NEW YORK STATE OF OPPORTUNITY. | Department of Environmental Conservation

Tioughnioga

UNIT MANAGEMENT PLAN

DRAFT

Towns of Cazenovia, DeRuyter, Fenner, Georgetown and Nelson

County of Madison

April 2019

DIVISION OF LANDS AND FORESTS
Bureau of State Forest Resource Management, Region 7
2715 State Rte. 80
Sherburne, NY 13460

Tioughnioga
Unit Management Plan

A planning unit consisting of three State Forests and one Unique Area in Madison County

DeRuyter State Forest, Madison R.A.#9
Morrow Mountain State Forest, Madison R.A.#10
Stoney Pond State Forest, Madison R.A.#13
Nelson Swamp Unique Area, Madison UA #63

April 2019

Prepared by the Tioughnioga Unit Management Planning Team:

Gregory Owens, Senior Forester, Team Leader
Jason Schoellig, Senior Forester
Glenn Wolford, Regional Supervisor Real Property
Thomas Cunningham, Fish and Wildlife Technician
Paul M. Giachetti, Mineral Resources Specialist III
James Everard, Aquatic Biologist

New York State Department of Environmental Conservation
Division of Lands and Forests
Region 7
2715 State Route 80
Sherburne, NY 13460
(607) 674-4017

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

2715 State Route 80
Sherburne, NY 13460

www.dec.ny.gov

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)

Vision Statement

State Forests on the Tioughnioga 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.

Nelson Swamp, 2014 (Photo: R.E.Off)

* words in bold are defined in Glossary

Table of Contents

Preface

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

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

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

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

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

Management Planning Overview
The Tioughnioga Unit Management Plan (UMP) is based on a long-range vision for the management of DeRuyter, Morrow Mountain and Stoney Pond State Forests and Nelson Swamp Unique Area, 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. Mass mailings, press releases and other methods for soliciting input are often also used to obtain input from adjoining landowners, interest groups and the general public.

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

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

DEC's Management Approach and Goals

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

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

Following the signed contract with NSF-International Strategic Registrations and Scientific Certification Systems, the Department was again audited for dual certification against FSC and additionally the SFI program standards on over 762,000 acres of State Forests in Regions 3

through 9. This independent audit of State Forests was conducted by these auditing firms from May until July 2007 with dual certification awarded in January 2008.

State Forests and Unique Areas continue to maintain certification under the most current FSC and SFI standards. Forest products derived from wood harvested off State Forests from this point forward may now be labeled as "certified" through chain-of-custody certificates. Forest certified labeling on wood products may assure consumers that the raw material was harvested from well-managed forests.

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

FSC
www.fsc.org
The mark of responsible forestry
FSC® C002027

SUSTAINABLE FORESTRY INITIATIVE
SFI-00102

Ecosystem Management Approach

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

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

Multiple-use Management

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

Landscape Ecology

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

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

Ecosystem Management Strategies

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

Passive Management

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

Silviculture (Active Management)

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

State Forest Management Goals

Goal 1 – Provide Healthy and Biologically Diverse Ecosystems

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

Goal 2 – Maintain State Forest Assets

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

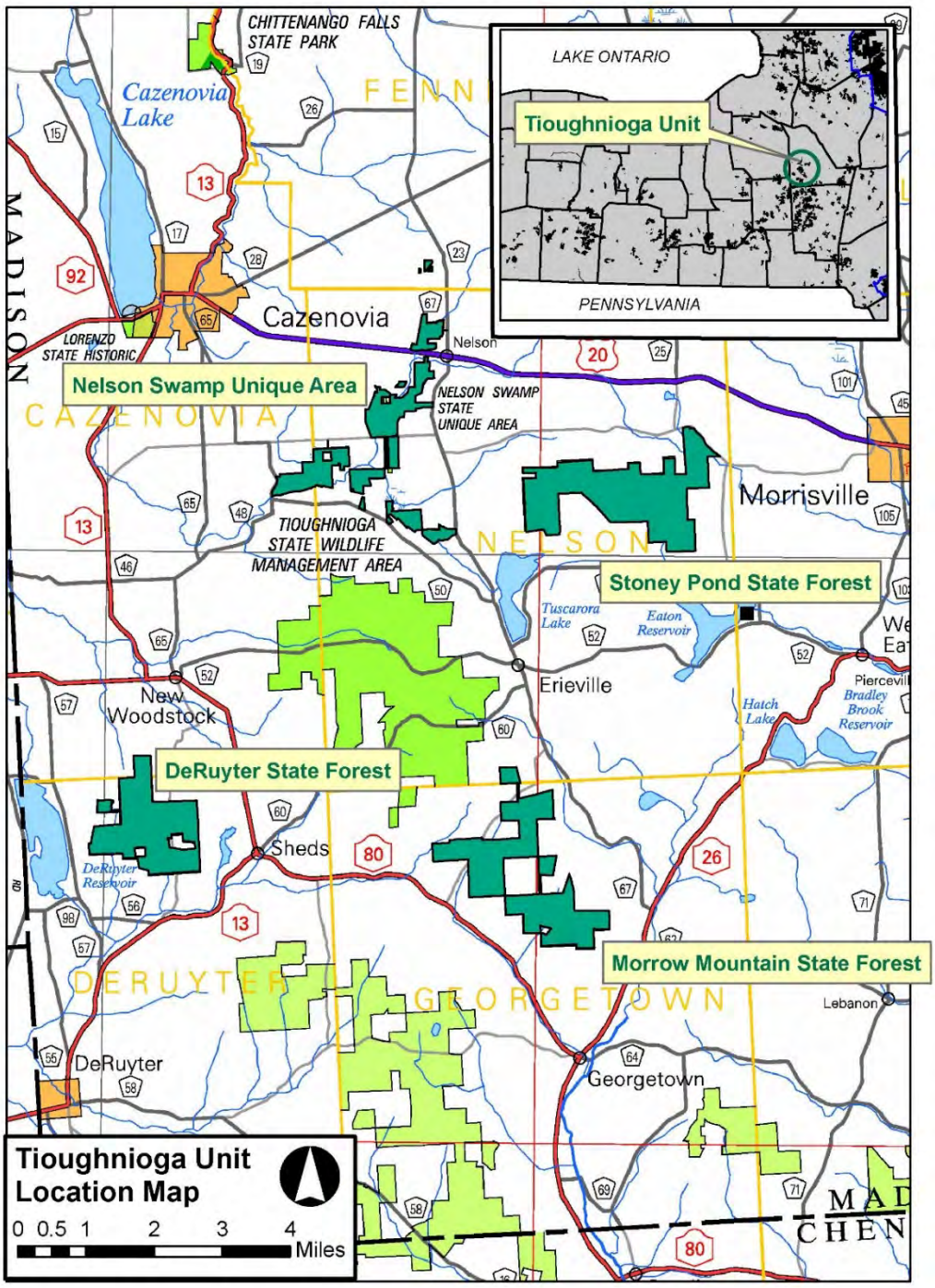
Goal 3 – Provide Recreational Opportunities for People of all Ages and Abilities

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

Goal 4 – Provide Economic Benefits to the People of the State

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

Location Map



I. Information on the Tioughnioga Unit

The Tioughnioga Unit is located in the Madison County towns of Cazenovia, DeRuyter, Fenner Georgetown, and Nelson. The landscape is a series of gently rolling hills with broad summits occupied by second growth forest, farmland and dispersed housing. A network of tributary streams feed both the headwaters of the Susquehanna River and Lake Ontario Drainage Basins. State Highways 13, 20, 26 and 80 and a number of county, town and seasonal roads connect the Villages of Cazenovia, DeRuyter, New Woodstock and Georgetown. These communities support a number of schools, churches and commercial areas.

Georgetown, NY

The 2010 census reports that 13,355 people live within the five towns at a density of 67 people per square mile, well below the New York State average of 412 people per square mile.

Estimates from the 2015 American Community Survey indicate that within the five towns 5,992 people are employed in the civilian labor force with 29% working in education and health care, 17% in manufacturing & construction, 5% in agriculture, **forestry** and mining and 13% in retail

and wholesale trade. Per capita income is $23,900 and 8.1% of the population is living in poverty (US Census Bureau).

Local government is organized by town with an elected supervisor, a four-member town council and highway superintendent. Each town supervisor is represented on the Madison County Board of Supervisors and has committee appointments. Parts of four central school districts-Cazenovia, Morrisville-Eaton, Georgetown-South Otselic, and Sherburne-Earlville - are located within the unit and have a combined enrollment of 2,878 students (NYSED, 2016).

