NEW YORK STATE OF OPPORTUNITY. | Department of Environmental Conservation

Long Pond

UNIT MANAGEMENT PLAN

DRAFT

Towns of Smithville, Triangle and Lisle

Counties of Broome and Chenango

February 2016

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

2715 Route 80
Sherburne, NY 13460
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www.dec.ny.gov

Long Pond
Unit Management Plan

A planning unit consisting of the Long Pond State Forest in Chenango County, the Triangle State Forest in Broome County, and the Nanticoke Lake Multiple Use Area in Broome County.

February, 2016

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New York State Department of Environmental Conservation
Division of Lands and Forests
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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).

Preface

State Forest Overview

The Long Pond management unit contains two State Forests. The Triangle and Long Pond State Forests are reforestation areas acquired for watershed protection, the production of timber, and for recreation, and kindred purposes. The authorizing legislation (ECL 9-0501) provides that the properties shall consist of not less than 500 acres of contiguous lands, which shall be forever devoted to the planting, growth, and harvesting of such trees as shall be reforested. Generally, State Forests 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) and Sustainable Forestry Initiative (SFI);
- set aside for the sustainable use of natural resources;
- 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

This unit also contains a property categorized as a Multiple Use Area (MUA). The Nanticoke Lake MUA was purchased by New York State with funds associated with the park and recreation bond acts of 1960 & 1962. The acquisition of properties with these funds was intended to provide additional opportunities for outdoor recreation, including public camping, fishing, hunting, boating, winter sports, and, wherever possible, to also serve multiple purposes involving the conservation and development of natural resources, including the preservation of scenic areas, watershed protection, forestry, and reforestation. Specific regulations for the Nanticoke Lake MUA are addressed in NYCRR Title 6 Part 94.2d. These regulations prohibit both

camping and swimming on the property. Also, boats shall not be powered with any motors, except electric, and boats shall not be moored or beach overnight on the Nanticoke Lake MUA.

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 Long Pond Unit Management Plan (UMP) is based on a long range vision for the management of Long Pond State Forest, Triangle State Forest, and the Nanticoke Lake MUA, 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.

Public Participation

One of the most valuable and influential aspects of UMP development is public participation. Public meetings are held to solicit input and written and verbal comments are encouraged while management plans are in draft form.

Strategic Plan for State Forest Management (SPSFM)

Management actions are designed to meet local needs while supporting statewide This unit management plan is designed to implement DEC's statewide Strategic Plan for State Forest Management 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

Sustainability and Forest Certification

Sustainability, in this instance, means the capacity of State Forests on the unit to maintain their health, productivity, diversity, and overall integrity, over the long run in the context of human activity and use. Forest certification is DEC's method of making certain and public that these State Forests are sustainably managed. In 2008, DEC received joint Forest Stewardship Council

(FSC) and Sustainable Forestry Initiative (SFI) certification under independent annual audits. Forest products derived from wood harvested off State Forests may now be labeled for the consumer as "green certified."

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

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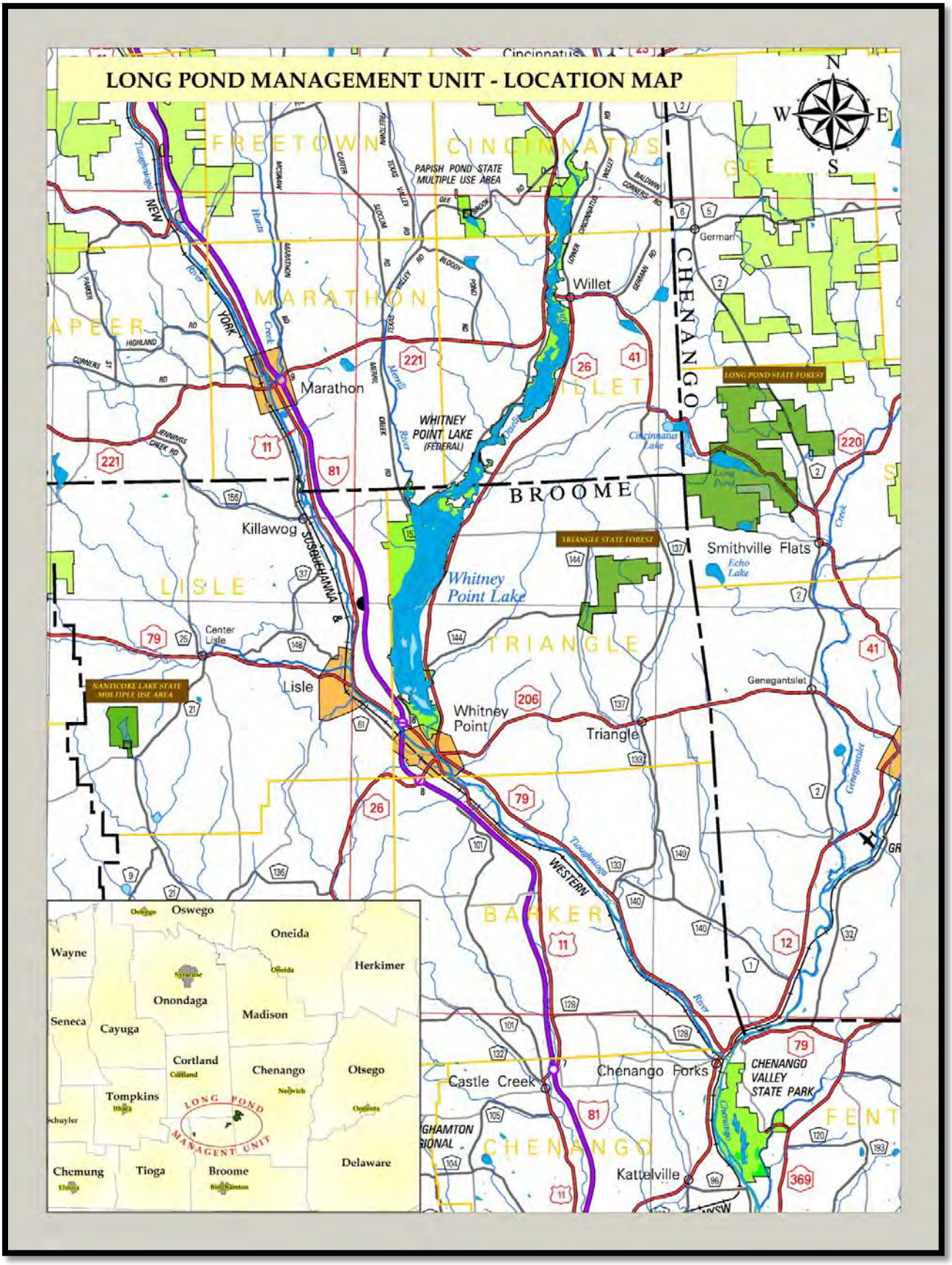

LONG POND MANAGEMENT UNIT - LOCATION MAP
N
S
E
W
FREETOWN
CINCINNATUS
MARATHON
LISLE
TRIANGLE
BARKER
CHENANGO
BROOME
PAPISH POND STATE MULTIPLE USE AREA
LONG POND STATE FOREST
TRIANGLE STATE FOREST
NANTICOKE LAKE STATE MULTIPLE USE AREA
CHENANGO VALLEY STATE PARK
WHITNEY POINT LAKE (FEDERAL)
Whitney Point Lake
Marathon
Killawog
Lisle
Center Lisle
Whitney Point
Triangle
Willet
German
Smithville Flats
Genegantslet
Castle Creek
Chenango Forks
Kattelville
NEW YORK & SUSQUEHANNA
WESTERN
Oswego
Oneida
Herkimer
Wayne
Onondaga
Madison
Seneca
Cayuga
Cortland
Chenango
Otsego
Tompkins
Schuyler
Chemung
Tioga
Broome
Delaware
LONG POND MANAGENT UNIT

I. Historical Background Information

A. 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. The New York State Constitution, Article XI, 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.

B. Local History

(FROM 1991 LONG POND UNIT MANAGEMENT PLAN)
The first inhabitants of this land were the Native Americans, specifically the Iroquois. It is believed that they formed the Iroquois Confederacy or the "League of the Iroquois" in the middle of the 15th century as a means of maintaining peace between the nations, and each member nation was assigned a designated territory. The five nations of the League were the Onondagas, the Mohawks, the Senecas, the Cayugas, and the Oneidas. In 1712, the Tuscaroras were admitted to the League of the Iroquois as the "sixth nation."

Up until the later part of the 18th century, most of the territory upon which the State Forests of the Long Pond UMP are now located, was occupied, or "owned" by the Oneidas. On November 5, 1768, one of the greatest real estate transfers in history was signed at Fort Stanwix (present day Rome, NY). This treaty established a line of division between the English Territory and the Indian Territory. For the sum of $50,000, the land east and south of the treaty line was deeded from the Native Americans to King George III. The treaty line followed the path of the Unadilla River, or what is now the eastern boundary of Chenango County. Therefore, at the time, the location of all of the State forests addressed in this UMP would have been within Indian Territory or "beyond civilization".

Chenango County and northern Broome County were considered a buffer zone between the Oneida-Iroquois and the Susquehannock-Iroquois of Pennsylvania. Game was plentiful in the buffer zone, but few, if any, permanent camps were established. The Oneidas supported the British during the Revolutionary War. As penalty for siding with the British, the Oneidas were forced to cede this buffer zone to New York State by Governor George Clinton in the Treaty of September 22, 1778.

Smithville:
The name Smithville was derived from an early settler, Elisha Smith. Smithville Flats was first settled in 1797 by Robert Lytle of New England. Smithville Flats was named for the flat lands which border the Genegantslet River. "Genegantslet" is an Indian word meaning "Three deer-lick river". Red Brook, which runs through the Unit, is said to be named for the color of iron ore deposits in the brook. It is more likely tinted red from the hemlock trees along its banks.

In 1805, Timothy Scoville of New England, built the first sawmill in the town, on the outlet of Long Pond. It is easy to visualize the old growth white pine and oak on the hill above the pond being harvested. Smithville became a political entity on April 1, 1808. In 1824, there were 10 sawmills and 2 asheries in the town. The Town of Smithville had a population of 1518 in 1875, compared to a population of 1174 in 1980. Gross sales from farms in 1875 were $132,314.00.

Many people today recognize the name Tarbell and the farm associated with it. In 1816, Eli Tarbell of Chester, VT, settled a farm east of the village and built one of the first hotels in the area. By 1875, Charles Tarbell bought 500 acres around Long Pond and owned the saw mill erected by Timothy Scoville. He was a farmer and dealer in all kinds of lumber, mowers, reapers, wagons, sleighs, plaster, sowers, and wheel rakes. In 1899, Gage Tarbell took over the farm and added another 800 acres. In 1903, the first dairy cow was purchased. During the 1940s and 1950s, the farm flourished as a model of efficiency. The farm employed 35 persons, owned 445 purebred Guernsey cows, and bottled 2,800 quarts of milk daily. One of the employees was a grassland manager from England. The farm had its own water tower and fire protection system. Long Pond was utilized for power, using a pioneer electric generating facility.

A flood ravaged Smithville Flats on July 8, 1935. About this time, local citizens expressed concern about the condition of the dam holding Long Pond. The dam was deemed unsafe in the 1980s and was replaced in 1989.

Sometime after World War II, a Boy Scout camp, Camp Spaulding, was established near Round Pond. It remained active until the early 1980s.

Beginning in the early 1930s, and proceeding through the 1950s, much of the land on Broome Reforestation Area #1 and Chenango Reforestation Area #35 was acquired, surveyed, and mapped with authority and funding provided by the 1931 Hewitt Amendment. On March 16, 1963, the state of New York purchased 2,200 acres from the Tarbell estate for $176,800.00. The property was purchased under the 1960 Bond Act for Multiple Use Purposes, including recreation.

Triangle:
Originally called "Chenango Triangle", the Town derives its name from its geographical location. Located south of the “twenty towns” in Chenango County and the “military tract” in Cortland County the confluence of the Tioughnioga and Chenango Rivers forms the apex of the "triangle". The town was first settled in 1791 by General John Patterson of Lenox, Massachusetts. Paterson settled in present-day Whitney Point. Triangle was set apart from the Town of Lisle through an act of Legislature on April 18, 1831. Like most of central New York, Triangle was heavily forested. When land was cleared for farming, logging bees were held. Neighbors brought ox teams, skidded logs into large piles and burned the wood into ashes. These ashes were gathered, leached and boiled into "black salts" which were converted into pot ash, or pearl ash, and sold. By 1835, 10,000 acres had been cleared.

Anson Seymour, son of one of Triangle’s first settlers, was a lumberman. He rafted vast amounts of native white pine logs cut from the surrounding hillsides down the Tioughnioga River, into the Chenango River, down the Susquehanna River into Baltimore Harbor. During the War of 1812, many of the nation’s capital buildings were burned, damaged, or destroyed. By 1816, reconstruction efforts were underway. Anson Seymour capitalized on this and sold his white pine logs to the Federal Government. To this day, some of our national buildings contain lumber from trees grown in Triangle. The hamlet of Triangle was founded on the Catskill-to-Ithaca Turnpike, which is the present State Route 206. Population of the Town of Triangle in 1835 was 1,669. In 1980, it was 2,618.

Nanticoke Lake:
In 1967, The New York Conservation Department purchased 338 acres from four, separate private land owners in the Town of Lisle, Broome County; Clayton W. Thomas, John A. Gowan, Donald L. Heath, and Herbert C. Sprague. The property was purchased with funds from the Park and Recreation Land Acquisition Bond Act. The primary feature of the properties was a wetland which formed the headwaters to Nanticoke Creek. In June of 1975, the construction of a dam was completed for the purpose of flooding the wetland and forming what is now known as Nanticoke Lake. The cost of the project was approximately $200,000. The original intention for the water body was to establish a high quality trout fishery. The lake was stocked with hybrid brook trout with the hope of someday producing trophy fish. Unfortunately, due to low dissolved oxygen levels in the summer months, brook trout survival was extremely limited. In addition, the unauthorized introduction of other fish species like largemouth bass, black crappie, yellow perch, and sunfish further reduced the lake's suitability for trout. Subsequently, rainbow trout were stocked in place of brook trout due to their ability to survive in somewhat warmer water. Currently, the trout stocking is conducted with the intent of supporting a "put-and-take" spring fishery with little to no survival expected through the summer months.

II. INFORMATION ON THE UNIT

A. Geographical and Geological Information on the Unit

The Long Pond Management Unit is located within the Town of Smithville in Chenango County and within the Towns of Triangle & Lisle, in Broome County. The Unit consists of two State Forests and a MUA.

State Forest Name	Reforestation Areas	Acres	Townships
Long Pond State Forest	Chenango RA #35	3,068	Smithville, Chenango County
Triangle State Forest	Broome RA #1	661	Triangle, Broome County
Nanticoke Lake MUA	Broome RA #10	337	Lisle, Broome County
		4,066	TOTAL

The Long Pond Management Unit is located in the south-central section of New York State. Geologically, this area is within the northern section of the Allegheny Plateau, which is a sub-section of the larger Appalachian Plateau. This area was glaciated, yielding the present-day characteristics of the soils, sedimentary layers, and overall topography of the region. The majority of the soils on the Unit are Lordstown, Mardin, and Volusia. They range from well drained to poorly drained and are located on gentle, rolling hills, with a few moderately steep slopes.

Table H. – Soils on the Management Unit				
Soil Type	**Acres**			
	Chenango-35	**Broome-1**	**Broome-10**	**Total**
Aldin	36	16	7	59
Bath	102	0	0	102
Chippewa	166	0	0	166
Lordstown	280	58	31	369
Mardin	935	346	86	1,367
Volusia	1,327	237	164	1,728
Water	140	0	44	184
other	82	4	5	91
Total	3,068	661	337	4,066

More detailed information on the soils in this area can be obtained from the Soil Survey of Chenango County, New York (USDA, 1985) and the Soil Survey of Broome County, New York (USDA, 1971). See Appendix XX for the soil maps of the Unit.

Elevations rise from a low of about 1,100 feet above sea level at the southern extent of Pond Brook on the Long Pond State Forest to a high of 1,560 feet in the southwest corner of Nanticoke Lake MUA.

Facility Name	High elevation	Low elevation
Long Pond State Forest	1,498 ft	1,100 ft
Triangle State Forest	1,540 ft	1,180 ft
Nanticoke Lake MUA	1,560 ft	1,340 ft

The Long Pond Management Unit contains a discontinuous wildlife corridor. Although the Route 81 corridor is beneficial to people this major roadway presents a migration obstacle to terrestrial wildlife. In addition to the highway, the 1,200 acre Whitney Point Reservoir and villages of Lisle and Whitney Point are also located between the Nanticoke MUA and the Triangle State Forest. While several wildlife species likely migrate between the Long Pond State Forest and the Triangle State Forest, it is unlikely that these same animals ever visit the Nanticoke Lake MUA due to the presence of the villages, reservoir, and highway. These developments do no present an obstacle for avian wildlife.

Numerous intermittent stream channels are located on the forests of the Unit. Springs, seeps, and seasonal rains provide flow to the network of these streams, which feed into the perennial streams of the area. The Long Pond Management Unit is within the Chesapeake Bay Watershed. The surface water from the Long Pond State Forest flows to the Genegantslet Creek, and then into the Chenango River, which connects to the Susquehanna River. The waters of the Triangle State Forest flow into the Toughnioga River, then to the Chenango River, and then the Susquehanna River. The water from the Nanticoke Lake MUA flows to the Nanticoke Creek, which connects to the Susquehanna River.

The climate of Broome and Chenango Counties is marked by significant seasonal differences. Mid-summer days are often in the low 80's (^{0}F) with high humidity and frequent cloud cover. Winters bring occasional below-zero temperatures, snow cover, and low humidity. Average annual rainfall is about 40" and average annual snowfall is about 70" for the area. Severe weather events have caused damage in recent years. Heavy rainfall has resulted in floods, especially in Broome County, in the years 1993, 1996, 2006, and 2011. Tornados of category EF2 have caused localized damage, often to forests, in the years 1989, 1998, and 2011.

B. History of the Forest Cover

The forests of the Long Pond Management Unit today contain tree species of both native and non-native origin. The **native tree species** include black cherry, white ash, sugar maple, red maple, basswood, red oak, American beech, yellow birch, eastern hemlock, eastern white pine, balsam fir, northern white cedar, aspen, and a few others. Most of the non-native species were introduced to the landscape in the 1930s, after New York State had purchased many of the undesirable farmlands and the Civilian Conservation Corps was directed to reforest these lands.

Large plantations of red pine, Norway spruce, white spruce, Scotch pine, Japanese larch and European larch were established in the open fields of these newly created State Reforestation Areas. This blend of natural forest **cover types** and plantation forest cover types is one of the defining characteristics of the present-day forest landscape.

The term "forest cover type" refers to the type of tree or vegetation that dominates the site. However, many more species of plants and animals are found within the type. The interrelationship of these species is known as an **ecological community**.

Two of the most prevalent ecological communities found on the forests of the Long Pond Unit are Beech-Maple **Mesic** Forest and the Hemlock-Northern Hardwood Forest. The following descriptions (edited) of these communities were developed by the New York State Natural Heritage Program.

<u>Beech-Maple Mesic Forest</u> - A **hardwood** forest with sugar maple and beech co-dominant. These forests occur on moist, well-drained, usually acidic soils. The term "mesic" refers to the balanced moisture level of the **habitat**. The soils are not typically saturated or dry. Common

associates are basswood, red maple, white ash, yellow birch, and Eastern hop hornbeam. There are relatively few shrubs and herbs. Characteristic small trees or tall shrubs are American hornbeam, striped maple, witch hazel, and hobblebush and alternate-leaf dogwood. Characteristic ground layer species are blue cohosh, Christmas fern, jack-in-the-pulpit, white baneberry, wild leek, wild ginger, false Solomon's seal and bloodroot. There are many spring ephemerals which bloom before the canopy trees leaf out. Typically, there is also an abundance of tree seedlings, especially of sugar maple. Beech and sugar maple saplings are often the most abundant "shrubs" and small trees. Hemlock may be present at a low density. Characteristic birds include the American redstart, red-eyed vireo, ovenbird, black-throated blue warbler, least flycatcher, Acadian flycatcher and red-bellied woodpecker.

Hemlock-Northern Hardwood Forest - A mixed forest that 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**, hemlock is co-dominant with any one to three of the following: beech, sugar maple, red maple, black cherry, white pine, yellow birch, and basswood. The relative cover of hemlock is quite variable, ranging from nearly pure stands in some steep ravines to as little as 20% of the canopy cover. The shrub layer may be sparse. Characteristic shrubs are hobblebush, maple-leaf viburnum and raspberries. Canopy cover can be quite dense, resulting in low light intensities on the forest floor and hence a relatively sparse ground layer. Characteristic ground layer plants are Indian cucumber-root, Canada mayflower, shining club moss, common wood fern, mountain wood fern, Christmas fern, star flower, bellwort, common wood-sorrel, partridge berry, foamflower, round-leaf violet, twisted stalk and purple trillium. In forests that have beech as co-dominant, beech-drops is a common herb. Characteristic birds include wild turkey, pileated woodpecker, golden-crowned kinglet, black-throated green warbler and Acadian flycatcher.

There are about 25 different tree species that are commonly found on the forests of the Long Pond Unit. Although additional species, such as American elm and butternut may be found on the Unit, their occurrence is quite rare. The most common tree species that occur on the forests are listed below.

Native Hardwood Species

Black cherry
White ash
Northern red oak
American beech
Basswood
Red maple
Sugar maple
Aspen (big tooth & quaking)
Yellow birch
Black locust
American hornbeam (blue beech)
Eastern hop hornbeam (ironwood)
Striped maple

Shadbush
Apple (various species)

Native Softwood Species

Eastern white pine
Eastern hemlock
Northern white cedar

Plantation Softwood Species

Norway and white spruce
Japanese, European and Dunkeld larch
Scotch pine
Red pine
Eastern white pine

C. Major Land Classification within the Unit

Table 2, following, identifies eight major categories of land found within the Long Pond 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.

Native hardwoods - at least 90% of the forest cover within these stands consists of native hardwood species (oak, ash, maple, beech, cherry, aspen, hickory, birch, etc.).

Native conifers with hardwoods - these stands are mixtures of native hardwoods and native **conifers** (white pine and eastern hemlock).

Conifer plantations - these stands were planted, usually by the Civilian Conservation Corps. (CCCs), with conifer species (red pine, Norway spruce, white spruce, Japanese larch, white pine and scotch pine).

Mixed native & non-native species - This forest cover type may contain non-native species such as red pine or Norway spruce mixed with native species such as white pine or Northern hardwoods.

Ponds - these are bodies of water with an average depth greater than 12 inches and with a surface area of at least 0.20 acres.

Wetlands - these are areas of poorly-drained ground that often contain some standing water (less than 12-inch depth) and may contain a variety of vegetation (grasses, shrubs, or trees).

Shrub fields - at least 50% of the vegetative cover within these areas consists of shrub species (thorn apple, alder, dogwood, brambles, viburnum, spirea, etc.)

Grasslands – these are open grasslands located on the Long Pond State Forest that are a legacy of a former dairy farm.

Roads - The roadways that cross through the State Forests are adjacent to the properties, are generally not more than 25 feet wide. However, the full road **corridor** is considered to be 50 feet in width and may contain trees, shrubs, or **grassland** habitat along its **edges**.

Table 2. Land Classifications within the Unit

Vegetative Types and Stages

Table I.D. - Vegetative Types and Stages within the Unit					
Vegetative Type	**Acres by DBH Size Class**				**% of Total**
	0 -5 in	6 - 11 in	12 - 17 in	18 in +	
Native Forest Conifer/Hardwood Mix	23	65	970	978	50
Native Forest Hardwood	31	94	443	113	17
Non-Native Conifer (Plantations)	139	9	431	0	14
Grassland	376	0	0	0	9
Ponds	182	0	0	0	5
Shrub	97	65	0	0	4
Other (Roads, Shale Quarries)	50	0	0	0	1
Total (Acres)	898	233	1,844	1,091	100%

D. Wetlands and Water Resources

Wetlands

Wetlands vary widely, across the landscape, because of differences in characteristics such as: hydrology (temporarily/seasonally flooded to permanently flooded), soils, topography, and vegetation (submergent aquatic plants to forested tree cover). Common freshwater wetlands include marshes, bogs, fens, swamps, vernal pools, **forested wetland**s, and spring seeps. Wetlands perform many functions that provide numerous benefits to people, fish, and wildlife.

Wetlands provide flood protection and abatement; erosion control and containment of sedimentation; improved water quality; recharge of groundwater supplies; regulation of surface water flows; essential fish and wildlife habitat; production and recycling of nutrients; recreational opportunities; open space; and **biological diversity**.

Both the federal and State government regulate use of wetlands to protect the numerous functions and benefits of wetlands. Wetlands are protected pursuant section 404 of the Federal Clean Water Act. The Army Corps of Engineers regulates activities that may impact wetlands, such as placement of fill. Most designated wetlands have been classified by the U.S. Fish & Wildlife Service and are listed in the National Wetlands Inventory. In New York State, all freshwater wetlands are protected pursuant to the New York State Freshwater Wetlands Act, if they are at least 12.4 acres in size and meet criteria specified in section 24-0107 of the Act. Certain wetlands that are smaller than 12.4 acres may also be protected by the Act. DEC's regulations, 6 NYCRR Part 664 establishes a classification system of freshwater wetlands. This system creates four classifications for freshwater wetlands (class I, class II, class III, and class IV). The classification of a freshwater wetland, regulated under the New York State Freshwater Wetland Act, is based on the ability of the wetland to perform functions and provide benefits. Class I wetlands perform the most functions, while Class IV wetlands perform the least amount of functions.

The Long Pond Management Unit contains about 123.5 acres of unclassified wetlands as delineated in the National Wetlands Inventory. The Unit includes all or portions of 3 wetlands that are classified under the New York State Freshwater Wetlands Act. These classified wetlands comprise a total of 69.0 acres. One of these wetlands is a class II and the other two are class III wetlands.

All of the wetlands within the Unit will be protected from activities such as timber harvesting and mineral or gas exploration through the implementation of Special Management Zone rules developed by the Division of Lands and Forests, and the use of best management practices. However, gaining access to other managed sections of the forests may require crossing some of these wetlands. If a crossing is necessary, measures such as temporary bridges, seasonal restrictions, or surface mats will be utilized to limit the impact to the wetland.

Ponds

There are four ponds on the Unit comprising 188 acres of open water. The largest is Long Pond, consisting of 113 acres and impounded by a concrete dam. The Long Pond dam was originally constructed in the late 1800s and reconstructed in 1989. Nanticoke Lake is also an impoundment, contained by an earthen dam and providing 49 acres of surface water. Nanticoke Lake was created when the dam was completed in 1976, as a joint project between the USDA and NYS DEC. Round Pond is a 26 acre natural pond located in the southern extent of the Long Pond State Forest. The smallest pond is a 0.25 acre impoundment within Stand C-37on the Long Pond State Forest. This pond was part of the Tarbell Farms property and was formed with an earthen dam. For the location of the ponds, see Water Resources map in Appendix XX.

Streams

The perennial streams within the Long Pond Management Unit have **water quality classifications** of C (t), or C, or no classification. Class C and class C (t) streams are capable of supporting fisheries, more specifically; class C (t) streams are capable of supporting a trout population. Intermittent streams and some of the perennial streams on the Unit are not classified. There are 1.76 miles of class C (t) streams and 7.27 miles of class C streams on the Unit. Intermittent and unclassified streams cover a total distance of about 5.63 miles on the Unit.

Appendix II provides information about the streams on the Unit. This information includes: location by State Forest; stream name; stream classification; and length of stream.

E. Mineral Resources

Oil and natural gas are valuable resources which may be located under State Forests. The extraction of these resources generates revenue and provides raw material for energy 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,** 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 NYSDEC Division of Lands and Forests, and the mineral estate is managed through the NYSDEC Division of Mineral Resources. At this time, there are no leases for oil or gas exploration or development on the Unit.

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 the natural gas and other mineral resource policies, please see SPSFM Chapter 5, page 225 at http://www.dec.ny.gov/lands/64567.html.

In December 2014, the Department of Health completed a Public Health Review of HVHF, which DEC Commissioner Martens had requested. Dr. Zucker recommended that New York should not proceed with HVHF. See the DEC and DOH press release.

DEC received more than 13,000 public comments on its Draft Supplemental Generic Environmental Impact Statement (Draft SGEIS) issued in September 2009.

In response to issues raised, DEC prepared and released for public review a Revised Draft SGEIS on September 7, 2011. DEC held four additional public hearings around the state and received another 67,000 comments.

Following release of the second draft, DEC also proposed regulations to supplement and reinforce the proposed permit conditions and received 180,000 public comments. In all, DEC received 260,000 public comments on the SGEIS and the regulations. The proposed regulations have lapsed under State law.

In September 2012, Commissioner Martens asked the Commissioner of Health to determine if the mitigation DEC proposed was adequate to protect public health. As the volume of new information on HVHF grew, the scope of the review expanded to broadly consider the public health impacts of HVHF.

In December 2014 the Governor and the Commissioners of the Department of Health (DOH) and DEC announced that the DOH had completed its public health review of NYS DEC's SGEIS on the Oil, Gas and Solution Mining Regulatory Program and recommended that high-volume hydraulic fracturing should not move forward in New York State. Therefore, consistent with the findings enumerated in the Final SGEIS, no HVHF will be allowed for the duration of this UMP.

The SEQR Findings Statement for high-volume hydraulic fracturing (HVHF) was issued on June 29, 2015. This concluded DEC's comprehensive, seven-year review and officially prohibits HVHF in New York.

F. Wildlife Resources

The Long Pond Management Unit and the landscape surrounding the Unit contain a variety of wildlife including many species of mammals, birds, amphibians, reptiles, and fish. There are also numerous species of invertebrates such as snails, mussels, insects, spiders and worms. Many resources were consulted to assess the variety of wildlife and wildlife habitat in and around the Unit.

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 NYS DEC public website, the U.S. Fish and Wildlife Service website, and the New York Natural Heritage Program (NYNHP) website.

The New York State GAP confirmed or predicted 52 mammalian species on or in the vicinity of the Unit. A complete list of mammals that were confirmed or predicted, on the Unit or surrounding area, can be found in **Appendix VII**.

The analysis revealed three bat species that are **endangered, threatened,** or 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 Northern long eared bat (*Myotis septentrionalis)* has been confirmed within the Unit and is listed as threatened, by both the State and Federal governments. The third bat, the Eastern small-footed Myotis is listed, by New York State, as a species of special concern. These bats share some common habitat-requirement characteristics. They 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 and the Northern long eared bat prefer to roost under the bark of living or dead trees while the Eastern small-footed Myotis prefers to roost in fractures of rock ledges. The most recent threat to all three 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 the bat deaths or it could be secondary to the cause.

Information on the variety of wildlife species in this area, including some of the more popular game species, can be found below.

Birds

The New York State Breeding Bird Atlas is a comprehensive, statewide survey that reveals the distribution and protective status of breeding birds in New York State. The most recent data, for the Breeding Bird Atlas, were collected from 2000 to 2005. Six Breeding Bird Atlas blocks (4068A, 4068B, 4269A, 4269B, 4269C, and 4269D) were assessed to determine the possible, probable, and confirmed breeding bird species found on the Unit and surrounding vicinity. The Breeding Bird Atlas confirmed or predicted that there are 106 bird species breeding on the Unit or the surrounding vicinity. **Appendix V** shows these species by common name, scientific name, breeding status, and protective status.

Most of the 106 bird species occurring on or in the vicinity of the Long Pond Unit are protected by the New York State Environmental Conservation Law. One species was identified as threatened in New York State and six species were identified as special concern. Henslow's sparrow is a probable breeder within the grassland habitat on Long Pond State Forest and the only **threatened species** on the unit. The red-shouldered hawk and northern goshawk are confirmed breeders and species of special concern; grasshopper sparrow, horned lark and vesper sparrow are probable breeders and species of special concern; osprey and sharp-shinned hawk are possible breeders and species of special concern.

Amphibians and Reptiles

The Amphibian and Reptile Atlas Project was a ten-year survey, conducted by the DEC, which was designed to document the geographic distribution of New York's amphibians and reptiles. The survey was conducted from 1990 to 1998. The project predicts 26 species of amphibians and reptiles on or in the vicinity of the Long Pond Management Unit. A complete list of the 26 species, by common name, scientific name, and protective status is found in **Appendix VI**. Two

species of turtle are listed as species of special concern. These are the wood turtle and spotted turtle.

Fish within the Pond:

Long Pond is the largest on the Unit. This pond is popular for fishing during the summer months. A limited amount of ice fishing also occurs. Long Pond is a warm water fishery with a maximum depth of 15 feet. Aquatic vegetation, including pond lilies, is abundant in the more shallow sections during the summer months. The pond contains various pan fish species, smallmouth bass, largemouth bass, chain pickerel, and tiger musky. The Department stocks Long Pond with 350 tiger musky each year. In August 2007, an Earlville resident caught a 44 inch, 16.6 pound tiger musky in Long Pond. In 1983, a 29 lb. 3 oz tiger musky was caught through the ice on Long Pond. At the time, this was a State record for the species. In the summer of 2008, a survey of the Long Pond fish population was completed. The results of the survey are shown here:

Fish Species	Number of Fish Surveyed
Bluegill	977
Brown bullhead	188
Largemouth bass	132
Chain pickerel	129
Golden shiner	103
Pumpkinseed	101
Black crappie	47
Yellow perch	27
Creel chub	1
Tiger musky	1

Round Pond on the Long Pond State Forest is also a warm water fishery containing brown bullhead, chain pickerel, and pan fish species such as bluegill and rock bass.
Nanticoke Lake was originally designed as a trout fishery. The lake was constructed in the 1970's with the intention of establishing a wild, self-sustaining brook trout fishery similar to those found in the Adirondacks. Unfortunately, due to low dissolved oxygen levels in the summer months, brook trout survival was extremely limited. In addition, the unauthorized introduction of other fish species such as largemouth bass further reduced the lake's suitability for trout. Subsequently, rainbow trout were stocked in place of brook trout due to their ability to survive in somewhat warmer water. Currently, the trout stocking is conducted with the intent of supporting a "put-and-take" spring fishery with little to no survival expected through the summer months. The lake has a maximum depth of about 20 feet. Rainbow trout, largemouth bass, black crappie, yellow perch and pumpkinseed sunfish inhabit Nanticoke Lake. The lake is stocked annually with approximately 2,300 year-old rainbow trout. Special fishing regulations exist for trout in Nanticoke Lake so please review the Special Regulations by County section of your fishing regulations guide.

