it is the message that a visitor takes home. Sub-themes further develop the theme and are the logical progression into storylines. These are the stories that are important to your district. What do you want the visitor to know about your forest district? What message do you want the visitor to take home?

**Central Theme:** Buchanan State Forest is an area “off the beaten path” but connected to many.

### Subthemes:

Buchanan State Forest encourages dispersed use recreation and ensures the continued availability of these resources for future generations through sound resource management and active stewardship.

- **Efforts made by the Civilian Conservation Corp and Conscientious Objectors to create access and recreational opportunities on Buchanan Forest District are used, maintained, and highlighted for public enjoyment on Buchanan State Forest.**
- **The historical use of forests in the Buchanan Forest District is identified and offered up to the public as an educational opportunity. These historic areas include remnants of old homes and cemeteries, farming and logging sites, logging railroads, and charcoal hearths.**

## Current Interpretation (personal and non-personal)

Create an inventory and overview of the programs, waysides, exhibits, brochures, maps, etc., currently offered by this state forest.

- Personal
  - Historic Education Programs have been conducted for the area surrounding CCC camp
  - Environmental Education Programs for
    - Local schools: Central Fulton, Southern Fulton, Forbes Road, Bedford. Service Forester makes use of the Kerper Tract or local resources for outdoor class rooms. Service Forester and other Foresters take tools and equipment into schools to demonstrate their use. Smokey Bear is taken into schools for fire prevention and tree planting or identification education. Assistance with Envirothon education training is offered yearly in Fulton and Bedford counties. Local forest history topics are discussed and sometimes toured.
    - Public Workshops: Past topics have included wild edibles, mushrooms, poisonous snakes, CCC and Railroad history
  - ATV Safety Program for Camp Cadet / Youth Field Days
  - Fire Safety Program for Camp Cadet / Youth Field Days
- Non-personal
  - Maps
    - Brochure with Map for Knobsville Tract
    - Brochure with Map for Kerper Tract
    - Brochure with Map for Pine Ridge Natural Area
    - Brochure with Map for Sweet Root Natural Area

- Brochure with Map for Martin Hill Wild Area
- Brochure with Map for Sideling Hill ATV Trail
- Brochure with Map for Martin Hill ATV Trail
- Brochure with Map for Sideling Hill Snowmobile Trail
- Brochure with Map for Martin Hill Snowmobile Trail
- Brochure with Map for Bear Valley Snowmobile Trail
- Brochures
  - Fuel wood Cutting
  -
- Waysides / Kiosks
  - Waysides
    - None at this time
  - Kiosks
    - Buchanan Forest District RMC
    - Bear Valley Forest Foreman HQ
    - Sideling Hill Forest Foreman HQ
    - Chaneyville Forest Foreman HQ
    - Knobsville Tract
    - Kerper Tract
    - Cove Road ATV Lot
    - Childers Ridge ATV Lot
    - Route 326 ATV Lot
    - Refuge Trail ATV Lot
    - Martin Hill Road ATV Lot
    - Beans Cove Road Parking Lot
    - Tower Road – Lincoln Trail Lot

### **Issues, Challenges and Opportunities**

Key issues and challenges to interpretation/operations at the site and a list of possible solutions to each of these concerns. Interpretation is a management strategy.

How can you use interpretation to resolve some of your key management issues?

**Recommendations for Personal (P) and Non-personal (NP) Media**

This section includes the specific descriptions for personal (staffing, programs) and non-personal (exhibits, publications, waysides, etc.) media as well as costs for each recommendation.

This is how you accomplish the objectives and prioritize your interpretive projects and funding.

**This section is linked to the Project Request Sheet/Share Point Site. Your priorities become our priorities.**

*Priority	*Rec Number	Recommendations (in priority order)	Corresponding Objectives	Estimated Cost	Project Lead
<b>Forest District - General</b>					
		<b>Personal Services (P):</b>			
1	P1	Interpretive Programs		Staff Costs	Program staff
		<b>Non Personal Services (NP):</b>			
<b>Bear Valley LMU</b>					
		<b>Non Personal Services (NP):</b>			
2	NP1	CCC History Wayside		\$850.00 each	Keiper
10	NP2	Self-Guided Driving Tour		\$1000.00 each	Keiper / Naugle
16	NP3	Vernal Pond Education Wayside			
<b>Allen's Valley North LMU</b>					
		<b>Non Personal Services (NP):</b>			
18	NP18	Forbes Road Interpretation			Keiper / Naugle

*Priority	*Rec Number	Recommendations (in priority order)	Corresponding Objectives	Estimated Cost	Project Lead
<b>Allen's Valley South LMU</b>					
		<b>Non Personal Services (NP):</b>			
6	NP4	GWW / Grouse Habitat Site Wayside			Scheetz / Naugle
7	NP5	Living Classroom Development RMC			Naugle / Scamardella
17	NP17	Charcoal Trail Hearth Interpretation			Keiper / Naugle
<b>Kerper Tract LMU</b>					
		<b>Non Personal Services (NP):</b>			
8	NP6	Living Classroom Development		??0.00 each	Scamardella / Naugle
9	NP7	Site History Wayside		??0.00 each	Scamardella / Naugle
<b>Sideling Hill North LMU</b>					
		<b>Non Personal Services (NP):</b>			
1	NP8	CCC History Wayside		\$850.00 each	Keiper
4	NP9	RR Trestle (Big & Little) Wayside		\$1000.00 each	Keiper
5	NP10	Self-Guided Tour(s)		\$1000.00 each	Keiper / Naugle
15	NP11	Interpretation RE Forbes Road		\$1000.00 each	Keiper

<b>*Priority</b>	<b>*Rec Number</b>	<b>Recommendations (in priority order)</b>	<b>Corresponding Objectives</b>	<b>Estimated Cost</b>	<b>Project Lead</b>
<b>Sideling Hill South LMU</b>					
		<b>Non Personal Services (NP):</b>			
<b>Resettlement Lands LMU</b>					
		<b>Non Personal Services (NP):</b>			
11	NP12	Field to Forest Wayside @ Pine Ridge		\$850.00 each	Keiper
<b>Martin Hill LMU</b>					
		<b>Non Personal Services (NP):</b>			
12	NP13	Old Mill Site @ Sweet Root Interpretation		\$850.00 each	Keiper
13	NP14	Self-Guided Tour		\$1000.00 each	Keiper / Naugle
3	NP15	CCC History Wayside		\$850.00 each	Keiper
14	NP16	Old Fire Tower Site Interpretation		\$1000.00 each	Keiper
<b>Lake Koon LMU</b>					
		<b>Non Personal Services (NP):</b>			
		TBD			

\*The Priority number and Recommendation Number are needed when requesting an interpretive project from the Communication Section.

### **Evaluation Strategies**

- How did we do?
- These are the methods that will be used to measure the effectiveness in meeting the objectives.
- Is that wayside effective?
- Are there less complaints?
- Review this plan every cycle in conjunction with the District Management Plan and SFRMP to discuss updates and changes needed.

### **Implementation Plan**

For this section, you can take the recommendations and group them into “Ongoing Efforts”, “Phase I” and “Phase II” projects, if that is helpful in planning.

### **References**

Plans, studies, maps and resources used in developing your interpretive plan.