The Unit consists of three State Forests and one Unique Area totaling 4,646 acres, which is approximately 3.7% of the total land area of the five towns.

The four state properties are located at elevations ranging between 2,142' on Morrow Mountain State Forest to 1,380' along the Chittenango Creek in Nelson Swamp Unique Area. Climatic conditions can vary dramatically between upland sites and other areas but data recorded at Morrisville between 1981-2010 reveals that the average low temperature in January is 11 degrees F and the average high temperature in July is 76 degrees F. Average annual precipitation in rainfall is 46" and 127" in snowfall (U.S. Climate Data, 2016).

State Lands in the Unit

Table 1 contains the names of the state land facilities that make up this unit. A web page has been developed for each of the State Forests. Each web page features an updated map of the State Forest with recreational information and natural features.

Table 1. State Land on the Tioughnioga Unit

State Land Name	Reforestation Area	Acres	Town
DeRuyter State Forest http://www.dec.ny.gov/lands/8219.html	Madison R.A.#9	972	DeRuyter & Cazenovia
Morrow Mountain State Forest http://www.dec.ny.gov/lands/8159.html	Madison RA#10	1,290	Georgetown & Nelson
Nelson Swamp Unique Area http://www.dec.ny.gov/lands/8150.html	Madison UA#63	915	Cazenovia, Nelson, Fenner
Stoney Pond State Forest http://www.dec.ny.gov/lands/8111.html	Madison RA#13	1,469	Nelson
Total		**4,646**	

High Conservation Value Forest

High Conservation Value Forests (HCVF) are those portions of State Forests which have known high conservation values that the Department feels should take precedent over all other land use and management decisions. HCVFs may not be identified on every Unit and State Forests that have an HCVF designated will not necessarily have multiple classifications. Areas that are identified as having exceptional values may be managed for timber, wildlife and/or recreation, however management activities must maintain or enhance the high conservation values present. Currently, HCVFs are assigned to one or more of five land classifications, four of which may be found on State Forests:

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

2. Special Treatment - Forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, **endangered species**, and refugia).

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

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

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

   **Forest Preserve lands inside both the Adirondack and Catskills Park Blue line. Although Forest Preserve is not considered State Forest, they offer a significant high conservation value for lands managed by the Department.*

Approximately 941 acres of the Tioughnioga Unit have been identified as having high conservation value forest. Portions of DeRuyter and Morrow Mountain State Forests are designated as watershed protection areas under the HVCF classification. For more information on HCVFs please go to http://www.dec.ny.gov/lands/42947.html

Soils

Mardin, Volusia, and Lordstown are the most common soil series found on the Unit (USDA,1981). Mardin soils are moderately well drained and deep with a firm and brittle layer in

the lower part of the subsoil at a depth of 14 to 26 inches. Volusia soils are somewhat poorly drained and deep with a firm and brittle subsoil at a depth of 10 to 20 inches. Lordstown soils are moderately deep and well drained and have bedrock at a depth of 20 to 40 inches.

Carlisle and Palms are the most common soil series found within Nelson Swamp. Carlisles are deep, very poorly drained organic soils that formed in decomposed woody and herbaceous plant remains. The Palms series consists of very poorly drained, well decomposed organic soils that are underlain by loamy mineral soil material at a depth of 16”-51” (USDA, 1981).

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

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

Geology

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

This region is underlain by bedrock that includes Pre-Cambrian Era rocks comprised of igneous and metamorphic type rocks. These rocks are generally referred to as basement rocks and are found at depths greater than 5,000 feet. Overlying the layers of igneous and metamorphic rocks under the Unit are sedimentary rocks deposited during the Cambrian Period over 500 million years ago and are comprised primarily of sandstone and shale.

Following the Cambrian Period was the Ordovician Period, and deposition of limestone, dolomites and shale in warm, shallow, and relatively open marine seas that occupied this region 435-500 million years ago. Overlying the Ordovician age sedimentary rocks are sedimentary rocks deposited during the Silurian Period. The Silurian age rocks are comprised of primarily evaporites (gypsum, anhydrite and salt), shales with some limestones and dolomites, which were deposited in more restrictive marine seas than the underlying Ordovician age rocks. These rocks are considered to have been deposited 400 to 435 million years ago. Following the Silurian Period, the Devonian Period (from 345 to 435 million years ago) resulted in the

deposition of sedimentary rocks comprised primarily of shale with some limestone and dolomites interbedded. Younger rocks such as Mississippian and Pennsylvanian age rocks were either not deposited in the area or were subsequently eroded by other natural events such as glaciation and/or erosion.

The land forms visible today are largely the result of glaciations. During the Pleistocene ice age, which lasted for approximately 1.25 million years, there were a series of glacial advances and retreats that occurred due to alternating global cooling and warming. Some of the inter-glacial intervals were times of warm and semi-tropical climate in regions that are today temperate. As the glacial ice advanced it rose over hills and mountains and filled valley floors with vast sheets of ice. Embedded with rock and soil, these ice sheets scoured hilltops and gouged out valleys and lake bottoms. Approximately 12,000 years ago the receding Wisconsin glacier deposited a heterogeneous mixture of weathered rock and soil material known collectively as glacial till. Because of the diverse ways in which it was deposited and the chemical composition of parent material, glacial till and the soils that ultimately formed from them are extremely variable. Valley floors were the last to see the glaciers retreat and here meltwater deposited pockets of soils, sands and rocks known as outwash deposits. Kames, eskers and moraines are some of the formations resulting from these deposits. Today, commercial sand and gravel establishments throughout the region owe their existence to the glaciers work (NY State Museum, 1981)

Water Resources

The Tioughnioga unit is located at the intersection of the Susquehanna and Lake Ontario drainage basins. Nelson Swamp and sections of DeRuyter and Stoney Pond State Forests drain north into Chittenango and Limestone Creeks, flowing into Oneida Lake and eventually discharging into Lake Ontario. Morrow Mountain and sections of DeRuyter and Stoney Pond State Forests drain south into the Tioughnioga and Chenango Rivers, join the Susquehanna River at Binghamton and eventually discharges into the Chesapeake Bay in Maryland.

Wetlands

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

Part 664 of the New York Codes, Rules and Regulations establishes four classifications for freshwater wetlands. Classification is based on the degree to which wetlands supply benefits such as vegetative cover, ecological associations, and hydrological and pollution control features. Class I wetlands provide the maximum number of benefits while Class IV provide the least. There are

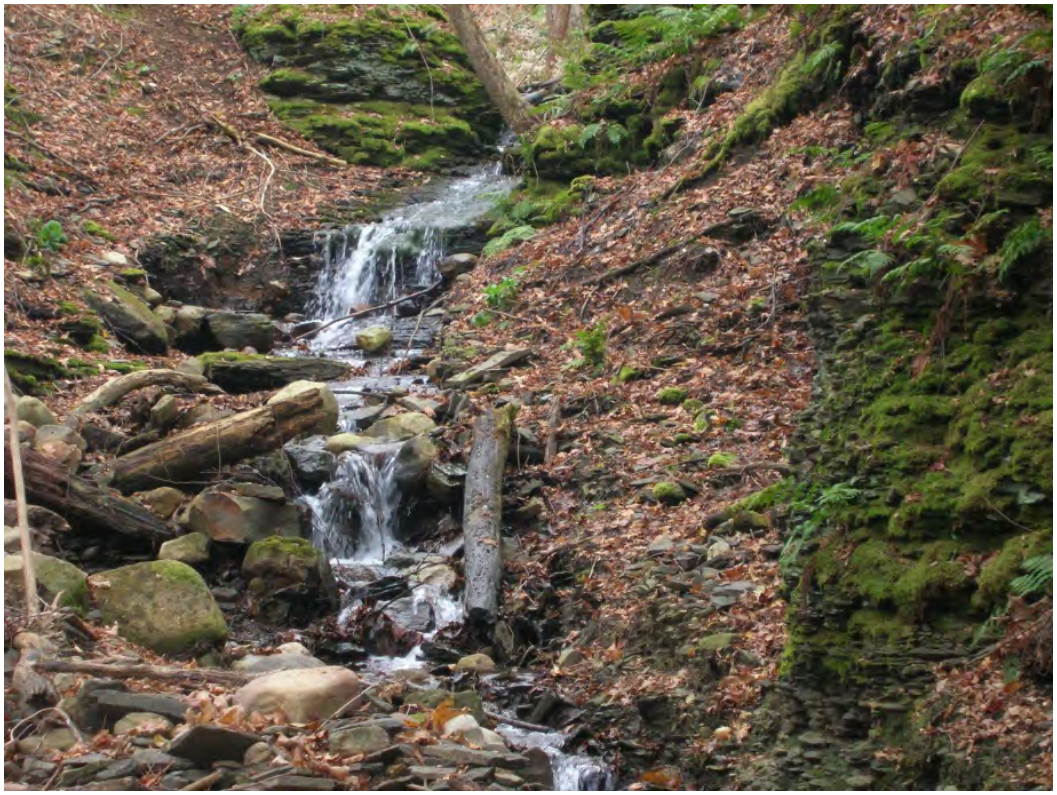
523 acres of freshwater wetlands on the unit that are protected under Article 24. Four hundred and forty-two acres are Class I and 81 acres are Class II wetlands. All but one of the 523 acres of classified wetlands are located in Nelson Swamp Unique Area.