Fish within Streams:

The primary management objective for all of the streams on the unit is to maintain good water quality by maintaining stream bank stability. Good water quality in these streams will help to ensure good water quality in their receiving waters. The maintenance and improvement of water quality in waterways throughout the Susquehanna drainage is taking on an ever increasing importance.

Two of the streams on the Long Pond State Forest are classified as trout streams: Pond Brook and Strong's Brook. These streams support native brook trout populations. Although these streams do not hold many large fish, it's probable that they are important spawning and nursery areas for trout.

Other streams in the Unit such as Ticknor Brook and Red Brook support fish species such as the black nose dace and creek chub and they may also support some limited trout populations as well.

Game Species

There are many game species located on or in the vicinity of the Long Pond Management Unit. Game species are protected by regulated hunting/trapping seasons. Game species; on or in the vicinity of the Unit include a variety of birds and mammals. Game species contribute to the local economy and provide outdoor recreation. Geographic regions have been delineated into Wildlife Management Units (WMUs) across the State. The Long Pond State Forest and Triangle State Forest are located in the southern section of WMU 7M. The Nanticoke Lake MUA is located in the eastern section of WMU 7R. Maps and descriptions of the WMU's can be found at http://www.dec.ny.gov/outdoor/8302.html. More details of some of the major game species can be found below.

White-tailed Deer

White-tailed deer are abundant within the Long Pond Management Unit, as they are throughout the majority of the State. The diversity of habitats on these forests supports a healthy deer population. A few trophy-sized deer can be expected within the Unit each year. Managing the deer population is a great challenge.

Excessive deer populations can be problematic in several ways, including adverse impacts to the forested **ecosystem**. Periodically, 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. Based upon this recommendation, and estimates of the current deer population, the Department determines the number of antlerless deer permits to distribute during the hunting season within each WMU. Deer hunting season in WMUs 7M & 7R extends from early October (bow) until mid-December. All areas of the three State properties in the Long Pond Management Unit are available for hunting. In 1978, the NYS deer population was estimated to be 450,000. In ten years time, the population nearly doubled to 800,000 deer within the state. Between the years 2000 and 2002, the deer population was estimated to be 1,000,000. Records for deer harvests within NYS have shown rather steady numbers since 1987.

In 1987, the NYS deer harvest was 204,715. The harvest numbers for 1997 were 216,386; 2007 were 219,141; and 2011 were 228, 359. **Appendix IX** contains information on deer harvests by township within the Long Pond Management Unit.

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). Turkey harvest records can be found in **Appendix X**.

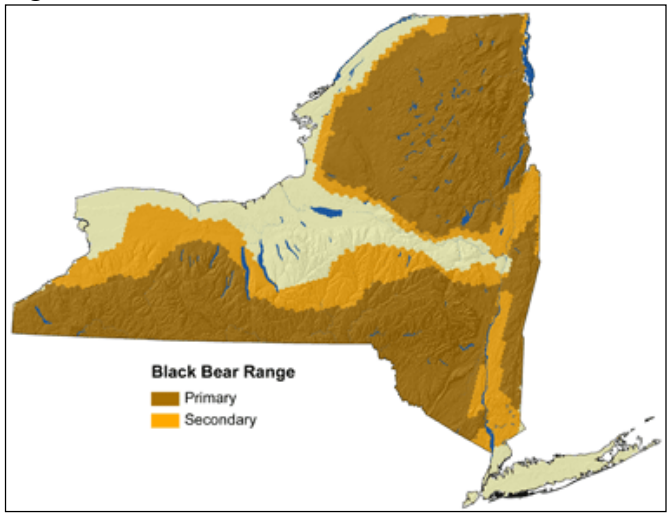
Furbearers

There are many species, on or in the vicinity of the Long Pond Management 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. **Appendix XI** shows ten-year harvest records for the American beaver and the coyote.

Black Bear

Within the townships of the Long Pond Management Unit (Lisle, Smithville, and Triangle) black bears are uncommon. In recent years, the frequency of bear sightings has increased in these townships, but the bear population here remains significantly lower than in the nearby townships of Afton, Sanford, and Windsor. Within the past five hunting seasons, there were no reports of black bear harvests in Lisle, Smithville, or Triangle. For current information on black bears, refer to the Department's website at: http://www.dec.ny.gov/animals/6960.html. Figure 1 shows the black bear distribution in New York. Primary range refers to areas where breeding bears were known to occur. Secondary range includes areas with routine bear sightings. Transient and dispersing bears may be found in all of upstate New York, including areas generally considered unoccupied by bears.

Figure 1.



G. Important Habitat Features

The Long Pond Management Unit and the surrounding landscape provide diverse habitats for a variety of wildlife species. The following habitat features will be considered when developing the forest management goals & objectives for the Unit.

Coniferous Forest Cover Type

About 16% of the Long Pond Management Units forests are comprised of coniferous (evergreen) forest canopy. Another 48% of the forest cover is a mix of native hardwoods and conifers. Some birds require a conifer component as part of their habitat. Some of the conifer dependent birds, which are confirmed or predicted to be on or near the Unit, include pine sisken, 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, and the blue-headed vireo.

There are also mammals that require and/or benefit from coniferous forests. Mammals that require and/or benefit from the coniferous forests on the Unit may include: the red squirrel, snowshoe hare, deer mouse, Southern red-backed vole, white-tailed deer, and Hoary bat.

Continuous Forest Canopy

Some species prefer large forested areas for their habitat. These areas may contain a variety of forest canopy conditions ranging from young forest to late successional habitat, but they provide remote, forest habitat with a minimal amount of non-forest cover. The red-shouldered hawk and sharp-shinned hawk prefer relatively undisturbed, continuous forest canopy. Other bird species, found on or near the Unit, that prefer a continuous forest canopy are the pileated woodpecker and broad-winged hawk.

Mammals that prefer a continuous forest canopy include: black bear, bobcat, fisher, and Northern flying squirrel.

Multi-Layered Forest Canopy Structure

There are many bird species, on or near the Unit, that require a multi-layered forest canopy structure as a habitat requirement. Some of the birds that require a multi-layered forest canopy structure are 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, yellow-throated vireo, black-throated blue warbler, Canada warbler, American redstart, and veery.

Cavity Trees/Snags/Course Woody Material

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.

Some of the 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, hooded merganser, and wood duck.

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

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, broad-winged hawk, red-tailed hawk, turkey vulture, American kestrel, brown creeper, great blue heron, great-horned owl, pileated woodpecker, and barred owl.

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

Ponds, Wetlands and Riparian Areas

Long Pond, Round Pond, and Nanticoke Lake are three significant water bodies on the Long Pond Management Unit that provide habitat for waterfowl, fish, amphibians, and certain mammals. In addition to the ponds, the Unit contains several wetlands and riparian areas that provide habitat for some of these species. Bird species that depend upon these water sources

include the hooded merganser, great blue heron, mallard, wood duck, belted kingfisher, swamp sparrow, alder flycatcher, willow flycatcher, Northern water thrush, and common yellowthroat.

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.

Early Successional Habitat

The primary early successional habitat on the Unit is the 375 acres of grasslands on the Long Pond State Forest. These grasslands are important habitat for bird species such as the Henslow's sparrow, grasshopper sparrow, bobolink, Eastern meadowlark, and Eastern bluebird. There are about 100 acres of additional early successional habitat scattered across the Unit, mostly consisting of seedling/sapling and shrub cover. Shrubs and seedling/sapling sized trees provide habitat to a variety of wildlife species. This early successional habitat is used by a number of bird species found in and around the Unit. The bird species include the ruffed grouse, Canada warbler, yellow-rumped warbler, Nashville warbler, blue-winged warbler, mourning warbler, yellow warbler, prairie 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, house wren, Baltimore oriole, Northern mockingbird, and Eastern phoebe.

Many mammals also depend on early successional habitat for food and cover. Mammals on or in the vicinity of the Unit that utilize early successional habitat include the red fox, gray fox, white-tailed deer, Eastern cottontail, woodland vole, woodchuck, and Southern bog lemming.

H. Rare 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, protect and help manage biodiversity. In 2004, NHP staff conducted a comprehensive inventory of all state forests in DEC's Region 7. A survey of the NHP data indicates that there are no significant **ecological communities** on the Long Pond Management Unit.

Representative Sample Areas

Representative Sample Areas (RSA) 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 and/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 an endangered species or a High Conservation Value Forest.

RSAs 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 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.

Significant Ecological Communities

Table I.E. - Significant Ecological Communities within the Unit				
Community Name	**Vegetative Type**	**Facility Name & Stand Numbers**	**NYNHP Rank**	**Acreage**
Representative Sample Areas of Commonly Occurring Ecological Communities				
Reservoir/Artificial Impoundment	Pond	CH-35, Long Pond; BR-10, Nanticoke Lake	S5, G5	158
Mesotrophic dimictic lake	Pond	CH-35, Round Pond	S4, G4	25
Midreach stream	stream	CH-35, A-40& A-70	S4, G4	76
Shrub swamp	Alder	CH-35, C-68	S5, G5	23
Hemlock-Hardwood swamp	Hemlock, yellow birch	BR-1, A-2.2; CH-35, A-22.1	S4, G4	41
Successional shrubland	Hawthorne, dogwood	BR-10, A-25; CH-35, C-2	S4, G4	27
Appalachian oak-hickory forest	Red oak, pignut hickory	BR-1, A-3.2; BR-10, A-3	S4, G4	28
Beech-maple mesic forest	American beech, red maple	CH-35, A-23 & 38.7	S4, G4	52
Hemlock-northern hardwood forest	Hemlock, red maple	CH-35, A-38.1 & 61.1	S4, G4	79
Successional northern hardwoods	Aspen, white ash	BR-1, A-24.1; CH-35, A-2	S5, G5	9
Pastureland	grass	CH-35, A-56.1 & 59.1	S5, G5	64
Spruce/fir plantation	Norway spruce	BR-1, A-6.1	S5, G5	62
Pine plantation	White pine	BR-1, A-4	S5, G5	100

At-Risk Ecological Communities (NYNHP Rank S1, S2, G1, or G2)				
n/a				0

Significant Plants

No records of rare plants are known for the Long Pond Management Unit.

Significant Animals

Significant animal species include those listed as Endangered, Threatened, or as Species of Special Concern. Species of Special Concern are those not yet recognized as Threatened or Endangered, but for which documented concern exists for their continued welfare in New York State.

The Atlas of Breeding Birds in New York State does not identify any endangered species within the Long Pond Management Unit. Threatened species include the Henslow's sparrow *(Ammodramus henslowii)* which has a probable breeding status on the Unit. Species identified as Special Concern include the grasshopper sparrow *(Ammodramus savannarum)*, horned lark (*Eremophila alpestris)*, red-shouldered hawk (*Buteo lineatus*), sharp-shinned hawk *(Accipiter striatus)*, osprey (*Pandion haliaetus*), northern goshawk (*Accipiter gentilis*), and vesper sparrow *(Pooecetes gramineus)*.

The Henslow's sparrow is a grassland species and has been known to utilize the grasslands at Long Pond for breeding from May through early August. Henslow's sparrows were uncommon in the early 1900s and rare in all parts of New York State. Populations increased from 1920 to 1940, with several new colonies appearing throughout the state, including Long Island, central and western New York, and corridors along the Hudson, Delaware and Susquehanna rivers. Populations began to decline in the 1950s. Breeding Bird Survey data through 1989 have shown a steady, statistically significant declining trend in New York State and throughout the Northeast. The Henslow's Sparrow has been on the American Birds' Blue List (Special Concern) since 1974. It was listed in New York State as a Species of Special Concern in the early 1980s and was re-classified as Threatened in 1999. Populations continue to decline.

Henslow's sparrow habitat preferences:

- Size of contiguous habitat may be the most important habitat component and is often a limiting factor – preferred minimum is 50 acres of contiguous, homogeneous habitat, unfragmented by roads, utility lines, hedge rows, structures, etc.
- Habitat shape is also important form an edge-to-area standpoint. The smaller the edge/area ratio, the better. Smaller, circular patches may be better than larger, linear strips.
- Vegetation – tall (> 3ft), live, dense, herbaceous cover dominated by grasses – important for nest concealment and protection from microclimate extremes.
- Well-developed layer of litter/ground cover for nesting, concealment, and foraging.
- Residual standing dead plant material for perches - used by males to attract females and defend territories.

- Sparse or no woody vegetation - in areas with no standing dead herbaceous vegetation, widely scattered shrubs are sometimes used as singing perches.
- Vegetation management rotation – no more frequently than once every three years.

The red-shouldered hawk prefers upland deciduous and mixed deciduous-conifer forests or bottomland hardwoods as both nesting and hunting sites. This raptor is associated with the mature forest canopy on the south side of Long Pond. Much of this area is managed for late successional stage forest canopy. The key component for any suitable habitat is closed canopy of mature trees. Nests are almost always found near water bodies such as a swamp, river, or pond surrounded by forest. The level of understory vegetation may vary, but sparse sub-canopies are favored for hunting. Prey consists of amphibians, arthropods, and small mammals.

The northern goshawk nests in mature deciduous, coniferous or mixed forests. It was once considered a rare summer resident "even in the wildest portions of the Adirondack forest." The dramatic increase in breeding documented between 1952 and the early 1970s is associated with the reforestation and maturing of large tracts of land during the 1930s. Goshawks are aggressive defenders of their territory and will attack anyone who ventures too close to their nests.

The sharp shinned hawk typically nests in dense coniferous or mixed woods. It is a widespread but unevenly distributed, secretive breeder in all parts of New York State. The increase in bird feeders has afforded opportunities for predation with sharp shinned hawks feeding at these sites until prey birds become wise and go elsewhere.

Ospreys prefer lakes and river habitats where they hover above the water in search of prey. They were observed in the breeding bird atlas bock that includes Long Pond suggesting that this species are possible breeders on the state forest. Bull reports that osprey suffered precipitous decline due largely to DDT-induced eggshell thinning and that populations have rebounded after the pesticide was banned in the early 1970s.

The grasshopper sparrow prefers open grasslands, meadows and pastures. Comparative studies of the grasshopper and Henslow's sparrows on the Finger Lakes National Forest showed that the grasshopper sparrow is more of a generalist, tolerating smaller sized pastures with shorter grass. As with the Henslow's sparrow, populations of grasshopper sparrows have decline as a result of reforestation and the conversion of pastures to more intensive agriculture.

The horned lark and vesper sparrow both prefer open habitats and, similar to other species that depend on grasslands, their populations have declined as a result of forest regrowth.

One mammal that is listed as endangered and may be found within the Long Pond Management Unit is the Indiana bat. This bat is one of nine bat species found in New York. The Indiana bat is roughly 2 inches in length and weighs approximately 0.2 -0.3 ounce. The Indiana bat was one of the mammals included on the original federal list of Endangered Species. In terms of sheer numbers, the species is rather abundant, with an estimated 550,000 existing range-wide as recently as the late 1970s. However, 85 percent of these bats winter in only seven caves or mines, with nearly one-half of the world's population being found in only two caves. Even

though other populations have been discovered in recent years, the additions have not offset the losses recorded over the full extent of the specie's range. **White nose syndrome (WNS)** is an illness that has killed over a million bats (various species) since 2006 when dead and dying bats, with the distinctive "white nose," were first observed. "White nose" refers to a ring of white fungus often seen on the faces and wings of affected bats. First observed in a cave in New York in February 2006, white-nose syndrome has spread from New York caves to caves in Vermont, Massachusetts, Connecticut, New Hampshire, New Jersey, Pennsylvania, and West Virginia. The Indiana bat may be found on the forests of the Long Pond Management Unit during the summer months, where the bats may choose to rest under the loose bark of mature trees. Habitat for winter hibernacula does not exist within the Long Pond Management Unit.

The small-footed bat (*Myotis leibii*) is a species of special concern that may be found within the Long Pond Management Unit. The small-footed bat appears to prefer rocky, forested areas, especially near coniferous forests. Summer roost sites are often caves, rock crevices, and behind loose tree bark, even abandon buildings and under bridges. They feed over quite 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. 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, may be released on the sunward side to aid in thermal heating of roosts. Preserve wetlands and other water bodies. Establish and maintain areas of regenerating forest as feeding grounds.

The wood turtle (*Glyptemys insculpta*) is another animal within the Unit classified as a species of special concern. Wood Turtles will rarely be seen more than several hundred meters from flowing water. 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. The favored source of food is the earthworm where an interesting behavior is exhibited, 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.

I. Management of Unique Habitats

The forests of the Long Pond Management Unit contain two specific habitats that are not common on the majority of other State Forests within Region 7. One of these habitats is the 375 acres of open grasslands, most of which is found on the Long Pond State Forest. The other is the large, contiguous areas to be managed for late successional stage forest cover. These can be found on both the Long Pond State Forest and the Nanticoke Lake MUA. The specific management actions to be utilized for these habitats are explained in this section.

Grassland Management

The grasslands provide essential habitat conditions for many migratory birds. These include the bobolink (*Dolichonyx oryzivorus*), Eastern meadowlark (*Sturnella magna*), savannah sparrow (*Passerculus sandwichensis*), grasshopper sparrow (*Ammodramus savannarum*), and Henslow's sparrow (*Ammodramus henslowii*). The Henslow's sparrow often receives the most notoriety of this group, since it is uncommon and listed as a species of special concern. Breeding pairs of Henslow's sparrows were documented at Long Pond during the 1980s and early 1990s. Nineteen pairs of Henslow's sparrows were documented at Long Pond in 1995 and seven pairs were documented in 1996. The population of this species has declined regionally over the past three decades, and currently it is unknown if any breeding pairs of Henslow's sparrows are present in the Long Pond grasslands. Three pairs of grasshopper sparrows were recorded at Long Pond in 1996. All of the grassland bird species prefer open land habitat with a high percentage of grass cover. Unmanaged grasslands will eventually become populated with shrub and pioneer tree species. This succession to shrub cover reduces the compatibility of the land with the habitat needs of these grassland bird species. Therefore, it is the Department's interest to continue management of the grasslands on the Long Pond Management unit to maintain the grass cover. This has historically been accomplished through periodic mowing and prescribed fire. More recently, contract haying has been performed in the grasslands for maintenance. Typically, if the grass is treated with mowing, haying, or fire, at an interval of once every three years, it will successfully limit the establishment of shrub species. One of the most important factors to consider when managing the grasslands is the timing of the treatment. The grassland birds utilize this habitat for breeding; therefore, disturbance during the breeding season is undesirable. Spring arrival for all of the species of interest is typically established by mid-May, but can occur by early April. Fall migration most commonly begins by mid-August, but some birds may stay into late November. Based upon this information, no treatments will be scheduled for grassland management during the months of May, June, and July. Mowing or haying will most often be scheduled between August 15 and October 15. This timing is not optimal for haying. Many farms are interested in the first available cut of hay which often in early June. Due to the management interests for protecting the breeding season of the grassland birds, haying will only be available late in the season. Contracts for haying will be awarded through competitive bids. Multiple-year contracts for haying will be considered. Prescribed fire, although historically utilized, is now an unlikely treatment option due to the expense. If prescribed fire is utilized, it will be limited to the Months of March and April. Additionally, the grasslands at Long Pond will be managed so that disturbance is limited to approximately no more than 1/3 of the grassland acreage in any given year. Three, defined, contiguous groups of grasslands will be recognized for management. A map of these grassland groups is shown in Appendix XX. The grasslands where Henslow's sparrows, grasshopper sparrows, and other uncommon grasslands bird species have been documented include: A-33, 37, 55, 56.1, 56.2, 57, 59.1, 59.2, and 63.

Another important activity associated with the grasslands on Long Pond is pheasant hunting. In recent years, the Department has released approximately 1,000 pheasants into the grasslands at Long Pond annually. The releases are typically scheduled twice per week, between early October and mid-November. Pheasant hunting is a popular activity and the grasslands will be

managed to support this field sport. Pheasant releases are intended to continue annually in the Long Pond grasslands. The release of these birds is primarily intended to serve the sport of hunting. Few birds are known to hold over through the winter season and no breeding has been documented. The release of pheasants will be targeted to the approximate 2/3 of the grasslands that are undisturbed in any year. In the event that mowing or haying is completed in late August, some pheasants may also be released in the treated fields if the grass has sufficient new growth by October. Pheasants may be released in any of the grasslands each fall, except for A-52, C-1, C-15, and C-68. Additionally, the northern section of A-69 is often strip-mowed annually for the benefit of dog trials, so pheasant stocking may also be avoided at this location.

Treating the grasslands during the period of August 15 through October 15 on a three year cycle is known to be effective for maintaining grass and forbs cover while limiting the amount of shrub establishment. However, treatment during this season and at this frequency may not be the most effective schedule for maintaining a relatively pure grass cover. While the grasslands at Long Pond do contain a high percentage of cool season grass species, there are also significant amounts of goldenrod, milkweed, asters, and other forbs. Mowing earlier in the season, annual mowing, applying lime, and periodic seeding would yield a more pure grass cover. But the associated grassland plants, such as goldenrod, are not detrimental to the ecology of the grasslands and not known to limit the habitat preference of any grassland birds. Treatment schedules that would include annual mowing (haying) and/or early season mowing would be detrimental to the grassland bird population due to the disturbance during breeding season.

One other grassland activity that is popular at Long Pond is dog trial events. Most recently organized by the North American Versatile Hunting Dog Association (NAVHDA), these events allow sportsmen to train and field test their dogs with an established standard of performance. These events have been scheduled annually in a select number of grasslands located south of NYS Route 41. The Department has issued a permit to NAVHDA annually for these events and intends to continue supporting the activity on the Long Pond Management Unit. Dog trials are primarily held in stand A-69. Other grasslands that have been used include A-74, C-37, C-44, and C-59.

Late Successional Stage Forest Management

In the southwestern section of the Long Pond State Forest, a total of 371 consolidated acres, north of the public forest access road and south of Long Pond, will be managed for late successional stage forest conditions. On the Nanticoke Lake MUA, a contiguous area of 189 acres will be managed for late successional stage forest conditions. This acreage includes a mixture of forested wetlands and **mesophytic** forests. Management for this interest means that no timber harvesting will be scheduled in these areas. These forests are not being protected from timber harvesting by regulations, but through the management objectives of this Unit Management Plan. Providing a biologically diverse ecosystem is one of the primary objectives of this Plan. Establishing these late successional stage forest areas, in a contiguous arrangement, is an important contribution to achieving this objective. In these areas, the forest will acquire characteristics over time that is unavailable on managed lands. In general, late successional stage forests contain a structural complexity of living and decaying vegetative material. These

unique characteristics add to the diversity of the landscape and offer an opportunity for a healthier ecosystem.

J. Cultural Resources

The New York State Archeological Historic Preservation Act protects resources of cultural importance because of their historical significance. Cultural resources are finite and non-renewable resources that once destroyed cannot be returned to their original state. As a state agency the DEC is required to avoid or mitigate adverse impacts to cultural resources on the lands they manage.

A review of the New York Archeological Site Index Map does not reveal any records or sites of interest within the Long Pond Management Unit.

There are also many ordinary cultural artifacts scattered throughout the Unit. Cellar holes, foundation remnants, and stone walls, provide clues about past settlement and land use. Each helps to tell the story about how the forest was cleared and transformed it into a working landscape. Waterholes and other works constructed by the Civilian Conservation Corps display the early history of the Unit under public ownership as the land was transformed once again back into a forested landscape. One CCC waterhole is located on the Triangle State Forest and remains in good condition. Most of these common cultural sites do not qualify as State or National Register historic resources. However, these artifacts from early settlement periods are still important cultural resources. As such, management practices are implemented to help retain and preserve these resources. Fieldstones are not sold from state forests and forest product sales are designed to avoid or limit impacts to these resources.

The Long Pond State Forest contains numerous foundations from the structures of the Tarbell Farms estate. Foundations from other houses and barns can be found in many places on the Long Pond State Forest and Triangle State Forest. Appendix XX, Cultural Resources Map identifies the known foundation sites within the Unit

K. Roads

Roadways found on the Long Pond Management Unit include Public Forest Access Roads, **Haul Roads**, **Access Trails**, Town Roads, County Roads, State Highways, and Abandoned Town Roads. From this group, the Public Forest Access Roads, State Highways, Town Roads, and County Roads are all designed for public use with motor vehicles. Haul Roads are designed to facilitate forest products removal (e.g. use by log trucks) and they are not open to motor vehicle use. The entrances to these roads are 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 motor vehicle use; 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.

Appendix I identifies the roads within the Unit.

L. Recreational Resources

In the spring of 1999, a series of public meetings was held for the Draft Region 7 Recreation Master Plan. Discussions at these meetings focused on issued related to recreational uses of State Forests in the Region. Participants presented a broad range of recreational uses including horseback riding, hiking, hunting, snowmobile riding, camping, photography, mountain biking, cross-country skiing, trapping, bird watching, canoeing/kayaking, target shooting, wildlife observation, fishing, and horse-drawn carriage riding. Although the Master Plan was never finished, input received from the public at these meetings has been incorporated into this plan and the Strategic Plan for State Forest Management (SPSFM) which should be read in conjunction with this UMP.

The more popular recreational activities on the Long Pond Management Unit include: snowmobiling on the designated corridor trail on BR-1 & CH-35; fishing on Long Pond, Round Pond, & Nanticoke Lake; bird observation in the CH-35 grasslands; camping at the designated sites on Long Pond; boating on Long Pond; deer and turkey hunting across the Unit; and fall pheasant hunting in the grasslands at Long Pond.

In general, the number of hunting licenses, fishing licenses, and snowmobile registrations has declined over the past 20 years in New York State; however, these still remain popular activities. The Department will manage for continued high quality recreational uses that are compatible with the other management objectives for the Long Pond Management Unit.

Currently, illegal off road vehicle and ATV use occurs on the Unit at various locations. This activity causes damage to the State Forests and is a violation of the Environmental Conservation Law (ECL). 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.

State Forests provide the public with opportunities for many recreational pursuits. **Parcelization** and residential occupancy have restricted the access to private lands, resulting in an increased public use of State Forests. The opportunity for many of these activities on the Unit will be offered on a primitive scale. For example, the camp sites at Long Pond are not developed to the extent that they are in State Parks or private campgrounds. There is no running water, electric hook-ups, trash receptacles, or attendants on site. The use of these sites is free and no reservations are required.

In managing the recreational resources on the Long Pond Management 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. The primary goal is to provide compatible opportunities for use while protecting and maintaining the forests.

The Long Pond Management Unit provides opportunities for a diverse array of opportunities for recreational activities and facilities that the Department maintains. Activities that do not require facilities, such as nature observation, hunting or trapping occur across the Unit. Opportunities for activities such as snowmobiling are available on designated, developed trails. Opportunities and facilities for recreation on the Unit include:

Snowmobile Trail System

A designated snowmobile trail is located on two of the properties in the Long Pond Management Unit. The trail extends for 1.3 miles on the Triangle State Forest and 4.6 miles on the Long Pond State Forest. The trail between the two State properties is connected across privately owned lands. This snowmobile trail is part of the extensive NYS snowmobile corridor trail system. Funding for this trail system is administered through the NYS Office of Parks, Recreation, and Historic Preservation (OPRHP). Trail maintenance on the Long Pond Management Unit is largely accomplished by the Ridge Riders Snowmobile Club through an Volunteer Stewardship Agreement (VSA) with the Department. Signing of the trail, removal of encroaching vegetation, erosion control, and seasonal trail grooming are all performed by the Club. Construction projects, such as the installation of bridges, are performed by the Department. The snowmobile trail on the Long Pond Management Unit travels through a variety of terrain. Most of it is located within the forest, about 1 mile is located on the unplowed Public Forest Access Road, and another mile extends across open grasslands. The snowmobiling season for this trail opens after the final day of deer hunting season in December and extends as long as sufficient snow cover persists, usually until early April.

Long Pond Camp Sites

There are eight designated camping sites located on the north side of Long Pond. A map showing the site locations can be found in Appendix XX. Seven of the sites are located near Long Pond and can be accessed through graveled driveways. The eighth site is located on the north side of NYS Route 41, off the Tarbell Estate driveway. These camp sites are open to the public, and no fees are collected by the Department. There are no requirements for permits or reservations. Most of the sites have a fire ring and some have a picnic table. Two commercial, portable toilets are located near the sites during the summer months for sanitation. The camping season is only limited by snow cover, as the driveways and sites are not plowed in the winter. The complete guidelines for camping at these designated sites may be found in Appendix XVI. These guidelines include:

- The maximum number of people per camp site shall be 8 and the maximum number of vehicles per camp site shall be 2.
- Each group camping at a site shall include at least 1 person 18 years of age or older.
- The maximum length of stay at any one site shall be 14 days, except during big game hunting season.
- Camping within the Long Pond camping area is allowed at designated sites only.
- Nanticoke Lake MUA: NYCRR Title 6 Part 94.2d prohibits camping on the Nanticoke Lake MUA.

Boat Launch Sites

An improved boat launch, suitable for launching trailer boats, is available at the west end of Long Pond, off NYS Route 41. Both electric and gas powered motor boats are permitted on Long Pond; however, the maximum horsepower is limited to not more than 25 hp. Two other sites have been designated within the Unit for launching car-top boats. One is located at Long Pond, in the designated camp site area and the other is located near the dam at Nanticoke Lake. No gas powered motors are permitted on Nanticoke Lake.

Parking Areas

A total of 24 parking areas have been designated within the Long Pond Management Unit. Some of these sites are developed with hardened surfaces and well-defined boundaries while others are unimproved, pull-off sites with suitable, level ground for parking a vehicle. These sites are identified on the maps in Appendix XX. Additional pull-off sites can be found within the Unit. Motor vehicles are not permitted off-road within the Long Pond Management Unit; however, it is permissible to park vehicles adjacent to the roadways where space and terrain are suitable. The improved parking areas include the boat launch parking area at Long Pond, the kiosk parking area at Long Pond, and the parking area at Nanticoke Lake.

Kiosk

An information kiosk with a map of the Long Pond State Forest is located on the south side of NYS Route 41, near the east end of Long Pond. A parking area and picnic table is available at this site. The parking area is maintained by the NYS Department of Transportation.

Snowmobiling

Snowmobiling is available on the 4.6 miles of designated corridor trail on the Triangle and Long Pond State Forests. This trail is groomed and maintained by the Ridge Riders Snowmobile Club through an AANRA with the Department. The trail includes six bridges on the Long Pond State Forest. Five of these bridges provide crossings over significant streams and most are designed with steel I-beams for the purpose of supporting grooming equipment. The sixth bridge is a small, ground-level bridge providing a crossing over a minor stream. The trail on these forests connects to the larger snowmobile trail network allowing snowmobilers to travel long distances.

Horseback Riding

The Long Pond Management Unit does not contain any designated horse trails such as those found in Madison County on the Brookfield State Forests. However, opportunities for horseback riding are available on the Unit, most readily on the designated snowmobile trail during non-snow cover periods. The main obstacle to horseback riding on the snowmobile trail is the gates which are used to barricade some of the bridges from motor vehicle use outside of snowmobile

season. At these points, horses would need to leave the trail and ford the streams. Horseback riding is available in any area of the Unit except on snowmobile trails during the snow cover season and areas that are posted against the activity. Tarbell road and the Public Forest Access Road on the Long Pond State Forest receive limited motor vehicle use and are compatible for horseback riding. Rathburn Hill Road on the Triangle State Forest is also a limited-use road and provides an opportunity for horseback riding along with the snowmobile trail.

Camping

Eight designated camp sites are available for public use on the Long Pond State Forest. Additionally, primitive camping is available across the Unit at non-designated sites in compliance with the current regulations. A summary of the regulations is available in Appendix XVI. Camping is prohibited within 150' of any road, trail, stream, or body of water, except where sites have been designated by the Department. Camping is allowed for up to 3 nights at any location without a permit. No fees are collected by the Department for camping.

Hunting and Trapping

Big game deer hunting receives the most participants of any form of hunting on the Unit. The white-tailed deer population is strong throughout the Unit. Hunting is permitted in all areas of the Unit, unless posted against the activity. In the interest of forest management, the Department encourages deer hunting on the Long Pond Management Unit. The deer density is presently at a level where adverse impacts to the understory vegetation from deer browsing have been observed. Turkey hunting on the Long Pond Management Unit is also popular with many hunters having success in the spring and fall seasons. The Long Pond grasslands are stocked with ring-necked pheasants each fall and are a popular draw for hunting activity. Pheasants are released by the Department from early October through mid-November. Other available hunting opportunities include the pursuit of upland game birds like grouse and woodcock. There is a greater density of red oak trees on the Triangle State Forest and Nanticoke Lake MUA than on the Long Pond State Forest and the grey squirrel populations are likely higher where these mast producing trees are located. Predators like coyote and fox are also present and receive a limited level of hunting activity. Rabbit populations are somewhat limited across the Unit, with the best habitat conditions existing along the edges of the grasslands on the Long Pond State Forest. Trapping takes place on the Unit however, overall participation in trapping is minor when compared to hunting.

