NEW YORK STATE OF OPPORTUNITY. | Department of Environmental Conservation

McDonough

UNIT MANAGEMENT PLAN

DRAFT

Towns of McDonough, Preston & Smithville

County of Chenango

June 2019

DIVISION OF LANDS AND FORESTS
Bureau of State Land Management, Region 7

2715 State Highway 80
Sherburne, NY 13460

McDonough
UNIT MANAGEMENT PLAN

COVERING FOUR STATE FORESTS IN CHENANGO COUNTY, NY:

McDONOUGH - CHENANGO R.A. # 1 & 11
LUDLOW CREEK - CHENANGO R.A.# 6
GENEGANTSLET-CHENANGO R.A. # 26

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DEC's Mission

"The quality of our environment is fundamental to our concern for the quality of life. It is hereby declared to be the policy of the State of New York to conserve, improve and protect its natural resources and environment and to prevent, abate and control water, land and air pollution, in order to enhance the health, safety and welfare of the people of the state and their overall economic and social well-being." - Environmental Conservation Law 1-0101(1)

* Highlighted (**bold**) terms are defined in the Glossary.

Vision Statement

State Forests on the McDonough Unit will be managed in a sustainable manner by promoting ecosystem health, enhancing landscape biodiversity, protecting soil productivity and water quality. In addition, the State Forests on this unit will continue to provide the many recreational, social and economic benefits valued so highly by the people of New York State. DEC will continue the legacy which started more than 80 years ago, leaving these lands to the next generation in better condition than they are today.
This plan sets the stage for DEC to reach these ambitious goals by applying the latest research and science, with guidance from the public, whose land we have been entrusted to manage.

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PREFACE

STATE FOREST OVERVIEW

The public lands comprising this unit play a unique role in the landscape. Generally, the State Forests of the unit are described as follows:

- large, publicly owned land areas;
- managed by professional Department of Environmental Conservation (DEC) foresters;
- green certified jointly by the Forest Stewardship Council (FSC) & Sustainable Forestry Initiative (SFI);
- set aside for the sustainable use of natural resources, and;
- open to recreational use.

Management will ensure the sustainability, **biological diversity**, and protection of functional **ecosystems** and optimize the ecological benefits that these State lands provide, including the following:

- maintenance/increase of local and regional **biodiversity**
- response to shifting land use trends that affect habitat availability
- mitigation of impacts from invasive species
- response to climate change through carbon sequestration and habitat, soil and water protection

Legal Considerations

Article 9, Titles 5 and 7, of the Environmental Conservation Law (ECL) authorize DEC to manage lands acquired outside the Adirondack and Catskill Parks. This management includes **watershed** protection, production of timber and other forest products, recreation, and kindred purposes. For additional information on DEC's legal rights and responsibilities, please review the statewide Strategic Plan for State Forest Management (SPSFM) at http://www.dec.ny.gov/lands/64567.html. Refer specifically to pages 33 and 317.

MANAGEMENT PLANNING OVERVIEW

The McDonough Unit Management Plan (UMP) is based on a long-range vision for the management of McDonough, Ludlow Creek and Genegantslet State Forests, balancing long-term ecosystem health with current and future demands. This Plan addresses management activities on this Unit for the next ten years, though some management recommendations will extend beyond the ten-year period. Factors such as budget constraints, wood product markets, and forest health problems may necessitate deviations from the scheduled management activities.

Strategic Plan for State Forest Management

This unit management plan is designed to implement DEC's statewide Strategic Plan for State Forest Management (SPSFM). Management actions are designed to meet local needs while supporting statewide and eco-regional goals and objectives.

The SPSFM is the statewide master document and Generic Environmental Impact Statement (GEIS) that guides the careful management of natural and recreational resources on State Forests. The plan aligns future management with principles of landscape ecology, ecosystem management, **multiple use** management and the latest research and science available at this time. It provides a foundation for the development of Unit Management Plans. The SPSFM divides the State into 80 geographic "units," composed of DEC administered State Forests that are adjacent and similar to one another. For more information on management planning, see SPSFM page 21 at http://www.dec.ny.gov/lands/64567.html.

DEC's MANAGEMENT APPROACH AND GOALS

Forest Certification of State Forests

In 2000, New York State DEC-Bureau of State Land Management received Forest Stewardship Council® (FSC®) certification under an independent audit conducted by the National Wildlife Federation - SmartWood Program. This certification included 720,000 acres of State Forests in DEC Regions 3 through 9 managed for water quality protection, recreation, wildlife habitat, timber and mineral resources (multiple-use). To become certified, the Department had to meet more than 75 rigorous criteria established by FSC. Meeting these criteria established a benchmark for forests managed for long-term ecological, social and economic health. The original certification and contract was for five years.

By 2005 the original audit contract with the SmartWood Program expired. Recognizing the importance and the value of dual certification, the Bureau sought bids from prospective auditing firms to reassess the Bureaus State Forest management system to the two most internationally accepted standards - FSC and the Sustainable Forestry Initiative® (SFI®) program. However, contract delays and funding shortfalls slowed the Departments ability to award a new agreement until early 2007.

Following the signed contract with NSF-International Strategic Registrations and Scientific Certification Systems, the Department was again audited for dual certification against FSC and additionally the SFI program standards on over 762,000 acres of State Forests in Regions 3 through 9. This independent audit of State Forests was conducted by these auditing firms from May until July 2007 with dual certification awarded in January 2008.

State Forests continue to maintain certification under the most current FSC and SFI standards. Forest products derived from wood harvested off State Forests from this point forward may now be labeled as "certified" through chain-of-custody certificates. Forest certified labeling on

wood products may assure consumers that the raw material was harvested from well-managed forests.

The Department is part of a growing number of public, industrial and private forest land owners throughout the United States and the world whose forests are certified as sustainably managed. The Department's State Forests can also be counted as part a growing number of working forest land in New York that is *third-party certified* as well managed to protect habitat, cultural resources, water, recreation, and economic values now and for future generations.

The mark of responsible forestry

FSC® C002027

Ecosystem Management Approach

State Forests on this unit will be managed using an ecosystem management approach which will holistically integrate principles of landscape ecology and multiple use management to promote habitat biodiversity, while enhancing the overall health and resiliency of the State Forests.

Ecosystem management is a process that considers the total environment - including all non-living and living components; from soil micro-organisms to large mammals, their complex interrelationships and habitat requirements and all social, cultural, and economic factors. For more information on ecosystem management, see SPSFM page 39 at http://www.dec.ny.gov/lands/64567.html.

Multiple-use Management

DEC will seek to simultaneously provide many resource values on the unit such as, fish and wildlife, wood products, recreation, aesthetics, minerals, watershed protection, and historic or scientific values.

Landscape Ecology

The guiding principle of multiple use management on the unit will be to provide a wide diversity of habitats that naturally occur within New York, while ensuring the protection of rare, endangered and threatened species and perpetuation of highly ranked unique natural communities. The actions included in this plan have been developed following an analysis of habitat needs and overall landscape conditions within the planning unit (i.e. the geographical area surrounding and including the State Forests) the larger ecoregion and New York State.

Ecosystem Management Strategies

The following strategies are the tools at DEC's disposal, which will be carefully employed to practice landscape ecology and multiple-use management on the unit. The management strategy will affect species composition and habitat in both the short and long term. For more information on these management strategies, please see SPSFM page 81 at http://www.dec.ny.gov/lands/64567.html.

Landscape ecology seeks to improve landscape conditions, taking into account the existing habitats and land cover throughout the planning unit, including private lands.

Passive Management

DEC foresters will employ passive management strategies through the designation of natural and protection areas, and buffers around those areas, such as along streams, ponds and other wetlands, where activity is limited.

Silviculture (Active Management)

DEC foresters will practice silviculture; the art and science of controlling the establishment, growth, composition, health, and quality of forests and woodlands, in an effort to promote biodiversity and produce sustainable forest products. There are two fundamental silvicultural systems which can mimic the tree canopy openings and disturbances that occur naturally in all forests; even-aged management and uneven aged management. Each system favors a different set of tree species. In general, even-aged management includes creating wide openings for large groups of trees that require full sunlight to regenerate and grow together as a cohort, while uneven-aged management includes creating smaller patch openings for individual trees or small groups of trees that develop in the shade but need extra room to grow to their full potential.

STATE FOREST MANAGEMENT GOALS

Goal 1 – Provide Healthy and Biologically Diverse Ecosystems

Ecosystem health is measured in numerous ways. One is by the degree to which natural processes are able to take place. Another is by the amount of naturally occurring species that are present, and the absence of non-native species. No single measure can reveal the overall health of an ecosystem, but each is an important part of the larger picture. The Department will manage State Forests so that they demonstrate a high degree of health as measured by multiple criteria, including the biodiversity that they support.

Goal 2 – Maintain Man-made State Forest Assets

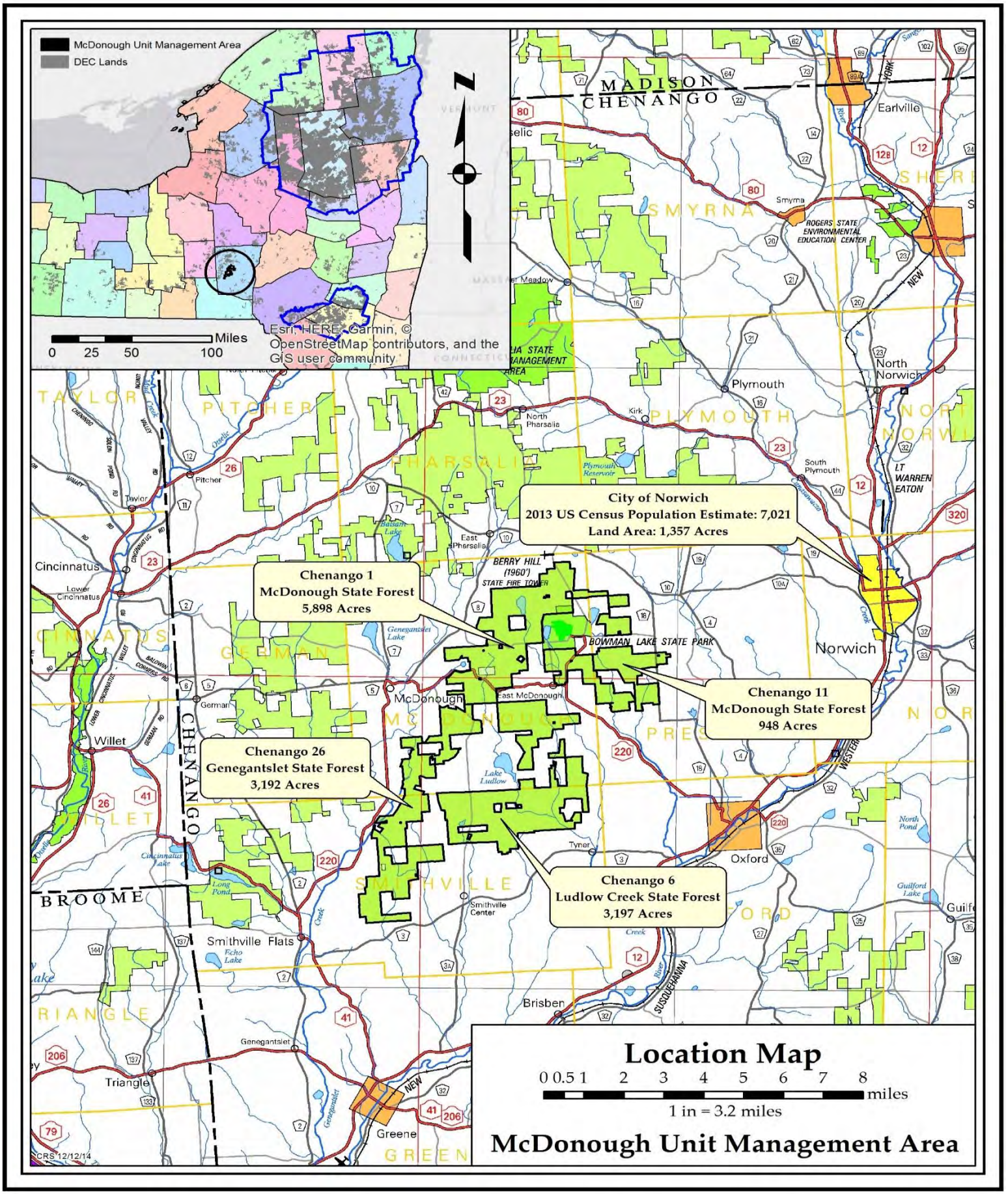
Man-made assets on State Forests include structures, boundary lines, trails, roads and any other object or infrastructure that exists because it was put there by people. Many of these items need no more than a periodic check to make sure they are still in working order. Others need regular maintenance to counteract the wear of regular use. It is the Department's intent

to ensure that all man-made items on State Forests are adequately maintained to safely perform their intended function.

Goal 3 – Provide Recreational Opportunities for People of all Ages and Abilities
State Forests are suitable for a wide variety of outdoor recreational pursuits. Some of these activities are entirely compatible with one another, while others are best kept apart from each other. Equally varied are the people who undertake these activities, as well as their abilities, and their desire to challenge themselves. While not all people will be able to have the experience they desire on the same State Forest, the Department will endeavor to provide recreational opportunities to all those who wish to experience the outdoors in a relatively undeveloped setting.

Goal 4 – Provide Economic Benefits to the People of the State
ECL §1-0101(1) provides in relevant part that "It is hereby declared to be the policy of the State of New York to conserve, improve and protect its natural resources and environment and to prevent, abate and control water, land and air pollution, in order to enhance the health, safety and welfare of the people of the state and their overall **economic** and social well-being." (Emphasis added) In considering all proposed actions, the Department will attempt to balance environmental protection with realizing potential economic benefit.

LOCATION MAP



Historical And Background Information

State Forest History

The **forest** lands outside the Adirondack and Catskill regions owe their present character, in large part, to the impact of pioneer settlement. Following the close of the Revolutionary War, increased pressure for land encouraged westward expansion. Up to 90% of the woodlands were cleared for cultivation and pasture.
Early farming efforts met with limited success. As the less fertile soils proved to be unproductive, farms were abandoned and settlement was attempted elsewhere. This set the stage for vegetative **succession** and new forests of young **sapling**s began to occupy the ground once cleared.

The State Reforestation Law of 1929 and the Hewitt Amendment (of the NYS Constitution) of 1931 set forth the legislation which authorized the Conservation Department to acquire land by gift or purchase for reforestation areas. This legislation was used to purchase the lands associated with seven of the **State Forests** addressed in this Unit Management Plan (UMP). These State Forests, consisting of not less than 500 acres of contiguous land are to be forever devoted to "reforestation and the establishment and maintenance thereon of forests for watershed protection, the production of timber and for recreation, and kindred purposes." This broad program is presently authorized under Article 9, Title 5 of the Environmental Conservation Law.

In 1930 Forest Districts were established and the tasks of land acquisition and reforestation were started. Shortly after his inauguration in 1933, President Theodore Roosevelt signed legislation authorizing the Civilian Conservation Corps (CCC) program. Under the supervision of Army personnel, men between the ages of 18 and 26 were employed to plant trees, construct ponds, bridges and roads, as well as other forest improvement activities. Thousands of young men were assigned to plant millions of trees on the newly acquired State Forests. Most of the **plantations** of red pine and Norway Spruce on the forests of this Unit were planted in the 1930s by the CCC.

During the war years of 1941-1945, very little was accomplished on the **reforestation** areas. Plans for further planting, construction, facility maintenance, and similar tasks had to be curtailed. However, through postwar funding, conservation projects once again received needed attention. The Park and Recreation Land Acquisition Act of 1960, as well as the Environmental Quality Bond Acts of 1972 and 1986, contained provisions for the acquisition of additional State Forest lands, including in-holdings or parcels adjacent to existing State Forests. A total of 1,773.7 acres were purchased with these funds for acquisitions to the State Forests addressed in this UMP. All of these lands were acquired for the conservation and development of natural resources, including the preservation of scenic areas, watershed protection, **forestry**, and recreation.

In 1970, the New York State Department of Environmental Conservation (DEC) was established. This new agency took over the mission of the old Conservation Department with the addition of various State environmental quality Divisions such as air and water. DEC's Division of Lands & Forests is now responsible for the management and stewardship of the State Forests.

New York State totals just over 30 million acres. The state-owned Forest Preserves in the Adirondack and Catskill Parks contain nearly 3 million acres, or very nearly 10 percent of the State's land area. These New York State Constitution, Article XI, Section mandates that Forest Preserve land be "forever kept as wild forest lands". No timber may be cut from the Forest Preserves. State Forests outside of the Adirondack and Catskill Preserves total over 780,000 acres. These lands are managed for a wide variety of purposes such as timber production, hiking, skiing, fishing, trapping and hunting. These State Forests are of great economic importance to the People of New York State. These forests also contribute greatly, in many additional ways, to the health and well-being of our communities.

Local History

In *The Archaeology of New York State*, William Ritchie (1994) details cultural development from the earliest hunters to the Iroquois tribes first encountered by Europeans at the beginning of the seventeenth century. Human occupation of central New York is linked with the final retreat of the Wisconsin ice sheet nearly 12,000 years ago. As ecological conditions favorable to plant growth began to prevail, a mixed forest developed that supported mastodon, giant beaver, elk, deer and many smaller mammals. Groups of Paleo-Indian hunters equipped with chipped stone tools followed these animals and migrated into the region from the south by following channels and tributaries of major waterways such as the Susquehanna and Allegheny Rivers. These small, freely wandering bands were related by blood or marriage and their movements and temporary encampments were entirely dependent on the migrations of wildlife species.

More permanent types of settlement did not occur until the Woodland Stage, beginning in 1,000 BC, with the development of ceramics, agriculture and village life. The Owasco people inhabited New York during the Woodland Stage and cultivated corn, beans and squash to supplement foods gathered from the wild. Excavations at former Owasco sites have uncovered implements for hoe tillage and ceramic vessels used for the preparation and storage of food. In addition to agriculture, hunting and fishing sustained Owasco populations and during this period the use of bow and arrow and domesticated dogs emerged as important features of the hunt.

One of the earliest Woodland sites in Chenango County is associated with the Owasco culture and dates from 905 AD. Known as the White site, the village was located near present day Norwich and included communal houses, cooking features and textile fragments used in burials, but no evidence of cultivated plants. The late Woodland stage of New York's pre-history is notable for the establishment of large, permanent longhouse villages, a developed

agricultural economy and the unification of the Six Nations into the Iroquois Confederacy. According to Iroquois tradition, the Confederacy was founded by Deganaeidah in the late fourteenth or early fifteenth century for the purpose of advancing peace between the Mohawk, Oneida, Cayuga, Onondaga and Seneca peoples (Hagan, 1975). A sixth tribe, the Tuscaroras, joined the Confederacy in the early 18th century after migrating from North Carolina following wars with the colonists. The Oneidas inhabited what is today Chenango County and excavations conducted by Ritchie provide evidence of early Iroquois culture at Bainbridge.

During the Revolutionary War, Joseph Brant, a prominent Mohawk was responsible for organizing the Iroquois Confederacy to support the British in their war with the colonists. Brant, who was educated by Anglican missionaries and spoke three of the Six Nation languages, believed that the Confederacy could coexist with the British but the expansionist fervor of the colonist, if not subdued, would lead to the Iroquois' demise. In 1768, in exchange for "lavish" gifts and protection from colonial expansion, the Confederacy agreed to cede lands they claimed in New York, West Virginia, Kentucky and Tennessee to the British Crown. Increasingly, the Confederacy became dependent on a steady supply of firearms, metal implements and other goods manufactured in Europe. This relationship ultimately strengthened Britain's strategic advantage over the colonists. Throughout the Revolutionary War, while the Confederacy was actively engaged in combat with the colonists, the Oneidas remained neutral. Subsequently, the American campaign of 1779 led by General John Sullivan to "strike a blow for the prompt and permanent overthrow of the Indian power" spared the villages and crops of the Oneidas. In retaliation for their neutrality however, Brant mounted an expedition against the Oneidas, forcing them to take refuge in the white settlements where they remained in active alliance with the colonists until the close of the war. Despite their neutrality and ultimate alliance with the colonists, a treaty drawn at Fort Stanwix in 1784 resulted in the Oneidas ceding to the Federal government much of their land west of the Unadilla River. Governor George Clinton subsequently acquired for the State of New York all land owned by the Iroquois with the exception of certain reservations (Hagan, 1975).

With the reservation period that followed the Pickering Treaty of 1794, Ritchie reports that Iroquois communalism was replaced by a more isolated family life on farmsteads scattered about the reservation lands. By 1800, the longhouse, which represented the unity of both individual clans and the larger Iroquois Confederacy, was increasingly being replaced by the single family log cabin of European introduction.

To facilitate settlement, the State directed Surveyor-General Simeon DeWitt to survey and delineate lands, to be called the Chenango Twenty Townships, into towns measuring 500 chains on each side (10 chains = 660'), sections of which were divided into four equal parts and lots to contain 250 acres each. To accomplish the ready sale of these lands, DeWitt was instructed to fix a price at no less than 3 shillings (24 cents) per acre. In 1792, land in Chenango County was offered for sale in large lots and many speculators acquired vast holdings for three shillings per acre and sold to smaller buyers for twenty.

The intensity with which the **landscape** of central New York was transformed following European settlement is comparable only to glaciation. The opening of the frontier resulted in an unprecedented migration into the region leading to extraordinary and permanent environmental change. Between 1790 and 1820, thirty thousand people moved into Chenango County and cleared more than 130,000 acres of forest land. By 1870, nearly 400,000 acres or 75% of the County was in an open, "improved" condition. Trees were felled, girdled and burned and farms were quickly producing goods for both home use and market. Alan Taylor argues that forest clearing radically diminished nature's wild diversity and that the wholesale substitution of native flora and fauna with cultivated plants and livestock resulted in a "domesticated ecosystem" capable of supporting larger human populations but more vulnerable to disease, drought, erosion and pests. "Settlement was a dual process: of emigration from older to newer communities and of environmental transformation into a landscape that better suited the settler's desires." (Taylor,1995)

Speculators, settlers and other newcomers to central New York learned to interpret the frontier landscape and make calculated decisions based on ecological conditions. "In their commercial, competitive, agricultural and rapidly expanding society, men prospered or failed largely on the basis of their ability to judge and acquire superior lands. The economic race of life rewarded those who correctly read the diverse forested landscape for the signs of agricultural potential and then acquired the best tracts most cheaply." (Taylor,1995)

Once acquired, clearing forest land not only advanced farm productivity but provided settlers with the opportunity to accumulate capital. In 19th century America, forest land would rise in value two to three times over a ten-year period while cleared land increased in value five to twenty times. Furthermore, the subsistence and economic incentives for land clearing was coupled with a righteousness grounded in Christianity. "Any qualms the frontiersman may have felt about the propriety of invading and exploiting the wilderness were calmed with the aid of the first commandment of God to man, Genesis 1:28: 'Be fruitful and multiply, and replenish the earth, and subdue it, and have dominion over every living thing that moveth over the earth'" (Nash, 1974).

Within a period of fifty years, the wilderness, which one European observer described as a "vast dome of vegetation where thousands of species are intertwined in a sort of chaos", was gone, replaced by what Taylor describes as a domesticated landscape. By 1845, two hundred and twenty five sawmills were operating in Chenango County and at the same time New York led the nation in lumber exports. Out of the dynamic social, economic and political conditions of the late nineteenth century, central New York emerged as a landscape shaped as much by the cycles of nature as by the impress of culture.

Colonists who settled prior to the 1792 land offering were considered illegal inhabitants. One such "squatter," James A. Glover, arrived from Norwich, Connecticut in 1787 and constructed a cabin on Fly Meadow Creek within the present-day town of Preston. Subsequent pioneers, who

purchased or took in pay for military duty sections of surveyed land, arrived at the close of the Revolutionary War and began the monumental task of clearing the forest and creating conditions necessary for settlement.
In 1804, Elder Davis Rogers and his son-in-law, Joseph Turner, arrived from Connecticut and settled on the present-day Rogers Street in the town of Preston. They organized a church society in 1816 and soon the area was "thickly" settled with members of the Rogers' family. By 1836 a Seventh Day Baptist church was constructed and today one can visit the Rogers' cemetery where the fifty graves recall the Sabbath keeping members of the congregation.

The hamlet of McDonough, while spelled slightly different, was formed in 1818 and is named for Commodore MacDonough, a naval hero in the 1812 battle of Lake Champlain. Some of the earliest settlers to McDonough arrived from Vermont and established their farms on land known as the Vermont Suffers Tract. This land was set aside to compensate those who suffered loss of land through the boundary line change between Vermont and New York. Smithville was formed from Greene in 1808 and derives its name from Elisha Smith, the first agent for the tract under the original Hornby Estate.

By 1825 the population of McDonough, Preston and Smithville was 4,367. There were 32 sawmills and 43,972 acres or 55% of the land was in an "improved" condition. Forests were cleared to establish cropland and pasture and cut timber provided the raw materials for local industries. McDonough had two tanneries, a paper mill, and shops where furniture, coffins, and wood implements were manufactured. Preston had the largest tannery in central New York with a water powered mill for grinding hemlock bark and large vats for soaking hides. Smithville had ten sawmills and manufacturing supplied goods for both local use and export. The Genegantslet Creek provided the necessary water power for many of the early industries including the Genegantslet Woolen Mills where cassimere, flannel and yarn were manufactured. Smithville was also known for its quarry where cut stone, reputedly the best of its kind, was shipped by rail to such destinations as Elmira, where it was used in the construction of the State Reformatory.

In her unpublished history of McDonough, Helen Hill Reid Tuttle provides a description of Spee's Spa, also known as McDonough Sulfur Springs, located approximately six miles south of the hamlet of McDonough on Sulfur Springs Road in the present day Genegantslet State Forest. It was a popular resort built in the early part of the 19th century that attracted visitors seeking relief from skin trouble and rheumatism. The resort was a two-story building with double decked verandas, twenty bedrooms, and a large ballroom. A stage line operated by G.D. Phillips ran from Oxford every Friday and, before closing in 1862, carried "many jolly loads of health and pleasure seekers during the season".

Donald Parkerson observes that in mid-19th century New York, men and women were "abandoning the security and drudgery of yeomanry (subsistence farming) for the gilt-edged life of material comfort associated with the market economy" (Parkerson, 1995). Potash generated from burning the potassium-rich maple and elm forests offered local residents one opportunity

for accessing the market economy. New York State led the nation in potash production fueled primarily by European demand for its use in manufacturing soap, glass and dies. Taylor suggests that the robust potash trade in central New York provided farmers with the most profitable return on their labor and, perhaps more importantly, accelerated the clearing and burning of forest land.

Migration and industrialization following the Civil War began to reconfigure America's economic and social conditions. By the late nineteenth century the amount of land under cultivation in Chenango County had peaked and population began to decline. Migration out of the rural east was encouraged by railroad barons and speculators who advertised fertile land and a better life in Ohio, Minnesota and points west. Horace Greely, editor of the New York Tribune popularized the phrase "go west young man and grow up with the county." Greely was a proponent of Manifest Destiny and believed that Americans had exceptional virtues and were destined to expand settlement throughout the western frontier. In addition, urbanization and industrial development provided an alternative to an agrarian existence and people migrated to cities to work in factories, mills and sweatshops. The same industries that drew people to cities also produced labor saving implements and technologies that required fewer people on the farm.

By 1925 the population of the three towns had dropped to 51% of its 1845 level from 4,367 to 2,125 residents. A 1929 study of the Town of Pharsalia in Chenango County conducted by Cornell University's Agricultural Experiment Station found that "uninhabited houses in various stages of disintegration are seen from all roads…. and dwellings and barns are in many cases reduced to heaps of fallen material which are rapidly disappearing under a vigorous growth of weeds and trash." The economic depression of 1929 contributed to increasing rates of tax delinquency, poverty and a more heightened awareness of New York's rural land problem.

Owing in part to recommendations from Cornell but, more importantly, the advocacy of Governor Franklin D. Roosevelt, New York State undertook an ambitious program to reclaim former agricultural land through reforestation and scientific forest management. In a 1931 speech to the Conference of Governors, Roosevelt detailed New York's rural land problem and argued that "the greater part of this land should be put into a different type of crop which will take many years to harvest but which, as the years go by, will, without question, be profitable and at the same time economically necessary-the growing of trees." Together with Senator Charles J. Hewitt, chairman of the State Senate's powerful Finance Committee, Roosevelt successfully campaigned for the passage of the Hewitt Amendment which authorized the acquisition "by gift or purchase, reforestation areas, which shall consist respectively of not less than 500 acres of contiguous lands, which shall forever be devoted to the planting, growth and harvesting of trees such as shall be deemed by the Conservation Commissioner best suited for the lands to be reforested." With relatively high rates of farm abandonment, Chenango County became an early focus of state land acquisition efforts. Within one year of the Hewitt Amendment's passage, 16,000 acres of abandoned farmland had been acquired in Chenango County and another 57,000 acres would ultimately be purchased. Tom Patton argues that the success of the Hewitt Amendment put New York State in the forefront of public forestry and

established Roosevelt as America's most important conservationist.

Shortly after his inauguration in 1933, President Franklin Roosevelt signed legislation authorizing the Civilian Conservation Corp (CCC). The United States was four years into the Great Depression and Roosevelt's New Deal, which included the CCC, was designed to, in his own words, "put America back to work." Drawing on his experience as governor of New York where he created the Temporary Emergency Relief Administration and hired 10,000 men to work in the woods, Roosevelt pledged to put a million men to work in a national reforestation program. Under the supervision of U.S. Army personnel, men between the ages of 18 and 26 were employed in a variety of conservation projects including flood control, habitat improvement, fire protection and reforestation.

The first CCC camp in Chenango County was a tent barracks, Tent Camp # 3, established in June 1933 for 180 black recruits located between North Griffen Road and Mill Brook in the Town of Preston on McDonough State Forest. The camp was the focus of a 2001 essay titled *A Forest Camp Disgrace*: *The Rebellion of Civilian Conservation Corp Workers at Preston, New York* by Tom Patton. In it he describes an incident where a group of young men refused to work in protest to black clerks being replaced by white recruits. Six recruits were arrested, thirty-four were sent home, and all others were transferred to another camp at Yaphank, Long Island. Roosevelt's critics used the incident to expose racial injustices in the CCC and argued that US Army involvement with the camps was an effort to militarize labor in preparation for World War II (Patton).

A more permanent camp, S-68, was established in October 1933 along State Route 220 in the Town of McDonough. The camp consisted of five barracks, a mess hall, an officers living quarters, a recreation building with a library, and various garages and workshops. The camp was active through 1941 and during its eight-year history, 1500 recruits undertook many conservation projects including reforestation, road construction, and flood control. A stone chimney located on McDonough State Forest, southeast of Bliven Pond along Route 220 marks the site where Camp S-68 once stood.

The Berry Hill Fire Tower, located on McDonough State Forest, west of Tower Road, was manufactured by the International Derrick Corporation and was constructed by the Civilian Conservation Corp in 1934. The 60-foot tower is located on one of the highest summits in Chenango County (1960 feet) and was last staffed by a fire observer in 1988. As with other state operated fire towers during World War II, the forest fire observer at Berry Hill reported all aircraft sightings to the local command of Civil Defense, while at the same time keeping an eye out for smoke. In 1993, following public interest in the Tower's historical significance, it was nominated for inclusion in the National Historic Lookout Register. Currently the tower is used as a communications mast, supporting four separate radio systems. Teresa Monroe-Werner who grew up on a nearby dairy farm recalled one observer launching paper airplanes from his perch atop the tower. "Those airplanes would land down in the pasture where my brother and I would find the ones that had landed with what appeared to be a scheduled stop in one of our cow paths."

In 1962, in response to a growing demand for outdoor recreation facilities, the Conservation Department established 200 campsites, a day use area, a boat launch and a sand beach at Bowman Lake. In its first year of operation, Bowman Lake had 7,580 visitors and by 1964 public use of the facility had increased to 29,055. In 1966, approximately 631 acres, including the lake and surrounding recreational facilities, were transferred from the Conservation Department to the New York State Parks and Recreation Commission. Today Bowman Lake State Park continues to provide year-round recreational opportunities.

If the 19th century was a period of forest clearing, the 20th century was a period of forest regrowth. In 1875, forest cover occupied approximately 20% of the land area of New York State. Today, approximately 62% of the state is forested (Canham and King 1998). Both natural reforestation and tree planting has returned 15 million of acres of forest to New York State. Bill McKibben argues that the "unintentional and mostly unnoticed renewal of the rural and mountainous East-not the spotted owl, not the salvation of Alaska's pristine ranges-represents the great environmental story of the United State,"(McKibben,1995).

Since 1998, the number of parcels in McDonough, Preston and Smithville has increased by 18%, adding 446 new properties to the tax rolls. Parcelization has introduced new features and activities into the landscape, changing both patterns of ownership and how people value natural resources. Local land use is shifting from commodity production and increasingly focused on recreation, leisure and other amenity values. Much of this change is driven by outside demand for vacation homes, hunting camps and other types of rural retreats. Currently, 42% of the land area within the three towns is under absentee ownership. In a 1991 study of Chenango County, Janet Fitchen observed that anxiety and friction often emerge when "city meets country" and that "awareness of change becomes crystallized around a clear dichotomy of 'locals' and 'city people'. As land parcelization and its attendant demographic shift continue to shape the regional landscape, traditional social relations will fade and new modes of experiencing nature will emerge.

Recent History of The McDonough Unit

The following objectives were listed in the 2005 McDonough Unit Management Plan approved by the Department in August of 1999. The status of the objectives from the first plan for this unit are described below.

The following Public Use and Recreation objectives outlined in the first McDonough Unit Management Plan have been accomplished:

- Eleven miles of snowmobile trail were designated as official DEC snowmobile trails.

- The snowmobile corridor trail 5A was rerouted onto Collier Hill Road. Also, 0.1 mile of Collier Hill Road was improved for better snowmobile trail access.

- A 3.0-mile-long hiking and Nordic ski trail was constructed and maintained connecting Bowman Lake State Park nature trail with Whaley's Pond and the designated Natural Area on Chenango RA #1.

- A fisherman's access parking lot was constructed on Chenango RA #26, near the Genegantslet Creek.

- Parking lots were constructed at:
    - Chenango #11 – Green Meadow Road
    - Chenango #1 – Whaley Road
    - Chenango #1 – CCC Road

- A lean-to was constructed along the Finger Lakes Trail on Chenango RA #6.

- Off-road vehicle access was blocked on Chenango RA #6, south and east of the High Bridge and on Chenango RA #26 between Stone Quarry Road and Collier Hill Road.

- A parking area for the Finger Lakes Trail was designated on Chenango RA #1.

- The name of Bowman Creek State Forest was changed to McDonough State Forest to prevent confusion with Bowman Lake State Park.

- A 5' diameter culvert was installed on Short Cut Road.

- A 2.1-mile section of Short Cut Road was rehabilitated and culverts were replaced where necessary.

- A 1.0 mile length of the CCC Truck Trail on Chenango RA #1 was rehabilitated.

- The 2.5 miles of Whaley Pond Road were rehabilitated.

- A total of 5.9 miles of Public Forest Access Roads have been maintained.

- The over 11 miles of snowmobile corridor trail have been maintained on the Unit.

- The chimney and other historic structures at the CCC camp on Chenango RA # 1 were rehabilitated.

- A gate was installed on the snowmobile trail at the intersection of Preston and Galetown Roads.

- A snowmobile trail head was established at the parking lot in Bowman Lake State Park. It was used for a few years but it required snow plowing a long length of road to use it.

After a few years, the plowing was stopped due to lack of use and budget cuts.

- A 3.4-mile length of snowmobile trail was established linking the Bowman Lake State Park trailhead with Corridor Trail #7.

- Heated facilities were provided at Bowman Lake State Park for winter use by snowmobiliers and Nordic skiers. After a few years, the park stopped providing this due to budget cuts since it received a relatively low amount of use and it was expensive to heat.

Public Use and Recreation objectives in the 2005 McDonough UMP that have not been completed are as follows:

The following projects were planned and approved in the first approved UMP:

- Construct parking lots on Chenango #26, Collier Hill Road & Chenango #26, Whiting Road.
  Reason: It was determined that parking areas were not needed at these locations.

- Acquire up to 21 parcels to connect State forests on the unit for the Genny Green Trail project.
  Reason: The Genny Green Trail project was not pursued because of a lack of funding.

- Acquire 347 acres of inholdings to consolidate forests on the unit.
  Reason: Parcels are only purchased from willing sellers when funding is available. A total of four parcels were purchased comprising 68 acres.

- Erect a historic marker at the site of the former CCC camp on Chenango #1.
  Reason: A DEC kiosk was placed at this site which is better able to explain the historical significance of this site.

- Rehabilitate the Berry Hill Fire Tower and cabin for use as a visitors center.
  Reason: This fire tower is the site of a communications antenna. The communications antenna must be relocated before the tower may be opened for public use. To this date, efforts of the Department and other State agencies have been unsuccessful in finding a suitable place and funding necessary to relocate the communications antenna.

- Produce a Public Use map and brochure of the Unit.

Reason: The Department determined that it would be better to provide public use information to everyone through the DEC website. The address to find information about State forests is: http://www.dec.ny.gov/lands/34531.html

- Construct two motor vehicle access trails for permitted people with disabilities on Chenango #1, 11 & 26 for a total of 2.7 miles.

  Reason: A trail was designated on Chenango #1. The trails on Chenango 11 & 26 were not built due to a lack of staffing and funding.

- Reclaim the shale pit on Chenango RA #26, stand A-19.

  Reason: This pit will remain in active status to supply shale for future road or landing construction projects on the forest.

Status of Forest Ecosystem Objectives outlined in the 2005 McDonough plan:

- The first McDonough Unit Management Plan recommended treating 6,558 acres with silvicultural treatments during the period of 1999 – 2014. A total of approximately 4,777 acres (73% of the acres scheduled) were treated through forest product sales during this time period. Acres were not treated due to a variety of reasons including:

  - Lack of staffing or market demand

  - After a field evaluation of the stands, it was determined that they were not appropriate for harvest due to characteristics of stand composition, site conditions, presence of rare species, difficulty of access or economic feasibility of a harvest.

- All of the 779 acres recommended for protection or management as Natural Areas have been maintained in that status. Additional areas have been designated for protection status as a result of field analysis indicating that those areas are best suited for non-timber management purposes.

- All taxes have been paid annually to local communities. See Appendix IX for detailed information about property taxes.

Status of Open Land Ecosystem Objectives outlined in the 2005 McDonough plan:

- The first UMP recommended maintaining 296 acres of shrub land. Current inventory records indicate that the Unit contains 122 acres of this vegetation type. There have been inadequate resources available to maintain the former grasslands through periodic mowing. In addition, the Department has since determined that this region is not suitable to identify as a Grassland Focus Area, so grassland and shrub land areas have been allowed to grow into seedling/sapling forested conditions.

The prior UMP recommended maintaining two water impoundments on the Unit, Whaley Pond and Balt Pond. The dam at Whaley Pond has been maintained. Balt Pond Dam was breached in 2012 and the site was restored to a wetland condition.

Geographic and Geologic Information on the Unit

Geography

The McDonough Unit is located in the Chenango County towns of McDonough, Preston and Smithville. The landscape is a series of gently rolling hills with broad summits occupied by second growth forest, small fields and widely dispersed houses. A network of tributary streams feed the Chenango River and form the headwaters of the Susquehanna Drainage Basin. State Highway 220 bisects the area and a number of county, town and seasonal roads provide access into remote sections of the unit.
The Unit consists of three State Forests which occupy approximately 17% of the land area of the three towns.

Table 1. Forests on the Unit

State Forest Name	Reforestation Area	Acres	Town
McDonough State Forest	Chenango 1&11	6,839	McDonough & Preston
http://www.dec.ny.gov/lands/8165.html			
Ludlow Creek State Forest	Chenango 6	3,197	McDonough & Smithville
http://www.dec.ny.gov/lands/8177.html			
Genegantslet State Forest	Chenango 26	3,193	McDonough & Smithville
http://www.dec.ny.gov/lands/8210.html			
Total		**13,229**	

The 2010 census reports that 3,260 people live within the three towns and with a density of 26 people per square mile, it is well below the New York State average of 412 people per square mile. Since 2000, there has been a 3.5% increase in population with an additional 115 people living in the three towns.

Estimates from the 2013 American Community Survey indicate that 1,424 people are employed in the civilian labor force with 26% working in education and health care, 16% in manufacturing, 10% in construction, and 4% in agriculture, forestry and related occupations. Per capita income is $20,569 and 21% of the population is living in poverty (US Census Bureau).

Mean travel time to work for people within the three towns is approximately 30 minutes suggesting that many are employed within Chenango County. Regional firms with more than 500 employees include NBT Bank, Chobani and The Raymond Corporation. Other local employers include Chenango Memorial Hospital, Frontier Cellular, Norwich City School District and Unison Industries.

Local government is organized at the township level with an elected supervisor, town council and highway superintendent. Each town supervisor is represented on the County Board of Supervisors and has committee appointments. Parts of three central school districts- Greene, Oxford, and Norwich - are located within the unit and have a combined student population of 3,969. The hamlets of McDonough and Smithville Flats are centers of local social and economic life and the locations of residential areas, churches and small businesses.

In the ten-year period ending in 2010, the amount of farmland in Chenango County declined by 13.4% from 199,800 acres to 172,900 acres. Both milk production and the number of cows have declined 27.2% and 34.7% respectively. Despite these declines, dairy agriculture continues to be an important component of the regional economy. In 2012, the total value of milk produced in Chenango County was more than 41 million dollars. This represents more than 60% of the value of all agricultural products sold in the county. The emergence and growth of a regional yogurt industry, with its reliance on local milk, suggests that dairy farming will continue to have an important impact on the social, economic and environmental conditions in Chenango County.

Table 2. Census Figures: 1845, 1925, 2010

Town	Population 1845	Population 1925	Population 2010
McDonough	1,514	740	886
Preston	1,059	544	1,044
Smithville	1,794	841	1,330
Total	**4,367**	**2,125**	**3,260**

Geology

The McDonough Unit is located within the Allegheny Plateau physiographic province, a large upland area extending throughout much of south-central and western New York State and into the northern portion of Pennsylvania. The high plateau of Chenango County is characterized by large, rounded, bedrock-controlled hills and ridges. Hilltops are nearly level and, because of glacial scouring of stream channels and valley floors, the upland plateau has a rugged and rolling appearance.

This region is underlain by bedrock that includes Pre-cambrian **igneous** and **metamorphic** rocks. These are generally referred to as “basement” rocks and are generally found at depths greater than 5,000 feet. Overlying the layers of basement rocks are Paleozoic **sedimentary** rocks deposited between the Cambrian (540 - 485 million years ago (mya)) and Devonian (420 – 360 mya) periods. The Cambrian strata are comprised primarily of sandstone and shale.

The Cambrian strata are overlain by limestones sandstones,and shales deposited during the Ordovician Period (485-445 mya); these Ordovician strata were deposited in warm, shallow, and relatively open marine seas that occupied this region. Some of the Ordovician limestones (e.g., the Black River) were later dolomitized (altered) by hydrothermal fluids. In Chenango

County, the Pre-cambrian, Cambrian, and Ordovician rocks are found only in the subsurface; that is, they never intersect or are exposed at the land surface. Overlying the Ordovician strata are sedimentary strata deposited during the Silurian Period (445 – 420 mya). The Silurian rocks are comprised primarily of evaporites (gypsum, anhydrite and salt), shales with some limestones and dolomites, which were deposited in more restrictive marine seas than the underlying Ordovician age rocks. Overlying the Silurian strata are Devonian rocks consisting primarily of shales, siltstones, and sandstones, with some interbedded limestones and dolomites. Younger rocks of Mississippian and Pennsylvanian age (420 – 290 mya) were either not deposited in the area or were subsequently eroded by other natural events such as glaciation and/or erosion.

The land forms visible today are largely the result of glaciations. During the Pleistocene, which lasted for approximately 1.25 million years, there was a series of glacial advances and retreats that occurred due to alternating cooling and warming of the atmosphere. Some of the intervals between glacial advance and retreat (interstades) were times of warm and semi-tropical climate in regions that are today temperate. As the glacial ice advanced, it rose over hills and mountains and filled valley floors with vast sheets of ice. Embedded with rock and soil, these ice sheets scoured hilltops and gouged out valleys and lake bottoms. Approximately 12,000 years ago the receding Wisconsinan glaciation deposited a heterogeneous mixture of weathered rock and soil material known collectively as glacial till.
Because of the diverse ways in which it was deposited and the chemical composition of parent material, glacial till and the soils that ultimately formed from them are extremely variable. Valley floors were the last to see the glaciers retreat and here meltwater deposited pockets of sedimentary materials known as outwash deposits. **Kames**, **eskers** and **moraines** are some of the formations resulting from these deposits. Today, commercial sand and gravel operations throughout the region owe their existence to the glaciers work.

Table 3. Surficial and Bedrock Geology

State Land Name	Geology	Description
McDonough State Forest	Surficial	Glacial Till - clay, silt, sand, gravel, cobbles, and boulders deposited by glacial activity.
		Kame Deposit - coarse to fine sand and gravel deposited adjacent to glacial ice.
	Bedrock	Shales of the Genesee Group, West River Shale Formation.
Ludlow Creek State Forest	Surficial	Glacial Till - clay, silt, sand, gravel, cobbles, and boulders deposited by glacial activity.
	Bedrock	Shales of the Genesee Group, West River Formation. The south central portion of the state forest is underlain by shales, siltstones, and sandstones of the Sonyea Group, Cashaqua Shale.
Genegantslet State Forest	Surficial	Glacial Till - clay, silt, sand, gravel, cobbles, and boulders deposited by glacial activity.

		Kame Deposit - coarse to fine sand and gravel deposited adjacent to glacial ice.
		Recent Alluvium - sand and gravel deposits confined to flood plains within a valley.
	Bedrock	Shales of the Genesee Group, West River Formation. The southern portion of the state forest is underlain by shales, siltstones, and sandstones of the Sonyea Group, Cashaqua Shale.

Soils

Soils provide the foundation both figuratively and literally, of forested ecosystems. They support an immense number of micro-organisms, fungi, mosses, insects, herptofauna and small mammals which form the base of the food chain. They filter and store water and also provide and recycle nutrients essential for all plant life. For information on DEC's policies for the protection of forest soils, as well as water resources, please see SPSFM page 108 at http://www.dec.ny.gov/lands/64567.htmlMardin, Volusia, and Lordstown are the most common soil series found on the Unit. Mardin soils are moderately well drained and deep with a firm and brittle layer in the lower part of the subsoil at a depth of 14 to 26 inches. The Mardin series soils occupy approximately 41% of the unit. Volusia soils are somewhat poorly drained and deep with a firm and brittle subsoil at a depth of 10 to 20 inches. The Volusia series soils occupy approximately 23% of the unit. Lordstown soils are moderately deep and well drained and have bedrock at a depth of 20 to 40 inches. The Lordstown series soils occupy approximately 15% of the unit.

A small section of the unit is occupied by the Red Hook-Middlebury-Chenango-Castile series and the Valois-Howard-Bath series. These soils are associated with Genegantslet Creek. The Red Hook series consists of deep, somewhat poorly drained soils formed in water-sorted deposits in low areas on glacial outwash terraces, stream terraces, and margins of alluvial flats. The Valois series soils are deep, well drained soils located in valleys and valley sides with slopes ranging from 3 to 50 percent.

Although soil description provides information on subsurface characteristics, ground-level conditions reveal much about land use history and ecological complexity. The relatively smooth ground surface condition in most plantations is due in part to repeated plowing and cropping during the 19th and early 20th centuries. These soils typically have a well-defined plow layer and soil properties such as porosity and availability of nutrients have been altered from pre-settlement conditions. Stones and other impediments to plowing have been removed resulting in a relatively uniform soil texture. Unplowed soils in contrast, have an undulating surface condition with a well-developed hummock and hollow micro topography. The hollows are created when trees are wind thrown, while the hummocks are the decayed and toppled remains of the tree's root system.

For additional information about the soils on the Unit, see the Soil Series and Drainage Classes maps in Appendix XI.

Forest Cover Types

Ninety-one percent (12,292 acres) of the unit is forested, with 35% occupied by the northern hardwood deciduous forest, 35% by mixed forest types including hemlock-northern hardwood, white pine-northern hardwood and plantation-northern hardwood, and 21% occupied by evergreen forest including conifer plantations and stands of native hemlock or white pine.

Following Eyre (1980), the northern hardwood cover type that best describes conditions on the unit is the **sugar maple-beech-yellow birch forest.** These three species are dominant but red maple, hemlock, white ash, black cherry, white pine, and basswood occur in varying mixtures depending on site conditions. The sugar maple-beech-yellow birch forest blends with other northern hardwood types including black cherry-maple, beech-sugar maple, and sugar maple. Past land use, cutting histories, soil characteristics, and differential deer browsing all significantly affect structure and composition of this type. In addition to tree seedlings, common understory vegetation includes striped maple, eastern hophornbeam, viburnums, serviceberry, and root suckers of beech. The **beech-maple mesic forest** described by Reschke provides similar explanation of local forest conditions. In addition to the above listed species, characteristic herbs and wood ferns in the beech-maple mesic type include Canada mayflower, Christmas fern, white wood aster, common wood-sorrel, Pennsylvania sedge, jack-in-the-pulpit, sarsaparilla, shining fir clubmoss, bearded short-husk, white snakeroot, violets, star flower, partridge berry, Solomon's-seals, foam flower, false Solomon's seal, whorled aster, Indian cucumber-root, wreath goldenrod, trilliums, mayapple, trout lily, and sessile-leaved bellwort.

Mixed forest types on the unit include the **hemlock-northern hardwood forest,** and stands of planted spruce and pine mixed with naturally regenerated northern hardwood species. The hemlock-northern hardwood forest is described by Reschke and typically occurs on middle to lower slopes of ravines, on cool, mid-elevation slopes, and on moist, well-drained sites at the margins of swamps. In any one stand, eastern hemlock is co-dominant with any one to three of the following: sugar maple, red maple, yellow birch, American beech, white ash, white pine. The relative cover of eastern hemlock is quite variable, ranging from nearly pure stands in some steep ravines to as little as 20% of the canopy cover. Striped maple, is often prominent as a mid-story tree. Canopy cover can be quite dense, resulting in low light intensities on the forest floor and hence a relatively sparse groundlayer (Reschke).