The National Wetlands Inventory (NWI) was established by the US Fish and Wildlife Service (FWS) to conduct a nationwide inventory of U.S. wetlands to provide biologists and others with information on the distribution and type of wetlands to aid in conservation efforts. There are 239 acres of wetlands listed on the National Wetland Inventory.

In addition to Article 24 and NWI wetlands, 259 acres on the unit are in wetland protection status. Included in this category are poorly drained sites and **buffer zones** adjacent to streams and wetlands. See Appendix I for Wetlands on the Unit.

Streams

The Middle Branch of the Tioughnioga Creek, Chittenango Creek, Eaton Brook, Otselic Creek and Electric Light Stream are the principle tributary streams that drain the unit. These streams have a designated water quality classification of C(t). Streams having class C(t) are also known as "Protected Streams." Both class C and C(t) streams are capable of supporting fisheries with C(t) streams capable of supporting trout populations. There are 6.1 miles of C(t) streams on the unit and 4.9 miles of all other streams. For locations of streams on the Unit, see Water Resources map in Appendix XII.



Tributary Stream to Middle Branch of Tioughnioga Creek, DeRuyter SF

Ponds

There are three constructed ponds on the Unit with a total surface area of 50 acres. Stoney Pond was constructed in 1959 and is a popular recreation site with a camping area, boat launch and picnic area. Little Stoney Pond and an unnamed pond on Morrow Mountain State Forest, that together have a surface area of six acres, were constructed to improve wildlife habitat.

Biodiversity

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

- "Keep Common Species Common" by maintaining landscape-level habitat diversity and a wide variety of naturally occurring forest-based habitat as well as managing plantations according to DEC natural resources policy.
- Protect and in some cases manage known occurrences and areas with potential to harbor endangered plants, wildlife and natural communities.
- Consider other "at-risk species" whose population levels may presently be adequate but are at risk of becoming imperiled due to new incidences of disease or other stressors.

Wildlife

Birds

The New York State Breeding Bird Atlas is a comprehensive survey documenting the distribution and protective status of breeding birds in New York State. The most recent Atlas data was collected between 2000 and 2005. Twelve Atlas blocks in and around the Unit were examined to determine the number of species and their breeding status. The Breeding Bird Atlas confirmed or predicted that 135 species, including 10 species of special concern, are breeding on or near the Unit (NYSBBA, 2000). Appendix III lists these species and their breeding and protective status.

- NYS Breeding Bird Atlas Block Numbers 4273A, 4273B, 4274B, 4274C, 4274D, 4275D, 4373A, 4373B, 4374A, 4374B, 4374C, 4375C, 4375D

Breeding Bird Atlas blocks can be searched at http://www.dec.ny.gov/cfmx/extapps/bba/

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

- Game Species Harvest Levels Wildlife Management Unit (WMU) Numbers 7J & 7M (Deer take, bear take, turkey harvest, etc.)

Herpetofauna

The Amphibian and Reptile Atlas Project was a survey conducted by the DEC to document the occurrence and distribution of New York's amphibians and reptiles. The survey was conducted from 1990 to 2007 and predicts 24 species of amphibians and reptiles (NYSDEC HA). A complete list of all 24 species and protective status is found in Appendix IV.

- Herp Atlas Object id/USGS 7.5 Quad : 136/Cazenovia; 137/Morrisville; 662/DeRuyter; 663/Erieville; 664/ West Eaton

Herp Atlas information on amphibians, toads, frogs, turtles, lizards and snakes can be found at http://www.dec.ny.gov/animals/7140.html

Red Spotted Newt

Fish

Electric Light Stream was surveyed in 2011 as part of the Eastern Brook Trout Joint Venture Program Species found include brook trout, central stone roller, cutlips minnow, common shiner, creek chub, white sucker, tessellated dart and sculpin. Appendix VI lists fish species found in Electric Light Stream, Chittenango Creek and Stoney Pond.

Game Species

There are a number of game species located on or in the vicinity of the Unit that are protected by regulated hunting/trapping seasons. Game species contribute to the local economy and provide outdoor recreation. More details of some of the major game species can be found below.

White-tailed Deer - The Department manages deer populations in Wildlife Management Units (WMUs). The Unit falls within WMU 7M. A Citizen Task Force (CTF) consisting of farmers, foresters, hunters, motorists, and other local interests recommend a desirable deer population to the Department. DEC's big game team is currently developing a new public input process for setting deer population goals in each WMU and it is expected that the CTF public input process

will change in the near future. Deer populations are controlled with regulated hunting through the use of Deer Management Permits (DMP). DMPs are permits to harvest antlerless deer. Using the recommendations, of the CTF, Department biologists determine the number of DMPs to issue within each WMU.

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

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

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 spring and fall seasons.

Grouse & woodcock – These are upland game birds are Species of Greatest Conservation Need (SGCN). Both species are dependent upon early successional habitat for portions of their life cycles. Aspen is an important source of food and cover for these species. Past management on the Unit has focused on maintaining aspen where it occurs.

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

Habitat

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

TABLE 2 . LAND CLASSIFICATION BY SIZE CLASS

Land Class	Acres	Acres by DBH Class			% of Total
		1" - 5"	6" - 11"	12" +	
Ponds, Wetland (open/Shrub)	336				7
Shrub / Grasslands/Apple	203				4
Northern Hardwood (NH)	1467	33	592	842	32
NH/Plantation Conifer	1692	29	469	1194	36
NH/ Natural Conifer	902	0	572	330	20
Shale Pits	1				<1
Roads	45				1
Total Area	**4646**	**62**	**1633**	**2366**	
% of Total Forested Area		**2**	**40**	**58**	**100**

Eighty-seven percent (4,084 acres) of the unit is forested with 32% occupied by the **northern hardwood forest** type and 20% by mixed hardwood and native **conifer** types including hemlock-northern hardwood and northern white cedar swamp forest. The remaining 36% of the unit's forested area is occupied by conifer plantations or **stands** with a mix of planted conifer trees and naturally occurring native **hardwoods**.

Following Eyre (1980), the northern hardwood **cover type** that best describes conditions on the unit is the sugar maple-beech-yellow birch forest**.** These three species are dominant but red maple, hemlock, white ash, black cherry, white pine, and basswood occur in varying mixtures depending on site conditions. The sugar maple-beech-yellow birch forest blends with other northern hardwood types including black cherry-maple, beech-sugar maple, and sugar maple. Past land use, harvest practices, soil characteristics, and differential deer browsing all significantly affect structure and composition of this type. In addition to tree **seedlings**, common understory vegetation includes striped maple, eastern hophornbeam, viburnums, serviceberry, and root suckers of beech. The beech-maple **mesic** forest described by Reschke (1990) provides similar explanation of local forest conditions. In addition to the above listed species, characteristic herbs and wood ferns in the beech-maple mesic type include Canada mayflower, Christmas fern, white wood aster, common wood-sorrel, Pennsylvania sedge, jack-in-the-pulpit, sarsaparilla, shining fir clubmoss, bearded short-husk, white snakeroot, violets , star flower, partridge berry, Solomon's-seals, foam flower, false Solomon's seal, whorled aster, Indian cucumber-root, wreath goldenrod, trilliums, mayapple, trout lily, and sessile-leaved bellwort.