Cross Country Skiing and Snowshoeing

A minor amount of skiing and snowshoeing is known to take place within the Unit. Snowshoeing is available anywhere across the Unit and does not require any developed facilities. Cross-country skiing is also available throughout the Long Pond Management Unit. The level of enjoyment for skiing is significantly enhanced with a developed trail, however, there are no designated cross-country ski trails on the Unit. Openings, such as the grasslands at Long Pond

and corridors through the forest such as logging skid trails provide opportunities for skiing. The designated snowmobile trail may be used for skiing, but it would often offer low suitability due to the machined surface conditions.

Hiking, Wildlife and Nature Observation

These activities are compatible across the Unit. No developed facilities are provided specifically for these activities. The diversity of habitat conditions, including ponds, streams, open grasslands, and mature forest canopy, within the Long Pond Management Unit provides excellent opportunities for nature observation.

Mountain Biking

There are no developed facilities for mountain biking on the Long Pond State Forest, but biking is allowed throughout the Unit unless posted against the activity. The Whaupaunaucau State Forest in the Town of North Norwich, Chenango County offers a trail system designated for mountain biking.

Fishing

The Long Pond Management Unit offers some excellent fishing opportunities. Long Pond contains various pan fish species, smallmouth bass, largemouth bass, chain pickerel, and tiger musky. The Department stocks Long Pond with 350 tiger musky each year. Some enormous fish have been taken from this pond, including a previous State record 29 lb. 3oz. tiger musky in 1983 through the ice. Round pond offers brown bullhead, chain pickerel, and pan fish species such as bluegill and rock bass. Nanticoke Lake is stocked annually with 2,500 rainbow trout and it also contains warm water species such as largemouth bass. Native brook trout can be found in some of the streams on the Long Pond Management Unit including Strong's Brook and Pond Brook.

1. Regulations Applicable to Recreational Activities on State Forests

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 or scouting camporees; competitive events, such as orienteering tournaments. The TRP process is explained on page 182 of Chapter 5 of The Strategic Plan for State Forest Management.
http://www.dec.ny.gov/docs/lands_forests_pdf/spsfmfinal3.pdf.

1a. Use of Motor Boats on Water Bodies within this Unit

Puruant Part 190.8 (t) (1): No person shall operate or possess a mechanically propelled vessel other than an electric powered vessel on Round Pond (CH-35) and Nanticoke Lake (BR-10).
Puruant Part 190.8 (t) (2): No person shall operate an inboard or outboard motor rated at greater than 25 horsepower on Long Pond (CH-35). Additionally, NYCRR Title 6 Part 94.2d prohibits the overnight mooring or beaching of any boats on the Nanticoke Lake MUA.

1b. Collection of Vegetation from State lands

6NYCRR Part 190.8 (g) states, "No person shall deface, remove, destroy or otherwise injure in any manner whatsoever any tree, flower, shrub, fern, fungi or other plant organisms, moss or other plant, rock, soil, fossil or mineral or object of archaeological or paleontological interest found or growing on State land, except for personal consumption or under permit from the Commissioner of Environmental Conservation and the Commissioner of Education, pursuant to section 233 of the Education Law."

1c. Universal Access

Universal access refers to the compatibility of facilities to people of all abilities. Consideration of physical accessibility needs to be considered when designing facilities such as parking areas, trails, and camp sites. This can be challenging in the natural environment and a balance must be found between the goal of making facilities available to the largest population possible and the impact to the environment in this pursuit. For more information on universal access policies, please see SPSFM page 173 at http://www.dec.ny.gov/lands/64567.html.

Specific projects to enhance accessibility are identified in the Goals & Objectives section of this UMP.

1d. 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

M. Other Facilities

1. State Forest boundary lines

The boundary line of each State Forest needs to be maintained in order to effectively manage the property. State Forest boundary lines are identified with metal signs, approximately 7"x10" in size, with the Department logo on a yellow background. The trees on the boundary line are also blazed with yellow paint. Periodic maintenance of the signs and paint, as well as survey records are needed to protect the integrity of the boundary lines.

State Forest	Length of Boundary
Long Pond SF	19.87
Triangle SF	7.07
Nanticoke Lake MUA	3.38
Total	30.32

2. 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.

Forest	# of signs	Location
Long Pond SF	1	NYS Route 41, near east end of Long Pond
Triangle SF	1	Page Brook Road
Nanticoke Lake MUA	1	Squedunk Road

3. Information Kiosks

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). Information kiosks have been installed at the Long Pond State Forest and Triangle State Forest. The Nanticoke Lake MUA will have an information kiosk installed when funding for this project is available. Below is a listing of the forests and the location of existing and proposed information kiosks.

Forest	Kiosk Location
Long Pond SF	Installed. NYS Rt. 41, near east end of Long Pond
Triangle SF	Installed. Page Brook Road
Nanticoke Lake MUA	Proposed. Squedunk Road

4. Impoundments

The term “impoundment” refers to a body of water that is artificially contained by a dam. There are currently three dams on the Unit which were constructed to create ponds. The largest and most well-known impoundment is Long Pond. This impoundment creates a 113 acre pond that is retained by a concrete dam. The dam was reconstructed in 1989. Nanticoke Lake was formed in 1976 with the construction of an earthen dam. This is a 49 acre impoundment. The third dam on the Unit is an earthen dam located on the Long Pond State Forest and was created to form a small farm pond. The impoundment is less the 0.25 acres in size. The impoundment is visible on photography from 1955, but it is not visible in 1937 photography.

In 2011, The Department contracted the Dormitory Authority of the State of New York (DASNY) to assess the design and rehabilitation needs of 21 dams in New York, including the Long Pond Dam. Subsequently, DASNY contracted with Stantec (engineering group) to perform the engineering evaluation of the Long Pond Dam. In July, 2015, Stantec provided the Department with the Engineering Assessment Report for Long Pond Dam. Prior to this Report, the Long Pond Dam was classified as a Class B – Moderate Hazard Dam. Based upon the engineering assessment of the dam, the hazard class of the dam was upgraded to a Class C – High Hazard Dam. The current auxiliary spillway configuration does not meet the criteria for a Class C structure. As of this writing (February, 2016) the Department intends to redesign the Long Pond Dam auxiliary spillway to meet the Class C criteria. This proposal would maintain the current water level of Long Pond. An alternative to this proposal would lower the water level of the pond by about 12 inches. Research will continue this year, including archeological assessments in the area of the dam. The desired outcome is to meet the Class C criteria, while maintaining the current level on the pond, and avoiding disturbance of any archeological features in the area.

5. Parking Areas

Several, unpaved, pull-off areas are located on each of the State Forests. Additionally, there are designated parking areas with hardened surfaces.

Forest	Location	Type	Size
Long Pond SF	Fry Road	Pull-off	2 cars
Long Pond SF	Nelson Road	Pull-off	2 cars
Long Pond SF	Shipton Road	Pull-off	2 cars
Long Pond SF	Shipton Road	Pull-off	2 cars
Long Pond SF	Rt 41, boat launch	Hardened surface	8 cars
Long Pond SF	Rt 41, west	Pull-off	2 cars
Long Pond SF	Rt 41, central	Pull-off	1 car
Long Pond SF	Tarbell driveway	Hardened surface	3 cars
Long Pond SF	Dam Access Rd.	Hardened surface	3 cars
Long Pond SF	Rt 41, kiosk	Hardened surface	3 cars
Long Pond SF	Rt 41, east	Asphalt surface	6 cars
Long Pond SF	Tarbell Rd, south	Hardened surface	2 cars
Long Pond SF	Tarbell Rd, north	Pull-off	2 cars
Long Pond SF	PFAR, south side	Pull-off	2 cars
Long Pond SF	PFAR, north side	Pull-off	2 cars

Long Pond SF	PFAR, end	Hardened surface	4 cars
Long Pond SF	Round Pond Road	Pull-off	2 cars
Long Pond SF	Fuller Road	Hardened surface	2 cars
Triangle SF	Rathburn Hill Rd	Pull-off	3 cars
Triangle SF	Rathburn Hill Rd	Pull-off	1 car
Triangle SF	Rathburn Hill Rd	Pull-off	2 cars
Triangle SF	Rathburn Hill Rd	Pull-off	1 car
Triangle SF	Gates Road	Pull-off	1 car
Nanticoke Lake MUA	Squedunk Road	Hardened surface	5 cars

6. Gates

There are five metal gates on the Unit

Forest	Location	Purpose
BR-1	Snowmobile trail – north side of Rathburn Hill Road	Limit off-season motor vehicle access to snowmobile trail.
CH-35	Snowmobile trail – 2nd bridge east of Fuller Road	Limit off-season motor vehicle access to snowmobile trail.
CH-35	Snowmobile trail – Pond Brook bridge	Limit off-season motor vehicle access to snowmobile trail.
CH-35	Snowmobile trail – Red Brook bridge	Limit off-season motor vehicle access to snowmobile trail.
BR-10	Service Road entrance	Limit motor vehicle access.

The gate at the end of Gates Road on the Triangle State Forest is on private property.

N. Property Use Agreements

1. Deeded Rights-of-Way, Utility R.O.W., Easements, and Permits

Triangle State Forest

Proposal A. Records on file indicate Gates Road was abandoned in 1969 and a request was received asking the department to grant an easement over Gates road to an adjoining private landowner for the purpose of access. A reference to a 6/5/89 Department recommendation on this matter is also included in the file, but the specific recommendation is unavailable. No additional correspondence on this issue has been received.

Long Pond State Forest

Proposal A An oil and gas lease was granted to Penn-York Natural Gas Corporation by H. Harrison in 1939. The lease is assumed to have expired.

Proposal B Spring rights were conveyed to J. Hudson Skillman by Sylvenus Brunson in 1882. Maps prepared in 1939 show the spring on the east side of Ridge Road approximately 200 feet south of the intersection with Nelson Road.

Proposal C Spring rights were reserved for two springs on the west side of Shipton Road, near the southwest corner of a 2.5 acre reserve that straddles the road.

Proposal D An oil and gas lease was granted to the Penn-York Natural Gas Corporation by Thomas Moland in 1931. The lease is assumed to have expired.

Proposal E An electric transmission line easement was granted in 1929 for the line on the west side of Shipton Road, south of the 2.5 acre reservation. The easement allows the cutting and trimming of trees to clear the line by 50 feet.

Proposal F An electric transmission line easement was granted in 1948 for the line near the northern boundary of the Long Pond State Forest on Shipton Road.

Proposal G Survey maps on file indicate woods roads that cross from private land to State Forest land. These roads include one east of Round Pond, one west of Round Pond, two north of NYS Route 41near the western extent of the forest, and one near the end of Fuller Road. Records on file do not reference any easements or other rights of use pertaining to any of these roads.

Records of four easements for electric utilities exist for Proposal J. One easement is for the transmission line paralleling NYS Route 41on the north side. This easement extends for 50' on each side of the centerline for the transmission line and 15' on each side of the centerline for the distribution line. A second easement was granted in 1925 by John and Mary Jane Harrison for an electric transmission and distribution line. The easement has a 125' width and is located on the west side of Tarbell Road. A third easement for an electric transmission and distribution line was granted in 1930 from Elwyn C. and Mary E. Rose. This line would have been located on the north side of NYS Route 41, near the western extent of the State forest, but no lines or utility poles are located there now. The forth easement on record is dated 1925 from Gage E. and Ella S. Tarbell for an electric transmission and distribution line. This line would have extended from the Tarbell estate to the Harrison property, but no lines or utility poles are located there now.

Maps on record show two former school house locations. One school house on the south side of Route 4 near the mid-point of Long Pond and the second one on the west side of Tarbell Road, south of the outlet from Long Pond. Maps on record show a road leading northerly from NYS Route 41, starting near the middle of Long Pond and passing through what is now all State Forest land to connect with Fry Road. The majority of this roadway has not been used since the time of State acquisition and it is no suitable nor permissible for travel by motor vehicles.

2. Temporary Revocable Permits

Temporary Revocable Permits (TRP) are utilized to grant permission for temporary activities on State Forests, such as group camping events, orienteering tournaments, or making repairs to existing trails. Numerous TRPs for such activities have historically been issued within the Long Pond Management Unit. Some of these included: cold weather training for more than 250 soldiers of the 204th Engineering Battalion of the New York State Army National Guard in the mid-1980s on the Long Pond State Forest; hunting dog training and trials for the North American Versatile Hunting Dog Association on the Long Pond State Forest; and snowmobile trail repairs by the Ridge Riders Snowmobile Club on both the Triangle and Long Pond State Forests. TRPs were historically issued to grant permission for the installation of infrastructure on State Forests. This procedure is no longer acceptable as it allows for an encroachment onto State property without a legal easement. Records on file indicate the following TRPs were issued for infrastructure within the Unit:

1972 - Issued to Boy Scouts of America to install camping structures on CH-35 near Round Pond. These structures were removed in 1980.

1973 - Issued to Chenango and Unadilla Telephone Corporation to install buried telephone cable along Ridge Road and Shipton Road on CH-35.

1973 - Issued to Chenango and Unadilla Telephone Corporation to install buried telephone cable through stands C-59, A-74, and along NYS Route 41 on CH-35.

1983 - Issued to CTC of New York - Chenango and Unadilla Telephone Corporation to replace 400 feet of buried telephone cable across Pond Brook on CH-35.

1987 - Issued to CTC of New York to install buried telephone cable along Ridge Road on CH-35.

1987 - Issued to CTC of New York to install buried telephone cable along NYS Rt. 41 on CH-35.

1990 - Issued to NYSEG for the installation of a utility pole and guy wire on Round Pond Road on CH-35.

1994. Issued to Genegantslet Fire Co., Inc., to install a dry hydrant on Round Pond on CH-35.

3. Uses of State Lands without Permits or Easements

Long Pond State Forest

Proposals D, E, and G. No easement exists for the electric and/or telephone lines located on the Long Pond State Forest along Ridge Road.

Proposal G. A 1982 survey revealed an encroachment of a driveway onto the State forest. Records on file do not indicate any resolution.

O. Forest Health

Many factors influence forest health including species of insects, diseases, pollutants and deer. All play important roles in the ecology of the forested landscape. Insects and diseases that affect 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.

1. 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 zone. Typically this is described as an area with a mix of fields, shrub land, agricultural crops, mast trees such as 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. High quality habitat can ecologically support more deer while maintaining the biodiversity of forest plant species than can low quality habitat because there is a greater diversity of and more abundant food resources available, and the deer are feeding less in the forest. The lands on the Unit are of moderate to poor habitat quality while better quality habitat is available on private lands in the vicinity of the Unit.

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 and 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.

In the forest, deer have "favorite foods". Species that deer prefer to eat include sugar maple, white ash, red maple and red oak, while 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 and 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). Excessive deer browsing can also reduce understory plant species diversity. 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.

New York fern, hay-scented fern, American beech, striped maple, and hophornbeam are the primary species of interfering vegetation on the Long Pond Unit. Some stands on the Unit have dense interfering vegetation that is preventing the establishment of desirable regeneration. Sustainable forest management requires regeneration of the forest to desirable species following harvesting. Based upon field observations, it is presumed that deer have a generally moderate impact to forest vegetation on the Unit; however the impact can vary across the Unit.

2. Insects

a. Hemlock Woolly 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. This insect has been the focus of many recent studies in an attempt to discover methods of reducing its impact. Presently, the adelgid has not caused extensive damage to hemlock trees in Chenango or Broome Counties, however this insect from Asia is present within the Unit and has been devastating to hemlock in the lower Delaware and Hudson River valleys. The adelgid attacks and kills all sizes of hemlock. As of 2010, known infestations covered 25 counties within New York State. 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. Current control efforts include 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. Infested hemlock trees can also be protected individually with chemical,

systemic insecticides. These insecticides, typically applied as a soil drench or an injection into the soil below the organic layer or as a basal bark spray, are incorporated by sap flow into the tree's tissues and can provide multiple years of protection from a single treatment. However, the costs associated with application, environmental safety concerns about applying insecticides near water resources, and the tremendous reproductive potential of HWA remain as challenges.

b. 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.

c. 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 have brought heavy infestations of the forest tent caterpillar to localized areas in central New York. Numerous patches of forest canopy were defoliated in Chenango and Broome Counties during the summers of 2008 and 2009. Many of the trees, especially sugar maple, did not survive the consecutive defoliations.

d. 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.

e. Pear Thrips (*Taeniothrips inconsequens*) - Introduced from Europe to the United States in 1904. They attack 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.

f. 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.

g. Peach Bark Beetle (*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.

h. 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. Populations of this pest have been established in central Massachusetts as well as Brooklyn and Amityville, NY. Host trees are predominantly maples. Since this pest is extremely destructive and has the potential to spread at a rapid rate, authorities are destroying all trees discovered with infestations. As of 2012, over 6000 infested trees resulted in the removal of over 18,000 trees; New Jersey's infestation of over 700 trees lead to the removal and destruction of almost 23,000 trees, and 28,000 trees have been removed in Worcester, MA because of the nearly 20,000 trees confirmed to be infested with the Asian longhorned beetle. There are no known natural factors which will limit the spread of this insect.

i. 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 millions of ash trees. The emerald ash borer is established in Illinois, Indiana, Kentucky, Maryland, Minnesota, Missouri, New York, Ohio, Ontario, Pennsylvania, Quebec, Tennessee, Virginia, West Virginia, and Wisconsin. 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 spread to several other counties. Current information on the status of EAB in New York State can be found on the web at http://www.dec.ny.gov/animals/7253.html. 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.

j. 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 Broome counties are in this Federal quarantine area which regulates and limits the transportation of pine logs to sawmills out of the area.

k. 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. As of late summer 2006, the Sirex woodwasp had been confirmed in most counties of central New York including Chenango and Broome Counties. Significant, localized damage to pine trees from this pest has been observed. Control methods for the woodwasp are being researched, including a biological control involving the use of parasitic nematodes.

l. 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*).

3. Diseases

a. 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.

b. 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. It is still possible to find mature elm trees within the area of the Long Pond Management Unit.

c. 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. American chestnut was historically present on the Unit, and young trees can still be found today in limited quantities. It is very rare to find an American chestnut tree with a dbh (diameter at breast height) of more than 8 inches. Once they reach this size, the bark fissures are large enough to be exposed to the fungus.

4. Pollutants

a. Acid Rain - Acid rain comes in many forms: rain, snow, sleet, hail, fog and as dry particles. It is formed when sulfur dioxide and oxides of nitrogen combine with moisture to produce sulfuric acid and nitric acid. The combustion of fossil fuels (coal, oil, natural gas) and the combustion of wood are the primary cause of acid rain. Emissions of SO2 and Nox from heavily industrialized sections of the country, especially the mid-west, have been identified as significant contributors to New York's air pollution. Sulfur and nitrogen deposition have caused adverse impacts on certain highly sensitive forest ecosystems, most notably in the high elevation spruce-fir forests in the eastern United States. Acid precipitation leaches nutrients from the soil. Excess atmospheric nitrogen may also adversely affect tree growth. Evidence of decreased growth and dieback has been found in the Adirondacks.

b. Global Warming and the Significance of Carbon Sequestration - Industrial activities, such as the combustion of fossil fuels, contribute to the amount of carbon dioxide (CO_2) in the atmosphere. CO_2, along with methane, nitrous oxide, and other gases absorb long wave radiation from the earth's surface. As the volumes of these gases increase, more of this energy is trapped in the atmosphere, instead of being released into space. The absorption of this energy creates a "greenhouse" effect, increasing the atmospheric temperature. Carbon sequestration refers to the ability of trees and other plant life to absorb and store (or sequester) carbon. As part of the photosynthetic process, trees transform atmospheric CO_2 into the basic elements of carbon and oxygen. The oxygen is released back into the atmosphere while the carbon is used to form carbohydrates, or sugars, which are the food source for tree growth. Forests may be viewed as "carbon sinks," where large amounts of carbon are being stored. Carbon sequestration plays a key role in the issue of global warming. The more carbon that is sequestered in forests, the less available carbon there will be for the formation of atmospheric CO_2.

5. 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.

The Long Pond unit is a multiple use property with a high potential for invasive species introduction. Boats, horses, logging equipment and firewood transported into the public campground each provide the opportunity for invasive species introduction onto the unit. Invasive species currently present on the Unit are listed below.

Table I.N. – Invasive Species Known to be Present on the Unit

Plants	Status
Common Buckthorn (*Rhamnus cathartica*)	Common on the unit
Eurasian Water Milfoil (*Myriophyllum spicatum*)	Common on Long Pond

Table I.N. – Invasive Species Known to be Present on the Unit	
Garlic Mustard (*Alliaria petiolata*)	Common on the unit.
Japanese Barberry (*Berberis thunbergii*)	Uncommon
Morrow's Honeysuckle (*Lonicera morrowii*)	Common on the unit
Multiflora Rose (*Rosa multiflora*)	Common on the unit.
Pale Swallowwort (*Cynanchum rossicum*)	Uncommon
Japanese Knotweed *(Polygonum Cuspidatum)*	Roadside patches.
Insects	
Gypsy moth(*Lymantria dispar*)	Present but does not cause significant tree mortality.
Diseases	
Beech Bark Disease (*Nectria ccoccinea var. faginata*)	Common throughout the unit resulting in decline and mortality.
Dutch Elm Disease (*Ophiostoma ulmi*)	Common but elm species persist throughout the region.
Animals	
	No known invasive animal species are present that have significant impact on the Unit.

Eurasian water milfoil is a submerged aquatic plant that grows in slow moving water. Once introduced into a waterbody, milfoil will out-compete and quickly causes declines in native plant diversity and abundance. It creates dense mats that interfere with boating and other water- based recreational activity. Eurasian water milfoil can grow from broken off stems which increases the rate in which the plant can spread and grow.

Pale Swallowwort is considered a high priority for control on the Unit due to its ability to prolifically reproduce in nearly any habitat and travel long distances on wind-blown seed. When it is located, efforts are made to eradicate it by hand digging or herbicide application. The other invasive species present are generally more common across Central New York and the Unit. State-wide efforts to prioritize, develop effective strategies for control, and allocate resources are needed to address these invasive species.

In 2013 the Department proposed regulations expected to help control invasive species by reducing the introduction of new and spread of existing populations, thereby having a positive impact on the environment. The proposed regulations include a list of prohibited species which

shall be unlawful to knowingly possess with the intent to sell, import, purchase, transport or introduce; a list of regulated species which shall be legal to possess, sell, purchase, propagate and transport but may not be knowingly introduced into a free-living state; and require a permit for research, education and other approved activities involving prohibited species and release of regulated species into a free-living state.

6. Landscape Conditions and Trends

Landscape is a spatial mosaic of several ecosystems, landforms, and plant communities across a defined area irrespective of ownership or other artificial boundaries and repeated in similar form throughout (Helms). The Long Pond Unit landscape is the larger geographic area within which the three state land properties are located. It is approximately 260 square miles in size and occupies all the land within the towns of Lisle, Marathon, Triangle and Willet and sections of land within the towns of Barker, Cincinnatus, Freetown, German, Greene, Lapeer, Nanticoke and Smithville. The Tioughnioga and Otselic Rivers are the two principle waterways within this landscape and they converge at Whitney Pont where a 1,200 acre flood control reservoir was constructed 1942. Interstate 81 is the principle transportation corridor and its route corresponds with relatively high population density and commercial activity. Additionally, there is a network of state and county highways that link the villages of Marathon, Greene, Willet, Lisle and Whitney Point.

An analysis of the Long Pond Unit landscape was conducted using the National Land Cover Multi-Resolution Land Characteristics, 2011 data set from the DEC Master Habitat Database (MHDB). This data was analyzed using Geographic Information System (GIS) software. This analysis revealed that 62% of the landscape is forested while 31% is in an open condition dominated by pasture and cropland. Urban or developed land occupies 5% of the landscape and 2% is water, with the Whitney Point Reservoir accounting for approximately one third of this figure.

The Long Pond Unit landscape is in turn part of the larger High Allegheny Plateau (HAP) Ecorgion, one of 7 ecoregions within New York State. Ecoregions are areas of ecological homogeneity, which are defined by similarities in soil, physiography, climate, hydrology, geology and vegetation. The HAP Ecoregion is located along the southern tier of New York and the northern tier of Pennsylvania (Zaremba and Anderson et. al. 2003). It is defined by high elevation features at the northern end of the Appalachian Plateau. Most of the ecoregion is above 1200 feet. The general land form of the area is mid-elevation hills separated by numerous narrow stream-cut valleys. One of the main features of the ecoregion is an abundance of rivers and streams. The Delaware, Susquehanna, and Allegheny Rivers and their many tributaries cover the entire ecoregion. The Delaware River drains into Delaware Bay; the Susquehanna flows into the Chesapeake Bay; the Allegheny flows into the Ohio and eventually into the Mississippi. These three different drainages contribute to the high overall aquatic diversity in the ecoregion. The northern and eastern portions of the ecoregion were glaciated; the southwest portion was not. Many northern species and communities reach their southern limit in HAP, while many southern species extend into the ecoregion but not beyond. Species and communities associated with glaciated landforms occur in the north and east; biodiversity associated with older substrate and deeper erosional soils occurs in the southwest. Another prominent feature of the ecoregion is its currently low population density, although major population centers are nearby. There are 1.7 million people living in the 16.9 million acres of HAP

(2000 census data). The largest city is Binghamton, New York at 47,000. Only 250,000 people in HAP live in cities over 10,000. The overall population trend in HAP indicates that people are moving out of the ecoregion with the notable exception of the areas within reach of New York City by major highways.

P. Land Use and Land Cover for the Landscape Surrounding the Unit Compared to Surrounding Eco Region

Unit Landscape: Four Mile Radius Around Unit
New York High Allegheny Plateau Eco Region (8,709,409 acres)

Land Use or Land Cover	Acres	% of Unit Landscape	Current % of Eco Region	20 Year Forecast - % Change
Deciduous Forest	47,561	28.6	47.0	-0.1
Conifer Forest	14,345	8.6	6.8	-0.1
Forest Wetland	731	0.4	2.9	-<0.1
Mixed Forest	34,714	20.9	12.2	+0.8
Shrub and Brush Rangeland (seedling/sapling)	866	0.5	2.1	+0.9
Non-forested Wetland	495	0.3	0.2	-<0.1
Agricultural – Cropland - Pasture	57,826	34.7	22.1	-3.5
Developed, Residential and Commercial (urban)	8,088	4.9	4.7	+1.8
Open Water	1,151	0.7	1.1	+<0.1
Grass – Herbaceous	462	0.3	0.8	+0.2
Barren Land – Mines, Quarries, Gravel Pits	29	<0.1	0.1	+0.1
	166,268	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

Forest regrowth during the 20th century on lands cleared for agriculture during the 19th century is perhaps the most important ecological change in New York and New England. Although this transition has stabilized, agricultural land within the HAP is will continue to decline as both urban and forest land increases. 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 number of bird and other species dependent upon early successional habitat conditions (See SGCN species in the Wildlife section).

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** structures 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.

III. 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. Eighty-five plus years after the passing of the Hewitt 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 in this UMP. 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.

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.

A. Timber Resources

Timber resources on the Unit include hardwood and softwood saw timber, 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.

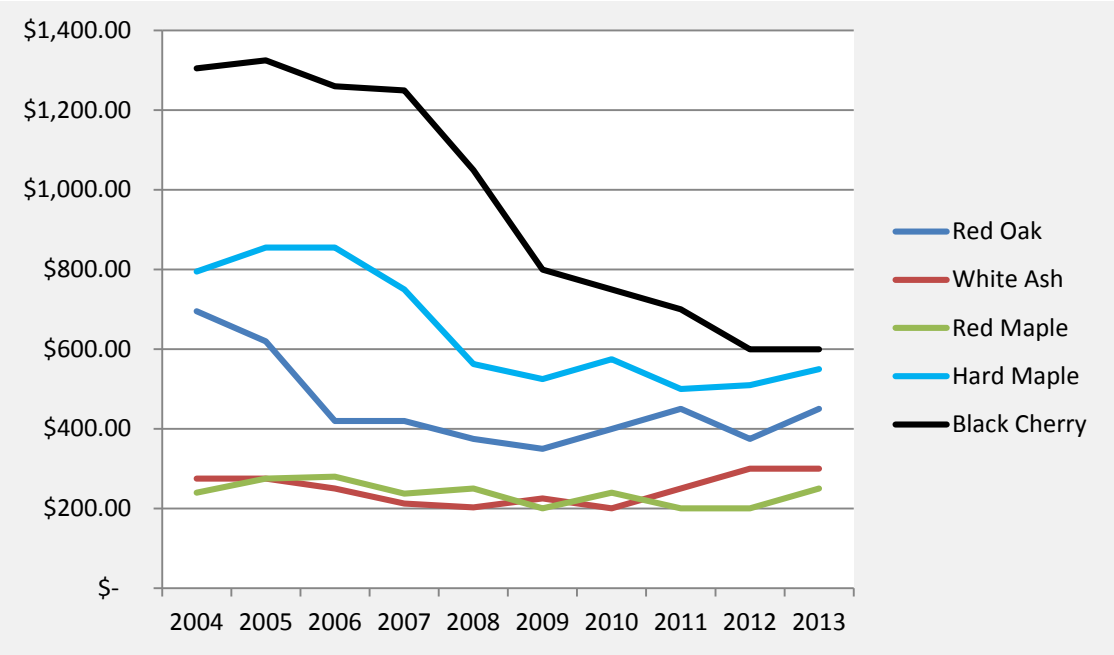
The demand for timber on the Unit is part of the larger regional timber market which is part of the global market for wood products. For example: hardwood trees grown and cut on the Unit's State forests are often purchased by local loggers or sawmills, sawn into lumber at a mill within the region, and 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 through the Sustainable Forestry Initiative® (SFI®) 2010 - 2014 Standard and the Forest Stewardship Council® (FSC®) FSC-US Forest Management Standard (v1.0). This process evaluates the Department's forest management

program for the use of sustainable forestry practices which have met 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 saw timber from regional sawmills. **Table 1** 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 Reporting Area "C," which includes Chenango County.

Figure 1.



The graph displays the trends in stumpage prices paid for standing timber based upon data for the 2004 season through the 2013 season. Market prices for hardwood saw timber steeply declined from 2006 to 2011. It appears that prices may have stabilized in 2012 and may be beginning to increase in 2013. 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 when the demand for new home construction increases and the state of the economy improves. While the local demand for hardwood saw timber 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 dedicated spruce sawmills in New York State, so most of the harvested spruce timber is transported north to Canadian sawmills. Approximately 10% of the spruce harvested in New York State is processed by small, multi-purpose sawmills within the state. These Canadian mills also purchase red pine logs. The Canadian demand for spruce and pine 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 saw timber from regional industries which manufacture it into 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 saw timber 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 data reveals that firewood is the primary fuel for heating in 19.5% of the occupied housing units within a 12 town area surrounding the unit.

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 100 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.

As the stumpage price chart in **Table 1** indicates, prices for the hardwood species rose steadily during the 1990s through 2001and have fluctuated since then. The rise in hardwood values 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 will 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.

B. Mineral Resources

Oil and Gas

Title 11 Section 23-1101 of the Environmental Conservation Law authorizes the Department of Environmental Conservation to make leases on behalf of the State for exploration, production and development of oil and gas on State lands.

Oil and natural gas are valuable resources which can provide energy and revenue, as well as the opportunity for improvements to the existing infrastructure of these areas and creation of open space to enhance habitat diversity. As with any other human activity on State lands, oil and natural gas exploration and development can impact the environment. Most impacts are short term and occur during the siting and drilling phases of a well.

New York State manages the surface estate through the NYS DEC Division of Lands and Forests and the Division of Fish, Wildlife and Marine Resources and the mineral estate through the NYS DEC Division of Mineral Resources and the Office of General Services.

For more information on the procedures of gas leasing, see the Mineral Resources section in Appendix XIV.

Historical Drilling and Production

The drilling of the first commercial oil well in the United States occurred in Titusville, Pennsylvania in 1859.The results of this drilling activity carried over into neighboring New York State in 1863. Eventually this activity extended into western and central New York.

James V. Joyce/DBA Joyce Pipeline Co. drilled the Tarbell 1 well in the Town of Smithville, Chenango County on property that is now included within Long Pond State Forest. This well was drilled to a depth of 6011 feet and was considered incapable of commercial gas production. The well was subsequently plugged in 1979.

The closest producing gas wells were drilled during the late 1960s and early 1970s south of the UMP area in the Town of Triangle, Broome County in the Triangle Field. Three wells were drilled to explore the potential for gas production from the Queenston Sandstone at approximate depths of 5800 to 6400 feet. These wells are located less than one mile from and midway between Long Pond and Triangle State Forests.

The Genegantslet Field was discovered in 1964 with four wells producing from the Hamilton Shale Group (which includes the Marcellus Shale formation) at approximate depths of 2000 feet. These wells are located approximately two miles southeast of Long Pond State Forest in the Town of Smithville, Chenango County. Although wells in both the Triangle and Genegantslet Fields were reported to be gas producers, none of the wells have been produced commercially.

Recent Drilling and Production

The closest commercially producing well is approximately 11 miles northeast of Long Pond State Forest operated by Emkey Resources LLC. The Blood 1 well, located in the Town of Preston, Chenango County, is currently producing gas from the Oneida Sandstone, Herkimer Sandstone, and Devonian Shale formations. Norse Energy Corp. USA drilled four wells in 2008 located 7 to 10 miles northeast of Long Pond State Forest in the Towns of McDonough, Preston, and Oxford, Chenango County. These wells are completed to produce from the Oneida and Herkimer Sandstones and Marcellus Shale but are currently shut in.