Evergreen forests include **conifer plantations** and naturally regenerated stands of white pine or hemlock where at least 75% of the canopy cover is occupied by conifer species. Norway spruce, red pine and to a lesser extent white pine, Scotch pine and white spruce plantations were established on the unit beginning in 1932 on what was open pasture or cropland. Many plantations are even-aged monocultures but harvesting and other treatments have changed the structure and species composition of these stands. Eyre describes the hemlock forest type as occurring in pure stands or provides a majority of the stocking. It is often limited to moist

cool valleys, moist flats, north and east slopes, coves, benches, and sides of ravines. Hemlock is very tolerant of shade and in pure stands the understory vegetation is sparse due to low sunlight.

For a list of the trees on the Unit, see **Appendix VII**, Trees. **Appendix XI** includes maps titled "Current Cover Types and Year Last Managed" showing the distribution of vegetation types on the Unit.

Major Land Classifications Within the Unit

The following table identifies the major categories of land found within the Unit. Some of these categories are quite broad, but they are useful in developing forest management goals from a landscape perspective. Definitions for each category are listed below.

TABLE 4. LAND CLASSIFICATION BY SIZE CLASS

Land Class	Acres	Acres by DBH Class			% of Total
		1" - 5"	6" - 11"	12" +	
Ponds	115	-	-	-	1
Shrub land	122	-	-	-	1
Wetland	283	-	-	-	2
Mixed Hardwood/Natural Conifer	3,065	39	354	2,672	23
Natural Hardwood	4,512	223	892	3,397	34
Conifer Plantation	2,446	39	191	2,216	18
Mixed Hardwood/Plantation Conifer	2,495	19	252	2,224	19
Shale Pits	7	-	-	-	<1
Roads	184	-	-	-	1
Totals	**13,229**	**320**	**1,689**	**10,509**	
% of Total Forested Area		**2%**	**14%**	**84%**	**100**

Ponds includes both constructed and natural ponds.

Shrub lands are early successional plant community dominated by shrub species including viburnum, hawthorne, multiflora rose, *Rubus*, honeysuckle, apple with scattered mature trees and small openings occupied by grasses and forbes.

Wetlands include open wet meadows and areas dominated by alder or other shrub species on poorly drained sites.

Mixed hardwood/natural conifer stands are comprised of at least 10% native conifers (eastern white pine, eastern hemlock, balsam fir, or cedar) in a mixture with hardwoods. This category also includes 211 acres of forested wetlands containing native conifers.

Natural hardwoods consist of areas where at least 90% of the forest cover within these stands consists of native hardwood species (white ash, red maple, sugar maple, beech, black cherry, aspen, etc.).

Conifer plantations contain planted trees of species such as red pine, Norway spruce, white spruce, Scotch pine, larch and white pine.

Mixed hardwood/plantation conifer includes those stands dominated by native hardwoods, where less than 50% of the trees are planted conifers.

Shale pits include the pits on the Unit used to maintain the road system.

Roads include the area occupied by forest access roads and town roads on the Unit. Full road **corridor width** is considered to be 50 feet in width and may contain trees, shrubs, or **grassland** habitat along its **edges**. Detailed information about vegetative communities can be found in the Department of Environmental Conservation publication Ecological Communities of New York State (Edinger et al. 2014)

High Conservation Value Forests

High Conservation Value Forests (HCVF) are those portions of State Forests which have known high conservation values that the Department feels should take precedent over all other land use and management decisions. Areas that are identified as having exceptional values may be managed for timber, wildlife and/or recreation, however management activities must maintain or enhance the high conservation values present. Currently, HCVF's are assigned to one or more of five land classifications, four of which may be found on State Forests:

1. Rare community- Forest areas that are in or contain rare, threatened or endangered ecosystems.

2. Special treatment- Forest areas that contain rare, threatened or endangered ecosystems.

3. Cultural Heritage- Forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health) and are critical to their traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities.

4. Watershed- Forest areas that provide safe drinking water to local municipalities.

5. Forest Preserve*- Forest areas containing globally, regionally or nationally significant large landscape level forests, contained within or containing the management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance.

Representative Sample Areas

Representative Sample Areas (RSA's) are stands which represent common ecological communities (i.e. forest types) of high or exceptional quality in their natural state. RSAs are setup to serve one or more of the following purposes:

1. To establish or maintain an ecological reference condition ; or

2. To create or maintain an under-represented ecological condition (i.e. includes samples of successional phases, forest types, ecosystems, and/or ecological communities); or

3. To serve as a set of protected areas or refugia for species, communities and community types not captured in other protection standards such as endangered species or a High Conservation Value Forest.

RSA's can simply be viewed as an effort to keep high quality examples of common ecosystems or assemblages from becoming rare in the landscape. An RSA designation does not prevent future management and in certain cases might require silvicultural treatment to achieve site conditions to perpetuate the representative community. In addition, treatment of an RSA to mitigate unfavorable conditions that will perpetuate the representative community. In addition, treatment of an RSA to mitigate unfavorable conditions that threaten the continuation of the target community will be allowed (ex. Fire, natural pests or pathogens). Although allowed, silvicultural treatment or infrastructure development should not impact the RSA in a way that will degrade or eliminate the viability of the specific assemblage or community. For more information on RSAs please go to
http://www.dec.ny.gov/lands/42947.html

No RSA's have been identified on the McDonough unit at this time.

Resource Protection Areas

In the course of practicing active forest management, it is important to identify areas on the landscape that are either reserved from management activity or where activity is conducted in such a manner as to provide direct protection and enhancement of habitat and ecosystem functions. For more information on these protective measures, see SPSFM page 85 at
http://www.dec.ny.gov/lands/64567.html
Special Management Zones (SMZs) provide continuous overstory shading of riparian areas and adjacent waters, by retaining sufficient tree cover to maintain acceptable aquatic habitat and protect riparian areas from soil compaction and other impacts. DEC's buffer guidelines also maintain corridors for movement and migration of all wildlife species, both terrestrial and aquatic. Buffers are required within SMZs extending from wetland boundaries, high water marks on perennial and intermittent streams, vernal pool depression, spring seeps, ponds and

lakes, recreational trails, campsites and other land features requiring special consideration. See Figure 1 "Water Resources and Special Management Zones in the Appendices for a map of SMZs as applied on the unit, For more information on Special Management Zones please see www.dec.ny.gov/sfsmzbuffers.pdf

The identification of large un-fragmented forested areas, also called martrix forest blocks, is an important component of biodiversity conservation and forested ecosystem protection. In addition, securing connections between major forested landscapes and their imbedded matrix forest blocks is important for the maintenance of viable populations of species, especially wide-ranging and highly mobile species, and ecological processes such as dispersal and pollination over the long term.

Maintaining or enhancing matrix forest blocks and connectivity corridors must be balanced against the entire array of goals, objectives and demands that are placed on a particular State Forest. Where matrix forest block maintenance and enhancement is chosen as a priority for a given property, management actions and decisions should emphasize closed canopy and interior forest conditions. The following areas have been identified to meet demands on the landscape level:

- Matrix Forest Block: DEC has management control of 13,234 acres of the 176,380-acre Tier 1 Chenango Highlands Forest Matric Block

- Forest Landscape Connectivity Corridor: 0 acres

More information regarding Matrix Forest Blocks, connectivity corridors and associated management considerations can be found in the SPSFM page 85 at http://www.dec.ny.gov/lands/64567.html

WETLANDS AND WATER RESOURCES

The McDonough unit lies within the upper reaches of the Susquehanna River drainage basin with freshwater wetlands and tributary streams feeding the Chenango River. At Binghamton the Chenango River meets the Susquehanna River, flows south through Pennsylvania and Maryland, and discharges into the Chesapeake Bay.

Wetlands

In New York State all freshwater wetlands that are at least 12.4 acres in size and have both wetland vegetation and hydric soils are protected under Article 24 of the Environmental Conservation Law. Also known as the Freshwater Wetland Act, it is intended to… "*preserve, protect and conserve freshwater wetlands and the benefits derived therefrom, to prevent the despoliation and destruction of freshwater wetlands, and to regulate use and development of such wetlands to secure the natural benefits of freshwater wetlands, consistent with the general welfare and beneficial economic, social and agricultural development of the state.*"

Part 664 of the New York Codes, Rules and Regulations (6 NYCRR) establishes four classifications for freshwater wetlands. Classification is based on the degree to which wetlands supply benefits such as vegetative cover, ecological associations, and hydrological and pollution control features. Class I wetlands provide the maximum number of benefits while Class IV provide the least. There are sixteen freshwater wetlands on the unit covering 412acres that are protected under Article 24. Two are Class I wetlands (69.4 acres), eleven are Class II (309.6 acres), and two are Class III (34 acres).

The National Wetlands Inventory (NWI) was established by the US Fish and Wildlife Service (FWS) to conduct a nationwide inventory of U.S. wetlands to provide biologists and others with information on the distribution and type of wetlands to aid in conservation efforts. There are 150 wetlands on the unit covering approximately 474 acres that are listed on the NWI.

In addition to Article 24 and NWI wetlands, there are 544 acres on the unit in protection management. Included in this category are poorly drained sites and buffer zones adjacent to wetlands.

See Appendix I for a listing of all wetlands on the unit.

Streams

Genegantslet Creek, Spring Brook, Edgerton Brook, Tillotson Creek, Kendron Brook, Lundlow Creek, Bowman Creek, and Mill Brook are the principle tributary streams that drain the unit. All of these streams have a designated water quality classification of either C(t) or C. Streams having class C(t) are also known as “Protected Streams”. Both class C and C(t) streams are capable of supporting fisheries with C(t) streams capable of supporting a trout population. There are 13.8 miles of C(t) streams on the unit and 41.1 miles of all other streams. For locations of streams on the Unit, see the maps titled “Water Resources and Special Management Zones” in **Appendix XI**.

Ponds

There are two constructed ponds on the Unit. Both Whaley Pond and Kopac Pond are located on Chenango RA#1 and measure 57 acres and 36 acres respectively. Whaley Pond was constructed under the marsh pond program begun on State Forests in 1953. The program was a cooperative effort between the Division of Lands and Forests and the Division of Fish and Game. Ponds were constructed to provide nesting and feeding sites for migratory waterfowl and to serve as a water supply in the event of a fire on State forests. Kopac Pond is a much older impoundment that was constructed prior to state ownership of the property.

MINERAL RESOURCES

Oil, Gas and Solution Mining

Oil and natural gas are valuable energy resources which may be located under State Forests. The extraction of these resources generates revenue and provides raw material for products. Due to the infrastructure necessary to extract oil and natural gas resources, as with any other human activity on State lands, oil and natural gas exploration and its development can have negative impacts on the environment. Some of the impacts are short term such as those occurring during the siting and drilling phases of a well. Other impacts, such as forest **fragmentation,** may have a more persistent effect.

Oil and gas production from State Forest lands, where the mineral rights are owned by the state, are only undertaken under the terms and conditions of an oil and gas lease. In all areas covered by this Unit Management Plan, New York State manages the surface estate through the DEC Division of Lands and Forests, and the mineral estate is managed through the DEC Division of Mineral Resources. At this time, there are no leases for oil or gas exploration or development on the Unit.

Oil and gas production from State Forests lands, where the mineral rights are owned by the state, are only undertaken under the terms and conditions of an oil and gas lease. As surface managers, the Division of Lands and Forests will evaluate any concerns as they pertain to new natural gas leases on State Forest lands. Consistent with past practice, prior to any new leases, DEC will hold public meetings to discuss all possible leasing options and environmental impacts. A comprehensive tract assessment will be completed as part of this process. For more information on natural gas and other mineral resource policies, please see SPSFM Chapter 5, page 225 at http://www.dec.ny.gov/lands/64567.html.

Shale Pits

There are two shale pits on the Unit, most likely created during Public Forest Access Road construction. Today shale is occasionally removed for landing construction and Public Forest Access Road maintenance. There are two shale pits located on the McDonough Unit, one on Chenango R.A. #1, east of Pooler Road and the other on Chenango R.A. #26, south of Chestnut Road. There is currently no public demand for sand, gravel, or other hard rock mineral resources on the Unit. The shale pits are operated under the regulatory threshold as less than 750 cubic yards or 1,000 tons of material is removed within any 12-successive calendar months. Therefore, the sites are not subject to jurisdiction under the Mined Land Reclamation Law and there is no requirement for a New York State mining permit. These pits are also used for target shooting.

Biodiversity

Information regarding biodiversity has been gathered to support the following goals:

- "Keep Common Species Common" by maintaining landscape-level diversity and a wide variety of naturally occurring forest-based habitat as well as managing plantations according to DEC natural resource policy.

- Protect and in some cases manage known occurrences of areas with potential to harbor endangered plants, wildlife and natural communities.

- Consider other "at-risk-species" whose populations levels may presently be adequate but are at risk of becoming imperiled due to incidences of disease and other stressors.

Common Species

The following information sources indicate which common species (among other species) are present over time:

- NYS Breeding Bird Atlas Block Numbers: 4369A, 4369B, 4370A, 4370B, 4370C, 4370D, 4470A, 4470C, 4371D.
  Breeding Bird Atlas blocks can be searched at http://www.dec.ny.gov/cfmx/extapps/bba/

- Herp Atlas: Herp Atlas information on amphibians, toads, frogs, turtles, lizards and snakes can be found at http://www.dec.ny.gov/animals/7140.html . Herp Atlas blocks on the Unit correspond with USGS Quad sheets East Pharsalia, Smithville Flats and Tyner.

- Game Species Harvest Levels-Based on deer take, bear take, turkey harvest in Wildlife Management Unit 7M

Wildlife Resources

Birds

The New York State Breeding Bird Atlas is a comprehensive survey documenting the distribution of breeding birds in New York State. Atlas data was collected between 2000-2005. Atlas blocks in and around the Unit were examined to determine the number of species and their breeding status. The Breeding Bird Atlas confirmed or predicted that 127 species, including 18 species of greatest conservation need, are breeding on or near the Unit. **Appendix III** lists these species and their breeding and protective status. Source: http://www.dec.ny.gov/animals/7312.htmlhttp://www.dec.ny.gov/animals/7312.html

Mammals

The New York GAP Mammal Hexagon Database was used to determine the distribution of mammals on or in the vicinity of the Unit. Other sources were used to determine the protective status of these species. The sources include: the DEC public website, the U.S. Fish and Wildlife Service website, and the New York Natural Heritage Program (NYNHP) database.

The New York State GAP confirmed or predicted 51 mammals, including four species of greatest conservation need, on or in the vicinity of the Unit. **Appendix V** lists mammals and their protective status.

Herpetofauna

The Amphibian and Reptile Atlas Project was a survey conducted by DEC to document the occurrence and distribution of New York's amphibians and reptiles. The survey was conducted from 1990 to 1998 and predicts 24 species of amphibians and reptiles, including two species of greatest conservation need, on or in the vicinity of the Unit. A complete list of all 24 species and protective status is found in **Appendix IV**. Source: http://www.dec.ny.gov/animals/7140.html

Fish

Genegantslet Creek has an abundant brown and brook trout fishery that is quite popular with anglers. The stream is stocked annually with approximately 4,450 1-yr old and 255 2-yr brown trout. The brook trout and many of the resident brown trout naturally reproduce. Other fish species found in the Genegantslet include rosyface shiner, mimic shiner, common shiner, brown bullhead, burbot (a fairly rare species in streams), margined madtom, longnose dace, redside dace, blacknose dace, fallfish, cutlip minnow, smallmouth bass, walleye, rock bass and white sucker, chain pickerel, mottled sculpin, tessellated darter, common carp, and river chub. Most of the non-trout species are present in the downstream areas near the confluence with the Chenango River.

Spring Brook has never had a formal fisheries survey completed on it, however it is classified as a protected trout stream and most likely has a resident wild brook and or brown trout population. The most likely location for trout would be in the headwater area associated with the State Forest. There are no records of Spring Brook being stocked by DEC in the past. Any trout present in the stream would have been naturally reproduced or migrated upstream from the Chenango River. Trout are highly migratory, so even though the stream isn't stocked if the habitat and conditions are favorable, fish from the nearby Genegantslet Creek likely find their way up Spring Brook. In addition to the probability for supporting trout, it is even more likely that blacknose dace exist in this stream.

Edgerton Brook was surveyed by Region 7 Fisheries staff in 2008, but only warm water fish were collected. Species found include creek chub, margined madtom, largemouth bass, blacknose dace, white sucker, pumpkinseed, brown bullhead, and mottled sculpin. There is no DEC trout stocking program on this stream.

Tillotson Brook was stocked with brook trout periodically between the 1930's and the 1960's. There is no current stocking program for Tillotson Brook. There has never been a formal fisheries survey completed on this stream. The majority of the stream is classified as protected trout water and most likely has a resident brook and or brown trout population. In addition to the probability for supporting trout, it is even more likely that blacknose dace exist in this stream. Any trout present in the stream would have been naturally reproduced or migrated upstream from the Chenango River. Trout are highly migratory, so even though the stream isn't stocked if the habitat and conditions are favorable, fish from the nearby Genegantslet Creek likely find their way up Tillotson Brook.

Kedron Brook was surveyed by Region 7 Fisheries staff in 2008 and found to contain both wild brook and brown trout. Brook trout were stocked into the stream once in 1933. The upper headwater reaches of the stream are classified as protected trout waters. Non-trout species found in Kedron Brook include creek chub, blacknose dace, white sucker, cutlip minnow, mottled sculpin, longnose dace, bluegill, and pearl dace. The majority of the non-trout species are found in the downstream reaches of the stream with the brook trout and blacknose dace inhabiting the headwater areas.

Ludlow Creek has been stocked with brook trout and brown trout as recently as 1976 and 1992, respectively. The creek was surveyed by Region 7 Fisheries staff in 2008 and found to contain wild brown trout. However, brook trout are also probable in the portion of the stream located in the Ludlow Creek State Forest. Portions of the stream are classified as protected trout water. Other fish species identified from Ludlow Creek include creek chub, cutlip minnow, central stoneroller, blacknose dace, and margined madtom. The majority of the non-trout species are found in the downstream reaches of the stream with the brook trout and blacknose dace inhabiting the headwater areas.

Bowman Creek has been stocked with brook trout once in 1962 and multiple times with brown trout, most recently in 2000. A survey by Region 7 Fisheries staff in 2008 found both wild brook and brown trout. Non-trout species found in Bowman Creek include cutlip minnow, smallmouth bass, mottled sculpin, tessellated darter, blacknose dace, white sucker, creek chub, central stoneroller, common shiner, redside dace, and longnose dace. The majority of the non-trout species are found in the downstream reaches of the stream with the brook trout and blacknose dace inhabiting the headwater areas.
Mill Brook was surveyed by Region 4 Fisheries staff in 2011 and found to contain wild brook trout. Nearly the entire length of the stream is classified as protected trout water Other species found in Mill Brook include smallmouth bass, creek chub, blacknose dace, white sucker, mottled sculpin, longnose dace, common shiner, burbot (a fairly rare stream species), pumpkinseed, and cutlip minnow. The majority of the non-trout species are found in the

downstream reaches of the stream with the brook trout and blacknose dace inhabiting the headwater areas.

Whaley Pond is a 54-acre shallow lake located in the McDonough State Forest. The pond has 1.3 miles of shoreline. It has never been stocked by DEC and the only fisheries survey of the pond was done to look at winter dissolved oxygen levels. In the winter of 2000 the dissolved oxygen levels in the pond ranged from 1.8 ppm 2 feet below the surface to 0.9 ppm 14 feet down. These very low oxygen levels indicate that overwinter survival by many fish species is likely a problem. Therefore, fish such as brown bullhead, which can tolerate low oxygen levels, may be the predominant component of the fishery.

Appendix VI lists the resident fish species on the Unit.

Game Species

There are many game species located on or in the vicinity of the Unit that are protected by regulated hunting/trapping seasons. Game species, on or in the vicinity of the Unit include a variety of birds and mammals. More details on some of the major game species can be found below.

White-tailed Deer - The Department manages deer populations in Wildlife Management Units (WMUs). The Unit falls within WMU number 7M. A Citizen Task Force (CTF), made-up of local interest groups such as farmers, foresters, hunters, motorists, and the tourism industry, recommends a desirable deer population to the Department. Deer populations are controlled with regulated hunting through the use of Deer Management Permits (DMP). DMPs are permits to harvest antlerless deer. Using the recommendations of the CTF, Department biologists determine the number of DMPs to issue within each WMU.

Deer can alter the forest **understory** by over-browsing. Over-browsing can eliminate certain tree, shrub, and herbaceous species. Over-browsing may eliminate the forest understory layer, which can cause increased nest predation to ground-nesting and shrub-nesting birds, alters food sources for a variety of wildlife, can impact the future forest composition and structure.

For many years Department staff suspected that deer were having a significant impact by restricting the regeneration of desirable species in the forest understory. In 2006 the Department conducted a regeneration study that confirmed the regeneration of desirable species often failed to develop and the widespread establishment of interfering species had become a significant problem. In 2007, the Department began conducting an annual deer density and browse impact survey on Beaver Meadow State Forest in Chenango County. In response to these surveys and other studies, the Department began issuing special tags in 2010 for the fall harvest of antlerless deer from Beaver Meadow State Forest. This is an ongoing pilot project to determine if increased deer harvest combined with timber harvesting activities can improve the quality of deer habitat and the forest understory species composition. More

information on the relationship between deer populations and the vegetation composition of the forest can be found in this plan under Section L, Forest Health.

There is limited ability to manage deer impacts using silvicultural systems. The most effective method of keeping deer impacts in line with management objectives is to monitor impacts while working with the Division of Fish and Wildlife to observe and manage the herd. On properties where deer are suspected of impacting values and objectives associated with biodiversity and timber management, such impacts must be inventoried and assessed. For more information on managing deer impacts, please see SPSFM page 291 at http://www.dec.ny.gov/lands/64567.html

Turkey

Once extirpated from New York State as a result of over-hunting and habitat loss, the wild turkey currently has a secure population throughout the State. Wild turkeys are protected as a game species and can be hunted during two seasons (Spring and Fall).

Grouse & woodcock

These are upland game birds that are also SGCN species. Both species are dependent upon early successional habitat for portions of their life cycles. Aspen is an important source of food and cover for these species. Past management on the Unit has focused on maintaining aspen where it occurs.

Furbearers

There are many species, on or in the vicinity of the Unit, that are considered furbearers. Within the Unit, some of the furbearers that can be hunted and/or trapped include the American beaver, mink, common muskrat, short-tailed weasel, long-tailed weasel, red fox, gray fox, common raccoon, coyote, gray squirrel, Virginia opossum, and the striped skunk.

Important Habitat Features

The Unit and the surrounding landscape provide diverse habitats for a variety of wildlife species. The assessments conducted above, along with forest inventories, have revealed important habitat features within the Unit. The following habitat features must be considered to ensure a healthy diverse wildlife population:

Coniferous Forest Cover Type

Conifer and mixed conifer-hardwood conditions occupy 57% of the Unit compared with 25% in the surrounding landscape. Some birds require a conifer component as part of their habitat. Conifer dependent birds confirmed or predicted on or near the Unit include pine siskin, purple finch, hermit thrush, yellow-rumped warbler, blackburnian warbler, magnolia warbler, black-

throated green warbler, dark-eyed junco, red crossbill, golden-crowned kinglet, red breasted nuthatch, winter wren, and the blue-headed vireo.

Mammals that require or benefit from conifer or mixed conifer-hardwood conditions on the Unit include the red squirrel, deer mouse, Southern red-backed vole, porcupine, white-tailed deer, and Hoary bat.

Continuous Forest Cover

Within central New York, State Forests often provide relatively large blocks of continuous forest cover in a landscape dominated by a mix of forest and open conditions. The Cooper's hawk, Northern goshawk, red-shouldered hawk, and sharp-shinned hawk have some variations in their habitat requirements, but all prefer a continuous forest cover. Neotropical migratory songbirds found on or near the unit that prefer continuous forest cover include wood thrush, red-eyed vireo, ovenbird, black-throated blue warbler, black-throated green warbler, and scarlet tanager. Mammals found on or near the unit that depend on continuous forest cover include the fisher, porcupine and Northern flying squirrel.

Multi-Layered Forest Canopy Structure

Bird species on or near the Unit requiring a multi-layered forest canopy structure the golden-crowned kinglet, hermit thrush, black-throated green warbler, yellow-rumped warbler, ovenbird, red-eyed vireo, warbling vireo, black-and-white warbler, least flycatcher, scarlet tanager, yellow-throated vireo, black-throated blue warbler, Canada warbler, American and redstart.

Many wildlife species use **cavity trees**, **snags,** or **Coarse Woody Material (CWM)** for perching, feeding, nesting, and/or roosting. Some wildlife use live cavity trees while others use dead cavity trees.

Bird species on or near the Unit that use cavity trees include red-breasted nuthatch, brown creeper, Eastern bluebird, house wren, Northern mockingbird, tree swallow, American kestrel, Eastern screech owl, barred owl, black-capped chickadee, pileated woodpecker, tufted titmouse, downy woodpecker, great-crested flycatcher, Northern flicker, white-breasted nuthatch, hairy woodpecker, winter wren, common merganser, hooded merganser, and wood duck.

Mammals in or around the Unit that use cavity trees include: little brown bat, silver-haired bat, big brown bat, Virginia opossum, gray squirrel, Northern flying squirrel, porcupine, gray fox, raccoon, fisher, and short and long-tailed weasels.

Snags may have cavities or they may not. Snags without cavities are used mostly as perches or foraging sites. Birds on or near the Unit that utilize snags include sharp-shinned hawk, Cooper's hawk, broad-winged hawk, red-tailed hawk, turkey vulture, American kestrel, brown creeper, great blue heron, green heron, great-horned owl, pileated woodpecker, and barred owl.

Mammals that establish dens in CWM include the Virginia opossum, Eastern chipmunk, Southern red-backed vole, gray fox, black bear, fisher, short and long-tailed weasels, mink, striped skunk, and bobcat. CWM is home to many wood-decaying insects that are used as a food source for birds, mammals, amphibians, and reptiles. Many species of amphibians and reptiles also occupy the moist, soft, decaying wood of CWM.

Wetlands/Riparian Areas

Although all wildlife need water to survive, there are many species that use water as their primary habitat. Many wildlife species depend on wetlands or riparian areas including spring seeps, vernal pools, swamps, bogs, ponds, and streams. Birds on or near the Unit that use water as their primary habitat include Canada goose, common merganser, hooded merganser, great blue heron, green heron, mallard, belted kingfisher, spotted sandpiper, swamp sparrow, alder waterthrush, bank swallow, common yellowthroat, and Wilson's snipe.

Mammals, on or in the vicinity of the Unit, that use water as part of their primary habitat include the American beaver, common muskrat, Southern bog lemming, big brown bat, little brown bat, Northern myotis, Indiana myotis, silver-haired bat, star-nosed mole, raccoon, mink, long-tailed weasel, and river otter.

Nearly all the amphibians and reptiles, on or near the Unit, require water for at least part of their life cycles.

Early Successional Habitat

The Unit does not contain sufficient habitat for grassland-dependent species. However, 5% of the Unit is occupied by seedling/sapling-sized trees (young forest), shrubs or open/alder wetlands. Shrubland and young forest in and around the unit provides habitat for a diversity of bird species including the ruffed grouse, Canada warbler, yellow-rumped warbler, Nashville warbler, blue-winged warbler, mourning warbler, yellow warbler, American crow, killdeer, white-throated sparrow, field sparrow, song sparrow, chipping sparrow, indigo bunting, Eastern bluebird, mourning dove, red-tailed hawk, turkey vulture, American goldfinch, American robin, American woodcock, cedar waxwing, Eastern towhee, gray catbird, house wren, Baltimore oriole, Northern mockingbird, and Eastern phoebe.

Bird species on or near the Unit that use open wetland include northern harrier, Wilson's snipe, spotted sandpiper, swamp sparrow, northern rough-winged swallow and killdeer. According to the New York Natural Heritage Program, there are two main reasons why the northern harrier is threatened: loss of large areas of grassland habitat and loss of wetland habitat.

Many mammals also depend on early successional habitat for food and cover. Mammals on or near the Unit that use young forest and other early successional habitats include the red fox,

gray fox, white-tailed deer, Eastern cottontail, woodland vole, woodchuck, Southern bog lemming, and meadow jumping mouse.

At Risk Species and Significant Ecological Communities

The New York Natural Heritage Program (NHP) is a partnership between DEC and The Nature Conservancy. The NHP conducts inventories for rare plants, animals, and significant ecological communities. These inventories are used to identify, track, rare species and significant ecological communities. In 2004, NHP staff conducted a comprehensive inventory of all state forests in DEC Region 7.

Significant Ecological Communities

A spruce-fir swamp is located on the Unit. These communities typically occur along gentle slopes or along the margins of drainage basins where there is some nutrient input from groundwater discharge or subsurface flow. The spruce-fir swamp on the unit is dark, cool, acidic, and located in a basin adjacent to, and somewhat intermingled with, a hemlock-hardwood swamp. The tree canopy is moderately dense (70% cover) and is dominated by red spruce (23%), white pine (17%), hemlock (10%), and balsam fir (7%). Hemlock is the most dominant subcanopy species (7% cover); additional species present in the canopy and subcanopy include yellow birch, red maple, and black ash. The tall shrub layer has 5% cover and consists primarily of hemlock (3%) with yellow birch and beech present in low abundance. The short shrub layer has a 25% cover and contains a diverse mix of tree canopy seedlings and shrub species. Common species include red spruce (4%), balsam fir (3%), hemlock (3%), red maple (3%), and mountain ash (2%) with scattered beech, yellow birch, highbush blueberry, black ash, red oak, white pine and striped maple. The herbaceous layer has 40% cover and is dominated by three-leafed goldenthread (11%), with lesser amounts of woodsorrel (6%), cinnamon fern (5%), marsh fern (3%), and dew drop (2%). Other herbaceous species include Canada mayflower and spotted wintergreen. The non-vascular layer has 80% cover and consists of a diverse group of species including *Sphagnum* spp. (32%), greater whipwort (18%) and glittering wood moss (3%).

Significant Plants

Jacob's-ladder (*Polemonium vanbruntiae*) occurs at two sites on the Unit. It is a rare plant in New York occurring at only 31 sites across the State. It typically grows in wet meadows, swamps, seepage areas, beaver meadows, edges of streams, and sometimes ditches. It may be found under closed canopy, but seems to only flower regularly in open areas. On one site within the Unit, Jacob's ladder is located within a hemlock-hardwood swamp and along the border of this swamp and a beaver meadow. The ground is peaty and saturated. At a second site, the plants are located along a small stream in open sun and extending into the partial shade of an adjacent mixed forest of planted spruce and native hardwoods. Most of the plants are within a sedge meadow that is dominated by spirea shrubs.

Significant Animals

In 2015, the Department released the *State Wildlife Action Plan (SWAP)*. It can be found at: http://www.dec.ny.gov/animals/7179.html The *Plan* considers "species of greatest conservation need" (SGCN), their habitat, and population trends. Conservation recommendations are advanced for SGCN in the eleven major watershed basins in New York State. The Unit is located in the Susquehanna Basin. Table 3 lists those SGCN species known to occur on or in the vicinity of the Unit, species group, and population trends.

Table 5. SGCN by Species Group and Population Trends Found On or Near the Unit

Taxa	Species	Species Group	NY Distribution Trend(*)
Bird	American Kestrel	Early successional forest/ shrub birds	Moderate Decline
Bird	American Woodcock	Early successional forest/ shrub birds	Stable
Bird	Black billed cuckoo	Deciduous forest breeding bird	Stable
Bird	Black Throated Blue Warbler	Deciduous/ mixed forest breeding birds	Increasing
Bird	Blue Winged Warbler	Early successional forest/ shrub birds	Stable
Bird	Bobolink	Grassland birds	Moderate Decline
Bird	Brown Thrasher	Early successional forest/shrub birds	Moderate Decline
Bird	Canada Warbler	Early successional forest/shrub birds	Moderate Decline
Bird	Eastern Meadowlark	Grassland birds	Moderate Decline
Bird	Golden Winged Warbler(SC)	Early successional forest/shrub birds	Severe Decline
Bird	Horned Lark (SC)	Grassland birds	Moderate Decline
Bird	Northern Goshawk (SC)	Forest breeding raptors	Moderate Decline
Bird	Pied-billed Grebe (T)	Freshwater marsh nesting birds	Increasing
Bird	Prairie Warbler	Early successional forest/ shrub birds	Increasing
Bird	Red- Shouldered Hawk (SC)	Forest breeding raptors	Increasing
Bird	Ruffed Grouse	Early successional forest/ shrub birds	Moderate Decline
Bird	Scarlet Tanager	Deciduous Forest breeding bird	Stable
Bird	Vesper Sparrow (SC)	Grassland birds	Decreasing
Bird	Wood Thrush	Deciduous/mixed forest breeding birds	Moderate Decline
Mammal	Eastern Red Bat	Tree Bats	Stable
Mammal	Hoary Bat	Tree bats	Stable
Mammal	Indiana Myotis (E)	Tree Bats	Moderate Decline
Mammal	Little Brown Myotis	Tree Bats	Moderate Decline
Mammal	Northern Long -Eared Bat	Tree Bats	Rapid Decline
Mammal	Silver-Haired Bat	Tree Bats	Unknown
Mammal	E. Small_Footed Bat (SC)	Tree Bats	Stable
Mammal	Eastern Pipistrelle	Tree Bats	Rapid Decline
Herpetofauna	Smooth Greensnake	Woodland/Grassland snake	Stable
Herpetofauna	Snapping Turtle (SC)	Snapping Turtle	Stable
Herpetofauna	Wood Turtle (SC)	Wood Turtle	Stable

(SC)-Special Concern, (T)-Threatened (*)-%of NYS where species occurs

In addition to SGCN, *The Atlas of Breeding Birds in New York State* lists eight species of special concern including: Cooper's hawk, golden winged warbler, horned lark, northern goshawk,

osprey, red-shouldered hawk, sharp-shinned hawk and vesper sparrow, and one threatened species, pied-billed grebe, that occur in breeding blocks located on or near the Unit.

Cooper's hawk, Northern goshawk, red-shouldered hawk and sharp-shinned hawk are raptors that nest in forest areas with a high percentage of canopy closure (Crocoll 2013). The Sharp-shinned hawk requires dense coniferous or mixed woods for nesting habitat. Maintaining a high percentage of forest cover around nesting sites is important for these four raptors but the sharp-shinned hawk is most sensitive to canopy disturbance.

The horned lark is a species dependent on open lands with short grass so it is unlikely to be found on the Unit. Osprey typically nest in large trees or snags in open areas. Vesper sparrow, common yellowthroat, and golden-winged warbler are dependent on open or early-successional conditions for their habitat needs.

Mammals

Two bat species may be in the vicinity of the Unit that are listed as **Endangered** or Species of Special Concern. The Indiana myotis, (*Myotis sodalis*) or Indiana bat is predicted on or in the vicinity of the Unit and is listed as Endangered, by both the State and the Federal government. The small-footed bat (*Myotis leibii*) is listed by New York State as a Species of Special Concern.

These bats share some habitat-requirement characteristics. Both bats hibernate in caves or mines and forage near water. When the bats are in their summer ranges, they do have different roosting habits. The Indiana bat prefers to roost under the bark of living or dead trees. The small-footed bat will utilize caves, rock crevices, areas behind loose tree bark, and even use abandoned buildings or under bridges for summer roosting sites.

The small-footed bat appears to prefer rocky, forested areas, especially near coniferous forests. They feed over quiet waters and wetlands, using streams and woodland trails as travel corridors between feeding areas and roost sites. Beetles, bugs, ants, and flies make up the known diet.

The most recent threat to both of these species is white-nose syndrome (WNS). Thousands of dead bats have been found in their hibernacula with evidence of WNS. WNS is associated with a newly identified fungus (Geomyces sp.) that thrives in the cold and humid conditions characteristic of the bats hibernacula. This fungus may be directly responsible for bat deaths or it could be secondary to the cause.

There are several specific management recommendations that may be applied to help benefit and protect the small-footed bat. Maintain a mosaic of over-mature hardwoods, forest openings, water sources, and linear elements such as trails and roads. Retain large snag trees within stands, along stream courses, and around wetlands. Trees and snags with loose or fractured bark can be utilized as roost sites. Harvesting trees on the south side of roost sites aid in thermal heating of roosts. Other management recommendations include preserving

wetlands and other water bodies and establishing and maintaining areas of regenerating forest as feeding grounds.

Reptiles & Amphibians

Three reptile and amphibian species which are Species of Special Concern were found in the NYS Reptiles and Amphibians Atlas survey blocks that include the Unit. These species include the Jefferson salamander, *Ambystoma jeffersonianum;* the blue-spotted salamander, *Abystoma laterale*, and the wood turtle, *Glyptemys insculpta.*

The Jefferson salamander is found in upland forested areas and breeds in vernal pools or seasonal wetlands. The blue-spotted salamander is found in damp forests with vernal pools. Both the Jefferson and blue-spotted salamanders can be found throughout New York State except for Long Island.

The wood turtle (*Glyptemys insculpta*) is a Species of Special Concern found on or in the vicinity of the Unit. Home ranges include some form of water habitat, typically a river or stream bordered by a mix of woodlands and meadows. Within these areas they tend to occupy open sites with low canopy cover. They are rarely associated with solid stands of habitat, instead preferring a mosaic of various forest types, meadows, active agricultural fields, swamps and other wetland habitats. Wood turtles are omnivorous with a vast and varied diet. Their diet consists of earthworms which turtles coax to the surface by stomping the ground with alternating hits of the front feet. This behavior is thought to imitate the sound of falling rain causing earthworms to rise to the surface and become easy prey. The greatest threat to wood turtle populations is habitat fragmentation and modification.

Historic and Cultural Resources

The term cultural resources encompass a number of categories of human created resources including structures, archaeological sites and related resources. The Department is required by the New York State Historic Preservation Act (SHPA) (PRHPL Article 14) and SEQRA (ECL Article 8) as well as Article 9 of Environmental Conservation Law, 6NYCRR Section 190.8 (g) and Section 233 of Education Law to include such resources in the range of environmental values that are managed on public lands. For more information on protection of historic and cultural resources, please see SPSFM page 139 at http://www.dec.ny.gov/lands/64567.html.

The New York State Historic Preservation Act of 1980 was enacted to protect historic resources from adverse impacts resulting from state actions. DEC is required to avoid or mitigate adverse impacts to cultural resources resulting from land management activities.

A review of the GIS data set for archaeological sites of historical significance maintained by the State Historic Preservation Office reveal that no sites of historical significance are located on the Unit. However, a rich assortment of artifacts and landscape features exist that provide

information about historic occupancy and land use on the unit. Farm sites, field systems and stone structures provide clues about historic relationships between people and nature.

A recent forest inventory identified 263 sites, containing 19th and early 20th century historic features including a former Civilian Conservation Corp camp, the Twichell cemetery, Berry Hill Firetower, the site of the former McDonough Sulfur Springs resort and stone karns with possible pre-European settlement origins. . Other, more ordinary features include cellar holes, stonewalls, farm dumps, bridge abutments, and hedgerows.

In 1993, the Berry Hill Firetower was placed on the National Historic Lookout Register (US#54). It is believed to be an eligible candidate for the National Register of Historic Places.
As part of the inventory effort associated with the development of this plan the Department arranged for the archaeological site inventories maintained by the New York State Museum and the Office of Parks Recreation and Historic Preservation to be searched in order to identify known archaeological resources that might be located near the unit. The two inventories overlap to an extent but do not entirely duplicate one another. The purpose of this effort was to identify any known sites that might be affected by actions proposed within the unit and to assist in understanding and characterizing past human use and occupation of the unit.

The following generic cultural resources and archaeological site protection text will be valid only **after a Structural Archaeological Assessment Form has been completed for planned site developments scheduled within the first two years of the plan** or if you do not have any such developments within the first two years of the plan. Site developments include things such as roads, parking areas and the like.

Historic and Archaeological Site Protection

The historic and archaeological sites located within the unit as well as additional unrecorded sites that may exist on the property are protected by the provisions of the New York State Historic Preservation Act (SHPA - Article 14 PRHPL), Article 9 of Environmental Conservation Law, 6NYCRR Section 190.8 (g) and Section 233 of Education Law. No actions that would impact known resources are proposed in this Unit Management Plan. Should any such actions be proposed in the future they will be reviewed in accordance with the requirements of SHPA. Unauthorized excavation and removal of materials from any of these sites is prohibited by Article 9 of Environmental Conservation Law and Section 233 of Education Law. In some cases, additional protection may be afforded these resources by the federal Archaeological Resources Protection Act (ARPA).

Archaeological Research

The archaeological sites located on this land unit as well as additional unrecorded sites that may exist on the property may be made available for appropriate research. Any future

archaeological research to be conducted on the property will be accomplished under the auspices of all appropriate permits. Research permits will be issued only after consultation with the New York State Museum and the Office of Parks, Recreation and Historic Preservation. Extensive excavations are not contemplated as part of any research program in order to assure that the sites are available to future researchers who are likely to have more advanced tools and techniques as well as more fully developed research questions.

Recreational Resources

Recreation is a major component of planning for the sustainable use of State Forests on this unit. DEC accommodates diverse pursuits such as snowmobiling, horseback riding, hunting, trapping, fishing, picnicking, cross country skiing, snowshoeing, bird watching, geocaching, mountain biking and hiking. Outdoor recreation opportunities are an important factor in quality of life. We often learn to appreciate and understand nature by participating in these activities. However, repeated use of the land for recreational purposes can have significant impacts.

For further discussion of recreational issues and policies see SPSFM page 187 at http://www.de.ny.gov/lands/64567.html. The following section includes an inventory of recreational opportunities available on this unit as well as a description of use and demand for each activity. Recreational maps and geographic data are available at DEC's Mapping Gateway http://www.dec.ny.gov/pubs/212.html in Google format or in the State Lands Interactive Mapper.

Recreation opportunities on the Unit include the following:

Snowmobiling

Snowmobiling is popular winter recreational activity on the Unit. Three snowmobile clubs maintain 20.1 miles of trails on the Unit through Volunteer Stewardship Agreements (VSA). Snowmobile trails are located on town roads, Public Forest Access Roads (PFAR) and off-road. Trails are signed, cleared of overhanging branches or fallen trees, and groomed by stewards. The following table lists their location and stewards.

Table 6. Snowmobile Trails on the Unit

Forest	Steward	Miles
Chenango RA #1	Chenango Sno-Riders	7.6
Chenango RA #6	Greene Drift Riders	3.1
Chenango RA #11	Chenango Sno-Riders	2.2
Chenango RA #26	Chenango Sno-Riders	2.5
Chenango RA #26	Ridge Riders	4.7
Total		**20.1**

Hiking

The Finger Lakes Trail Conference maintains a 7.4-mile segment of the long-distance FLT on the Unit. The entire trail is 558 miles long extending from Allegany State Park near the New York-Pennsylvania border in southwestern New York to the Catskill Forest Preserve in eastern New York. There are 400 additional miles of branch trails and loops off the main FLT.

Cross Country Skiing & Snowshoeing

A 1.8-mile-long cross-country ski trail connects Kopak Pond with Whaley Pond. This trail is part of a larger network extending into Bowman Lake State Park. Unplowed roads, hiking and logging trails provide additional opportunities for cross country skiing and snowshoeing.

Hunting & Trapping

Big game deer hunting is the most common form of hunting on the Unit and may be the most popular recreational activity on the Unit. Turkey hunting is also a popular activity. Active management of the deer population is an increasingly important factor in allowing forest habitats to produce viable tree regeneration, a diversity of herbaceous plants in the forest understory, and hunter harvest opportunities. Other available hunting opportunities include the pursuit of upland game birds such grouse and woodcock. There are also opportunities for hunting coyote and fox. The Unit also provides good opportunities for furbearer trapping.

Mountain Biking

Town roads, abandoned roads, Public Forest Access Roads and haul roads provide opportunities for mountain biking on the Unit. While mountain biking occurs on the unit, it is not a common activity.

Horseback Riding

There are no designated trails or facilities for horse riding on the Unit. However, town roads, PFARs, and some off-road locations are used for riding.

Fishing

Geneganslet Creek has an abundant brown and brook trout fishery that is quite popular with anglers. There are 9.6 miles of Public Fishing Rights easements on the stream along with additional long stretches running through Genegantslet State Forest. There are four Angler Parking areas along the stream, including two on the State Forest lands. The stream is stocked annually with approximately 4,450 1-yr old and 255 2-yr brown trout.

Kedron Brook contain both wild brook and brown trout. The upper headwater reaches of the stream are classified as protected trout waters and light angling pressure is presumed by those seeking wild trout.

Ludlow Creek has been stocked with brook trout and brown trout as recently as 1976 and 1992, respectively. However, brook trout are also probable in the portion of the stream located in the Ludlow Creek State Forest. The State Forest encompasses the majority of the stream length and is available for public fishing, likely receiving light fishing pressure from anglers seeking wild trout.

Bowman Creek has been stocked with brook trout once in 1962 and multiple times with brown trout, most recently in 2000. Extensive stretches of Bowman Creek flow through McDonough State Forest and Bowman Lake State Park providing opportunities for public fishing access.

Mill Brook was surveyed in 2011 and found to contain wild brook trout. Nearly the entire length of the stream is classified as protected trout water. Large sections of the upper reaches of the stream run through McDonough State Forest and are thus open for public fishing. It is likely, given the extensive public access available and the presence of wild trout, that fishing pressure is light to moderate.

Whaley Pond has 1.3 miles of shoreline. In the winter of 2000 the dissolved oxygen levels in the pond ranged from 1.8 ppm 2 feet below the surface to 0.9 ppm 14 feet down. These very low oxygen levels indicate that overwinter survival by many fish species is likely a problem. Therefore, fish such as brown bullhead, which can tolerate low oxygen levels, may be the predominant component of the fishery. Angling pressure is probably fairly light given the oxygen levels described above which would limit fish survival.

Geocaching

Geocaching occurs on the Unit. This is a low intensity, dispersed activity where people search for a hidden object or small container based upon GPS coordinates posted on the internet. No developed facilities are needed for this activity.

Auto-touring, Wildlife & Nature Observation

These activities occur across the Unit. The Unit is managed to provide a diversity of habitat conditions to support a wide variety of species. Softwood plantations provide habitat diversity at the landscape scale and offer habitat for some unusual bird species dependent upon conifers such as the pine siskin, red crossbill and white-winged crossbill. A wildlife viewing platform is located on Kopac Pond, .25 mile from a designated parking area.

Formal and Informal Partnerships and Agreements

Conservation and Stewardship partnerships are increasingly important, especially for public land management agencies. Considering the fact that resources will always be limited, collaboration across political, social, organizational and professional boundaries is necessary for long term success and sustainability. Encouraging the development of cooperative and collaborative relationships is and can be done through volunteer agreements with the department. For more information on these and other partnerships, please see SPSFM page 181 at http://www.dec.ny.gov/lands/64567.html.

Overall Assessment of the Level of Recreational Development

It is important that recreational use is not allowed to incrementally increase to an unsustainable level. DEC must consider the impact on the unit from increased use on other management goals or other recreational uses. DEC must consider the full range of impacts, including long-term maintenance and the balancing of multiple uses.

The Unit currently has a low level of recreational development consistent with the recreational demands in this area. These forests are best suited to provide opportunities for dispersed recreational activities, requiring a low level of development in a remote setting. Activities such as hunting, snowmobiling, hiking, nature observation, trapping and geocaching are all consistent with the character and features of the Unit.

Universal Access

DEC has an essential role in providing universal access to recreational activities that are often rustic and challenging by nature, and ensuring that facilities are not only safe, attractive and sustainable, but also compatible with resources. For more information on universal access policies, please see SPSFM page 173 at http://www.dec.ny.gov/lands/64567.html.

Currently there are three facilities on the unit that provide access for people with disabilities. The .25 mile Kopac Pond Trail passes through late successional native conifer forest to a viewing platform overlooking a pond and emergent wetlands. With universal access into relatively unique ecological areas, the Kopac site offers a high-quality experience to the visiting public. The Civilian Conservation Corp Historic Site provides universal access opportunities to observe cultural resources and recreate at a day-use area. There is a 0.7 mile Motorized Access Program for People with Disabilities (MAPPWD) route on the Unit. All three facilities have accessible parking areas.

Application of the Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA), along with the Architectural Barriers Act of 1968 (ABA) and the Rehabilitation Act of 1973; Title V, Section 504, have had a profound effect on the manner by which people with disabilities are afforded equality in their recreational pursuits. The ADA is a comprehensive law prohibiting discrimination against people with

disabilities in employment practices, use of public transportation, use of telecommunication facilities and use of public accommodations. Title II of the ADA requires, in part, that reasonable modifications must be made to the services and programs of public entities, so that when those services and programs are viewed in their entirety, they are readily accessible to and usable by people with disabilities. This must be done unless such modification would result in a fundamental alteration in the nature of the service, program or activity or an undue financial or administrative burden. Title II also requires that new facilities, and parts of facilities that are newly constructed for public use, are to be accessible to people with disabilities. In rare circumstances where accessibility is determined to be structurally impracticable due to terrain, the facility, or part of facility is to be accessible to the greatest extent possible and to people with various types of disabilities.

Consistent with ADA requirements, the Department incorporates accessibility for people with disabilities into the planning, construction and alteration of recreational facilities and assets supporting them. This UMP incorporates an inventory of all the recreational facilities or assets supporting the programs and services available on the unit, and an assessment of the programs, services and facilities on the unit to determine the level of accessibility provided. In conducting this assessment, DEC employs guidelines which ensure that programs are accessible, including buildings, facilities, and vehicles, in terms of architecture and design, transportation and communication to individuals with disabilities. Any new facilities, assets and accessibility improvements to existing facilities or assets proposed in this UMP are identified in the section containing proposed management actions. The Department is not required to make each of its existing facilities and assets accessible as long as the Department's programs, taken as a whole, are accessible.