Northern Hardwood Forest on Morrow Mountain State Forest

The hemlock-northern hardwood forest is also described by Reschke and typically occurs on middle to lower slopes of ravines, on cool, mid-elevation slopes, and on moist, well-drained sites at the margins of swamps. In any one stand, eastern hemlock is co-dominant with any one to three of the following tree species: sugar maple, red maple, yellow birch, American beech, white ash, white pine. The relative cover of eastern hemlock is quite variable, ranging from nearly pure stands in some steep ravines to as little as 20% of the canopy cover. Striped maple, is often prominent as a mid-story tree. Canopy cover can be quite dense, resulting in low light intensities on the forest floor and hence a relatively sparse groundlayer. The northern white cedar swamp forest occurs at Nelson Swamp Unique Area and occupies 316 acres or 7% of the unit. A more detailed description of the northern white cedar swamp is in "Significant Ecological Communities".

Conifer plantation and mixed hardwood/ plantation conifer include stands of Norway spruce, red pine and to a lesser extent white pine, Japanese larch, Scotch pine and white spruce established on the unit beginning in 1932 on what was open pasture or cropland. Many plantations are even-aged monocultures but harvesting and other treatments have changed the structure and species composition of these stands. Most plantations have a component of native hardwood including white ash, black cherry, sugar maple and red maple.

For a list of the trees on the Unit, see Appendix VII. See Current Cover Types and Management Direction map in Appendix XII for a distribution of vegetation types on the Unit.

Other land classes included in Table 2 are Ponds/ Wetlands; Shrub/Grassland/Apple; Pit and Roads. Three constructed ponds occupy 50 acres and there are 158 acres in alder (shrub) wetland and 128 in open wetland. Shrub lands are early successional plant communities dominated by viburnum, hawthorn, multiflora rose, *Rubus*, and honeysuckle. **Grasslands** occur on open fields dominated by perennial grasses and forbes and are also referenced in the land management tables as "old fields". Most apple stands are located on former orchards. There is one active shale pit on the unit used for state forest construction projects. Roads include the area occupied by forest access roads and town roads on the Unit. Full road **corridor** width is considered to be 50 feet in width and may contain trees, shrubs, or grassland habitat along its **edges**.

Significant Ecological Communities

Element Occurrence Records for the New York Natural Heritage Program's Biological and Conservation Data System were consulted for information on Significant Ecological Communities (NYSNHP). Nelson Swamp is a Northern white cedar swamp, a significant **ecological community**. The following is a description of this community by Edinger (2014) in Ecological Communities of New York State: Northern white cedar swamps are conifer or mixed swamps that occur on organic soils in cool, poorly drained depressions in central and northern New York, and along lakes and streams in the northern half of the state. These swamps are often spring fed or enriched by seepage of cold, minerotrophic groundwater, resulting in a stable water table and continually saturated soils. Soils are often rich in calcium. At some sites these soils have developed above a marl substrate.

The characteristic tree is northern white cedar, which makes up more than 30% of the canopy cover. White cedar may form nearly pure stands, or it may be mixed with other conifers and hardwoods, including red maple, hemlock, balsam fir, tamarack, yellow birch, black ash and white pine. The shrublayer is usually sparse; characteristic species are dwarf raspberry, red osier dogwood, swamp fly honeysuckle, and highbush blueberry. The groundlayer is typically diverse, with many bryophytes and boreal herbs. There are typically many hummocks formed by decaying downed trees or tip-up mounds.

Characteristic herbs on the hummocks are the sedges *Carex leptalea* and *C. eburnea*, oak fern, gold thread, starflower, bunchberry, miterwort, Canada mayflower, blue bead, snowberry, and partridge berry.

Characteristic herbs of hollows between the hummocks are the sedge *C. intumescens*, sensitive fern, marsh fern, cinnamon fern, royal fern, crested wood fern, showy lady's-slipper, yellow lady's slipper, and golden ragwort.

Characteristic bryophytes are several species of *Sphagnum* moss, feather mosses such as *Hylocomium splendens* and *Ptilium crista-castrensis*, and leafy liverworts such as *Bazzania trilobata* and *Trichocolea tomentella*.

Northern White Cedar Swamp at Nelson Swamp

Rare Plants

Element Occurrence Records for the New York Natural Heritage Program's Biological and Conservation Data System were consulted for information on Rare Plants (NYSNHP). Spreading globeflower (*Trollius laxus*) and striped coralroot (*Coralloriza striata var. striata*) occur at Nelson Swamp. The following are descriptions of these two species developed by New York State Natural Heritage Program. Spreading globeflower is a rare plant in New York State and grows at multiple sites within the Unique Area. The plant typically occurs in open areas of calcareous wetlands, including casually grazed pastures, openings in cedar, tamarack, or hemlock swamps, rich sloping fens, rich graminoid fens, powerline right-of-ways through rich shrub swamps, seepage areas, and other such sites. The most immediate threat to this plant is habitat **conversion**, particularly due to **succession**. This wetland plant prefers open areas within wetlands and does not survive well when the area is dominated by shrubs or a heavy tree canopy.

Spreading globeflower at Nelson Swamp

Striped coralroot is an endangered species in New York State. This orchid is limited to cedar swamps and coniferous and mixed woods that are often associated with limestone. Coralroot lacks chlorophyll and depends upon a symbiotic relationship with certain fungi to survive.

Wildlife Species of Greatest Conservation Need

In 2015, the Department released the *State Wildlife Action Plan* (NYSDEC, 2015). The *Plan* considers "species of greatest conservation need" (SGCN), their habitat, and population trends. Table 3 lists those SGCN species known to occur on or in the vicinity of the Unit, species group, and population trends.

Table 3. SGCN by Species Group and Population Trends Found on or Near the Unit

Taxa	Species	Species Group	NY Distribution Trend (*)
Bird	American Kestrel	Early successional forest/ shrub birds	Moderate Decline
Bird	American Woodcock	Early successional forest/ shrub birds	Stable
Bird	Black billed cuckoo	**Deciduous** forest breeding bird	Stable
Bird	Black Throated Blue Warbler	Deciduous/ mixed forest breeding birds	Increasing
Bird	Blue Winged Warbler	Early successional forest/ shrub birds	Stable
Bird	Bobolink	Grassland birds	Moderate Decline
Bird	Brown Thrasher	Early successional forest/shrub birds	Moderate Decline
Bird	Canada Warbler	Early successional forest/shrub birds	Moderate Decline

Bird	Eastern Meadowlark	Grassland birds	Moderate Decline
Bird	Golden Winged Warbler(SC)	Early successional forest/shrub birds	Severe Decline
Bird	Horned Lark (SC)	Grassland birds	Moderate Decline
Bird	Northern Goshawk (SC)	Forest breeding raptors	Moderate Decline
Bird	Pied-billed Grebe (T)	Freshwater marsh nesting birds	Increasing
Bird	Prairie Warbler	Early successional forest/ shrub birds	Increasing
Bird	Red- Shouldered Hawk (SC)	Forest breeding raptors	Increasing
Bird	Ruffed Grouse	Early successional forest/ shrub birds	Moderate Decline
Bird	Scarlet Tanager	Deciduous Forest breeding bird	Stable
Bird	Vesper Sparrow (SC)	Grassland birds	Decreasing
Bird	Wood Thrush	Deciduous/mixed forest breeding birds	Moderate Decline
Mammal	Hoary Bat	Tree bats	Stable
Mammal	Indiana Myotis (E)	Tree Bats	Moderate Decline
Mammal	Little Brown Myotis	Tree Bats	Moderate Decline
Mammal	Northern Myotis	Tree Bats	Rapid Decline
Mammal	Silver-Haired Bat	Tree Bats	Unknown
Mammal	Eastern Pipistrelle	Tree Bats	Rapid Decline
Herpetofauna	Snapping Turtle (SC)	Snapping Turtle	Stable

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

In addition to SGCN, *The Atlas of Breeding Birds in New York State* lists eight species of special concern including: Cooper's hawk, golden winged warbler, horned lark, northern goshawk, osprey, red-shouldered hawk, sharp-shinned hawk and vesper sparrow, and one threatened species, pied-billed grebe, that occur in breeding blocks located on or near the Unit.

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

Golden –winged warbler (Photo: Rick and Nora Bowers/ Vireo)

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

The Indiana bat (*Myotis sodalis*), an endangered species, may occur in the vicinity of the Unit. It is listed as endangered by both New York State and the United States Fish & Wildlife Service. The Indiana bat hibernates in caves or mines and forages near water and prefers to roost under the bark of living or dead trees. The most recent threat to the Indiana bat 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 bat's hibernacula. This fungus may be directly responsible for bat deaths or it could be secondary to the cause.