Commercial gas production has been established since 2004 within 16 miles northeast of Long Pond State Forest in the Towns of Smyrna and Plymouth, Chenango County where Nornew, Inc. and Norse Energy Corp. USA drilled wells targeting the Oneida, Oswego, and Herkimer Sandstones in the Beaver Meadow and Hawley Brook Fields. Production in these fields was originally from the Oneida and Oswego Sandstones; however, drilling from 2007 to present has extended the fields and has focused on horizontal wells drilled in the Herkimer Sandstone. These wells are currently operated by Emkey Resources LLC.

Recent Leasing Activity

An initial title review indicates New York State owns the mineral estate under all areas covered by this Unit. The above statement is made with the qualification that mineral reservations may exist and no expressed or implied warranty of title is being offered in this document. All of the state lands comprising the UMP area are not currently under oil/gas lease contracts.

Future Leasing Activity

Future interest in natural gas production in the western New York and the Finger Lakes Region, the State may lead to requests to nominate lands for leasing. For further information on lease procedures, well drilling permitting procedures, historical and statistical information go to the Department's website at http://www.dec.ny.gov/energy/205.html or contact the NYS DEC Mineral Resource staff at (585) 226-5376 or by mail at Region 8, 6274 East Avon-Lima Road,

Avon, New York 14414-9591. Additional contacts include; New York State Department of Environmental Conservation-Division of Mineral Resources- Bureau of Oil and Gas Regulation, 3rd Floor, 625 Broadway, Albany, New York 12233 (518) 402-8056.

Mining

Gravel and Hard Rock

The bedrock out-cropping or sub-cropping beneath surficial deposits in the UMP area consists of shale and siltstones of the Upper Devonian age Genesee and Sonyea Groups. Shale can be excavated near the surface where it is weathered and used as a source of aggregate. There is one shale pit on the Long Pond State Forest, on the north side of the public forest access road. The shale excavated from this site was used to surface this road. Additional shale is occasionally removed for the maintenance of parking areas and campsites on the forest but the amounts excavated are below the threshold required for obtaining a Mined Land Reclamation permit.

Surficial deposits overlying bedrock in the unit are predominantly glacial till with occasional bedrock outcrops located intermittently on the flanks and crests of ridges and hills. There are also recent alluvial deposits with a few intermittent kame deposits in the stream valley east of Long Pond State Forest. The kame sand and gravel deposits associated with glacial meltwater fluvial systems would provide the best sand and gravel resources for potential mining operations.

There are no active sand and gravel mines within the UMP area. The closest active mine is approximately 3 miles northwest of Triangle State Forest which is a12 acre sand and gravel mine in the Town of Willet, Cortland County.

References: *Surficial Geologic Map of New York, New York State Museum - Geologic Survey - Map and Chart series #40, 1986.*

Geologic Map of New York - Finger Lake Sheet - New York State Museum and Science Service - Map and Chart #15, 1970.

IV. Management Constraints on the Unit

A. 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

B. Administrative Constraints

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

C. 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.

D. Department Rules, Regulations and Laws

Appendix XVI lists the Department's Rules, regulations and laws governing management activities on the Unit.

V. VISION STATEMENT

State Forests on the Long Pond 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.

VI. GOALS AND OBJECTIVES

A. Provide Healthy and Biologically Diverse Forest Ecosystems

The enhancement of biological diversity across the landscape of the Long Pond unit will be a priority of the objectives in this plan.

Hunter (1999) and Lindenmayer & Franklin (2002), describe five principles for conserving biodiversity. These will be followed in the Long Pond UMP:

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

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

(3) Maintenance of stand structural complexity - This refers to the provision 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.

State Forests on this unit will be managed using an ecosystem management approach which will integrate principles of landscape ecology and multiple use management to promote biodiversity, while enhancing the overall health and resiliency of the forest resources. Ecosystem management is a process that considers environmental management on a broad scale with the goal of sustainability. Ecosystem management decisions must be socially acceptable, economically feasible, and environmentally responsible. For more information on ecosystem management, see SPSFM page 39 at http://www.dec.ny.gov/lands/64567.html.

1. Ecosystem Management

- A landscape perspective will be considered when setting objectives.
- A variety of habitats will be maintained.
- All water resources and sensitive sites will be protected from degradation.
- At least 33% of the Unit's forested acreage will be maintained in a conifer component cover type. (Conifer component cover types will have at least 10% of their **basal area** in a conifer species.)
- The values of habitats will be enhanced by establishing geographic groupings of stands with similar management directions.

- Corridors of unbroken forest canopy will be maintained along streams.
- Site specific actions will be used to enhance wildlife habitat. These actions may include **even-aged** cuttings of aspen to enhance bird habitat, **release** cuttings for apple trees and mast-producing trees, retention of roosting and cavity trees, and the retention of coarse woody material.
- **Natural regeneration** will be favored over planting. Although the coniferous plantation species are valuable, it is difficult to artificially re-establish these species with the competing natural hardwood regeneration. Therefore the natural regeneration is typically favored. In some areas, spruce will regenerate naturally. Reforestation of a site by planting will be considered if natural regeneration is unsuccessful.
- The use of pesticides including **herbicides**, insecticides, or growth retardants will be considered only after evaluating all other management alternatives and determining a clear, environmental benefit to the use of a specific pesticide. The Department has successfully used herbicides in recent years to control both invasive and undesirable plant species in the forest. An example of an exotic, invasive plant species is pale swallow-wort (*Vincetoxicum rossicum*). This plant is present on the Unit. It has the potential to monopolize sections of the forest and prevent the development of native vegetation. An example of undesirable forest vegetation is American beech (*Fagus grandifolia*). Although mature beech trees are very much a desirable component of our forests, beech saplings can sometimes become a monoculture in the forest understory and suppress the establishment of a diversity of other species. In these circumstances, a decision must be made on the proper course of action for achieving the management objectives. Mechanical means have been used in the past and will continue to be used in the future to control certain invasive and undesirable forest vegetation. Pesticides containing active ingredients such as glyphosate or triclopyr may also be used. The factors influencing the decision include soil types, slopes, proximity to water, proximity to sensitive features, vegetation size, density, area size, influences to wildlife and habitat, and the success of previous treatments under similar conditions.
- Efforts will be made to protect the forest from exotic, invasive plant species.
- The resources of timber, water, wildlife, recreation and other environmental interests on these lands will be managed on a sustainable basis. Some of the practices that promote sustainable forest management that are incorporated into this plan include: retaining coarse woody material, harvest restrictions on steep slopes and along riparian corridors, protecting areas with significant cultural or historic resources and following **Best Management Practices** during timber harvesting.
- Opportunities to interact with the community to gain knowledge of their interests in the State Forests will be pursued.
- Communications with other natural resource managers will be encouraged as future decisions are needed in the management of these lands.
- Forest management decisions will ultimately be supported through social acceptability, economic feasibility, and reliable scientific information.
- This management plan shall include goals and objectives consistent with sustainable forestry criteria established by the **Forest Stewardship Council** and the Sustainable Forestry Initiative**.**

1a. Objective to 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. The Long Pond Unit contains several important hydrology features which influence the quality of water in the downstream environment. 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 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.

Action 1.1.2 All timber harvesting and other management activities on the Unit will comply with the NYS publication Best Management Practices for Water Quality as described in the Strategic Plan for State Forest Management pages 110-112.

Action 1.1.3 Monitor BMP implementation by evaluating control structures after construction to assess effectiveness. A State wide monitoring system will be implemented by 2016 as per the SPSFM pg. 114.

Action 1.1.4 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 1.1.5 Protect **960.2** acres of forested wetlands, shrub wetlands, open wetlands, ponds and riparian forests. Ponds, wetlands and riparian forests are 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).

The riparian and wetland ecotypes on the Unit are diverse and productive. They provide food, breeding areas and cover for many species of wildlife. They are an integral part of the hydrologic cycle (the route water takes from evaporation to rainfall) providing sediment filters, regulating runoff and recharging aquifers. The **riparian zones** along streams and other bodies of water are protected so that mechanical **disturbance** does not cause excessive soil movement, erosion and degradation of water quality.

In accordance with the Department's Special Management Zone (SMZ) guidelines, a 50 foot forested **buffer** will be recognized on each side of all perennial streams on the Unit. No harvesting will be done within these stream corridors. An additional 50 foot buffer will also be

established outside of the no-harvest buffer, where at least 75% of the pre-harvest basal area must be retained. The number of crossings through these zones for timber extraction will be kept to a minimum. All crossings will comply with the DEC Protection Of Waters Program and the New York State Forestry Best Management Practices (BMPs) for Water Quality to protect stream banks and prevent sedimentation from entering stream channels. A 100 foot forested buffer will be recognized on each side of all intermittent streams on the Unit. At least 75% of the pre-harvest basal area will be retained within this buffer zone during silvicultural practices.

Ponds and lakes on the Long Pond Management Unit will be protected with SMZs by observing a 50 foot no-harvest buffer immediately adjacent to the water and an additional 100 foot buffer where at least 75% of the pre-harvest basal area is retained.

Classified wetlands, unclassified wetlands, and spring seeps will be protected by SMZs by observing a 100 foot buffer zone around the wetland where at least 75% of the pre-harvest basal area will be retained. Timber harvesting equipment will not be allowed within any wetland or spring seep, except for the purpose of crossing the feature to reach other sections of the forest. If crossings are necessary, BMPs will be utilized and may involve restrictions on the type of equipment, the use of timber mats, corduroy, geotextile fabric, silt fencing, or frozen ground conditions.

Protection of riparian zones will maintain streambank 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 intended within any wetland or riparian forests of this Unit. 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 XX. “Management Direction” maps.

These protection forests will be comprised of **182.8** acres of ponds, **314.7** acres of riparian zones, and **462.7** acres of wetlands. The ponds are Long Pond, Round Pond, and Nanticoke Lake. The riparian zones are forested areas adjacent to these ponds or stream corridors. Many of the riparian zones may contain soils and timber resources sufficient to warrant silvicultural treatments, however, the value of these areas as water quality buffers is favored over their economic values. Additionally, these areas will remain undisturbed and eventually attain late successional stage forest conditions, enhancing the biodiversity of the forest. The wetlands contain a variety of forest covers including shrub, hardwood and conifer-hardwood mixes. These areas contain saturated soils, or at least seasonally saturated soils, and disturbance would be detrimental to their structure and function.

In addition to these areas of protection forest, special management zones (SMZs)within managed stands will be recognized during silvicultural treatments. These SMZs will be established along stream corridors, ponds, and wetlands, to ensure protection of the water quality on the forest property as well as downstream. SMZs will be defined in the silvicultural prescriptions.

Action 1.1.6 Protect **48.7** 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. There is only a small amount of steep slope terrain on the Long Pond management unit. One example of this type of topography is located on the north-facing slopes along the south side of Long Pond. Timber harvesting will not be allowed in sections of the forest that are considered inaccessible. Sections of the forest having conditions suitable for management are designated inaccessible if riparian, wetland and other protection zones will be impacted by the transport of equipment to the site or if the environmental cost of establishing access outweighs the benefits derived from the management activity.

Action 1.1.7 Log landings and clearings for other management activities will not be constructed on slopes exceeding 10%. Significant slope modification is necessary to establish landings on these sites and there is the potential of impacting drainage patterns and creating abrupt and permanent contrasts in landscape patterns. Acceptable sites where log landings were previously established will be favored over the alternative of creating a new log landing.

Action 1.1.8 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. These trout streams include Pond Brook and Strong's Brook. Protect all C and D classified streams by establishing a 50 foot "no-harvest" buffer along both sides of the streams. Beyond the initial buffer, an additional 50 foot "restricted-harvest" buffer zone will be established. BMP's will also be implemented to protect the streams.

Action 1.1.9 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. Brine has a high saline content. 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. 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 will not be allowed on the portions of the following town roads and Public Forest Access Roads that are on State land:

State Forest #	Town(s)	Road Name
Broome RA #1	Triangle	Rathburn Hill Road
Chenango RA #35	Smithville	Tarbell Road & the Public Forest Access Road
Chenango RA #35	Smithville	Round Pond Road adjacent to Round Pond

1b. Objective to Protect and Enhance the Biodiversity of Long Pond Management Unit

The forests of the Long Pond management unit contain an impressive variety of plant species, animal species, ecological communities, and habitats. The management of these properties will continue to maintain this diversity through specific silvicultural practices or adherence to policies for protection of the forests. Presently, the State forests of this Unit are comprised of nearly 5% open water (ponds), 11% wetlands, 9% grasslands, 43% managed forests, and 25% protection forests for biodiversity or riparian values. There is diversity in the age classes, size classes, and species composition of the forest cover across the properties. This diversity carries benefits for the wildlife of the forests. Adjustments to the timing and rate of disturbance during silvicultural operations will be made for the benefit of protecting the wildlife resources of the forests. The value of the inclusion of the Long Pond Management Unit within the Chenango Highlands forest matrix block and linkage zone will be favored for the benefits of enhancing the ecological function of the landscape.

Forest Matrix Blocks and Linkage Zones: The Long Pond State Forest and the Triangle State Forest are located within the Chenango Highlands matrix block. A map of this matrix block can be found in Appendix XX. This 275 square mile matrix block represents an area containing a high percentage of relatively unfragmented forested areas. Several of these areas have been designated across New York State for the purpose of managing the State's natural resources in the interests of biodiversity conservation and forest ecosystem protection. Chapter 2 of the NYS Strategic Plan for State Forest Management (SPSFM) provides additional information on this subject. Conscientious forest management within these matrix blocks and their associated Linkage Zones will help conserve populations of forest dwelling species in the northeastern United States. The Nanticoke Lake MUA is located outside of the Chenango Highlands forest matrix block, but within a Linkage Zone. The Long Pond Management Unit will consider maintenance and enhancement of the forest matrix block objectives as a priority. In this interest, the forest management actions within the Unit will favor:

- Avoidance of large and persistent artificial openings in the forest canopy.
- Continuous closed canopy areas to increase the amount of forest area supporting both late successional stage forests and their characteristics.
- Retention of damaged trees following natural disturbance events within areas designated as protection management, including late successional stage forest management.

Limiting fragmentation of the forest is a fundamental strategy of the forest matrix block and linkage zone concept. Fragmentation can be reduced by limiting the use of even-aged management actions across large, contiguous areas of the forest and limiting road construction and other infrastructure development. Specific methods utilized to achieve this objective may be found in the Goals & Objectives section of this plan.

Action 1.2.1 Protect **700.6** acres of forest for the values associated with biological diversity. These areas will not receive silvicultural treatments and will be allowed to attain late successional stage forest conditions. Some of these areas have been undisturbed for the past 50 years and are beginning to develop some of the characteristics of late stage forests. An uneven-aged forest structure with natural disturbance openings, large diameter tree components, coarse woody debris in various stages of decay, hummocked soils, rich herbaceous layers, and the absence of man-made disturbance are all descriptive of late successional stage forests. The flora and fauna associated with these conditions are often uncommon and contribute to the diversity of the property. Two of the larger sections of the forests that will be managed for the value of biological diversity are located (1) near the end of the Public Forest Access Road on the Long Pond State Forest and (2) the majority of the Nanticoke Lake MUA.

Action 1.2.2 Protect at-risk species and significant ecological communities as identified by the New York State Natural Heritage Program or other reliable resources. 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.

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.

Rare Plant Species that May Potentially Occur on the Unit

Common Name (*Scientific Name*)	**Habitat**
None are identified for the Long Pond Unit on the 2014 State Forest PRO layer	

Rare Animals that May Potentially Occur on the Unit

Common Name (*Scientific Name*)	**Habitat**
Henslow's sparrow, *Ammodramus henslowii*	Grasslands
Bald eagle, *Haliaeetus leucocephalus*	Ponds
Pied-billed grebe, *Podilymbus podiceps*	Ponds, streams, & wetlands
Yellow lampmussel, *Lampsilis cariosa*	Ponds
Arrowhead Spiketail, *Cordulegaster obliqua*	Ponds, streams, & wetlands
Timber rattlesnake, *Crotalus horridus*	Deciduous forests, open rocky sites.

Source: 2014 State Forest Predicted Richness Overlay GIS Data Layer

Action 1.2.3 High densities of even-aged forest management will not be utilized on the Unit.

Action 1.2.4 New road construction (of quality comparable to PFARs) will not be planned for any sections of the Unit.

Action 1.2.5 Long term or permanent openings of 0.25 acres or larger will not be planned for any sections of the Unit.

Action 1.2.6 Protect 700.6 acres of forest for the values associated with biological diversity by managing for late successional stage forest cover.

Action 1.2.7 Refrain from salvaging damaged timber within late successional stage forest cover management areas following natural disturbance events.

1c. Objective for Open Land Ecotypes

Open land **ecotypes** are composed primarily of grasses, herbaceous plants, shrubs and other low, woody vegetation. Open lands provide primary habitat for many birds, small animals and insects. Species such as deer and rabbits can find forage, seeds, or berries. Many species, especially birds, seasonally use open lands for nesting, brood cover, courtship, and food. The grasslands of the Long Pond State Forest provide valuable habitat for species such as Henslow's sparrow, grasshopper sparrow, bobolink, eastern meadow lark, and savannah sparrow. Open lands also provide edges where ecotypes meet and overlap. These edges form a transition zone called **ecotones**. Some wildlife species such as bluebirds and song sparrows require the special habitat conditions that are formed where full forest cover is adjacent to open land. Raptor species, such as hawks and owls, utilize these edges while seeking prey. The boundary lines of the Long Pond forests total approximately 30.3 miles in length. Much of the boundaries adjoin private agricultural land with open conditions.

Grass and shrub land habitats can diminish within the landscape if natural succession is allowed to occur. It is important to maintain some open land cover types within the landscape. Analysis of the landscape surrounding the Long Pond Unit reveals that approximately 35% of the land is in open conditions, mostly managed for agriculture. The open land within the State Forests of this unit comprises a much lower percentage than found in the landscape, but it is still significantly greater than typically found on State Forests in central New York State. The Long Pond forests contain about 505 acres of open land, or 12% of the property's total acreage. Both the local landscape and the Long Pond State Forests contain a sufficient amount of open land presently. If the landscape experiences a decline in this type of habitat in the future, actions will be considered to acquire additional acreage that can be maintained as open land.

Grass land maintenance will be performed by mowing or haying the grass on a 3 year cycle. Between the years 1990 and 2008, prescribed fire was used as an alternate method for grassland maintenance on the Long Pond State Forest. The use of prescribed fire has been recommended by researchers as providing specific benefits for grassland bird species. However, the cost of prescribed fire is about twice that of mowing and specialized staff and equipment are required to perform this treatment. The use of prescribed fire will not be ruled-out as a method of future grassland maintenance, but it is an unlikely option due to the associated costs. Haying is another method of providing maintenance for grasslands and it's the most economically attractive method. Haying has been used as a treatment for the Long Pond grasslands and will continue to be considered in the future through a competitive bid process. Shrub land maintenance will

include periodic site inspections and removing trees when necessary to prevent succession. Invasive species such as honey suckle and multi-flora rose will be removed with mechanical methods. The use of herbicides to control invasive vegetation within the grasslands will only be considered if mechanical methods prove unsuccessful.

Action 1.3.1 Maintain **453.0** acres of open land on the State Forests. This will include **78.3** acres of shrub cover and **374.7** acres of grass cover. In addition to these acres, the forests contain 83 acres of shrub cover in wetlands or riparian areas.

Actions 1.3.2 Periodically monitor the landscape for changes in the amount of open land.

1d. Objectives Using Silvicultural Treatments for the Management of Specific Forest Cover Types

The non-protected forest stands on the Unit are to be managed for multiple uses, including timber. **Silviculture** is the science and art of cultivating forest crops. Although there are several variations, the two basic silvicultural systems for managing a stand of trees are the **even-aged system** and the **uneven-aged** system. Depending upon the type of system used, the structure of the forest is altered accordingly. One of the principle differences between the two systems is the type of tree species that is favored by each. The even-aged system is best suited to the growth and **regeneration of shade-intolerant species**, such as black cherry and white ash. These species prefer full sunlight conditions. The uneven-aged system favors shade-tolerant species such as hemlock and sugar maple. In this system, the shade of continuous **overstory** trees facilitates the regeneration of these species. The implementation of these silvicultural systems is primarily achieved through the State Forest product sales program. The **cutting cycle** is the time span between treatments (i.e. timber harvests) in an uneven-aged stand. The **thinning** cycle is the interval between treatments in an even-aged stand. Cutting and thinning cycles of ranging from 15 to 30 years will be used for most stands on the Long Pond management unit forests. The age of trees at maturity varies and is dependent upon variables such as tree species, **site quality** and growing space.

An even-aged stand is one whose individual trees originated at approximately the same time, either naturally or by planting. It may undergo various **intermediate thinnings** during its development and the mature forest crop is ultimately removed in one or more major harvest cuts after which a new stand is released or established. Such a stand, consequentially, has a beginning and an ending time. The **rotation** is the number of years from establishment to maturity. Depending on the tree species comprising the forest stand and the quality of the site, the rotation length will vary. The Long Pond UMP will utilize three rotation lengths. The short rotation length will be 60-80 years, the standard rotation length will be 100-120 years, and the long rotation length will be 140+ years. The short rotation will most commonly be implemented for stands of aspen or pioneer hardwood. The standard rotation length will be used on the majority of the Unit where northern hardwood species are present and the site quality is good. Long rotations will be applied to stands containing high quality northern hardwood mixed with the native coniferous species of white pine and/or eastern hemlock. The even-aged management

system is important because it creates early forest developmental stages necessary for the survival of many plant and animal species. The tree species that this system favors (e.g. black cherry) have some of the highest timber values. Even-aged management also favors the establishment of many of the hard **mast species** such as hickory and oak. The even-aged conifer plantations on the Unit are mostly red pine, Norway spruce or mixtures of these two species. Most of these plantations will continue to be managed with the even-aged system until such time that all of the planted stems have been harvested. Once the stand has been converted to a naturally regenerated stand, the uneven-aged system may be implemented.

Another forest cover type that lends itself to even-aged management is **pioneer hardwood**. Pioneer hardwood stands tend to be old pasture reverting to aspen-red maple on poor sites. Patch cuts (grouse cuts) of one to five acres will be accomplished either using grant money or done in conjunction with nearby timber sales. These cuts result in dense sapling regrowth which provides optimal nesting habitat for grouse, woodcock and other ground-nesting wildlife.

The uneven-aged management system establishes or maintains at least three distinct **age classes** ranging from seedling-sapling to large sawtimber within one stand. During harvests, if single-tree **selection** is used, shade tolerant species regenerate, such as hemlock, beech and sugar maple. To regenerate shade intolerant species such as oak, ash or cherry, the **group-selection** variation of the system is used. During harvests, groups of overstory trees are cut to create openings from one-quarter acre to one acre in size. The larger openings are more likely to produce the shade intolerant species, provided that the seed source is available. Uneven-aged stands have the unique character of having several different layers of canopy representative of the different age classes. During the growing season, a person's line-of-sight in an uneven-aged stand is likely to be very limited due to the presence of the lower and intermediate leaf canopies.

Most of the stands on the Unit are presently even-aged as a result of agricultural abandonment and **clear cutting** in the early 1900s. Where feasible, the even-aged stands may be converted to uneven-aged stands for the purpose of growing specific tree species (e.g. sugar maple), maintaining continuous forest canopy for specific wildlife (e.g. **neo-tropical migratory birds**), or providing layered canopy structure. A layered canopy structure can provide benefits to the visual aesthetics as well as the habitat of the forest. The **conversion** of these stands will require many silvicultural treatments over a long period of time. Therefore, while the management objective for many of the even-aged, conifer plantations is listed as even-aged northern hardwood, the conversion of these forest types may require another 50 years.

The conversion of these stands from even-aged conifer plantations to uneven-aged northern hardwoods may take 100 years or more. One method of converting a stand from even-aged to uneven-aged is with group selection. This method removes small patches or groups of trees within the stand. The maximum width of the groups is usually twice the height of the mature trees. Harvesting the groups creates small openings throughout the forest stand which represent another age class within the stand. Over the course of time, as additional patches are created through timber harvests, enough age classes are established to define the stand as uneven-aged. If the harvested patches are kept small enough (e.g. 1/2 acre) and a seed source is available, it is possible to establish shade-tolerant regeneration within these patches. An example of this type

of treatment has been demonstrated in stand C-55.1 on the Long Pond State Forest. Unfortunately, the sugar maple component of this stand was severely impacted by an outbreak of forest tent caterpillar in 2009 & 2010, resulting in a lower residual canopy than desired.

The following management objectives are organized by forest cover type. Both even and uneven-aged systems are utilized to meet these objectives.

1d.1 Management for the Northern Hardwood or Northern Hardwood-Oak Cover Types

Manage 16% of the forest acreage (611.3 acres) with the interest of maintaining or developing the forest cover types of either Northern Hardwood or Northern Hardwood-Oak. A variety of present forest cover types, such as NH, RP, WS, NH-WP, will be managed to attain a future forest cover type of NH or NH-Oak. The NH and NH-Oak cover types consist of native, deciduous species. Many of the species associated with these forest types have high timber value and are prized by the furniture industry. Economic maturity of these species is often in the range of 100 to 120 years, while biologic maturity will often exceed 150 years.

Action 1.4.1a Manage **287.3** acres of present NH forest as even-aged with a 20 year cutting interval.

Action 1.4.1b Manage **64.0** acres of present NH forest as uneven-aged with a 20 year cutting interval.

Action 1.4.1c Manage **12.4** acres of present NH forest as uneven-aged with a 30 year cutting interval.

Action 1.4.1d Manage **83.9** acres of present Red Pine forest as even-aged with a 20 year cutting interval.

Action 1.4.1e Manage **4.8** acres of present Red Pine - Larch forest as even-aged with a 20 year cutting interval.

Action 1.4.1f Manage **48.9** acres of present Larch forest as even-aged with a 20 year cutting interval.

Action 1.4.1g Manage **14.1** acres of present NH-Spruce forest as even-aged with a 20 year cutting interval.

Action 1.4.1h Manage **53.7** acres of present NH-White Pine forest as even-aged with a 20 year cutting interval.

Action 1.4.1i Manage **29.1** acres of present White Spruce forest as even-aged with a 20 year cutting interval.

Action 1.4.1j Manage **13.1** acres of present NH-Oak forest as even-aged with a 20 year cutting interval.

1d.2 Management for the Shrub, Pioneer Hardwood, Apple and Spruce-Open Cover Types

Manage 2% of the forest acreage (78.3 acres) with the interest of maintaining or developing the forest cover types of Shrub, Pioneer Hardwood, Apple, or Spruce-Open. Various present forest cover types, including NH and NS, will be managed to achieve the objective early successional forest cover. The Shrub, Pioneer Hardwood, Apple, and Spruce-Open cover types have high wildlife habitat values. The apple trees and many of the shrub species serve as food sources for wildlife. The Spruce-Open cover type contains patches of grasses and shrubs mixed with widely-spaced, full canopy spruce trees.

Action 1.4.2a Manage **3.0** acres of present NH forest as even-aged with a 15 year cutting interval.

Action 1.4.2b Manage **21.1** acres of present Shrub forest as even-aged with a 15 year cutting interval.

Action 1.4.2c Manage **12.0** acres of present Apple forest as even-aged with a 15 year cutting interval.

Action 1.4.2d Manage **8.8** acres of present Pioneer Hardwood forest as even-aged with a 15 year cutting interval.

Action 1.4.2e Manage **33.4** acres of present Norway Spruce forest as even-aged with a 15 year cutting interval.

1d.3 Management for the Northern-Hardwood-Spruce Cover Type

Manage 4% of the forest acreage (167.1 acres) with the interest of maintaining or developing the forest cover type of Northern Hardwood-Spruce. Either present Norway Spruce or present NH-Spruce forest types will be managed to achieve the objective NH-Spruce over type. Although Norway spruce is not native to this region, it isn't an invasive species and it does regenerate from existing seed sources. Norway spruce has high value in the construction lumber and paper industries.

Action 1.4.3a Manage **8.5** acres of present NH-Spruce forest as even-aged with a 20 year cutting interval.

Action 1.4.3b Manage **158.6** acres of present Norway Spruce forest as even-aged with a 20 year cutting interval.

1d.4 Management for the Northern-Hardwood-White Pine Cover Type

Manage 8% of the forest acreage (341.8 acres) with the interest of maintaining or developing the forest cover type of Northern Hardwood-White Pine. Either present Northern Hardwood-White

Pine, present White Pine, or present White Pine-Spruce forest types will be managed to achieve the objective NH-WP over type. Eastern white pine is native to this region and regenerates from natural seed sources. White pine is a popular species for producing lumber. The biologic maturity of white pine often exceeds 200 years.

Action 1.4.4a Manage **30.1** acres of present NH-WP forest as even-aged with a 20 year cutting interval.

Action 1.4.4b Manage **99.6** acres of present NH-WP forest as even-aged with a 30 year cutting interval.

Action 1.4.4c Manage **19.2** acres of present WP forest as even-aged with a 20 year cutting interval.

Action 1.4.4d Manage **25.9** acres of present WP forest as even-aged with a 30 year cutting interval.

Action 1.4.4e Manage **50.5** acres of present WP-Spruce forest as even-aged with a 20 year cutting interval.

Action 1.4.4f Manage **116.5** acres of present WP-Spruce forest as uneven-aged with a 20 year cutting interval.

1d.5 Management for the Northern-Hardwood-Hemlock Cover Type

Manage 17% of the forest acreage (713.2 acres) with the interest of maintaining or developing the forest cover type of Northern Hardwood-Hemlock. Both the present Northern Hardwood - Hemlock forest type and the Northern Hardwood forest type will be managed to achieve the objective of retaining or developing the NH-Hem cover type. Eastern hemlock is native to this region, and it regenerates from natural seed sources. Hemlock has a low commercial value, but is often used in barn construction. The biologic maturity of hemlock often exceeds 200 years.

Action 1.4.5a Manage **54.6** acres of present NH-HEM forest as even-aged with a 20 year cutting interval.

Action 1.4.5b Manage **286.6** acres of present NH-HEM forest as uneven-aged with a 20 year cutting interval.

Action 1.4.5c Manage **336.3** acres of present NH-HEM forest as uneven-aged with a 30 year cutting interval.

Action 1.4.5d Manage **45.7** acres of present NH forest as even-aged with a 20 year cutting interval.

1e. Objective to Manage the Recreational Values

There are 8 designated camp sites on the Long Pond State Forest. The forest stands in which these sites are located will not receive commercial silvicultural treatments. Non-commercial work, primarily the removal of risk trees which pose a danger to campers, will be performed within these stands. Another significant recreational feature on the Unit is the 4.6 miles of designated snowmobile trail. This trail crosses through both protection and managed sections of the forest. A buffer will be maintained adjacent to the trail in the managed stands to protect the aesthetics of the trail.

Action 1.5.1 Manage **28.4** acres for protection due to recreation values.

1f. Objective to Manage Road Corridors

The road corridors on the forests have been delineated as separate stands. Most of these corridors are 50 feet wide (3 rods) where the roadway is within the forest property, or 25 feet wide (to road centerline) where the roadway is adjacent to one edge of the forest property. Although the forest cover within these corridors is limited, most of the roadways are lined with trees along the edges of the corridor and it is not uncommon for a road corridor to contain three acres of forested area for every one mile of distance. Maintaining this forested edge provides important **aesthetic** benefits to travelers of these roadways. While these **aesthetics** will remain a priority, it is also important to remove hazard trees along the roadways and to prevent the forest canopy from shading the road excessively. These road corridors will be treated with the corresponding adjacent forested stands. Advanced treatments will be scheduled where tree removal is needed for road improvement. Municipalities maintaining these roads may cut trees within the legal right-of-way. In some cases, the legal road right-of-way may be limited to the distance between maintained ditches instead of a measured distance, such as 3 rods. The Department requires municipalities to obtain a Temporary Revocable Permit (TRP) if they wish to remove trees larger than 3"**diameter at breast height** (**DBH**), within the legal right-of-way.

Action 1.6.1 Manage **46.2** acres as road corridors and an additional **3.3** acres as shale quarries.

Action 1.6.2 Maintain the forested edges along these corridors for their aesthetic importance.

Action 1.6.3 Regulate the removal of trees and non-routine maintenance within the road right-of-ways through the issuance of Temporary Revocable Permits.