For copies of any of the above mentioned laws or guidelines relating to accessibility, contact the DEC Universal Access Program Coordinator at 518-402-9428 or UniversalAccessProgram@dec.ny.gov.

Visual Resources

The aesthetic quality of State Forests is considered in management activity across the unit. However, some areas have greater potential to preserve or create unique opportunities for public enjoyment. These especially scenic areas are inventoried below. For information on the protection of visual resources, please see SPSFM page 81 at http://www.dec.ny.gov/lands/64567.html.

Kopac Pond is a large expanse of open water framed by emergent wetlands and natural conifer forest. A viewing platform provides the visiting public with direct access to high quality natural scenery. Whaley Pond is another large expanse of open water framed by natural and planted forest. The summit of Berry Hill offers panoramic views of landscapes, both near and far, in all four directions.

State Forest Regulations Applicable to Recreational Activities

No fees are charged to the users of State Forest lands for recreational activities. However, a permit may be required for group activities or events. A **Temporary Revocable Permit (TRP)** is required for the following types of recreational activities on State Forests: organized and advertised events such as club-sponsored pleasure rides, scouting camporees; competitive events involving horse riding or orienteering tournaments, and activities involving more than 20 people. Chapter 5 of the Strategic Plan for State Forest Management provides specific details on the permitting process and the requirements for liability insurance.

ADDITIONAL INFORMATION

State Lands Interactive Mapper (SLIM) – An interactive online mapper can be used to create custom maps of recreational trails on this Unit to help people plan outdoor activities. Located at DEC's Mapping Gateway: http://www.dec.ny.gov/pubs/212.html
Google Earth Virtual Globe Data - Some of DEC's map data, including accessible recreation destinations, boat launches, lands coverage, roads and trails on this Unit can be viewed in Google Maps or Google Earth. (Also located at DEC's Mapping Gateway)

Other Facilities

State Forest Boundary Lines

There are 108.2 miles of State Forest boundary lines on the unit. Boundary lines are identified with metal signs, approximately 7"x10" in size, with the DEC logo on a yellow background. Boundary line trees are blazed with yellow paint. Lines for each State Forest require periodic maintenance on a seven-year cycle.

Table 7: Boundary Line Maintenance Schedule

Year	Forest	Length (miles)
2016-17	Chenango 1	45.8
2016-17	Chenango 11	8.6
2018-19	Chenango 6	22.7
2012-22	Chenango 26	30.5
Total		**107.6**

For more information on boundary line maintenance, please see SPSFM page 153 at http://www.dec.ny.gov/lands/64567.html.

State Forest Identification Signs

Each State Forest has an identification sign, displaying the name of the forest and its acreage. The wooden signs are approximately 3' x 4' in size with yellow lettering on a brown background and fastened to a free standing wooden sign post.

Table 8. Forest Identification Signs on the Unit

Forest	Stand	Location
Chenango 1	B-37	Bliven Road
Chenango 1	E-23	NYS Rt. 220
Chenango 6	F-2	Tucker Road & PFAR intersection
Chenango 26	A-18	Shore & Chestnut Roads intersection

Kiosks and Map Boards

State Forest Information Kiosks are weatherproof panels containing, photographs, maps, and written information relating to a specific State Forest. The Division of Lands & Forests in Region 7 is moving forward with a proposal to establish an Information Kiosk at each State Forest in the Region (9 Counties). All State Forests addressed in this UMP will have Information Kiosks installed in the near future as Department labor and funding permits. Below is a listing of the forests and the location of kiosks with associated map board locations.

Table 9. Kiosks and Map Boards on the Unit

Forest	Stand	Location
Chenango 1	D-42.1	Kopac Pond Trail on Sherman-Bliven Road
Chenango 1	E-26	CCC Historic Site on NYS Rt. 220

Ponds

There are two constructed ponds on the Unit and three beaver impoundments. Whaley Pond has an earthen dam, drop box and emergency spillway. Kopac Pond was constructed prior to state ownership and has no water control structures.

Table 10. Impoundments on the Unit

Forest	Name	Stand	Acres
Chenango 1	Whaley Pond	D-1	57
Chenango 1	Kopak Pond	D-34	36
Chenango 1	Beaver Pond	E-58	5
Chenango 6	Corbin Pond	D-3	17
Chenango 26	Beaver Pond	B-15	6

Parking Areas

This Unit has ten designated parking areas, each with a parking capacity of two to four vehicles. In addition, there are many other road-side pull-offs, log landing sites, or vehicle turn-arounds where people routinely park to access the Unit.

Table 11. Designated Parking Areas

Forest	Stand	Location
Chenango 1	NA	Berry Hill Firetower/ Tower Road
Chenango 1	C-15	Whaley Pond/ PFAR
Chenango 1	D-42.1	Kopak Trail/ Bliven-Sherman Road
Chenango 1	E-26	CCC Site/ NYS Rt. 220
Chenango 1	I-2	CP-3 Trail/ Short Cut Road
Chenango 6	F-2	Finger Lakes Trail/ Tucker Road-PFAR
Chenango 26	A-6	CP-3 Trail/ Chestnut Road
Chenango 26	A-19	Shale Pit
Chenango 26	B-13	Angler Parking/ Creek Road
Chenango 26	D-55	Pavilion/ Stone Quarry Road

Roads

DEC's GIS data contains an inventory of public forest access roads, haul roads and multiple-use Trails. Roadways found on the Unit include Public Forest Access Roads, **Haul Roads**, **Access Trails**, Town Roads, County Roads, and Abandoned Town Roads. From this group, the Public Forest Access Roads, Town Roads, and County Roads are all designed for public use with motor vehicles.

Public Forest Access Roads have been built by and are maintained by the DEC. On this Unit, Pubic Forest Access Roads are also called Truck Trails (TT). The roads are constructed to standards that will provide reasonably safe travel and keep maintenance costs at a minimum. These roads are not normally plowed or sanded in the winter. Haul Roads are designed to facilitate forest products removal (e.g., use by log trucks). Access Trails have a low level of

maintenance and provide limited access on the unit and may require a 4-wheel drive vehicle for travel. The entrances to Haul Roads or Access Trails may be gated or otherwise barricaded. The historic corridors from some Abandoned Town Roads may also be found on the State Forests. These lanes are no longer suitable for passenger vehicles or log trucks, however some are designated for use as recreational trails. These corridors remain important for their historic values and provide information about the cultural development of these lands. The following roads on the Unit are maintained to provide access for passenger vehicles or log trucks:

Table 12. DEC Roads on the Unit

Forest	Description/Location	Length (miles)	Number of Culverts
Public Forest Access Roads			
Chenango 1	Berry Hill Access Road/ west of Tower Road	0.2	
Chenango 1	CCC Road/ between NYS Rt. 220 and Sherman Road	1.0	12
Chenango 1	Short Cut Road/ between NYS Rt. 220 and Corbin Road	2.0	15
Chenango 1	Whaley Road/ between Sherman Road and Whaley Pond	1.5	3
Chenango 6	Trail Road/ between Engaard Road and Tucker Road	1.3	11
Administrative Roads			
Chenango 1	Galetown Road/ south of Preston Road	0.5	
Chenango 1	Steere Pond Road/ west of N. Griffen Road	0.4	
Chenango 26	Sulfur Springs Road/ south of Art Lake Road	0.2	
Chenango 26	Sulfur Springs Road/ north of Art Lake Road	0.3	
Abandoned Roads			
Chenango 1	Galetown Road	0.6	
Chenango 1	Old NYS R. 220	0.7	
Chenango 1	Unnamed Road north of Short Cut Road to SF boundary	0.8	
Chenango 1	Unnamed Road south of Short Cut Road to Chestnut Road	0.7	
Chenango 6	Abandoned Joscelyn Road north of Joscelyn Road to Hoben Road	1.2	
Chenango 6	Unnamed Road east of abandoned Joscelyn Road to SF boundary	0.6	
Chenango 6	Engaard Road north of Tucker Road to SF boundary	0.5	
Chenango 6	Tucker Road west of Hammerle Road to SF boundary	0.8	
Chenango 26	Unnamed Road east of Collier Road to SF boundary	0.6	
Chenango 26	Tucker Road east of Waldron Road to SF boundary	0.2	
Chenango 26	Unnamed Road west of Waldron Road to abandoned Sulfur Sp. Rd.	0.4	

Forest	Description/Location	Length (miles)	Number of Culverts
Chenango 26	Sulfur Springs Road south of Creek Road to Sulfur Springs Road	1.6	
Qualified Abandoned Roads			
Chenango 1	Murphy Road west of N. Griffen Road to Preston town line	0.4	
Chenango 1	McDonough Road west of S. Griffen Road to Preston town line	0.4	
Chenango 26	Collier Road east and south of Whitling Road to SF boundary	1.2	

Gates

Gates have been installed at four locations on the unit to restrict motor vehicle access on abandoned town roads.

Table 13. Gates

Forest	Stand	Location
Chenango 1	D-4	Galetown/Preston Roads Intersection
Chenango 1	B-8	N. Griffen / Steere Roads intersection
Chenango 26	B-44.2	Sulfer Springs/Art Lake Roads Intersection (N)
Chenango 26	C-2.2	Sulfer Springs/Art Lake Roads Intersection (S)

Berry Hill Fire Tower

The 59’ 3” Berry Hill Fire Tower and observer’s cabin were constructed in 1934 and are located on an isolated 1.02 acre parcel at an elevation of 1,960’. A driveway connects the fire tower site with Tower Road. Electrical service is available at the site and radio communications equipment is mounted on the tower for use by the Department as well as several law enforcement agencies.

Property Use Agreements

Chenango Reforestation Area 1 **McDonough State Forest (part)**

5637.41 acres, perimeter boundary = 44.12 miles or 232,932 feet
(0.53 miles, 2794 feet of boundary adjoins Chenango Ref. Area 11
and 0.19 miles, 1003 feet adjoins Chenango Reforestation Area 26)

Easements, Property Use Agreements, etc.

New York State Electric & Gas - A 150-foot-wide right of way for an electric transmission line runs east-west across the area. Rights for the easement are currently held by NYSEG and were acquired by the following deeds: Pro. W, 282/96; Pro. DD, unknown; Pro. Z, 282/135; Pro. CC, 282/188; Pro. EE, 282/64. The line is reportedly offset from the centerline of the easement, being 90 feet from the north boundary and 60 feet from the south.

The Texas Eastern Transmission Corp. placed a pipeline along the same ROW by a Temporary Revocable Permit (TRP) dated 12/17/1963. That TRP was terminated by a Consent Order as of 12/17/2013 and Enterprise Pipeline (formerly TEPPCO), which currently owns the pipeline, is required to apply for new annual TRPs. A TRP is required for each year of vegetation control. Under the terms of an annual TRP, Permittee may mow or brush above the pipeline. Such mowing and brushing must be conducted during May through October; the mowing must not extend more than fifteen feet perpendicular to the center line of the pipeline.

All of the lands acquired as Proposals E and OO and portions of Proposals D and JJ were transferred to OPRHP by order dated 9/1/1967 under the Park Re-Organization Law. The lands reportedly included 653 acres and comprise Bowman Lake State Park.

Pro. A – A private cemetery is located in the interior of the proposal, south of Sherman Road and northwest of CCC Road. The cemetery and an access ROW to it were excepted in deed 248/16 dated 1/4/1918.

Pro. A – The Town of McDonough has a Concurrent Use and Occupancy Agreement dated 9/18/1997 covering the use and maintenance of Whaley Road for highway purposes.

Pro. G – 2.56 acres are excepted from the deed into NYS for lands previously conveyed to the Chenango County Board of Supervisors for highway purposes in deed 222/303 dated 12/5/1907. Those lands are now part of NYS Route 220.

Pro. G – NYS granted an easement dated 6/21/2011 to NYSEG for an electric line and other utilities along NYS Route 220 from the intersection with Butler Road east to the intersection with CCC Spur Road. The recording data for the easement is unknown. NYSEG released rights to an existing line crossing the interior of Pro. G but a buried phone line (active and without an easement) is still located in the interior of Pro G.

Pro. J – A private cemetery is located on the west side of Bowman Road at the boundary between state forest and state park lands.

Pro. M – A 0.32-acre school house lot on the south side of Preston Road was excepted from the proposal.

Pro. Y – A 0.73-acre cemetery is excepted from the deed into NYS, less the area in the highway right-of-way. The cemetery is located on the east side of Corbin Road.

Pro. Y – The deed into NYS reserves a spring, the use of its water, and maintenance rights.

Pro. Z – The deed into NYS is subject to a reservation of ½ of all oil and gas in a deed from T. W. Egan to A. J. Turner dated 10/8/1932 and recorded as 291/368.

Pro. Z – The deed into NYS reserves a 19.8-foot-wide ROW running easterly from a now abandoned road to remaining lands of the grantors.

Pro. DD – The deed into NYS is subject to a reservation of ½ of all oil and gas in a deed from T. W. Egan to A. J. Turner dated 10/8/1932 and recorded as 291/368.

Pro. HH – The deed into NYS is subject to a ROW reserved in a deed from George Curtis, et al to Francis L. Miles dated 8/4/1928 and recorded in 276/185. The deed into NYS also reserved a 12-foot-wide ROW from the public road to remaining lands of the grantor. This second ROW is now occupied by a drive that provides access from Griffin Road to lots on Steeres Pond.
Pro. HH – Map 4302 shows a Chenango and Unadilla Corp. telephone line running along and southwesterly from Griffin Road in 1937, before the proposal was acquired.

Pro. FF – Map 4297 shows a Chenango and Unadilla Corp. telephone line running along Preston Road in 1937, before the proposal was acquired.

Pro. GG – Map 4301 shows a “farmer owned” telephone line running along Hogan Road in 1937, before the proposal was acquired.

Pro. JJ – The deed into NYS is subject to the rights (unspecified) conveyed by Archie Steere to Phillip Muth and Howard Barrows in 300/501 dated 5/20/1939.

Pro. RR and II – Map 10830 shows a telephone line running along Chestnut Road in 1989. The Chenango and Unadilla Telephone Corp. acquired an 8-foot-wide ROW affecting only Pro. RR in 344/4 dated 10/7/1946.

Pro. SS – The proposal was acquired from the USA and is subject to restrictive covenants regarding the management of the property for conservation purposes. There are general covenants and ones specific to wetlands and floodplains. The proposal is subject to enforcement and reversion upon breach of the covenants.

Pro. KK, LL, MM – The abstracts of title for these proposals refer to NYSEG easements or ROWs acquired in 282/89, 282/168, and 316/39. It isn’t clear from the records in our files whether these deeds affect the proposals or may only affect a larger parent parcel.

Road Status

Several "abandoned" roads exist within the unit, but no information on their official status is available in our files. Several other roads were created or relocated after a 1912 atlas map of Chenango County, including Whaley Road, CCC Road, Short Cut Road and portions of NYS Route 220. Other than Route 220, those roads may have been built during the CCC era, but no information on their origin or status is available in our files.

Chenango Reforestation Area 6 **Ludlow Creek State Forest**

3197.30 acres, perimeter boundary = 22.57 miles or 119,195 feet.

Easements, Property Use Agreements, etc.

Pro. A – The abstract refers to a pole line easement granted to the Greene and Smithville Farmers Telephone dated 6/21/1920 and recorded 8/13/1920 in 253/362.

Pro. D – The deed into NYS is subject to spring rights reserved in a deed from Levi Benedict to John Dibble dated 1/21/1843 and recorded in 65/390. Those rights may have been consolidated into state ownership by the acquisition of lands adjoining Pro. D.

Pro. G – The deed into NYS is subject to reservations in a deed from Edward Loomis to Augustus D. Burke dated 4/8/1861 and recorded in 111/197. The reservations pertain to dam sites, mills, and flowage rights on Ludlow Creek.

Pro. T – The deed into NYS is subject to the right to use water from a spring and to maintain a pipeline as reserved in a deed from Vernon Stratton to NYS dated 1/18/1936 and recorded in 298/259.

Road Status

Several "abandoned" roads exist within the unit but no information on their official status is available in our office.

Chenango Reforestation Area 11 **McDonough State Forest (part)**

947.85 acres, perimeter boundary = 8.48 miles or 44,761 feet (0.53 miles, 2794 feet of boundary adjoins Chenango Ref. Area 1)

Easements, Property Use Agreements, etc.

Pro. B – The deed into NYS excepts a cemetery of 0.53 acre. Map 4080 shows the cemetery located to the east of the public road that runs north-south though the proposal.

Pro. D – The proposal is subject to a 150-foot-wide right of way acquired by NYSEG in a deed dated 2/20/1930 and recorded on 3/28/1930 in 282/67. This is the same transmission line ROW that affects Chenango Ref. Area 1 and which also has a gas pipeline located within it. See the entry for Chenango 1 and the Enterprise Pipeline (TEPPACO).

Chenango Reforestation Area 26 **Genegantslet State Forest**

3191.69 acres, perimeter boundary = 30.52 miles or 161,120 feet (0.19 miles, 1003 feet adjoins Chenango Reforestation Area 1).

Easements, Property Use Agreements, etc.

Proposal G, H, J – These three proposals are subject to a 150-foot-wide right of way currently held by NYSEG and acquired in deeds 282/100, 301/332, and 282/88. This is the same transmission line ROW that affects Chenango Ref. Area 1 and which also has a gas pipeline located within it. See the entry for Chenango 1 and the Enterprise Pipeline (TEPPCO).
Pro. K – The deed into NYS is subject to the right to use the water from two springs, and to lay and maintain a pipeline from them, as reserved in a deed from Ray and Eva Root to Vernon Stratton dated 9/23/1941. Map 4103 shows the springs located east of the former Sulphur Springs Road.

Pro. N – Map 4013 shows a cemetery located on the south side of Art Lake Road.

Pro. P – The abstract refers to an easement acquired by the Binghamton Light, Heat, and Power Co. (now NYSEG) in 281/76. The deed says the easement follows the Smithville Flats – Willet Road and it may not affect Pro. P.

Pro. Q – The abstract refers to an easement acquired by NYSEG in 327/106. The deed says the easement follows the Smithville Center – McDonough Road.

Road Status

Although the location of the road isn't clearly identified in our files, George Loomis Road apparently crossed state forest land and an order of qualified abandonment for that road was signed on 3/24/1972 and posted on 4/11/1972. It maybe be located on Pro. P

Pro. K, L – Sulphur Springs Road, aka Spring Road, was subject to qualified abandonment in 1922. Questions about a private adjoiner's right of access over the road were raised in 1982 and again in 2011. The issue was not conclusively resolved and limited private use was allowed to continue.

Other "abandoned" roads exist within the unit, but no information on their official status is available in our files.

The records in the Region 7 Real Property office are not complete or comprehensive and research of other sources and field inspection would most likely find additional information.

Land Acquisition

Acquisition of property from willing sellers on the landscape surrounding the unit may be considered in the following priority areas:

- In holdings and adjoining properties that would reduce management costs and benefit resource protection and public access goals
- The mineral estate whenever it is split from a State Forest tract
- Properties with identified forest matrix blocks and connectivity corridors
- Forested lands in underserved areas of the state
- Forested lands that are in need of watershed protection

For more information on land acquisition, please see SPSFM at http://www.dec.ny.gov/lands/64567.html

Forest Health

Many factors influence forest health including species of insects, diseases, pollutants and deer. All of these factors play important roles in the ecology of the forested landscape. Insects and diseases that impact trees are constant natural forces that shape the forest. Most insects and diseases have only negligible impacts to overall forest health, and on a small scale even provide beneficial impacts. Some however, particularly invasive exotic species can be especially damaging. Important factors that currently or could potentially affect the forest health on the Unit are described below.

Deer Impacts on the Vegetative Composition of the Forest

It is important to understand that the forest is an ecosystem and, therefore, not simply a group of trees. The forest is the combination of all of the physical and biological elements in the environment and their interrelationships. One of the more prominent relationships in the forest exists between white-tailed deer and understory vegetation. The understory layer of the forest (between ground level and about 6 feet above the ground) is the feeding zone for white-tailed deer. High quality deer habitat includes areas with abundant food and cover in this feeding zone. Typically this is described as an area with a mix of fields, shrub land, agricultural crops, **mast** trees such as beech or oaks and forest edges with some conifers for shelter. In contrast, poor quality habitat would be large areas with little food or cover in the understory, such as may exist in dense conifer stands, where little undergrowth exists. The Unit is nearly entirely (98%) forested with a small amount (2%) of acres in the seedling-sapling size class. The surrounding landscape is also heavily (74%) forested with only 1% of the area in shrub land or young forest. Also, cultivated crop land is only present on 1% of the surrounding landscape.

Thus, deer habitat on the Unit is generally poor to fair quality while slightly better quality habitat is available on private lands in the vicinity of the Unit.

White-tailed deer can have a significant impact on tree seedlings and herbaceous vegetation in the forest. An adult white-tailed deer eats about 5–7 pounds of plant material each day. This may not sound significant but consider for example: If the deer are feeding in the forest, they are eating tree seedlings at about 600 seedlings per pound. If they are feeding in the forest only during the seven months of November through May, each deer is eating about 750,000 tree seedlings per year. Thus, the cumulative impact of a deer population on the forest vegetation can be very significant depending upon the habitat quality. High quality habitat supports more deer than low quality habitat because there is more food available and deer are feeding less in the forest.

In the forest, deer have "favorite foods." Species that deer prefer to eat include sugar maple, white ash, red maple and red oak, while unpalatable vegetation that they tend to avoid eating includes American beech, striped maple, and hophornbeam. While many plants can survive occasional browsing, repeated browsing can often cause direct mortality. The species that deer tend to avoid are also generally resistant to the effects of repeated browsing. When deer populations are high, relative to the quality of the habitat, repeated, preferential browsing over many years can lead to a decrease in plant diversity and an increase in the abundance of unpalatable species. Without the recruitment of young trees and shrubs, the understory layer is eventually reduced to a small collection of undesirable species including, fern, striped maple, American beech and hophornbeam. Over time, these species can develop in high densities so that they interfere or prevent other more desirable species from growing.

The presence of interfering species above threshold stocking levels will prevent the establishment of other tree species, resulting in greatly reduced vegetation diversity and severely limited potential for future timber production (Bashant & Nyland, et al., 2005). New York fern, hay-scented fern, American beech, striped maple, and hophornbeam are the primary species of interfering vegetation on the Unit. **Sustainable forest management** requires regeneration of the forest to desirable species following harvesting. Management of stands with a dense stocking of interfering species requires management actions to reduce the abundance of the interfering vegetation on the site so that a diversity of species can grow.

Excessive deer browsing can also reduce understory plant species diversity. Some of the forest herbaceous species sensitive to deer **browse** include trillium, Canada mayflower, and Indian cucumber. Furthermore, excessive deer browsing can have secondary impacts in the forest, such as a reduced diversity of breeding birds, due to the altered structure of understory vegetation.

Insects

Hemlock wooly adelgid (*Adelges tsugae*) - This **exotic**, or non-native, insect is currently posing a significant threat to the health of eastern hemlock across much of its natural range. Adelgid

infestations can cause rapid **defoliation** of hemlock trees and can result in the complete mortality of all hemlock trees in affected stands within four years. The adelgid attacks and kills all sizes of hemlock. This insect from Asia has been devastating to hemlock in the lower Delaware and Hudson River valleys. In 2014, the adelgid was discovered near the Unit in the towns of Oxford and Greene in Chenango County. The eastern hemlock is one of only a few native conifers found on the Unit and the most abundant. It is considered a keystone species, because it is valuable in so many ways to native habitats. It stabilizes the soil in moist areas and on slopes. It cools riparian areas in the heat of summer and provides thermal cover for deer and other wildlife during winter. Many wildlife species such as red squirrels and black-throated green warblers are strongly associated with hemlock. This insect has been the focus of many recent studies in an attempt to discover methods of reducing its impact. Current control efforts focus on the release of a beetle native to western North America where it preys on the hemlock wooly adelgid and other native adelgid species. Several other beetles are also being tested for control. If these biological controls prove unsuccessful, the long-term consequence could be the elimination of eastern hemlock from the landscape. Current control efforts focus on the release of a beetle native to western North America where it preys on the hemlock wooly adelgid and other native adelgid species. Several other beetles are also being tested for control. If these biological controls prove unsuccessful, the long-term consequence could be the elimination of eastern hemlock from the landscape.

Gypsy Moth (*Lymantria dispar*) - Although present, this moth from Europe has not had significant outbreaks on the Unit. This insect has received much notoriety since it was introduced into the United States in 1868. Populations of this insect can periodically build to "outbreak levels" resulting in widespread forest defoliation. Gypsy moths will defoliate many species of northeastern trees, but they favor oaks. High populations of gypsy moths do not typically persist more than three years before they collapse. Until recently, a virus (*NucleoPolyhedrosis* Virus) has usually caused the rapid decline of Gypsy Moth populations. In recent years however, a fungus (*Entomophaga maimaiga*) has also proved to be effective in reducing moth populations. This fungus was introduced to the U.S. from Japan in 1910 and again in 1985. Its effectiveness had been dismissed until its presence was identified in seven states in 1989. Because of the presence of both the virus and the fungus, it is hoped that future Gypsy Moth outbreaks will be less severe and less frequent.

Forest Tent Caterpillar (*Malacosoma disstria*) - This insect can be a serious defoliator of sugar maple. Unlike other "tent caterpillars," the forest tent caterpillar does not construct a tent on the tree branches. Most healthy hardwoods can withstand a single defoliation from this insect. The summer seasons from 2004 through 2008 had heavy infestations of the forest tent caterpillar on hilltop locations in central New York. Numerous patches of overstory trees on the Unit were defoliated on the hilltops during the summers of 2008 and 2009. Many of the trees, especially sugar maple, did not survive the consecutive defoliations.

Eastern Tent Caterpillar (*Malacosoma americanum*) - This is the most common "tent maker" in New York State. The caterpillars build the nests in the crotches of tree branches. They prefer cherry trees and apples trees. The nests are formed in late April or early May each year and the caterpillars feed on the leaves. Most of the feeding is done from dusk through the evening hours.

Pear Thrips (*Taeniothrips inconsequens*) - Introduced from Europe to the United States in 1904. It attacks a variety of orchard and forest trees. There were several population explosions of Pear thrips in the northeast during the late 1980s. The outbreak of 1988 damaged or defoliated more than 1.5 million acres of sugar maple trees. In addition to causing leaf damage, Pear Thrips may also be capable of transmitting a fungal disease, maple anthracnose. This disease often coincides with Pear Thrip infestations. Maple anthracnose decreases the photosynthetic ability of leaves, which can kill trees, if they are severely infected.

Elm Spanworm (*Ennomos subsignarius*) (and other species of loopers) - The common name of this insect is deceiving, as it is not only associated with elm trees, but will defoliate beech, oak, hickory, maple, and ash as well. More than 20 major outbreaks have occurred in the past century. Typically, outbreaks of the Elm Spanworm succumb to mortality from a complex of natural agents, including egg parasites and larval diseases.

(*Phloeotribus liminaris*) - This insect has recently gained increased attention from foresters in the northeast due to the amount of damage it has caused to black cherry trees. Infestations of this insect can result in large amounts of gum deposits on the trunks of black cherry. The damage can significantly reduce the value of the timber and it causes a general decline in tree health. Peach Bark Beetle populations build up in the tree tops following the harvest of cherry timber. **Residual**, healthy cherry trees are then attacked. Cultural practices (e.g. reducing quantities of slash and seasonal cutting) are being investigated to minimize the negative impacts of peach bark beetles., healthy cherry trees are then attacked. Cultural practices (e.g. reducing quantities of slash and seasonal cutting) are being investigated to minimize the negative impacts of peach bark beetles.

Asian Longhorned Beetle (*Anoplophora glabripennis*) - This black & white beetle with long antennae, is a native of Asia. Potential impacts from this invasive insect may be very devastating since it attacks a range of hardwood species. It prefers maple species in particular, which are major components of the northeastern forest and also important to the wood product industry. This insect was first detected in New York City in 1996. The only known sites in New York State with this insect are in the New York City and Long Island region. Populations of this pest have also become established in central Massachusetts. To control this pest, authorities must remove and chip all infested trees. There are no known natural factors which will limit the spread of this insect.

Emerald Ash Borer (*Agrilus planipennis* Fairmaire) - This metallic green beetle is native to Asia. It was first discovered in the US (Michigan) in 2002. Since that time, it has killed tens of millions

of ash trees in southeastern Michigan alone, with tens of millions more lost in the eastern United States, including New York State. The larva feed on the inner bark of ash trees. They will feed on trees of any size and will usually kill the tree within 3 years of infestation. Quarantine zones have been established to restrict the transportation of infected wood. EAB was first discovered in New York State in 2009, at a site in Cattaraugus County and has since been found in many counties across New York State. The closest known infestations to the Unit are in Onondaga County and southern Otsego County. EAB will likely become established throughout the state within the next 10 years, unless an effective control is discovered. In 2010, the Department released the *Emerald Ash Borer Management Response Plan* which defines goals to slow ash mortality in New York State. To date this approach is showing signs of success at slowing the EAB outbreak.

European Pine Shoot Beetle (*Tomicus piniperda*) - This beetle, native to Europe and Asia, attacks the new shoots of pine trees, including scotch pine and red pine, stunting the growth of the tree. The USDA's Animal and Plant Health Inspection Service (APHIS) has issued regulations resulting in "quarantines" within the infested counties of New York State, and other states, to prevent the spread of this insect. These quarantines are of significance because they affect the transportation of pine logs. In general, the regulation restricts the transportation of pine logs from a quarantined area to a non-quarantined area. In 2004, nearly every county in New York State was listed as quarantined, with the exception of the eastern-most counties and the downstate area. Chenango and Madison counties are in this Federal quarantine area which regulates and limits the transportation of pine logs to sawmills out of the area.

Sirex Woodwasp (*Sirex noctilio*) - This exotic pest was first discovered in New York State on September 7, 2004 in Fulton, NY (Oswego County). The Sirex woodwasp is native to Europe, Asia and Northern Africa, and it attacks most species of pine trees, including red pine and white pine, which are common in New York. The female woodwasp carries a fungus (*Amylostereum areolatum*) that it deposits in the tree while laying eggs. This fungus can kill the host trees in just a few weeks. It is anticipated that the woodwasp will easily adapt to most U.S. climates. Significant, localized damage to pine trees in the state from this pest has been observed. Control methods for the woodwasp are being researched, including a biological control involving the use of parasitic nematodes.

Viburnum leaf beetle (*Pyrrhalta viburni*) - A non-native beetle that first appeared in NYS along Lake Ontario in 1996. It currently infests almost all of New York State except Long Island. Both larvae and adults feed on viburnum shrubs. This insect has had a significant impact on native stands of arrowwood (*Viburnum dentatum*).

Additional information on invasive insects in New York State can be found at:

http://www.dec.ny.gov/animals/265.html

Diseases

Beech Bark Disease - This disease has caused a widespread decline in the health of American beech, and it limits the life span of these trees. Beech trees are infected when the beech scale (*Cryptococcus fagi*) punctures the bark, allowing the spores of the fungus (*Nectria coccinea*) to enter the tree. American beech saplings are still abundant in the understory of northeastern forests, however mature beech trees are declining and becoming less common.

Dutch Elm Disease - This disease entered North America in 1930, and it has killed most of the American elm trees in the northeastern United States. The causal agent is a fungus (*Certatocystis ulmi*) which is spread by elm bark beetles. Although the disease has killed most elms, a few resistant individuals have survived.

Chestnut Blight - This is one of the most famous plant diseases in North America. It has resulted in the near extinction of American chestnut trees throughout their natural range. The blight is caused by a fungus (*Cryphonectria parasitica*) that enters through wounds in the bark. The Unit is near the northern edge of the historical range of American chestnut.

Sirococcus Shoot Blight – This disease is caused by the fungus Sirococcus strobilinus and is known to infect a wide variety of North American conifer species in the northern United States and Canada, including red pine. It has recently been observed to be affecting many of the Norway spruce plantations on the Unit. Observed symptoms are generally thinning tree crowns and tree crowns dying from the bottom-up. In addition, it commonly kills Norway spruce seedlings growing in the understory of infected stands. Field observations seem to indicate that it is most common in dense plantations and areas sheltered from winds. It is uncertain what the long-term impacts of this disease will be on the Norway spruce plantations on the Unit. At a minimum it will cause reduced growth rates of surviving trees due to their smaller crowns. It will also make regeneration of Norway spruce difficult or impossible in some stands.

Invasive Species

As global trade and travel have increased, so have the introduction of non-native species. While many of these non-native species do not have adverse effects on the areas in which they are introduced, some become invasive in their new ranges, disrupting ecosystem function, reducing biodiversity and degrading natural areas. Invasive species have been identified as one of the greatest threats to biodiversity, second only to habitat loss. Invasive species can damage native habitats by altering hydrology, fire frequency, soil fertility and other ecosystem processes.

Across the landscape, people are constantly travelling to and from distant locations. Invasive species may potentially be introduced through natural means via wind or animals, or by humans through the movement of firewood, off-road motor vehicles or equipment, or the planting of infested vegetation. The known invasive species present on the Unit are listed below.

Table 14. Invasive Species Present on the Unit

Plants	Status
Garlic Mustard	Common on the Unit, especially near openings and on disturbed sites.
Japanese Barberry	Uncommon, but present on the Unit. Documented in 10 stands on the Unit.
Morrow's Honeysuckle	Uncommon, but present on the Unit. Known to be present in at least 27 stands on the Unit. Where this species exists, the infestations are generally scattered stems, often in open areas near roads or in other disturbed sites such as utility right-of-ways.
Multiflora Rose	Uncommon, but present on the Unit. It is known to be present in 7 stands. It is often found growing with Morrow's honeysuckle.
Pale swallowwort	Rare, but present on the Unit. It is known to be present in only one stand. This infestation consists of some scattered plants.
Japanese knotweed	Uncommon, but present on the Unit. Documented in 5 stands on the Unit. All sites are along road edges.
Insects	
Gypsy moth	Present but does not cause significant tree mortality.
Diseases	
Beech Bark Disease	Common in hardwood stands containing beech. Nearly all mature beech eventually become infected resulting in the decline of the tree.
Dutch Elm Disease	Present on the unit and across the northeast, however, occasional mature elms are still found on the Unit.
Animals	
	No known invasive animal species are present that have significant impact on the Unit.

The Brooklyn Botanic Garden (Brooklyn Botanic Garden, 2013) has ranked the invasiveness of plant species in New York State for the NYS Office of Invasive Species Coordination. All of the invasive plants in the table above have a New York State Invasiveness Rank of "Very High". Species that rank Very High or High are considered Invasive and are recommended candidates for action.

While the invasive species listed above are present on the unit, they are in scattered locations and, at this time, are not considered to have significant impacts to species diversity, recreation or forest management. At low densities, populations of invasive species may be more easily eradicated or controlled. State-wide efforts to prioritize, develop effective strategies for control, and allocate resources are needed to address these invasive species.

Local Landscape Conditions and Trends

Current Landscape Conditions

To determine the current landscape conditions, a three-mile buffer was placed around the Unit to define the landscape to be used for analysis. This area does not include the Unit. This landscape of 132 square miles includes an area generally south of County Route 23, west of State Route 12, north of the village of Greene and east of the hamlet of German. This landscape includes the hamlets of East Pharsalia, McDonough, East McDonough, Tyner, Smithville Center and Smithville Flats.

The analysis of the surrounding landscape was done using the National Land Cover Multi-Resolution Land Characteristics, 2011 data set from the DEC Master Habitat Database (MHDB). This data was analyzed using ArcGeographic Information System (GIS) software.

Observations from the landscape analysis are as follows:

A. The landscape is in the High Allegheny Plateau Ecoregion and the northern part of the Susquehanna River watershed.

B. The landscape is 74% forest cover compared to 68.9% forest cover for the surrounding Ecoregion. The statewide average is 62%.

C. The Unit is in a generally forested landscape fragmented by open and developed areas. The forested areas are generally on hills or hilltops separated by valleys or low land areas that are largely open or developed. The landscape also includes other State forests to the north and west of the Unit as well as Bowman Lake State Park which is managed by the NYS Department of Parks Recreation and Historic Preservation.

D. Approximately 21% of the landscape is in agricultural or open land cover. Over 19% of this landscape area is in pasture or hay fields. The statewide average for open or agricultural land cover is 18%.

E. Approximately 1.4% (1,157 acres) of the landscape is in shrub/scrub or seedling/sapling vegetation. This is less than that in the surrounding ecoregion. This cover type is scattered throughout the landscape with a large block of over 500 acres of it located on the site of the 1998 tornado that struck Pharsalia Woods State Forest located north of the Unit.

F. Approximately 2.7% of the landscape is in developed residential/ commercial land cover.

G. There are no known **old growth** forest areas in the landscape.

H. The landscape surrounding the Unit is nearly entirely within the Chenango Highlands Forest Matrix Block as determined by the New York Natural Heritage Program. Only two small areas of

the landscape lie outside of the forest matrix block boundaries. The Nature Conservancy has designated select areas as "Matrix Forest Blocks." These are large areas dominated by forest cover that represent the most viable examples of the dominant forest communities throughout the state. Matrix sites are large contiguous areas whose size and natural condition allow for the maintenance of ecological processes, viable occurrences of matrix forest communities, embedded large and small patch communities, and embedded species populations.

I. Forest matrix blocks may be important to maintain viable populations of forest species in the future as species react to changes in habitat and climate. These areas may also act as "stepping stones" to allow for species movements across the landscape if they shift their ranges over time. For additional information, see Chapter 2, page 85 of the strategic plan at http://www.dec.ny.gov/lands/64567.html.

J. Based upon 2014 modelling done by the New York Natural Heritage Program, the area where the Chenango Highlands Forest Matrix Block is located is rated as having high value as stopover habitat for both spring and fall migratory birds. Stopover sites are places where birds pause between migratory flights. High quality stopover habitat is important because the energy-depleted migratory birds need safe areas for resting, where they can avoid predators, and areas of abundant insect and fruit food resources to quickly refuel their energy reserves to sustain them for their long-distance flight.

K. The landscape is dominated by mid-aged to mature forest cover with comparatively little **early successional**, seedling/ sapling habitat.

Table 15. Land Use and Land Cover for the Landscape Surrounding the Unit Compared to Surrounding Ecoregion.

Land Use or Land Cover	**Unit Landscape: 3 Mile Distance Around Unit**		**New York High Allegheny Plateau Ecoregion** (8,709,409 acres)	
	Acres	% of Unit Landscape	Current Percent of Ecoregion	20 Year Forecast, Percent Change
Deciduous Forest	37,827	44.6	47.0	-0.1
Conifer Forest	6,212	7.3	6.8	- 0.1
Forest Wetland	3,698	4.4	2.9	- < 0.1
Mixed Forest	15,014	17.7	12.2	+ 0.8
Shrub & Brush Rangeland (seedling/sapling)	1,157	1.4	2.1	+ 0.9
Non-forested Wetland	385	0.4	0.2	- <0.1
Agricultural – Cropland, pasture	17,367	20.5	22.1	- 3.5

Land Use or Land Cover	Unit Landscape: 3 Mile Distance Around Unit		New York High Allegheny Plateau Ecoregion (8,709,409 acres)	
	Acres	% of Unit Landscape	Current Percent of Ecoregion	20 Year Forecast, Percent Change
Developed, residential and commercial	2,318	2.7	4.7	+ 1.8
Open Water	655	0.8	1.1	+ < 0.1
Grass/ herbaceous	120	0.1	0.8	+ 0.2
Barren land – mines quarries, gravel pits	36	<0.1	0.1	+ 0.1
Total	84,789	100	100	

Source: Landscape data for the Unit was derived from National Land Cover Multi-Resolution Land Characteristics data set. For additional information about this data set see: http://www.mrlc.gov/ . New York High Allegheny Plateau Ecoregion data is from NYS Strategic Plan for State Forest Management (SPSFM).

Landscape Trends

One of the most significant historical trends in the landscape is that areas of early successional vegetation have declined as abandoned farm lands have matured into forest cover. This loss of agricultural land is expected to continue in the future as shown in the table above. The Ecoregion forecast predicts a loss of agricultural land, but an approximately equal shift of an increase in shrub-brush land cover. This will provide a temporary increase in habitat for those species that can use this cover type. However, these lands will eventually grow into forest cover, losing their ability to support early successional associated species. Development of early successional cover types has been identified as a need in the SPSFM to promote habitat diversity for the many declining species of birds and other animals dependent upon early successional habitat conditions. See Section F. Wildlife Resources in this plan for information on species that require early successional habitat.

Forest management can provide early-successional habitat through the implementation of even-aged forest regeneration practices. However, private non-industrial forest lands of the region are typically treated with partial harvests leaving roughly similar **residual stand structure**s of mid-aged forests after the harvest. These privately-owned forests are also usually harvested before they reach the late successional stage of development.

Late successional forests are those areas where there is a significant component of trees greater than 140 years old. Forests in this age are beginning to develop old-growth characteristics such as large size, large snags, large cavities, rough bark and large dead trees and fallen logs. While no wildlife species on the Unit are exclusively dependent upon old forest conditions for habitat, many are often associated with these types of areas. Late successional forests are also important because they may provide superior habitat quality for some species

even though they are found in other forest conditions. State lands have the unique opportunity to provide late successional forest conditions on the landscape because of their long-term continuity of ownership. In contrast, private lands in New York State have a relatively short average length of ownership resulting in little opportunity for the long-term consistency of planning needed to allow forests to reach the late successional stage of development. Late successional forests are adequately provided in the Northern Appalachian – Acadian Ecoregion by Adirondack Forest Preserve lands, however, there is likely little of this type in the landscape surrounding the Unit.

The other significant trend is parcelization. Parcelization is the process of subdividing large parcels of land and selling them to separate individuals. Parcelization frequently occurs near State lands as these areas are deemed desirable for recreation properties. Some of the impacts of parcelization include the increased need for road maintenance or other services such as electricity in remote areas as new landowners build residences on their parcels. The forest products industry is also impacted. As large parcels of forested land are split into smaller parcels with many different owners, it becomes difficult or impossible to profitably engage in timber management. Germain et.al., (2006) document the decline in average parcel size of nonindustrial private forest in Oneida County dropping from 36 to 24 acres between 1975 and 2000. The minimum threshold parcel size for profitability is considered between 10 – 25 acres (Germain et.al., 2006). While much of the nonindustrial private forest land remains above this threshold, parcelization of private lands continues to reduce the acreage of working forest that is available to support New York's forest product industries.

For more information about the current landscape conditions, see the Appendix XI map titled "Land Cover Within 3 Miles of the McDonough Unit Management Area".

Resource Demands on the Unit

The charge of the Conservation Department in 1929 was to acquire lands adapted for reforestation and establish thereon forests for watershed protection, timber production, recreation and kindred purposes. Seventy-five plus years after the passing of the State Reforestation Act and the Hewett Amendment by the State Legislature, New York State continues to benefit from the careful management of natural resources on these State Forests.

Society's demand for natural resources continues to increase. In the United States, consumption of wood, water and non-renewable mineral resources surpasses that of other industrialized and developing countries. On a more local scale, recent trends reflect an ever steady to increasing demand for the natural resources available from State Forest lands throughout New York including those within the Unit. The recent trend of business and industry capitalizing on global markets has spurred an increased demand for both hardwood and softwood lumber production on a regional scale. The desire for more domestic sources of oil

and gas by our expanding economy has also added to the demand for exploration and extraction of these natural resources from both public and private lands within New York.

Larger tracts of public ownership allow for greater flexibility in protecting, managing or extracting natural resources as compared to private lands with similar resources. Although the vast majority of land acreage throughout Central New York is held in private ownership, the individual parcels tend to be on a much smaller acreage scale as compared to the public land holdings. The private lands are held by a wide array of landowners exercising many diverse management views and actions throughout their time of ownership. Combined with frequent ownership changes and increased parcelization of existing properties, private lands and their associated natural resources tend to be in a much greater state of flux than those of the public lands.

The historic ownership of the State Reforestation Areas has allowed for several generations of resource managers to consider long range planning with a commitment to quality natural resource management. Societal views of natural resource management continually demand higher standards for sustainable practices and responsible management for the betterment of all people. State Forests will play a vital role in the balancing of natural resource use and protection for the foreseeable future.

Forest Products

Timber

Timber management provides a renewable supply of sustainably-harvested forest products and can also enhance biodiversity. The products harvested may include furniture quality hardwoods, softwoods for log cabins, fiber for paper making, firewood, animal bedding, wood pellets, biofuel, and chips for electricity production. For more information, please see SPSFM page 251 at http://www.dec.ny.gov/lands/64567.html.
Information on upcoming timber expected to be produced from timber management activities on the unit is contained in the land management action schedules in the Appendix of this plan. The authority to sell forest products from DEC administered lands is provided by the Environmental Conservation Law. To perpetuate the growth, health and quality of the forest resources, the Department has implemented a sustained yield timber management program for State Forest lands.

Forest stands being considered for timber harvesting are selected based on the following criteria:

1) Adequate access;
2) Wildlife considerations;
3) Present and future forest health concerns (including invasive plants and pests);

4) Current distribution of vegetative stages within the unit management land area and surrounding landscape, including the eco-regional habitat gaps as per the Strategic Plan for State Forest Management;
5) Ability to regenerate stands (if a regeneration harvest);
6) Existing timber and vegetation management needs from other unit management plans;
7) Market conditions;
8) Potential growth response of stands to treatment
9) Presence of rare, threatened and endangered species and unique natural communities

By law, any trees to be removed in a harvest must be designated, and paid for prior to removal. Designation (marking) of trees is made by DEC forestry staff. After designation is completed, a fair market appraisal is conducted. No products may be sold at less than the fair market value. Forest stands are selected for harvest based on the criteria outlined above, and the desired future conditions identified by this Unit Management Plan
The Environmental Conservation Law requires that different procedures are employed based on the appraised value of a timber sale. Sales that are appraised greater than $10,000 are called revenue sales and sales that are appraised at less than $10,000 are known as local sales. Revenue sales contracts must be approved by DEC's Central Office staff, and revenue sale contracts valued at $25,000 or more must be approved by the Office of the State Comptroller. The Regional Forester has the authority to execute local sale contracts. All sales valued at more than $500 (and those less than $500 which are thought to have substantial public interest) are publicly advertised and competitively bid.

Timber resources on the Unit include hardwood and softwood sawtimber, **pulpwood**, and firewood. Some of the factors affecting timber demand on the Unit include timber value, distance to markets, timber species and quality, the availability or scarcity of similar timber in the area, international trade policies and market demand.

The demand for timber on the Unit is part of the larger regional timber market which is part of the global market for wood products. For example: hardwood trees grown and cut on the Unit's State forests are often purchased by local loggers or sawmills, sawn into lumber at a mill within the region, and may eventually end up in a consumer product sold in Europe, Asia, or South America. The United States is a large part of the global market and has the highest per capita wood consumption of any nation on the planet. Wood products have been essential to the development of our country and continue to be an essential need of our society. As worldwide population continues to increase and the economies of other countries develop, there will be a continued long term increase in the global timber demand.

The continuous, long term management of State Forests has resulted in a timber resource of very high quality. New York's State forests have been certified as meeting the most current standards of the Sustainable Forestry Initiative® (SFI®) and the Forest Stewardship Council®. The certification process evaluates the Department's forest management program for the use of sustainable forestry practices which meet the policies and principles of the SFI and the FSC.

Certification by these organizations indicates that the landowner is using scientifically, environmentally, socially and economically sustainable forestry practices.

At the regional scale, there is a steady demand for hardwood sawtimber from regional sawmills. **Appendix VIII** illustrates the change in price for black cherry, white ash, hard maple, red maple and red oak based upon figures from the DEC **Stumpage** Price Report for the Western/Central region of New York State. The graph displays the trends in stumpage prices paid for standing timber based upon data for the years 2006 through 2015. Market prices for hardwood sawtimber steeply declined from 2006 to 2011. Since 2012, stumpage prices have been on a generally increasing trend. The value of high quality hardwood logs throughout New York and the northeast had reached historic high levels in 2004-2005 until this recent market decline. High quality hardwood stumpage prices depend on new home construction, especially homes with high-end cabinetry and flooring. Demand for hardwood lumber and the coinciding hardwood stumpage are expected to increase as the demand for new home construction increases and the state of the economy improves. While the local demand for hardwood sawtimber has been steady, competition for sales has declined due to a variety of factors including the presence of fewer sawmills compared to the 1990s.

The market for spruce is almost exclusively for saw logs. There are no spruce sawmills in New York State, so nearly all spruce logs are sold and trucked north to Canadian sawmills which process the logs into lumber. The Canadian demand for spruce logs fluctuates along with the general state of the economy since most Canadian mills are only hauling logs back north after they have delivered a load of retail products into New York State. The other primary factor affecting the demand for spruce logs is the demand for new home construction since spruce lumber is primarily used for wood framing.

There has been a steady demand for red pine sawtimber from regional industries which manufacture log homes, landscaping wood, fencing and utility poles. Because of the abundance of pine plantations on State forests and their scarcity on private lands, State lands are the primary source for the regional industries that use red pine.

The demand for softwood pulpwood is limited due to the long trucking distance to the nearest paper mills. When diesel fuel prices are high, it limits the distance from which it is profitable to ship pulpwood. Now increased trucking costs to distant markets have reduced the economic feasibility of marketing pulpwood for many local contractors, although there may be new markets available for “green certified” pulpwood.

As both plantation pine and spruce stands continue to mature, the supply of softwood sawtimber is expected to increase for the near foreseeable future. The supply of this softwood resource is expected to change over time as these stands reach and pass their economic and biological maturity.

At the local scale, there is a somewhat different demand for wood products. While many local loggers supply larger mills with hardwood logs, lesser valued products such as hemlock or larch logs and firewood can be profitably cut and sold to local markets. Hemlock and larch are often sawn by small local band mills for use in barn construction. Firewood is cut by individuals for their own use or for resale to home owners. The 2010 census reports that 495 households or 25% of the total number of household in the six towns within which the unit is located use wood as their primary fuel source for home heating.