In January, 2016 the US Fish and Wildlife Service released its Final 4(d) Rule for the northern long-eared bat (). Under the rule and within the WNS zone, incidental take caused by tree removal is prohibited within ¼ mile of a known hibernaculum at any time of year or if tree removal cuts or destroys a known a known occupied maternity roost tree or any other tree within a 150 feet

radius of the maternity roost tree during the pup season (June 1-July31). There are no know hibernaculum on the 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.

Currently, there are no Representative Sample Areas on the Tioughnioga Unit. Natural Heritage Program is considering northern white cedar stands within Nelson Swamp UA as an RSA.

Resource Protection Areas

In the course of practicing active forest management, it is important to identify areas on the landscape that are either reserved from management activity or where activity is conducted in such a manner as to provide direct protection and enhancement of habitat and ecosystem functions. For more information on these protective measures, see SPSFM, page 85 at http://www.dec.ny.gov/lands/64567.html.

Special Management Zones (SMZs) provide continuous over-story shading of riparian zones to sustain aquatic habitat and protect these zones from soil compaction and other impacts. SMZs also provide corridors for movement and migration of both terrestrial and aquatic wildlife species. Buffers are required within SMZs extending from wetland boundaries, high-water marks on perennial and intermittent streams, vernal pool depression, spring seeps, ponds and

lakes, recreational trails, campsites and other land features requiring special consideration. For more information regarding Special Management Zones please see www.dec.ny.gov/sfsmzbuffers.pdf

Maintaining or enhancing matrix forest blocks and connectivity corridors must be balanced against the entire array of goals, objectives and demands that are placed on a particular State Forest. Where matrix forest block maintenance and enhancement are chosen as a priority for a given property, management actions and decisions should emphasize closed canopy and interior forest conditions. The entire Tioughnioga Unit with the exception of 22 acres on DeRuyter SF lies within a **linkage zone** between the Chenango Highlands **Matrix Block** and the Oneida Lake/ Rome Sand Plain Matrix Block

Visual Resources

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

Stoney Pond is a large expanse of open water framed by emergent wetlands and native forest. The boat launch, dam and perimeter foot trail provide access to high quality natural scenery. A number of locations within Nelson Swamp Unique Area also provide panoramic views of the landscapes both near and far.

Historic and Cultural Resources

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 **saplings** began to occupy the ground once cleared.

Hamilton Farm, Jones Road, 1915 (now Stoney Pond State Forest; Photo: Nelson Town Historian's Office)

The State Reforestation Law of 1929 and the Hewitt Amendment (of the NYS Constitution) of 1931 set forth the legislation that authorized the Conservation Department to acquire land by gift or purchase for reforestation areas. This legislation was used to purchase approximately 3,574 acres of land associated with three of the State Forests on the Tioughnioga Unit. 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 157 acres were purchased with these funds to acquire additional lands on Morrow Mountain State Forest. All of these lands were acquired for the conservation and development of natural resources, including the preservation of scenic areas, watershed protection, forestry, and recreation.

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

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

Local History

Human occupation of central New York is linked with the final retreat of the Wisconsin ice sheet nearly 12,000 years ago. Groups of Paleo-Indian hunters migrated into the region from the south by following channels and tributaries of the Susquehanna and Allegheny Rivers. These small, freely wandering bands were related by blood or marriage and their movements and temporary encampments were entirely dependent on the migrations of wildlife species (Ritchie, 1994).

More permanent types of settlement did not occur until the Woodland Stage, beginning in 1,000 BC, with the development of ceramics, agriculture and village life. The Owasco people inhabited New York during the Woodland Stage and cultivated corn, beans and squash to supplement foods gathered from the wild. The late Woodland stage of New York's pre-history is notable for the establishment of large, permanent longhouse villages, a developed agricultural economy and the unification of the Six Nations into the Iroquois Confederacy.

The Confederacy was founded in the late fourteenth or early fifteenth century for the purpose of advancing peace between the Mohawk, Oneida, Cayuga, Onondaga and Seneca peoples

(Hagan, 1975). A sixth tribe, the Tuscaroras, joined the Confederacy in the early 18th century after migrating from North Carolina following wars with the colonists. The Oneidas inhabited what is today Madison County.

During the Revolutionary War, Joseph Brant, a prominent Mohawk was responsible for organizing the Iroquois Confederacy to support the British in their war with the colonists. Brant believed that the Confederacy could coexist with the British, but the expansionist fervor of the colonist would lead to the Iroquois' demise. In 1768, in exchange for gifts and protection from colonists, the Confederacy agreed to cede lands they occupied in New York, West Virginia, Kentucky and Tennessee to the British. Increasingly, the Confederacy became dependent on a steady supply of firearms, metal implement and other goods manufactured in Europe. This relationship ultimately strengthened Britain's strategic advantage over the colonists.

Throughout the War, while the Confederacy was actively engaged in combat with the colonists, the Oneidas remained neutral. Subsequently, the American campaign of 1779 led by General John Sullivan to "strike a blow for the prompt and permanent overthrow of the Indian power" spared the villages and crops of the Oneidas. In retaliation for their neutrality however, Brant mounted an expedition against the Oneidas, forcing them to take refuge in the white settlements where they remained in active alliance with the colonists until the close of the war. Despite their neutrality and ultimate alliance with the colonists, a treaty drawn at Fort Stanwix in 1784 resulted in the Oneidas ceding to the Federal government much of their land west of the Unadilla River. Governor George Clinton subsequently acquired for the State of New York all land owned by the Iroquois with the exception of certain reservations (Hagan, 1975).

To facilitate settlement, the State directed Surveyor-General Simeon DeWitt to survey and delineate lands, to be called the Chenango Twenty Townships, into towns measuring 500 chains on each side (1 chain=660'), sections of which were divided into four equal parts and lots to contain 250 acres each. To accomplish the ready sale of these lands, DeWitt was instructed to fix a price at no less than 3 shillings (24 cents) per acre. In 1792, land in Madison County was offered for sale in large lots and many speculators acquired vast holdings for three shillings per acre and sold to smaller buyers for twenty. Cazenovia was formed from Whitestown and Paris in 1795, DeRuyter and Nelson were formed from Cazenovia in 1798 and 1807 respectively, and in 1815 Georgetown was formed from DeRuyter (Smith, 1880).

Urbanization, westward expansion and increasing demand for industrial labor in the late 19th century began to reconfigure the rural landscape of central New York. Urban factories, mills and sweatshops provided an alternative to farming and the opening of America's western frontier encourage migration out of the region. The same industries that drew people to the cities also produced labor saving implements and technologies that required fewer people on the farm.

Between 1870 and 1930 the population of Cazenovia, DeRuyter, Fenner, Georgetown, and Nelson declined 35% from 10,808 residents to 7,056. Migration out of the region together with declines in agricultural resulted in much of the open landscape transitioning back to forest.

Table 4. Population Trends

Town	Census 1870	Census 1930	Population Decline	Census 2010
Cazenovia	4,265	3,504	-17.8%	7,086
DeRuyter	2,009	1,047	-47.8%	1,589
Fenner	1,381	795	-42.4%	1,726
Georgetown	1,423	684	-51.9%	974
Nelson	1,730	1,026	-40.6%	1,980
Total	**10,808**	**7,056**	**-34.7%**	**13,355**

(US Census Bureau)

By 1929, declines in New York's rural population coupled with farm abandonment, poverty and tax delinquency were exacerbated by the stock market crash and subsequent economic depression. Together with Charles J. Hewitt, chairman of the State Senate's Finance Committee, Governor Franklin Roosevelt undertook an ambitious program to reclaim former agricultural land through reforestation and scientific forest management. They successfully campaigned for the passage of the Hewitt Amendment, which authorized acquisition of State Reforestation areas "to be forever devoted to the planting, growth and harvesting of trees." Approximately 20,000 acres of reforestation areas would eventually be acquired in Madison County with much of it concentrated in the upland towns of Brookfield, Georgetown and DeRuyter.