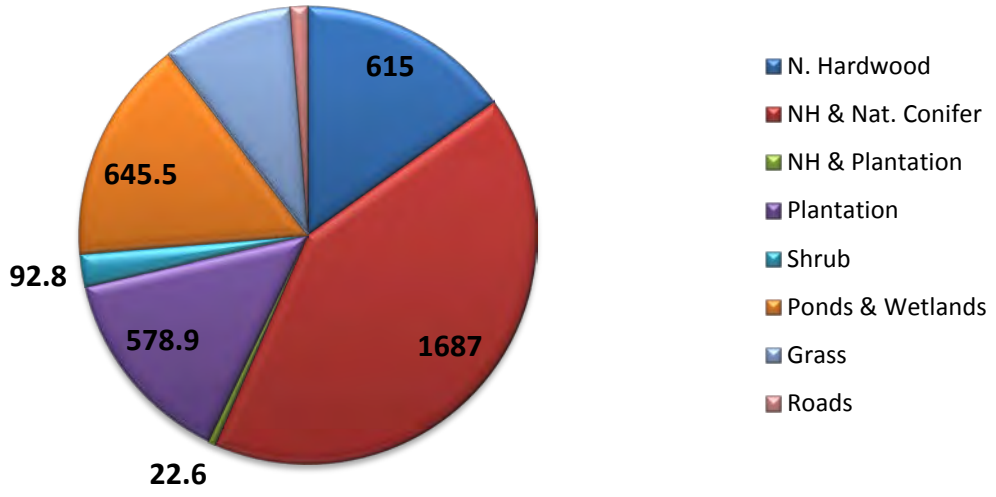
Summary of Ecotypes on the Long Pond Management Unit

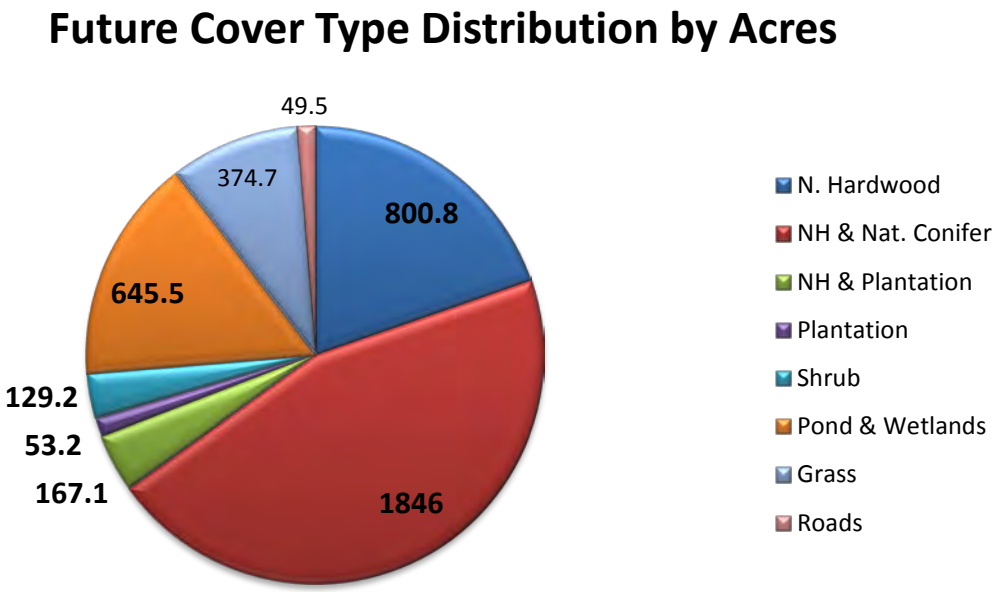
Ecotype distribution and management objectives are presented in Table 4 and Figure 1. The values identified reflect the predicted results of the actions discussed in the previous section.

Table 4. Present and Future (Objective) Cover types

Vegetation Type	Present Acres	% of Unit	Objective Acres	% of Unit
Northern Hardwoods	615	15	800.8	20
N. Hardwoods & Natural Conifer	1687.0	41	1846.0	46
N. Hardwoods & Plantation Conifer	22.6	1	167.1	4
Plantation Conifer	578.9	14	53.2	1
Shrub, Apple, PH	92.8	2	129.2	2
Ponds & Wetlands	645.5	16	645.5	16
Grassland	374.7	10	374.7	10
Roads, Shale	49.5	1	49.5	1
Total	**4,066**	**100**	**4,066**	**100**

Present Cover Type Distribution by Acres





Summary of silvicultural objectives

	1,063.2 acres even-aged
	843.7 acres uneven-aged
	1,739.9 acres protected
	374.7 acres grasslands
	49.5 acres roads & shale
Total:	4,066 acres

1g. Objective to Retain Portions of the Original Stand Structural Elements or Unique Components during Silvicultural Practices

The term **retention** refers to retaining certain elements of the original **stand structure** following silvicultural treatment. These elements may include coarse woody material (CWM), Legacy trees, snags, or cavity trees. Previous UMP's have incorporated the concepts of Variable Retention or Green Tree Retention and listed them as a separate silvicultural category. In 2010, the Department developed a Retention Policy which requires the retention of elements such as **biological legacy** trees or patches of live trees in all treated stands. Therefore, identifying this as a separate type of silvicultural practice is no longer applicable.

Retention is to be incorporated into all silvicultural treatments undertaken on State Forests

Action 1.7.1 Retain one live (Legacy) tree, ≥ 18" DBH per acre.

Action 1.7.2 Retain reserve trees and/or patches in even aged stands at time of regeneration harvest. In regeneration harvest areas 5 acres, retain 5% of the stand area in reserve patches that are 0.1-2 acres in size or 5% of the pre-harvest basal area in dispersed individual trees. Reserve patches and/or dispersed individual trees will satisfy all requirements for recruitment and cavity trees in even aged stands at time of regeneration harvest.

Action 1.7.3 Consider the habitat needs of Species of Greatest Conservation Need, Species of Special Concern, Threatened, or Endangered species known or likely to be found in or near the harvest area when deciding between dispersed and patch retention.

Action 1.7.4 Promote mixed stand conditions having both conifers and hardwoods where possible. In conifer plantations, retain at least 10% of the residual basal area in hardwood where possible. In natural stands, where possible retain native conifers in hardwood stands and retain hardwoods in native conifer stands so that they compose at least 5% of residual basal area**.**

1h. Objective to Develop Specific Habitat Conditions

Silvicultural treatments will be integrated with wildlife management by considering the effect on habitat. The species composition of a forest stand, the structure of the stand, the timing of treatments, and the retention of specific resources all influence the quality of wildlife habitat. The following actions have been developed to sustain and improve the quality of habitat in the Unit.

Action 1.8.1 Maintain both snag and cavity trees. Snag trees are standing, dead or declining stems within the forest that provide a number of benefits. Snags provide open perching sites for many species of birds, especially raptors. Other bird species require snags for construction of nesting cavities. Snags are also a future source of downed coarse woody material.

Cavity trees may be alive or dead standing stems within the forest that contain either a natural cavity or one created by animal activity. Tree cavities are preferred nesting sites for numerous song birds and owls. A range of tree diameters will be retained in order to accommodate a variety of large and small cavity users.

Emphasis will be given to maintain both snag and cavity trees near water, fields and edges where possible. This will be applied in both even and uneven-aged systems.
Recruitment trees are live trees that are permanently retained to eventually develop into cavity trees, snags, and downed woody material within the stand.

Action 1.8.1a Provide an average of four snag trees per acre and an average of four cavity trees per acre.

Tree Diameter	Snags	Cavity Trees	Recruitment Trees
11-17"	2	3	N/A
18+"	2	1	1

Downed woody material is an important component of the forest ecosystem. Downed wood stores moisture, provides habitat niches for insects, plants and fungi and cycles nutrients as it decays. Downed wood naturally occurs when limbs break, trees are blown over or snags fall. Typically, woody material is placed into two general size categories; material with a diameter greater than 4" and material with a diameter less than 4". The larger sized material is referred to as Coarse Woody Material (CWM) and the smaller sized material is Fine Woody Material (FWM).

Action 1.8.2a Retain at least 3 downed tree stems per acre that are at least 10" diameter at the small end and at least 16' in length.

Action 1.8.2b Tops of felled trees will not be sold for firewood following sawtimber harvests, except along travel corridors or where aesthetics are important.

Action 1.8.2c Minimum utilization limits will generally not be required.

Action 1.8.2d Whole tree harvesting will not be permitted.

Action 1.8.3 To manage fruit and mast producing trees. Species, such as wild turkey and grey squirrels depend upon hard mast-producing trees such as oaks, beech and hickories. Silvicultural techniques will be implemented to improve and regenerate mast-producing species for the benefit of wildlife.

Some areas on State Forests contain productive apple trees. These apple trees can be an important food source for many species of wildlife. Many of the areas with apple trees are associated with early settlement sites, where the trees were planted on cleared land. Most of these sites are now forested and the apple trees are being overtopped by taller trees. Without release efforts, this plant succession process will shade the apple trees, lower their fruit productivity and eventually kill the trees. Pruning will further enhance the fruiting of these trees and the availability of desired wildlife food.

Action 1.8.3a Release and thin around mast producing trees in both commercial and non-commercial silvicultural treatments.

Action 1.8.3b Release and prune apple trees on **12** acres of the Unit.

Action 1.8.4 To enhance stand structure and promote timber growth

Pole size stands often have the least vertical structure and little ground vegetation. Thinning of these stands will add downed woody material and stimulate vegetation regeneration on the forest floor. (See Management Actions Table for firewood thinning, pulpwood thinning, and non-commercial **timber stand improvement** thinning).

Action 1.8.4a Even-aged, pole sized stands will be scheduled for silvicultural treatments that release crop trees to promote their growth and that create openings in the forest canopy to stimulate tree regeneration on the forest floor.

1i. Objective to Encourage Winter Timber Harvesting

The benefits of winter timber harvesting include; a limited disturbance of the site and soils, availability of winter **browse** for wildlife, and less interference with active nesting sites. When practical, winter timber harvesting will be encouraged.

Action 1.9.1 Seasonal restrictions that limit harvesting to the winter only, will be included in timber sale contracts to protect soils, tree seedlings, and wildlife habitat when such protections are needed on a specific site. Seasonal harvesting restrictions will also be implemented, when it is practical, for timber sale sites that may not require such protection, but will benefit from winter harvesting.

1j. Objective to Manage Water Fowl Nesting Sites

Constructed nest boxes increase the successful breeding opportunities for water fowl by providing protection of nest eggs from predators. The forests of the Long Pond Unit will utilize nest boxes on sites with suitable habitat for water fowl.

Action 1.10.1a Install nest boxes for wood duck or other waterfowl species around ponds and open wetlands.

Action 1.10.1b Environmental organizations will be encouraged to provide nest boxes or engage in other habitat enhancement work through the "Volunteer Stewardship Agreement" program.

1k. Objective to Manage Nest Sites of Raptors on the Forests of the Unit

Certain raptors will construct tree nests in areas with an expanse of continuous forest canopy. These nest sites are rather uncommon in this area and they will be protected for the benefits of diversity that these wildlife species contribute to the ecosystem.

Action 1.11.1 The active nesting site of raptors that are listed as species of special concern will be protected. Many raptors in New York State are listed as species of special concern. Within the Unit, these may include: Sharp-shinned Hawk, Cooper's Hawk, Goshawk, and Red-shouldered Hawk. Each species has specific habitat requirements when nesting. 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. DEC 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: set-backs, no-cut or no disturbance zones, or seasonal restrictions. For recreational uses, actions may include trail closures or rerouting of trails. When specific management strategies for individual species are developed, they will be incorporated into the management plan.

Licensed falconers will continue to be permitted to remove raptors from the Unit, in compliance with ECL Article 11 and 6 NYCRR Part 173. Licensed falconers seeking to remove raptors from State land are required to obtain a permit from the Regional Wildlife Manager. To obtain additional data on the distribution, abundance, and allowable levels of take, the Department's Wildlife Diversity Section requires the cooperation of the falconry community in providing the Department with the locations of known active nests. This should be done at the time of application for the taking of **eyas**. Additionally, the Wildlife Diversity Section recommends that Regional Wildlife Staff accompany the falconer when the eyas is taken to assess immediate impacts on the breeding pair. The falconer should be required to provide a minimum of 24 hours notice to both the Regional Wildlife Manager and Regional Law Enforcement Office to enable them to accompany the falconer to the nest site and witness the capture of the eyas. Falconers are required to leave at least one eyas within the nest and to install flashing near the base of the nest tree to protect against predators after an eyas is removed from a nest.

The Department will encourage monitoring and research on the status of the northern goshawks to ensure sustainable populations, and to ensure that our knowledge of the natural history and ecology of the raptors continues to increase.

2. Protection of Resources and Forest Inventory

Efforts will be made to protect the resources of the Unit from damage due to wildfire, insect and disease outbreaks, trespass and the spread of invasive species.

2a. Objective for Fire Protection Management

A program of protection from wildfire will be maintained to assure minimum risk of loss to humans, structures and forest resources. This program is the responsibility of the Forest Rangers of the Division of Forest Protection and Fire Management.

2b. Objective for Insect and Disease Protection Management

The protection of resources from injurious insects, diseases and invasive species will be accomplished through a program of integrated pest management, with emphasis on early detection and rapid response, where appropriate. This program includes elements of reconnaissance, analysis and determination of thresholds and controls when necessary, emphasizing natural methods.

Action 2.2.1 Participate in the implementation of systematic statewide early detection program(s) to minimize the amount of time between infestation and detection.

Action 2.2.2 Develop rapid and long term response capabilities at the local level to minimize degree of impact.

Action 2.2.3 Support research and technology transfer on significant insects and diseases and their impacts on forest resources.

Action 2.2.4 Attempt to positively identify causal agents for all significant forest damages in collaboration with state and local experts.

2c. Objective for Cultural Resources Protection Management

Stone walls and old foundation sites are also protected. Forest management action and recreational trail plans will buffer these sites from disturbances. Should stone wall disturbances be necessary for access during forest product sales, a designated crossing will be established. If damage outside of the designated crossing occurs, the forest product sales contracts shall require repair of the structures.

2d. Objective for Maintenance of Forest Inventory and Boundary Lines

Forest inventory will be updated every 7 to 10 years and re-inventory of individual stands will be completed following each silvicultural treatment will be conducted. Forest inventory provides a record of the conditions and characteristics of the forest. Inventory is conducted on an individual forest stand level. Information on trees, such as species, size, density and quality are recorded. Additional information is collected on ground conditions, understory composition, quality of habitat and management options.

The integrity of boundary lines is also important for resource protection. Periodic maintenance of 30.32 miles of boundary lines and surveying when necessary will maintain the integrity of the property lines.

Forest inventory and boundary line maintenance

State Forest	Last Year of Inventory	Next Year of Inventory	Last Year of Boundary Maintenance	Next Year of Boundary Maintenance
BROOME RA #1	2010	2020	2013	2020
BROOME RA #10	2014	2024	2013	2020
CHEN. RA #35	2005	2015	2013	2020

2e. Objective for Monitoring Ecosystem Health and Developing Response Strategies to Minimize Impacts from Damaging Agents

Ecosystems are dynamic and will change over time in response to natural or man-made 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 change. Therefore, the focus will be limited to monitoring 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 2.5.1 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 which will require any silvicultural treatments will be analyzed prior to treatment. A post-harvest inventory will additionally be conducted in these stands at the end of each harvest operation.

Action 2.5.2 Include an evaluation of deer browse on forest regeneration in the periodic forest inventory. High deer populations have the ability to degrade forest health by eliminating species from the forest understory and ground layer through their repeated browsing. Department protocol will be followed as described in Chapter 6 of the Strategic Plan for State Forest Management. Volunteer research efforts will be supported, provided they do not conflict with this plan's goals or objectives.

Action 2.5.3 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 2.5.4 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 2.5.5 Monitor invasive species populations and encourage other partners or outside agencies to conduct periodic invasive species assessments of the Unit.

Action 2.5.5.a When invasive species are found, work to eradicate the population where feasible with 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 impacts to non-target species. All applications will comply with the State Environmental Quality Review law and State regulations.

Action 2.5.5.b When invasive species are found, develop rapid and long term response capabilities at the local level to minimize degree of impact.

Action 2.5.5.c 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 2.5.6 Support research and technology transfer on significant insects and diseases and their impacts on forest resources.

Action 2.5.7 Attempt to positively identify causal agents for all significant forest damages, in collaboration with state and local experts.

3. Provide Property Tax Income to Local Governments and Schools

3a. Objective to Maintain Annual Tax Payments to Local Governments and Schools

The State provides annual payments of approximately $114,332 (2013 data) in combined town, school, and special district taxes on the lands in this Unit. See Appendix XII for additional information.

4. Mineral Resources

4a. Objective to Evaluate the Compatibility of Surface Disturbance Associated with Natural Gas Exploration, Production and Development on the Unit

Article 23, Title 11, Section 23-1101 of the Environmental Conservation Law and State Finance Law authorizes the Department to make leases on behalf of the State for exploration, production and development of oil and gas on State lands. Proposals to lease parcels of Department regulated State lands for this purpose will be considered following public notice in the Environmental Notice Bulletin (ENB), and in local newspapers.

Initial title review indicates that the State owns the mineral estate under all State Forests within the Unit, with the qualification that the mineral reservation may exist and no expressed or implied warranty of title is being offered in this Plan.

Prior to leasing any land in the Unit, a public meeting will be held to provide information about natural gas development specific to the Unit and receive comments. A 30-day public comment period will follow and the Department will consider all comments prior to making a decision. If the proposal meets the SEQRA thresholds and criteria set forth in the SPSFM, no further SEQRA is necessary. Otherwise, additional site specific SEQRA review will be necessary in accordance with the SPSFM.

If the Department decides to pursue leasing, a tract assessment may indicate that a no-surface occupancy lease is preferred to avoid potential conflicts with biodiversity conservation, public recreation, cultural resource preservation, and protection of water quality. The site specific conditions for limiting impacts on natural resources encompassed in this plan will be drafted by land managers in coordination with Mineral Resource staff and incorporated into contract documents. These conditions will include but not be limited to criteria for site selection, mitigation of impacts, and land reclamation upon completion of drilling.

A number of factors are considered to determine the compatibility of surface disturbance associated with natural gas development including, but not limited to the proximity to wetlands,

riparian areas, recreation trails, unique ecological communities, and rare, threatened or endangered species. The slope of the terrain is also considered. (See Chapter 5 of SPSFM) Compatibility will be determined during field inspection and the tract assessment process on a case by case basis. Buffers will be established around sensitive features, such as streams or wetlands, and surface disturbance will not be allowed within these features or their associated buffer zones. Individual tract proposal reviews for each forest within this Unit will be completed with determinations made regarding exclusion zones prior to awarding a lease. Any parcel designated for non-surface entry in the lease will no longer be subject to the review process detailed above due to the prohibition of surface disturbance(s). Exceptions to the tract assessments are possible if additional analysis, protective measures, new technology, or other issues warrant a change in compatibility status of an area.

Upon completion of drilling, well sites will be reclaimed with native vegetation to best serve the forest management objectives. Vegetation may include trees, shrubs, or grasses.

Access roads associated with well sites will not exceed 14' in width between ditches. On turns and intersections roads will not exceed a total cleared width of 36'. Roads will be constructed with gravel over filter fabric to minimize soil disturbance. Upon completion of drilling, access roads will be closed to the public and reclaimed to a condition that maximizes the amount of desirable vegetative cover, while still allowing periodic access for maintain the well site. Site restoration and long term access will be authorized by a **Temporary Revocable Permit** (TRP).

Gas pipelines and utility lines will be located adjacent to existing roads or the existing disturbed areas created to construct the well sites.

To ensure the compatibility with the natural resources objectives within the Plan, land managers will review and evaluate all proposals for surface disturbance associated with gas leasing. This will determine the suitability of these activities and will include a review of the well siting plan, the drilling pad development plan, management of disturbed soils at the well site, and the location of distribution, collection, and utility lines.

Requests to use State land to conduct geophysical (such as seismic survey), geochemical and/or surface sampling procedures will require an approved lease and a Temporary Revocable Permit. These procedures are necessary to determine the extent and distribution of natural gas fields. Sampling procedures are less invasive than development operations and will be subject to the Department's seismic testing guidelines. If the property is subject to lease agreement, only the lessee, or parties authorized by the lessee, can be issued a TRP for these purposes. Seismic testing will not be permitted prior to leasing.

The Unit is not being considered for underground gas storage. However, if a proposal for gas storage is submitted to the Department, it may be considered as a separate lease. It will require a change to the Plan, and will precipitate the UMP amendment process, including additional public meetings and full compliance with SEQRA. Any proposal for gas storage development must be consistent with the objectives of this Plan. Once wells are played out, they will be properly plugged and abandoned.

4b. Commercial Sale of Gravel or Hard Rock Resource

Gravel and hard rock resources located on the forests of the Between Rivers Unit will be protected from commercial use. There are no mining contracts, permits, or mining operations on any of the forests in this 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 Department policy is to decline any commercial mining application(s) pertaining to any lands in this Unit. The Department will occasionally mine small quantities of shale or gravel for use on State facilities such as access roads or parking lots.

4c. Management Objectives and Actions for Mineral Resources

Actions Related to the Management of Surface Use and the Extraction of Mineral Resources

Management Objectives and Actions for Mineral Resources				
#	**Management Objectives**	**#**	**Management Actions**	**Frequency**
1.0	Consideration of approval for the extraction of mineral resources.	1.1	Nominated properties are reviewed by Division of Mineral Resources (DMN) and Division of Lands and Forests (L&F) and Division of Fish, Wildlife and Marine Resources (Wildlife) per above process. Mining minerals are reviewed by Office of General Services (OGS).	As needed.
If extraction is permitted:				
2.0	Execute consent contracts.	2.1	DMN conducts lease sale through competitive bid process and executes contracts for oil and gas. OGS executes contracts for minerals.	As needed.
3.0	Regulate operations and assess surface estate to extract mineral resources.	3.1	L&F reviews proposed operations and, if approved, issues a Temporary Revocable Permit (TRP).	Always
		3.2	DMN reviews proposed operation and issues a Drilling Permit or Mining Permit.	Always
		3.3	DMN inspects and regulates operations, production, and administers royalty payments to State.	Always

4.0	Monitor reclamation and well plugging.	4.1	DMN enforces Rules & Regulations pertaining to plugging procedures.	Always
		4.2	DMN and L&F monitors and enforces surface reclamation.	Always
5.0	Administer mineral estate.	5.1	DMN monitors lease, production, and royalty payments for oil & gas. OGS does same for minerals.	Always
6.0	Pipeline access and construction.	6.1	Granted and directed by terms of lease agreement administered by DMN.	Always
		6.2	L&F and/or Wildlife reviews proposed operations and, if approved, issues a TRP.	Always
		6.3	L&F and/or Wildlife enforce TRP provisions.	Always

B. Public Use and Recreation Goal

It is the goal of this UMP to provide an array of recreational opportunities that are compatible and balanced with the natural resources of the Unit while promoting a better public awareness of State Forest features.

1. Public Use and Recreation Management

The Strategic Plan for State Forest Management conveys guidelines for recreational development on State Forests throughout the state. In general, 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.

There are three components to the public use and recreation section of this plan:

- Maintaining and enhancing public access;
- Maintaining and enhancing recreational opportunities and facilities;
- Providing educational opportunities.

The above guidelines and principle will be used to determine the extent of development and type of facilities.

Numerous other factors influence the placement or expansion of facilities on this Unit. These influences include public safety issues, accessibility, aesthetics, fiscal considerations and recreational opportunities beyond the boundaries of the Unit.

Please refer to the Application of the Americans with Disability Act (ADA) information presented on Page 41.

Appendix XX includes maps of each forest showing the locations of existing and proposed facilities.

1a. Objective to Maintain and Enhance Public Access

Public access will be enhanced by maintaining and/or improving existing facilities, such as trails and abandoned town roadways. Additional facilities, such as pull-offs and parking areas, will be constructed to improve public access to the State land. Details on each of these improvements are identified in the following action.

Action 1.1.1 Maintain existing pull-offs and parking areas - the forests of the Long Pond management unit contain designated parking areas with improved surfaces as well as some informal pull-off sites where the ground conditions are suitable to support motor vehicles. Maintenance of these areas is important for the purpose of providing access to the properties. Designated parking areas are located at the south end of Nanticoke Lake MUA, the information kiosk site on Rt. 41 on the Long Pond State Forest, the information kiosk site on Page Brook Road on the Triangle State Forest, and both the boat launch and the dam site on Long Pond. Informal pull-off sites are available on the Long Pond State Forest on Shipton Road, Nelson Road, Fry Road, Fuller Road, County Rt. 3, and the Public Forest Access Road. Pull-off parking sites are also located on Rathburn Hill Road on the Triangle State Forest. Maintenance will include annual brushing, grading and litter pick-up when needed. Additional access opportunities will be enhanced through access routes established via land management actions removing forest products. Refer to the Assets & Cultural Resources Maps (Appendix XX) for locations.

Actions to develop a new parking area to improve public access and improve fishing opportunities:

Action 1.1.1 Construct a 2 car parking area with a hardened surface on the east side of Reed Road within stand #A-8 on the Nanticoke Lake MUA. There is an abandoned driveway at this location that leads to Nanticoke Lake. The entrance to the driveway is blocked with a gate that is in poor condition. The gate should be removed and replaced with an improved barricade to prevent motor vehicle use beyond the designated parking area. The driveway connecting the parking area to the lake shore will be graded to remove existing ruts, prevent erosion, and provide a suitable pedestrian path to the lake. This parking area will improve general access to the property as well as improve fishing opportunities. An accessible shoreline fishing platform will be installed at the terminus of the trail on the northwest side of Nanticoke Lake.

Action 1.1.2 Construct a 2 car parking area with a hardened surface on the north side of Round Pond Road within stand #C-71 on the Long Pond State Forest. Round Pond is a popular fishing area and there is presently no designated parking area near the pond and limited access to the water.

People often stand along the guardrail of Round Pond Road while fishing the pond. This project will also develop a foot path from the parking area in Stand #C-71 to the shoreline of the east end of the pond. The project will include an improvement to a portion of the shoreline to accommodate the activity of fishing. The shoreline improvement may include the application of rock or other construction material to prevent erosion from pedestrian use. Some vegetation, including shrubs and low tree branches are also expected to be removed to allow sufficient clearance for fishing. This project will be constructed to ADA access standards if the trail can reasonably be designed to accommodate acceptable slope from the parking area to the pond shoreline. If ADA standards can be achieved on the access trail, the shoreline improvement will be designed as a level and hardened platform.

Action 1.1.3 Install an ADA compliant dock at the Long Pond boat launch site. The present dock is too narrow to meet the standard. Providing this facility will increase opportunities for people to launch boats at Long Pond.

1b. Objective to Prevent Property Damage from Unauthorized Motor Vehicle Use

These State forests serve the public resources and therefore public access to the properties is encouraged. However, unauthorized motor vehicle use on the forests causes damage to the resources and diminishes the enjoyment for visitors to the properties. Rutting of soils and the associated erosion from this disturbance are the primary types of damage resulting from off-road motor vehicle use. Preventing this damage will enhance the access opportunities for authorized users. Most commonly, off-road motor vehicle damage occurs at entrances to recreational trails. The snowmobile trail through the Triangle State Forest and Long Pond State Forest has been frequently damaged from unauthorized motor vehicle use where barricades are not present to prevent this activity.

Action 1.2.1 Maintain existing barricades
For the purpose of preventing property damage from motor vehicle use, gates are located at the south section of Nanticoke Lake MUA, the entrance to the snowmobile trail on the north side of Rathburn Hill Road on the Triangle State Forest, and three snowmobile trail bridges on the Long Pond State Forest. These gates will be maintained. Snowmobile trail gates are opened during the winter season and closed outside of snowmobile season.

Action 1.2.2 Install new barricades
For the purpose of preventing property damage from motor vehicle use, 4 new gates will be installed on the Long Pond management unit. Three will be located at the following snowmobile trail entrances on the Long Pond State Forest: Fuller Road, Stand C-26 off the Public Forest Access Road and the west side of County Rt. 3 in Stand A-47. Additionally, a new gate will be installed at the snowmobile trail entrance on the Triangle State Forest on the south side of Rathburn Hill Road.

1c. Objective to Provide On-Site Information for Visitors to the Properties

The Department has installed an informational kiosk on the Long Pond State Forest, on the south side of NYS Route 41, just east of Long Pond. An informational kiosk is also located on the

Triangle State Forest, on the east side of Page Brook Road. These kiosks contain a map of the property along with photos and text descriptions of the property features.

Action 1.3.1 The informational kiosks will be maintained in a weather-tight condition and the information will be updated as needed.

Action 1.3.2 Develop an informational kiosk for the Nanticoke Lake MUA. This kiosk will be located near the parking area on the south end of the property.

1d. Objective to Improve Access to the Nanticoke Lake MUA

Access to the water on the Nanticoke Lake MUA is limited due to the configuration of the property, the location of existing features, and the absence of a designated trail.

Action 1.4.1 Improve the existing south parking area and the maintenance driveway at Nanticoke Lake MUA to increase the access opportunities for people with various levels of ability. Additionally, construct an ADA compliant shoreline fishing platform near the south end of Nanticoke Lake. The improvements to the parking area and maintenance driveway will be made to ADA standards if the slope can reasonably be modified to meet the standard. The desired improvement is to allow at least one vehicle to park in a designated ADA site, allowing access with a wheelchair along the maintenance driveway to reach the shoreline fishing platform. The current barricades will need to be modified for this purpose and parking area improved. The surface of the maintenance driveway is already hardened and expected to support the use of a wheelchair. Some construction may be needed to reduce the slope in the southern section of the maintenance driveway. A sign identifying the fishing platform and the travel distance to it will be posted in the parking area at the designated ADA site.

Action 1.4.2 Offer the opportunity to develop a pedestrian trail around Nanticoke Lake. The opportunity to develop this trail will be available to an interested volunteer group through the Department's Volunteer Stewardship Agreement program. The project would allow a 1.5 mile loop trail to be designated for pedestrian use around the lake on the Nanticoke Lake MUA. The purpose of the trail is to provide a marked corridor through the forest for short distance hiking. The trail will also improve pedestrian access for fishing. Construction of the trail may require removal of herbaceous vegetation, shrubs, saplings, and trees less than 6" dbh. Sections of poorly drained ground may need to be hardened with rock or corduroy. Trail markers will be placed along the route to clearly define the pedestrian corridor.

1e. Objective to Develop Recreation Trails on the Long Pond State Forest

Over the past 15 years, the Department has received some requests to develop additional recreational trails on the Long Pond State Forest. If the demand persists, the Department will offer the opportunity for a volunteer group to develop a new trail on the forest.

Action 1.5.2 Offer the opportunity to develop a multi-use trail on the Long Pond State Forest. The opportunity to develop this trail will be available to an interested volunteer group through the Department's Volunteer Stewardship Agreement program. The project would allow for the

improvement of approximately 1.4 miles of an abandoned road corridor. The corridor runs north-south between NYS Route 220 and Fry Road. The trail could be designated for both pedestrian activities and the CP3 program.

A second proposal was considered to develop a 2.5 mile pedestrian trail around the perimeter of Long Pond. Analysis of the terrain indicated that maintenance of such a trail would be difficult due to the sections of shrub land, grassland, and wetlands on the north side of the pond. A bridge would also be needed over the Long Pond inlet on the west side of the pond. Due to these maintenance issues, a designated trail around the shores of Long Pond will not be supported as a proposal.

1f. Objective to Support a Variety of Recreational Activities on the Long Pond Management Unit

There are eight designated camp sites on the Long Pond State Forest and informal camping is available throughout the Long Pond Management Unit, in compliance with current regulations (refer to Appendix XIV.)

Action 1.6.1 The eight designated camp sites at Long Pond will be maintained. These sites are accessible by car and include fire rings and some picnic tables. Commercially serviced portable toilets will be available beginning with the 2014 camping season. The Department does not charge any fees for camping here. Historically, neither reservations nor permits have been required for the use of these sites. If demand for use of these sites increases, the Department may require reservations and permits, similar to the process utilized for the Stoney Pond and Hunt's Pond camping sites. Presently, none of the Long Pond camping sites are designated as ADA compliant. During the 2014 season, an Eagle Scout project is scheduled to improve at least one of the sites to ADA standards.

Action 1.6.2 Allow primitive camping throughout the Long Pond Management Unit in compliance with current regulations. Many areas of the forest make attractive sites for camping, even without designated facilities. Note that NYCRR Title 6 Part 94.2d prohibits camping on the Nanticoke Lake MUA.

This management unit offers excellent opportunities for hunting and fishing with several ponds and streams and a variety of forest habitats.

Action 1.6.3 Continue to monitor the fisheries on the Unit and stock the waters with game fish where appropriate. Fish stocking presently includes tiger muskellunge in Long Pond and rainbow trout in Nanticoke Lake.

Action 1.6.4 Continue the pheasant stocking program on the Long Pond State Forest. The Department stocks pheasants in the grasslands at Long Pond each fall for the hunting season.

Action 1.6.5 Continue to provide appropriate habitat and points of access for the big game hunting season. Hunting will be allowed throughout the Long Pond Management Unit, unless an area is specifically posted against hunting. Presently, no areas are posted against hunting.

Action 1.6.6 Maintain the boat launch at Long Pond. The parking area, boat launch ramp, and dock will be maintained or reconstructed. Reconstruction may be necessary in association with the 2014-2015 repairs to the Long Pond dam. If the rehabilitation of the Long Pond dam results in a lower surface water level of the pond (not more than 12"), the boat launch may need to be reconstructed.

Action 1.6.7 Improve the site designated for hand launching boats (car top boats, canoes, kayaks) on Long Pond. This site is located near the group of 4 campsites on the north shore of Long Pond. The area between the well-drained ground and the water's edge is saturated and does not readily accommodate pedestrian use. This section will be improved with either a boardwalk or stepping stones or a raised & hardened path.

Action 1.6.8 Continue to allow the activity of target shooting in the shale quarry on the Long Pond State Forest. Target shooting is permitted across the Unit, except where posted against the activity. The shale quarry is a popular location for this activity. Glass targets are not permitted.

1g. Objective to Support Birding Activities on the Long Pond Management Unit

A great variety of bird life is available for observation across the Unit.

Action 1.7.1 Provide the opportunity for volunteer organizations to install and maintain bluebird and wood duck nest boxes on the Unit. Nest boxes for other species of interest will also be supported. Presently, some bluebird nest boxes are located on the open grasslands on the Long Pond State Forest. There are no bluebird nest boxes on the Nanticoke Lake MUA, although appropriate open land is available on this property. Wood duck boxes were once installed on Long Pond, but have deteriorated over time.

Action 1.7.2 Encourage volunteer organizations to survey the bird populations on the Long Pond Management Unit. The Department will exchange information with organizations regarding bird observations.

1h. Objective to Support Snowmobiling on the Long Pond Management Unit

Snowmobiling is available on the 4.6 miles of designated corridor trail on the Triangle and Long Pond State Forests. This trail is groomed and maintained by the Ridge Riders Snowmobile Club through an Volunteer Stewardship Agreement with the Department. The trail on these forests connects to the larger snowmobile trail network allowing snowmobilers to travel long distances.