The demand for timber on the Unit also is an indicator of those employed in the forest products sector of the economy who views State forests as a source of work. One rough measure of this is the number of people who want to receive notice of timber sales from State forests on the Unit. Currently over 90 individuals or companies have expressed interest in purchasing timber sales within the Unit. Most of these companies or individuals are located in central New York.

The rise in hardwood timber values during the late 1990's and early 2000's has been an incentive for **selective cutting** or **high-grading** on many private forest lands in the region. This is a type of logging where the trees of highest value and quality are cut from the wood lot, leaving a forest of low quality trees with reduced potential for growing high quality sawtimber in the future. If this trend continues, the future demand for high quality timber from State forests may increase as those high-quality trees become increasingly scarce on private lands.

The original softwood tree planting of the 1930s was intended to bring abandoned farmland back into productive forests. Much of this effort was to conserve and restore soil productivity and control erosion from these sites. Throughout New York, thousands of acres were planted to the various softwood species in a relatively short time frame. Since then, the opportunity to replant on State lands has been limited by the lack of newly acquired agricultural lands and the gradual succession of plantations to natural hardwood species. As the number of plantation acres on State Forests is inevitably reduced over time, the supply of softwood timber will subsequently decrease in the long run.

Non-Timber Forest Products

Non-timber forest products include all forest products except trees that are of value to people for their use. Examples include maple syrup, nuts, forest plants, fungi, decorative greens, and fish and game species.

The most sought after non-timber forest product is deer during the fall hunting season. Venison provides a source of healthy, low fat protein for the families of successful hunters. Hunters also pursue wild turkey, ruffed grouse and other game species for their food value. Trappers seek furbearers such as mink, muskrat, beaver, coyote and fox for their pelts. New York City is a center for fur garment production and sales and the largest fur export markets are in China and Russia. The demand and price for fur tends to fluctuate with winter temperatures and the economies in North America, China and Russia.

While there is little demand for other non-timber forest products, local people are known to collect leeks, berries, mushrooms and fiddleheads (immature ferns) for food. While there are no Department signs or facilities at the location, some people also collect and use water from a ground spring on the east side of Hammerle Road on Chenango 6.

In 2012, there were approximately ten thousand gallons of maple syrup produced on twenty-three farms in Chenango County. This is a 12% increase from 2002 production suggesting a stronger demand for maple syrup in the immediate future. Two maple producers are located in Smithville and one in Greene, all three within 10 miles of the Unit's maple resource. http://www.agcensus.usda.gov/Publications/2012/

There have been no specific requests or demands addressed to the Department for the collection of maple syrup or any other non-timber forest product on the Unit.

Mineral Resources

Hard Rock Mineral Resources

Mineral deposits available in this portion of New York State include shale, bluestone, topsoil, and sand and gravel. The mine sites are regulated by DEC through permitting and compliance inspections. There are presently no mining contracts, permits or commercial operations located on state lands included in the McDonough Management Unit. Under Article 7 of the New York Consolidated Laws/Public Lands, any citizen of the United States may apply for permission to explore and /or extract any mineral on state lands. However, current NYS DEC policy is to decline any commercial mining application(s) associated with state lands.

Although there are no commercial mines within the state lands comprising the McDonough Management Unit, privately owned mining operations do exist within one-half mile to two miles of state lands in the Unit. Surficial deposits surrounding these state lands are generally glacial till deposits that would not yield large amounts of sand and gravel. Most of the mines in the area are small and are permitted by the local municipalities or local construction companies. There are a few mine sites near state lands in the Unit that are no longer in operation and have undergone reclamation returning the land to a productive use.

Sand and gravel mines in the vicinity of the Unit are limited to the Susquehanna River valley. Since the state forests in the unit do not border the Susquehanna River valley, there is limited potential for sand and gravel operations to occur adjacent to state land. The closest sand and gravel operation to any of the forests is a thirteen-acre mine located one and one-half miles west of McDonough State Forest. A one-acre bluestone mine is located three-quarter of a mile north-west of Genegantslet State Forest. The closest sandstone quarry is a forty-acre quarry located over three-miles to the south-east of McDonough State Forest.

There are two small shale pits located in the McDonough Unit. Material from the pits are made available to loggers working under a timber sale contract on state land to build landings or to make minor road improvements as required by the contract. The shale pits were created when the Public Forest Access Roads were being constructed. There is currently no public demand for sand, gravel, or other hard rock mineral resources on the Unit. The pits are operated under the regulatory threshold as less than 750 cubic yards or 1,000 tons of material is removed within any 12-successive calendar months. Therefore, the sites are not subject to jurisdiction under the Mined Land Reclamation Law and there is no requirement for New York State mining permits.

Energy Demand

There is currently a broad societal demand for energy since the United States is the largest consumer of energy in the world. Natural gas is the mineral resource of greatest concern on the Unit. The 2009 New York State Energy Plan examines the State's energy consumption and projected needs to year 2018. As reported in the plan, the demand for natural gas in New York State is expected to increase by about 5% by 2020. The residential and commercial sectors in the state are expected to increase demand by about 0.6% annually. About 80% of the increase in demand is expected to come from the New York City and Long Island regions of the state. Gas wells in New York State provide for about 5% of volume needed to meet the annual state demand. The remainder comes into the state through pipelines from primarily the Gulf Coast region and Canada.

Recently, the new technologies of horizontal drilling and high volume hydraulic fracturing have moved gas corporations to lease thousands of acres as they seek to extract gas from the Marcellus Shale formation. Industry demand for access to the Marcellus shale formation as well as the development of gas fields in the vicinity of the Unit are the result of increased global demand for energy. This demand is expected to increase in the future, with periodic fluctuations depending upon the market price of this commodity.

In December 2014, after several years of studying the issue, New York State announced a ban on high volume hydraulic fracturing. The determination to ban the practice was based upon unresolved concerns about impacts to environmental quality and human health.

Gas Exploration in the Vicinity of the Unit

There has been recent natural gas production in the vicinity of the Unit but no wells have been drilled on state land. Norse Energy, Inc. established the majority of these wells but they have since been acquired by EmKey Resources LLC. Production in the Herkimer and Oneida formations began in 2008 in the towns of McDonough, Preston and Oxford.

Future Leasing Activity

Initial title review indicates the State owns the mineral estate under all State Forests covered by this Unit Management Plan, with the qualification that mineral reservations may exist and no expressed or implied warranty of title is being offered in this document. As of 2014, there are no oil and gas lease agreements pertaining to the mineral estate under the State Forests contained in this plan. In the future, the State may receive requests to nominate some or all of the tracts contained in this Unit for oil and gas leasing. Additional information on oil and gas leasing procedures can be found in Chapter 5 of the Strategic Plan for State Forest Management, which can be found online at http://www.dec.ny.gov/docs/lands_forests_pdf/spsfmfinal.pdf.

For further information contact the NYSDEC Mineral Resource staff, Region 8, 6274 East Avon-Lima Road, Avon, New York 14414-9591.

Under Article 7 of the Public Lands Law, any citizen of the United States may apply for permission to explore and/or extract any mineral on State lands. However, to protect surface resources, current Department policy is to decline any commercial mining application(s) pertaining to any lands covered by this Management Plan.

Biological Resources

State forests were established in part, to meet the public demand for biological resources. The abandoned crop lands and eroding pastures were replanted with trees to prevent erosion and provide a timber resource for future generations. Biological resources have always been a public demand of State forests as expressed through the participation in traditional activities such as hunting, fishing and trapping. More recently, increasing interest in birding and general wildlife viewing activities, as well as the greater awareness of human impacts on the natural world has created additional interest in the management of public lands for a variety of biological-based values. These values may include commodity products such as timber or fur as well as non-commodity values such as trophy deer, small game, species diversity or old growth forests.

An important variety of biological resources exist on the Unit. Conservation of those resources is an increasing significant societal demand. Varied habitat types across the forests provide diverse conditions to an array of species. No comprehensive study has been made on the forests for a wholly inclusive list of species, but recognized fish, birds, mammals, reptiles, and amphibians are listed in several of the included appendices. In 2004 the New York Natural Heritage Program (NHP) which is a partnership between DEC and SUNY College of Environmental Science and Forestry. Natural Heritage Program staff conducted an inventory for rare plants, animals, and significant ecological communities on these forests. That inventory is used to help identify, track, protect, and manage biodiversity. The NHP has a historic record of a Kentucky warbler location on Chenango RA #1. On Chenango RA #6, they also identified the

presence of Jacob's ladder (a rare plant) and discovered a spruce-fir swamp, an unusual ecological community in this area of New York State.

The value of biological resources is often difficult to quantify since they are not easily measured in economic terms. The demand and potential conflict over how best to manage biological resources is expected to increase as the awareness of human induced impacts on the natural world multiply in the future.

Recreational Resources

The mission of the DEC's Division of Lands and Forests is, *"to care for and enhance the lands, forests and natural resources in the State of New York for the benefit of all through the care, custody, and control of state-owned lands, and promotion of the use and protection of all natural resources."* This is a broad mission which reflects that DEC has many other responsibilities beyond satisfying public recreation desires. Rather, recreation opportunities are provided on DEC lands that are compatible with other multiple uses and the ecosystem management approach described previously in this plan.

The McDonough Unit is used by many people for a wide variety of recreational activities. Parcelization and residential occupancy have restricted the access to private lands, resulting in an increased public use on State Forests. Activities people enjoy on the unit include, but are not limited to, pleasure driving, hunting, snowmobiling, hiking, horse riding, mountain biking, cross-country skiing, camping, wildlife/nature observation, trapping, and fishing.

In New York State, the demand for outdoor recreation is periodically assessed by the Office of Parks, Recreation and Historic Preservation (OPRHP). The most recent assessment is published in the Statewide Comprehensive Outdoor Recreation Plan (SCORP), 2014-2019 (NYS OPRHP, 2014). The SCORP examines statewide trends and demographics and the supply and demand for outdoor recreation in the state. While New York's population is expected to remain fairly constant through 2025, there will be a large increase in the number of people 65 and older. This aging of New York's population is the largest factor affecting future recreation trends. This will result is less future demand for highly vigorous activities such as team and court sports and increased future demand for less physically demanding activities such as picnicking, walking and nature observation. The 2013 General Public Recreation Survey surveyed the preferred activities of New Yorkers age 65 – 85. The top activities listed that may also occur on the Unit, included walking or day hiking, visiting nature areas, fishing, camping, and cross-country skiing or snowshoeing (SCORP 2014-2019). There will also be increased demand for *universally accessible* recreation opportunities as the number of people with limited mobility is expected to increase due to the aging of the population.

The following information about recreation activities includes observation about how people use the Unit for their activities combined with broader demand information derived from the SCORP 2014-2019 report.

Demand for Trail-Based Activities

The most popular trail based activities on the Unit are snowmobiling and hiking.

Snowmobiling - During the winter, snowmobiles are the primary use on the Unit. The Unit contains 20.1 miles of snowmobile trails which are maintained by two local snowmobile clubs through Adopt-A-Natural Resource Agreements or Volunteer Stewardship Agreements with the Department. One indication of snowmobile demand is the number of registrations. The number of snowmobile registrations in New York State steadily climbed each year from 1991 to a peak during the season of 2002-2003 at about 172,200. The season of 2011-2012 had large drop in registrations to about 90,400 but that was probably due to the unusually warm and snow-free winter. Statewide snowmobile registrations for the 2013-2014 season totaled 115,982. This is a slight decrease of 758 or 0.6% from the number of registrations for the 2012-2013 season. The demand to route snowmobile trails onto public lands is increasing due to conflicts associated with parcelization and changes in ownership of private lands. Increasing home development in rural areas near State forests often results in plowing of previously unplowed town roads. This forces snowmobiles off the roads and onto trails on nearby State or private lands.

Walking for Pleasure/Jogging/Day Hiking – Based upon the 2012 General Public Recreation Survey, SCORP reports that walking, jogging and day hiking are the most popular outdoor activity. Over 88% of the population between the ages of 18-85 participates in these activities. Recreational day hikers and long distance through hikers use the Finger Lakes Trail (FLT) on the Unit. An additional opportunity for these activities is the Kopak Pond Trail which is accessible and has a platform to provide scenic views of the pond. Local use numbers are not available for the Unit but demand for this activity is expected to remain stable in the future.

Cross-country skiing/ Snowshoeing – The public can enjoy these winter activities along the FLT as well as on the Kopak Pond trail. Current use level for these winter activities on the Unit is general low.

Mountain Biking – General bicycling (including both on and off-road use) was the fourth most popular activity in the 2012 General Public Recreation Survey. While the Unit does not have trails designated for off-road biking, the numerous dirt roads are well suited to this activity. Despite this, there appears to be low demand for this activity on the unit.

Horse Riding – There are no designated trails for horse riding on the unit. Informal horse riding may occur on town or DEC roads.

Demand for Dispersed Use Activities

Hunting & Trapping – Deer and turkey are the most popular game species pursued by hunters on the Unit. Bear, while very scarce on the Unit, may also be hunted. People also enjoy small game hunting for grouse, woodcock, squirrel, rabbit, waterfowl, raccoons, coyotes and foxes. Trappers pursue beaver, mink muskrat, fox and other fur bearers on the Unit. Trapping popularity usually fluctuates with fur prices.

Camping – SCORP forecasts a slight decrease in statewide demand for camping. Demand for camping on this Unit is expected to remain steady as it generally occurs during deer hunting season by hunters camping in the forests.

Fishing – The Genegantslet Creek is the most popular fishing location on the unit. Here, anglers enjoy pursuing brook and brown trout in this high-quality stream. Most of the other flowing waters on the Unit are small streams, some of which may have native brook trout populations. The ponds on the Unit are too shallow to maintain fisheries since the dissolved oxygen levels drop too low in the winter to support game fish populations.

Auto Touring & Nature/ Wildlife Observation – This is a popular activity, although there are no formal records for local participation. While SCORP does not address these activities, their demand is expected to increase because they are activities that can be enjoyed by an aging population.

Geocaching – Geocaching is a growing outdoor activity where people use GPS units to locate hidden “treasures”. This is a challenging family activity that is enjoyed by both the young and old on the Unit. People are often surprised by what they discover at the hidden treasure site.

ATV Use - Currently, illegal off road vehicle and ATV use occurs on the Unit at various locations. It is unknown if this activity is increasing or decreasing. For information on DEC’s policy regarding ATV use on State Forests, please refer to Chapter 5, page 213 of the Strategic Plan for State Forest Management.

For further discussion of the DEC’s recreation goals and objectives on State Forests, please see Chapter 5 of the Strategic Plan for State Forest Management, which can be found online at http://www.dec.ny.gov/docs/lands_forests_pdf/spsfmfinal.pdfource

Management Constraints on The Unit

Physical constraints

Steep slopes
Wetlands

Geological characteristics
Soil characteristics
Climatic conditions
Storm damage
Potential insect and disease infestations and associated quarantines
Limited access
Presence of cultural resources
Electrical transmission and telephone lines
Deeded rights-of-way
Buried telecommunication lines
Natural gas collection and distribution lines
Concurrent use agreements
Fragmented configuration of State land
Vegetation composition

Administrative Constraints

Budget limitations
Staffing shortages
Availability of Corrections work crews
Fluctuations in wood markets
Lack of demand for some wood products
Contract procedures

Societal Influences

There are differing public opinions on the management practices and uses of State Forests. All opinions are considered, but the degree to which they can be satisfied will vary. There are special interest groups for hunting, horseback riding, off-highway vehicles, bird watching, and many other recreational pursuits. There are industry demands for timber, natural gas, cell tower sites, field stone, rights-of-way and more. All of these demands need to be reviewed for their compatibility with the current laws, regulations, land management policies, the environmental conditions and the objectives for the forest property. It is recognized that these societal influences are dynamic and, if the State Forest resources are to continue to benefit the interests of the public, some flexibility must be incorporated into the management of these resources.

Department Rules, Laws and Regulations

Appendix X lists the Department's Rules, regulations and laws governing management activities on the Unit. For additional information on the Department's rules, regulations and laws, see Chapter 7 of the New York State Strategic Plan for State Forest Management.

Vision Statement

New York State was built from forests that continue to provide important economic, social and environmental benefits. Management of the McDonough Unit will foster a diverse forest that supports sustainable timber production, innumerable social values, and vital environmental services for current and future generations of New Yorkers.

State Forests on the McDonough Unit will be managed in a sustainable manner by promoting ecosystem health, enhancing landscape biodiversity, protecting soil productivity and water quality. In addition, the State Forests on this unit will continue to provide the many recreational, social and economic benefits valued so highly by the people of New York State. DEC will continue the legacy which started more than 80 years ago, leaving these lands to the next generation in a better condition than they are today.

This plan sets the stage for DEC to reach these ambitious goals by applying the latest research and science, with guidance from the public, whose land we have been entrusted to manage.

Management Goals and Objectives

GOAL 1: PROVIDE HEALTHY AND BIOLOGICALLY DIVERSE FOREST ECOSYSTEMS

Biodiversity is the sum total of all forms of life including genes, microbes, fungi, plants, animals and **ecosystems** (Hunter 1999). State forests are managed for a variety of resources used by society including commodities such as timber, firewood and natural gas.
The McDonough Unit offers a unique opportunity to blend conservation of biodiversity with commodity production and public recreation because it includes large areas of relatively unfragmented forests with an extensive recreational trail system. Furthermore, these forests are under the single, stable ownership of New York State so that long-term conservation practices can be implemented.

Principles for maintaining biodiversity in working forests have emerged in the fields of conservation biology and landscape ecology and provide guidance for land management on the McDonough Unit. Following Hunter (1999) and Lindenmayer & Franklin (2002), conserving biodiversity on the Unit will be guided by five principles:

(1) Maintenance of landscape connectivity - An example of this is the protection of undisturbed **riparian zones** and maintenance of areas of continuous forest cover.

GOAL 1: PROVIDE HEALTHY AND BIOLOGICALLY DIVERSE FOREST ECOSYSTEMS

(2) Maintenance of landscape diversity - This is the diversity, size and spatial arrangement of habitat conditions.

(3) Maintenance of stand structural complexity - This refers to the provision of and spatial arrangement of multiple forest **age classes**, sizes of live trees, snags, cavity trees and downed wood.

(4) Maintenance of the integrity of aquatic ecosystems - There is a direct association between forest conditions and water quality. In addition to providing clean drinking water, wetlands, lakes, ponds, and riparian zones provide habitat for diversity of aquatic and terrestrial species.

(5) Implement multiple management strategies at the stand, forest and landscape level - This is necessary because conservation of biodiversity requires providing suitable habitat for a wide variety of species, each of which has unique habitat requirements. In addition, if one strategy fails, there will likely be others that may provide the necessary conditions for sensitive species.

The long-term maintenance of biodiversity on any ownership is a lofty goal. Achieving this goal will be increasingly complicated in the future due to the influence of external factors on the forest environment such as acid precipitation, climate change and invasive exotic species. Furthermore, the current knowledge of many species is insufficient. In addition, the fields of conservation biology, wildlife and forest ecology continue to evolve and provide new insights on the impacts of human activities on forest resources. In the absence of sufficient knowledge, decisions in this plan have leaned toward the values of conserving forest biodiversity rather than resource extraction.

State Forests on this unit will be managed using an ecosystem management approach which will holistically integrate principles of landscape ecology and multiple use management to promote biodiversity, while enhancing the overall health and resiliency of the State Forests. Ecosystem management is a process that considers the total environment - including all non-living and living components; from soil micro-organisms to large mammals, their complex interrelationships and habitat requirements and all social, cultural, and economic factors. For more information on ecosystem management, see SPSFM page 39 at http://www.dec.ny.gov/lands/64567.html.

Objective 1.1 Protect soil and water quality by preventing erosion, compaction and nutrient depletion.

Protection of soil and water quality is one of the highest management priorities and is the foundation of sustainable forest management. Headwaters streams of the Chenango and Susquehanna Rivers are located on the Unit and management activities on these State Forest impacts downstream water quality. The greatest threat to water quality on the Unit is the potential disturbances to any streambed or adjacent area along with any soil erosion flowing into a water body. The primary management objective for all of the streams on the Unit is to maintain good water quality by maintaining streambank stability. Good water quality in these streams will help to ensure good water quality in their receiving waters.

GOAL 1: PROVIDE HEALTHY AND BIOLOGICALLY DIVERSE FOREST ECOSYSTEMS

The following are actions that will strive to protect the soils and waters of the Unit.

Action 1.1.1 Follow the DEC Special Management Zone (SMZ) Guidelines on all areas identified as a special management zone. These SMZ areas consist of buffer strip areas surrounding water bodies, streams, wetlands, vernal pools and spring seeps. The buffered areas will have different management action restrictions along with varying buffer widths depending upon the sensitivity of the riparian area designated. These rules are designed to minimize impacts to aquatic habitats from actions associated with gas and mineral extraction or forest management. For additional information on the protection of soil and water quality as well as SMZs, see the Strategic Plan for State Forest Management pages 107-110. New SMZs will be added to the database.

Action 1.1.2 Comply with the NYS publication Best Management Practices for Water Quality as described in the Strategic Plan for State Forest Management pages 110-112 during all timber harvesting and other management activities.

Action 1.1.3 Monitor BMP implementation by evaluating control structures after construction to assess effectiveness.

Action 1.1.4 Maintain water quality standards during road maintenance on state forest lands including, but not limited to, ditch cleaning, stream bank stabilization, and culvert replacement. Road maintenance activities will comply with Bureaus of Fisheries and Habitat guidelines or as per the guidelines on the Department website at: http://www.dec.ny.gov/permits/49060.html and http://www.dec.ny.gov/permits/49066.html. Undersized culverts can prevent the movement of fish, particularly wild brook trout, in headwater streams effectively reducing the amount of available habitat. When existing undersized culverts are replaced, future culverts will be installed consistent with Department Stream Crossing Guidelines and Best Management Practices.

Action 1.1.5 Restrict commercial use of water located wholly within the Unit. Wells will not be allowed to be drilled for personal or commercial water extraction.

Action 1.1.6 Protect 2,414 acres of forested wetlands, shrub wetlands, open wetlands, ponds and riparian forests. Ponds, wetlands and riparian forests are extremely complex and diverse ecosystems that provide environmental, biological and recreational benefits. They are distinct ecological communities that support a diversity of plant and animal species not often found elsewhere in the landscape (Calhoun, p. 300, Brinson, p. 652 in Hunter 1999 and Hunter 1991).

Protection of riparian zones will maintain stream bank stability to ensure a clean supply of water and protect the habitat of native fish and other species inhabiting these areas. Timber harvesting, gas well development and road construction are not permitted in wetland and riparian forests. Logging trails may cross riparian zones using Best Management Practices to protect water quality. Riparian forests are vulnerable to impacts resulting from logging and drilling with the potential of increasing stream sedimentation, disrupting habitat conditions and diminishing overall

watershed quality. In the absence of disturbance, these areas will develop into late successional forest. See Appendix XI "Proposed Management Direction" maps.

Action 1.1.7 Protect 175 acres of steep slopes and inaccessible sites by limiting management actions. Timber harvesting will not be permitted on steep slopes in excess of 40% because the terrain is extremely vulnerable to soil erosion. Sites having conditions suitable for management are designated inaccessible if riparian, wetland and other protection zones will be impacted as a result of management activities or if the environmental cost of establishing access outweighs the benefits derived from the management activity.

Action 1.1.8 Construct log landings and clearings for other management activities on slopes ≤10%. Significant slope modification increases the potential of impacting drainage patterns and creating abrupt and permanent contrasts in landscape patterns.

Action 1.1.9 Protect the water quality and habitat of all classified trout C(t) streams by complying with recommendations from the Bureau of Fisheries and the Bureau of Environmental Permits.

Action 1.1.10 Protect the forest and streams on the Unit from impacts associated with brine application to roads.

The development of gas drilling in central New York has led to the practice of disposing gas well production fluids, known as brine, onto town roads. Brine consists of the fluids produced by a gas well after the drilling phase is completed. This practice is allowed under permit (a Beneficial Use Determination) issued from the Department's Division of Solid & Hazardous Materials. The permits may be issued when requested by a waste transporter and where approved by the town government. The permit allows the conditional spreading of gas well brine on town roads for the beneficial purposes of road de-icing, dust suppression and road surface stabilization.

The Unit contains a wide variety of road conditions, some of which are more suitable for brine application than others. Application of brine on unsuitable roads may cause negative impacts to streams, wetlands and forest vegetation due to the high amounts of salts, heavy metals and other chemicals. Unsuitable roads may contain impermeable surfaces, surfaces that cannot be graded, lack of ditches, poor drainage or pot holes with standing water.

The application of brine generated from natural resource gas well production will not be allowed on the portions of the following town roads and Public Forest Access Roads that are on State land:

Table 14. Town Roads Passing Through the Unit

Forest	Town	Road
Chenango 1	McDonough	Preston Road
Chenango 1	McDonough	Whaley Road (PFAR)

Chenango 1	McDonough	Sherman Road
Chenango 1	McDonough	CCC Road (PFAR)
Chenango 1	McDonough	Bowman Road
Chenango 1	McDonough	Green Meadow Road
Chenango 1	McDonough	Short Cut Road (PFAR)
Chenango 6	Smithville	Engaard Road
Chenango 6	Smithville	Trail Road (PFAR)
Chenango 26	McDonough	Shore Road
Chenango 26	McDonough	Creek Road
Chenango 26	Smithville	Shore Road
Chenango 26	Smithville	Art Lake Road
Chenango 26	Smithville	Stone Quarry Road
Chenango 26	Smithville	Collier Road
Chenango 26	Smithville	Whitling Road
Chenango 26	Smithville	Sulfur Spring Road

Objective 1.2 Provide forest vegetation types or features which are declining or rare in the landscape to enhance wildlife habitat diversity.

State lands comprise a significant portion of the landscape and are unique in that they have stable ownership and can be managed over long time frames for habitat conditions that can complement the surrounding privately owned landscape.

The landscape analysis used in this planning process indicates that only 1.4% of the landscape surrounding the Unit is in early successional shrub/scrub or seedling/sapling vegetation. Also, due to past demands to clear land and a need for wood products in the late 1800s and early 1900s, there is little to no known late successional forest types in the landscape. The Unit contains no open fields or grassland. The Department considers this region of the State to have only marginal potential for grassland habitat management. As a result, it is not designated as a Grassland Focus Area. While the Unit has limited potential for grassland habitat management, it can provide shrub/scrub or **seedling/sapling** early successional habitat and eventually develop late successional forest stands which are often lacking on private lands.

Early successional habitat consists of areas dominated by grass or other herbaceous vegetation, shrub lands or young (seedling/sapling) forest cover. Recent research has also shown that upland early successional habitat conditions are heavily used by a wide variety of mature forest songbirds (Vitz and Rodewald, 2006, Chandler, King and Chandler, 2012). Specifically, mature forest songbirds were found to use the interior of small clearcuts (10-23 acres) during the post-fledgling period. Chandler, in 2012, found that in post-fledging period seven of the nine sampled mature forest nesting bird species were more abundant in early-successional habitats than in mature forest. The species using these areas included many that are typically considered “forest interior” species including ovenbird, hermit thrush, red-eyed vireo, and black-throated green warbler. Researchers think that the mature forest birds may be using early successional areas such as regenerating clearcuts because of the abundant food and cover these areas provide.

Regenerating clearcuts typically have dense vegetation of a wide variety of plant species resulting in abundant fruit and insect food resources.

Although there has been much concern among conservationists about the decline of mature forest birds, surveys have shown that species dependent upon early successional habitats are declining even more rapidly. Much of the decline of early successional dependent species has occurred as forests have grown up on abandoned agricultural lands. In a forested landscape, even-aged management practices can provide habitat for these declining early successional species without necessarily conflicting with the needs of mature forest songbirds.

The New York State Comprehensive Wildlife Conservation Strategy (CWCS) plan recommends maintaining or increasing the amount of early successional forest and shrub land in the Susquehanna Basin. According to the CWCS, 92% of the bird species that depend upon early successional habitat are in decline in New York State. Some of the species designated in the CWCS as Species of Greatest Conservation Need that require early successional habitat include American woodcock, brown thrasher, Canada warbler and ruffed grouse. See Section F. Wildlife Resources in this plan or the CWCS, Susquehanna Basin, at http://www.dec.ny.gov/animals/30483.html for additional information.

Late successional habitat consists of forests with mature and older trees, greater than 140 years of age, being dominant in the forest canopy. Late successional forests may have been previously logged but are beginning to develop old growth forest attributes such as large tree size, large downed logs, large snags, cavities and species such as mosses, lichens, fungi and insects that are typically found in old growth forests. Hunter (1990) suggests that old forests are important because they represent the most biologically diverse portion of the successional sequence and, with few old stands remaining, there is a scarcity of late successional habitats. These areas of significantly large and older trees also have social value and are appreciated by many people as places to camp, relax and reconnect with nature.

Action 1.2.1 Increase the amount of early successional habitat on the Unit.

Early successional habitat consists of a variety of vegetative conditions including grasslands, shrublands and young forests. Over the next 20 years, early successional habitat will be provided on the Unit through even-aged regeneration harvests which create young forests. Stands containing a significant amount of aspen comprising 112 acres will be managed on a 60-year **rotation** to enhance and perpetuate aspen **forest type** and early successional forest cover. Even-aged management using a 120-year rotation will be conducted on 7,115 acres of the Unit. These areas, consisting of conifer plantations and native hardwoods will provide early successional forest cover at the time of regeneration. Over the course of this 20-year plan, it is expected that approximately 1,872 acres will be regenerated using the clearcut or shelterwood method. An additional 854 acres will be treated with the shelterwood method where adequate stocking of advance regeneration is present, or thinned to establish regeneration for a future shelterwood treatment. The Unit also contains 273 acres of seedling/sapling, open or shrub dominated

wetlands that are expected to remain in this condition over the next 20 years. See Appendix XI "Proposed Management Direction" maps for locations of these areas.

Any treatments involving clearcutting will comply with the Department's program policy *ONR-DLF-3 / Clearcutting on State Forests (2011)*. Information on this policy can be found at http://www.dec.ny.gov/docs/lands_forests_pdf/policysfclearcutting.pdf.

Action 1.2.2 Increase the amount of late successional stage forest on the Unit.

Forested areas designated to be excluded from timber harvesting which will develop into late successional forests consist of 2,712 acres on the Unit. This is an increase of 1,933 acres from the previous management plan for this Unit. These areas include stands excluded from timber management to protect wooded wetlands, riparian areas, steep slopes or other sensitive sites, visual buffers, areas that are inaccessible and Natural Areas. These protected areas are often in corridors linking streams with wetland areas to improve landscape connectivity. **Natural Areas** are forests withdrawn from timber production, natural gas exploration and other direct human disturbances. Within natural areas ecological patterns and processes will operate without direct human intervention and, together with riparian and wetland forests, stands will develop late successional characteristics with old trees, structural complexity and a seemingly chaotic appearance.

Natural areas are a critical component of any effort to conserve biodiversity because they develop ecological conditions distinct from those in forests managed for commodity production. Disturbances associated with timber harvesting and mineral extraction, however sensitive to biodiversity and environmental concerns, will trigger change that set them apart from natural areas. Natural areas also provide important reference areas against which to compare changes in working forests, such as the long-term effects of timber harvesting on biodiversity. In the absence of logging or other disturbances such as gas drilling, natural areas along with other protected stands will develop into late successional forests, conditions that are relatively scarce within the larger rural landscape of Chenango County.

See **Appendix XI** "Proposed Management Direction" maps for locations of protected or natural areas.

Action 1.2.3 Increase the presence of native oak and hickory species on the Unit.
In the future, climate change is expected to cause northward or altitudinal shifts in the suitable climate for tree species ranges. Climate scientists predict that New York's climate will be comparable to present day Virginia - South Carolina by 2070 - 2090. This warmer climate in the future will favor the development of an oak-hickory forest type instead of the current species mix of northern hardwoods that dominate the natural forests on the Unit. The warming is expected to exceed historic rates of change and consequently occur at a pace that will likely exceed the natural migration rate of native tree species. As the climate warms, it is anticipated that species such as eastern hemlock, hard maple and red maple will be stressed and increasingly vulnerable to mortality from other factors such as drought and insect or disease attack.

The Unit is within the existing range of native red and white oaks and shagbark hickory. Red oak is somewhat common as it is present in many stands on the Unit. Hickory species are present but rare on the Unit. Oak and hickory regeneration will be encouraged on the Unit where over-story trees are present. In addition, groups or patches of oaks and/or hickories will be planted on selected sites where existing pine plantations are harvested at the end of their rotation. Encouraging the development of oak and/or hickory regeneration on the forests will provide a future seed source for **natural regeneration** of these species and may mitigate the severity of future impacts associated with climate change. In addition, increasing the presence of these species will increase forest diversity as well as provide a valuable food source (nuts) for a variety of wildlife species.

Objective 1.3 Protect at-risk species and significant ecological communities.

At-risk species are those species having the New York State legal status of Endangered or Threatened. Significant ecological communities are those unique areas identified by the New York State Natural Heritage Program as being significant due to rarity or high quality status. For additional information on at-risk species and communities, see the SPSFM, Chapter 3, pgs. 115-126. The Unit includes a five-acre red spruce-balsam fir swamp which is classified as a significant ecological community. There are two rare plants-Jacob's ladder and cloud sedge listed as vulnerable and critically imperiled respectively. The Kentucky warbler is an imperiled species last observed on the Unit in 2015. Comet darner and arrowhead spiketail, two insects listed as imperiled and vulnerable respectively, were last observed on the Unit in 2015.

Action 1.3.1 Protect any occurrences of at-risk species and significant ecological communities, if they become identified in the future. Management actions may be done to improve or enhance habitat necessary for at-risk species and communities in the future. Natural Heritage staff will be consulted prior to altering the vegetation at any site where at-risk species or ecological communities have been documented.

Action 1.3.2 Conduct a survey, for rare species or communities by Natural Heritage staff as time and resources become available, of any newly acquired lands and protect any new finds of at-risk species and significant ecological communities identified by New York State Natural Heritage.

A review of the State Forest Predicted Richness Overlay GIS data layer shows the *potential* occurrence of the rare species listed in the tables below. Sites where these potential occurrences are located will be protected and/or surveyed before any potential site disturbing activities occur.

Table 15. Rare Plant Species that May Potentially Occur on the Unit

Common Name, *Scientific name*	**Habitat**

Schweintz's sedge, Carex schweintzi	Calcareous wet, seepy areas, often near rich fens, marshes, swamps. Edges of small drainage channels or perennially wet ditches that have strongly calcareous water.
Jacob's ladder, Polemonium vanbruntiae	Wet meadows, swamps, beaver meadows, edges of streams. Often near beaver impoundments. Confirmed on the Unit.

Table 16. Rare Animals that May Potentially Occur on the Unit

Common Name, *Scientific name*	**Habitat**
Comet darner, Anax longipes	Small lakes, quarry ponds or constructed ponds having an abundance of floating and submerged vegetation.
Henslow's sparrow	Tall, dense grassy fields lacking woody vegetation. This habitat does not occur on the unit.

Source: State Forest Predicted Richness Overlay GIS Data Layer, NY Natural Heritage Program.

Objective 1.4 Conserve and Enhance Fish and Wildlife Habitat.

This plan includes multiple strategies to conserve and enhance fish and wildlife habitat. In addition to the actions listed below, see Objectives 1.1, 1.2 and 1.3 and their corresponding actions.

Action 1.4.1 Retain snags, cavity trees, reserve trees, conifers, **coarse woody material (CWM)** and **fine woody material (FWM)** as specified in the Division of Lands and Forests policy for retention on State Forests, *ONR-DLF2 / Retention on State Forests (2011)*. This policy sets forth guidelines for maintaining or obtaining a minimum number of retention trees within a forest stand. A detailed description of the retention policy may be found at http://www.dec.ny.gov/docs/lands_forests_pdf/policysfrention.pdf.

A variety of habitat structures are necessary components for biological diversity. These structures, live or dead, serve as biological legacies, providing habitat, shelter, feeding substrates, or nesting sites for a wide array of species. This Department policy addresses the retention of these important habitat structures and features in forest stands that are actively managed for timber production. Retaining these features will maintain the habitat for the wide array of forest wildlife species that depend upon them.

Action 1.4.2 Improve habitat for Species of Greatest Conservation Need.
See Objective 1.2 corresponding actions.

Action 1.4.3 Manage North American beaver *(Castor canadensis)* where their actions threaten rare species or ecological communities, roads, culverts, trails or other access related infrastructure. Beaver are an important part of aquatic ecosystems because of their ability to create diverse habitat conditions that are beneficial to a wide array of species. They are an abundant species on the Unit. However, their actions can also have negative impacts to rare

species or access infrastructure resulting in the need for costly repairs. Beaver problems will be addressed on a case by case basis after consultation with Bureau of Wildlife staff.

Action 1.4.4 Protect active nesting sites for raptors listed as species of Special Concern.

Many raptors in New York are listed as species of special concern. Within the Unit, these include: sharp-shinned Hawk, Cooper's Hawk, Northern Goshawk and red-shouldered Hawk. Each species has specific habitat requirements when nesting. The birds may occupy territory seasonally, or return to the same location yearly. During breeding season, usually between April and July, human activity near nests may disrupt breeding or cause the adult birds to abandon their young. The Bureau of Wildlife staff will be consulted and management activities will be adapted to minimize disturbance to birds that are known to be nesting on the Unit. Adaptive management strategies and actions will be developed and applied on a case by case basis. These strategies may place restrictions on timber harvesting and gas exploration activities and could include: setbacks, no-cut or no disturbance zones, or seasonal restrictions. For recreational uses, actions may include trail closures or rerouting of trails.

Bureau of Wildlife Staff will monitor the nesting status after implementation of the recommended management strategies to further our understanding of the nesting behavior and protection needed for these species. When specific management strategies for individual species are developed, they will be incorporated into the management plan.

Action 1.4.4.1 Permit licensed falconers to remove a total of only one raptor **eya** from the Unit every three (3) years and in compliance with ECL Article 11 and 6 NYCRR Part 173. Permits for this activity are issued by the Bureau of Wildlife.

Action 1.4.5.2 Provide and maintain forest stand types acceptable for nesting habitat for northern goshawks on the Unit. Maintain 3,019 acres of mixed hardwood-conifer forest type consisting of white pine, hemlock, red pine, and hardwood species for the next 20 to 25 years. A significant amount of additional suitable habitat will also be present in stands managed for timber. The suitability of these areas will shift over the landscape depending upon harvest intensity, time since last harvest and size class of the stand.

Action 1.4.5.3 Continue to cooperate with the Bureau of Wildlife's effort in monitoring and providing data for research on the status of Northern goshawks and other raptors to ensure their sustainable populations and to ensure that our knowledge of the natural history and ecology of these raptors continues to increase. Regional Forestry staff will consult with Bureau of Wildlife staff when raptor nest sites are discovered in the process of planning or conducting activities on State forests.

Action 1.4.6 Protect the habitat of any other at-risk or Special Concern species discovered on the Unit. Bureau of Wildlife staff will be consulted for habitat protection priorities if any at-risk or Special Concern species are found on the Unit.

Action 1.4.7 Maintain a variety of conifer species and at least 5% of existing red pine for wildlife species conservation.

Conifer trees are an important habitat feature used by a wide variety of wildlife species for shelter and cover, however one unique species dependent upon conifers is located on this Unit. According to the 2000 New York State Breeding Bird Survey published in *The Second Atlas of Breeding Birds in New York State,* a population of breeding red crossbills is located in western Chenango County. The survey found that red crossbills are a confirmed breeding species on the Unit. As a species, they are unique because they are specially adapted to feed on conifer seeds and it is thought that they exist in this portion of the State due to the large amount of conifer plantations, located predominately on the State forests. Crossbills depend upon a variety of conifer species for food since good seed crops are sporadic for conifer tree species.

Approximately 5% (+/- 90 acres) of existing mature red pine will be retained in perpetuity in stands designated for protection or natural areas. Additional acres of red pine will be retained in scattered locations throughout the unit as a result of compliance with the Department's Forest Retention policy and in buffers along wetlands, streams and water bodies. Although the presence of red pine on the landscape can be prolonged by retention, they will eventually succumb to damaging high winds, ice storms, or inevitable death due to age related declining vigor. For additional information about red pine plantations, see Action 1.6.3.

Action 1.4.8 Maintain apple trees on 10 acres.
Apple trees are a food resource used by many wildlife species and are a legacy of the past settlers.

Objective 1.5 Monitor Ecosystem Health and Develop Response Strategies to Minimize Impacts from Damaging Agents.

Ecosystems are active and can change slowly over time or quickly from other influences. Periodic monitoring of the Unit is necessary to determine if change is occurring and if it is detrimental or beneficial to the Unit. With limited resources, it is unrealistic to monitor everything that may or can change. We can however monitor key species or community types which are indicators of a healthy ecosystem. Information gained from monitoring of forest cover and community types, rare plant & animal species, insect and disease outbreaks and invasive species enable Department staff to decide on the appropriate actions to take.

Action 1.5.1 Conduct periodic forest inventory of the State Forests within the Unit. The inventory will be updated prior to the 10-year plan update. Forest stands scheduled for silvicultural treatments will be analyzed prior to treatment. A post-harvest inventory will be conducted in treated stands.

Action 1.5.2 Consider implementing strategies to monitor and reduce deer browsing impacts on forest vegetation. Deer have the ability to degrade forest health by eliminating species from

the forest understory and ground layer through their repeated browsing. Strategies that may be implemented in the future may include:

- Monitoring deer density through use of deer pellet plot transects or other methods
- Conducting browse impact surveys or monitor vegetation plots to determine deer impacts
- implementing reduction of deer population on the Unit through the issuance of Deer Management Assistance Program (DMAP) permits for the harvest of antlerless deer on the Unit
- Fence construction around regeneration areas to prevent deer browse
- Support volunteer efforts to monitor deer populations or evaluate their impacts.
- Department protocol will be followed as described in Chapter 6 of the Strategic Plan for State Forest Management.

Action 1.5.3 Monitor Rare Species and Species of Special Concern through efforts by the New York Natural Heritage Program and develop an action plan as appropriate.

Action 1.5.4 Participate in the implementation of systemic statewide early detection program(s) to minimize amount of time between infestation and detection. Conduct annual insect and disease aerial surveys. As resources are available the Division will continue to conduct the aerial surveys for the entire state including this Unit.

Action 1.5.5 Monitor invasive species populations and encourage other partners or outside agencies to conduct periodic invasive species assessments of the Unit.

Action 1.5.5.1 Eradicate, where feasible, populations of invasive species using approved procedures. This may be accomplished through Regional staff, contracts or grant opportunities. Mechanical and/or approved chemical treatments may be applied depending upon the characteristics of the infestation. Chemical treatments will only be applied where mechanical methods will not be effective. Application of the herbicides or pesticides will be done according to the specifications of the label to protect water quality and prevent impacts to non-target species. All applications will comply with the State Environmental Quality Review law and State regulations.

Action 1.5.5.2 When invasive species are found, develop rapid and long-term response capabilities at the local level to minimize degree of impact.

Action 1.5.5.3 Abide by all Federal and State restrictions and regulations as well as Departmental guidelines recommended in the SPSFM for the identification, prioritization and eradication of any invasive species found on the Unit.

Action 1.5.6 Support research and technology transfer on significant insects and diseases and their impacts on forest resources.

Action 1.5.7 Attempt to positively identify causal agents for all significant forest damages, in collaboration with state and local experts.

Objective 1.6 Apply forest management principles and silvicultural systems to maintain or enhance ecosystem health and biodiversity.

One of the previously mentioned principles for maintaining biodiversity is the maintenance of landscape diversity. This is the diversity, size and spatial arrangement of habitat conditions.
In the process of forest management to produce wood products, foresters use two silvicultural systems which mimic natural disturbance patterns and create distinct habitat conditions. The two systems are referred to as even-aged and uneven-aged management.

Even-Aged Silviculture

Even-aged silvicultural practices are beneficial to many Species of Greatest Conservation Need early successional birds such as American woodcock, black-billed cuckoo, Canada warbler, brown thrasher and ruffed grouse as well as a wide variety of other species. Regenerating clearcuts and shelterwoods are quickly occupied by early successional bird species that require this type of habitat for breeding and feeding. Each species has specific habitat requirements which occur during the development of the new age class of trees. After a period of 10-15 years, the new forest has become established and canopy closure has occurred. At this point, many early successional species no longer use the site and species numbers continue to decline until about the 25th year after the timber harvest. After this point, mature forest bird species gradually increase in abundance as the even-aged stand develops into a mature forest.

Even-aged **silviculture** is a management system that maintains a forest stand where the trees are about the same age. Conifer plantations and hardwoods established on old agricultural lands are examples of even-aged stands. This system is desired for creating periods of early successional habitat and other forest development stages beneficial to many plant and animal species. Even-aged silviculture also promotes natural regeneration of **shade intolerant** species such as black cherry, red oak, aspen and white ash. This system most often involves several intermediate thinning treatments in a stand over time to tend the stand and develop established regeneration. At the end of the rotation age, all or most of the overstory trees are removed to **release** a new stand of trees composed of seedlings or saplings. Rotation age on the Unit will vary from 60 to 140 years. Even-aged silviculture uses the **shelterwood, seed tree and clearcut** regeneration methods to establish a new age class of trees on the harvested site.

The clearcut method is the removal of all trees in a stand at the same time. There are insufficient amounts of desirable established regeneration present on the ground when the **overstory** trees are removed. After the harvest of the overstory trees, seedlings may become established through natural means or by tree planting. In clearcuts of 20 acres and larger, **variable patch retention** will be practiced. Variable patch retention involves leaving patches of uncut trees and large individual trees in the clearcut area. The patches provide islands of forest cover as well as seed source in the middle of the clearcut areas. The number and size of patches retained will vary depending on the size of the clearcut. The individual trees and some of the trees in the patch retention areas may blow down over time; these blown down trees will provide two important benefits to the forest ecosystem. First, they will create coarse woody

material on the forest floor. Second, they will contribute to the establishment of pit and mound micro-topography. This is especially important in plantations where past agricultural practices had eliminated the natural micro-topography. Clearcuts larger than 40 acres exceed the Generic Environmental Impact Statement (GEIS) thresholds in the Strategic Plan for State Forest Management (SPSFM) and will be subject to additional environmental review.

The shelterwood method is the removal of all trees in a series of two to three treatments. The trees are thinned over a series of harvests to improve the growth rate, size and species composition of the overstory timber trees and also to nurture the establishment of desirable seedlings and saplings in the understory. Finally, the removal cut is done to release tree seedlings when they are established. Most all of the overstory trees are removed in this treatment and a new stand is created. Scattered overstory reserve trees may be retained at the time of the final harvest to ameliorate the microclimate, provide future snags, cavity trees, coarse woody debris and other wildlife or visual benefits.

The seed tree method is the removal of all trees in a series of one or two treatments; this method is similar to the clearcut method except that a few individual trees or groups of trees are left to provide seed source. The remaining trees may or may not be removed once regeneration has become established.

Uneven-aged Silviculture

Uneven-aged silviculture is a system for maintaining and regenerating forest stands with at least three distinct age classes. Uneven aged silviculture mimics the natural process by which scattered older trees grow to maturity, die and are gradually replaced by young seedlings and saplings. Regeneration and control of uneven-age stand structure will be accomplished using the single tree and/or **group selection** system with periodic harvests using a 20-30 year **cutting interval**. Single tree selection is the selection of individual or very small groups of trees for harvest. Single tree selection tends to favor **shade tolerant** tree species such as hemlock, beech, and sugar maple. Group selection is the selection of a group of trees up to 2 acres in size for harvest. This method is used to create openings for the regeneration of a greater variety of species including shade shade-intolerant species such as black cherry and white ash. The larger canopy gaps also promote faster growth of the tree seedlings to enable them to grow beyond the reach of deer more quickly.

The previous UMP for the McDonough Unit (completed in 1999) recommended Ludlow Creek State Forest be managed using only uneven-aged silviculture and fifty years between the harvests within stands to produce structural features similar to old growth conditions. During the intervening years since the development of that plan, there have been significant discoveries in the science of forest and wildlife management which have resulted in revising the management recommendations for Ludlow Creek State Forest. There are two significant factors influencing this change in management approach. The first is the improved understanding of the impacts of deer browsing on tree seedling growth and establishment. This

limits the ability to successfully regenerate forests using only uneven-aged methods. The second factor is the development of New York State's Comprehensive Wildlife Conservation Strategy Plan in 2005, which identified "Species of Greatest Conservation Need" (SGCN). The plan highlighted the need to provide young forest habitat on the landscape, using even-aged silviculture methods, since many SGCN species are dependent upon such conditions and are declining in population. Furthermore, State forests are now surveyed by the NY Natural Heritage Program for the presence of rare species and 548 acres on Ludlow Creek State Forest are designated as "Protection Forest" which are expected to develop old growth features in the future.

As most stands on the Unit are currently even-aged, conversion to uneven-aged conditions will require a long-term commitment to regenerating at least two new age classes through controlled cutting of mature trees. This will require the use of group selection in conjunction with individual tree selection. Where conditions allow, **crop trees** will be grown to a maximum diameter of 26". Other trees may be selected as **recruitment trees** to be retained permanently within the stand for wildlife habitat or their unique features on the landscape.

Some trees of unique characteristics and size will be left as **biological legacy trees** as determined by the forester and in compliance with the DEC Program Policy, ONR-DLF-2 / Retention on State Forests.

Action 1.6.1 Manage the Unit's forests using silvicultural treatments for all forest cover types at a total annual average harvest of 321 acres per year for the 20-year planning period.

Action 1.6.2 During the next 20 years, maintain at least 4,345 acres (33%) of the Unit in a conifer component comprised of both planted and naturally reproducing conifer species. Natural conifer forest types comprised of stands containing hemlock and white pine will be maintained on 3,087 acres or 23% of the Unit. At least 1,258 acres (10%) of the Unit will be maintained in conifer plantation forest types consisting of primarily red pine, Norway spruce and larch.