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

Civilian Conservation Corp (CCC) recruits planting trees on State Forest (Photo: NYSDEC)

There were four camps in Madison County including Camp S-103, a camp for World War I veterans in DeRuyter and Camp S-101, in Sheds. The focus of the camp at DeRuyter was reforestation and in 1935 recruits planted 3 million trees. Recruits also built **Public Forest Access Roads**, improved streams and sponsored Blister Rust Control Week to raise local awareness about the disease. At Sheds, the focus was on soil conservation where recruits built dams to prevent gully erosion and planted shrubs to stabilize soils on steep slopes (Evans, 2005). In 1939 recruit from Sheds erected the sixty-seven foot tall Georgetown Firetower and observation cabin on Morrow Mountain State Forest. The tower was closed in 1970 and later removed. In 1971 a one hundred foot communication tower and metal building were erected at the same location to support a New York State Police radio network.

If the 19th century was a period of forest clearing, the 20th century was a period of forest regrowth. In 1875, forest cover occupied approximately 25% of the land area of New York State; today, approximately 62% of the state is forested (NYSDEC, 2010). Both natural reforestation and tree planting have returned 15 million of acres of forest to New York State. The American environmentalist and author Bill McKibben argues that the "unintentional and mostly unnoticed renewal of the rural and mountainous East-not the spotted owl, not the salvation of Alaska's pristine ranges-represents the great environmental story of the United States" (McGibben,1995).

The post-war boom in outdoor recreation resulted in increased demand for facilities to support camping, boating, and similar activities. In 1959 the regional Fish and Wildlife Management Board recommended to the Conservation Department the construction of Stoney Pond and "all appropriate recreational uses of the area" (Elliot, G.B. no date New York Conservationist. Stony Pond: An Adventure in Multiple Use Planning). In 1961 a 37-acre pond was constructed and since that time a camping area, day use area, boat launch and thirteen miles of cross-country ski trails have been established on Stoney Pond State Forest.

In November of 1986, 67% of New York's voters passed the Environmental Quality Bond Act (EQBA II). A significant portion of the debt bonding was to be directed towards the protection of environmentally sensitive lands, which were considered vulnerable to development. Using funds from EQBA II, acquisition of Nelson Swamp was begun in 1987 under the categories of unique area and exceptional forest character. Nelson Swamp is a relatively large northern white cedar swamp with a diversity of vascular plants including the endangered striped coral root and threatened spreading globeflower. Today, approximately 65% of Nelson Swamp is in state ownership.

The Nelson Swamp Unique Area Stewardship Management Plan was released in 2000 and the original Tioughnioga unit management plan, which in addition to DeRuyter, Stoney Pond and Morrow Mountain State Forests included the Tioughnioga Wildlife Management Area, was released in 2003. Nelson Swamp UA and the three State Forests were combined to establish a new Tioughnioga unit in 2015.

Accomplishments since 2003 on the Tioughnioga Unit

Nelson Swamp Unique Area
-acquired 84 acres of new state land.
-constructed a 0.7-mile interpretive trail.
-constructed a viewing platform adjacent to Chittenango Creek.
-constructed two parking areas.
-constructed one snowmobile bridge over.
-constructed on footbridge over Chittenango Creek.
-installed one kiosk and a Unique Area identification sign.
-designated a 1.2-mile segment of the Madison County Link Trail.
-designated 1.1 miles of snowmobile trails.
-maintained 29 acres of grassland through annual mowing.

Interpretive Trail Construction at Nelson Swamp

DeRuyter State Forest
-constructed four new parking areas.
-designated a 1.3-mile segment of the Onondaga Hike Trail.
-designated a 1.0-mile snowmobile trail.
-harvested 471 acres of timber, 84% of treatments scheduled in the 2003 ump.

Morrow Mountain State Forest
-constructed a 0.9 trails under the Motor Access Program for People with Disabilities (MAPPD).
-constructed one parking area.
-installed two rock barricades to restrict motor vehicle access.
-designated a 1.9-mile snowmobile trail.
-constructed a new 0.3-mile snowmobile trail segment.
-harvested 425 acres of timber, 60% of treatments scheduled in the 2003 ump.

Stoney Pond State Forest
-constructed four new campsites.
-constructed a 0.2-mile road to access new campsites.
-constructed 2 tent sites.
-reconstructed 11 existing campsites.
-eliminated island campsite and peninsula campsite.
-constructed sites for two portable sanitary facilities within Camping Area.
-installed one gate to restrict motor vehicle access.
-installed one kiosk.

-maintained 13 miles of cross-country ski trails.
-designated a 1.3-mile snowmobile trail.
-maintained 24 acres of grassland through periodic mowing.
-harvested 216 acres of timber, 58% of treatments scheduled in the 2003 ump.

Inventory of Cultural Resources

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

Stone Wall, Stoney Pond State Forest

The following generic cultural resources and archaeological site protection text will be valid only after a Structural Archaeological Assessment Form has been completed for planned site developments.

Historic and Archaeological Site Protection

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

Archaeological Research

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

Real Property

DEC's Bureau of Real Property GIS system contains maps and some deeds for State Forest properties. Original deeds were also consulted to complete the information below.

The following information was compiled from the files and other information in the Region 7 Real Property office.

DeRuyter State Forest

972.08 acres, perimeter boundary = 9.52 miles or 50,274 feet

Outstanding Survey Requests:

Survey No. 7-27-395 (1992), (2013) – A request to mark various lines on Proposal L. Research and field inspection was done soon after first receiving the request, but a field survey was not completed.

Survey Request (1987) – A report that numerous locations on the boundary of the area needed to be surveyed and marked. No work has been done.

Easements, Property Use Agreements, etc.:

Proposals A and G – Both proposals are subject to a power line easement acquired by the Syracuse Lighting Company in deeds 295/236 dated 8/30/1926 and 295/217 dated 5/8/1926. The easement didn't have a specified width or location, but its terms included the right to trim trees to clear the lines by 25 feet and to fix guy wires to trees. The easement is now reportedly owned by Niagara Mohawk.

Pro. B – The proposal is subject to a ROW from Stanton Road to the 12.83-acre private inholding east of that road and another ROW running south from the 12.83-acre parcel to a 6.13-acre parcel that was reserved at along the southern boundary of Proposal B. The ROWs are shown on Map 4126.

Pro. D – A 30-foot by 20-foot lot "on which the schoolhouse stands" is excepted from the deed for Proposal D. The 1875 atlas shows a schoolhouse on the east side of the road in that location. The exception is not shown on map 4126.

Pro. G – The proposal is subject to a ROW from the now abandoned road at its western boundary to a lot that was reserved on its eastern boundary. The ROW is shown on map 4126.

Road Status:

Two "abandoned" roads exist within the unit, but no information on their official status is available in our files. Stanton Road in the Town of DeRuyter originally continued north along and through the unit to connect to the road having the same name in the Town of Cazenovia. Burdick Road in the Town of DeRuyter originally continued north along the west side of Proposals A and G to connect to Kiley Road in the Town of Cazenovia.

Morrow Mountain State Forest
1,132.88 reforestation area acres, 157.12-acres multiple use acres, 1,290 total acres perimeter boundary = 15.21 miles or 80,319 feet.

Outstanding Survey Requests:

Survey No. 7-27-5 (1975), (1985) – A request to survey the southern boundary of Proposal C west of Morrow Road. No work has been done.

Survey Request (2014) – A request to mark the southern lines of Pro. G. No work has been done.

Easements, Property Use Agreements, etc.:
Pro. I – The deed into NYS excepts and reserves use of a spring (1937). Map 4814 shows a spring on the west side of Fire Tower Road. It isn't clear what property the spring would have served after the surrounding land was sold to NYS or if the reservation was intended for personal use.

Pro. I – The abstract indicates the proposal is subject to an easement for a telephone or telegraph line conveyed to the Chenango & Unadilla Telephone Company in deed 568/6 dated 10/8/1959. No specific location or width for the easement is stated, but its terms include the right to trim trees to keep the lines clear by 48 inches and to anchor guy wires to trees.

Pro. M – The proposal is subject to a ROW for a pipeline combined with the right for a pole line for and telephone or telegraph conveyed to the New York State Natural Gas Corporation in deed 432/330 dated 12/8/1949. No specific location or width is stated in the summary deed copy in the abstract.

Pro. M – The abstract indicates the proposal is subject to easements conveyed to the Chenango & Unadilla Telephone Corporation in deeds 601/799 dated 9/11/1962 and 601/800 dated 9/11/1962. The easement includes the right to construct and maintain communication lines, but has no specified location or width.