Action 1.8.1 The Department will continue to maintain the designated snowmobile trail, with the assistance of the Ridge Riders Snowmobile Club. Fallen trees will be removed from the corridor so the trail remains open during the snowmobile season. Unauthorized, off-road motor vehicle use will be discouraged to prevent damage to the trail. Bridges will be maintained to allow snowmobiles and grooming equipment to cross stream channels.

Action 1.8.2 Replace the Pond Brook snowmobile trail bridge. This bridge was inspected by the Department in 2011 and determined to be structurally deficient. In December of 2011, the Department made repairs to the bridge to restore the structural integrity of the bridge; however, the repairs were intended only as a short-term solution. A newly constructed bridge is needed at this location. Optionally, a bridge capable of supporting both snowmobile use and seasonal, single lane motor vehicle use will be constructed at the location of the former town road bridge (near the dam).

1i. Objective to Support the Activity of Hunting Dog Trails on the Long Pond Management Unit

The North American Versatile Hunting Dog Association (NAVHDA) has used some of the grasslands on the Long Pond State Forest for the past several years to train hunting dogs and demonstrate their skills. This activity is compatible with the management interests of the property and will continue to be supported.

Action 1.9.1 The Department will make efforts to accommodate any organization that applies for permission to hold hunting dog trails on the Unit. Permission must be requested through the Temporary Revocable Permit (TRP) process. Liability insurance and application fees are required.

1j. Objective to Support Research Projects Provide Specific Information on the Long Pond Management Unit or General Ecological Information that may Benefit the Future Management Efforts on this Property

Action 1.10.1 The Department will encourage and support any research that does not disrupt the management of the Long Pond forests or diminish public access to these properties. The Department has granted permission for at least two University sponsored research projects in the recent past involving analysis of specific vegetation on the Long pond Management Unit. Permission for research must be requested through the TRP process.

1k. Objective to Acquire Private Property from Willing Sellers for the Benefit of Consolidating Forest Boundary Lines and Improving Access

The purchase of undeveloped in-holdings and certain adjacent parcels would help to consolidate forest boundary lines and improve access. Sections of the forests have a fragmented shape structure. The Department has an interest in reducing this fragmentation. The Department will pursue fee simple title of parcels that further this goal from willing sellers when funding becomes available.

C. Public Awareness Goal

It is the goal of this UMP to strengthen the participation of local people in forest management.

1. Community Forestry and Public Awareness

Community forestry can be defined as a program that purposely and directly involves local people, their values and their institutions in the forest management decisions of a given area. Community forestry gives local people both the opportunity and responsibility to participate with DEC in the management of these forest resources and to enjoy the benefits of that responsibility. Community forestry builds on local knowledge about natural and cultural resources to plan and implement sustainable forestry practices. It seeks to foster greater awareness about local forest resources and to advance cooperative forest management.

1a. Public Awareness Objective

Action 1.1.1 Conduct public programs to promote community involvement in forest management.

DEC welcomes the opportunity to engage local citizens, government, schools, conservation organizations and other groups within the area to participate in an open dialogue about forest management and community based forestry activities through a variety of public forums. Public programs could include guided walks, workshops, tree planting, litter collection and other activities that strengthen local involvement in forest management.

Action 1.1.2 Encourage participation in the DEC's Volunteer Stewardship Agreement program

The Volunteer Stewardship Agreement program is designed to encourage volunteer participation in State land management projects. This program has strengthened the role of citizens in planning and implementation of recreation and habitat improvement projects. Projects in need of adoption include recreational trail maintenance, researching, documenting and preserving cultural sites, watershed restoration, and invasive plant removal.

VII. Accomplishments since the Inception of the Original Long Pond State Forest UMP in June 1991:

- Silvicultural treatments were completed on 442 acres of forest land.
- Periodic treatments of mowing, haying, and prescribed fire were completed on 375 acres of grasslands.
- An information kiosk was installed on NYS Rt 41 for the Long Pond State Forest.
- An information kiosk was installed on Page Brook Road for the Triangle State Forest.
- Regulation adopted to limit use of motors in excess of 25 hp on Long Pond.
- Snowmobile trail was constructed through the triangle and Long Pond State Forests.
- Four snowmobile trail bridges were replaced with engineer-designed I-beam & pressure treated wood bridges.
- Eight designated campsites were established at Long Pond.
- Bluebird nest boxes were installed in grasslands at Long Pond.
- Wood duck nest boxes were installed on Long Pond.
- Boat launch and parking area at Long Pond were improved.
- A forest vegetative study was completed by SUNY ESF in and around stands C-21, C-25 and
- C-27 on the Long Pond State Forest.

- A forest vegetative study was completed by the Department in and around stands C-21, C-25, C- 27, C-48 and C-50 on the Long Pond State Forest.
- Pheasants were stocked annually in the grasslands of Long Pond.
- Rainbow trout were stocked annually in Nanticoke Lake.
- Tiger Muskellunge were stocked annually in Long Pond.

VIII. Management Action Schedules

A. Tables of Land Management Actions

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:

1. Definition of Codes Used

Forest Type and Objective Type Codes	Definition
APP	Apple
GRASS	Grass
LARCH, L	Japanese Larch
NH	Northern hardwoods
NH-HEM	Northern hardwoods and Hemlock
NH-LARCH	Northern hardwood
NH-OAK	Northern hardwoods and Oak spp.
NH-SPRUCE	Northern hardwoods and White or Norway spruce
NH-WP	Northern hardwoods and White Pine
NS	Norway spruce
OAK	Red or White oak
OAK-PINE	Red or White oak and Red or White pine
PH	Pioneer hardwoods - Aspen
SHALE	Shale or gravel pit
SHRUB	Shrub spp.
POND	Natural or constructed water bodies, including beaver ponds
RP	Red pine

RP-LARCH	Red pine and Japanese Larch
WETLAND	Open or shrub wetland dominated by alder or other shrub spp.
WP	White pine
WP-Spruce	White pine and Norway or White spruce
WS	White spruce

Management Direction Codes	Definition
E/A	Even-aged forest: 60-120 year rotation
E/ A.L	Even-aged forest with long rotation: 120+ year rotation
LSS	Late successional forest
OPEN	Grassland or Shrubland
U/A	Uneven-aged: 20 year cutting interval
ZF	Protection, recreational area
ZR	Protection, Riparian zone
ZW	Protection, wetland area

Species Code	Common Name	Genus and Species
Alder	Speckled alder	*Alnus rugosa*
APP	Apple	*Malus Spp*
ASP	Quaking aspen	*Populus tremuloides*
BAS	American basswood	*Tilia americana*
BB	Black birch	*Betula lenta*
BC	Black cherry	*Prunus serotina*
BE	American beech	*Fagus grandifolia*
HE	Eastern hemlock	*Tsuga canadensis*
HM	Hard maple	*Acer saccharum*
IW	Ironwood	*Ostrya virginiana*
JL	Japanese larch	*Larix kaempferi*
NS	Norway spruce	*Picea abies*
PC	Pin cherry	*Prunus pensylvanica*
RS	Red spruce	*Picea rubens*
RO	Red oak	*Quercus rubra*
RP	Red pine	*Pinus resinosa*
RM	Red maple	*Acer rubrum*
TA	Thornapple	*Cratagus spp.*
WA	White ash	*Fraxinus americana*
WO	White oak	*Quercus alba*
WP	White pine	*Pinus strobus*
WS	White spruce	*Picea glauca*
YB	Yellow birch	*Betula alleghaniensis*

Treatment Code	Definition
CONVERT	Plantation harvest with conversion to a hardwood type

Crop Tree Release	Release of dominant overstory trees from competition under even aged management.
FW	An intermediate treatment in hardwood stands to remove unacceptable growing stock, typically <12'dbh to improve growing conditions of residual trees.
FW/ TSI	A combination firewood harvest and timber stand improvement
Group Selection	Group selection: removal of trees in groups up to 2 acres in size to regenerate a mix of species with various shade tolerances.
Mow/ Hay	Mow to maintain grass
NONE	No scheduled treatment
RELEASE	Remove overstory trees to maintain grass, apple or shrub types.
SR	Removal of overstory trees to release understory spruce seedlings.
SHELTWD	Shelterwood treatment: An even-aged regeneration method where the stand is thinned to establish regeneration. The overstory trees are then removed to release the regeneration in one or two harvests.
ST-FW	A commercial treatment to remove sawtimber and firewood.
Thin	An intermediate treatment to remove unacceptable growing stock and improve growing conditions of residual trees.
TSI	Timber stand improvement: A non-commercial thinning to improve stand quality.
Thin-TSI	A combination commercial thinning and non-commercial timber stand improvement.
Variable Intensity Harvest	Variable intensity harvest: thinning with intentionally varied marking rules including removal in groups or patches, thinning and unthinned areas.

Treatment Year Code	Treatment Year
A	2017-2021
B	2022-2026
C	2027-2031
D	2032-2036
E	2037+

Abbreviations used in the tables are listed below:

TABLE HEADINGS

UNIT – State Forest (e.g. Chenango R.A. # 10).
COMP – forest stand sub-compartment.
STAND – forest stand identification number.
COVER TYPE – forest cover type.
ACRES – area of forest stand.
SPECIES – the two most prevalent overstory species in the forest stand.
DBH – Diameter at Breast Height. The average diameter class of overstory trees.
BASAL AREA – a measurement of tree stem density expressed in square feet.

MGT DIR – management direction.
OBJECTIVE – management objective.
TREAT TYPE – treatment type.
TREAT YEAR – year of scheduled treatment.

FOREST TREATMENT SCHEDULE ORGANIZED BY STAND I.D. NUMBER

UNIT	COMP	STAND	COVER TYPE	ACRE	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
TRIANGLE STATE FOREST											
BR-1	A	1.00	RP	46.0	RP, RM	12-17	147	E/A	NH	THIN or CONVERT	A
BR-1	A	2.10	NH-HEM	11.0	HEM, RO	12-17	136	E/A	NH-HEM	VAR. INT. HAR	D
BR-1	A	2.20	NH-HEM	12.0	Bas, Hem	12-17	120	ZW	NH-HEM	NONE	NONE
BR-1	A	3.10	NH-HEM	15.0	HEM, RM	12-17	158	E/A	NH-HEM	VAR. INT. HAR	D
BR-1	A	3.20	NH-OAK	12.0	RM, RO	18+	101	E/A	NH-OAK	CROP TR. REL	D
BR-1	A	4.00	NH-WP	100.0	WP, WA	12-17	121	E/A.L	NH-WP	VAR. INT. HAR	E
BR-1	A	5.00	RP	13.0	RP, RM	12-17	140	E/A	NH	CONVERT	B
BR-1	A	6.10	NS	62.0	NS, RM	12-17	181	E/A	NH-Spruce	THIN	A
BR-1	A	6.20	NH-Spruce	9.0	RM, ASP	12-17	100	E/A	NH	FW-TSI	D
BR-1	A	7.00	NH	6.0	RM, HM	12-17	122	E/A	NH	SHELTWD	A
BR-1	A	8.00	NH-HEM	10.0	RM, HEM	6-11	122	ZW	NH-HEM	NONE	NONE
BR-1	A	9.00	WP	10.0	WP, ASP	12-17	162	ZW	NH_HEM	NONE	NONE
BR-1	A	10.00	WP	20.0	WP, BB	12-17	174	E/A.L	NH-WP	VAR. INT. HAR	C
BR-1	A	11.00	NH-HEM	8.0	RM, HM	12-17	159	ZW	NH-HEM	NONE	NONE
BR-1	A	12.00	WP	5.0	WP, YB	12-17	110	E/A	NH-WP	THIN	D
BR-1	A	13.00	NH-HEM	5.0	RM, WA	12-17	136	E/A	NH-HEM	VAR. INT. HAR	D
BR-1	A	14.00	NH-HEM	12.0	HEM, HM	12-17	154	U/A	NH-HEM	GROUP SEL	C
BR-1	A	15.00	NH-HEM	18.0	HEM, RM	12-17	143	U/A	NH-HEM	GROUP SEL	C

UNIT	COMP	STAND	COVER TYPE	ACRE	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
BR-1	A	16.00	NH-HEM	49.0	HEM,HM	12-17	125	U/A	NE-HEM	GROUP SEL	C
BR-1	A	17.00	NH-HEM	11.0	RM, HEM	12-17	119	U/A	NH-HEM	GROUP SEL	C
BR-1	A	18.00	WP	7.0	WP, RM	12-17	108	E/A.L	NH-WP	VAR. INT. HAR	C
BR-1	A	19.00	NH-Spruce	7.0	BC, ASP	12-17	40	E/A	NH	FW-TSI	E
BR-1	A	20.00	WS	30.0	WS, BC	6-11	88	E/A	NH	TSI	B
BR-1	A	21.00	NH-Spruce	8.0	WS, RM	12-17	45	ZR	NH-Spruce	NONE	NONE
BR-1	A	22.00	WP-Spruce	50.0	RM, BC	6-11	82	E/A	NH-WP	THIN-TSI	E
BR-1	A	23.00	NS	58.0	NS, RM	12-17	155	E/A	NH-Spruce	THIN	A
BR-1	A	24.10	PH	3.0	ASP, HM	6-11	105	E/A	NH	FW-TSI	C
BR-1	A	24.20	PH	2.0	ASP, RM	6-11	93	ZW	NH	NONE	NONE
BR-1	A	25.00	NH-HEM	2.0	Hem, Bas	12-17	175	ZR	NH-HEM	NONE	NONE
BR-1	A	26.00	NH	3.0	RM, BC	12-17	40	ZR	NH-HEM	NONE	NONE
BR-1	A	28.00	NH-WP	13.0	WP, RM	12-17	124	E/A	NH-WP	CROP TR. REL	D
BR-1	A	29.00	WP	2.0	WP	6-11	≤ 40	ZW	WP	NONE	NONE
BR-1	A	30.00	NH	3.0	RM, WA	12-17	143	E/A	NH	ST-FW	B
BR-1	A	31.00	NS	6.0	NS, PC	0-5	≤ 40	E/A	NH-Spruce	TSI	E
BR-1	A	32.00	NH-HEM	10.0	HEM, RM	12-17	217	ZR	NH-HEM	NONE	NONE
NANTICOKE LAKE MULTIPLE USE AREA											
BR-10	A	1.00	NH-WP	10.0	WP, RM	12-17	118	LSS	NH-WP	NONE	NONE
BR-10	A	2.00	NH-WP	3.0	WP, RM	6-11	≤40	LSS	NH-HEM	NONE	NONE

UNIT	COMP	STAND	COVER TYPE	ACRE	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
BR-10	A	3.00	OAK	16.0	RO, WA	18+	153	LSS	OAK	NONE	NONE
BR-10	A	4.00	NH-WP	21.0	RM, WP	0-5	58	LSS	NH-WP	NONE	NONE
BR-10	A	5.00	NH-WP	13.0	WP, RM	12-17	137	LSS	NH-WP	NONE	NONE
BR-10	A	6.00	NH-WP	10.0	RO, WP	0-5	103	ZR	NH-WP	NONE	NONE
BR-10	A	7.00	NH	4.0	HM, WA	12-17	107	LSS	NH	NONE	NONE
BR-10	A	8.00	SHRUB	3.0	WA, APP	0-5	≤40	LSS	NH	NONE	NONE
BR-10	A	9.00	NH-WP	3.0	WP, RO	12-17	143	LSS	WP-HEM	NONE	NONE
BR-10	A	10.00	NH-WP	8.0	WP, RM	18+	146	LSS	NH-WP	NONE	NONE
BR-10	A	11.00	NH-HEM	24.0	HEM, RM	12-17	183	ZR	NH-HEM	NONE	NONE
BR-10	A	12.00	NH-HEM	4.0	HEM	18+	103	LSS	NH-HEM	NONE	NONE
BR-10	A	13.00	SHRUB	3.0	RM	0-5	≤40	LSS	NH	NONE	NONE
BR-10	A	14.00	NH-HEM	21.0	HEM, BE	12-17	147	LSS	NH-HEM	NONE	NONE
BR-10	A	15.00	NH-HEM	2.0	HEM, RM	6-11	245	ZR	NH-HEM	NONE	NONE
BR-10	A	16.00	POND	48.0	POND	--	0	ZW	POND	NONE	NONE
BR-10	A	17.00	NH-HEM	19.0	RM, BB	12-17	147	LSS	NH-HEM	NONE	NONE
BR-10	A	18.00	NH	9.0	HM, RM	18+	132	LSS	NH	NONE	NONE
BR-10	A	19.00	NH	9.0	BE, YB	6-11	124	LSS	NH	NONE	NONE
BR-10	A	20.00	NH	18.0	RM, HM	6-11	100	LSS	NH	NONE	NONE
BR-10	A	21.00	NH-WP	12.0	RM, WP	12-17	163	ZR	NH-HEM	NONE	NONE
BR-10		22.00	NH-WP	15.0	RM, WP	0-5	75	LSS	NH-WP	NONE	NONE

UNIT	COMP	STAND	COVER TYPE	ACRE	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
	A										
BR-10	A	23.00	NH	20.0	RM, WA	0-5	83	LSS	NH	NONE	NONE
BR-10	A	24.00	NH	7.0	RM, APP	6-11	48	LSS	NH	NONE	NONE
BR-10	A	25.00	SHRUB	10.0	WA	0-5	≤40	OPEN	SHRUB	RELEASE	A
BR-10	A	26.00	GRASS	6.0	GRASS	--	0	OPEN	GRASS	MOW	A
BR-10	A	27.00	NH-HEM	9.0	HEM, RM	12-17	148	ZR	NH-HEM	NONE	NONE
BR-10	A	28.00	NH	8.0	RM, HM	6-11	33	ZR	NH-HEM	NONE	NONE
BR-10	A	29.00	NS	2.0	NS	6-11	≤ 40	E/A	NH-Spruce	TSI	B
LONG POND STATE FOREST											
CH-35	A	1.00	NH	9.4	RM, WA	6-11	100	E/A	NH	FW/ST	B
CH-35	A	3.00	SHRUB	2.5	SHRUB	6-11	≤ 40	ZW	SHRUB	NONE	NONE
CH-35	A	4.00	SHRUB	4.1	RM, WA	6-11	125	ZW	NH	NONE	NONE
CH-35	A	5.00	NH-HEM	17.2	HEM, RS	12-17	178	ZW	NH-HEM	NONE	NONE
CH-35	A	6.00	NH-HEM	5.5	HEM, RM	18+	170	ZA	NH-HEM	NONE	NONE
CH-35	A	7.00	NH-HEM	3.4	HEM, WP	12-17	183	ZW	NH-HEM	NONE	NONE
CH-35	A	8.00	NH-HEM	5.7	HEM, RM	18+	180	LSS	NH-HEM	NONE	NONE
CH-35	A	9.00	NH-HEM	7.9	HM, WA	12-17	94	ZW	NH-HEM	NONE	NONE
CH-35	A	10.00	NH	28.3	RM, HEM	12-17	95	E/A	NH-HEM	FW/ST	C
CH-35	A	11.00	NH	18.9	RM, BC	12-17	123	E/A	NH	FW/ST	C
CH-35	A	13.00	NH-WP	6.0	WP, BC	18+	163	LSS	NH-WP	NONE	NONE

UNIT	COMP	STAND	COVER TYPE	ACRE	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CH-35	A	14.00	NH-HEM	37.7	HEM, WP	18+	165	ZW	NH-HEM	NONE	NONE
CH-35	A	15.00	NH-HEM	14.7	HEM, RM	12-17	208	ZA	NH-HEM	NONE	NONE
CH-35	A	16.00	NH-WP	35.5	WP, BC	18+	151	LSS	NH-WP	NONE	NONE
CH-35	A	17.00	NH-WP	5.6	BC, RM	12-17	150	LSS	NH-WP	NONE	NONE
CH-35	A	18.00	WP-Spruce	15.8	WP, RM	6-11	128	LSS	WP-Spruce	NONE	NONE
CH-35	A	19.00	NH	2.1	RM, ASP	12-17	113	ZA	NH	NONE	NONE
CH-35	A	20.10	APPLE	11.1	APL, BC	6-11	91	OPEN	SHRUB	RELEASE	B
CH-35	A	20.20	WP	1.5	WP, BC	12-17	160	E/A	NH-WP	TSI	B
CH-35	A	20.30	NH	6.7	BC, RM	12-17	84	E/A	NH	FW/ST	D
CH-35	A	20.40	NH	7.8		- -	≤ 40	ZR	NH	NONE	NONE
CH-35	A	21.00	WP	6.8	BC, WP	12-17	100	E/A	NH-WP	TSI/FW	D
CH-35	A	22.1	NH-HEM	28.7	HEM, RM	12-17	163	ZW	NH-HEM	NONE	NONE
CH-35	A	22.2	NH-HEM	11.3	HEM, RM	12-17	120	ZR	NH-HEM	NONE	NONE
CH-35	A	22.3	NH	5.2	HM, BC	12-17	120	ZA	NH	NONE	NONE
CH-35	A	23.00	NH	13.1	RM, HM	12-17	158	E/A	NH	FW/ST	C
CH-35	A	24.10	NH	19.4	RM, BC	12-17	107	E/A	NH	FW/ST	C
CH-35	A	24.20	SHRUB	14.8		6-11	≤ 40	ZR	NH	NONE	NONE
CH-35	A	25.00	NH-HEM	5.3	RM, ASP	--	≤ 40	ZW	NH-HEM	NONE	NONE
CH-35	A	26.00	NH-HEM	4.0	HEM, RM	6-11	140	U/A	NH-HEM	FW	C
				62.5	RM, HEM		133	U/A	NH-NEM	GROUP SEL.	C

UNIT	COMP	STAND	COVER TYPE	ACRE	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CH-35	A	27.00	NH-HEM			18+					
CH-35	A	28.00	NH-HEM	4.8	HEM, RM	18+	198	LSS	NH-HEM	NONE	NONE
CH-35	A	29.00	NH-HEM	7.9	HEM, RM	12-17	143	LSS	NH-HEM	NONE	NONE
CH-35	A	30.00	NH-HEM	5.8	RM, HEM	12-17	185	E/A	NH-HEM	FW/ST	A
CH-35	A	32.00	NH	4.0	RM, ASP	6-11	145	E/A	NH	FW/TSI	A
CH-35	A	33.00	GRASS	12.6	GRASS	--	0	OPEN	Grass	Mow/Hay	A
CH-35	A	34.00	NH-HEM	74.8	HEM, RM	12-17	141	ZW	NH-HEM	NONE	NONE
CH-35	A	35.00	NH-HEM	2.7	HEM, RM	6-11	203	E/A	NH-HEM	FW/ST	A
CH-35	A	36.00	NS	1.0	NS	0-5	≤ 40	LSS	NS	NONE	NONE
CH-35	A	37.00	GRASS	15.2	GRASS	- -	0	OPEN	Grass	Mow/Hay	A
CH-35	A	38.10	NH-HEM	44.5	RM, HEM	18+	121	U/A	NH-HEM	GROUP SEL.	B
CH-35	A	38.20	NH-HEM	8.4	HEM, RM	18+	137	U/A	NH-HEM	FW/ST	B
CH-35	A	38.30	NH	5.1	RM, WA	12-17	124	U/A	NH	FW/ST	B
CH-35	A	38.40	NH	1.2		6-11	≤ 40	OPEN	SHRUB	RELEASE	B
CH-35	A	38.50	NH-HEM	5.9	HEM, BE	12-17	153	U/A	NH-HEM	FW/ST	B
CH-35	A	38.60	NH	6.3	RM, BC	12-17	100	U/A	NH	FW/ST	B
CH-35	A	38.70	NH	39.5	HM, BC	18+	115	U/A	NH	FW/ST	B
CH-35	A	39.00	NH-HEM	4.9	HEM, RM	12-17	173	LSS	NH-HEM	NONE	NONE
CH-35	A	40.00	NH-HEM	30.2	HEM, RM	18+	159	ZR	NH-HEM	NONE	NONE
CH-35	A	41.00	NH-HEM	12.4	HEM, RM	12-17	196	LSS	NH-HEM	NONE	NONE

UNIT	COMP	STAND	COVER TYPE	ACRE	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CH-35	A	42.00	NH	2.8	RM, BC	12-17	110	ZA	NH	NONE	NONE
CH-35	A	43.10	NH	8.3	RM, BC	18+	130	ZA	NH	NONE	NONE
CH-35	A	43.20	NH-HEM	2.7	HEM, RM	18+	163	ZA	NH-HEM	NONE	NONE
CH-35	A	43.30	NH-HEM	4.1	HEM, RM	12-17	170	ZA	NH-HEM	NONE	NONE
CH-35	A	44.10	NH	26.1	RM, HM	12-17	108	E/A	NH	FW	B
CH-35	A	44.20	NH	9.1	RM, HM	12-17	108	E/A	NH	FW	B
CH-35	A	45.00	NH	1.8	RM, IW	0-5	55	ZW	NH	NONE	NONE
CH-35	A	46.00	RP	11.5	RM, BC	6-11	124	E/A	NH	CONVERT	B
CH-35	A	47.00	WP	6.0	BC, WP	12-17	110	E/A	NH-WP	FW/ST	D
CH-35	A	48.00	SHRUB	2.7	TA, WP	6-11	86	OPEN	SHRUB	FW/TSI	B
CH-35	A	49.00	NH	9.5	RM, ASP	12-17	80	ZW	NH	NONE	NONE
CH-35	A	50.00	NH-WP	2.2	WP, RM	12-17	105	E/A	NH-WP	FW/ST	D
CH-35	A	51.00	SHRUB	6.9	SHRUB	- -	≤ 40	OPEN	SHRUB	FW/TSI	A
CH-35	A	52.00	GRASS	2.5	GRASS	- -	0	OPEN	Grass	Mow/Hay	A
CH-35	A	53.10	NS	13.6	NS, WA	12-17	111	E/A	NH-NS	Thin	C
CH-35	A	53.20	RP-Larch	1.2	RP, JL	12-17	120	E/A	NH	CONVERT	C
CH-35	A	54.10	NS	5.2	NS, RM	12-17	212	E/A	NH-NS	Thin	A
CH-35	A	54.20	NH-OAK	1.4	RM, WA	12-17	143	E/A	NH-OAK	FW	A
CH-35	A	55.00	GRASS	8.2	GRASS	--	0	OPEN	Grass	Mow/Hay	A
				28.7	GRASS		0	OPEN	Grass	Mow/Hay	A

UNIT	COMP	STAND	COVER TYPE	ACRE	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CH-35	A	56.10	GRASS			- -					
CH-35	A	56.20	GRASS	21.3	GRASS	- -	0	OPEN	Grass	Mow/Hay	A
CH-35	A	57.00	GRASS	21.7	GRASS	- -	0	OPEN	Grass	Mow/Hay	A
CH-35	A	58.00	NS	17.5	NS	12-17	104	E/A	NS - OPEN	Convert 9 ac	A
CH-35	A	59.10	GRASS	34.8	GRASS	- -	0	OPEN	Grass	Mow/Hay	A
CH-35	A	59.20	GRASS	34.4	GRASS	- -	0	OPEN	Grass	Mow/Hay	A
CH-35	A	60.10	Larch	13.6	JL, WP	12-17	63	E/A	NH	Thin	C
CH-35	A	60.20	Larch	3.1	JL, WP	12-17	40	E/A	NH	CONVERT	C
CH-35	A	61.10	NH-HEM	34.2	HEM, RM	18+	169	U/A	NH/HEM	GROUP SEL.	B
CH-35	A	61.20	NH-HEM	5.9	HEM, RM	12-17	183	ZW	NH-HEM	NONE	NONE
CH-35	A	61.30	NH	4.8	RM, BE	12-17	145	U/A	NH	FW	B
CH-35	A	61.40	NH	1.8	BC, RM	12-17	110	OPEN	SHRUB	RELEASE	B
CH-35	A	61.50	NH-WP	8.9	RM, BC	12-17	127	E/A	NH-WP	FW	B
CH-35	A	62.00	NH-HEM	5.3	HEM, YB	12-17	120	ZW	NH-HEM	NONE	NONE
CH-35	A	63.00	GRASS	12.8	GRASS	--	0	OPEN	Grass	Mow/Hay	A
CH-35	A	64.10	NH	11.5	ASP, RM	12-17	86	ZW	NH	NONE	NONE
CH-35	A	64.20	NH	3.6	BC, RM	18+	138	ZA	NH	NONE	NONE
CH-35	A	64.30	NH	3.3	BC, RM	12-17	120	E/A	NH	FW/ST	A
CH-35	A	64.40	NH	6.9	BC, RM	12-17	140	E/A	NH	FW/ST	A
CH-35	A	65.00	NH-HEM	3.1	HEM, RM	12-17	160	ZR	NH-HEM	NONE	NONE

UNIT	COMP	STAND	COVER TYPE	ACRE	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CH-35	A	66.00	NH	5.8	BC, ASP	12-17	86	E/A	NH	FW/ST	B
CH-35	A	67.00	GRASS	20.7	GRASS	- -	0	OPEN	Grass	Mow/Hay	A
CH-35	A	68.00	GRASS	3.1	GRASS	- -	0	OPEN	Grass	Mow/Hay	A
CH-35	A	69.00	GRASS	35.3	GRASS	- -	0	OPEN	Grass	Mow/Hay	A
CH-35	A	70.00	NH-HEM	46.1	HEM, RM	12-17	90	ZR	NH-HEM	NONE	NONE
CH-35	A	71.00	GRASS	8.6	GRASS	- -	0	OPEN	Grass	Mow/Hay	A
CH-35	A	72.00	NH	11.1	RM, BC	6-11	82	LSS	NH	NONE	NONE
CH-35	A	74.00	GRASS	9.9	GRASS	- -	0	OPEN	Grass	Mow/Hay	A
CH-35	A	75.00	NH	6.2	HM, WA	6-11	60	LSS	NH	NONE	NONE
CH-35	A	78.00	NH	25.5	BC, RM	12-17	104	E/A	NH	FW/ST	B
CH-35	B	1.00	NH-WP	53.9	RM, WP	12-17	145	E/A	NH	FW/ST	B
CH-35	B	2.00	NH	13.5	BC, RM	12-17	116	E/A	NH	FW/ST	B
CH-35	B	3.00	RP	3.4	RP, RM	6-11	113	E/A	NH	CONVERT	B
CH-35	B	4.00	NH-HEM	11.6	HEM, YB	12-17	137	LSS	NH-HEM	NONE	NONE
CH-35	B	5.10	WP-Spruce	16.2	WS, WP	6-11	141	LSS	NH-WP	NONE	NONE
CH-35	B	5.20	SHRUB	1.4	Alder	- -	≤ 40	ZW	SHRUB	NONE	NONE
CH-35	B	6.00	NH-HEM	9.7	HEM, RM	12-17	167	ZW	NH-HEM	NONE	NONE
CH-35	B	7.10	WP-Spruce	116.0	WS, WP	12-17	102	U/A	NH-WP	GROUP SEL.	D
CH-35	B	7.20	RP	1.9	RP, RM	6-11	200	LSS	NH	NONE	NONE
			NH	9.9	RM, BC	12-17	116	E/A	NH	FW	D

UNIT	COMP	STAND	COVER TYPE	ACRE	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CH-35	B	8.00									
CH-35	B	9.00	SHRUB	5.4	Alder	- -	≤ 40	ZW	SHRUB	NONE	NONE
CH-35	B	10.00	Larch	4.2	JL, RM	12-17	120	E/A	NH	Thin	C
CH-35	B	11.00	NH	5.1	RM, HM	12-17	98	E/A	NH	FW	D
CH-35	B	12.00	NH	8.4	RM, HM	12-17	123	E/A	NH	FW/ST	C
CH-35	B	13.00	NH-HEM	16.9	HEM, RM	12-17	129	U/A	NH-HEM	FW/ST	C
CH-35	B	14.10	NH	2.9	HM, RM	12-17	80	E/A	NH	FW/ST	C
CH-35	B	14.20	Larch	1.4	JL, HM	12-17	85	E/A	NH	CONVERT	C
CH-35	B	15.00	NH-HEM	19.2	HEM, RM	18+	128	LSS	NH-HEM	NONE	NONE
CH-35	B	16.00	NH-HEM	3.4	HEM, HM	12-17	195	ZR	NH-HEM	NONE	NONE
CH-35	B	17.00	NH-HEM	11.0	HEM, RM	18+	161	ZR	NH-HEM	NONE	NONE
CH-35	B	18.00	NH	11.2	BC, RM	12-17	143	E/A	NH	FW/ST	C
CH-35	B	19.00	NH	2.8	BC, RM	12-17	133	E/A	NH	FW/ST	C
CH-35	B	20.00	Larch	23.1	JL, BC	12-17	111	E/A	NH	CONVERT	C
CH-35	B	21.00	NH	2.9	RM, BC	12-17	125	E/A	NH	FW/ST	C
CH-35	B	22.10	NH	7.3	RM, BC	12-17	126	E/A	NH	FW/TSI	C
CH-35	B	22.20	Apple	1.0	APL	6-11	≤ 40	E/A	Apple	RELEASE	C
CH-35	B	23.00	Larch	3.5	JL, BC	12-17	93	E/A	NH	CONVERT	C
CH-35	B	24.00	NH-HEM	5.4	HEM, RM	12-17	193	ZR	NH-HEM	NONE	NONE
CH-35	C	1.00	GRASS	6.1	GRASS	- -	0	OPEN	Grass	Mow/Hay	A