The DEC Region 7 guideline has been to maintain a minimum of 20% of each State Forest in conifer cover. Conifer trees provide a variety of special functions for many species of wildlife. Conifer forests moderate temperature extremes, which can help provide winter thermal cover, help moderate snow depth, provide shelter from wind and provide escape cover on a year-round basis. Conifer stands provide valuable habitat for many groups of wildlife species, including white-tailed deer, grouse, wild turkey and various species of raptors.

Action 1.6.3 Manage 3,555 acres of conifer plantations (with varying amounts of mixed hardwoods) with the goal of eventually converting them to native hardwoods or naturally regenerated conifers. The Unit contains a total of 4,920 acres (37% of the Unit) of conifer plantations or mixed hardwoods with plantation conifers. Non-native conifer plantations on the Unit consist of primarily red pine and Norway spruce along with minor amounts of white spruce and larch. A large majority of these plantations were established in the 1930's by the CCC's with the trees now about 80 years old.

Red pine is not native to this portion of New York State and is vulnerable to damage from wind storms due to it being planted on shallow soils in many areas of the Unit. While many red pine plantations have grown well for decades, they are now at or near maturity. Many sites have trees with declining vigor as indicated by thin **crown**s. Red pine is adapted to reproduce on seedbeds after a fire has occurred. Otherwise, it only appears to regenerate in areas receiving full sunlight with exposed mineral soil, such as on logging trails in clear cuts. Therefore, widespread natural reproduction of this species is very difficult to achieve.

The Unit contains a total of 1,838 acres where red pine is the dominant species. This plan has identified 1,739 of these acres as suitable for timber management. Nearly all of these sites are designated for management using the even-aged silvicultural system. Over the course of this 20 year plan, 476 of these acres are scheduled for treatment. The treatment of these stands will focus on thinning to develop advance hardwood regeneration or overstory removal to release advance hardwood regeneration where it is present in adequate quantities.

The Unit has a total of 1,307 acres where Norway spruce is the dominant species. This plan has identified 1,221 of these acres as suitable for timber management. Nearly all of these sites are designated for management using the even-aged silvicultural system. Over the course of this 20 year plan, 1,158 of these acres are scheduled to be treated through thinnings to develop regeneration or overstory removal to release advance native hardwood or natural spruce regeneration.

Harvesting of the plantations will create important early successional conditions on the Unit which will provide habitat for many declining Species of Greatest Conservation Need (see Table 3). All management of plantations will comply with the Department program policy ONR-DLF-1 / Plantation Management on State Forests (2011). More information on the Plantation Management policy can be found at http://www.dec.ny.gov/docs/lands_forests_pdf/policysfplantation.pdf .

Action 1.6.4 Manage 7,228 acres using even-aged silvicultural systems. Over the course of this 20 year plan, 4,841 of these acres are scheduled to be treated. Areas designated for even-aged management include a mix of conifer plantations and native hardwoods.

Action 1.6.5 Manage 2,620 acres using uneven-aged silvicultural systems. Over the course of this 20-year plan, 1,612 of these acres are scheduled to be treated. Areas designated for uneven-aged management include primarily native hardwoods and hemlock.

Action 1.6.6 Manage 1,991 acres using the variable retention system.
Variable retention is an experimental harvest system for increasing biodiversity in stands managed for timber production (Franklin et. al., 1997, Lindenmayer & Franklin, 2002). It will be applied in both even- and uneven-aged stands to increase structural complexity by permanently retaining trees, uncut patches and coarse woody debris.

Variable retention will mostly be applied in conifer plantations or natural stands with native white pine. It will be used in 1,344 acres of stands managed using even-aged systems and in 61 acres using uneven-aged systems. Retention patches will be no larger than one acre and represent no more than 50% of the stand area. In stands with native conifers, eastern hemlock and eastern white pine will be favored for retention. Riparian zones, wet seeps and poorly drained sites within the stand will be favored for retention and may expand upon required retention for Special Management Zones. Sites with snags, decaying logs and existing or potential cavity trees will be favored for retention. Sites with vernal pools, hedgerows, rock outcrops, abrupt **pit and mound topography**, steep slopes and other unique features will be favored for retention. Rotation in even-aged stands may be extended up to 160 years depending upon stand and site conditions. Individual wind thrown trees will not be salvaged.

The precise quantity and distribution of retention features will vary depending on analysis prior to stand treatments. Retention trees and patches will be identified during the planning of stand treatments and designated for retention. Retention features will be recorded in office inventory records. The result of these practices will be increased structural complexity providing features such as large snags, cavity trees and coarse woody debris on the forest floor. This increased structural complexity should benefit a wide array of species ranging from birds and mammals using the snags and cavity trees to woodland salamanders that need decaying logs for habitat.

Action 1.6.7 Maintain and enhance forest conditions to promote the benefits of the Chenango Highlands Forest Matrix Block by implementing the following practices:

- Control invasive species
- Provide enhanced retention where feasible
- Use silviculture to develop late successional features in UEA stands
- Establish a diversity of size classes and successional conditions
- Promote species diversity
- Provide early-successional conditions
- Promote fruit and mast production
- Retain a minimum of 10% of forest areas impacted by a wind episode or other storm event in an unsalvaged condition.
- Provide snags, cavities and CWD.
- Do not construct roads, interior log landings or similar openings beyond 250 feet from existing Town or State roads on the Unit.

Objective 1.7 Establish adequate regeneration of desired tree species so that within 10 years of plan implementation, stands that are five years or older since a timber harvest are at least 50% stocked with desirable regeneration.

GOAL 1: PROVIDE HEALTHY AND BIOLOGICALLY DIVERSE FOREST ECOSYSTEMS

Repeated browsing by deer often results in the proliferation of interfering woody (striped maple, beech and hophornbeam) and herbaceous vegetation (hay-scented and New York fern) in the forest understory. These interfering species are either not preferred by deer or are resistant to the effects of repeated browsing. Furthermore, the presence of interfering species above threshold stocking levels will prevent the establishment of other tree species, resulting in greatly reduced vegetation diversity and severely limited potential for future timber production (Bashant & Nyland, et al., 2005).

Excessive deer browsing can also reduce understory plant species diversity. Forest herb species sensitive to deer browse such as trillium, Canada mayflower, Indian cucumber and others can be severely reduced in abundance or eliminated after years of repeated browsing. Furthermore, excessive deer browsing resulting in altered understory plant communities can have secondary impacts such as reducing the diversity of breeding birds.

The Department will use the following strategies to achieve successful regeneration:

Action 1.7.1 Increase the intensity of the timber harvest using large group selection and patch cuts along with individual tree selection in stands designated for uneven-aged management.

Including the use of large group selection and patch cuts along with individual tree selection will create larger canopy gaps, up to one acre in size. This will have a variety of benefits including the potential for both shade tolerant and intolerant species of forest regeneration. Any regeneration that does become established in the larger gaps should grow at a faster rate, so that it can grow above the reach of deer more quickly.

Action 1.7.2 Remove interfering vegetation at select locations where it dominates the forest understory.

Interfering vegetation typically consists of dense stocking of New York or hayscented fern, beech, striped maple or hophornbeam in the forest understory. In areas where they dominate the forest understory, they can prevent the establishment of other species. Where interfering vegetation exceeds threshold levels and limits the establishment of desirable tree species, a variety of methods will be used to reduce its dominance in the understory. These methods will include cutting of individual stems and herbicide application where necessary. Herbicides will only be applied where mechanical methods will not be effective. When herbicides are applied, the least toxic and most specific type of application will be used to achieve the desired objective. The preferred methods include backpack spraying of the foliage and applying herbicide to the cut stumps or bark of individual trees. The application methods will also include provisions for protecting future stand species diversity since the objective is not to eliminate all interfering vegetation, but to reduce its dominance to allow other species to grow. Application of the herbicides will be done according to the specifications of the label to protect water quality and

impacts to non-target species. All herbicide applications will comply with the State Environmental Quality Review law and State regulations.

Action 1.7.3 Implement an annual cyclic regeneration inventory to assess regeneration development 5-10 years after silvicultural treatments that were intended to develop desirable regeneration after harvest. An inventory of regeneration development will provide information necessary to evaluate the effectiveness of stand treatments. Silvicultural practices may then be modified to improve effectiveness of stand treatments.

Table 16. Present and Future Cover Types

Vegetation Type	Present Acres	% of Unit	Objective Acres	% of Unit
Northern Hardwoods	4,512	34	7,029	53
N. Hardwoods & Natural Conifer	3,065	23	3,549	27
N. Hardwoods & Plantation Conifer	2,495	19	1,952	15
Plantation Conifer	2,446	19	0	0
Brush, Apple	122	1	110	1
Ponds & Wetlands	398	3	398	3
Shale pits	7	<1	7	<1
Roads	184	1	184	1
Total	**13,229**	**100**	**13,229**	**100**

GOAL 2: PROTECT AND MAINTAIN STATE FOREST ASSESTS AND VISUAL RESOURCES OF THE UNIT

State Forest assets on this Unit include historic or cultural resources, vehicle access infrastructure, shale or gravel pits, and boundary lines. This Unit also includes many visual resources important to the public such as views from the camping areas, assembly areas, and scenic views from roads, trails, rivers and streams. The importance of the visual resources and the public's perception will always be considered in the decision making and implementation of activities on this Unit.

Objective 2.1 Preserve and Protect Historic and Cultural Resources on the Unit

Historic and archaeological sites located on State Forests, as well as additional unrecorded sites that may exist, are protected by provisions of the New York State Historic Preservation Act (SHPA-

Article 14 PRHPL), Article 9 of the Environmental Conservation Law, 6NYCRR Section 190.8 (g) and Section 233 of Education Law. Unauthorized excavation and removal of materials from any of these sites is prohibited by Article 9 of Environmental Conservation Law and Section 233 of Education Law. In some cases, additional protection may be afforded these resources by the federal Archaeological Resources Protection Act (ARPA). *(SPSFM pg141)*

Cultural resources on the Unit offer clues about the historic relationship between people and nature. Farm sites, graveyards, stonewalls and similar artifacts reveal cultural practices and provide clues about settlement patterns. Preservation of cultural resources will ensure that future generations have access to information about the past.

Action 2.1.1 Protect all cultural resource sites, including new discoveries from disturbances associated with timber harvesting, well site construction and recreational activities. Many sites of cultural significance have been identified including two cemeteries. Recent forest inventory identified 262 sites with historic features including a former Civilian Conservation Corp camp, the Twichell cemetery, and the site of a 19th century sulfur spring spa. Stone walls and other structures will not be dismantled and efforts will be made to accommodate access using existing gateways. Hedgerows, shade and fruit trees, and other ornamental plants associated with cultural sites will not be harvested.

Action 2.1.2 Follow all standard operating procedures for managing historic and cultural resources once developed and implemented as part of the SPSFM stated actions, HC Action 1.

Action 2.1.3 Implement a systematic and comprehensive archaeological inventory of the Unit as outlined in the SPSFM actions, HC Action 2.

Action 2.1.4 Maintain Civilian Conservation Corp Historic Site. The former camp includes two restored stone structures, a kiosk, parking area, picnic table, bench, and hardened path. The grass area will be mowed on a monthly basis during the growing season. Periodic maintenance includes grading and resurfacing the parking area and path and repair or replacement of the kiosk contents, picnic table and bench.

Action 2.1.5 Restore the Berry Hill Fire tower and establish an historic site at this location. The site provides opportunities for recreation and to raise public awareness about environmental history, architecture and forest management. The site is also one of the highest elevations in Chenango County and offer exceptional views of the rural landscape, including several distant State Forest properties. Due to the incompatibility between public use and communications equipment mounted on the tower, development of an historic site will only proceed upon removal of this equipment.

Objective 2.2 Maintain and enhance vehicle access infrastructure which includes forest access roads, haul roads, access trails, gates, parking areas, and associated facilities.

GOAL 2: PROTECT AND MAINTAIN STATE FOREST ASSESTS AND VISUAL RESOURCES OF THE UNIT

Action 2.2.1 Implement a standard process as identified in the SPSFM (pg 168) for assessing State Forest infrastructure needs and assign maintenance schedule priorities and budgets.

Action 2.2.2 Maintain 6.0 miles of Public Forest Access Roads (PFAR) and 1.3 miles of administrative roads and all associated road culverts.

These roads provide the primary means of access for these forests. Routine upkeep includes ditch and culvert maintenance. The road sides are mowed annually. Periodic maintenance includes grading and crowning every other year and periodic road resurfacing with new gravel or shale and culvert replacement. During this 20-year plan, a 1.0 mile PFAR between State Route 220 and Bliven-Sherman Road on Chenango 1 will be resurfaced and have the culverts replaced.

Action 2.2.3 Maintain 2 shale pits to provide material for the maintenance of Department facilities.

These shale pits, located on Chenango 1 & 26, will be maintained to provide surface material necessary for roads, trails, parking areas, log landings and camp sites. Shale or gravel extracted from these pits will be utilized exclusively for State land construction projects and will not be made available for commercial use. The pits are operated under the regulatory threshold as less than 750 cubic yards or 1,000 tons of material is removed within any 12-successive calendar months. Therefore, the sites are not subject to jurisdiction under the Mined Land Reclamation Law and there is no requirement for New York State mining permits. If annual extractions will exceed 1,000 tons or 750 cubic yards of material, then a mined land use plan will be developed and a New York State mining permit will be obtained for the site. Regional staff from the Division of Minerals will be consulted at that time.

Action 2.2.4 Maintain ten parking areas to provide safe access into the Unit. Existing parking areas requiring periodic resurfacing, grading and sign replacement are located at the following sites:

Forest	Stand	Location
Chenango 1	NA	Berry Hill Firetower/ Tower Road
Chenango 1	C-15	Whaley Pond/ PFAR
Chenango 1	D-42.1	Kopak Trail/ Bliven- Sherman Road
Chenango 1	E-26	CCC Site/ NYS Rt. 220
Chenango 1	I-2	CP-3 Trail/ Short Cut Road
Chenango 6	F-2	Finger Lakes Trail/ Tucker Road-PFAR
Chenango 26	A-6	CP-3 Trail/ Chestnut Road
Chenango 26	A-19	Shale Pit/ Chestnut Road
Chenango 26	B-13	Angler Parking/ Creek Road
Chenango 26	D-55	Pavilion/ Stone Quarry Road

Action 2.2.5 Construct eight new parking areas to enhance public access on the unit. New parking areas will accommodate a minimum of two vehicles and be constructed of shale or crushed stone. Parking signs will be posted and where necessary, boulders installed to restrict off-road vehicle access. New parking areas will be constructed at the following locations:

Forest	Stand	Location
Chenango 1	G-22	Pooler Road
Chenango 1	I-23	Chestnut Street
Chenango 6	F-49	Stone Quarry Road
Chenango 6	F-57	Tucker Road
Chenango 11	A-36	McDonough Road
Chenango 26	A-33	Shore Road
Chenango 26	B-34	Waldron Road
Chenango 26	D-39.4	Whitling Road

Action 2.2.6 Maintain four gates on the Unit. Gates have been installed to restrict unauthorized vehicle access while at the same time allowing access for management activities and permitted uses. Gates require periodic painting and other maintenance to remain functional: The four gates are located at the following sites:

Forest	Stand	Location
Chenango 1	D-4	Galetown and Preston Roads intersection
Chenango 1	B-8	N. Griffen Road/ Steere Roads intersection
Chenango 26	C-2.2	Sulfur Springs/ Art lake Road intersection (S)

Action 2.2.7 Install five new gates to prevent illegal off-road motor vehicle use and trash dumping at the intersection of roads and snowmobile trails. Remote trails and roads accessible by vehicles are often sites chosen for illegal dumping of trash or are used for illegal bon fires and beer parties. Blocking vehicle access at road/trail intersections will mitigate problems and reduce costs for maintenance and law enforcement. Vehicle access will be blocked at the following locations:

Forest	Stand	Location
Chenango 1	H-20	Shortcut Road
Chenango 1	I-6	Shortcut Road
Chenango 1	I-17	Chestnut Road
Chenango 26	C-4	Art Lake Road
Chenango 26	C-21	Stone Quarry Road

Objective 2.3 Maintain Boundary lines to identify State property and prevent timber theft and encroachments

Establishing visible boundary lines is a basic requirement for resource management and protection.

Action 2.3.1 Repaint boundary lines on a seven-year cycle utilizing DEC's Operations crews. Boundary lines will be repainted using the following schedule:

Year	Forest	Miles
2016-17	Chenango 1	45.8
2016-17	Chenango 11	8.6
2018-19	Chenango 6	22.7
2021-22	Chenango 26	30.5
Totals		**105.6**

Action 2.3.2 Identify and complete survey requests through the Bureau of Real Property as priorities and budgets allow.

Objective 2.4 This Unit will be managed so that the overall quality of the visual resources is maintained or improved.

State lands are dominated by forest cover which has created a unique visual character of these areas compared to roads through private lands. The visual resources of the Unit will be considered when planning management actions near roads, trails or high use recreational facilities. The visual quality along these roads and trails today is different from what it was 50 years ago and how it will change in the future. The forests on the Unit are a dynamic resource that is constantly changing in response to human or natural events. Timber harvesting, insect or disease infestation, or extreme weather events all have the ability to impact and change this visual resource. For additional information on the management of visual resources, see the *SPSFM, 2011, pg. 127*.

Action 2.4.1 Manage the visual corridors along approximately 38.7 miles of town roads, 6.0 miles of Public Forest Access Road corridors and 31.1 miles of trails for visual qualities associated with a forested landscape.

The visual resources along these corridors will be considered when planning management actions. Hazard trees will be removed for road maintenance. Trees along roads or trails may be harvested or retained depending upon site conditions and specific management objectives. The forest will change in response to management actions and natural events but a forested character will remain along road and trail corridors. Fallen tree tops will be hauled back from trails and roads and the tree tops in the corridors will be cut down close to the ground to maintain visual qualities.

Action 2.4.2 Follow all future guidelines for visual impact assessments and mitigation around timber harvests, mineral extraction sites and infrastructure.

Action 2.4.3 Follow all visual resource protection requirements identified in the DEC policies for retention, plantation management and clearcutting.

Action 2.4.4 Materials compatible with the rustic character of State Forests will be used for the construction of any necessary improvements on the Unit.

Action 2.4.5 Install kiosks at locations to minimize sign pollution and to avoid replication.

Action 2.4.5 Highlight vista and other unique natural and cultural features in new road and trail design.

GOAL 3: PROVIDE FOREST BASED RECREATIONAL OPPORTUNITIES FOR PEOPLE OF ALL AGES AND ABILITIES

State lands offer opportunities for recreational activities that are best enjoyed in remote, relatively undisturbed natural areas. Such activities typically require only a minimum of facility development or site disturbance. Activities meeting these criteria are compatible with maintaining and protecting the natural character and features of State land. Visitors to State Forests do not pay admission fees, and limited facility development and associated construction and maintenance costs are consistent with this principle.

In managing the recreational resources on the Unit many factors are considered. Constraints consist of property size, shape, topography, soils, access, wetlands, streams, existing uses, capital, staff, suitability, as well as enacted rules, regulations, policies, and laws. Other factors like nearby recreational opportunities, public input, history, cover type, maintenance, environmental impact, and general demand are also considered.

For further discussion of DEC recreation goals and objectives for State Forests, see Chapter 5 of the Strategic Plan for State Forest Management at http://www.dec.ny.gov/docs/lands_forests_pdf/spsfmfinal.pdf .

Objective 3. Provide recreational opportunities compatible with the resources on the Unit and maintain recreational facilities to ensure ecosystem sustainability.

State forests are best suited to low impact recreational activities that require a minimum amount of facility development and maintenance. Recreational activities shall not have negative impacts to rare species or ecological communities or cause degradation of the soil, water or vegetation

resources on the Unit. This objective focuses on the tasks needed to provide and maintain high quality recreational facilities while also protecting the environmental integrity of the Unit.

Action 3.1.1 Continue partnering with the Chenango Ridge Riders, the Chenango Sno Riders, and the Greene Drift Riders to maintain 20.1 miles of snowmobile trails on the unit. Continue partnership with the Finger Lakes Trail Conference to maintain 9.4 miles of hiking trails on the Unit including the Fingers Lakes Trail, the Kopac Trail, the Kopac-Whaley Pond Trail and two trail bridges (one wooden bridge on Chenango 6 and a steel I-beam bridge on Chenango 1) . The partnership agreements with these various groups will be through their respective Volunteer Stewardship Agreements (VSAs).

Action 3.1.2 Encourage groups or individuals to participate in volunteer programs to promote the resources on the Unit or to help maintain the public use facilities on the Unit. The Department's ability to provide the needed funds and staffing to adequately maintain or improve recreational facilities is limited. Help from volunteers can be instrumental in improving, maintaining or preventing closure of recreation facilities. Volunteer Stewardship Agreements and other DEC Volunteer programs provide the opportunity for volunteers to propose activities that assist the Department in achieving management goals and objectives for the Unit. Volunteer activities may include group hikes, historic tours, birding walks or surveys, organized group hiking or snowmobile events and other Department approved group activities. Maintenance activities suitable for volunteer participation include upkeep of trails, parking areas, camping sites, cultural resources and wildlife habitat. Group activities involving 10 or more people may require a special permit. Applications and information are available through the Sherburne Lands & Forests office.

Action 3.1.3 Continue to allow dispersed recreation activities for which no trails or amenities exist or will be provided, such as hunting, trapping, hiking, fishing and nature observation.

Action 3.1.4 Maintain recreational facilities to provide a safe user experience by periodically closing trails impacted by timber harvests or extreme weather events.

Action 3.1.5 Prohibit public ATV use on the Unit in accordance with the Department's State Forest ATV policy as stated in the Strategic Plan for State Forest Management, 2011. As stated in the SPSFM, ATV use is only compatible with State Forest management goals under the circumstances described below:

"…the Department will not permit ATV use on State Forests, except;

- as may be considered to accommodate a "connector trail" through Unit Management Planning or a similar public process; and
- on those specific routes designated for use by DEC-issued Motorized Access Permit for People with Disabilities (MAPPWD)."

Action 3.1.6 Maintain lean-to on Chenango 6. Repairs to the structure will be made on an as-needed basis and the exterior will be painted on a ten-year cycle.

Objective 3.2 Provide recreational opportunities that are universally accessible and comply with the Americans with Disabilities Act.

Application of the Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA), along with the Architectural Barriers Act of 1968 (ABA) and the Rehabilitation Act of 1973; Title V, Section 504, have had a profound effect on the manner by which people with disabilities are afforded equality in their recreational pursuits. The ADA is a comprehensive law prohibiting discrimination against people with disabilities in employment practices, use of public transportation, use of telecommunication facilities and use of public accommodations. Title II of the ADA requires, in part, that reasonable modifications must be made to the services and programs of public entities, so that when those services and programs are viewed in their entirety, they are readily accessible to and usable by people with disabilities. This must be done unless such modification would result in a fundamental alteration in the nature of the service, program or activity or an undue financial or administrative burden.

Consistent with ADA requirements, the Department incorporates accessibility for people with disabilities into the planning, construction and alteration of recreational facilities and assets supporting them. This UMP incorporates an inventory of all the recreational facilities or assets supporting the programs and services available on the unit, and an assessment of the programs, services and facilities on the unit to determine the level of accessibility provided. In conducting this assessment, DEC employs guidelines which ensure that programs are accessible, including buildings, facilities, and vehicles, in terms of architecture and design, transportation and communication to individuals with disabilities. A federal agency known as the Access Board has issued the ADA Accessibility Guidelines (ADAAG) for this purpose.

An assessment was conducted, in the development of this UMP, to determine appropriate accessibility enhancements which may include developing new or upgrading of existing facilities or assets. The Department is not required to make each of its existing facilities and assets accessible so long as the Department's programs, taken as a whole, are accessible. Any new facilities, assets and accessibility improvements to existing facilities or assets proposed in this UMP are identified in the section containing proposed management actions.

Universal access will be provided unless it fundamentally alters the character or recreational programs of the area. This objective strives to maximize accessibility while protecting the natural setting to the greatest extent possible, thereby preserving the fundamental experience for all. A minimal tool approach will be used to implement this vision, resulting in projects that blend into the natural environment and protect the landscape.

GOAL 3: PROVIDE FOREST BASED RECREATIONAL OPPORTUNITIES FOR PEOPLE OF ALL AGES AND ABILITIES

For copies of any of the above mentioned laws or guidelines relating to accessibility, contact the DEC Universal Access Program Coordinator at 518-402-9428 or UniversalAccessProgram@gw.dec.state.ny.us

Action 3.2.1 Maintain a 0.7 mile ATV Access (MAPPWD) Route for people with qualifying disabilities on Chenango 1.

Action 3.2.2 Establish a 0.8 mile ATV Access (MAPPWD) Route for people with qualifying disabilities on Chenango 26.

Action 3.2.3 Establish a 0.2 mile universal access trail from parking area on Chenango 6, stand F-2 to the lean-to along the Finger Lakes Trail in stand F-3. Approximately 0.1 mile is new construction and the remaining segment is on the Finger lakes Trail.

Action 3.2.4 Maintain the 0.25 mile Kopac Pond Trail and viewing platforms. This site offers universal access into a relatively diverse ecological area to the visiting public.

Objective 3.3 Provide and enhance information on the Unit.

This Unit contains numerous recreational opportunities that can be utilized throughout the year at various locations. Some of these opportunities may not be known or apparent to the general public. Each of the opportunities may also have specific rules or regulations not explained to the public. Clear and up to date information is needed to help guide the Units users as to where the opportunities exist as well as the areas restrictions or regulations. This will improve the public's use of the Unit as well as protect the resource from inappropriate or misuse from occurring.

Action 3.3.1 Design and install two new kiosks describing the recreational opportunities of the Unit including designated trails, camping facilities, trail closures, access points and rules and regulations for State lands at the following locations:

Forest	Stand	Location
Chenango 6	F-2	Ludlow Road
Chenango 26	B-13	Creek Road

Action 3.3.2 Improve the availability of information to the public on the internet about the Unit.

Current information about the Unit available on the DEC web site includes maps of the forests, descriptions of the forests, rules and regulations, and directions to the forests.

- Provide smart phone quick response bar codes (QR codes) at all new kiosks to access information about the Unit.

Action 3.3.3 Maintain all signs communicating information to the public on the Unit. This includes:

- Identification signs for three PFARs totaling 6.0 miles.
- Nine (4 existing, 5 proposed) State forest identification signs
- Installed State forest kiosks
- Designated parking area signs

Action 3.3.4 Install new State Forest identification signs at the following locations:

State Forest	Stand Number	Location
Chenango 1	B-3	Tower Road
Chenango 6	A-55	Hammerle Road
Chenango 11	A-33	Rogers Street
Chenango 26	C-26.2	Stone Quarry Road

GOAL 4: PROVIDE ECONOMIC BENEFITS TO PEOPLE OF THE STATE

ECL §1-0101(1) provides in relevant part that "It is hereby declared to be the policy of the State of New York to conserve, improve and protect its natural resources and environment and to prevent, abate and control water, land and air pollution, in order to enhance the health, safety and welfare of the people of the state and their overall *economic* and social well- being" (emphasis added). In considering all proposed actions, DEC will attempt to balance environmental protection with economic benefit.

New York's State forests provide economic benefits to the People of the State through the variety of goods and services they produce as well as the tax revenue they provide to local communities. Goods provided by State forests include timber from the sale of forest products, fish and wildlife obtained for consumption, and potential mineral resources such as gas. Services provided by State forests include the opportunity for a wide variety of recreation activities and the services their natural ecosystems provide which help sustain and fulfill human life.

Objective 4.1 Provide a steady flow of forest products through sustainable forest management.

New York's public and private forests contribute over $9.9 billion annually to the State's economy through the forest products industry, while forest-based recreation and tourism businesses are worth an additional $8.2 billion (North East State Foresters Association, 2013). Over 43,000

people are directly employed in forest-based manufacturing industries and over 31,000 people are employed in forest recreation-based businesses.

Each 1,000 acres of forest land in New York supports 2.6 forest-based manufacturing jobs with a payroll of $83,000 (North East State Foresters Association 2004). State forests make important contributions to these economic categories resulting in economic benefits to local communities and their larger surrounding areas.

For additional information about forest product sales from State forests, see the Chapter 6 of the Strategic Plan for State Forest Management.

Action 4.1.1 Treat an average of approximately 321 acres each year through timber sales. Timber sold from the Unit will be purchased by businesses for manufacturing products such as construction lumber, paper, flooring, furniture, veneer, utility poles, fencing, pallets and fuel wood. These products are manufactured and sold locally and internationally in the global wood products market. The sale of timber provides jobs to loggers, truck drivers, and employees in wood products manufacturing businesses as well as revenue to New York State. Acres treated will be dependent upon staffing and suitable markets.

Action 4.1.2 Offer suitable locations for maple sugar tapping. Sixteens stands $\geq$ 5 acres, where sugar maple occupies 33% of stocking, with a mean stand diameter $\geq$ 12”, and capable of supporting a gravity-fed collection system are designated for maple sugar tapping.

Forest	Stand	% Sugar Maple	Mean Stand Diameter	Acres
Chenango 1	A8.1	46	15.2”	15
Chenango 1	A29	49	13.7”	17
Chenango 1	C20	43	12.9”	18
Chenango 1	C26	33	14.5”	11
Chenango 1	D31	35	12”	12
Chenango 1	E32	36	14.4”	45
Chenango 1	E60	42	15.0	12
Chenango 1	G5	34	13.0	8
Chenango 1	H2	62	11.7	17
Chenango 1	H3	53	11.7	12
Chenango 1	H12	36	12.3	17
Chenango 6	D10	53	11.8	13
Chenango 11	A16	52	12.6	40
Chenango 26	B33.1	36	14.4	29
Chenango 26	B37	34	13.3	23
Chenango 26	B34	45	12.4	6
Chenango 26	C3.1	71	15.1	33
Total				**328**

Objective 4.2 Provide Property Tax Income to Local Governments and Schools.

Action 4.2.1 Maintain annual tax payments to local governments and schools.

The State provides annual payments of approximately $569,563 (2012 data) in combined town, and school taxes on the lands in this Unit. See **Appendix IX** for additional information.

Objective 4.3 Evaluate and consider surface disturbance associated with natural gas exploration, production and development on the Unit compatible with the goals and objections of the plan.

Action 4.3.1 Make no decision with respect to oil and gas exploration, development and extraction on this unit in this management plan.

Technology and techniques with respect to the oil and gas industry are ever changing. Practices that may have been common place in the industry decades ago may be outdated, deemed infeasible or are no longer applicable. Therefore, no decision with respect to Oil and Gas exploration on the Unit will be made in this unit management plan.

Should any portion, or all of the unit be nominated for oil and gas exploration, development and extraction, or new requests for new or additional pipelines be made; this will trigger a new public process before final decisions are made with respect to the proposal(s). The Department will conduct a tract assessment of the Unit, and hold a public meeting to receive comments in regard to the proposal(s). A 30-day public comment period would then follow the public meeting. The Department will consider all comments and the tract assessment prior to making a decision. If the Department decides to go forward with a lease proposal, this section of the unit management plan will be amended. In addition, the Division of Lands and Forests will collaborate with the Division of Mineral Resources to incorporate special conditions into the proposed lease. These conditions would include, but not be limited to criteria for site selection, mitigation of impacts and land reclamation upon completion of the proposal.

Action 4.3.2: Restrict surface mining.

Restrict surface mining of shale, sand, gravel or other aggregate and underground mining of "hard rock" minerals such as metal ores, gem minerals, and salt. The Department's current policy is to decline any commercial mining application(s) pertaining to any lands covered by this UMP as these activities are not compatible with the purposes for which State Forests were purchased.

Objective 4.4 Provide support to local communities through forest-based tourism.

GOAL 4: PROVIDE ECONOMIC BENEFITS TO PEOPLE OF THE STATE

New York forest-based recreations and tourism businesses employ about 32,000 people and support a payroll of $965 million annually (North East State Foresters Association, 2013). Recreation activities enjoyed on the Unit, such as hunting, snowmobiling, and hiking contribute to the local economy through the participant's purchase of supplies, food and lodging.

Action 4.4.1 Develop cooperative partnerships with organizations individuals or communities to sustain or enhance forest-based tourism activities that are consistent with this plan and State forest rules and regulations. The Volunteer programs will be used to formalize such partnerships. The Department will also support approved volunteer activities that are consistent with the goals and objectives of this plan.

Action 4.4.2 Promote public awareness through kiosks, brochures, and Department website development to be utilized by local communities. See actions 3.3.1, 3.3.2 and 3.3.3.

Objective 4.5 Protect rural character and provide ecosystem services and open space benefits to local communities.

The presence of State forests maintains the rural character of much of New York State. Undeveloped lands, such as State forests, provide many important ecosystem services to society such as wildlife habitat, buffering of downstream communities from floods, pollination of crops, insect pest control, clean water and clean air. They also provide open space benefits such as free public recreational opportunities and places for relaxation and escape from the disruptions and stresses associated with urban areas.

Action 4.5.1 The Department will pursue possible purchases of lands, from willing sellers only, in fee or through conservation easement parcels (in-holdings and parcels bordered on two or three sides by State lands) that will consolidate State ownership or protect at-risk species or ecological communities. Acquisition of such lands will improve public and administrative access and provide larger consolidated blocks of State land for improved protection of rare species and enhanced recreational opportunities. For more information on the Departments land acquisition priorities please refer to the SPSFM page 149 at http://www.dec.ny.gov/lands/64567.html.

Management Action Schedules

Tables of Land Management Action

Land Management Actions Code Definitions

The following table presents a 20-year schedule of planned management actions referenced by stand number and year of management. Maps showing the specific stand locations are available for viewing at the Sherburne Office.

Abbreviations or codes for the following tables are listed below:

DEFINITION OF CODES USED

Forest Type Codes	Definition
APP	Apple
BR	Brush, woody shrub species
BF	Balsam fir
EL	European Larch
HEM	Hemlock
JL	Japanese larch
JP	Jack Pine
NH	Northern hardwoods
NS	Norway spruce
PH	Pioneer hardwoods - aspen
PIT	Shale or gravel pit
POND	Natural open water bodies, including beaver ponds
POND-C	Constructed ponds that are maintained.
RO	Red oak
RP	Red pine
RS	Red spruce
SH	Swamp hardwoods - red maple, white ash
SP	Scotch pine
WC	White cedar
WET-ALDER	Wet areas dominated by alder or other wetland shrub species
WET-OPEN	Wet areas dominated by non-woody vegetation
WP	White pine
WS	White spruce

Objective Type Code	Definition
APP	Apple
BR	Brush or woody shrub species

Objective Type Code	Definition
CEDAR, C	Northern white cedar
BF	Balsam fir
HEM	Hemlock
HWD	Hardwoods
LA	Larch spp.
NH	Northern hardwoods
NS	Norway spruce
PH	Pioneer hardwoods
PIT	Shale or gravel pit
POND	Natural open water bodies, including beaver ponds
POND-C	Constructed ponds that are maintained.
RO	Red oak
RP	Red pine
SH	Swamp hardwoods - red maple, white ash
WET-ALDER	Wet areas dominated by alder or other wetland shrub species
WET-OPEN	Wet areas dominated by non-woody vegetation
WC	White cedar
WP	White pine
WS	White spruce

Management Direction Code	Definition
APP	Apple trees.
BR	Brush: Shrub species other than apple.
E	Even-aged: 100-160 year rotation for natural stands; up to 140 years for plantations.
ES	Even-aged, Short Rotation: Approximately 60 year rotations to maintain pioneer hardwoods such as aspen.
EVR	Even-aged, Variable Retention: Principles of even-aged silviculture applied while retaining individuals or groups of trees in the harvested stand for the next rotation.
NA	Natural Area: Forest area managed to grow to and sustain a climax condition.
PIT	Shale Pit
U	Uneven-aged: Stands managed to develop multiple age classes with a 20 year cutting interval.
UVR	Uneven-aged, Variable Retention: The principles of uneven-aged silviculture are applied while retaining individuals or groups of trees in the harvested stand. Retained trees will be allowed to grow to their full biological maturity.
ZA	Protection – Inaccessible: Stands which are not environmentally or economically unfeasible to access.
ZF	Protection – Recreation: Stands excluded from harvesting to protect recreation assets or facilities.

Management Direction Code	Definition
ZG	Protection – Ground conditions: Stands that are excessively wet or rocky.
ZH	Protection – Historic: Stands excluded from harvesting to protect historic or cultural resources.
ZR	Protection - Riparian: Stands excluded from harvesting to protect stream banks and other zones near water features.
ZS	Protection – Steep: Stands excluded from harvesting to protect steep slopes.
ZV	Protection – Visual: Stands excluded from harvesting to protect visual resources.
ZW	Protection – Wetlands: Stands excluded from harvesting to protect wetlands.

Treatment Code	Definition
B	Treatment of stand in blocks staggered over more than one cutting interval
CC	Clearcut
CTR	Crop tree release
FENCE	Fence stand to protect seedlings from deer browsing.
FW	Firewood thinning
GC	Aspen clearcut to regenerate aspen for ruffed grouse and other species.
GS	Group selection: removal of trees in groups up to 2 acres in size to regenerate a mix of species with various **shade tolerance**s.
H	Apply herbicide to control interfering vegetation or invasive species
IN	Improvement thinning, removing mostly low grade timber with some sawtimber
M	Mow to maintain grass or prevent succession to forest cover
PT, PLANT	Plant trees
RA	Release apple trees
RE	Remove over-story trees to maintain grass or brush types.
RT	Pine or larch thinning
SAL	Salvage harvest of damaged or dying trees to recover economic value
SPT	Spruce harvest - pulp or sawtimber
SC	Seed cut: The first harvest in a shelterwood treatment: Purpose of harvest is to establish regeneration of desirable tree seedlings.
ST, STS	Single tree selection: individual trees across all size classes are removed to uniformly thin the stand. This system encourages the development of shade tolerant species.
SW	Shelterwood treatment: An even-aged regeneration method where the stand has previously been thinned to establish regeneration. The over-story trees are now scheduled to be removed to release the regeneration in one or two harvests.

Treatment Code	Definition
SW-SPR	Shelterwood treatment with the objective of releasing established spruce regeneration.
SWR	Shelterwood with reserves: A harvest of most over-story trees to release established regeneration from competition with the overstory. Reserve trees comprising at least 30 square feet of **basal area** are retained to ameliorate the microclimate, provide future snags, cavity trees, coarse woody debris and other wildlife or visual benefits.
SWR-SPR	Shelterwood with reserves treatment with the objective of releasing established spruce regeneration.
SWR-T	A combination treatment using the shelterwood with reserves regeneration method where adequate established regeneration is present and a thinning elsewhere in the stand to establish regeneration and increase growth of residual trees.
SWR-SR-T	A combination treatment using the shelterwood with reserves regeneration method to release established spruce regeneration and a thinning elsewhere in the stand to establish regeneration and increase growth rate of residual trees.
T	Thinning
TSI	Timber stand improvement: A non-commercial thinning to improve stand quality.
VIH	Variable intensity harvest: thinning with intentionally varied marking rules including removal in groups or patches, thinning and unthinned areas.

The following tables present a 20-year schedule of planned management actions. The first table is referenced by forest, then stand number and the second table is referenced by the year of scheduled management. The State Forest Stand Mosaic Maps for this Unit show the specific forest stand locations.

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 1	A	1.00	19	NH	SST	100	NH	E	SC	1	2023
CHEN 1	A	2.00	11	JL	MST	139	NH	E	SW	1	2033
CHEN 1	A	3.00	5	NH	SST	117	NH	ZR			
CHEN 1	A	4.00	18	NS	SST	149	NH-NS	E	SPT	1	2017
CHEN 1	A	5.00	10	NH-HEM	SST	167	NH-HEM	ZW			
CHEN 1	A	6.00	48	NS	SST	138	NH-NS	EVR	SWR-T	1	2028
CHEN 1	A	7.00	7	NS	MST	157	NS	ZW			
CHEN 1	A	8.10	15	NH	SST	121	NH	U	ST-GS	1	2018
CHEN 1	A	8.20	4	NH	MST	133	NH	ZR			
CHEN 1	A	9.00	29	RP-NH	SST	131	NH	E	SW-T	1	2021
CHEN 1	A	10.00	4	NH-HEM	MST	151	NH-HEM	U	ST-GS	2	2023
CHEN 1	A	11.00	11	NH	SST	124	NH	U	ST-GS	2	2023
CHEN 1	A	12.00	1	NH	MST	107	NH	U	ST-GS	2	2023
CHEN 1	A	13.00	12	WS	MST	153	NH-WS	E	SPT	2	2028
CHEN 1	A	14.00	5	NH	PT	123	NH	E	H-SC	3	
CHEN 1	A	15.00	3	NH	SST	90	NH	U	SW	3	
CHEN 1	A	16.00	10	NS-NH	SST	103	NH-NS	E	SC-SPT	3	
CHEN 1	A	17.00	10	NH-HEM	SST	175	NH-HEM	U	ST-GS	3	
CHEN 1	A	18.00	10	HEM	PT	83	HEM	ZW			
CHEN 1	A	19.00	5	NS	SST	133	NH	E	SW-T	3	
CHEN 1	A	20.00	12	NH-NS	PT	152	NH	E	IN-FW	3	
CHEN 1	A	21.00	7	NH-RP	PT	125	NH	E	RT	4	
CHEN 1	A	22.00	13	RP-NH	SST	133	NH	E	SW-T	3	
CHEN 1	A	23.00	8	RP-NH	SST	120	NH	ZW			
CHEN 1	A	24.00	7	NH-RP	Null	65	NH	ZW			
CHEN 1	A	25.00	1	NH	SST	160	NH	E	IN	2	2023
CHEN 1	A	26.00	29	NH	Null	50	NH	E		3	
CHEN 1	A	27.00	25	NH-NS	SST	94	NH	U		3	

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 1	A	28.00	4	NH-WS	SST	97	NH	U	SPT	3	
CHEN 1	A	29.00	16	NH	SST	120	NH	U	ST-GS	3	
CHEN 1	A	30.00	3	NH	PT	97	NH	U	ST-GS	3	
CHEN 1	A	31.10	7	NH	SST	137	NH	U	ST-GS	3	
CHEN 1	A	31.20	5	NH	MST	137	NH	U	H-STS	2	2017
CHEN 1	A	31.30	9	NH	PT	97	NH	U	H-STS	2	2017
CHEN 1	A	31.40	23	NH	SST	123	NH	ZW			
CHEN 1	A	32.00	12	RP-NH	SST	131	NH	E	RT	1	2024
CHEN 1	A	33.00	20	WS-NH	SST	89	NH	E	SW	2	2025
CHEN 1	A	34.00	12	NS-WS	SST	124	NH	E	SW	2	2025
CHEN 1	A	35.00	6	NH	SST	100	NH	U		3	
CHEN 1	A	36.00	7	HEM	SST	210	HEM	ZW			
CHEN 1	A	37.00	2	WET-ALDER	Null	55	WET-ALDER	ZW			
CHEN 1	A	38.00	3	NH	PT	135	NH	ZW			
CHEN 1	A	39.00	5	NH	PT	117	NH	U	FW	2	2017
CHEN 1	A	40.00	11	WS-NH	SST	163	NH-PH	E	SW	2	2025
CHEN 1	A	41.00	5	NS-NH	MST	70	NH	ZR			
CHEN 1	B	1.00	9	NH	SST	105	NH	ZW			
CHEN 1	B	2.10	47	RP-NH	SST	114	NH	EVR	SWR	1	
CHEN 1	B	2.20	14	NH	SST	53	NH	E		1	
CHEN 1	B	3.00	3	NH	PT	97	NH	ZH			
CHEN 1	B	4.00	11	NH	SST	104	NH	U	ST-GS	3	
CHEN 1	B	5.00	7	NH-HEM	SST	150	NH-HEM	ZW			
CHEN 1	B	6.00	6	NH-HEM	SST	113	NH-HEM	ZW			
CHEN 1	B	7.00	33	NH	SST	120	NH	E	H-IN	2	2023
CHEN 1	B	8.00	2	NH	PT	85	NH	ZW			
CHEN 1	B	9.00	23	WS-NH	SST	144	NH	E	H-SW	2	2025
CHEN 1	B	10.00	19	PH	S-S	48	PH	ZW			

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 1	B	11.00	4	NH	PT	97	NH	E	TSI	2	2027
CHEN 1	B	12.00	2	NH	SST	110	NH	E	FW	4	
CHEN 1	B	13.00	6	NH-HEM	SST	160	NH-HEM	ZR			
CHEN 1	B	14.00	4	HEM	PT	180	HEM	ZW			
CHEN 1	B	15.00	7	NH-HEM	PT	190	NH-HEM	ZR			
CHEN 1	B	16.00	2	NH	PT	155	NH	ZW			
CHEN 1	B	17.00	34	WS-NH	SST	126	NH	E	H-SW	3	
CHEN 1	B	18.10	3	WS-NH	PT	90	NH	E	SW-T	3	
CHEN 1	B	18.20	4	WS-NH	PT	130	NH	E	SW-T	3	
CHEN 1	B	19.00	9	WET-ALDER	Null	10	WET-ALDER	ZW			
CHEN 1	B	20.10	23	WS-NH	SST	91	NH	E	SW	1	2023
CHEN 1	B	20.20	15	NH	SST	93	NH	E	SW	1	2023
CHEN 1	B	21.00	9	NH-WS	PT	147	NH	ZW			
CHEN 1	B	22.00	6	NH-HEM	PT	190	NH-HEM	ZW			
CHEN 1	B	23.10	18	NH	PT	143	NH	U	ST-GS	2	2023
CHEN 1	B	23.20	14	NH-HEM	PT	204	NH-HEM	U	ST-GS	1	2023
CHEN 1	B	24.10	15	NH	SST	100	NH	E	H-IN	2	2022
CHEN 1	B	24.20	7	NH	PT	53	NH	ZR			
CHEN 1	B	25.00	10	NH	PT	34	NH	E		4	
CHEN 1	B	26.00	7	NH	SST	70	NH	E	IN	1	
CHEN 1	B	27.00	4	NH	PT	37	NH	E	FW		
CHEN 1	B	28.00	10	NH	PT	144	NH	E	H-IN	2	2019
CHEN 1	B	29.00	12	NH-NS	Null	73	NH	ZR			
CHEN 1	B	30.00	13	NS-NH	SST	158	NH-NS	E	SPT	1	2025
CHEN 1	B	31.00	3	NH	PT	100	NH	E	IN	1	2019
CHEN 1	B	32.00	5	NS-NH	SST	132	NH-NS	E	SPT	2	2025
CHEN 1	B	33.10	24	NH	SST	114	NH	E	IN		
CHEN 1	B	33.20	3	RP-WP	SST	217	NH-RP	EVR	SWR	1	2024

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 1	B	34.00	8	NH	PT	74	NH	E			
CHEN 1	B	35.00	10	NH	S-S	91	NH	E			
CHEN 1	B	36.00	60	NH	PT	104	NH	E	H-IN	2	2028
CHEN 1	B	37.10	42	SP-NH	SST	108	NH-SP	U	VIH	2	2024
CHEN 1	B	37.20	3	SP-NH	SST	120	NH	ZW			
CHEN 1	C	1.00	6	NH-WS	SST	78	NH-WS	ZR			
CHEN 1	C	2.00	8	NH-WS	MST	126	NH	E	IN	1	2024
CHEN 1	C	3.00	9	NH-WS	SST	152	NH	E	SPT	1	2017
CHEN 1	C	4.00	6	NS-NH	SST	164	NH-NS	E	SPT	1	2017
CHEN 1	C	5.00	11	JL-NH	MST	148	NH	E	SW-T	1	2020
CHEN 1	C	6.00	35	NH	MST	78	NH	U	ST-GS		
CHEN 1	C	7.00	22	NH	SST	125	NH	E	IN	2	2024
CHEN 1	C	8.00	3	JP-NH	SST	113	NH	E	IN	2	2020
CHEN 1	C	9.00	32	NS	SST	121	NH-NS	EVR	VIH	1	2032
CHEN 1	C	10.00	8	NH	SST	109	NH	E	IN-SW	1	2024
CHEN 1	C	11.10	13	NH-HEM	Null	150	NH-HEM	ZW			
CHEN 1	C	11.20	16	NH-HEM	SST	143	NH-HEM	U	ST		
CHEN 1	C	12.00	21	NS	SST	140	NH-NS	EVR	SWR	2	2028
CHEN 1	C	13.00	9	NS	SST	137	NH-NS	EVR	SWR	2	2028
CHEN 1	C	14.00	15	NH-HEM	SST	207	NH-HEM	ZR			
CHEN 1	C	15.00	7	NH	PT	147	NH	ZF			
CHEN 1	C	16.00	48	NH	MST	76	NH	E			
CHEN 1	C	17.00	8	NS	MST	168	NH-NS	E	SPT	2	2028
CHEN 1	C	18.00	45	NH	PT	76	NH	E	FW	1	2036
CHEN 1	C	19.00	6	NH	SST	74	NH	E	ST-FW	3	
CHEN 1	C	20.00	18	NH	SST	89	NH	E	FW	2	2036
CHEN 1	C	21.00	14	NH	SST	117	NH	U	H-ST	2	2036
CHEN 1	C	22.00	6	NH-HEM	SST	146	NH-HEM	ZW	ST		