Pro. M – Map 6558 (1963) shows a power line crossing Proposal M north of Fire Tower Road. No other records regarding this power line are available in our files.

Pro. O – Proposal O is a Revocable Permit (1978) for a ROW by SUNY on behalf of Morrisville Agricultural & Technical College. It provides rights for ingress, egress and maintenance on the portion of a Mack Road located on the College's lands. That section of the road was thought to be abandoned when the permit was issued.

Road Status:

After a dispute about an earlier abandonment action, part of Mack Road was abandoned under Section 212 of the Highway Law in 1993. The abandoned section began 0.9 miles south of the intersection of Mack Road and Fire Tower Road and extended 0.4 miles south to the southwest corner of lands owned by Morrisville College. Old atlas maps show that Mack Road once continued south to State Route 80. Atlas maps also show that a road once ran northwesterly from Morrow Road through Proposal M to connect to Fire Tower Road.

Stoney Pond State Forest
1,469.17 acres, perimeter boundary = 11.96 miles or 63,136 feet

Outstanding Survey Requests: None

Easements, Property Use Agreements, etc.:

Pro. C – A 0.05-acre schoolhouse lot on the west side of Jones Road and a 0.004-acre cemetery lot on the east side of the road were excepted from the deed into NYS. Each exception includes an access ROW from the road. The exceptions are shown on map 4130.

Pro. H – The proposal is subject to a 10-foot-wide right of way running westerly from Greene Road along the part of the southern boundary. The ROW allows travel by trucks, teams, and pedestrians to remove wood and travel to and from the highway to a parcel of land retained by the grantor in deed 456/449. The ROW is shown on map 4645.

Pro. I – Map 9443 shows that the Oneida-Madison Electric Co-op has a ROW and easement across the proposal near or along Hughes Road. A note on the map indicates that the easement is dated 9/24/1941 and is unrecorded.

Road Status:

The 0.4-mile portion of Greene Road, aka Cook Hill Road, within the state forest was discontinued under Section 212 of the Highway Law in 1993. The 0.3-mile eastern portion of Stoney Pond Road within the state forest was also discontinued under Section 212 of the Highway Law in 1993. Old atlas maps show that Stoney Pond Road once continued east to Hughes Road. Atlas maps also show that a road once ran northwesterly from Jones Road along Proposals C and D and through Proposal E to connect to Greene Road.

Nelson Swamp Unique Area
915 acres, known perimeter boundary = 18.55 miles or 97,930 feet *(boundary data incomplete)*

Outstanding Survey Requests:

Numerous parcels within the Unique Area were acquired without being surveyed, many because it was hoped consolidation with other acquisitions would eventually eliminate the need to survey them or reduce the length of boundary to be marked by a survey. However, the consolidation of the area has not been as complete as planned and many parcels having exterior boundary lines have never been marked. This includes parcels 63.43, 63.44, and 63.44A north of Hardscrabble Road; parcels 63.06 (part), 63.06A, 63.11A, 63.96, 63.97, 63.98, 63.99, and 63.100 in the central part of the swamp north of Lyon Road and east of Thomas Road; and parcels 63.89 and 63.91 in the northern part of the project area in the Town of Fenner. Further consolidation through additional acquisitions may still eliminate the need to survey some of the boundaries, but at present they should all be considered in need of survey.

In addition, field staff have reported that many of the property corners and boundary lines set and marked on parcels that were surveyed 25+/- years ago, are now difficult to locate. Real Property staff assisted in recovering property corners and boundary line markings for the UA lands north of Route 20 in 2015, but many of the other surveyed parcels within the UA still need to be inspected to recover the corners and markings.

Easements, Property Use Agreements, etc.:

A gas pipeline corridor crosses the center of the area and affects parcels 63.07, 63.11, 63.11A, 63.19, and 63.20. Records regarding the pipeline refer variously to the Tennessee Gas Pipeline Company, Tennessee Gas Transmission Company, or the Tennessee Gas Pipeline Transmission Company. The ROW affecting parcels 63.11 and 63.20 was conveyed to the pipeline company in deed 450/9 dated 11/15/1950 and recorded 4/4/1951. No width was stated, but map 10893 shows the easement being 150-feet-wide. A partial release of easement 450/9 was recorded at 636/806 on 7/27/1967. Our files do not have the pipeline easement information for parcels 63.07, 63.11, and 63.11A, but it is probably similar to that in 450/9.

Parcel 63.07 – Map 11418 shows electric and telephone lines on poles along the Nelson-Erieville Road.

Parcel 63.50 – This parcel is subject to two reserved access ROWs 25 feet in width, one providing access from a farm lane driveway to lands retained by the grantor in deed 1112/5 and the other providing access to and over an old railroad grade to lands being retained by that grantor.

Parcel 63.52 – Map 10960 shows electric and telephone lines along the roads or across the parcel at Judd Road and Nelson-Erieville Road.

Parcel 63.63 – Map 10935 shows a telephone line on poles along Nine Road.

Parcel 63.70 – This parcel is subject to a 25-foot-wide ROW for ingress and egress to benefit the property to the south of the fee strip connecting 63.70 to the Nelson-Fenner Road. That private property is also subject to a 25-foot-wide ROW held by NYS and a driveway roughly straddles the south line of the fee strip (1990).

Road Status:

Map 10953 (1991) notes that some older deeds refer to Lyon Road having a width of 66 feet, but recent surveys have held a width of 49.5 feet.

General:

The acquisition of parcels 63.37 and 63.63 included public fishing rights along the south bank of Chittenango Creek.

Parcel 63.39 has access from Hardscrabble Road over a 30-foot-wide ROW.

Parcels 63.43, 63.44, and 63.44A have access from Hardscrabble Road over a ROW.

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

Land Acquisition

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

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

For more information on land acquisition, please see SPSFM page 147 at http://www.dec.ny.gov/lands/64567.html.

Infrastructure

State Forests are managed with a minimal amount of improvements to accommodate rustic, forest based recreational opportunities while providing for resource protection; public health and safety; and access for individuals of all ability levels. For more information on infrastructure policies, please see SPSFM page 157 at http://www.dec.ny.gov/lands/64567.html.

Roads

Road found on the Unit that are maintained by the DEC include Public Forest Access Roads and Haul Roads. Public Forest Access Roads, also known as “Truck Trails”, are constructed to standards that will provide reasonably safe travel and keep maintenance costs at a minimum. These roads are not normally plowed or sanded in the winter. Haul Roads are designed to facilitate forest products removal (e.g., use by log trucks) and to limited access for management activities. Table 5 list roads on the Unit that are maintained by DEC.

Public Forest Access Road (PFAR)

Table 5. DEC Roads on the Unit

Forest	Road	Distance (Miles)
DeRuyter SF	Tromp PFAR	1.5
Morrow Mt. SF	Mollie PFAR	0.7
Stoney Pond SF	Camp Site PFAR	0.4
Stoney Pond SF	Haul Road	0.2
Total		**2.7**

Trails

There are 35.7 miles of **designated recreational trails** on the Unit including hike, snowmobile, cross country ski, interpretive, and horse. Table 10 lists designated recreation trails on the Unit.

Table 6. Designated Recreation Trails on the Unit

Trail Type	Length (mi.)
Hiking	2.5

Trail Type	Length (mi.)
Cross Country Skiing	13.0
Horse Trails	5.8
Snowmobile	5.3
Interpretive	0.7
MAPPWD *	0.9
Total	**28.2**

* Motor Access Program for People with Disabilities

Kiosks, Map Boards and Signage

State Forest Information Kiosks are weatherproof panels containing, photographs, maps, and/or written information related to a specific State Forests. Below is a listing of the forests and the location of kiosks with associated map board locations.

Table 7. Kiosks, Map Boards and Signage on the Unit

Forest	Stand	Location
Stoney Pond SF	B-38	Stoney Pond Camping Area Kiosk
Stoney Pond SF	B-52	Jones Road (N) Trailhead Map Board
Stoney Pond SF	B-28	Jones Road (S) Trailhead Map Board
Nelson Swamp UA	A-3	Constine Bridge Trailhead Kiosk
Nelson Swamp UA (7)	C-4,5,7,11,12	Nelson Swamp Interpretive Trail

Boating and Fishing

There is one boat launch on Stoney Pond SF.

Designated Campsites and Lean-tos

Stoney Pond Camping Area has 15 designated campsites and two designated tent sites. Three of the designated campsites are universally accessible. There is one lean-to on DeRuyter State Forest.