UNIT	COMP	STAND	COVER TYPE	ACRE	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CH-35	C	2.00	SHRUB	16.7	Alder, Asp	0-5	≤ 40	ZR	SHRUB	NONE	NONE
CH-35	C	3.00	NH	8.0	RM, WA	12-17		ZR	NH	NONE	NONE
CH-35	C	4.10	GRASS	13.2	GRASS	- -	0	OPEN	Grass	Mow/Burn	A
CH-35	C	4.20	RP	6.1	RP, WA	6-11	115	E/A	NH	Thin	B
CH-35	C	4.40	GRASS	4.9	GRASS	- -	0	OPEN	Grass	Mow/Burn	A
CH-35	C	5.00	POND	109.7	POND	- -	0	ZW	POND	NONE	NONE
CH-35	C	6.10	NH-WP	7.7	WA, RM	12-17	118	ZR	NH-WP	NONE	NONE
CH-35	C	6.20	NH-HEM	5.5	HEM, RM	18+	190	ZR	NH-HEM	NONE	NONE
CH-35	C	7.00	NH	9.1	RM, BC	12-17	113	LSS	NH	NONE	NONE
CH-35	C	8.00	WP	9.9	WP, RM	12-17	150	LSS	WP	NONE	NONE
CH-35	C	9.00	NH-HEM	15.5	HM, WA	18+	145	LSS	NH-HEM	NONE	NONE
CH-35	C	10.10	NH-HEM	22.0	HM, RM	18+	123	LSS	NH-HEM	NONE	NONE
CH-35	C	10.20	NH-HEM	13.8	HEM, RM	18+	186	LSS	NH-HEM	NONE	NONE
CH-35	C	10.30	NH	5.9	WA, RM	12-17	140	LSS	NH	NONE	NONE
CH-35	C	11.00	Oak-Pine	10.0	WO, WP	18+	108	ZF	Oak-Pine	NONE	NONE
CH-35	C	12.00	SHRUB	4.7	Ald, TA	0-5	≤ 40	ZR	SHRUB	NONE	NONE
CH-35	C	13.00	Spruce	18.4	NS, BC	12-17	190	ZF	NH-NS	NONE	NONE
CH-35	C	14.00	Spruce	5.7	NS, Grass	12-17	≤ 40	E/A	NS - OPEN	Mow/Hay	A
CH-35	C	15.00	GRASS	6.7	GRASS	- -	0	OPEN	Grass	Mow/Hay	A
			NH-HEM	10.2	HEM, RM	18+	178	LSS	NH-HEM	NONE	NONE

UNIT	COMP	STAND	COVER TYPE	ACRE	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CH-35	C	16.00									
CH-35	C	18.00	NH-HEM	22.1	HM, HEM	18+	114	LSS	NH-HEM	NONE	NONE
CH-35	C	19.00	NH	18.3	Asp, RM	12-17	70	ZW	NH	NONE	NONE
CH-35	C	20.00	NH	11.5	HM, BC	18+	127	LSS	NH	NONE	NONE
CH-35	C	21.00	NH-HEM	55.5	HEM, RM	18+	136	LSS	NH-HEM	NONE	NONE
CH-35	C	25.00	NH-HEM	37.5	HEM, HM	18+	173	LSS	NH-HEM	NONE	NONE
CH-35	C	26.00	NH-HEM	52.2	HM, HEM	18+	123	LSS	NH-HEM	NONE	NONE
CH-35	C	27.00	NH-HEM	34.8	HEM, RM	18+	144	LSS	NH-HEM	NONE	NONE
CH-35	C	28.00	NH-HEM	8.0	HEM, YB	12-17	148	LSS	NH-HEM	NONE	NONE
CH-35	C	29.00	NH-HEM	17.7	HEM, RM	18+	161	LSS	NH-HEM	NONE	NONE
CH-35	C	30.00	GRASS	3.6	GRASS	- -	0	OPEN	Grass	Mow/Hay	A
CH-35	C	31.00	NS	4.7	NS, RM	12-17	75	E/A	NS-OPEN	Mow/Hay	A
CH-35	C	32.00	NH	11.1	WA, RM	18+	134	LSS	NH	NONE	NONE
CH-35	C	33.00	SHALE	3.3	SHALE	- -	0	N/A	Shale	NONE	NONE
CH-35	C	34.00	NS	2.5	NS	12-17	118	E/A	NS - OPEN	Mow/Hay	A
CH-35	C	35.00	GRASS	2.9	GRASS	- -	0	OPEN	Grass	Mow/Hay	A
CH-35	C	36.00	NH	17.5	WA, RM	12-17	152	E/A	NH-HEM	FW/ST	D
CH-35	C	37.00	GRASS	15.4	GRASS	- -	0	OPEN	Grass	Mow/Hay	A
CH-35	C	38.00	WP	4.2	WP, BC	12-17	180	LSS	WP	NONE	NONE
CH-35	C	39.00	GRASS	2.8	GRASS	- -	0	OPEN	Grass	Mow/Hay	A

UNIT	COMP	STAND	COVER TYPE	ACRE	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CH-35	C	40.00	NH-WP	6.4	RM, WA	12-17	160	E/A	NH-WP	FW/ST	D
CH-35	C	41.10	NH	9.0	RM, HM	12-17	135	U/A	NH-HEM	FW/TSI	B
CH-35	C	41.20	NH-HEM	7.0	RM, HEM	6-11	95	E/A	NH-HEM	FW/TSI	B
CH-35	C	43.00	NS	3.1	NS, RM	12-17	113	E/A	NS-OPEN	TSI	A
CH-35	C	44.00	GRASS	6.0	GRASS	- -	0	OPEN	Grass	Mow/Hay	A
CH-35	C	45.00	GRASS	6.4	GRASS	- -	0	OPEN	Grass	Mow/Hay	A
CH-35	C	46.00	NH	20.5	RM, ASP	12-17	127	E/A	NH	FW	C
CH-35	C	47.00	NS	4.8	NS, RM	6-11	162	E/A	NH-NS	Thin	C
CH-35	C	48.00	NH-HEM	102.6	HM, WA	18+	109	U/A-L	NH	FW/ST	D
CH-35	C	49.00	NH-HEM	2.9	HEM, YB	6-11	147	ZW	NH-HEM	NONE	NONE
CH-35	C	50.00	NH-HEM	116.1	HEM, HM	18+	127	U/A-L	NH-HEM	FW/ST	C
CH-35	C	51.00	NH	12.5	HM, WA	18+	109	U/A-L	NH	FW/ST	C
CH-35	C	52.00	NH-HEM	122.3	HEM, RM	12-17	164	ZW	NH-HEM	NONE	NONE
CH-35	C	55.10	NH-HEM	116.3	HM, BE	18+	114	U/A	NH-HEM	FW/ST	D
CH-35	C	55.20	NH	10.4	HM, WA	12-17	126	ZW	NH	NONE	NONE
CH-35	C	55.30	NH-HEM	10.9	HM, WA	12-17	109	U/A	NH-HEM	FW	B
CH-35	C	57.00	NH	24.6	RM, HM	12-17	100	E/A	NH	FW	B
CH-35	C	58.10	NH-Spruce	8.6	WA, NS	0-5	≤ 40	E/A	NH-NS	TSI	D
CH-35	C	58.20	RP	3.4	RP, RM	12-17	153	E/A	NH	CONVERT	B
			GRASS	32.4	GRASS	- -	0	OPEN	Grass	Mow/Hay	A

UNIT	COMP	STAND	COVER TYPE	ACRE	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CH-35	C	59.00									
CH-35	C	60.00	NH	1.9	RM, BC	6-11	185	E/A	NH	FW/ST	B
CH-35	C	61.00	NH	6.1	BC, RM	6-11	112	E/A	NH	FW/ST	B
CH-35	C	62.00	NH-HEM	2.4	HEM, YB	12-17	195	ZW	NH-HEM	NONE	NONE
CH-35	C	63.10	NH	7.8	RM, BC	12-17	136	E/A	NH	FW/ST	B
CH-35	C	63.20	NH	3.3	BAS, RM	12-17	133	LSS	NH	NONE	NONE
CH-35	C	64.00	NH-Larch	3.6	JL, RP	12-17	≤40	E/A	NH	TSI	D
CH-35	C	66.00	NH-HEM	15.9	HEM, YB	18+	160	ZR	NH-HEM	NONE	NONE
CH-35	C	67.00	NH-HEM	6.8	HEM, YB	12-17	150	ZW	NH-HEM	NONE	NONE
CH-35	C	68.00	SHRUB	23.1	Alder	0-5	≤ 40	ZW	SHRUB	NONE	NONE
CH-35	C	69.00	POND	25.3	POND	- -	0	ZW	POND	NONE	NONE
CH-35	C	70.10	NH-HEM	11.5	RM, HEM	18+	148	ZR	NH-HEM	NONE	NONE
CH-35	C	70.20	NH-HEM	6.6	RM, HEM	18+	168	ZR	NH-HEM	NONE	NONE
CH-35	C	71.00	NH	4.2	RM, WA	6-11	110	E/A	NH	FW	C

FOREST TREATMENT SCHEDULE ORGANIZED BY TREATMENT YEAR

Includes both Commercial & Non-Commercial Treatments

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE	RANK
A	BRM-1	A	1.00	RP	E/A	46.0	THIN or REL.	1
A	BRM-1	A	6.10	NS	E/A	62.0	THIN	1
A	BRM-1	A	7.00	NH	E/A	6.0	SHELTWD	2
A	BRM-1	A	23.00	NS	E/A	58.0	THIN	1
A	BRM-10	A	25.00	SHRUB	E/A	10.0	MOW/TSI	2
A	CH-35	A	30.00	NH-HEM	E/A	5.8	FW/ST	1
A	CH-35	A	32.00	NH	E/A	4.0	FW/TSI	2
A	CH-35	A	35.00	NH-HEM	E/A	2.7	FW/ST	2
A	CH-35	A	51.00	SHRUB	E/A	6.9	FW/TSI	2
A	CH-35	A	54.10	NS	E/A	5.2	Thin Spruce	1
A	CH-35	A	54.20	NH-OAK	E/A	1.4	FW	1
A	CH-35	A	58.00	NS	E/A	17.5	Convert 9 ac	1
A	CH-35	A	64.30	NH	E/A	3.3	FW/ST	2
A	CH-35	A	64.40	NH	E/A	6.9	FW/ST	2
A	CH-35	C	14.00	Spruce	E/A	5.7	Mow/Hay	2
A	CH-35	C	31.00	NS	E/A	4.7	Mow/Hay	1
A	CH-35	C	34.00	NS	E/A	2.5	Mow/Hay	1
A	CH-35	C	43.00	NS	E/A	3.1	TSI	2
Total Acres in Schedule A						251.7		
B	CH-35	A	5.00	RP	E/A	13.0	RELEASE	1
B	CH-35	A	20.00	WS	E/A	30.0	TSI	2
B	CH-35	A	30.00	NH	E/A	3.0	ST-FW	2
B	CH-35	A	1.00	NH	E/A	9.4	FW/ST	1
B	CH-35	A	20.10	APPLE	E/A	11.1	TSI	2
B	CH-35	A	20.20	WP	E/A	1.5	TSI	2
B	CH-35	A	38.10	NH-HEM	U/A	44.5	GROUP SEL.	2
B	CH-35	A	38.20	NH-HEM	U/A	8.4	FW/ST	2
B	CH-35	A	38.30	NH	U/A	5.1	FW/ST	2
B	CH-35	A	38.40	NH	E/A	1.2	CONVERT	2

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE	RANK
B	CH-35	A	38.50	NH-HEM	U/A	5.9	FW/ST	2
B	CH-35	A	38.60	NH	U/A	6.3	FW/ST	1
B	CH-35	A	38.70	NH	U/A	39.5	FW/ST	1
B	CH-35	A	44.10	NH	E/A	26.1	FW	2
B	CH-35	A	44.20	NH	E/A	9.1	FW	2
B	CH-35	A	46.00	RP	E/A	11.5	CONVERT.	2
B	CH-35	A	48.00	SHRUB	E/A	2.7	FW/TSI	2
B	CH-35	A	61.10	NH-HEM	U/A	34.2	GROUP SEL.	1
B	CH-35	A	61.30	NH	U/A	4.8	FW	1
B	CH-35	A	61.40	NH	E/A	1.8	CONVERT	1
B	CH-35	A	61.50	NH-WP	E/A	8.9	FW	2
B	CH-35	A	66.00	NH	E/A	5.8	FW/ST	1
B	CH-35	A	78.00	NH	E/A	25.5	FW/ST	1
B	CH-35	B	1.00	NH-WP	E/A	53.9	FW/ST	2
B	CH-35	B	2.00	NH	E/A	13.5	FW/ST	1
B	CH-35	B	3.00	RP	E/A	3.4	CONVERT	2
B	CH-35	C	4.20	RP	E/A	6.1	Thin RP	1
B	CH-35	C	41.10	NH	U/A	9.0	FW/TSI	1
B	CH-35	C	41.20	NH-HEM	E/A	7.0	FW/TSI	1
B	CH-35	C	55.30	NH-HEM	U/A	10.9	FW	2
B	CH-35	C	57.00	NH	E/A	24.6	FW	1
B	CH-35	C	58.20	RP	E/A	3.4	CONVERT	1
B	CH-35	C	60.00	NH	E/A	1.9	FW/ST	2
B	CH-35	C	61.00	NH	E/A	6.1	FW/ST	1
B	CH-35	C	63.10	NH	E/A	7.8	FW/ST	1
B	BR-10	A	29.00	NS	E/A	2.0	TSI	2
Total Acres in Schedule B						458.9		
C	BR-1	A	10.00	WP	E/A.L	20.0	VAR. INT. HAR	1
C			14.00	NH-HEM	U/A	12.0	GROUP SEL	2

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE	RANK
	BR-1	A						
C	BR-1	A	15.00	NH-HEM	U/A	18.0	GROUP SEL	2
C	BR-1	A	16.00	NH-HEM	U/A	49.0	GROUP SEL	1
C	BR-1	A	17.00	NH-HEM	U/A	11.0	GROUP SEL	1
C	BR-1	A	18.00	WP	E/A.L	7.0	VAR. INT. HAR	1
C	BR-1	A	24.10	PH	E/A	3.0	FW-TSI	2
C	CH-35	A	10.00	NH	E/A	28.3	FW/ST	1
C	CH-35	A	11.00	NH	E/A	18.9	FW/ST	1
C	CH-35	A	23.00	NH	E/A	13.1	FW/ST	2
C	CH-35	A	24.10	NH	E/A	19.4	FW/ST	2
C	CH-35	A	26.00	NH-HEM	U/A	4.0	FW/PULP	2
C	CH-35	A	27.00	NH-HEM	U/A	62.5	GROUP SEL	2
C	CH-35	A	53.10	NS	E/A	13.6	Thin Spruce	1
C	CH-35	A	53.20	RP-Larch	E/A	1.2	CONVERT	2
C	CH-35	A	60.10	Larch	E/A	13.6	Thin Larch	1
C	CH-35	A	60.20	Larch	E/A	3.1	CONVERT	1
C	CH-35	B	10.00	Larch	E/A	4.2	Thin Larch	1
C	CH-35	B	12.00	NH	E/A	8.4	FW/ST	1
C	CH-35	B	13.00	NH-HEM	U/A	16.9	FW/ST	1
C	CH-35	B	14.10	NH	E/A	2.9	CONVERT	1
C	CH-35	B	14.20	Larch	E/A	1.4	CONVERT	1
C	CH-35	B	18.00	NH	E/A	11.2	FW/ST	1
C	CH-35	B	19.00	NH	E/A	2.8	FW/ST	2
C	CH-35	B	20.00	Larch	E/A	23.1	CONVERT	1
C	CH-35	B	21.00	NH	E/A	2.9	FW/ST	1
C	CH-35	B	22.10	NH	E/A	7.3	FW/TSI	2
C	CH-35	B	22.20	Apple	E/A	1.0	Release	2
C	CH-35	B	23.00	Larch	E/A	3.5	CONVERT	1
C	CH-35	C	46.00	NH	E/A	20.5	FW	1

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE	RANK
C	CH-35	C	47.00	NS	E/A	4.8	Thin Spruce	1
C	CH-35	C	50.00	NH-HEM	U/A-L	116.1	FW/ST	1
C	CH-35	C	51.00	NH	U/A-L	12.5	FW/ST	1
C	CH-35	C	71.00	NH	E/A	4.2	FW	1
Total Acres in Schedule C						541.4		
D	BR-1	A	2.10	NH-HEM	E/A	11.0	VAR.INT.HAR.	1
D	BR-1	A	3.10	NH-HEM	E/A	15.0	VAR. INT. HAR	1
D	BR-1	A	3.20	NH-OAK	E/A	12.0	CROP TR. REL	1
D	BR-1	A	6.20	NH-SPRCE	E/A	9.0	FW/TSI	2
D	BR-1	A	12.00	WP	E/A	5.0	THIN	2
D	BR-1	A	13.00	NH-HEM	E/A	5.0	VAR. INT. HAR	2
D	BR-1	A	28.00	NH-WP	E/A	13.0	CROP TR. REL	1
D	CH-35	A	20.3	NH	E/A	6.7	FW/ST	1
D	CH-35	A	21.00	WP	E/A	6.8	TSI/FW	1
D	CH-35	A	47.00	WP	E/A	6.0	FW/ST	1
D	CH-35	A	50.00	NH-WP	E/A	2.2	FW/ST	2
D	CH-35	B	7.10	WP-Spruce	U/A	116.0	GROUP SEL.	2
D	CH-35	B	8.00	NH	E/A	9.9	FW	2
D	CH-35	B	11.00	NH	E/A	5.1	FW	2
D	CH-35	C	36.00	NH	E/A	7.5	FW/ST	1
D	CH-35	C	40.00	NH-WP	E/A	6.4	FW/ST	1
D	CH-35	C	48.00	NH-HEM	U/A-L	102.6	FW/ST	1
D	CH-35	C	55.10	NH-HEM	U/A	116.3	FW/ST	1
D	CH-35	C	58.10	NH-Spruce	E/A	8.6	TSI	2
D	CH-35	C	64.00	NH-Larch	E/A	3.6	TSI	1
Total Acres in Schedule D						468.7		
E	BR-1	A	4.00	NH-WP	E/A.L	100.0	VAR. INT. HAR	1
E	BR-1	A	19.00	NH-Spruce	E/A	7.0	FW-TSI	2
E	BR-1	A	22.00	WP-Spruce	E/A	50.0	THIN-TSI	2
E	BR-1	A	31.00	NS	E/A	6.0	TSI	2
Total Acres in Schedule E						163.0		

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE	RANK
Rank: "1" = stands where treatments could be made with favorable economics (good access, limited trade-offs, valuable timber). "2"= stands with economic challenges.								

Short Interval, Non-Commercial, Maintenance Treatments						
BR-10	A	26	Grass	OPEN	6	MOW
CH-35	A	33	Grassland	OPEN	12.6	MOW/HAY
CH-35	A	37	Grassland	OPEN	15.2	MOW/HAY
CH-35	A	52	Grassland	OPEN	2.5	HAY
CH-35	A	55	Grassland	OPEN	8.2	MOW/HAY
CH-35	A	56.1	Grassland	OPEN	28.7	MOW/HAY
CH-35	A	56.2	Grassland	OPEN	21.3	MOW/HAY
CH-35	A	57	Grassland	OPEN	21.7	MOW/HAY
CH-35	A	58	Grassland	OPEN	9	BURN after conversion
CH-35	A	59.1	Grassland	OPEN	34.8	MOW/HAY
CH-35	A	59.2	Grassland	OPEN	34.4	MOW/HAY
CH-35	A	63	Grassland	OPEN	12.8	MOW/HAY
CH-35	A	67	Grassland	OPEN	20.7	MOW/HAY
CH-35	A	68	Grassland	OPEN	3.1	MOW/HAY
CH-35	A	69	Grassland	OPEN	35.3	MOW/HAY
CH-35	A	71	Grassland	OPEN	8.6	MOW/HAY
CH-35	A	74	Grassland	OPEN	9.9	MOW/HAY
CH-35	C	1	Grassland	OPEN	6.1	HAY
CH-35	C	4.1	Grassland	OPEN	13.2	BURN/MOW
CH-35	C	4.4	Grassland	OPEN	4.9	BURN/MOW
CH-35	C	15	Grassland	OPEN	6.7	MOW/HAY
CH-35	C	30	Grassland	OPEN	3.6	MOW/HAY
CH-35	C	35	Grassland	OPEN	2.9	MOW/HAY
CH-35	C	37	Grassland	OPEN	15.4	MOW/HAY
CH-35	C	39	Grassland	OPEN	2.8	MOW/HAY

CH-35	C	44	Grassland	OPEN	6.0	MOW/HAY
CH-35	C	45	Grassland	OPEN	6.4	MOW/HAY
CH-35	C	59	Grassland	OPEN	32.4	MOW/HAY
Total Acres:					384.1	

Project Schedule

YEAR	FOREST	PROJECT DESCRIPTION (refer to Goals & Objectives for more details)
2017	CH-35	Install waterfowl nest boxes on Long Pond (volunteer stewardship)
2017	BR-10	Install waterfowl nest boxes on Nanticoke Lake (volunteer stewardship)
2017	BR-10	Designate driveway leading from south parking area to lake as CP3 trail.
2017	BR-10	Offer opportunity for development of 1.5 mile pedestrian trail around lake. Opportunity offered through Volunteer Stewardship Agreement program.
2017	CH-35	Improve at least one designated campsite to ADA standards.
2018	CH-35	Construct pedestrian trail from C-71 parking area to Round Pond and improve shoreline to support fishing.
2018	CH-35	Install ADA compliant dock at Long Pond boat launch site.
2018	CH-35	Construct 2-car parking area in Stand C-71, near round Pond.
2018	CH-35	Offer opportunity for development of 2.5 mile pedestrian trail around Long Pond. Opportunity offered through Volunteer Stewardship Agreement.
2018	CH-35	Offer opportunity for development of 1.4 mile trail on abandoned road, north of Rt 41. Opportunity through Volunteer Stewardship Agreement.
2018	CH-35	Replace snowmobile trail bridge at Pond Brook crossing.
2018	CH-35 BR-1	Maintain & install nest boxes for eastern bluebirds and other species of interest. Offered through Volunteer St3wardship Agreement program.
2018	CH-35	Update public use brochure for camping facilities.
2020	BR-10	Install information kiosk.
2020	BR-1	Install vehicular barricade gate at snowmobile trail entrance, south side of Rathburn Hill Road.
2020	CH-35	Install vehicular barricade gates at snowmobile trail entrances: Fuller Road, Stand C-26 off Forest Access Road, & Stand A-47 off Route 3.
2020	BR-10	Construct 2-car parking area in Stand A-8, Reed Road.
2020	BR-10	Install vehicular barricade and improve surface of driveway leading to Nanticoke Lake from Reed Road.

Annual	CH-35	Maintain 8 designated campsites. Provide fire rings & serviced, portable toilets (ADA compliant). Provide picnic tables for some sites.
Annual	CH-35	Stock Long Pond annually with tiger muskellunge (spring).
Annual	BR-10	Stock Nanticoke Lake annually with rainbow trout (spring).
Annual	CH-35	Stock grasslands annually with pheasants (fall).

IX. APPENDICIES

APPENDIX I Cultural Resources and Roads

Cultural Resources

Resource	Type	Location	Associated Name
Foundation	concrete	CH-35; A-53.1	O. P. Rose
Foundation	stone	CH-35; A-56.2	J. Potter
Foundation	stone	CH-35; A-59.2	C. P. Tarbell residence
Foundation	concrete	CH-35; A-59.2	C. P. Tarbell barn
Foundation	concrete	CH-35; A-59.2	C. P. Tarbell barn
Foundation	stone	CH-35; C-15	Sawmill
Foundation	concrete	CH-35; C-15	C. P. Tarbell
Dam	concrete	CH-35; A-70	Long Pond dam
Foundation	stone	CH-35; C-59	J. W. Harrison
Foundation	stone	CH-35; C-58.1	M. Macomb
Foundation	stone	CH-35; C-46	L. D. Leach
Foundation	stone	CH-35; C-45	Watson
Foundation	stone	CH-35; A-69	Hotchkiss
Foundation	stone	CH-35; C-64	Unknown
Foundation	stone	BR-10; A-6	E. Galer
Foundation	stone	BR-1; A-4	R. W. Nusom
Foundation	stone	BR-1; A-19	F. C. Hazzard
Foundation	stone	BR-1; A-22	Unknown
Foundation	stone	CH-35; C-67	Fergason
Foundation	stone	CH-35; A-70	Sawmill
Foundation	stone	CH-35; A-70	Mrs. Finnigan
Foundation	stone	CH-35; A-70	G. C. Saxton
Foundation	stone	CH-35; A-78	Miss Harrison
Foundation	stone	CH-35; C-44	School
Foundation	stone	CH-35; A-58	C. P. Tarbell
Foundation	stone	CH-35; A-53.1	J. P.
Foundation	stone	CH-35; B-1	S. Bronson

Foundation	stone	CH-35; A-20.4	J. E. Smith sawmill
Foundation	stone	CH-35; A-11	W. Gates
Fire Pond	stone	BR-1; A-4	C.C.C.

Roads

State Forest	Road Name	Jurisdiction	Miles	Description
BR-1	Rathburn Hill Road	Town of Triangle	1.46	Fair condition. Not plowed.
BR-1	Gates Road	Town of Triangle	0.19	Fair condition. Not plowed.
BR-1	Page Brook Road	Town of Triangle	0.26	Very good condition.
BR-1	Ticknor Brook Road	Town of Triangle	0.23	Very good condition.
BR-1	Wilson Hill Road	Town of Triangle	0.35	Very good condition.
BR-10	Reed Road	Town of Lisle	0.86	Very good condition.
BR-10	Squedunk Road	Town of Lisle	0.11	Very good condition.
BR-10	Dam Access Road	NYS DEC	0.33	No motor vehicle use.
CH-35	NYS Route 41	NYS DOT	2.35	Very good condition.
CH-35	Round Pond Road	T. of Smithville	0.95	Very good condition.
CH-35	Public Forest Access Rd	NYS DEC	1.50	Good condition. Not plowed.
CH-35	Tarbell Road	T. of Smithville	1.00	Good condition.
CH-35	Campsite access 1	NYS DEC	0.10	Fair condition. Not plowed.
CH-35	Campsite access 2	NYS DEC	0.20	Fair condition. Not plowed.
CH-35	Campsite access 3	NYS DEC	0.13	Fair condition. Not plowed.
CH-35	Tarbell driveway	NYS DEC	0.10	Good condition. Not plowed.
CH-35	Dam Access Road	NYS DEC	0.14	Good condition. Not plowed.
CH-35	Fry Road extension	NYS DEC	0.40	Fair condition. Not plowed.
CH-35	Old Ferry Road.	NYS DEC	1.18	No motor vehicle use.
CH-35	Nelson Road	T. of Smithville	0.36	Good condition.
CH-35	Ridge Road	T. of Smithville	1.29	Very good condition.
CH-35	Shipton Road	T. of Smithville	0.50	Good condition.

APPENDIX II Watercourses

Watercourses

State Forest	Stream Description or Name	Standard	Fishery Code	Length (miles)
CH-35	Tributary 2B to Red Brook	none	SR-44-23-17-2B	1.78
CH-35	Red Brook	C	SR-44-23-17	1.15
CH-35	Tributary 4A to Red Brook	none	SR-44-23-17-4A	0.20
CH-35	Tributary 4 to Red Brook	C	SR-44-23-17-4	0.10
CH-35	Tributary 3 to Red Brook	C	SR-44-23-17-3	0.15
CH-35	Intermittent tributary 1 to Red Brook	none	none	0.22
CH-35	Strong's Brook	C(t)	SR-44-23-18	0.18
CH-35	Tributary 2 to Red Brook	C	SR-44-23-17-2	0.42
CH-35	Pond Brook	C(t)	SR-44-23-14	1.58
CH-35	Tributary 3 to Pond Brook	C	SR-44-23-14-3	0.33
CH-35	Tributary 2 to Pond Brook	none	none	0.34
CH-35	Tributary 3 to Long Pond	C	SR-44-23-14-P83-3	0.15
CH-35	Intermittent tributary 1 to Long Pond	none	none	0.13
CH-35	Intermittent tributary 2 to Long Pond	none	none	0.12
CH-35	Intermittent tributary 3 to Long Pond	none	none	0.48
CH-35	Tributary 1 to Long Pond	C	SR-44-23-14-P83-1	0.86
CH-35	Tributary 1A to Long Pond	none	SR-44-23-14-P83-1A	0.28
CH-35	Tributary 1.1 to Long Pond	C	SR-44-23-14-P83-1-1	0.32
CH-35	Tributary 1 to Pond Brook	C	SR-44-23-14-1-1	0.85
CH-35	Round Pond tributary	C	SR-44-23-14-1-P82-1	0.95
CH-35	Intermittent stream Stand C-41.2	none	none	0.34
			subtotal	10.93
BR-1	Ticknor Brook	C	SR-44-14-10	0.57
BR-1	Intermittent tributary to Ticknor Brook	none	none	0.13
BR-1	Tributary 13 to Ticknor Brook	C	SR-44-14-10-13	0.10
BR-1	Tributary 12 to Ticknor Brook	C	SR-44-14-10-12	0.18
BR-1	Intermittent stream Stand A-6.1	none	none	0.38
BR-1	Intermittent stream Stand A-25	none	none	0.14
BR-1	Tributary 8.4 to Ticknor Brook	C	SR-44-14-14-8-4	0.74
BR-1	Perennial stream Stand A-4	C	none	0.40
BR-1	Intermittent stream Stand A-12	none	none	0.19
			subtotal	2.83
BR-10	Nanticoke Lake inlet west	None	none	0.43
BR-10	Nanticoke Lake inlet east	None	none	0.15
BR-10	Nanticoke Lake outlet	none	none	0.32
			subtotal	0.90

State Forest	Stream Description or Name	Standard	Fishery Code	Length (miles)
			TOTAL	14.66

APPENDIX III Wetlands

Classified Freshwater

State Forest	Stand(s)	Description	Wetland ID	Legal Class	Acres on the Unit*
CH-35	A-2, 3, 4, 5	Freshwater Forest/Shrub Wetland	SF-9	III	19.9
CH-35	A-34	Freshwater Forest/Shrub Wetland	SF-10	III	26.9
CH-35	C-67 & 68	Freshwater Forest/Shrub Wetland	SF-11	II	22.2
Total					69.0

Unclassified Freshwater Wetlands

Forest	Stand(s)	Description	NWI code	Acres on the Unit*
CH-35	A-14	Freshwater Forest/Shrub Wetland	PFO4E	10.0
CH-35	A-22.1	Freshwater Forest/Shrub Wetland	PFO4E	0.5
CH-35	A-22.1	Freshwater Forest/Shrub Wetland	PFO4E	2.0
CH-35	A-22.1	Freshwater Forest/Shrub Wetland	PFO4E	0.8
CH-35	A-22.2	Freshwater Forest/Shrub Wetland	PFO4E	2.3
CH-35	A-24.2 & 25	Freshwater Forest/Shrub Wetland	PFO1E	8.7
CH-35	A-26	Freshwater Forest/Shrub Wetland	PFO4E	1.2
CH-35	A-28	Freshwater Forest/Shrub Wetland	PFO4E	1.1
CH-35	A-34	Freshwater Forest/Shrub Wetland	PFO4E	0.4
CH-35	A-34	Freshwater Forest/Shrub Wetland	PFO1/4E	1.5
CH-35	A-51	Freshwater Forest/Shrub Wetland	PSS1E	4.9
CH-35	A-61.1	Freshwater Forest/Shrub Wetland	PFO4E	0.3
CH-35	A-61.1	Freshwater Forest/Shrub Wetland	PFO4E	4.1
CH-35	A-61.1 & 62	Freshwater Forest/Shrub Wetland	PFO4E	4.3
CH-35	A-61.2 & 64.1	Freshwater Forest/Shrub Wetland	PFO1E	0.8
CH-35	A-64.1	Freshwater Forest/Shrub Wetland	PFO1E	0.3
CH-35	B-6	Freshwater Forest/Shrub Wetland	PFO4E	2.7
CH-35	B-7.1 & 9	Freshwater Forest/Shrub Wetland	PSS1E	4.4
CH-35	B-13	Freshwater Emergent Wetland	PEM1F	0.2
CH-35	B-17	Freshwater Pond	PUBHh	0.2
CH-35	C-2 & 3	Freshwater Forest/Shrub Wetland	PSS1/FO1Eh	13.0
CH-35	C-11	Freshwater Forest/Shrub Wetland	PSS1/3Eh	0.7
CH-35	C-12 & 13	Freshwater Forest/Shrub Wetland	PSS1/FO1Eh	2.9

Forest	Stand(s)	Description	NWI code	Acres on the Unit*
CH-35	C-18 & 19	Freshwater Forest/Shrub Wetland	PFO1E	15.1
CH-35	C-21	Freshwater Forest/Shrub Wetland	PFO4E	9.6
CH-35	C-28 & 29	Freshwater Forest/Shrub Wetland	PFO4E	5.9
CH-35	C-49	Freshwater Forest/Shrub Wetland	PFO4E	0.8
CH-35	C-52	Freshwater Forest/Shrub Wetland	PFO4E	2.9
CH-35	C-52	Freshwater Forest/Shrub Wetland	PFO4E	3.4
CH-35	C-52	Freshwater Forest/Shrub Wetland	PFO4E	1.7
CH-35	C-68	Freshwater Forest/Shrub Wetland	PSS1E	4.3
BR-1	A-2.2			2.9
BR-1	A-21	Freshwater Emergent Wetland	PEM1/SS1C	8.0
BR-1	A-29			1.6
Total				123.5

* Some wetlands extend across onto adjacent private lands. Only the area on the Unit is listed.