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 1	C	23.00	9	NH	S-S	74	NH	E	FW-TSI	2	2036
CHEN 1	C	24.00	17	RP-NH	SST	135	NH	E	RT	1	2019
CHEN 1	C	25.00	10	NS-NH	SST	139	NH-NS	E	SPT	2	2022
CHEN 1	C	26.00	11	NH-NS	SST	120	NH	U	SPT	2	2022
CHEN 1	C	27.00	11	NH	MST	94	NH	U	ST	1	2033
CHEN 1	D	1.00	57	POND-C	Null	5	POND-C	ZW			
CHEN 1	D	3.00	25	RP-WS-JL	SST	130	NH-JL	EVR	SWR	2	2021
CHEN 1	D	4.00	8	WS-NH	SST	114	NH-WS	E	SPT	1	2027
CHEN 1	D	5.10	16	NH-HEM	SST	206	NH-HEM	ZW			
CHEN 1	D	5.20	12	NH	PT	112	NH	U	ST	2	2018
CHEN 1	D	6.00	7	NS-WP	SST	192	NH-WP	EVR	SPT	2	2021
CHEN 1	D	7.10	6	NH-NS	SST	142	NH	NA			
CHEN 1	D	7.20	14	NS-NH	SST	138	NH-NS	ZR			
CHEN 1	D	8.10	8	NS-NH	SST	166	NH-NS	ZR			
CHEN 1	D	8.20	5	NS	SST	125	NH-NS	E	SW-SPR	2	2024
CHEN 1	D	8.30	13	NS-NH	SST	127	NH-NS	E	SPT	3	
CHEN 1	D	8.40	4	NS-NH	MST	153	NH-NS	E	SPT	2	2024
CHEN 1	D	9.00	13	NS-NH	MST	170	NH-NS	E	SPT	3	2024
CHEN 1	D	10.10	9	NH-HEM	SST	171	NH-HEM	U	ST-GS	3	
CHEN 1	D	10.20	9	NH-HEM	SST	140	NH-HEM	ZW	ST-GS		
CHEN 1	D	11.00	9	NH	SST	120	NH	U	ST-GS	2	2018
CHEN 1	D	12.10	27	NS-NH	SST	166	NH-NS	E	SPT	1	2025
CHEN 1	D	12.20	2	NH	SST	95	NH	ZH			
CHEN 1	D	13.00	4	NH	SST	158	NH	E	ST	1	2017
CHEN 1	D	14.10	12	NS-NH	SST	145	NH	E	SW-SPR-T	2	2025
CHEN 1	D	14.20	27	NS-NH	SST	188	NH-NS	E	SPT	1	2025
CHEN 1	D	15.00	7	NH-HEM	PT	97	NH-HEM	ZW			
CHEN 1	D	16.10	12	NS-NH	SST	127	NH-NS	EVR	SW-SPR	1	2025

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 1	D	16.20	10	NS-NH	SST	178	NH-NS	EVR	SW-SPR	1	2025
CHEN 1	D	16.30	10	NS-HEM	SST	160	NH-HEM-WP	ZR			
CHEN 1	D	17.00	12	NH	SST	87	NH	E	SW	2	2027
CHEN 1	D	18.00	8	NH-NS	Null	35	NH	ZW			
CHEN 1	D	19.00	7	NS-NH	SST	170	NH-NS	E	SW-SPR	2	2025
CHEN 1	D	20.10	2	WP-NH	SST	250	NH-WP	EVR	TSI	2	2025
CHEN 1	D	20.20	1	WP-NH	SST	205	NH-WP	ZW			
CHEN 1	D	20.30	8	WP-NH	SST	162	NH-WP	E	RT	3	
CHEN 1	D	21.00	8	NH	SST	123	NH	E	H-ST-GW	3	
CHEN 1	D	22.10	7	RP-NH	SST	151	NH	E	H-SW	2	2025
CHEN 1	D	22.20	4	RP-NH	SST	207	NH	E	H-SW	2	2025
CHEN 1	D	22.30	1	NS-NH	SST	190	NH-NS	E	SPT	2	2025
CHEN 1	D	23.10	7	NH	SST	129	NH	E	H-VIH-SW	3	
CHEN 1	D	23.20	3	NH	LST	80	NH	U		4	
CHEN 1	D	23.30	2	NH	SST	110	NH	ES	CC	2	2025
CHEN 1	D	23.40	2	NH	PT	100	NH	ZW			
CHEN 1	D	24.00	13	NH-HEM	SST	134	NH-HEM	ZW			
CHEN 1	D	25.00	25	NH	MST	72	NH	U	ST	1	2032
CHEN 1	D	26.00	38	RP	SST	112	NH	EVR	SWR-T	2	2019
CHEN 1	D	27.00	7	NH-HEM	SST	150	NH-HEM	ZW			
CHEN 1	D	28.00	37	NH	SST	101	NH	U	ST	2	2032
CHEN 1	D	29.00	5	RP	MST	104	NH	E	SW	2	2019
CHEN 1	D	30.00	6	NH	PT	71	NH	E			
CHEN 1	D	31.00	12	NH	PT	129	NH	U	ST	1	2021
CHEN 1	D	32.00	6	NH	SST	50	NH	ZW			
CHEN 1	D	33.10	10	NH-HEM	MST	175	NH-HEM	NA			
CHEN 1	D	33.20	16	NH-HEM	PT	90	NH-HEM	ZW			
CHEN 1	D	33.30	10	NH-HEM	SST	190	NH-HEM	NA			

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 1	D	33.40	3	NH	PT	60	NH	NA			
CHEN 1	D	34.00	36	POND	Null	10	POND	ZW			
CHEN 1	D	35.00	31	NH-HEM	MST	156	NH-HEM	NA			
CHEN 1	D	36.10	15	NH	MST	128	NH	NA			
CHEN 1	D	36.20	2	RP-NH	SST	180	NH	NA			
CHEN 1	D	37.00	13	NH-HEM	SST	153	NH-HEM	NA			
CHEN 1	D	38.00	9	NH-HEM	MST	153	NH-HEM	NA			
CHEN 1	D	39.10	15	WET-ALDER	Null	10	WET-ALDER	ZR			
CHEN 1	D	39.20	3	NH-HEM	MST	140	NH-HEM	ZR			
CHEN 1	D	40.00	15	NH-HEM	SST	184	NH-HEM	NA			
CHEN 1	D	41.00	73	WP-NH	SST	169	NH-WP	EVR	VIH	2	2024
CHEN 1	D	42.10	43	NH-HEM	SST	222	NH-HEM	NA			
CHEN 1	D	42.20	1	NH-HEM	SST	125	NH-HEM	ZR			
CHEN 1	D	43.00	13	NH-WP	SST	127	NH-WP	NA			
CHEN 1	D	44.00	11	NH-WP	SST	141	NH-WP	NA			
CHEN 1	D	45.00	6	NH	SST	130	NH	EVR	IN	2	2024
CHEN 1	E	1.00	5	NH	SST	127	NH	E			
CHEN 1	E	2.00	11	NH	SST	130	NH	E	IN		
CHEN 1	E	3.00	21	NH	SST	120	NH	E	H-SW		
CHEN 1	E	4.00	25	NH-RP	SST	131	NH	E	H-SW	2	2017
CHEN 1	E	5.00	22	NH	PT	93	NH	E	FW-TSI	2	2027
CHEN 1	E	6.00	10	NH	MST	113	NH	E	SW		
CHEN 1	E	7.00	16	NH	PT	104	NH	E	FW-TSI	2	2027
CHEN 1	E	8.00	8	NS-NH	SST	136	NH-NS	E	SPT	1	2034
CHEN 1	E	9.00	12	NS-NH	SST	120	NH-NS	E	SPT	2	2034
CHEN 1	E	10.00	7	NH	MST	60	NH	E	ST	2	2026
CHEN 1	E	11.00	8	NS-NH	SST	140	NH-NS	E	IN	2	2034
CHEN 1	E	12.00	12	NS-NH	PT	168	NH-NS	E	SPT	1	2034

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 1	E	13.10	12	NS-NH	SST	157	NH-NS	E	SPT	3	
CHEN 1	E	13.20	2	WET-ALDER	Null	30	WET-ALDER	ZW			
CHEN 1	E	14.00	7	NH	SST	114	NH	E	ST-FW	2	2026
CHEN 1	E	15.00	17	RP-WP	SST	126	NH-WP	EVR	SWR	2	2022
CHEN 1	E	16.00	2	NH	SST	127	NH	E	FW		
CHEN 1	E	17.00	2	NH	SST	105	NH	E	TSI		
CHEN 1	E	18.00	7	NH	SST	102	NH	E	SW	1	2026
CHEN 1	E	19.00	21	RP-WP	SST	113	NH-WP	EVR	SWR-T	3	
CHEN 1	E	20.00	8	WP-NH	SST	177	NH-WP	EVR	RT	2	2022
CHEN 1	E	21.00	2	RP-NH	PT	140	NH	E	SW	2	2022
CHEN 1	E	22.00	3	NH	SST	105	NH	E	IN	2	2026
CHEN 1	E	23.00	9	NH	S-S	68	NH	E	TSI		
CHEN 1	E	24.00	4	RP-NH	SST	170	NH	E	SW-T	1	2022
CHEN 1	E	25.00	4	NH	SST	110	NH	ZH			
CHEN 1	E	26.00	1	NH	MST	110	NH	ZH			
CHEN 1	E	27.00	4	RP-NH	SST	150	NH	E	SW	2	2022
CHEN 1	E	28.00	21	RP-NH	PT	107	NH	ZW			
CHEN 1	E	29.00	15	NH	PT	38	NH	E	FW		
CHEN 1	E	30.00	4	NS	SST	135	NH-NS	E	SW-SPR	2	2022
CHEN 1	E	31.00	6	NS-NH	PT	120	NH	E	SW-SPR	2	2022
CHEN 1	E	32.00	45	NH	SST	107	NH	U	ST-GS	1	2021
CHEN 1	E	33.10	3	NS	SST	116	NH-NS	E	SPT	2	2022
CHEN 1	E	33.20	5	NH	SST	47	NH	ZW			
CHEN 1	E	34.00	15	NS-NH	SST	119	NH-NS	E	SW-SPR	1	2034
CHEN 1	E	35.00	7	NS-NH	SST	138	NH-NS	E	SW-SPR	1	2034
CHEN 1	E	36.00	3	NH	SST	150	NH	E	IN	1	2020
CHEN 1	E	37.00	9	NS-NH	SST	182	NH-NS	E	SPT	1	2022
CHEN 1	E	38.00	13	JL-NS	SST	192	NH	E	RT	1	2022

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 1	E	39.00	12	NH-WP	SST	166	NH-WP	NA			
CHEN 1	E	40.00	8	NH-HEM	SST	210	NH-HEM	NA			
CHEN 1	E	41.00	19	NH-HEM	PT	170	NH-HEM	ZW			
CHEN 1	E	42.00	7	WP-NH	SST	132	NH-WP	NA			
CHEN 1	E	43.00	3	RP-NH	SST	247	NH-WP	EVR	SWR	1	2020
CHEN 1	E	44.00	4	NH	PT	53	NH	E	FW-TSI		
CHEN 1	E	45.00	10	WP-NH	SST	140	NH-WP	EVR	H-SWR	2	2021
CHEN 1	E	46.00	19	NH	MST	69	NH	E	SW		
CHEN 1	E	47.00	12	NH-HEM	SST	143	NH-HEM	ZW			
CHEN 1	E	48.00	41	NH-HEM	SST	116	NH-HEM	NA			
CHEN 1	E	49.00	120	NH-HEM	SST	197	NH-HEM	ZW			
CHEN 1	E	50.00	54	RP-NH	SST	175	NH	EVR	SWR-T	1	2020
CHEN 1	E	52.00	16	WP-NH	SST	160	NH-WP	EVR	SWR-T	3	
CHEN 1	E	53.00	7	WP-NH	SST	160	NH-WP	EVR	SWR-T	3	
CHEN 1	E	54.00	8	NH	SST	107	NH	EVR	IN	3	
CHEN 1	E	55.00	45	RP-NH	SST	153	NH	EVR	SWR-T	1	2020
CHEN 1	E	56.00	8	NH	MST	110	NH	E	H-IN	3	
CHEN 1	E	57.00	4	WET-ALDER	PT	50	WET-ALDER	ZW			
CHEN 1	E	58.00	5	POND	Null	0	POND	ZW			
CHEN 1	E	59.00	5	NH-HEM	SST	140	NH-HEM	ZW			
CHEN 1	E	60.00	12	NH-WP	SST	62	NH-WP	U	H-ST-GS		
CHEN 1	E	61.00	23	NH-HEM	SST	147	NH-HEM	ZW			
CHEN 1	E	62.00	27	WP-NH	SST	181	NH-WP	EVR	SWR-T	1	2021
CHEN 1	E	63.00	12	WP-NH	PT	133	NH-WP	ZW			
CHEN 1	E	64.00	32	NH-HEM	Null	180	NH-HEM	ZW			
CHEN 1	E	65.00	8	NH	SST	167	NH	ZW			
CHEN 1	E	67.00	2	NH-HEM	MST	180	NH-HEM	U	ST-VIH	3	
CHEN 1	E	68.00	26	RP-NH	SST	173	NH-WP-HEM	UVR	ST-GS	2	2021

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 1	E	69.10	29	RP-NH	SST	155	NH	E	SW-T	2	2021
CHEN 1	E	69.20	3	NH	S-S	117	NH	E	TSI		
CHEN 1	F	1.00	33	NH	SST	110	NH	U	H-ST-GS	1	2026
CHEN 1	F	2.00	14	NH-HEM	S-S	100	NH-HEM	ZR			
CHEN 1	F	3.00	2	NH	S-S	80	NH	E	FW-TSI		
CHEN 1	F	4.00	7	NS-NH	SST	173	NH-NS	E	SPT	1	2018
CHEN 1	F	5.00	5	NH	S-S	50	NH	E	TSI		
CHEN 1	F	6.00	41	NH-WP	SST	75	NH-WP	ZW			
CHEN 1	F	7.10	20	RP-NH	SST	200	NH	E	SW-T	2	2022
CHEN 1	F	7.20	2	NH-HEM	SST	275	NH-HEM	ZW			
CHEN 1	F	8.00	21	NH	PT	117	NH	E	IN	2	2026
CHEN 1	F	9.00	10	RP-NH	SST	178	NH	E	SW	2	2022
CHEN 1	F	10.00	22	WP-NH	SST	196	NH-WP	EVR	SWR-T	2	2029
CHEN 1	F	11.00	15	NH-HEM	SST	86	NH-HEM	E	IN	2	2026
CHEN 1	F	12.00	8	NH-HEM	SST	120	NH-HEM	E			
CHEN 1	F	13.00	20	WP-NH	SST	164	NH-WP	EVR	SWR-T	3	
CHEN 1	F	14.00	14	WP-NH	S-S	88	NH-WP	ZR			
CHEN 1	F	15.00	18	WP-NH	SST	176	NH-WP	EVR	SWR-T	2	2029
CHEN 1	F	16.00	5	WP-NH	SST	126	NH-WP	EVR	RT	3	
CHEN 1	F	17.00	3	EL-NH	Null	50	NH	ZR			
CHEN 1	F	18.00	6	WP-NH	SST	146	NH-WP	EVR	SWR	3	
CHEN 1	F	19.00	28	APP	S-S	63	BR	BR			
CHEN 1	F	20.00	6	NS-NH	SST	232	NH-NS	E	SPT	3	
CHEN 1	F	21.00	11	NS-NH	SST	178	NH-NS	E	SPT	1	2018
CHEN 1	F	22.10	8	RP-NH	SST	169	NH	E	SW	1	2022
CHEN 1	F	22.20	22	NH-WP	S-S	29	NH-NS	E	TSI		
CHEN 1	F	22.30	5	RP-NH	SST	153	NH	ZR			
CHEN 1	F	22.40	4	NH	S-S	47	NH	E	TSI		

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 1	F	23.00	68	NH	SST	101	NH	U	H-ST-GS	2	2029
CHEN 1	F	24.00	9	NH-HEM	SST	153	NH-HEM	ZW			
CHEN 1	F	25.00	8	NH	PT	139	NH	U	H-ST-GS	2	2029
CHEN 1	F	26.00	15	NH-RP	SST	129	NH-WP	U	VIH		
CHEN 1	F	27.00	11	NH	SST	113	NH	U	ST-GS	2	2029
CHEN 1	F	28.00	5	NH	MST	100	NH	ZR			
CHEN 1	F	29.00	46	NH	SST	178	NH	U	H-ST-GS	1	2029
CHEN 1	F	31.00	6	NS-NH	SST	158	NH-NS	E	H-SPT	1	2030
CHEN 1	F	32.00	2	NH	SST	50	NH	ZW			
CHEN 1	F	33.00	26	RP-NS	SST	128	NH	E	H-SW-SPR	1	2030
CHEN 1	F	34.00	11	RP-NS	SST	131	NH	E	H-SW-SPR	1	2030
CHEN 1	F	35.00	4	NH	SST	90	NH	E			
CHEN 1	F	36.00	5	NS-NH	SST	200	NH-NS	E	SPT	1	2030
CHEN 1	F	38.10	7	NS-NH	SST	148	NH-NS	E	SW	1	2030
CHEN 1	F	38.20	4	NH	SST	115	NH	E	FW	2	2019
CHEN 1	F	38.30	8	BR	Null	56	NH	ZW			
CHEN 1	F	39.00	20	NH	SST	106	NH	E	IN		
CHEN 1	F	40.10	30	NH	SST	92	NH	E	SW	2	2031
CHEN 1	F	40.20	4	NH	SST	110	NH	E	SW	2	2031
CHEN 1	F	40.30	2	WET-ALDER	Null	0	WET-ALDER	ZW			
CHEN 1	F	41.10	4	NS-NH	SST	107	NH	E	SW	2	2030
CHEN 1	F	41.20	3	NS-NH	SST	127	NH-NS	E	SW	2	2030
CHEN 1	F	41.30	1	NS-NH	SST	145	NH-NS	ZW			
CHEN 1	F	41.40	5	NS-BR	SST	104	NS-BR	ZW			
CHEN 1	F	42.00	57	WET-ALDER	Null	0	WET-ALDER	ZW			
CHEN 1	F	43.00	4	BR	Null	0	BR	BR			
CHEN 1	F	44.00	10	NH	SST	94	NH	E	IN	3	
CHEN 1	F	45.10	5	NS-NH	SST	94	NH	E	IN	3	

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 1	F	45.20	3	NS-NH	SST	130	NH	E	SPT	3	
CHEN 1	F	46.00	10	NH	SST	111	NH	U	ST	3	
CHEN 1	F	47.00	26	JL-NH	S-S	98	NH	E	H-SW	4	
CHEN 1	F	48.00	13	RP-JL	SST	110	NH	E	H-SW	2	2019
CHEN 1	F	49.00	5	BR	Null	10	BR	BR			
CHEN 1	F	50.10	21	RP-JL	SST	115	NH	E	RT	2	2019
CHEN 1	F	50.20	5	JL-NH	SST	64	NH	E	RT		
CHEN 1	F	51.00	3	NH	SST	130	NH	E	FW-TSI	2	2019
CHEN 1	F	52.00	11	NH	S-S	80	NH	E	FW		
CHEN 1	F	53.00	9	NH	SST	88	NH	ZW			
CHEN 1	F	54.00	47	WS-NH	PT	117	NH	E	SW	4	
CHEN 1	F	55.00	18	WET-ALDER	S-S	45	WET-ALDER	ZW			
CHEN 1	G	1.00	19	WP-JL-RP	SST	118	NH-WP	EVR	SWR	1	2018
CHEN 1	G	2.00	4	RP-WP	SST	110	NH	E	SW	1	2018
CHEN 1	G	3.10	9	NH-HEM	SST	155	NH-HEM	U	ST	1	2020
CHEN 1	G	3.20	5	NH	SST	83	NH	U	FW	1	2020
CHEN 1	G	4.00	7	NH-HEM	SST	100	NH-HEM	ZW			
CHEN 1	G	5.00	8	NH-RO	SST	133	NH-RO	U	FW	1	2020
CHEN 1	G	6.00	19	NH	SST	100	NH	E	H-IN	3	2020
CHEN 1	G	7.00	7	NH-RO	PT	135	NH-RO	E	IN-FW	1	2020
CHEN 1	G	8.00	7	NH-HEM	SST	138	NH-HEM	U	ST-GS	2	2020
CHEN 1	G	9.00	7	NH-RO	PT	148	HWD-RO	U	H-GS	2	2020
CHEN 1	G	10.00	42	NH-WP	SST	94	NH-WP	E	TSI		
CHEN 1	G	11.00	14	NH	SST	92	NH	U	H-ST-GS	2	2020
CHEN 1	G	12.00	9	NH-HEM	SST	120	NH-HEM	U	GS	2	2020
CHEN 1	G	13.00	2	NH-HEM	SST	205	NH-HEM	ZW			
CHEN 1	G	14.00	11	NH	PT	114	NH-RO	U	GS	2	2019
CHEN 1	G	15.00	10	WS-NH	PT	127	NH	E	TSI	3	

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 1	G	16.00	15	NH	SST	133	NH	U	H-ST-GS	2	2019
CHEN 1	G	17.00	21	PH	PT	143	NH-HEM	ZW			
CHEN 1	G	18.00	18	WP-HEM	SST	117	WP-HEM	ZW			
CHEN 1	G	19.00	33	WP-NH	SST	146	NH-WP	EVR	SWR	1	2021
CHEN 1	G	20.00	16	NH	SST	94	NH	E	H-IN	2	2019
CHEN 1	G	21.00	8	NH-RO	PT	83	RO-NH	E	H-IN	2	2019
CHEN 1	G	22.00	4	PIT	PT	45	PIT	PIT			
CHEN 1	G	23.10	20	RP	PT	124	NH	E	SW	1	2017
CHEN 1	G	23.20	3	RO-NH	MST	110	RO-NH	E	IN	1	2019
CHEN 1	G	24.00	18	NH	SST	90	NH	U	H-FW	2	2019
CHEN 1	G	25.00	17	RP	SST	120	NH	E	H-SW	2	2035
CHEN 1	G	26.00	5	HEM-RP	SST	207	HEM-RP	ZR			
CHEN 1	G	27.00	11	NH-RO	SST	114	NH-RO	E	SW	1	2019
CHEN 1	G	28.00	4	NH-RO	PT	103	NH-RO	E	FW		
CHEN 1	G	29.00	14	NH	SST	109	NH	U	H-GS	3	
CHEN 1	G	30.00	17	NH-RO	SST	131	NH-RO	U	H-GS	2	2019
CHEN 1	G	31.00	11	NH-HEM	SST	114	NH-HEM	U	H-GS	3	
CHEN 1	G	32.00	22	HEM	SST	194	HEM	ZW			
CHEN 1	G	33.00	32	NH-HEM	SST	146	NH-HEM	U	H-ST	2	2017
CHEN 1	G	34.00	3	NH-HEM	SST	175	NH-HEM	ZR			
CHEN 1	H	1.00	8	NH-HEM	SST	130	NH-HEM	E	H-IN-FW	2	2020
CHEN 1	H	2.00	17	NH	PT	100	NH	U	H-ST-GS	2	2020
CHEN 1	H	3.00	12	NH	SST	124	NH	U	H-GS	2	2020
CHEN 1	H	4.00	12	JL	SST	132	NH	E	SW-T	1	2023
CHEN 1	H	5.00	3	NH-HEM	PT	87	NH-HEM	E	H-IN	2	2020
CHEN 1	H	6.00	3	NH-HEM	PT	195	NH-HEM	ZW			
CHEN 1	H	7.00	7	NH-HEM	PT	143	NH-HEM	ZW			
CHEN 1	H	8.00	9	NH-WP	PT	173	NH-WP	U	ST-GS	3	

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 1	H	9.00	4	NH-WP	PT	213	NH-WP	E	FW	3	
CHEN 1	H	10.00	15	BR	Null	10	BR	BR			
CHEN 1	H	11.00	4	NH-RO	PT	120	NH-RO	E	FW	2	2020
CHEN 1	H	12.00	17	NH	SST	101	NH	E	H-SC	2	2020
CHEN 1	H	13.00	2	NS	SST	175	NS	ZW			
CHEN 1	H	14.00	3	NS	PT	155	NH	E	SW	1	2023
CHEN 1	H	15.00	6	NH	SST	123	NH	E	H-IN	2	2020
CHEN 1	H	16.00	24	NS-NH	PT	138	NH	E	SW-T	3	
CHEN 1	H	17.00	12	NH-HEM	PT	205	NH-HEM	ZW			
CHEN 1	H	18.00	11	NS-NH	PT	165	NH	E	SW-FW	3	
CHEN 1	H	19.00	16	NH	PT	116	NH	E	FW	1	2020
CHEN 1	H	20.00	6	NS	SST	165	NH-NS	EVR	SWR-T	1	2023
CHEN 1	H	21.00	3	NH	SST	110	NH	E	FW	2	2020
CHEN 1	H	22.00	4	NH-RO	PT	147	NH-RO	E	FW	1	2020
CHEN 1	H	23.00	21	NH-RP	SST	158	NH	E	SW-T	3	
CHEN 1	H	24.00	18	NH-HEM	PT	180	NH-HEM	ZW			
CHEN 1	H	25.00	7	NH-RP	SST	96	NH	E	SW		
CHEN 1	H	26.00	17	NH	PT	116	NH	U	H-GS	2	2020
CHEN 1	H	27.00	17	NH-NS-WS	PT	95	NH-NS	E	TSI		
CHEN 1	H	28.00	10	NH-WS	SST	90	NH	ZR			
CHEN 1	H	29.00	26	RP-WS	SST	116	NH	E	SW-T	1	2023
CHEN 1	H	30.00	19	RP-NH	SST	134	NH	E	H-SW	2	2023
CHEN 1	H	31.10	27	WS-NH	SST	97	NH	E	FW		
CHEN 1	H	31.20	5	WS-PH	Null	73	PH	ZW			
CHEN 1	H	32.00	10	NH	PT	80	NH	ZR			
CHEN 1	H	33.00	8	WET-ALDER	Null	33	WET-ALDER	ZR			
CHEN 1	H	34.00	13	NH-HEM	PT	142	NH-HEM	ZA			
CHEN 1	H	35.00	7	NH	SST	143	NH	ZA			

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 1	H	36.00	12	NS	SST	124	NH-NS	EVR	SWR-T	1	2033
CHEN 1	H	37.00	3	NH-HEM	SST	205	NH-HEM	ZR			
CHEN 1	H	38.00	7	RP-NH	SST	167	NH-RP	ZA			
CHEN 1	I	1.00	6	NH-HEM	PT	163	NH-HEM	U	H-ST-GS	2	2020
CHEN 1	I	2.00	2	BR	Null	10	BR	BR			
CHEN 1	I	3.00	13	NH	SST	130	NH-RO	E	H-IN/SC	2	2030
CHEN 1	I	4.10	28	JL-RP	PT	121	NH	E	SW	2	2027
CHEN 1	I	4.20	8	NH	SST	10	NH	ZR			
CHEN 1	I	5.00	24	NH	PT	125	NH	U	H-GS	2	2030
CHEN 1	I	6.00	18	NS	SST	176	NH-NS	E	SPT-SW	1	2019
CHEN 1	I	7.00	22	NH	PT	133	NH	E		3	
CHEN 1	I	8.00	40	NH	SST	132	NH	E	IN-FW	2	2030
CHEN 1	I	9.00	22	NH	SST	49	NH	E			
CHEN 1	I	10.00	11	NS	SST	230	NH-NS	E	SPT	1	2019
CHEN 1	I	11.00	14	RP-JL	SST	160	NH	ZR			
CHEN 1	I	12.00	4	NS	SST	213	NH	E	SPT	1	2019
CHEN 1	I	13.00	5	NH	SST	90	NH	E		3	
CHEN 1	I	14.00	11	RP	SST	154	NH	E	SW	2	2027
CHEN 1	I	15.00	6	WS-NH	PT	135	NH	ZR			
CHEN 1	I	16.00	1	NH-WP	PT	170	NH-WP	ZV	FW-ST	3	
CHEN 1	I	17.00	14	NH	PT	93	NH	ZR-ZH			
CHEN 1	I	18.00	7	NS	SST	207	NH-NS	E	SPT	1	2019
CHEN 1	I	19.00	4	NH	PT	87	NH	E		3	
CHEN 1	I	20.00	8	WP-SP	MST	143	NH-WP	EVR	SWR	3	
CHEN 1	I	21.00	8	NH-RO	SST	140	NH-RO	E	H-IN	2	2030
CHEN 1	I	22.00	48	RP-NH	SST	155	NH-RO	EVR	H-SWR	2	2027
CHEN 1	I	23.00	8	NH	SST	23	NH	E			
CHEN 1	I	24.00	37	RO-NH	SST	141	RO-NH	E	SW	1	2022

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 1	I	25.00	14	NH	S-S	97	NH	E	FW	1	2022
CHEN 1	I	26.00	9	WS-RP	SST	68	NH	E	SW		
CHEN 1	I	27.00	7	NH-RP	PT	120	NH-RO	E	FW-TSI	1	2028
CHEN 1	I	28.00	3	RP	SST	150	NH	E	SW-RT	2	2027
CHEN 1	I	29.00	3	NH	PT	100	NH	ZR			
CHEN 1	I	30.10	60	RP-NS	SST	145	NH-NS	EVR	SWR-B	1	2027
CHEN 1	I	30.20	10	NS-RP	SST	140	NH-NS	ZR			
CHEN 1	I	30.30	2	NS-RP	SST	40	NH-NS	ZW			
CHEN 1	I	31.00	9	NH	SST	110	NH-RO	E	IN	2	2019
CHEN 1	I	32.00	34	NH-RO	PT	83	NH-RO	E	FW	1	2033
CHEN 1	I	33.10	9	NH	PT	123	NH-RO	E	IN-FW	1	2019
CHEN 1	I	33.20	6	PH	PT	120	PH	ZW			
CHEN 1	I	34.00	18	NH	SST	120	NH	EVR	IN	2	2019
CHEN 1	I	35.10	11	RP	PT	190	NH	E	SW	2	2027
CHEN 1	I	35.20	2	RP	SST	85	NH	ZW			
CHEN 1	I	36.00	11	NH-RO	SST	120	NH-RO	ZW		2	
CHEN 1	I	37.00	3	WS	SST	110	NH	E	SW	1	2028
CHEN 1	I	38.00	5	RP	SST	146	NH-WP	EVR	SWR	2	
CHEN 1	I	39.10	4	NH	SST	103	NH	E	IN	2	
CHEN 1	I	39.20	8	NH	PT	117	NH	ZR			
CHEN 1	I	40.00	10	RP	PT	164	NH	U	SW	2	2022
CHEN 1	I	41.00	6	SH	Null	110	SH	ZW			
CHEN 1	I	42.00	22	NH-HEM	SST	123	NH-HEM	U	ST-GS	3	
CHEN 1	I	43.10	8	NH	SST	126	NH	U	FW-IN	3	
CHEN 1	I	43.20	6	NH-HEM	PT	140	NH-HEM	ZW			
CHEN 1	I	44.00	21	HEM	PT	220	NH-HEM	ZW	ST-GS	3	
CHEN 1	I	45.00	7	PH	PT	130	NH	E	FW	2	2023
CHEN 1	I	46.00	11	PH	PT	64	PH-BR	E	H-RA	4	

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 6	A	1.00	3	NH-HEM	MST	173	NH-HEM	ZA			
CHEN 6	A	2.00	9	NH-HEM	SST	98	NH-HEM	ZW			
CHEN 6	A	3.00	10	NH-HEM	MST	126	NH-HEM	U	H-ST-GS	4	
CHEN 6	A	4.00	30	NH	SST	121	NH-HEM	U	H-ST	4	
CHEN 6	A	5.00	14	NH-HEM	SST	120	NH-HEM	U	GS	3	
CHEN 6	A	6.00	25	NH	MST	116	NH	U	H-ST-GS	3	
CHEN 6	A	7.00	11	NH-RP	SST	68	NH	ZR			
CHEN 6	A	8.10	20	RP-NH	SST	130	NH	E	H-SW	2	2024
CHEN 6	A	8.20	2	RP	SST	140	NH	E	H-SW-RT	3	
CHEN 6	A	9.00	11	NH-HEM	SST	166	NH-HEM	ZW			
CHEN 6	A	10.00	7	NH-HEM	SST	140	NH-HEM	ZW			
CHEN 6	A	11.00	13	NH-HEM	SST	133	NH-HEM	ZW			
CHEN 6	A	12.00	18	NH	SST	114	NH	U	H-ST-GS	3	
CHEN 6	A	13.10	15	RP	SST	79	NH	E	H-SW	2	2032
CHEN 6	A	13.20	8	NH	SST	28	NH	E			
CHEN 6	A	13.30	2	RP	SST	145	NH	E	SW	2	2032
CHEN 6	A	14.00	1	NH	Null	55	NH	ZH			
CHEN 6	A	15.00	7	NH-WP	SST	98	NH-WP	ZR			
CHEN 6	A	16.00	26	NH-HEM	SST	173	NH-HEM	ZW			
CHEN 6	A	17.10	7	NH-HEM	SST	126	NH-HEM	U	ST-GS	3	
CHEN 6	A	17.20	2	NH-WP	MST	185	NH-WP	U	ST-GS	3	
CHEN 6	A	18.10	3	NH-WP	SST	133	NH-WP	U	H-ST-GS	3	
CHEN 6	A	18.20	2	NH-WP	SST	100	NH-WP	U	ST-GS	3	
CHEN 6	A	19.00	9	PH	SST	90	PH	ZW	GC	4	
CHEN 6	A	20.00	3	NS-WP	SST	125	NH-WP	E	SPT	3	
CHEN 6	A	21.00	7	WET-ALDER	Null	40	WET-ALDER	ZR			
CHEN 6	A	22.00	8	PH	SST	72	PH	ES	GC	3	

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 6	A	23.00	4	RP-NH	SST	85	NH	ZR			
CHEN 6	A	24.00	6	WS	PT	110	NH-WS	E	CC-B	2	2032
CHEN 6	A	25.00	5	NH-HEM	SST	130	NH-HEM	ZW			
CHEN 6	A	26.00	4	NH	SST	113	NH	U	ST-GS	3	
CHEN 6	A	27.00	8	NH-WP	SST	152	NH-WP	U	H-ST-GS	3	
CHEN 6	A	28.00	14	WP-HEM	SST	148	WP-HEM	U	H-ST-GS	3	
CHEN 6	A	29.00	5	NH-HEM	SST	135	NH-HEM	ZR			
CHEN 6	A	30.00	40	NH	SST	123	NH	U	H-ST-GS	2	2035
CHEN 6	A	31.00	4	NH	SST	105	NH	ZH		2	
CHEN 6	A	32.00	5	NH	SST	123	NH	U	ST-GS	3	
CHEN 6	A	33.00	6	NH-WP	SST	132	NH-WP	U	H-ST-GS	3	
CHEN 6	A	34.00	16	NH	SST	133	NH	U	H-ST-GS	3	
CHEN 6	A	35.00	3	NH-HEM	SST	155	NH-HEM	ZS			
CHEN 6	A	36.00	13	WET-OPEN	Null	0	WET-OPEN	ZW			
CHEN 6	A	37.00	3	NH-WP	SST	65	NH-WP	ZW			
CHEN 6	A	38.00	12	NH-HEM	SST	99	NH-HEM	ZW			
CHEN 6	A	39.10	9	NH-WP	MST	108	NH-WP	ZW			
CHEN 6	A	39.20	2	NH-HEM	SST	155	NH-HEM	ZW			
CHEN 6	A	40.00	6	NH	SST	124	NH	U	ST-GS	3	
CHEN 6	A	41.00	8	NH-WP	SST	84	NH-WP	U	ST-GS	3	
CHEN 6	A	42.00	14	NH	SST	91	NH	U	H-ST-GS	3	
CHEN 6	A	43.00	4	NH	SST	100	NH	U	ST-GS	3	
CHEN 6	A	44.00	2	HEM	SST	130	HEM	ZW			
CHEN 6	A	45.00	6	NH-HEM	SST	186	NH-HEM	U	ST-GS	3	
CHEN 6	A	46.10	11	NH-HEM	SST	160	NH-HEM	U	H-ST-GS	4	
CHEN 6	A	46.20	3	NH-HEM	SST	145	NH-HEM	U	H-ST-GS	4	
CHEN 6	A	47.00	26	NH	SST	109	NH	U	H-ST-GS	3	
CHEN 6	A	48.00	11	NS-NH	SST	147	NH-NS	E	SW-SPT	3	

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 6	A	49.10	2	NH-HEM	SST	125	NH-HEM	ZA			
CHEN 6	A	49.20	16	NH	MST	90	NH	ZR			
CHEN 6	A	50.00	5	NH-HEM	MST	163	NH-HEM	U	ST-GS	2	2032
CHEN 6	A	51.00	5	NH	SST	130	NH	U	H-ST-GS	2	2032
CHEN 6	A	52.00	4	NS-NH	SST	195	NH-NS	E	SPT-SW	1	2024
CHEN 6	A	54.00	2	NH	SST	95	NH	ZS			
CHEN 6	A	55.00	7	RP	S-S	16	NH	E	PT	3	
CHEN 6	B	1.00	11	RP	SST	143	NH	E	SW-T	1	2024
CHEN 6	B	2.00	10	NH	SST	105	NH	U	ST	1	2028
CHEN 6	B	3.10	5	NH-HEM	SST	160	NH-HEM	U	ST	1	2028
CHEN 6	B	3.20	5	HEM	SST	235	HEM	NA			
CHEN 6	B	4.00	15	NH	SST	125	NH	U	ST-GS	1	2028
CHEN 6	B	5.00	15	NH-HEM	SST	178	NH-HEM	U	ST-GS	3	
CHEN 6	B	6.00	2	HEM	SST	160	HEM	ZW			
CHEN 6	B	7.00	23	NH-HEM	SST	153	NH-HEM	U	H-GS	2	2028
CHEN 6	B	8.10	15	NH-HEM	PT	165	NH-HEM	U	ST-GS	3	
CHEN 6	B	8.20	11	NH-HEM	SST	167	NH-HEM	ZR			
CHEN 6	B	9.10	10	NH-HEM	SST	146	NH-HEM	E	H-IN	3	2028
CHEN 6	B	9.20	6	NH	PT	33	NH	EVR			
CHEN 6	B	10.00	12	NS	SST	182	NH-NS	E	SPT	1	2017
CHEN 6	B	11.00	10	NH-HEM	PT	113	NH-HEM	ZS			
CHEN 6	B	12.00	16	WET-ALDER	Null	10	WET-ALDER	ZW			
CHEN 6	B	13.00	5	WP	SST	120	NH-WP	ZR-ZH			
CHEN 6	B	14.10	4	RP	SST	126	NH	E	SW	2	2024
CHEN 6	B	14.20	4	NH	S-S	63	NH	E			
CHEN 6	B	14.30	4	RP	SST	113	NH	E	SW	2	2024
CHEN 6	B	15.00	19	HEM	PT	150	HEM	ZW			
CHEN 6	B	16.10	9	HEM	SST	210	HEM	ZW			

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 6	B	16.20	1	NH	SST	65	NH	ZW			
CHEN 6	B	17.00	10	NH-WP	SST	157	NH-WP	NA			
CHEN 6	B	18.00	7	NS-NH	SST	180	WP-LA-NH	E	CC-PT	2	2017
CHEN 6	B	19.00	6	NS	SST	176	NH-NS	E	SPT	1	2017
CHEN 6	B	20.00	10	NS	SST	180	NH-NS	E	SPT	1	2017
CHEN 6	B	22.00	14	NS	SST	175	NH-NS	E	SPT	1	2017
CHEN 6	B	23.00	3	NH-HEM	SST	183	NH-HEM	E			
CHEN 6	B	24.00	3	NH	SST	80	NH	ZF			
CHEN 6	B	25.00	7	RP-NS-NH	S-S	43	RP-NS-NH	E	RA-PLANT		
CHEN 6	B	26.00	1	NH	PT	175	NH	E	IN-FW	2	2017
CHEN 6	B	27.00	8	WS	PT	146	NH	E	VIH	2	2032
CHEN 6	B	28.00	11	NH	SST	110	NH	E	IN-FW	2	2017
CHEN 6	B	29.00	7	NH	SST	94	NH	E	IN	3	
CHEN 6	B	30.10	9	NH-HEM	SST	140	NH-HEM	U	ST-GS	1	2017
CHEN 6	B	30.20	4	NH-HEM	SST	165	NH-HEM	ZH			
CHEN 6	B	31.10	3	NH-WP	SST	157	NH-WP	NA	ST-GS		
CHEN 6	B	31.20	13	PH	S-S	2	NH-HEM	E			
CHEN 6	B	32.00	8	PH	S-S	72	PH	E			
CHEN 6	B	33.00	1	PH	S-S	65	NH-NS	E			
CHEN 6	B	34.00	8	NH	S-S	30	NH	E			
CHEN 6	C	1.00	4	NH	SST	70	NH	E	FW	3	
CHEN 6	C	2.00	9	SH	PT	40	SH	ZR			
CHEN 6	C	3.00	8	NH	PT	93	NH	E	FW		
CHEN 6	C	4.00	14	RP-NH	SST	143	NH	E	H-SW	3	
CHEN 6	C	6.00	14	RP	SST	182	NH-RO	E	SW-T	3	
CHEN 6	C	9.00	5	NH	S-S	95	NH	E			
CHEN 6	C	10.00	16	NH	PT	139	NH	E	FW-GC		
CHEN 6	C	11.00	33	NH-HEM	SST	173	NH-HEM	ZW			

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 6	C	12.00	71	NH	SST	127	NH	U	H-GS-B	2	2018
CHEN 6	C	13.00	4	RP	SST	135	NH	U	SW	2	2031
CHEN 6	C	15.00	43	RP	SST	105	NH	EVR	SWR	2	2031
CHEN 6	C	16.00	32	NH	SST	87	NH	E	SW	3	
CHEN 6	C	18.00	4	NH-HEM	SST	150	NH-HEM	U	H-ST-GS	3	
CHEN 6	C	19.00	18	NH-HEM	SST	165	NH-HEM	ZR			
CHEN 6	C	20.00	4	RP	SST	140	NH	E	SW	2	2030
CHEN 6	C	21.00	2	NH-HEM	SST	115	NH-HEM	ZR			
CHEN 6	C	22.00	3	NH	PT	90	NH	E			
CHEN 6	C	23.00	2	NH	SST	130	NH	ZW			
CHEN 6	C	24.00	40	RP	SST	134	NH	EVR	SWR	2	2030
CHEN 6	C	26.00	34	NH	MST	125	NH	U	H-GS	2	2033
CHEN 6	C	27.00	7	NH-HEM	SST	130	NH-HEM	U	ST-GS	2	2033
CHEN 6	C	31.00	8	NH-HEM	PT	170	NH-HEM	ZW			
CHEN 6	C	32.00	20	NH	SST	73	NH	U			
CHEN 6	C	33.00	4	NH-HEM	PT	120	NH-HEM	ZR			
CHEN 6	C	34.00	19	RP	SST	103	NH	U	SW	2	2031
CHEN 6	C	35.00	9	NH-RP	SST	68	NH	U	FW		
CHEN 6	C	39.00	7	WP-HEM	SST	175	WP-HEM	ZW			
CHEN 6	C	40.00	20	PH	S-S	73	NH	ZR			
CHEN 6	C	41.00	11	NH-HEM	SST	150	NH-HEM	ZR			
CHEN 6	C	42.00	17	NH	PT	133	NH	U	GS	3	
CHEN 6	C	43.00	13	WS-NH	PT	152	NH	E	SW		
CHEN 6	C	44.00	9	WS	SST	118	NH	E	SW		
CHEN 6	C	45.00	6	NS	SST	135	NH-NS	E	SPT		
CHEN 6	C	46.00	10	RP-NH	SST	150	NH	ZV			
CHEN 6	C	47.00	1	NH	S-S	35	NH	E			
CHEN 6	C	48.00	5	NH	S-S	23	NH	E			

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 6	C	49.00	1	PH	S-S	25	NH	E			
CHEN 6	D	1.00	3	SH	Null	50	SH	ZA			
CHEN 6	D	2.00	9	NS	SST	180	NH-NS	ZA			
CHEN 6	D	3.00	17	POND	Null	0	POND	ZW			
CHEN 6	D	4.00	9	NS	SST	166	NH-NS	E	SW-SPR-B	1	2028
CHEN 6	D	5.00	2	NS	SST	160	NH-NS	ZW			
CHEN 6	D	6.00	4	WET-ALDER	Null	70	WET-ALDER	ZR			
CHEN 6	D	7.00	4	NH	SST	105	NH	E	FW	3	2028
CHEN 6	D	8.00	15	NS	SST	110	NH-NS	E	SPT	2	2028
CHEN 6	D	9.00	5	NH-HEM	SST	173	NH-HEM	ZR			
CHEN 6	D	10.00	13	NH	SST	97	NH	U	H-GS	2	2021
CHEN 6	D	11.00	5	NH	SST	110	NH	E	SW	2	2021
CHEN 6	D	12.00	6	RP-NH	SST	122	NH	E	RT-SW	2	2017
CHEN 6	D	13.10	8	NH	S-S	88	NH	E	FW	2	2034
CHEN 6	D	13.20	3	SH	PT	70	SH	ZW			
CHEN 6	D	14.00	12	NH-HEM	SST	136	NH-HEM	ZG	GS	2	
CHEN 6	D	15.00	13	NH	SST	100	NH	ZR			
CHEN 6	D	16.00	23	RP	SST	180	NH	E	SW-T-B	1	2017
CHEN 6	D	17.00	4	NH	SST	115	NH	E	FW	4	2021
CHEN 6	D	18.00	4	RP-NH	SST	145	NH	E	SW	1	2017
CHEN 6	D	19.00	4	WET-ALDER	Null	25	WET-ALDER	ZW			
CHEN 6	D	20.00	3	NH	SST	140	NH	E	SC	4	
CHEN 6	D	21.00	3	RP	SST	200	NH	E	SW	3	
CHEN 6	D	22.00	4	NH	MST	115	NH	U	GS	3	
CHEN 6	D	23.00	31	HEM	SST	173	HEM	ZW			
CHEN 6	D	24.10	7	RP-NH	SST	110	NH	E	SW-T	2	2026
CHEN 6	D	24.20	3	NH	SST	65	NH	E			
CHEN 6	D	25.00	6	NH	S-S	73	NH	E			

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 6	D	26.00	27	RP	SST	143	NH	E	SW-RT-PT	1	2026
CHEN 6	D	27.00	11	NH	S-S	107	NH	E			
CHEN 6	D	28.00	13	NH	S-S	102	NH	E			
CHEN 6	D	29.00	19	NH	SST	129	NH	E	H-IN	2	2028
CHEN 6	D	30.10	4	NH-RP	SST	108	NH	E	H-IN	2	2026
CHEN 6	D	30.20	4	NH	SST	53	NH	E			
CHEN 6	D	31.00	70	RP	SST	106	NH	EVR	SWR-T	2	2029
CHEN 6	D	32.00	11	RP	SST	110	NH	E	SW-T	2	2029
CHEN 6	D	33.00	8	RP	SST	120	NH	E	SW-T	2	2029
CHEN 6	D	34.00	16	NH	SST	108	NH	U	H-GS	3	
CHEN 6	D	35.00	9	NH	PT	86	NH	E			
CHEN 6	D	36.00	9	NH	PT	88	NH	E			
CHEN 6	D	37.00	1	NH	SST	75	NH	ZH			
CHEN 6	D	38.00	1	RP-WP	SST	125	NH-WP	EVR	RT	2	2029
CHEN 6	D	39.00	3	WET-ALDER	Null	25	WET-ALDER	ZW			
CHEN 6	D	40.00	11	NH-HEM	SST	200	NH-HEM	NA			
CHEN 6	D	41.00	20	RP	SST	120	NH	E	SW	3	
CHEN 6	D	42.00	6	NS	SST	110	NH-NS	EVR	SPT	1	2030
CHEN 6	D	43.00	6	NH-HEM	SST	247	NH-HEM	NA			
CHEN 6	D	44.00	23	RP	SST	115	NH	E	SW	2	2030
CHEN 6	E	1.00	7	WS	PT	138	NH	E	SW	2	2032
CHEN 6	E	2.00	33	NH-WP	SST	161	NH	E	IN	3	
CHEN 6	E	3.10	53	NH-HEM	MST	139	NH-HEM	U	H-GS	2	2018
CHEN 6	E	3.20	10	NH-HEM	MST	143	NH-HEM	ZR			
CHEN 6	E	4.00	7	WP-HEM	MST	144	WP-HEM	ZR			
CHEN 6	E	5.00	11	NH	S-S	77	NH	U	FW	2	2034
CHEN 6	E	6.00	3	NS	SST	183	NH-NS	ZR	SPT		
CHEN 6	E	7.00	19	NH-HEM	SST	147	NH-HEM	U	H-GS	2	2023

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 6	E	8.00	35	NH	MST	117	NH	U	H-GS	2	2023
CHEN 6	E	9.00	3	NH-HEM	SST	125	NH-HEM	ZR			
CHEN 6	E	10.00	5	NS	MST	175	NH-NS	E	SPT	1	2017
CHEN 6	E	11.00	6	PH	SST	114	PH	E	FW-GC	2	2017
CHEN 6	E	12.00	8	NH-HEM	SST	98	NH-HEM	U	ST-GS	3	
CHEN 6	E	14.00	4	NH-HEM	SST	220	NH-HEM-WP	U	ST-GS	3	
CHEN 6	E	15.00	6	NH-WP	LST	176	NH-WP	U	ST-GS	3	
CHEN 6	E	16.00	6	NH-WP	SST	154	NH-WP	U	ST-GS-GC	3	
CHEN 6	E	17.00	13	NS-NH	SST	147	NH-WP	EVR	H-SWR	3	
CHEN 6	E	19.00	5	NH-HEM	MST	92	NH-HEM	U	ST-GS	2	2018
CHEN 6	E	21.00	3	NH	SST	128	NH	U	ST-GS	2	2026
CHEN 6	E	22.00	38	NS	SST	155	NH-NS	E	SPT-SW	2	2022
CHEN 6	E	23.00	3	NS-NH	SST	127	NH	U	SW	2	2022
CHEN 6	E	24.00	1	NH	SST	90	NH	E	FW	2	
CHEN 6	E	25.00	21	NH-HEM	MST	176	NH-HEM	U	H-GS	2	2018
CHEN 6	E	26.00	10	RO	LST	103	RO	E	SW-FENCE	3	2026
CHEN 6	E	27.00	22	NS-WS	SST	165	NH-NS	E	SPT-SW-B	1	2022
CHEN 6	E	28.00	17	NH	SST	141	NH	U	ST-GS	3	
CHEN 6	E	30.00	11	NS-RP-L	SST	131	NH	E	SW	1	2024
CHEN 6	E	31.00	10	NH	SST	100	NH	ZR			
CHEN 6	E	32.10	22	RP-EL-NH	SST	134	NH	E	SW	2	2026
CHEN 6	E	32.20	37	RP-EL-NH	SST	175	NH	EVR	H-SWR-B	2	2026
CHEN 6	E	33.00	20	NS	SST	177	NH-NS	E	SPT	1	2022
CHEN 6	E	34.00	2	NH	SST	110	NH	E	IN	2	2022
CHEN 6	E	35.00	4	NS	SST	160	NH-NS	E	H-SPT	2	2022
CHEN 6	E	36.00	19	NS-SP	SST	187	NH-NS	E	SPT-SW	1	2017
CHEN 6	E	37.00	2	NS-NH	SST	155	NH	E	SW	1	2017
CHEN 6	E	38.00	17	NS	SST	200	NH-NS	E	VIH-SW-B	1	2017