Ponds

Pond	NWI Code	Acres
Long Pond	L1UBHh	109.4
Nanticoke Lake	L1UBHh	48.6
Round Pound	L1UBH	25.2
Total		183.2

APPENDIX IV Code Definitions

Code Definitions for Protective Status of Wildlife on the Between Rivers Management Unit

The protective status of species listed in Appendices V, VI, and VII 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.
	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 V Birds

Species of Birds In the Vicinity of the Long Pond Unit, 2000-2005, New York State Breeding Bird Atlas Data. Survey Blocks: 4068A, 4068B, 4269A, 4269B, 4269C and 4269D.

Confirmed Species of Breeding Birds

Common Name	Scientific Name	Date	NYS Legal Status
Alder Flycatcher	*Empidonax alnorum*	7/12/2004	Protected
American Crow	*Corvus brachyrhynchos*	6/15/2004	Game Species
American Goldfinch	*Spinus tristis*	7/12/2004	Protected
American Kestrel	*Falco sparverius*	7/12/2004	Protected
American Redstart	*Setophaga ruticilla*	7/17/2005	Protected
American Robin	*Turdus migratorius*	6/13/2004	Protected
Baltimore Oriole	*Icterus galbula*	7/17/2005	Protected
Barn Swallow	*Hirundo rustica*	7/12/2004	Protected
Belted Kingfisher	*Megaceryle alcyon*	6/15/2004	Protected
Black-capped Chickadee	*Poecile atricapillus*	7/12/2004	Protected
Black-throated Green Warbler	*Dendroica virens*	7/12/2004	Protected
Blue Jay	*Cyanocitta cristata*	7/10/2000	Protected
Blue-winged Warbler	*Vermivora pinus*	7/17/2005	Protected
Bobolink	*Dolichonyx oryzivorus*	6/13/2004	Protected
Brown Creeper	*Certhia americana*	7/19/2004	Protected
Brown-headed Cowbird	*Molothrus ater*	7/17/2005	Protected
Canada Goose	*Branta canadensis*	4/30/2004	Game Species
Canada Warbler	*Wilsonia canadensis*	7/12/2004	Protected
Cedar Waxwing	*Bombycilla cedrorum*	7/12/2004	Protected
Chestnut-sided Warbler	*Dendroica pensylvanica*	7/12/2004	Protected
Chipping Sparrow	*Spizella passerina*	7/19/2004	Protected
Common Grackle	*Quiscalus quiscula*	6/13/2004	Protected
Common Yellowthroat	*Geothlypis trichas*	7/19/2004	Protected
Dark-eyed Junco	*Junco hyemalis*	7/17/2005	Protected
Eastern Bluebird	*Sialia sialis*	7/10/2004	Protected
Eastern Kingbird	*Tyrannus tyrannus*	7/17/2005	Protected
Eastern Meadowlark	*Sturnella magna*	7/10/2000	Protected
Eastern Phoebe	*Sayornis phoebe*	6/13/2004	Protected
Eastern Towhee	*Pipilo erythrophthalmus*	7/10/2000	Protected
European Starling	*Sturnus vulgaris*	7/12/2004	Protected
Field Sparrow	*Spizella pusilla*	7/10/2000	Protected
Golden- crowned Kinglet	*Regulus satrapa*	7/26/2004	Protected
Gray Catbird	*Dumetella carolinensis*	7/12/2004	Protected
Great Crested Flycatcher	*Myiarchus crinitus*	7/19/2004	Protected
Hermit Thrush	*Catharus guttatus*	5/23/2005	Protected
House Finch	*Carpodacus mexicanus*	7/19/2004	Protected
House Sparrow	*Passer domesticus*	7/7/2005	Protected
House Wren	*Troglodytes aedon*	7/17/2005	Protected
Indigo Bunting	*Passerina cyanea*	8/1/2005	Protected

Common Name	Scientific Name	Date	NYS Legal Status
Killdeer	*Charadrius vociferus*	6/20/2004	Protected
Mallard	*Anas platyrhynchos*	6/29/2000	Game Species
Mourning Dove	*Zenaida macroura*	6/20/2004	Protected
Northern Cardinal	*Cardinalis cardinalis*	8/6/2005	Protected
Northern Flicker	*Colaptes auratus*	8/1/2005	Protected
Northern Goshawk	*Accipiter gentilis*	6/13/2002	Protected-Special Concern
Northern Mockingbird	*Mimus polyglottos*	7/19/2004	Protected
Ovenbird	*Seiurus aurocapilla*	8/6/2005	Protected
Pine Siskin	*Spinus pinus*	6/29/2000	Protected
Purple Finch	*Carpodacus purpureus*	7/17/2005	Protected
Red-breasted Nuthatch	*Sitta canadensis*	7/7/2005	Protected
Red-eyed Vireo	*Vireo olivaceus*	7/17/2005	Protected
Red-shouldered Hawk	*Buteo lineatus*	5/23/2005	Protected-Special Concern
Red-tailed Hawk	*Buteo jamaicensis*	8/6/2005	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	7/19/2004	Protected
Rock Pigeon	*Columba livia*	7/7/2005	Protected
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	8/2/2005	Protected
Ruffed Grouse	*Bonasa umbellus*	7/19/2004	Game Species
Savannah Sparrow	*Passerculus sandwichensis*	7/19/2004	Protected
Scarlet Tanager	*Piranga olivacea*	8/1/2005	Protected
Song Sparrow	*Melospiza melodia*	7/12/2004	Protected
Tree Swallow	*Melospiza melodia*	7/12/2004	Protected
Tufted Titmouse	*Baeolophus bicolor*	8/6/2005	Protected
Veery	*Catharus fuscescens*	8/6/2005	Protected
White-breasted Nuthatch	*Sitta carolinensis*	8/1/2005	Protected
Winter Wren	*Troglodytes troglodytes*	7/19/2004	Protected
Wood Duck	*Aix sponsa*	7/10/2000	Game Species
Wood Thrush	*Hylocichla mustelina*	7/19/2004	Protected
Yellow Warbler	*Dendroica petechia*	7/7/2005	Protected
Yellow-bellied Sapsucker	*Sphyrapicus varius*	7/17/2005	Protected
Yellow-rumped Warbler	*Dendroica coronata*	8/6/2005	Protected
Common Name	***Scientific Name***		**NYS Legal Status**
American Woodcock	*Scolopax minor*	5/31/2000	Game Species
Barred Owl	*Strix varia*	6/4/2000	Protected
Black-and-white Warbler	*Mniotilta varia*	6/15/2004	Protected
Black-billed Cuckoo	*Coccyzus erythropthalmus*	7/19/2004	Protected
Blackburnian Warbler	*Dendroica fusca*	6/15/2004	Protected
Black-throated Blue Warbler	*Dendroica caerulescens*	7/12/2004	Protected

Common Name	Scientific Name	Date	NYS Legal Status
Blue-headed Vireo	*Vireo solitarius*	6/13/2004	Protected
Brown Thrasher	*Toxostoma rufum*	6/15/2004	Protected
Chimney Swift	*Chaetura pelagica*	7/26/2004	Protected
Common Raven	*Corvus corax*	6/15/2004	Protected
Downey Woodpecker	*Picoides pubescens*	7/26/2004	Protected
Eastern Wood-Pewee	*Contopus virens*	7/19/2004	Protected
Grasshopper Sparrow	*Ammodramus savannarum*	7/10/2000	Protected-Special Concern
Great Blue Heron	*Ardea herodias*	7/19/2004	Protected
Great Horned Owl	*Bubo virginianus*	5/31/2000	Protected
Green Heron	*Butorides virescens*	6/29/2000	Protected
Hairy Woodpecker	*Picoides villosus*	7/19/2004	Protected
Henslow's Sparrow	*Ammodramus henslowii*	7/10/2000	Threatened
Hooded Warbler	*Wilsonia citrina*	7/12/2004	Protected
Horned Lark	*Eremophila alpestris*	6/29/2000	Protected-Special Concern
Least Flycatcher	*Empidonax minimus*	7/7/2005	Protected
Magnolia Warbler	*Dendroica magnolia*	7/19/2004	Protected
Mourning Warbler	*Oporornis philadelphia*	6/15/2004	Protected
Northern Harrier	*Circus cyaneus*	6/20/2004	Threatened
Northern Waterthrush	*Seiurus noveboracensis*	6/28/2003	Protected
Common merganser	*Mergus merganser*	5/31/2000	Game Species
Double-crested Cormorant	*Phalacrocorax auritus*	6/29/2000	Protected
Hooded Merganser	*Lophodytes cucullatus*	6/15/2004	Game Species
Nashville Warbler	*Vermivora ruficapilla*	5/18/2005	Protected
Northern Parula	*Parula americana*	6/13/2004	Protected
Osprey	*Pandion hliaetus*	6/4/2000	Protected-Special Corncen
Prairie Warbler	*Dendroica discolor*	6/5/2004	Protected
Sharp-shinned Hawk	*Accipiter striatus*	5/31/2001	Protected-Special Corncern
Spotted Sandpiper	*Actitis macularius*	6/15/2004	Protected
Wilson's Snipe	*Gallinago delicata*	6/13/2004	Game Species

APPENDIX VI Amphibians and Reptiles

Species of Amphibians and Reptiles In the Vicinity of the Long Pond Management Unit. New York State Amphibian and Reptile Atlas Data 1990-1999.

Amphibian and Reptile Species

Common Name	Scientific Name	NY Legal Status
Bullfrog	*Rana catesbeiana*	Game Species
Gray Treefrog	*Hyla versicolor*	Unprotected
Green Frog	*Rana clamitans melanota*	Game Species
Northern Leopard Frog	*Rana pipiens*	Game Species
Northern Spring Peeper	*Pseudacris crucifer*	Unprotected
Pickerel Frog	*Rana palustris*	Game Species
Wood Frog	*Rana sylvatica*	Game Species
Eastern American Toad	*Bufo americanus*	Unprotected
Common Snapping Turtle	*Chlydra serpentina*	Game Species
Painted Turtle	*Chrysemys picta*	Unprotected
Spotted Turtle	*Clemmys guttata*	Protected/Special Concern
Wood Turtle	*Clemmys insculpta*	Game Spec-S Concern*
Allegheny Dusky Salamander	*Desmognathus ochrophaes*	Unprotected
Northern Dusky Salamander	*Desmognathus fuscus*	Unprotected
Northern Redback Salamander	*Plethodon cinereus*	Unprotected
Northern Slimy Salamander	*Plethodon glutinosus*	Unprotected
Northern Spring Salamander	*Gyrinophilus porphyriticus*	Unprotected
Northern Two-lined Salamander	*Eurycea bislineata*	Unprotected
Red-spotted Newt	*Notophthalmus viridescens*	Unprotected
Spotted Salamander	*Ambystoma maculatum*	Unprotected
Common Garter Snake	*Thamnophis sirtalis*	Unprotected
Eastern Milk Snake	*Lampropeltis Triangulum*	Unprotected
Northern Redbelly Snake	*Storeria* occiptomaculata	Unprotected
Northern Ringneck Snake	*Diadophis punctatus*	Unprotected
Northern Water Snake	*Nerodia sipedon*	Unprotected
Smooth Green Snake	*Liochlorophis vernalis*	Unprotected

* The Wood Turtle has been protected since 1905 by listing it as a game species with no open season.

APPENDIX VII Mammals

Mammals of the Long Pond Management Unit and Vicinity. Common Name, Scientific Name and Protective Status.

Mammals

Common Name	Scientific Name	Confirmed/ Predicted	Protective Status	
			Federal	State
American Beaver	*Castor canadensis*	C	UN	GS
Big Brown Bat	*Eptesicus fuscus*	C	UN	UN
Black Bear	*Ursus americanus*	P	UN	GS
Bobcat	*Lynx rufus*	C	UN	GS
Common Muskrat	*Ondatra zibethicus*	C	UN	GS
Common Raccoon	*Procyon lotor*	P	UN	GS
Coyote	*Canis latrans*	C	UN	GS
Deer Mouse	*Peromyscus maniculatus*	C	UN	UN
E. small-footed Myotis	*Myotis leibii*	P	UN	SC
Eastern Chipmunk	*Tamias striatus*	C	UN	UN
Eastern Cottontail	*Sylvilagus floridanus*	P	UN	GS
Eastern Gray Squirrel	*Sciurus carolinensis*	C	UN	GS
Eastern Pipistrelle	*Pipistrellus subflavus*	P	UN	UN
Eastern Red Bat	*Lasiurus borealis*	P	UN	UN
Fisher	*Martes pennanti*	P	UN	GS
Fox Squirrel	*Sciurus niger*	P	UN	GS
Gray Fox	*Urocyon cinereoargentus*	C	UN	GS
Hairy-tailed Mole	*Parascalops breweri*	C	UN	UN
Hoary Bat	*Lasiurus cinereus*	C	UN	UN
House Mouse	*Mus musculus*	C	UN	UN
Indiana Myotis	*Myotis sodalis*	P	E	E
Least Shrew	*Cryptotis parva*	P	UN	UN
Little Brown Myotis	*Myotis lucifugus*	C	UN	UN
Long-tailed Weasel	*Mustela frenata*	P	UN	GS
Masked Shrew	*Sorex cinereus*	C	UN	UN
Meadow Jumping Mouse	*Zapus hudsonius*	C	UN	UN
Meadow Vole	*Microtus pennsylvanicus*	C	UN	UN
Mink	*Mustela vison*	P	UN	GS
N. Short-tailed Shrew	*Blarina brevicauda*	C	UN	UN
Northern Flying Squirrel	*Glaucomys sabrinus*	C	UN	UN
Northern Long Eared Bat	*Myotis septentrionalis*	C	T	T
Norway Rat	*Rattus norvegicus*	P	UN	UN
Porcupine	*Erethizon dorsatum*	P	UN	UN

Common Name	Scientific Name	Confirmed/ Predicted	Protective Status	
			Federal	State
Pygmy Shrew	*Sorex hoyi*	C	UN	UN
Red Fox	*Vulpes vulpes*	C	UN	GS
Red Squirrel	*Tamiasciurus hudsonicus*	C	UN	UN
River Otter	*Lutra canadensis*	C	UN	GS
Short-tailed Weasel (Ermine)	*Mustela erminea*	C	UN	UN
Silver-haired Bat	*Lasionycteris noctivagans*	P	UN	UN
Smoky Shrew	*Sorex fumeus*	C	UN	UN
Snowshoe Hare	*Lepus americanus*	P	UN	GS
Southern Bog Lemming	*Synaptomys cooperi*	C	UN	UN
Southern Flying Squirrel	*Glaucomys volans*	C	UN	UN
Southern Red-backed Vole	*Clethrionomys gapperi*	C	UN	UN
Star-nosed Mole	*Condylura cristata*	C	UN	UN
Striped Skunk	*Mephitis mephitis*	P	UN	GS
Virginia Opossum	*Didelphis virginiana*	P	UN	GS
White-footed Mouse	*Peromyscus leucopus*	C	UN	UN
White-tailed Deer	*Odocoileus virginianus*	C	UN	GS
Woodchuck	*Marmota monax*	P	UN	UN
Woodland Jumping Mouse	*Napaeozapus insignis*	C	UN	UN
Woodland Vole	*Microtus pinetorum*	C	UN	UN

Source: Adapted from The New York Gap Program, U.S. EPA EMAP Hexagons 414, and 417.

APPENDIX VIII Fish

Common Name	Scientific Name
Black Crappie	*Pomoxis nigromaculatus*
Bluegill	*Lepomis macrochirus*
Brook Trout	*Salvelinus fontinalis*
Brown Bullhead	*Ameiurus nebulosus*
Brown Trout	*Salmo trutta*
Chain Pickerel	*Esox niger*
Largemouth Bass	*Micropterus salmoides*
Northern Pike	*Esox lucius*
Pumpkinseed	*Lepomis gibbosus*
Rainbow Trout	*Oncorhynchus mykiss*
Rock Bass	*Ambloplites rupestris*
Tiger Muskellunge	*Esox masquinongy*
Yellow Perch	*Perca flavescens*

Department's website for fishing information: http://www.dec.ny.gov/outdoor/7936.html

APPENDIX IX Deer Harvest Data

Total Deer Take by Town

Town	2007	2008	2009	2010	2011	2012
Lisle	303	270	317	341	305	278
Smithville	274	495	321	344	342	315
Triangle	255	246	203	187	188	207
Total	832	1,011	841	872	835	800
Average	277	337	280	291	278	267

Adult Buck Take by Town

Town	2007	2008	2009	2010	2011	2012
Lisle	116	86	73	119	85	106
Smithville	142	181	171	177	187	169
Triangle	128	110	111	107	110	109
Total	386	377	355	403	382	384
Average	129	126	118	134	127	128

APPENDIX X Turkey Harvest Data

As described in DEC's Wild Turkey Management Plan, DEC has changed the way that seasonal turkey harvest is reported. In the past, DEC only summarized the number of birds actually reported by hunters. Now, the Department reports an estimated total turkey harvest based on surveys of approximately 12,000 turkey permit holders after the close of the hunting season. This results in a calculated harvest based on estimated reporting rates. This provides a more accurate harvest estimate and a more realistic assessment of the status of New York's wild turkey populations.
Source: http://www.dec.ny.gov/outdoor/30420.html

Spring Harvest Data

County	2008	2009	2010	2011	2012	2013
Broome	576	587	467	378	315	353
Chenango	923	986	852	570	490	612

Fall Harvest Data

County	2007	2008	2009	2010	2011	2012
Broome	416	382	176	262	91	194
Chenango	651	598	298	406	111	309

APPENDIX XI Property Taxes

SF	Town	Acres	Assessment	Town Tax	School Tax	Fire District Tax	Total Tax
C-35	Smithville	3,068	2,744,300	20,720	64,656	7,355	92,731
B-1	Triangle	661	190,300	761	5,484	383	6,628
B-10	Lisle	337	420,800	2,323	12,128	522	14,973
Total		**4,066**	**3,355,400**	**23,804**	**82,268**	**8,260**	**114,332**

APPENDIX XII Mineral Resource Procedures

Any activity involving the procurement of oil and gas resources and/or storage of gas and liquids in the subsurface on state lands in this unit management plan are administered by the NYS DEC Division of Mineral Resources which issues lease contracts. The procurement of minerals and rocks (inorganic substances), including the solution mining of minerals (such as salt) on these same state lands is administered by the Office of General Services. All activities associated with mining minerals and rocks, solution mining of minerals and oil & gas drilling, including production, are regulated by the NYS DEC Division of Mineral Resources (including the issuance of mining permits and drilling permits).

The surface estate of these state lands is managed through the NYS DEC Division of Lands and Forests or Division of Fish, Wildlife and Marine Resources. In the event the surface estate is to be used in the evaluation and/or extraction of mineral resources from state lands, a Temporary Revocable Permit (TRP) must be obtained from the NYS DEC Division of Lands and Forests prior to conducting any operations. If the mineral estate is under a lease agreement, only the lessee, or entities authorized by the lessee, will be issued a TRP for these purposes.

It is NYS DEC policy to recommend excluding operations in surface areas with sensitive habitats (stream banks, wetlands, steep slopes, rare communities etc.) or intensive recreational use. Any proposal for mineral development other than oil and gas would require SEQR review.

APPENDIX XIII Oil and Gas

Procedures for Oil and Gas Procurement for State Lands Nominated in the Future

In the event a party has an interest in exploring and developing oil and gas reserves under lands administered by the NYS DEC, the Division of Mineral Resources will receive requests to nominate specific lands for leasing of the mineral rights. Prior to leasing lands where the mineral estate is owned by New York State, a thorough review of the lands nominated for leasing is conducted to determine:

1.) Which areas can be leased with full rights granted (100% surface entry and no special conditions required);

2.) Which areas may require special environmental and safety conditions; and

3.) Which areas may be leased with no surface-disturbance/entry conditions (non-drilling clause)

This review is conducted by the area's land manager (Division of Lands and Forests or Division of Fish and Wildlife) in coordination with the Division of Mineral Resources. A tract assessment is then conducted by the surface managers that identifies sensitive resources of the unit. These resources include certain management strategies, wetlands, riparian zones, steep slopes, recreational trails and areas, unique ecological communities, habitats of rare and endangered species, archeological and cultural sites and scenic vistas and view sheds.

A public meeting will be held to provide information and receive comments about the tract assessment and proposed oil and gas development specific to the Unit. A 30-day public comment period will follow. The Department will consider all comments prior to making a decision. If the Department decides to pursue leasing, the site specific conditions for limiting impacts on natural resources will be drafted by the Division of Mineral Resources in coordination with the Division of Lands & Forests and/or Division of Fish, Wildlife and Marine and incorporated into contract documents. These conditions will include but not be limited to criteria for site selection, mitigation of impacts and land reclamation upon completion of drilling. A number of factors are considered. Riparian areas, steep slopes, significant recreation areas, presence of rare, threatened or endangered species or unique ecological communities are all areas which may be excluded from surface disturbance. Certain land management strategies, such as reserves where timber harvesting is precluded, may be incompatible with oil and gas well development and may result in exclusion from surface disturbance. This determination is made as part of the tract assessment process on a case by case basis. Individual tract proposal reviews for each forest within the Unit will be completed, and determinations deciding which areas will be excluded from surface disturbance (should leasing be initiated) will be made. Maps depicting these areas will be made part of the lease contracts. Any parcel designated as a non-surface entry lease will no longer be subject to the process detailed above due to the prohibition of surface disturbance(s). Exceptions to these tract assessments are possible if additional analysis, protective measures, new technology, or other issues warrant a change in the compatibility status of an area.

If it is determined that oil and gas exploration and development can proceed, a lease sale is conducted through a competitive bid process administered by the Division of Mineral Resources and in accordance with Article 23, Title 11 of the Environmental Conservation Law and State Finance Law. Revenues from State Reforestation Areas and MUA (State Forests) are deposited into the General Fund while revenues from Wildlife Management Areas are deposited into the Conservation Fund.

In the event leases are granted and the drilling of a well is desired by the lessee on the leased property, an Application for Permit to Drill, Deepen, Plug Back or Convert a Well Subject to the Oil, Gas and Solution Mining Law (form 85-12-5) must be submitted to the Division of Mineral Resources. Site-specific impacts will then be identified by NYS DEC staff during review process

and inspection of the proposed well site. The Generic Environmental Impact Statement On the Oil, Gas and Solution Mining Regulatory Program (Draft, 1988, Final, 1992) is used to guide the Department in determining whether the proposal will have a significant impact on the environment.

Once the proposal is approved, a drilling permit with site specific conditions is issued by the Division of Mineral Resources and a Temporary Revocable Permit is issued by either the Division of Lands and Forests or Fish and Wildlife. These permits are administered by their respective programs and are designed to prevent and/or mitigate environmental impacts. Site inspections are conducted by the Division of Mineral Resources to ensure compliance with Article 23 of the Environmental Conservation Law and 6NYCRR Part 550 - 559. The Division of Lands and Forests or the Division of Fish, Wildlife and Marine Resources will also inspect the site to ensure compliance with the TRP.

In the event underground pipelines are planned to transport gas and/or oil across state lands, the Division of Mineral Resources, in conjunction with the Division of Lands and Forests, and Division of Fish, Wildlife and Marine Resources, will coordinate with the mineral estate lessee to determine the best route for the pipeline(s). Any pipelines greater than 1,000 feet in length and/or containing pressures greater than 125 pounds per square inch are regulated by the New York State Public Service Commission.

Procedures for Mineral and Rock Procurement

In the event a party desires to explore and procure minerals and/or rock (including salt) from state lands, the party must obtain a permit, consent or lease of such duration as the Commissioner may deem advisable from the Office of General Services under Article 7 of the New York Consolidated Laws / Public Lands. Prior to operations, a Mining Permit or Drilling Permit in the case of solution mining must be obtained from the Division of Mineral Resources and a Temporary Revocable Permit (for access and use of land) must be obtained from the Division of Lands and Forests or the Division of Fish, Wildlife and Marine Resources. Mining operations are regulated by the Division of Mineral Resources.

Under Article 7 of the New York State Consolidated Laws, any citizen of the United States may apply for permission to explore and/or extract any mineral on State lands. However, current Department policy is to decline any commercial mining application(s) pertaining to any lands covered by this unit management plan.

APPENDIX XV Budget

Funds needed to sustain both annual, routine maintenance programs and special projects are typically allocated to the Department through the Environmental Protection Fund (EPF). Routine maintenance includes projects such as litter collection, road grading, culvert pipe clearings, roadside mowing, and camp site maintenance. Special projects include construction of

snowmobile trail bridges, installation of information kiosks, and development of new parking areas & trails.

New York State's Environmental Protection Fund (EPF) is a source of funding for capital projects that protect the environment and enhance communities. Capital projects are usually large projects that purchase land or construct facilities. Most projects that receive grants of EPF money combine it with other funding sources that require matching funds.

The EPF also supports the stewardship of public lands, including state parks and millions of acres of public lands throughout the state. Through partnerships with volunteer organizations, state agencies use stewardship funding to manage trails and lands, protect natural resources, preserve wildlife habitats, make critical capital improvements at parks and campgrounds, educate students about conservation and provide access to persons with disabilities.

Created by the state legislature in 1993, the Environmental Protection Fund is financed primarily through a dedicated portion of real estate transfer taxes. The EPF has gradually grown from its original appropriation of $31 million in fiscal year 1994-1995. Over the past 20 years, the EPF has provided more than $2.7 billion for a variety of environmental projects. As a trust fund created in state law, these resources must be kept separate from other state monies.

APPENDIX XIV Department Laws, Rules, Regulations and Policies

A. 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

B. Rules & Regulations Pertaining to New York State Public Lands

Title 6 of *the New York Code of Rules and Regulations* - 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.

C. State Forest Camping Regulations

NYCRR Title 6 Part 94.2d – No person shall camp in the Nanticoke Lake Multiple Use Area in Broome County.

The following regulations apply to Long Pond State Forest and Triangle State Forest:

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.

D. Department Policies

Unit Management Planning	Prescribed Fire	Pesticides
Motor Vehicle use	Inventory	Recreational Use
Timber Management	Acquisition	Public Use
Temporary Revocable Permits	Road Construction	State Forest Master Plan
Plantation Management	Retention	Clearcutting

APPENDIX XVII References

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APPENDIX XVIII 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.

Aesthetics - forest value, rooted in beauty and visual appreciation and providing a distinct visual quality.

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 - a 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 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.

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.

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.

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 Esocial 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.

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.

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 Stage Forest - a forest which is allowed to attain climax forest conditions, through the absence of periodic silvicultural treatments.

Log deck - a cleared area in the forest to which logs are skidded and are temporarily stored before being loaded onto trucks for transport.

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.

Medium sawtimber - trees 15-17 inches diameter at breast height.

Mesic - of sites or habitats characterized by intermediate moisture conditions, i.e., neither decidedly wet nor dry.

Mesophytic forest – a forest that is growing in a moderately moist environment. The soils of the forest have a well-balanced moisture supply.

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 regeneration - the establishment of a forest stand from natural seeding, sprouting, suckering or layering.

Neo-Tropical Migratory Bird – any species of bird that breeds in either Canada or the United States during our summer season and spends our winter season in Mexico, Central America, South America or the Caribbean Islands.

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.

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.

Protection forest - forest land excluded from most active management including timber management, oil and gas exploration and development, and some recreational activities to protect sensitive sites. These sites most often include steep slopes, wet woodlands and riparian zones along stream corridors. Silvicultural treatments of these stands may occur in relationship with events such as storms, insect and disease outbreaks, or fires.

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.

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.

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.

Selection cut/method - 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.

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.

Site index - a species-specific measure of actual or potential forest productivity, expressed in terms of the average height of trees included in a specified stand component at a specified age.

Site quality - the productive capacity of a site, usually expressed as volume production of a given species.

Skid trail - a temporary or permanent trail used to skid or forward felled trees from the stumps to the log landing.

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).

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

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.

Water quality classes - a system of classification in ECL Article 17 which presents a ranked listing of the State's surface waters by the letters AA, A, B, C or D according to certain quality

standards and specifications. AA is the highest quality rank and has the greatest suitability for human usage.

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.

Wetland classes - a system of classification set forth in ECL Article 24, section 664.5 which ranks wetland I through IV based upon wetland functions and benefits, I being the highest rank.

APPENDIX XV Special Management Zones

DEC Division of Lands and Forests Management Rules for Establishment of Special Management Zones on State Forests Version: June 2008

Streams, Wetlands, Ponds, Lakes and Spring Seeps	
Streams include naturally occurring perennial[2] and intermittent[1] drainages having defined channels. **Special management zone[4]** widths are from the edge of high water channels or, for wetlands[6], the edge of seasonally saturated soils. A spring seep is a permanent spring where water emerges from the ground and flows across the soil surface without defined bed and banks. The limits of the seep are demarked by the extent of surface water. All distances are in horizontal feet.	
Activity	**Guidelines**
Mineral Exploration and Development	• Mineral Exploration: Refer to *Guidelines for Seismic Testing on DEC Administered State Land* Draft 12/20/07 • Development Surface disturbance prohibited within 250'.
Silviculture	• Spring Seeps and DEC Classified, Federally Classified, and Unclassified Wetlands[6]: No timber harvesting equipment allowed in any wetland or spring seep. Any trees cut within any wetland or spring seep must be winched out. Maintain at least 75% of pre-harvest basal area evenly spread throughout both the wetland or spring seep and a 100' **Special Management Zone**[4] surrounding wetland or spring seep. • Ponds & Lakes: 50' **Protection Buffer**[3]* next to water body & additional 100' **Special Management Zone** retaining at least 75% of pre-harvest basal area. • Perennial Streams[2]: 100' **Special Management Zone** on each side of stream. First 50' next to stream is a **Protection Buffer***. The next 50' - maintain at least 75% of pre-harvest basal area. • Intermittent Streams[1]: 100' **Special Management Zone** on each side of naturally occurring intermittent streams. Maintain at least 75% of pre-harvest basal area within **Special Management Zone**.

Streams, Wetlands, Ponds, Lakes and Spring Seeps	
Skid Trails	• Keep skid trails at least 100' from wetlands and water bodies and at least 150' away when adjoining slopes are greater than 10%. • No skidding through spring seep origin. Where roads and trails must cross spring seeps, locate them as far from the origin as possible and ensure that crossings are at right angles to the spring seep. • Must follow guidelines presented in *New York State Forestry BMPs for Water Quality Field Guide* (BMP Field Guide) and stream crossing permit procedures.
Haul Roads**	• Avoid construction within 250' of wetlands. Must follow BMP Field Guide.
Log decks and Landings	• Must follow BMP Field Guide. • Keep log decks and landings at least 250' from all wetlands, streams and ponds.

Vernal Pools[7]	
The Vernal Pool **Depression*** consists of the area fully covered by water at maximum capacity (usually during spring thaw), which may not always be wet during the period when timber is being harvested. During the dry season, the high-water mark can often be determined by the presence of blackened, water- or silt-stained leaves, aquatic debris along the edges, or a clear change in topography from the pool depression to the adjacent upland. (Phillip G. deMaynadier and Jeffry E. Houlahan, "Conserving Vernal Pool Amphibians in Managed Forests," *Science and Conservation of Vernal Pools in Northeastern North America*, CRC Press, Boca Raton, FL, 2008, p. 269)	
Mineral Exploration and Development	• Mineral Exploration: Refer to *Guidelines for Seismic Testing on DEC Administered State Land* Draft 12/20/07 • Development Surface disturbance prohibited within 250' of the vernal pool depression.
Silviculture	• No disturbance, including tree cutting and use of timber harvesting equipment, is allowed within the **Vernal Pool** depression*. • Establish **Special Management Zone** at least 100' wide (if possible, wider is better) around perimeter of **vernal pool** depression*. Maintain at least 75% crown cover and minimize disturbance of leaf litter and soil. In **Special Management Zone**, avoid using heavy machinery when possible and restrict logging to frozen or dry ground conditions if necessary. Do not create ruts deeper than 6 inches. If rutting begins, immediately suspend operations. Any ruts must be leveled.
Main Skid Trails	• Keep main trails out of the 100' wide **Special Management Zone**.

Vernal Pools[7]	
Haul Roads** and Landings	• Avoid construction within 250' of **Vernal Pool** depression*.

Recreational Trails	
Mineral Exploration and Development	• Mineral Exploration: Refer to *Guidelines for Seismic Testing on DEC Administered State Land* Draft 12/20/07 • Development Surface disturbance prohibited within 250' of trails.
Silviculture	• Where possible, avoid clear cutting over and across any recreational trail. • Whenever harvesting close to or over a recreational trail, contact must be made with representatives of known trail adopter or trail user groups to explain the rationale for the harvest. Additionally, educational or interpretive signs explaining the rationale for the harvest must be installed on site. Tops & slash must be kept at least 25' back from the edge of trails.

*All perimeters of **Protection Buffers** and **Vernal Pool** depressions will be designated on the ground with flagging or paint. For Harvests, buffers and depressions will be identified on sale maps and equipment restrictions will be listed in the *Notice of Sale*.

** Haul roads refer to permanent, unpaved roads which are not designed for all weather travel, but may have hardened or improved surfaces with artificial drainage. ["Unpaved Forest Road Handbook." NYS DEC Bureau of State Land Management. 30 August 2004.]
*** Policy section, 'Possible Silvicultural Exemption Considerations' and section, 'Definitions', omitted.

APPENDIX XVI

STATE ENVIRONMENTAL QUALITY REVIEW ACT

Following a review of the management actions proposed in this plan, it has been determined that they **do not exceed the following thresholds** as set forth in the Strategic Plan/Generic Environmental Impact Statement for State Forest Management and **a separate site specific environmental review is not required.**

1. Clearcuts of 40 acres or larger
2. Pesticide applications exceeding 40 acres
3. Prescribed burning in excess of 100 acres

This Unit Management Plan does not include any of the following, and therefore does not require any separate site specific environmental review.