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 6	E	39.00	1	NH	SST	140	NH	E	FW	2	2019
CHEN 6	E	40.00	2	NS-NH	PT	160	NH-NS	ZR	SPT	1	
CHEN 6	E	42.00	3	RP	SST	173	NH	E	SW	2	2026
CHEN 6	E	43.00	4	NH-WP	LST	140	NH-WP	ZR			
CHEN 6	E	44.00	12	NS	SST	175	NH-NS	E	SPT	1	2022
CHEN 6	E	45.00	8	NH-HEM	SST	160	NH-HEM	ZR			
CHEN 6	E	46.00	11	NH	SST	118	NH	E	H-SC-SW	3	
CHEN 6	E	48.00	7	NH-RP	PT	116	NH	E	SC-SW	1	2031
CHEN 6	F	1.00	7	NH-HEM	SST	154	NH-HEM	ZG			
CHEN 6	F	2.00	6	NH-WP	SST	124	NH-WP	EVR	IN	3	
CHEN 6	F	3.00	2	RP	PT	250	NH-WP	ZV			
CHEN 6	F	4.00	17	RP	SST	112	NH	E	SW	1	2032
CHEN 6	F	6.00	6	NH-HEM	SST	208	NH-HEM	U	ST-GS	3	
CHEN 6	F	7.00	20	NH-HEM	SST	134	NH-HEM	ZR			
CHEN 6	F	8.00	5	NS-RP	SST	146	NH-HEM	EVR	SWR	2	2034
CHEN 6	F	9.00	15	RP	SST	123	NH	U	SW	2	2034
CHEN 6	F	10.00	9	RP	SST	133	NH	E	SW	2	2034
CHEN 6	F	11.00	26	RP-NS	SST	133	NH-WP	EVR	SWR	3	2034
CHEN 6	F	13.00	4	WP-HEM	LST	198	WP-HEM	NA			
CHEN 6	F	14.00	29	WET-ALDER	Null	46	WET-ALDER	ZW			
CHEN 6	F	15.00	15	RP	SST	118	NH	E	SW	2	2034
CHEN 6	F	16.00	11	NH	SST	130	NH	U	ST-GS	3	
CHEN 6	F	17.00	6	NH	MST	134	NH-NS	EVR	SPT	2	2031
CHEN 6	F	18.00	4	NH-HEM	SST	155	NH-HEM	ZR			
CHEN 6	F	19.00	7	NH-WP	LST	87	NH-WP	ZR			
CHEN 6	F	20.00	9	NS	SST	154	NH-NS	ZV			
CHEN 6	F	21.00	16	NH-WP	SST	163	NH-WP	U	ST-GS	3	
CHEN 6	F	22.00	18	NH-HEM	SST	183	NH-HEM	U	ST-GS	3	

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 6	F	23.10	25	NH-HEM	SST	144	NH-HEM	U	ST-GS	3	
CHEN 6	F	23.20	14	NH-HEM	SST	130	NH-HEM	U	H-ST-GS	4	
CHEN 6	F	23.30	3	NS	SST	160	NH	E	SPT	3	
CHEN 6	F	24.10	43	NH	MST	94	NH	U	H-ST-GS	3	
CHEN 6	F	24.20	14	NH-HEM	SST	150	NH-HEM	U	H-ST-GS	3	
CHEN 6	F	25.00	5	NH	SST	115	NH-HEM	ZW			
CHEN 6	F	26.00	13	NH-HEM	SST	153	NH-HEM	U	ST-GS	3	
CHEN 6	F	27.00	7	NH	SST	128	NH	U	H-IN	3	
CHEN 6	F	28.00	4	NH-HEM	SST	143	NH-HEM	U	H-ST-GS	3	
CHEN 6	F	31.00	16	RP	SST	177	NH	E	SW	2	2034
CHEN 6	F	32.00	43	RP	SST	204	NH-WP	EVR	SWR	2	2034
CHEN 6	F	33.00	16	RP	SST	117	NH	E	H-SW	3	2034
CHEN 6	F	34.00	6	NH	SST	84	NH	U		4	
CHEN 6	F	35.00	5	NH	S-S	50	NH	E			
CHEN 6	F	36.00	11	NH-HEM	MST	167	NH-HEM	U		3	
CHEN 6	F	37.00	9	NH-HEM	SST	194	NH-HEM	ZS	ST-GS	4	
CHEN 6	F	38.00	4	NH-NS	MST	145	NH	ZW			
CHEN 6	F	39.00	6	NH	SST	140	NH	U	FW-ST-GS	2	2026
CHEN 6	F	40.00	10	NH-HEM	SST	148	NH-HEM	U	H-ST-GS	3	
CHEN 6	F	41.00	22	RS-BF-WP-HEM	SST	137	RS-BF-WP-HEM	ZW			
CHEN 6	F	42.00	21	NH-HEM	MST	156	NH-HEM	U	ST-GS	3	
CHEN 6	F	44.00	3	NH	MST	100	NH	E	IN	1	2026
CHEN 6	F	45.00	34	NS	SST	123	NH-NS	E	SPT	2	2031
CHEN 6	F	46.00	14	NH-HEM	SST	112	NH-HEM	ZR			
CHEN 6	F	47.00	15	NH	SST	144	NH	U	ST-GS	2	2026
CHEN 6	F	48.00	3	NS-WS	SST	155	NH-NS	EVR	SWR	1	2031
CHEN 6	F	49.00	20	NS-WS	SST	128	NH-NS	E	SW	1	2031

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 6	F	50.00	14	RP	SST	169	NH	E	H-SW-PT	2	2031
CHEN 6	F	51.00	6	NH	MST	98	NH	U	ST-GS	2	2026
CHEN 6	F	52.00	6	NS-NH	SST	145	NH	E	H-SW	3	2031
CHEN 6	F	54.00	11	WP-HEM	SST	145	WP-HEM	ZR			
CHEN 6	F	55.00	6	RP-NH	SST	158	NH-WP	EVR	SWR	2	2031
CHEN 6	F	56.00	11	RP	SST	184	NH	E	SW	2	2031
CHEN 6	F	57.00	6	PH	SST	20	NH-NS	E	PT	1	2018
CHEN 6	F	59.00	4	NS-RP	SST	200	NH	E	SW	1	2034
CHEN 11	A	1.00	9	NH	SST	124	NH	U	ST	2	2029
CHEN 11	A	2.00	7	WET-OPEN	Null	15	WET-OPEN	ZW			
CHEN 11	A	3.00	16	BR	SST	96	BR	ZW			
CHEN 11	A	4.10	40	NS	MST	184	NH-NS	E	ST	1	2024
CHEN 11	A	4.20	5	EL-NS	MST	217	NH	E	SPT	1	2024
CHEN 11	A	5.00	11	NS	MST	179	NH-NS	E	SPT	1	2024
CHEN 11	A	6.00	57	NH	SST	110	NH	E	ST	3	
CHEN 11	A	7.10	4	PH-WC	PT	130	NH	E			
CHEN 11	A	7.20	3	PH-WC	PT	135	NH	E			
CHEN 11	A	7.30	2	BR	S-S	0	NH	E			
CHEN 11	A	7.40	1	NH	Null	0	NH	E			
CHEN 11	A	8.00	15	NS-NH	MST	138	NH	E	SW-T	1	2024
CHEN 11	A	9.10	21	WET-ALDER	Null	0	WET-ALDER	ZW			
CHEN 11	A	9.20	3	BR	PT	70	BR	ZW			
CHEN 11	A	9.30	12	WC-NH	SST	110	NH	E	FW	3	
CHEN 11	A	10.00	39	NH	SST	109	NH	U	ST-GS	2	2029
CHEN 11	A	11.10	19	NH-HEM	SST	103	NH-HEM	ZR			
CHEN 11	A	11.20	1	NS-NH	SST	220	NH-NS	ZR			
CHEN 11	A	11.30	2	NH	SST	135	NH	E	ST-FW	3	

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 11	A	12.00	9	NS-NH	SST	120	NH-NS	E	SPT	2	2024
CHEN 11	A	13.00	9	WET-OPEN	Null	0	WET-OPEN	ZW			
CHEN 11	A	14.10	7	NH	Null	63	NH	ZW			
CHEN 11	A	14.20	5	WET-ALDER	Null	57	WET-ALDER	ZW			
CHEN 11	A	15.00	116	NS-NH	MST	175	NH-NS	EVR	SWR-T	1	2035
CHEN 11	A	16.00	40	NH	SST	107	NH	U	ST-GS	2	2019
CHEN 11	A	17.00	7	NS-NH	MST	174	NH-NS	E	SPT	2	2035
CHEN 11	A	18.00	12	NH	SST	100	NH	E	SW	2	2025
CHEN 11	A	19.00	10	NH	SST	109	NH	E	IN	3	2025
CHEN 11	A	20.00	11	NS-NH	SST	118	NH-NS	E	SPT	1	2033
CHEN 11	A	21.00	9	NS-NH	SST	134	NH	E	SPT	1	2033
CHEN 11	A	22.00	15	NS-NH	SST	123	NH-NS	E	FW	3	
CHEN 11	A	23.00	4	NH-WC	SST	113	NH	E	FW	3	
CHEN 11	A	24.00	7	EL-NS	MST	144	NH	E	RT	2	2027
CHEN 11	A	25.00	6	NH-WP	SST	94	NH-WP	ZW			
CHEN 11	A	26.00	10	NH	SST	86	NH	E	IN-SW	2	2035
CHEN 11	A	27.00	5	NH	SST	124	NH	E	IN	2	2025
CHEN 11	A	28.00	8	NS	PT	176	NH-NS	EVR	SWR	1	2033
CHEN 11	A	29.00	6	WET-OPEN	Null	20	WET-OPEN	ZW			
CHEN 11	A	30.00	23	NH	SST	104	NH	U	H-ST-GS	2	2035
CHEN 11	A	31.00	17	EL-NS	MST	111	NH	E	SW	2	2027
CHEN 11	A	32.00	10	WC-NH	Null	97	WC-NH	ZW			
CHEN 11	A	33.00	8	NS	SST	136	NH-NS	E	SW	1	2033
CHEN 11	A	34.00	11	EL-NS	MST	149	NH-NS	E	SW	1	2027
CHEN 11	A	35.00	3	EL-NH	SST	130	NH	E	SW	1	2027
CHEN 11	A	36.00	21	RP-NH	SST	103	NH	E	SW-T	2	2030
CHEN 11	A	37.00	14	NS-NH	SST	132	NH-NS	EVR	SWR-T	1	2033
CHEN 11	A	38.00	1	NH-WP	S-S	40	NH-WP	ZW			

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 11	A	39.00	15	NS-NH	SST	132	NH-NS	EVR	SWR-T	1	2033
CHEN 11	A	40.00	13	NH	SST	109	NH	U	ST	2	2025
CHEN 11	A	41.00	44	NH	MST	99	NH	U	VIH		
CHEN 11	A	42.00	9	NH	PT	114	NH	ZG			
CHEN 11	A	43.00	9	NH	SST	104	NH	U	SW	4	2021
CHEN 11	A	44.00	58	NS-NH	SST	115	NH-NS	E	SW	3	2021
CHEN 11	A	45.00	6	NH-SP	SST	124	NH	E	VIH	4	
CHEN 11	A	46.00	5	BR	Null	0	BR	BR			
CHEN 11	A	47.00	2	NH-SP	SST	135	NH	E	VIH	4	
CHEN 11	A	48.00	22	NH	SST	95	NH	U	ST-GS	2	2025
CHEN 11	A	49.00	13	NH-NS	SST	120	NH	E	SW	3	2027
CHEN 11	A	50.00	55	NS-NH	SST	95	NH	E	SW	3	2027
CHEN 11	A	51.00	8	NH-NS-RP	SST	104	NH-NS	E	SW-VIH		
CHEN 26	A	1.10	14	NH-RO	SST	54	NH-RO	E	SW	1	2033
CHEN 26	A	1.20	1	NH	SST	125	NH	E	H-FW	2	
CHEN 26	A	2.00	7	RP	SST	98	NH	E	SW-T	2	2033
CHEN 26	A	3.00	4	NH	PT	87	NH-RO	E	IN		
CHEN 26	A	4.10	11	RP-NS	SST	130	NH	E	SW	1	2025
CHEN 26	A	4.20	3	NH-NS	SST	140	NH	E	SW	1	2025
CHEN 26	A	5.00	3	NH-RP	SST	117	NH	U	ST-GS	1	2019
CHEN 26	A	6.00	8	BR	Null	0	BR	BR			
CHEN 26	A	7.00	26	RP	SST	126	NH	E	H-SW-RT	2	2033
CHEN 26	A	8.10	47	NH-RP	SST	95	NH	U	ST-GS		
CHEN 26	A	8.20	2	NH	SST	95	NH	U	ST	1	2033
CHEN 26	A	8.30	14	RP-NH	SST	122	NH	E	H-SW-RT	3	
CHEN 26	A	8.40	7	RP-NH	SST	110	NH	ZR			
CHEN 26	A	8.50	10	NH-RO	SST	90	NH-RO	U	ST-GS	1	2025

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 26	A	8.60	1	RP	SST	150	NH	ZR			
CHEN 26	A	9.00	5	NH-RO	SST	135	NH-RO	E	IN	1	2025
CHEN 26	A	10.00	12	RP-JL	SST	107	NH	E	SW-T	1	2033
CHEN 26	A	11.00	11	WP-NH	SST	177	NH-WP	UVR	H-ST-GS	3	
CHEN 26	A	12.00	5	NH-WP	SST	140	NH-WP	UVR	H-ST-GS	3	
CHEN 26	A	13.00	3	BR	Null	0	BR	BR			
CHEN 26	A	14.10	14	RP	SST	120	NH	E	RT	1	2025
CHEN 26	A	14.20	3	BR	Null	0	BR	BR			
CHEN 26	A	15.00	6	NH	MST	76	NH	E	IN	3	
CHEN 26	A	16.00	13	NH-HEM-WP	SST	132	NH-HEM-WP	NA			
CHEN 26	A	17.00	9	HEM	MST	176	HEM	NA			
CHEN 26	A	18.00	22	RP-NS	SST	128	NH-NS	E	RT	1	2025
CHEN 26	A	19.00	2	PIT	Null	0	PIT	PIT			
CHEN 26	A	20.00	39	NH-HEM	SST	114	NH-HEM	U	H-GS	1	2036
CHEN 26	A	21.00	34	NH-HEM	SST	85	NH-HEM	ZW			
CHEN 26	A	22.10	25	NH-HEM	SST	108	NH-HEM	U	ST-GS	1	2036
CHEN 26	A	22.20	6	NH	SST	13	NH	E	IN	1	2036
CHEN 26	A	23.00	36	WP-NH	SST	212	NH-WP	EVR	SWR-B	3	2019
CHEN 26	A	24.10	12	RP	SST	198	NH	E	H-SW	2	2019
CHEN 26	A	24.20	2	NH	SST	145	NH	E			
CHEN 26	A	24.30	1	WET-OPEN	Null	0	WET-OPEN	ZW			
CHEN 26	A	25.00	9	RP-JL	SST	134	NH-LA	E	SW	1	2026
CHEN 26	A	26.00	7	NH	MST	128	NH	ZR			
CHEN 26	A	27.00	2	WP	SST	240	NH-WP	EVR	RT	3	
CHEN 26	A	28.00	12	NH-WP	SST	140	NH-WP	EVR	IN	3	
CHEN 26	A	30.00	3	WP	SST	227	NH-WP	EVR	RT	3	
CHEN 26	A	31.00	7	NH-WP	SST	150	NH-WP	EVR	VIH	3	
CHEN 26	A	32.00	1	NH	Null	120	NH	ZW			

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 26	A	33.00	186	NH-HEM	SST	140	NH-HEM	EVR	H-SC		
CHEN 26	B	1.00	47	NH	SST	127	NH	ZA			
CHEN 26	B	2.10	18	NH-HEM	PT	187	NH-HEM	ZA			
CHEN 26	B	2.20	5	NH-HEM	MST	90	NH-HEM	ZR			
CHEN 26	B	3.00	8	NH-HEM	SST	110	NH-HEM	ZR			
CHEN 26	B	4.00	12	RP	SST	133	NH	U	H-SW	2	2026
CHEN 26	B	5.00	2	NH-HEM	SST	145	NH-HEM	ZR			
CHEN 26	B	6.10	2	RP	SST	200	NH	E	SW-T	1	2026
CHEN 26	B	6.20	1	NH-HEM	SST	130	NH-HEM	ZA			
CHEN 26	B	7.00	4	RP	SST	153	NH	E	H-RT	2	2026
CHEN 26	B	8.00	4	NH	SST	110	NH	E	H-IN	3	2026
CHEN 26	B	9.00	10	NH-HEM	SST	118	NH-HEM	U	ST-GS	3	
CHEN 26	B	10.00	14	NH	SST	95	NH	E	H-SW	2	2026
CHEN 26	B	11.00	4	NH-WP	SST	158	NH-WP	E	H-IN	2	2026
CHEN 26	B	12.00	9	WP	SST	172	NH-WP	EVR	RT	1	2026
CHEN 26	B	13.00	28	NH	PT	107	NH	ZR			
CHEN 26	B	14.00	15	NH	SST	118	NH	E	IN	1	2032
CHEN 26	B	15.00	6	WET-OPEN	Null	0	WET-OPEN	ZW			
CHEN 26	B	16.10	9	WET-ALDER	Null	0	WET-ALDER	ZW			
CHEN 26	B	16.20	4	WP-HEM	SST	190	WP-HEM	ZR			
CHEN 26	B	16.30	5	NH-WP	Null	126	NH-WP	E	IN	3	
CHEN 26	B	17.00	4	WS	SST	118	WS	ZR			
CHEN 26	B	18.10	5	NH	SST	148	NH	E	FW	3	
CHEN 26	B	18.20	2	NH-HEM	SST	150	NH-HEM	ZR			
CHEN 26	B	19.10	7	NH	SST	140	NH	E	FW	3	
CHEN 26	B	19.20	3	WS-NH	PT	170	NH	E		3	
CHEN 26	B	19.30	7	PH	SST	95	PH	ZR			
CHEN 26	B	20.00	7	NH	PT	96	NH	E	H-IN	2	2026

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 26	B	21.00	4	WS	SST	175	WS	ZA			
CHEN 26	B	22.00	12	NH-BR	PT	77	NH-BR	ZR			
CHEN 26	B	23.00	11	WS	SST	173	WS	ZR			
CHEN 26	B	24.00	16	NH-HEM	SST	120	NH-HEM	U	H-ST-GS	3	2032
CHEN 26	B	25.10	60	WS-NH	SST	137	NH-LA	EVR	SWR	2	2032
CHEN 26	B	25.20	15	NH-HEM	SST	187	NH-HEM	ZR			
CHEN 26	B	26.10	21	WS	SST	185	NH-PH-LA	E	SW	1	2032
CHEN 26	B	26.20	3	PH	S-S	0	PH	ES			
CHEN 26	B	27.10	14	NH	PT	107	NH	ZR			
CHEN 26	B	27.20	2	NH	Null	0	NH	ZH			
CHEN 26	B	28.00	23	WS	SST	205	NH	ZR			
CHEN 26	B	29.00	18	WP	SST	210	NH-WP	E	RT-TSI	3	
CHEN 26	B	30.00	15	NH-WP	SST	182	NH-WP	EVR	IN	3	
CHEN 26	B	31.00	14	NS-WP	SST	135	NH-WP	EVR	IN	3	
CHEN 26	B	32.00	9	WP	SST	149	NH-WP	E	IN	2	
CHEN 26	B	33.10	29	NH	SST	97	NH	E	SW	3	
CHEN 26	B	33.20	29	NH-RO	SST	115	NH-RO	E	SW	3	
CHEN 26	B	33.30	30	NH-WP	SST	158	NH-WP	EVR	SW	3	
CHEN 26	B	33.40	5	NH	SST	10	NH	ZR			
CHEN 26	B	34.00	6	NH	SST	146	NH	ZH		1	
CHEN 26	B	35.00	9	NH	SST	163	NH	E	IN	2	2034
CHEN 26	B	36.10	84	WP	SST	112	NH-WP	EVR	H-RT	2	
CHEN 26	B	36.20	7	WP	SST	73	NH-WP	ZR			
CHEN 26	B	36.40	1	NH	MST	150	NH	ZH			
CHEN 26	B	37.00	23	NH-WP	SST	132	NH-WP	EVR	IN	1	2035
CHEN 26	B	38.00	10	WP	SST	164	NH-WP	EVR	RT	1	2035
CHEN 26	B	39.00	23	NH	SST	135	NH	E	IN	1	2035
CHEN 26	B	40.00	8	NH-HEM	PT	153	NH-HEM	ZA			

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 26	B	41.00	17	NH-HEM	PT	97	NH-HEM	ZR			
CHEN 26	B	42.00	3	NH-HEM	SST	185	NH-HEM	ZR			
CHEN 26	B	43.00	5	NH	SST	153	NH	E	IN	3	
CHEN 26	B	44.10	3	PH	SST	90	NH-HEM	ZR			
CHEN 26	B	44.20	8	NH-RP	PT	173	NH	E			
CHEN 26	B	44.30	3	NH	SST	210	NH	E	IN	2	2034
CHEN 26	B	44.40	7	RP	PT	189	NH	E			
CHEN 26	B	45.10	17	NH	SST	158	NH	U	ST-GS	1	2034
CHEN 26	B	45.20	5	NH-WP	SST	120	NH-WP	ZR			
CHEN 26	B	45.30	6	NH-HEM	PT	147	NH-HEM	ZR			
CHEN 26	B	45.40	6	NH	SST	165	NH	E	IN	1	2034
CHEN 26	B	46.10	18	NH	SST	180	NH	ZR			
CHEN 26	B	46.20	6	PH	SST	145	PH	ES	GC	2	2034
CHEN 26	B	47.00	22	NH	SST	120	NH	E	IN	1	2034
CHEN 26	B	48.10	6	RP	PT	180	NH	E	RT	1	2030
CHEN 26	B	48.20	5	NH-NS	S-S	13	NH-NS	E			
CHEN 26	B	49.00	10	NH-HEM	SST	102	NH-HEM	U	H-IN	3	
CHEN 26	B	50.00	2	HEM	SST	150	HEM	ZR			
CHEN 26	B	51.00	4	WS-NH	MST	100	NH	E	SPT	3	
CHEN 26	B	52.00	9	NH	SST	62	NH	U	H-ST-GS	2	2032
CHEN 26	C	1.00	3	NH-HEM	SST	50	NH-HEM	ZR			
CHEN 26	C	2.10	12	RP	SST	108	NH-RP	EVR	SWR		
CHEN 26	C	2.20	10	RP	SST	164	NH-RP	E	H-SAL		
CHEN 26	C	2.30	4	NH	PT	120	NH	E	H-IN	2	2036
CHEN 26	C	2.40	2	PH	S-S	90	PH	ES			
CHEN 26	C	3.10	33	NH	SST	138	NH	U	H-ST-GS	2	2036
CHEN 26	C	3.20	4	NH	SST	160	NH	ZR			
CHEN 26	C	4.00	69	RP	SST	132	NH	EVR	SWR	1	2030

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 26	C	5.00	4	NH	SST	105	NH	E	H-IN	3	2030
CHEN 26	C	6.00	5	NH	SST	118	NH	E	IN-SAL	2	2035
CHEN 26	C	7.00	3	PH	SST	103	PH	ES	GC	2	2035
CHEN 26	C	8.00	17	NH	SST	117	NH	E	H-IN	2	2035
CHEN 26	C	9.00	7	NH-ALDER	PT	63	NH-ALDER	ZR			
CHEN 26	C	10.10	16	NH	SST	118	NH	U	H-ST-GS	3	2036
CHEN 26	C	10.20	4	NH-HEM	SST	130	NH-HEM	ZS			
CHEN 26	C	10.30	3	BR-NH	S-S	85	NH-BR	ES	GC	2	2036
CHEN 26	C	10.40	10	NH	PT	124	NH	E	H-IN	2	2036
CHEN 26	C	10.50	3	HEM	MST	195	HEM	ZR			
CHEN 26	C	10.60	10	NH	SST	133	NH	ZR			
CHEN 26	C	11.00	12	NH	SST	178	NH	E	SC	1	2036
CHEN 26	C	12.00	5	NH	SST	220	NH	E	IN	3	
CHEN 26	C	13.00	3	BR	Null	10	NH-BR	ZR			
CHEN 26	C	14.10	17	NH	SST	154	NH	E	IN	1	2035
CHEN 26	C	14.20	8	NH-WP	SST	228	NH-WP	E	IN-FW	3	
CHEN 26	C	14.30	8	NH	SST	168	NH	E	SC	3	
CHEN 26	C	14.40	5	NH-RO	SST	170	NH-RO	E	FW	2	2035
CHEN 26	C	14.50	4	WS-NH	SST	160	NH	ZR			
CHEN 26	C	14.60	3	WS-NH	PT	160	NH	E			
CHEN 26	C	15.10	15	NH	SST	166	NH	E	H-SC	2	2035
CHEN 26	C	15.20	3	HEM	SST	230	NH-HEM	UVR	ST-GS	2	
CHEN 26	C	16.00	24	NH	SST	188	NH	ZS	IN	3	
CHEN 26	C	17.00	12	NH	SST	133	NH	E	H-IN	2	2031
CHEN 26	C	18.00	21	NH	MST	123	NH	E	SW	1	2031
CHEN 26	C	19.00	21	NH	PT	102	NH	E	H-IN	2	2031
CHEN 26	C	20.00	11	PH	PT	115	PH	ES			
CHEN 26	C	21.00	9	NH	SST	122	NH	E	SW	1	2031

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 26	C	22.00	12	NH-WS	PT	115	NH	E	IN	3	
CHEN 26	C	23.00	26	NH	SST	138	NH-RO	E	H-IN/SC	2	2033
CHEN 26	C	24.00	21	NH	PT	128	NH	E	IN-FW	1	2033
CHEN 26	C	25.00	5	NH	PT	65	NH	ZR			
CHEN 26	C	26.10	14	WS	PT	113	NH-PH	E	CC-B	2	
CHEN 26	C	26.20	4	WS	SST	117	NH	U	VIH	2	
CHEN 26	C	27.00	7	NH	SST	175	NH	E	SW	1	2036
CHEN 26	C	28.00	6	NH-WP	SST	148	NH	E	IN-FW	1	2033
CHEN 26	C	29.00	19	NH-RO	PT	133	NH-RO	E	FW	1	2033
CHEN 26	C	30.10	12	NH-WS-WP	SST	178	NH-WP	E	CC-B	3	
CHEN 26	C	30.20	15	WS-NH	SST	198	NH	E	VIH	3	
CHEN 26	C	30.30	5	NH-WS	SST	118	NH	E	VIH-FW	3	
CHEN 26	C	30.40	12	WS	PT	158	NH-PH	E	VIH	3	
CHEN 26	C	31.10	3	NH	PT	130	NH	E	FW	1	2033
CHEN 26	C	31.20	2	PH-BR	Null	145	PH-BR	ES	H-GC	3	2033
CHEN 26	C	31.30	3	NH	SST	135	NH	E	SW	1	2033
CHEN 26	C	32.10	15	NH-PH	Null	90	NH-PH	ZR			
CHEN 26	C	32.20	2	NH	SST	170	NH	E	FW	1	2021
CHEN 26	C	32.30	4	NH	Null	83	NH-WP	U	FW	3	
CHEN 26	C	32.40	11	NH-PH	Null	78	PH-WP-BR	ES-BR	GC-RA	2	2036
CHEN 26	C	32.50	2	WS	PT	100	NH-PH	ZW			
CHEN 26	C	33.00	39	NH	SST	132	NH	U	ST-GS	1	2036
CHEN 26	C	34.00	38	NH-RO	SST	102	NH-RO	E	SW	1	2036
CHEN 26	D	1.10	9	NH-WP	SST	93	NH-WP	E	FW	3	
CHEN 26	D	1.20	10	NH-WS-WP	SST	118	NH-WP	EVR	SPT	3	
CHEN 26	D	1.30	8	NH-WS	SST	138	NH-WP	EVR	SPT-FW	3	
CHEN 26	D	2.00	20	NH	SST	127	NH	E	IN	1	2023
CHEN 26	D	3.00	11	NH	SST	43	NH-HEM	ZW			

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 26	D	4.00	3	NH	PT	100	NH	NA			
CHEN 26	D	5.10	24	NH-WP	SST	140	NH-WP	NA			
CHEN 26	D	5.20	2	NH-WET-ALD	SST	160	NH-WET-ALDER	ZW			
CHEN 26	D	6.10	17	NH-WP	SST	97	NH-WP	E	IN	3	
CHEN 26	D	6.20	2	NH-WP	SST	140	NH-WP	ZW			
CHEN 26	D	8.00	11	NH	SST	116	NH-RO	E	IN	1	2023
CHEN 26	D	9.00	15	NH	SST	98	NH	U	H-ST-GS	2	2023
CHEN 26	D	10.00	86	NH-HEM-WP	MST	157	NH-HEM-WP	NA			
CHEN 26	D	11.00	11	NH	SST	123	NH	U	H-ST-GS	2	2017
CHEN 26	D	12.10	8	WS	PT	192	NH	E	VIH	3	
CHEN 26	D	12.20	6	WS	SST	116	NH	E	VIH	3	
CHEN 26	D	12.30	2	NH	SST	100	NH	ZR			
CHEN 26	D	13.00	8	NH	SST	110	NH	E	IN	1	2017
CHEN 26	D	14.10	5	PH	SST	10	PH	ES			
CHEN 26	D	14.20	3	RP	PT	110	NH	E	SW	1	2018
CHEN 26	D	14.30	2	NH-NS	Null	0	NH	ZH			
CHEN 26	D	14.40	3	NH	SST	140	NH	ZW			
CHEN 26	D	15.00	3	WS	SST	110	NH	E	SPT	3	
CHEN 26	D	16.00	17	NH-HEM-WP	SST	123	NH-HEM-WP	ZW			
CHEN 26	D	17.00	14	NH	SST	95	NH	E	FW	1	2018
CHEN 26	D	18.00	12	NH	SST	90	NH	E	IN	1	2023
CHEN 26	D	19.00	37	NH-HEM	SST	105	NH-HEM	ZW			
CHEN 26	D	20.00	11	NH-WP	MST	170	NH-WP	NA			
CHEN 26	D	21.00	20	NH-WP	SST	128	NH-WP	EVR	IN	3	
CHEN 26	D	22.00	16	WET-ALDER	Null	0	WET-ALDER	ZW			
CHEN 26	D	23.00	11	NH-WP	PT	143	NH-WP	ZR			
CHEN 26	D	24.10	21	NH-HEM	SST	237	NH-HEM	ZR			

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 26	D	24.20	4	NH-HEM	PT	135	NH-HEM	ZW			
CHEN 26	D	25.00	38	RP	PT	182	NH	E	SW	1	2018
CHEN 26	D	26.00	25	JL	SST	120	NH-JL	E	RT	1	2017
CHEN 26	D	27.00	10	NH-RO	SST	158	NH-RO	E	FW	1	
CHEN 26	D	28.00	11	NH-WP	SST	190	NH-WP	E	IN	3	
CHEN 26	D	29.00	11	RP	SST	198	NH	E	SW-T	1	2018
CHEN 26	D	30.10	6	NH	PT	152	NH	E	FW	3	
CHEN 26	D	30.20	7	NH	SST	86	NH	E	FW	3	
CHEN 26	D	31.00	29	RP	SST	167	NH	E	SW	1	2018
CHEN 26	D	32.00	26	NH	SST	150	NH	U	ST-GS	1	2028
CHEN 26	D	33.00	39	NH-PH	SST	72	PH	ES	GC	3	
CHEN 26	D	34.00	16	NH	SST	127	NH	E	FW	3	
CHEN 26	D	35.00	19	NH	SST	110	NH	E	H-IN	2	2031
CHEN 26	D	37.00	5	WP-NH	SST	143	NH-WP	ZW			
CHEN 26	D	38.10	7	WP-NH	SST	156	NH-WP	E	IN	2	2031
CHEN 26	D	38.20	5	WP-NH	SST	137	NH-WP	ZW			
CHEN 26	D	38.30	6	NH-WP	PT	133	NH-WP	ZR			
CHEN 26	D	38.40	2	PH	S-S	0	PH	ES			
CHEN 26	D	38.50	3	NH-HEM	SST	110	NH-HEM	ZW			
CHEN 26	D	38.60	4	WP-NH	SST	145	NH-WP	EVR	IN-FW	3	
CHEN 26	D	39.10	4	PH	S-S	10	PH	ES			
CHEN 26	D	39.20	3	NH-WP	PT	170	NH-WP	EVR	FW		
CHEN 26	D	39.30	2	PH	S-S	10	PH	ES			
CHEN 26	D	39.40	7	RP-PH	PT	196	NH-PH	E	H-SW	2	2018
CHEN 26	D	39.50	2	NH-PH	PT	160	PH-BR	ES	GC	2	2018
CHEN 26	D	40.30	3	PH	SST	10	PH	E			
CHEN 26	D	41.00	2	NH-PH	SST	10	NH-PH	ES			
CHEN 26	D	42.00	7	NH-WP	PT	150	NH-WP	E	FW-TSI	3	

Forest	Comp	Stand	Acres	Forest Type	Size Class	Basal Area	Objective Type	Mngt Direction	Treatment	Priority	Year
CHEN 26	D	43.00	31	NH-HEM	MST	203	NH-HEM	ZW			
CHEN 26	D	44.00	14	NH-WP	SST	140	NH-WP	E	H-IN	2	2031
CHEN 26	D	45.10	9	PH-NH	PT	100	PH-APP	E	FW-RA	2	2026
CHEN 26	D	45.20	2	PH	S-S	20	PH	ES			
CHEN 26	D	46.30	3	PH	PT	70	PH	ES			
CHEN 26	D	47.40	5	NH-WP	SST	125	NH-WP	EVR	IN	3	
CHEN 26	D	48.00	4	WP-NH	SST	123	NH-WP	UVR	H-FW-TSI	3	
CHEN 26	D	49.00	6	WP-HEM	Null	0	WP-HEM	ZR			
CHEN 26	D	50.00	12	WP-NH	MST	118	NH-WP	UVR	ST-GS	3	
CHEN 26	D	51.10	11	NH-WP	SST	97	NH-WP	EVR	IN	1	2032
CHEN 26	D	51.20	4	WP-NH	SST	115	NH-WP	EVR	FW	3	
CHEN 26	D	52.00	1	APP-NH	Null	0	APP	APP	FW-RA	2	2017
CHEN 26	D	53.10	17	NH-WP	PT	123	NH-WP	E	IN	3	
CHEN 26	D	53.20	3	NH	SST	100	NH	E	IN-FW	1	2032
CHEN 26	D	53.30	1	NH-WP	S-S	73	WP	ZW			
CHEN 26	D	53.40	2	PH	S-S	10	PH	ES			
CHEN 26	D	54.00	24	NH	PT	107	NH	E	H-IN	2	2032
CHEN 26	D	55.00	3	NH	SST	117	NH	ZF			
CHEN 26	D	56.00	2	NH-BR	SST	127	NH	ZH	RE-FW	1	2019
CHEN 26	D	57.00	17	NH-WP	SST	144	NH-WP	E	H-IN	3	
CHEN 26	D	58.00	4	NH-WP	SST	98	NH-WP	E	FW	1	2034

TABLE OF FOREST STAND MANAGENT ACTIONS

Annual Summary of Scheduled Stand Treatments

Year	Pine	Spruce	Hardwood Sawtimber	Firewood	TSI	Other	Total
2017	78	125	117	11	-	1	332
2018	110	18	186	14	-	8	336
2019	142	40	192	10	-	-	384
2020	116	-	162	40	-	-	318
2021	153	65	109	6	-	-	333
2022	95	131	66	14	-	-	306
2023	57	32	226	7	-	-	322
2024	173	113	22	-	-	-	308
2025	58	179	81	-	2	2	322
2026	132	-	169	9	-	-	310
2027	197	63	25	38	4	-	327
2028	-	125	169	11	-	-	305
2029	131	-	181	-	-	-	312
2030	201	31	89	-	-	-	321
2031	97	68	143	-	-	-	308
2032	34	134	151	-	-	-	319
2033	56	77	124	56	-	-	313
2034	139	71	61	19	-	6	296
2035	27	123	156	5	-	3	314
2036	-	-	244	72	-	14	330
Total	1,996	1,395	2,673	312	6	34	6,416
Average	100	70	134	16	<1	6	321

The Pine column includes acres of stands harvested in which the primary species are red pine, scotch pine, white pine, or larch. The Spruce column includes acres of stands scheduled for harvest in which the primary species are Norway spruce or white spruce. Hardwood Sawtimber includes acres of northern hardwood stands scheduled for harvest of sawtimber. These stands also include varying amounts of firewood. The Firewood column includes the acres of stands scheduled for harvest in which firewood is the primary product. The TSI column lists acres designated for pre-commercial thinning. The Other column includes acres of noncommercial stand treatments for activities such as clearcuts for grouse habitat and cutting trees to release apple trees or improve wildlife habitat.

An additional 2,388 acres of stands are designated for treatment in the Table of Forest Stand Management Actions but are not scheduled due to limited staffing. These stands may be treated if staffing resources improve in the future.

MANAGEMENT ACTIONS FOR FACILITIES AND INFORMATION

Scheduled Actions

Year	Action	Description
2018	Action	Install 3 gates on Chenango RA #1
2019	Action	Install 2 gates on Chenango RA #26
2019	Action	Install 1 kiosk on Chenango RA #6
2019	Action	Install1 kiosk on Chenango RA #26

Annual, Ongoing Management Actions and Those Performed as Needed

Action	Description
Action	Perform maintenance on 6 miles of Public Forest Access Roads including annual mowing and periodic grading, resurfacing and culvert replacement.
Action	Maintain recreational facilities to provide a safe user experience by periodically closing trails impacted by timber harvests or extreme weather events.
Action	Maintain one ATV Access Route for people with qualifying disabilities on Chenango RA #1, south of Bliven Road.
Action	Construct one ATV Access Route for people with qualifying disabilities on Chenango RA#26, south of Chestnut Road.
Action	Maintain all signs and kiosks communicating information to the public on the Unit.

Glossary

Access trails - may be permanent, unpaved and do not provide all-weather access with the Unit. These trails are originally designed for wood product removal and may be used to meet other management objectives such as recreational trails. These trails are constructed according to Best Management Practices.

Age class - trees of a similar size originating from a single natural event or regeneration activity. *see* cohort.

Basal area - the cross sectional area, measured in square feet, of a single stem, including the bark, measured at breast height (4.5 ft above the ground).

Beech bark disease - an insect and disease pathogen complex involving a scale insect (*Cryptococcus fagi*) and a nectria fungus (*Nectria coccinea* var. *faginata*). The insect pierces the bark to feed, allowing a place for the fungus to enter the tree. Fungal activity interrupts the tree's normal physiological processes and a severely infected tree will most likely die.

Best management practices - a practice or a combination of practices that are designed for the protection of water bodies and riparian areas, and determined to be the most effective and practicable means of controlling point and non-point source water pollutants.

Biological diversity (Biodiversity) - the variety, abundance, and interactions of life forms found in areas ranging in size from local through regional to global. Biodiversity considers both the ecological and evolutionary processes, functions, and structures of plants, animals and other living organisms, as well as the variety and abundance of species, communities, gene pools, and ecosystems.

Biological legacy - an organism, living or dead, inherited from a previous ecosystem - *note* biological legacies often include large trees, snags, and downed logs left after timber harvesting.

Browse - portions of woody plants including twigs, shoots, and leaves consumed by animals such as deer.

Buffer zone / Buffer strip - a vegetation strip or management zone of varying size, shape, and character maintained along a stream, lake, road, recreation site, or different vegetative zone to mitigate the impacts of actions on adjacent lands, to enhance aesthetic values, or as a best management practice.

Cavity tree / Den tree - a tree containing an excavation sufficiently large for nesting, dens or shelter; tree may be alive or dead.

Clear cut - a harvesting and regeneration technique that removes all the trees, regardless of size, on an area in one operation. This practice is done in preparation of the re-establishment of a new forest through reforestation, stump sprouting, or changing habitats, i.e., from forest to brush or grass cover.

Climax forest - an ecological community that represents the culminating stage of a natural forest succession for its locality / environment.

Coarse Woody Material (CWM) - any piece(s) of large dead woody material on the ground in forest stands or in streams.

Conifer - a cone-bearing tree, also referred to as softwood; *note* the term often refers to gymnosperms in general.

Conversion - a change from one silvicultural system to another or from one tree species to each other.

Coppice - an even-aged silvicultural practice designed to stimulate the production of new stems from the cut stumps of the parent vegetation.

Corridor - a linear strip of land identified for the present or future location of a designed use within its boundaries. *Examples:* recreational trails, transportation or utility rights-of-way. When referring to wildlife, a corridor may be a defined tract of land connecting two or more areas of similar management or habitat type through which a species can travel from one area to another to fulfill any variety of life-sustaining needs.

Cover type - the plant species forming a majority of composition across a given area.

Crop tree - any tree selected to become a component of a future commercial timber harvest.

Crown - the part of a tree or woody plant bearing live branches and foliage.

Cultural resources - significant historical or archaeological assets on sites as a result of past human activity which are distinguishable from natural resources.

Cutting cycle - the number of years between harvest or regeneration cuts in a stand.

Cutting interval - the number of years between treatments in a stand.

Deciduous - tree and shrub species that lose their leaves in autumn.

Defoliation - the partial or complete loss of leaves, usually caused by an insect, disease, or drought.

Designated recreational trail - a Department authorized recreational trail that is signed and/or mapped.

Diameter (at) breast height (DBH) - the diameter of the stem of a tree (outside bark) measured at breast height (4.5 ft) from the ground.

Disturbance - a natural or human-induced environmental change that alters one or more of the floral, faunal, and microbial communities within an ecosystem. Timber harvesting is the most common human disturbance. Windstorms and fire are examples of natural disturbance.

Ecological Community - an assemblage of plants and animals interacting with one another, occupying a habitat, and often modifying the habitat; a variable assemblage of plant and animal populations sharing a common environment and occurring repeatedly in the landscape.

Ecosystem - a spatially explicit, relatively homogeneous unit of the earth that includes all interacting organisms and components of the abiotic environment within its boundaries - *note* an ecosystem can be of any size, e.g., a log, pond, field, forest or the earth's biosphere.

Ecosystem management - the appropriate integration of ecological, economic, and social factors in order to maintain and enhance the quality of the environment to best meet our current and future needs. Means keeping natural communities of plants, animals, and their environments healthy and productive so people can benefit from them year to year.

Edge - the more or less well-defined boundary between two or more elements of the environment, e.g. a field adjacent to a woodland or the boundary of different silvicultural treatments.

Endangered species - any species of plant or animal defined through the Endangered Species Act of 1976 as being in danger of extinction throughout all or a significant portion of its range and published in the Federal Register.

Even-aged - a class of forest or stand composed of trees of about the same age. The maximum age difference is generally 10-20 years.

Even-aged system - a program of forest management directed to the establishment and maintenance of stands of trees having relatively little (10-20 yrs) variation in ages. The guidelines to be applied in using this system at all stages of tree development are uniquely different from the uneven-aged system.

Exotic - a plant or species introduced from another country or geographic region outside its natural range.

Eyas - A nestling (unfledged) hawk or falcon, especially one to be trained for falconry.

Fine Woody Material (FWM) - any piece(s) of small dead woody material on the ground in forest stands or in streams.

Forest - an assemblage of trees and associate organisms on sites capable of maintaining at least 60% crown closure at maturity.

Forest Stewardship Council - A non-profit organization devoted to encouraging the responsible management of the world's forests.

Forestry - the profession embracing the science, art, and practice of creating, managing, using, and conserving forests and associated resources for human benefit and in a sustainable manner to meet desired goals, needs, and values.

Forest type - a category of forest usually defined by its vegetation, particularly its dominant vegetation as based on percentage cover of trees.

Forested wetland - an area characterized by woody vegetation where soil is periodically saturated with or covered by water.

Fragmentation - the process by which a landscape is broken into small islands of forest within a mosaic of other forms of land use or ownership - islands of a particular age class that remain in areas of younger-aged forest - fragmentation is a concern because of the effect of noncontiguous forest cover on connectivity and the movement and dispersal of animals in the landscape.

Grassland - land on which the vegetation is dominated by grasses, grass-like plants, or forbs.

Group selection - an uneven-aged silvicultural practice where mature trees are removed in small groups (typically the diameter of the grouping is twice the average tree height) for the purpose of establishing a new age class of trees within the stand.

Habitat - the geographically defined area where environmental conditions (e.g., climate, topography, etc.) meet the life needs (e.g., food, shelter, etc.) of an organism, population, or community.

Hardwoods - broad-leafed, deciduous trees belonging to the botanical group Angiospermae.

Haul roads - permanent, unpaved roads, not designed for all-weather travel, but are constructed primarily for the removal of wood products and provide only limited access within the Unit. As such, these roads may or may not be open for public use. The standards for these roads are those of Class C roads.

Herbicide - a chemical used for killing or controlling the growth of plants.

High-grading - the removal of the most commercially valuable trees (high-grade trees), often leaving a residual stand composed of trees of poor condition or species composition.
Hydrofracking – The hydraulic fracturing process used to release natural gas from limited porosity formations. Fluids are injected into the formation under pressure.

Invasive species -
1.) a plant or animal that spreads rapidly and in great numbers in a region, often to the point of being a nuisance in an ecosystem where it is not native.
2.) species that, after they have been moved from their native habitat, spread on their own, displacing other species, and sometimes causing environmental damage.

Late Successional Forest – Those areas where there is a significant component of trees greater than 140 years old. Forests in this age are beginning to develop old-growth characteristics such as large size, large snags, large cavities, rough bark and large dead trees and fallen logs.

Mast - all fruits of trees and shrubs used as food for wildlife. Hard mast includes nut-like fruits such as acorns, beechnuts, and chestnuts. Soft mast includes the fleshy fruits of black cherry, dogwood and serviceberry.

Matrix Block - Large contiguous areas dominated by forest cover whose size and natural condition allow for the maintenance of ecological processes, viable occurrences of matrix forest communities, embedded large and small patch communities, and embedded species populations. These areas represent the most viable examples of the dominant forest communities throughout the state.

Mesic - of sites or habitats characterized by intermediate moisture conditions, i.e., neither decidedly wet nor dry.

Multiple use - a strategy of land management fulfilling two or more objectives, e.g. forest products removal and recreation.

Native species - an indigenous species that is normally found as part of a particular ecosystem.

Natural area - an ecological community where physical and biological processes are allowed to operate without direct human intervention. (Helms, 1998)

Natural regeneration - the establishment of a forest stand from natural seeding, sprouting, suckering or layering.

Northern hardwood forest - a forest type usually made up of sugar and red maple, American beech, yellow birch, and to a lesser extent black cherry and white ash. This type represents about 70 percent of all forests in New York State.

Old growth -

1.) forests that approximate the structure, composition, and functions of native forest prior to European settlement. They vary by forest type, but generally include more large trees, canopy layers, standing snags, native species, and dead organic matter than do young or intensively managed forests.
2.) the definition of "Old Growth Forest" involves a convergence of many different, yet interrelated criteria. Each of these criteria can occur individually in an area that is not old growth; however, it is the presence of all of these factors that combine to differentiate "Old Growth Forest" from other forested ecosystems. These factors include: An abundance of late successional tree species, at least 180 - 200 years of age in a contiguous forested landscape that has evolved and reproduced itself naturally, with the capacity for self perpetuation, arranged in a stratified forest structure consisting of multiple growth layers throughout the canopy and forest floor, featuring (1) canopy gaps formed by natural disturbances creating an uneven canopy, and (2) a conspicuous absence of multiple stemmed trees and coppices. Old growth forest sites typically (1) are characterized by an irregular forest floor containing an abundance of coarse woody materials which are often covered by mosses and lichens; (2) show limited signs of human disturbance since European settlement; and (3) have distinct soil horizons that include definite organic, mineral, illuvial accumulation, and unconsolidated layers. The understory displays well developed and diverse surface herbaceous layers.

Overstory - that portion of the trees in a forest forming the upper or uppermost canopy layer.

Pioneer - a plant capable of invading bare sites (newly exposed soil) and persisting there or colonizing them until supplanted by successional species.

Pit and mound topography - an example of microsite topography that is the result of tree uprooting where the depression or pit is formed at the former location of the root structure and the mound is formed from the up-thrown roots and soil mass; creates heterogeneous soil and microclimatic conditions in ecosystems predisposed to tree uprooting.

Plantation - a stand composed primarily of trees established by planting or artificial seeding - a plantation may have tree or understory components that have resulted from natural regeneration.

Public forest access roads - permanent, unpaved roads marked for motor vehicle use. They may be designed for all-weather use depending on their location and surfacing. These roads provide primary access within the Unit. The standards for these roads are those of the Class A and Class B access roads.

Pulpwood - low grade or small diameter logs used to make paper products, wood chips, etc.

Recruitment (legacy) tree - A live tree permanently retained to eventually develop into a cavity tree, snag, or downed woody material (CWD and FWM) within the stand or to retain a unique feature on the landscape.

Reforestation - the re-establishment of forest cover by natural or artificial means.

Regeneration - naturally or artificially established seedlings or saplings existing in a forest stand.

Release -
1.) a treatment designed to free trees from undesirable, usually overtopping, competing vegetation.
2.) a treatment designed to free young trees not past the sapling stage from undesirable competing vegetation that overtops or closely surrounds them.

Residual stand - a stand composed of trees remaining after any type of intermediate harvest.

Riparian zone - an area adjoining a body of water, normally having soils and vegetation characteristic of floodplains or areas transitional to upland zones. These areas help protect the water by removing or buffering the effects of excessive nutrients, sediments, organic matter, pesticides, or pollutants.

Rotation - the period of years required to establish and grow timber crops to a specified maturity. Rotation being the predetermined time frame between successive harvest/ regeneration cuts in a given stand under even-aged management.

Sapling - a small tree, usually defined as being between 1 and 5 inches diameter at breast height.

Sawtimber - trees that are generally 12 inches and larger diameter at breast height.

Seedling - a young tree originating from seed that is less than 4 feet tall.

Seedling/sapling - trees less than 6 inches diameter at breast height.

Seed tree cut/method - the removal of the mature timber in one cutting, except for a small number of trees left singly, or in small groups, as a source of seed for natural regeneration.

Selective cut - a type of exploitation cutting that removes only certain species (a) above a certain size, (b) of high value; known silvicultural requirements and/or sustained yields being wholly or largely ignored or found impossible to fulfill. (Ford-Robertson, F. C. 1971)

Selection system - the removal of trees over the entire range of size classes either singly or in groups at relatively short intervals, resulting in continuous establishment of reproduction. Individual trees are chosen for removal due to their maturity because they are of poor quality or thinning is needed to improve the growth rate of the remaining trees.

Shade tolerance - the ability of a tree species to germinate and grow at various levels of shade.
Shade tolerant: having the capacity to compete for survival under shaded conditions.
Shade intolerant: having the capacity to compete for survival only under direct sunlight conditions; light demanding species.

Shelterwood cut/method - a regeneration action designed to stimulate reproduction by implementing a series of cuts over several years that will gradually remove the overstory trees. Gradual reduction of stand density protects understory trees and provides a seed source for stand regeneration.

Silviculture - the art and science of controlling the establishment, growth, composition, health, and quality of forests and woodlands to meet the diverse needs and values of landowners and society on a sustainable basis.

Snags - standing, dead trees, with or without cavities; function as perches, foraging sites and/or a source of cavities for dens, roosting and/or nesting for wildlife.

Softwoods - generally refers to needle and/or cone bearing trees (conifers) belonging to the botanical group Gymnospermae.

Species - the main category of taxonomic classification into which genera are subdivided, comprising a group of similar interbreeding individuals sharing a common morphology, physiology, and reproductive process.

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.

Stand structure - the horizontal and vertical distribution of components of a forest stand including the height, diameter, crown layers, and stems of trees, shrubs, herbaceous understory, snags, and downed woody debris.

State Forest / State Reforestation Area - lands owned by the State of New York, administered by the Department of Environmental Conservation and authorized by Environmental Conservation Law to be devoted to the establishment and maintenance of forests for watershed protection, the production of timber and other forest products, and for recreation and kindred purposes. These forests shall be forever devoted to the planting, growth and harvesting of such trees (Title 3 Article 9-0303 ECL).

Stumpage - The value of timber as it stands uncut.

Succession - the natural series of replacements of one plant community (and the associated fauna) by another over time and in the absence of disturbance.

Sustainable forest management - management that maintains and enhances the long-term health of forest ecosystems for the benefit of all living things, while providing environmental, economic, social and cultural opportunities for present and future generations.

Temporary Revocable Permit (TRP) - a Department permit which authorizes the use of State land for a specific purpose for a prescribed length of time.

Thinning - a silvicultural treatment made to reduce stand density of trees primarily to improve growth of remaining trees, enhance forest health, or recover potential mortality.

Threatened species - a species likely to become endangered in the foreseeable future, throughout all or a significant portion of its range, unless protected.

Timber stand improvement (TSI) - pre-commercial silvicultural treatments, intended to regulate stand density and species composition while improving wood product quality and fostering individual tree health and vigor, through the removal of undesirable trees.

Understory - the smaller vegetation (shrubs, seedlings, saplings, small trees) within a forest stand, occupying the vertical zone between the overstory and the herbaceous plants of the forest floor.

Uneven-aged system - a planned sequence of treatments designed to regenerate a stand with three or more age classes.

Uneven-aged stand/forest - a stand with trees of three or more distinct age classes, either intimately mixed or in small group

Variable retention - an approach to harvesting based on the retention of structural elements or biological legacies (trees, snags, logs, etc.) in the harvested stand to achieve various ecological objectives (i.e. structural complexity, riparian protection, habitat improvement). The structural elements may be retained singly or in patches.

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Watershed - a region or area defined by a network of stream drainage. A watershed includes all the land from which a particular stream or river is supplied.

Wetland - a transitional area between aquatic and terrestrial ecosystems that is inundated or saturated for periods long enough to produce hydric soils and support hydrophytic vegetation.

References

Atlas of Chenango County, New York, Pomeroy, Whitman & Co., Philadelphia, PA., 1875.

Bashant, A.L., & Nyland, R.D. et.al., 2005. The Role of Interfering Plants in Regenerating Hardwood Stands of Northeastern North America. *Maine Agricultural and Forest Experimental Station, Miscellaneous Publication 753.* http://www.umaine.edu/mafes/elec_pubs/miscpubs/mp753.pdf

Brinson, M. & Jos Verhoeven, 1999. Riparian Forests, Pps. 265-299 in Hunter: *Maintaining Biodiversity in Forest Ecosystems*. Cambridge University Press. Cambridge.

Brooklyn Botanic Garden, 2013. *Invasiveness Assessment Scores and Ranks for 183 Nonnative Plant Species in NYS*. New York State Office of Invasive Species Coordination, March 2013.

Calhoun, Aram. 1999. Forested Wetlands, Pps. 300-331 in Hunter: *Maintaining Biodiversity in Forest Ecosystems*. Cambridge University Press. Cambridge.

Canham, H.O. & K.S.King. 1998. *Just the Facts: An Overview of New York's Wood-Based Economy and Forest Resource*. Empire State Forest Products Association. Albany, NY.

Chandler, C.C, D.I. King and R.B. Chandler. 2012. Do mature forest birds prefer early-successional habitat during the post-fledging period? *Forest Ecology and Management* 264:1-9

Commerce Chenango. *Corporate Neighbors*. http://chenangony.org/chamber/corporate-neighbors/, last accessed December 19, 2014.

Crocoll, Scott, 2013. *Raptor Management on State Forests*. Internal DEC report.

Eyre, F.H. 1980. *Forest Cover Types of the United States and Canada*. Society of American Foresters. Washington DC.

Fitchen, Janet M. 1991. *Endangered Spaces, Enduring Places: Change, Identity, and Survival in Rural America*. Boulder. Westview Press.

Franklin, Jerry F. Dean Rae Berg, Dale A. Thornburgh and John C. Tappeiner. 1997. Alternative Silviculture Approaches to Timber Harvesting: Variable Retention Harvest Systems. Pps. 111-139. In Kohm, Kathryn A. and Jerry F. Franklin (editors) Creating a Forestry for the 21st Century: The Science of Ecosystem Management. Island Press. Washington DC.

Germain et.al., 2006. Forestland Parcelization in Upstate New York Despite Economic Stagnation and a Declining Population. *Northern Journal of Applied Forestry*, 23 (4), Dec. 2006.

Hagan, William T. 1975. *Longhouse Diplomacy and Frontier Warfare*. Albany. New York State Education Department.

Hunter, Malcom L. ed. 1999. *Maintaining Biodiversity in Forest Ecosystems*. Cambridge University Press. Cambridge.

Hunter, Malcom L. 1991. *Wildlife, Forests & Forestry*. Prentice Hall. Englewood Cliffs, NJ.

Lindenmayer, David B. and Jerry F. Franklin. 2002. *Conserving Forest Biodiversity: A Comprehensive Multiscaled Approach*. Island Press. Washington DC.

McKibben, Bill. 1995. An Explosion of Green. *The Atlantic Monthly*. Vol.275, No.4

Nash, Roderick. 1974. *Wilderness and the American Mind*. New Haven. Yale University Press.

New York State Library. *Census of the State of New York, For 1845. County of Chenango*. Albany: http://www.nysl.nysed.gov/scandocs/nyscensus.htm , last accessed 12/19/14.

New York State Library. *Population Figures for the Cities, Incorporated Villages, Towns, and Counties, Census of June 1, 1925.* Albany: http://www.nysl.nysed.gov/scandocs/nyscensus.htm , last accessed 12/19/14.

North East State Foresters Association, 2013. *The Economic Importance of New York's Forest Based Economy 2013*. Accessed March 2014. http://www.nefainfo.org/publications.html

North East State Foresters Association, 2004. *The Economic Importance of New York's Forests, 2004.* Accessed March 2013. http://www.nefainfo.org/publications/2004_nefa_ei_ny.pdf

NYSDEC, 2005. New York State Comprehensive Wildlife Conservation Strategy (CWCS) Last accessed January 2016. http://www.dec.ny.gov/animals/30483.html

NYS DEC, 2006-2015. Stumpage Price Reports. Division of Lands & Forests. Albany, NY. http://www.dec.ny.gov/lands/5259.html

NYS DEC, 2015. State Wildlife Action Plan (SWAP). http://www.dec.ny.gov/animals/7179.html

NYS DEC, Strategic Plan for State Forest Management, 2010. http://www.dec.ny.gov/lands/64567.html

NYS DEC, 2006 Regeneration Study on State Forests in Madison, Chenango and Broome Counties. unpublished and in progress.

NYS DEC, 2011. Revised Draft SGEIS on the Oil, Gas and Solution Mining Regulatory Program, 2011. http://www.dec.ny.gov/energy/75370.html

NYS DEC, 2005. Breeding Bird Atlas Data and Maps. http://www.dec.ny.gov/animals/51030.html

NYS DEC, 1987. *Checklist of the Amphibians, Reptiles, Birds and Mammals of New York State, Including Their Protective Status*. Albany

NYS OPRHP, 2014. *New York State Statewide Comprehensive Outdoor Recreation Plan* 2014-2019. Albany

NYS OPRHP, 2014. Snowmobile Unit's 2013-2014 Season Report. Albany

Parkerson, Donald. 1995. *The Agricultural Transition in New York State*. Ames. Iowa State University Press.

Patton, Thomas W. 2001. "A Forest Camp Disgrace": The Rebellion of Civilian Conservation Corp Workers at Preston, New York, July 7, 1933. *New York History*. Vol. 82 No. 3. New York State Historical Association. Cooperstown.

Patton, Thomas W. 1994. Forestry and Politics: Franklin D. Roosevelt as Governor of New York. *New York History*. New York State Historical Association. Cooperstown.

Reschke, Carol. 2014 *Ecological Communities of New York State*. New York Natural Heritage Program. NYSDEC. Latham NY

Ritchie, William A. 1994. *The Archeology of New York State*. Fleischmanns, NY. Purple Mountain Press.

School Digger. *Green Schools, Oxford Schools, Norwich Schools*. http://www.schooldigger.com/, last accessed December 19, 2014.

Taylor, Alan. 1995. The Great Change Begins: Settling the Forest of Central New York. *New York History*. Vol. LXXV. No. 3 pp.265-290.

U.S. Census Bureau. *Census 2010 Summary*. Washington DC: http://www.census.gov , last accessed December 19, 2014.

U.S. Department of Agriculture. Census of Agriculture 2012. County Profiles. http://www.agcensus.usda.gov/Publications/2012/Online_Resources/County_Profiles/NewYork/# Last accessed August 12, 2014

U.S. Department of Agriculture. 1985. *Soil Survey of Chenango County, New York*. Washington DC

Vitz, A.C., A.D. Rodewald. 2006. Can regenerating clearcuts benefit mature-forest songbirds? An examination of post-breeding ecology. *Biological Conservation*, 127:477-486.

APPENDICES

APPENDIX I WETLANDS

Classified Freshwater Wetlands on the Unit

Forest	Compartment	Stand	Acres	Wetland ID	Class
Chenango 1	D	1.00	39.4	EP9	2
Chenango 1	D	28,32,33.2,33.3,33.4,34,35,42.2	74.5	EP10	2
Chenango 1	E	39,41,41	20.2	EP10	2
Chenango 1	E	49,63	15.5	EP12	3
Chenango 1	F	42	43.4	T5	1
Chenango 1	H	6,7,8,10,17	15.0	T3	2
Chenango 6	A	15,16,17.2,25	20.4	T9	2
Chenango 6	A	2,3,9	12.4	T8	2
Chenango 6	A	28,30,36,37,38	26.4	T10	1
Chenango 6	B	11,12,23	14.4	T12	2
Chenango 6	F	41,42	14.6	T13	2
Chenango 26	A	20,21	24.3	T2	2
Chenango 6	D	3.00	10.8	T7	2
Chenango 26	D	10,19	43.4	SF12	2
Chenango 26	D	22,24.1,24.2	19.8	SF13	2
Chenango 26	D	43,44	18.5	SF14	3

Unclassified Freshwater Wetlands on the Unit

Forest	Compartment	Stand	Acres	Forest Type
Chenango 1	A	5.00	9.8	NH-Hem
Chenango 1	A	7.00	7.0	NS
Chenango 1	A	18.00	9.7	Hem
Chenango 1	A	23.00	7.7	RP-NH
Chenango 1	A	24.00	6.6	NH-RP
Chenango 1	A	31.40	22.6	NH
Chenango 1	A	36.00	7.1	Hem
Chenango 1	A	37.00	2.4	Wet-Alder
Chenango 1	A	38.00	3.0	NH
Chenango 1	B	1.00	8.6	NH
Chenango 1	B	5.00	7.0	NH-Hem
Chenango 1	B	6.00	5.8	NH-Hem
Chenango 1	B	8.00	1.7	NH
Chenango 1	B	10.00	18.5	PH
Chenango 1	B	14.00	3.8	Hem
Chenango 1	B	16.00	2.1	NH
Chenango 1	B	19.00	9.5	Wet-Alder
Chenango 1	B	21.00	8.7	NH-WS
Chenango 1	B	22.00	6.3	NH-Hem
Chenango 1	B	37.20	2.5	SP-NH
Chenango 1	C	11.10	12.5	NH-Hem
Chenango 1	C	22.00	5.7	NH-Hem
Chenango 1	D	5.10	15.6	NH-Hem
Chenango 1	D	10.20	8.8	NH-Hem
Chenango 1	D	15.00	7.0	NH-Hem
Chenango 1	D	18.00	8.1	NH-NS
Chenango 1	D	20.20	0.9	WP-Hem
Chenango 1	D	23.40	1.9	NH
Chenango 1	D	24.00	12.6	NH-Hem
Chenango 1	D	27.00	7.4	NH-Hem
Chenango 1	D	32.00	5.7	NH
Chenango 1	E	13.20	1.7	Wet-Alder
Chenango 1	E	28.00	21.0	RP-NH
Chenango 1	E	33.20	5.0	NH
Chenango 1	E	47.00	11.9	NH-Hem
Chenango 1	E	49.00	119.9	NH-Hem
Chenango 1	E	57.00	4.2	Wet-Alder
Chenango 1	E	58.00	4.6	Pond
Chenango 1	E	59.00	5.4	NH-Hem

Chenango 1	E	61.00	23.4	NH-Hem
Chenango 1	E	64.00	31.7	NH-Hem
Chenango 1	E	65.00	8.2	NH
Chenango 1	F	6.00	40.5	NH-WP
Chenango 1	F	7.20	1.8	NH-Hem
Chenango 1	F	24.00	9.3	NH-Hem
Chenango 1	F	32.00	2.0	NH
Chenango 1	F	38.30	8.0	BR
Chenango 1	F	40.30	1.6	Wet-Alder
Chenango 1	F	41.30	0.7	NS-NH
Chenango 1	F	41.40	5.0	NS-BR
Chenango 1	F	42.00	56.9	Wet-Alder
Chenango 1	F	53.00	9.3	NH
Chenango 1	F	55.00	17.6	Wet-Alder
Chenango 1	G	4.00	7.1	NH-Hem
Chenango 1	G	13.00	2.3	NH-Hem
Chenango 1	G	17.00	21.1	PH
Chenango 1	G	18.00	18.0	WP-Hem
Chenango 1	G	32.00	22.3	Hem
Chenango 1	H	6.00	2.9	NH-Hem
Chenango 1	H	13.00	1.8	NS
Chenango 1	H	24.00	18.4	NH-Hem
Chenango 1	H	31.20	5.2	WS-PH
Chenango 1	I	30.30	2.1	NS-RP
Chenango 1	I	33.20	6.3	PH
Chenango 1	I	35.20	2.0	RP
Chenango 1	I	36.00	10.5	NH-RO
Chenango 1	I	41.00	6.0	SH
Chenango 1	I	43.20	6.0	NH-Hem
Chenango 1	I	44.00	21.2	Hem
Chenango 6	A	10.00	6.8	NH-Hem
Chenango 6	A	11.00	13.0	NH-Hem
Chenango 6	A	19.00	9.0	PH
Chenango 6	A	39.10	8.7	NH-WP
Chenango 6	A	39.20	2.1	NH-Hem
Chenango 6	A	44.00	1.9	Hem
Chenango 6	B	6.00	1.5	Hem
Chenango 6	B	15.00	18.7	Hem
Chenango 6	B	16.10	8.7	Hem
Chenango 6	B	16.20	0.9	NH
Chenango 6	C	11.00	32.6	NH-Hem

Chenango 6	C	23.00	2.1	NH
Chenango 6	C	31.00	7.5	NH-Hem
Chenango 6	C	39.00	7.4	WP-Hem
Chenango 6	D	5.00	1.7	NS
Chenango 6	D	13.20	2.9	SH
Chenango 6	D	19.00	4.2	Wet-Alder
Chenango 6	D	23.00	31.2	Hem
Chenango 6	D	39.00	2.8	Wet-Alder
Chenango 6	F	14.00	28.8	Wet-Alder
Chenango 6	F	25.00	5.3	NH
Chenango 6	F	38.00	4.0	NH-NS
Chenango 11	A	2.00	6.8	Wet-Open
Chenango 11	A	3.00	15.8	BR
Chenango 11	A	9.10	20.9	Wet-Alder
Chenango 11	A	9.20	2.8	BR
Chenango 11	A	13.00	8.6	Wet-Open
Chenango 11	A	14.10	6.7	NH
Chenango 11	A	14.20	4.7	Wet-Alder
Chenango 11	A	25.00	6.5	NH-WP
Chenango 11	A	29.00	6.0	Wet-Open
Chenango 11	A	32.00	10.2	WC-NH
Chenango 11	A	38.00	1.5	NH-WP
Chenango 26	A	24.30	1.3	Wet-Open
Chenango 26	A	32.00	1.0	NH
Chenango 26	B	15.00	6.5	Wet-Open
Chenango 26	B	16.10	8.9	Wet-Alder
Chenango 26	C	32.50	2.3	WS
Chenango 26	D	5.20	2.4	NH-Wet-Alder
Chenango 26	D	6.20	2.0	NH-WP
Chenango 26	D	14.40	3.2	NH
Chenango 26	D	16.00	17.3	NH-Hem-WP
Chenango 26	D	37.00	5.2	WP-Hem
Chenango 26	D	38.20	4.7	WP-Hem
Chenango 26	D	38.50	3.3	NH-Hem
Chenango 26	D	53.30	1.2	NH-WP

APPENDIX II Code Definitions

Code Definitions for Protective Status of Wildlife on the McDonough Management Unit

The protective status of species listed in Appendices III, IV, and V is based on Federal and State regulations. Following column entries for common and scientific names, a "protective status" category appears. The following definitions are adopted for the terms as used in The Checklist of Amphibians, Reptiles, Birds, and Mammals of New York State, Including their Protective Status.

Code	Federal Definitions
E	*Endangered Species* are determined by the U. S. Department of the Interior to be in danger of extinction throughout all or a significant portion of their range. All such species are fully protected, including their habitat.
T	*Threatened Species* are determined by the U. S. Department of the Interior as likely to become endangered within the foreseeable future throughout all or a significant portion of their range. All such species are fully protected.
UN	*"Unprotected"* under Federal Law.
Code	**State Definitions**
P	*Protected* wildlife means "wild game, protected wild birds, and endangered species of wildlife" as defined in the Environmental Conservation Law.
E	*Endangered Species* are determined by the DEC to be in imminent danger of extinction or extirpation in New York State, or are federally listed as endangered. All such species are fully protected under New York State Environmental Conservation Law.
T	*Threatened Species* are determined by the DEC as likely to become endangered within the foreseeable future in New York State, or are Federally listed as threatened. All such species are fully protected under the New York State Environmental Conservation Law.
SC	*Special Concern Species* are those native species that are not yet recognized as endangered or threatened, but for which documented evidence exists relating to their continued welfare in New York State. The Special Concern category exists within DEC rules and regulations, but such designation does not in itself provide any additional protection. However, Special Concern species may be protected under other laws.
GS	*Game species* are defined as "big game", "small game", or "game bird" species as stated in the Environmental Conservation Law; many normally have an open season for at least part of the year, and are protected at other times.
UN	*Unprotected* means that the species may be taken at any time without limit. However, a license to take may be required.

APPENDIX III BIRDS

Species of Birds On or In the Vicinity of the McDonough Unit. 2000-2004 New York State Breeding Bird Atlas Data.

Breeding Birds Surveyed on or Within the Vicinity of the Unit

Common Name	Scientific Name	Breeding Status	NY Legal Status
Acadian Flycatcher	*Empidonax virescens*	PO	Protected
Alder Flycatcher	*Empidonax alnorum*	CO	Protected
American Crow	*Corvus brachyrhynchos*	CO	Game Species
American Goldfinch	*Spinus tristis*	CO	Protected
American Kestrel	*Falco sparverius*	CO	Protected
American Redstart	*Setophaga ruticilla*	CO	Protected
American Robin	*Turdus migratorius*	CO	Protected
American Woodcock	*Scolopax minor*	CO	Game Species
Baltimore Oriole	*Icterus galbula*	CO	Protected
Bank Swallow	*Riparia riparia*	CO	Protected
Barn Swallow	*Hirundo rustica*	CO	Protected
Barred Owl	*Strix varia*	PR	Protected
Belted Kingfisher	*Megaceryle alcyon*	PR	Protected
Black-and-white Warbler	*Mniotilta varia*	CO	Protected
Black-billed Cuckoo	*Coccyzus erythropthalmus*	PR	Protected
Blackburnian Warbler	*Dendroica fusca*	CO	Protected
Black-capped Chickadee	*Poecile atricapillus*	CO	Protected
Black-throated Blue Warbler	*Dendroica caerulescens*	PR	Protected
Black-throated Green Warbler	*Dendroica virens*	CO	Protected
Blue Jay	*Cyanocitta cristata*	CO	Protected
Blue-headed Vireo	*Vireo solitarius*	CO	Protected
Blue-winged Teal	*Anas discors*	PO	Game Species
Blue-winged Warbler	*Vermivora pinus*	CO	Protected
Bobolink	*Dolichonyx oryzivorus*	CO	Protected
Broad-winged Hawk	*Buteo platypterus*	CO	Protected
Brown Creeper	*Certhia americana*	PR	Protected
Brown Thrasher	*Toxostoma rufum*	PR	Protected
Brown-headed Cowbird	*Molothrus ater*	CO	Protected
Canada Goose	*Branta canadensis*	CO	Game Species
Canada Warbler	*Wilsonia canadensis*	CO	Protected
Cedar Waxwing	*Bombycilla cedrorum*	CO	Protected
Chestnut-sided Warbler	*Dendroica pensylvanica*	CO	Protected
Chimney Swift	*Chaetura pelagica*	CO	Protected
Chipping Sparrow	*Spizella passerina*	CO	Protected

Common Name	Scientific Name	Breeding Status	NY Legal Status
Cliff Swallow	*Petrochelidon pyrrhonota*	CO	Protected
Common Grackle	*Quiscalus quiscula*	CO	Protected
Common Merganser	*Mergus merganser*	CO	Game Species
Common Raven	*Corvus corax*	PR	Protected
Common Yellowthroat	*Geothlypis trichas*	CO	Protected
Cooper's Hawk	*Accipiter cooperii*	CO	Protected-Special Concern
Dark-eyed Junco	*Junco hyemalis*	CO	Protected
Downy Woodpecker	*Picoides pubescens*	CO	Protected
Eastern Bluebird	*Sialia sialis*	CO	Protected
Eastern Kingbird	*Tyrannus tyrannus*	CO	Protected
Eastern Meadowlark	*Sturnella magna*	CO	Protected
Eastern Phoebe	*Sayornis phoebe*	CO	Protected
Eastern Screech-Owl	*Megascops asio*	CO	Protected
Eastern Towhee	*Pipilo erythrophthalmus*	CO	Protected
Eastern Wood-Pewee	*Contopus virens*	CO	Protected
European Starling	*Sturnus vulgaris*	CO	Unprotected
Field Sparrow	*Spizella pusilla*	CO	Protected
Fish Crow	*Corvus ossifragus*	PR	Protected
Golden-crowned Kinglet	*Regulus satrapa*	PR	Protected
Golden-winged Warbler	*Vermivora chrysoptera*	PO	Protected-Special Concern
Gray Catbird	*Dumetella carolinensis*	CO	Protected
Great Blue Heron	*Ardea herodias*	CO	Protected
Great Crested Flycatcher	*Myiarchus crinitus*	CO	Protected
Great Horned Owl	*Bubo virginianus*	PR	Protected
Green Heron	*Butorides virescens*	PR	Protected
Hairy Woodpecker	*Picoides villosus*	CO	Protected
Hermit Thrush	*Catharus guttatus*	CO	Protected
Hooded Merganser	*Lophodytes cucullatus*	CO	Game Species
Horned Lark	*Eremophila alpestris*	PR	Protected-Special Concern
House Finch	*Carpodacus mexicanus*	CO	Protected
House Sparrow	*Passer domesticus*	CO	Unprotected
House Wren	*Troglodytes aedon*	CO	Protected
Indigo Bunting	*Passerina cyanea*	CO	Protected
Killdeer	*Charadrius vociferus*	CO	Protected
Least Flycatcher	*Empidonax minimus*	CO	Protected
Louisiana Waterthrush	*Seiurus motacilla*	CO	Protected
Magnolia Warbler	*Dendroica magnolia*	PR	Protected
Mallard	*Anas platyrhynchos*	CO	Game Species
Mourning Dove	*Zenaida macroura*	CO	Protected
Mourning Warbler	*Oporornis philadelphia*	CO	Protected

Common Name	Scientific Name	Breeding Status	NY Legal Status
Nashville Warbler	*Vermivora ruficapilla*	CO	Protected
Northern Cardinal	*Cardinalis cardinalis*	CO	Protected
Northern Flicker	*Colaptes auratus*	CO	Protected
Northern Goshawk	*Accipiter gentilis*	PR	Protected-Special Concern
Northern Mockingbird	*Mimus polyglottos*	PO	Protected
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	CO	Protected
Northern Waterthrush	*Seiurus noveboracensis*	CO	Protected
Osprey	*Pandion haliaetus*	PO	Protected-Special Concern
Ovenbird	*Seiurus aurocapilla*	CO	Protected
Pied-billed Grebe	*Podilymbus podiceps*	PR	Threatened
Pileated Woodpecker	*Dryocopus pileatus*	PR	Protected
Pine Siskin	*Spinus pinus*	CO	Protected
Prairie Warbler	*Dendroica discolor*	PO	Protected
Purple Finch	*Carpodacus purpureus*	CO	Protected
Red Crossbill	*Loxia curvirostra*	CO	Protected
Red-bellied Woodpecker	*Melanerpes carolinus*	PO	Protected
Red-breasted Nuthatch	*Sitta canadensis*	CO	Protected
Red-eyed Vireo	*Vireo olivaceus*	CO	Protected
Red-shouldered Hawk	*Buteo lineatus*	CO	Protected-Special Concern
Red-tailed Hawk	*Buteo jamaicensis*	CO	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	CO	Protected
Ring-necked Pheasant	*Phasianus colchicus*	PO	Game Species
Rock Pigeon	*Columba livia*	PR	Unprotected
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	CO	Protected
Ruby-throated Hummingbird	*Archilochus colubris*	CO	Protected
Ruffed Grouse	*Bonasa umbellus*	CO	Game Species
Savannah Sparrow	*Passerculus sandwichensis*	CO	Protected
Scarlet Tanager	*Piranga olivacea*	CO	Protected
Sharp-shinned Hawk	*Accipiter striatus*	PR	Protected-Special Concern
Song Sparrow	*Melospiza melodia*	CO	Protected
Spotted Sandpiper	*Actitis macularius*	PR	Protected
Swainson's Thrush	*Catharus ustulatus*	PR	Protected
Swamp Sparrow	*Melospiza georgiana*	CO	Protected
Tree Swallow	*Tachycineta bicolor*	CO	Protected
Tufted Titmouse	*Baeolophus bicolor*	CO	Protected
Turkey Vulture	*Cathartes aura*	PR	Protected
Veery	*Catharus fuscescens*	CO	Protected
Vesper Sparrow	*Pooecetes gramineus*	CO	Protected-Special Concern
Virginia Rail	*Rallus limicola*	PO	Game Species
Warbling Vireo	*Vireo gilvus*	CO	Protected

Common Name	Scientific Name	Breeding Status	NY Legal Status
White-breasted Nuthatch	*Sitta carolinensis*	CO	Protected
White-throated Sparrow	*Zonotrichia albicollis*	CO	Protected
Wild Turkey	*Meleagris gallopavo*	CO	Game Species
Willow Flycatcher	*Empidonax traillii*	PR	Protected
Wilson's Snipe	*Gallinago delicata*	PR	Game Species
Winter Wren	*Troglodytes troglodytes*	PR	Protected
Wood Duck	*Aix sponsa*	CO	Game Species
Wood Thrush	*Hylocichla mustelina*	CO	Protected
Yellow Warbler	*Dendroica petechia*	CO	Protected
Yellow-bellied Sapsucker	*Sphyrapicus varius*	CO	Protected
Yellow-billed Cuckoo	*Coccyzus americanus*	PO	Protected
Yellow-rumped Warbler	*Dendroica coronata*	CO	Protected
Yellow-throated Vireo	*Vireo flavifrons*	PR	Protected

APPENDIX IV REPTILES & AMPHIBIANSREPTILES & AMPHIBIANS

Reptiles and Amphibians on or Near the Vicinity of the Unit

Common Name	Scientific Name	NYS Legal Status
Spotted Salamander	*Ambystoma maculatum*	Game Species -No season
Red-spotted Newt	*Notophthalmus v. viridescens*	Game Species – No season
Northern Dusky Salamander	*Desmognathus fuscus*	Game Species – No season
Allegheny Dusky Salamander	*Desmognathus ochrophaeus*	Game Species – No season
Northern Redback Salamander	*Plethodon c. cinereus*	Game Species – No season
Northern Spring Salamander	*Gyrinophilus p. porphyriticus*	Game Species – No season
Northern Two-lined Salamander	*Eurycea bislineata*	Game Species – No season
Eastern American Toad	*Bufo a. americanus*	Game Species
Gray Treefrog	*Hyla versicolor*	Game Species
Northern Spring Peeper	*Pseudacris c. crucifer*	Game Species
Bullfrog	*Rana catesbeiana*	Game Species
Green Frog	*Rana clamitans melanota*	Game Species
Wood Frog	*Rana sylvatica*	Game Species
Northern Leopard Frog	*Rana pipiens*	Game Species
Pickerel Frog	*Rana palustris*	Game Species
Common Snapping Turtle	*Chelydra s. serpentina*	Game Species
Wood Turtle	*Clemmys insculpta*	Game Species – No season – Species of Concern*
Painted Turtle	*Chrysemys picta*	Game Species – No season
Northern Water Snake	*Nerodia s. sipedon*	Game Species – No season
Northern Redbelly Snake	*Storeria o. occipitomaculata*	Game Species – No season
Common Garter Snake	*Thamnophis sirtalis*	Game Species – No season
Northern Ringneck Snake	*Diadophis punctatus edwardsii*	Game Species – No season
Smooth Green Snake	*Liochlorophis vernalis*	Game Species – No season
Eastern Milk Snake	*Lampropeltis t. triangulum*	Game Species – No season

- Information obtained from the Reptiles and Amphibians Atlas from 1990-2007 via NYS DEC website, as well as the Checklist of Amphibians, Reptiles, Birds, and Mammals of New York State (2010) and Herp Atlas layer in ArcMap.

*** -** Special Concern status of species are based on the Checklist of Amphibians, Reptiles, Birds, and Mammals of New York State (2010).

APPENDIX V MAMMALS

Mammals on or Near the Vicinity of the McDonough Unit

Common Name	Scientific Name	Confirmed/ Predicted	Protective Status	
			Federal	State
Virginia Opossum	Didelphis virginiana	P	UN	GS
Masked Shrew	Sorex cinereus	C	UN	UN
Smoky Shrew	Sorex fumeus	C	UN	UN
Pygmy Shrew	Sorex hoyi	P	UN	UN
N. Short-tailed Shrew	Blarina brevicauda	C	UN	UN
Least Shrew	Cryptotis parva	P	UN	UN
Hairy-tailed Mole	Parascalops breweri	P	UN	UN
Star-nosed Mole	Condylura cristata	P	UN	UN
Little Brown Bat	Myotis lucifugus	C	UN	UN
Indiana Mytosis	Myotis sodalis	P	E	E
E. small-footed Bat	Myotis leibii	P	UN	P-SC
Northern Mytosis (Keen's Myotis)	Myotis septentrionalis	C	UN	UN
Silver-haired Bat	Lasionycteris noctivagans	P	UN	UN
Eastern Pipistrelle	Pipistrellus subflavus	P	UN	UN
Big Brown Bat	Eptesicus fuscus	C	UN	UN
Eastern Red Bat	Lasiurus borealis	P	UN	UN
Hoary Bat	Lasiurus cinereus	P	UN	UN
Eastern Cottontail	Sylvilagus floridanus	P	UN	GS
Snowshoe Hare	Lepus americanus	P	UN	GS
Eastern Chipmunk	Tamias striatus	C	UN	UN
Woodchuck	Marmota monax	P	UN	UN
Eastern Gray Squirrel	Sciurus carolinensis	P	UN	GS
Red Squirrel	Tamiasciurus hudsonicus	C	UN	UN
Southern Flying Squirrel	Glaucomys volans	P	UN	UN
Northern Flying Squirrel	Glaucomys sabrinus	P	UN	UN
American Beaver	Castor canadensis	C	UN	GS
Deer Mouse	Peromyscus maniculatus	C	UN	UN
White-footed Mouse	Peromyscus leucopus	P	UN	UN
Southern Red-backed Vole	Clethrionomys gapperi	C	UN	UN
Meadow Vole	Microtus pennsylvanicus	P	UN	UN
Woodland Vole	Microtus pinetorum	P	UN	UN
Common Muskrat	Ondatra zibethicus	P	UN	GS
Southern Bog Lemming	Synaptomys cooperi	P	UN	UN
Meadow Jumping Mouse	Zapus hudsonius	C	UN	UN
Woodland Jumping Mouse	Napaeozapus insignis	P	UN	UN

Common Name	Scientific Name	Confirmed/ Predicted	Protective Status	
			Federal	State
Porcupine	Erethizon dorsatum	P	UN	UN
Coyote	Canis latrans	C	UN	GS
Red Fox	Vulpes vulpes	P	UN	GS
Gray Fox	Urocyon cinereoargentus	P	UN	GS
Black Bear	Ursus americanus	P	UN	GS
Common Raccoon	Procyon lotor	P	UN	GS
Fisher	Martes pennanti	P	UN	GS
Short-tailed Weasel (Ermine)	Mustela erminea	C	UN	GS
Long-tailed Weasel	Mustela frenata	P	UN	GS
Mink	Mustela vison	P	UN	GS
Striped Skunk	Mephitis mephitis	P	UN	GS
River Otter	Lutra canadensis	C	UN	GS
Bobcat	Lynx rufus	C	UN	GS
White-tailed Deer	Odocoileus virginianus	C	UN	GS
House Mouse	Mus musculus	P	UN	UN
Norway Rat	Rattus norvegicus	P	UN	UN

Sources: Adapted from The New York Gap Program, U.S. EPA Hexagons 414 and Checklist of Amphibians, Reptiles, Birds and Mammals of New York State: Including Their Protective Legal Status, 2010.

APPENDIX VI FISH

Resident Fish Species On The Unit

Common Name	Scientific Name
Blacknose dace	*Rhinichthys altratulus*
Brook trout	*Salvelinus fontinalis*
Brown bullhead	*Ictalurus nebulosus*
Brown trout	*Salmo trutta*
Burbot	*Lota lota*
Central stoneroller	*Campostoma anomalum*
Chain pickerel	*Esox niger*
Common Carp	*Cyprinus carpio*
Common shiner	*Notropis cornutus*
Creek chub	*Semotilus atronawlatus*
Cutlips minnow	*Exoglossum maxillingua*
Fallfish	*Semotilus corporalis*
Longnose dace	*Rhinichthys caractae*
Margined madtom	*Noturus insignis*
Mottled sculpin	*Cottus bairdi*
Pearl dace	*Semotilus margarita*
Pumpkinseed	*Lepomis gibbosus*
Redside dace	*Clinostomus elongates*
River chub	*Nocomis micropogon*
Rock bass	*Amblophlites rupestris*
Rosyface shiner	*Notropis rubellus*
Smallmouth bass	*Micropterus dolomieui*
Tessellated darter	*Etheostoma olmstedi*
Walleye	*Sander vitreus*
White sucker	*Catostomus commersonnii*

APPENDIX VII TREES

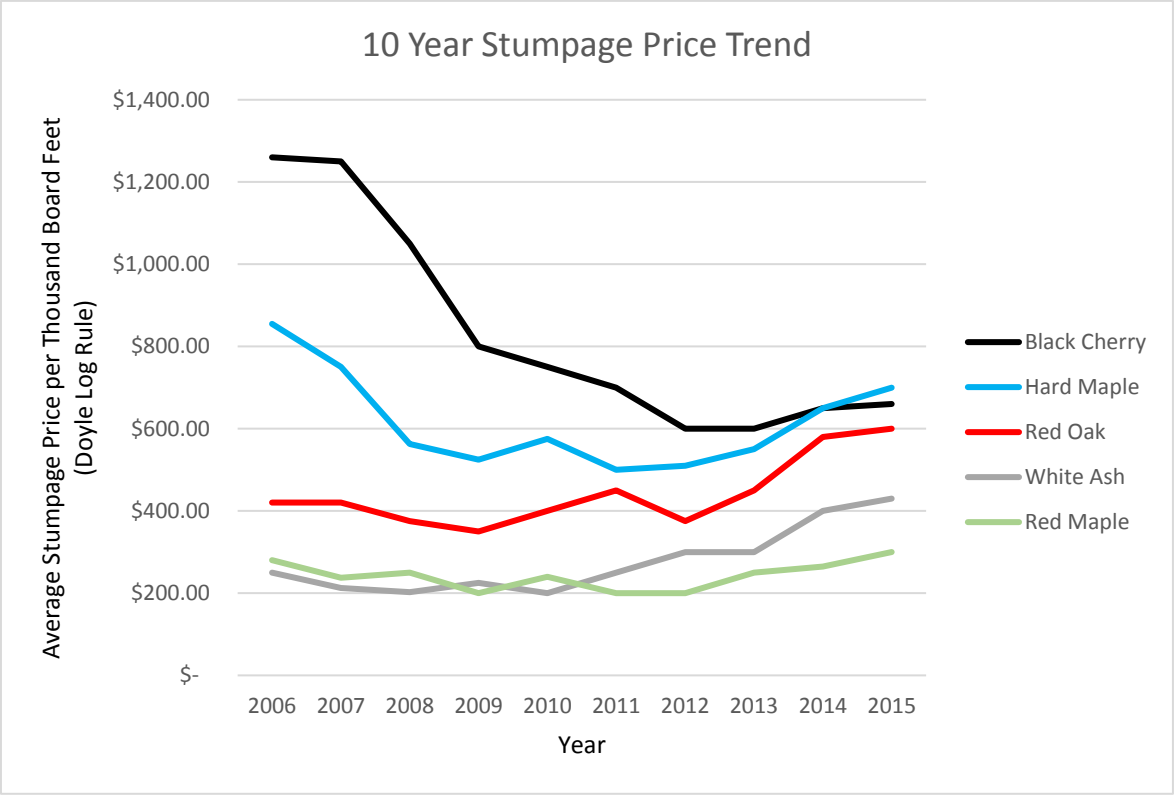
Tree Species on the Unit

Common Name	Scientific Name
Alder, Speckled	*Alnus rugosa*
Apple	*Malus spp.*
Ash, Black	*Fraxinus nigra*
Ash, White	*Fraxinus americana*
Aspen, Bigtooth	*Populus grandidentata*
Aspen, Quaking	*Populus tremuloides*
Basswood, American	*Tilia americana*
Beech, American	*Fagus grandifolia*
Birch, Black	*Betula lenta*
Birch, Gray	*Betula populifolia*
Birch, Yellow	*Betula alleghaniensis*
Birch, White	*Betula papyrifera*
Buckthorn, European	*Rhamnus cathartica*
Butternut	*Juglans cinerea*
Cedar, Northern white	*Thuja occidentalis*
Cherry, Black	*Prunus serotina*
Cherry, Pin	*Prunus pensylvanicum*
Elm, American	*Ulmus americana*
Elm, Slippery	*Ulmus rubra*
Fir, Balsam	*Abies balsamea*
Hawthorn	*Crataegus spp.*
Hickory, Bitternut	*Carya cordiformis*
Hemlock, Eastern	*Tsuga canadensis*
Hophornbeam, American	*Ostrya virginiana*
Hornbeam, American	*Carpinus caroliniana*
Larch, European	*Larix decidua*
Larch, Japanese	*Larix leptolepis*
Locust, Black	*Robinia pseudoacacia*
Maple, Red	*Acer rubrum*
Maple, Striped	*Acer pensylvanicum*
Maple, Sugar	*Acer saccharum*
Mountain ash, American	*Sorbus americana*
Oak, Red	*Quercus rubra*
Pine, Jack	*Pinus banksiana*
Pine, Red	*Pinus resinosa*
Pine, Scotch	*Pinus sylvestris*
Pine, White	*Pinus strobus*

Common Name	Scientific Name
Serviceberry	*Amelanchier arborea*
Spruce, Norway	*Picea abies*
Spruce, Red	*Picea rubens*
Spruce, White	*Picea glauca*
Sumac, Staghorn	*Rhus typhina*
Willow	*Salix spp.*

APPENDIX VIII STUMPAGE PRICE TRENDS

Ten Year Stumpage Price Trends



Source: NYS DEC Stumpage Price Reports

APPENDIX IX PROPERTY TAXES

2018 Assessments and Local Taxes Paid on the Unit

Towns	State Forest	Acres	Assessment ($)	Town Tax($)	School Tax ($)	Total Tax ($)
McDonough	CRA#1,6,26	6,968	$10,422,200	$80,275	$240,673	$320,948
Preston	CRA#1,11	1,661	$658,315	$11,390	$30,516	$41,906
Smithville	CRA#6,26	4,600	$5,623,000	$51,029	$175,224	$226,253
Totals		**13,229**	**$16,703,515**	**$142,694**	**$446,413**	**$589,107**

Source: Chenango County Real Property Tax Services

APPENDIX X DEPARTMENT LAWS, RULES, REGULATIONS, AND POLICIES

Environmental Conservation Laws

ECL Article 8	Environmental Quality Review
ECL Article 9	Lands and Forests
ECL Article 11	Fish and Wildlife
ECL Article 15	Water Resources
ECL Article 23	Mineral Resources
ECL Article 24	Freshwater Wetlands
ECL Article 33	Pesticides
ECL Article 51	Implementation of Environmental Quality Bond Act/1972
ECL Article 52	Implementation of Environmental Quality Bond Act/1972
ECL Article 71	Enforcement

Rules & Regulations Pertaining to New York State Public Lands

***The New York Code of Rules and Regulations* - Part 190 - Use of State Forests - Part 190 - Use of State Forests**

Section 190.1 - Fire - no fires permitted except for cooking, warmth, or smudge. Also specifies depositing matches, etc. and using live trees for fuel prohibited.

Section 190.2 - Signs and structures - no person shall deface, mutilate or destroy, etc. This section also includes the prohibition of placing trash, garbage, etc.

Section 190.3 - Camping sites - sites must be kept neat, 150 feet from trail, road, stream, pond, spring, etc. and includes emergency closure times and elevation restrictions.

Section 190.4 - Camping permits - camping at one site for four nights or more without a permit is prohibited, length of stay specified, camping restricted to posted areas, group size specified and age of permittee.

Section 190.5 - Permissible structures - no permanent structures allowed, no transfer of existing structures, listing of reasons for cancellation of existing permits for lean-to (open camps).

Section 190.6 - Open camps - specifies number of days a lean-to may be occupied, what constitutes an enclosure, etc.

Section 190.7 - Public campgrounds - Lists of additional public use requirements when a public campground exists on state land.

Section 190.8 - General - a long list of prohibitions for the public use of State lands including gambling, use of snowmobiles, toboggans and sleds on ski trails, sale of alcohol, speed limit on truck trails, deface, remove, destroy vegetation without a permit, etc. This section allows the use of horses except on intensively developed facilities (listed). This section was updated in 2009 with many new provisions pertaining to recreational trails, use of motor boats, harvesting of berries, etc.

Section 190.9 - Use of pesticides on State lands - none allowed except by written permission.

Section 190.10 - Unique Areas - special regulations listed by area.

Section 190.11 - Environmentally sensitive lands - lists the sections above that apply to people using sensitive lands (Sections 190.0 - 190.9) seems redundant.

Section 190.12 - Conservation Easements - Applies to all easement lands that the public has a right to access. Goes on to list general prohibitions on use, then lists areas under easements.

Section 190.13 - 190.22 - Repealed or not in use.

Section 190.23 - Specific Areas - List of Ski Centers: Belleayre, Gore and Whiteface.

Section 190.24 - Boat launch sites - specific rules of public use of launch sites.

Section 190.25 - 190.33 - Regulations for specific areas such as Zoar Valley, Lake George, the Olympic Area, etc.

State Forest Camping Regulations

1. Campsites must be kept clean. These are “carry-in -carry-out” areas.
2. Camping is prohibited within 150' of any road, trail, stream, or body of water, except where sites have been designated by the Department.
3. Camping is allowed for up to 3 nights without a permit. Campers occupying a site for more than 3 nights are required to obtain a written permit from the Sherburne DEC office. There is currently no fee for the permit.
4. Permits will be issued for a maximum of 10 days. A permit will not be renewed to the same person for the same site during the same calendar year.
5. Groups of 10 or more persons are required to obtain a camping permit for any length of stay.
6. Camping is prohibited in any area that is posted against camping.
7. All camping equipment and supplies must be removed from State land when the users have completed their stay.
8. No permits will be issued to persons under 18 years of age.

9. Campers are required to obtain a permit for any length of stay in a Wildlife Management Area. These permits are available from the Cortland DEC office.
10. Campers may use tents or trailers, but no permanent structures, such as tent platforms or lean-tos, may be constructed for camping.
11. Lean-tos that are provided by the DEC may not be occupied for more than 3 successive nights or for more than 10 nights in any one calendar year, if others wish to use the site.
12. Only dead and down wood may be used for campfires. Fires must be extinguished when the site if not occupied.
13. There is no fee for camping on State Forests.

Department Policies

Unit Management Planning	Prescribed Fire	Pesticides
Motor Vehicle use	Inventory	Recreational Use
Timber Acquisition	Acquisition	Public Use
Temporary Revocable Permits	Road Construction	State Forest Master Plan
Plantation Management	Retention	Clearcutting

APPENDIX XI STATE ENVIRONMENTAL QUALITY REVIEW (SEQR)

This Plan and the activities it recommends will be in compliance with State Environmental Quality Review (SEQR), 6NYCRR Part 617. The State Environmental Quality Review Act (SEQRA) requires the consideration of environmental factors early in the planning stages of any proposed action(s) that are undertaken, funded or approved by a local, regional or state agency. The Strategic Plan for State Forest Management (SPSFM) serves as the Generic Environmental Impact Statement (GEIS), regarding management activity on State Forests. To address potential impacts, the SPSFM establishes SEQR analysis thresholds for each category of management activity.

Management actions in this Plan are within the thresholds established in the SPSFM, therefore these actions do not require additional SEQR. Any future action that does not comply with established thresholds will require additional SEQR prior to conducting the activity.

STATE ENVIRONMENTAL QUALITY REVIEW ACT

This Unit Management Plan (UMP) does not propose pesticide applications of more than 40 acres, any clearcuts of 40 acres or larger, or prescribed burns in excess of 100 acres. Therefore, the actions in the plan do not exceed the thresholds set forth in the Strategic Plan/Generic Environmental Impact Statement for State Forest Management**.**

This Unit Management Plan also does not include any of the following:

1. Forest management activities occurring on acreage occupied by protected species ranked S1, S2, G1, G2 or G3
2. Pesticide applications adjacent to plants ranked S1, S2, G1, G2 or G3
3. Aerial pesticide spraying by airplane or helicopter
4. Any development of facilities with potable water supplies, septic system supported restrooms, camping areas with more than 10 sites or development in excess of other limits established in this plan.
5. Well drilling plans
6. Well pad densities of greater than one well pad in 320 acres or which does not comply with the limitations identified through a tract assessment
7. Carbon injection and storage or waste water disposal

Therefore, the actions proposed in this UMP will be carried out in conformance with the conditions and thresholds established for such actions in the Strategic Plan/Generic Environmental Impact Statement, and do not require any separate site-specific environmental review (see 6 NYCRR 617.10[d]).

Actions not covered by the Strategic Plan/Generic Environmental Impact Statement

Any action taken by the Department on this unit that is not addressed in this Unit Management Plan and is not addressed in the Strategic Plan/Generic Environmental Impact Statement may need a separate site-specific environmental review.

APPENDIX XII MAPS OF THE MCDONOUGH UNIT