Communications Facilities

Two communication towers are located on the summit of Morrow Mt. State Forest. A 112-foot tower with six guide wires and three anchors is maintained by DEC. A second, 80-foot tower with six guide wires and three anchors is maintained by the New York State Police. A steel shed surrounded by a chain-link fence for servicing both communication towers is located at this site.

Utility Transmission Facilities

The Tennessee Gas Transmission Company and Oneida-Madison Electric Co-op maintain transmission lines within Nelson Swamp UA. National Grid maintains an electrical transmission line on DeRuyter SF and Dominion Transmission Company maintains a gas line on Morrow Mt. SF.

State Forest Identification Signs

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

Table 8. Forest Identification Signs on the Unit

Forest	Stand	Location
DeRuyter SF (MRA#9)	A-45	Stanton Road/ PFAR
Morrow Mt. SF (MRA#10)	A-10	Firetower Road/ PFAR
Stoney Pond SF (MRA#13)	A-34	Jones Road
Nelson Swamp UA	A-3	Constine Bridge Road

Parking Area

There are fourteen designated parking areas on the Unit. In addition, there are many other road-side pull-offs, log landing sites, or vehicle turn-arounds where people routinely park to access the Unit.

Table 9. Designated Parking Areas on the Unit

Forest	Stand	Location
DeRuyter SF	A-17	Onondaga Trail/PFAR
DeRuyter SF	A-21	Fairbanks Road (N)
DeRuyter SF	A-43	Stanton Road/PFAR
DeRuyter SF	A-68	Fairbanks Road
Morrow Mt. SF	A-18	PFAR
Morrow Mt. SF	A-40.2	Morrow Mt. Tower Site/ PFAR
Morrow Mt. SF	A-53	Mack Road
Morrow Mt. SF	B-39	Parker Hill Multi-Purpose Trailhead
Morrow Mt. SF	B-41	Morrow Road
Stoney Pond SF	B-28	Jones Road (S) Trailhead
Stoney Pond SF	B-38	Boat Launch
Stoney Pond SF	B-52	Jones Road (N) trailhead
Nelson Swamp UA	A-3	Constine Bridge Trailhead
Nelson Swamp UA	B-24	Lyon Road

Gates

Gates have been installed at six locations on the unit.

Table 10. Gates on the Unit

Forest	Stand	Location
Stoney Pond SF	A-8	Green Road
Stoney Pond SF	B-12.2	Hughes Road
Stoney Pond SF	B-37	Stoney Pond Camping Area
Stoney Pond SF	B-54	Stoney Pond Dam
Nelson Swamp UA	A-3	Constine Bridge Trailhead
Nelson Swamp UA	C-46	Snowmobile Bridge

Bridges
There is one snowmobile bridge and one-foot bridge within Nelson Swamp Unique Area.

Other Infrastructure
There are two benches and one viewing platform on the Unit.

Formal and Informal Partnerships and Agreements

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

The DEC has established four Volunteer Stewardship Agreements (VSAs) to maintain 2.5 miles of long distance hiking trails and 5.3 miles of snowmobile trails located on the Unit. VSAs have also been issued on a temporary basis to local organizations to conduct trail maintenance and litter removal at Stoney Pond SF. Also, since 2007, **Temporary Revocable Permits** have been issued to Cazenovia College, Colgate University, SUNY College of Environmental Science and Forestry and Cornell University to conduct ecological research at Nelson Swamp UA.

Informal partnerships have been established with farmers residing adjacent to Nelson Swamp UA to maintain 24 acres of grassland on that property through late season mowing.

Recreation

Recreation is a major component of planning for the sustainable use of State Forests on this unit. DEC accommodates diverse pursuits such as snowmobiling, horseback riding, hunting, trapping, fishing, picnicking, cross-country skiing, snowshoeing, bird watching, geocaching, mountain biking, and hiking. Outdoor recreation opportunities are an important factor in quality of life. For further discussion of recreational issues and policies, please see SPSFM page

187 at http://www.dec.ny.gov/lands/64567.html. The following section includes an inventory of recreational opportunities available on this unit as well as a description of use and demand for each activity. Recreational maps and geographic data are available at DEC's Mapping Gateway http://www.dec.ny.gov/pubs/212.html in Google format or in the State Lands Interactive Mapper. See Appendix XII for a map recreation and other facilities.

Student Visit to Nelson Swamp Interpretive Trail

Hunting

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

Deer Take in Wildlife Management Unit (WMU) 7M, within which the Tioughnioga Unit is located, reveals a 17% decrease in total deer take between 2007-2015. However, the change in number of resident license holders in New York State during the same period increased approximately 5% suggesting increased participation in deer hunting (NYSDEC, 2016).

Fishing

Stoney Pond is a 44-acre water body on Stoney Pond State Forest that is a popular fishing and boating destination. A boat ramp provides access for non-motorized craft and a foot trail along the Pond's perimeter allows for shoreline fishing. This is one of the first lakes in the area to ice-up, and is considered a good, early ice fishing location for bluegills.

Bullhead catch at Stoney Pond (Photo: N. Lund)

Chittenango Creek emerges from Nelson Swamp UA and is one of the more popular trout fishing streams in Central New York. A 2014 creel survey on Chittenango Creek had an estimated 13,892 total angler hours for the season (April 1-Oct 15). A 2.2-mile section of Chittenango Creek became a Catch-and-Release (C&R) artificial lure only trout fishery in Oct 2010. Chittenango Creek is stocked annually with approximately 14,300 one-year-old brown trout (8-9") and 1,900 two year-old brown trout (12-15").

Since 2005 the number of resident fishing license holders in New York State has declined 26% suggesting a weakening demand for this activity.

Trapping

The Unit provides good opportunities for furbearer trapping. Nelson Swamp UA and Stoney Pond SF have relatively high beaver populations compared with other properties on the unit and have experienced moderate levels of trapping.

Between 2007-2015, the number of trapping license sales in New York State increased approximately 18% suggesting increased participation in this activity.

Viewing Natural Resources

In general, recreational trails and PFARs promote natural resources viewing by providing opportunities to access remote sections of the unit. The Nelson Swamp Interpretive Trail provides enhanced opportunities to experience nature from a viewing platform, benches located at vista sites and interpretive signage to learn about site history and ecology. Informal user surveys of the interpretive trail reveal that approximately thirty people visit the interpretive trail each day.

Data on wildlife watching suggest that participation in this activity is increasing in New York State. The National Survey of Fishing, Hunting, and Wildlife Associated Recreation (USFWS 2011) reveals that NYS resident participation in "Away from Home Wildlife Watching" increased 14% between 2001-2011.

Camping

Stoney Pond Camping Area has 15 designated campsites (three that are universally accessible) and two designated tent sites. Each site has a parking pad and fire ring. The two tent sites also have fire rings and are accessed from a designated parking area by a 0.1-mile foot trail. The Camp Area includes two portable sanitary facilities that are installed and maintained on a seasonal basis by a private service. A no-fee permit is issued through the DEC office in Sherburne between May 1 and September 30. During the 2016 season, 439 permits were issued for a total of 1,949 campers. Most (84%) registered campers reside within 25 miles of the Camping Area suggesting that this facility is primarily a local recreational resource.

Availability of no-fee camping facilities within the region are limited and subsequently demand for sites at Stoney Pond is strong. The Camping Area was at capacity on most weekends during June, July and August in 2016.

Camping is not permitted at Nelson Swamp UA but all other state lands on the unit are open with restrictions. See Appendix XII for a map of Stoney Pond Camping Area.

Water-based Recreation

Stoney Pond provides opportunities for non- motorized boating. The boat launch and parking area adjacent to the Camping Area provide access for kayaks, canoes and other small watercraft. With eleven public boat launch sites within a 25-mile radius of Stoney Pond, demand for boating on the Unit is low to moderate. Swimming is not permitted at Stoney Pond.

Kayaking on Stoney Pond

Hiking

The 2.5 miles of designated hiking trails on the Unit are part of a larger regional network of interconnected foot trails that are maintained by state and national trail organizations. Under a Volunteer Stewardship Agreement (VSA), The Finger Lakes Trail Conference maintains a 1.3-mile segment of the Onondaga Trail that passes through DeRuyter State Forest. Under a separate VSA, the Central New York Chapter of the North Country Trail Association maintain a 1.2-mile segment of the Madison County Link Trail that passes through Nelson Swamp Unique Area. This section of the Link Trail is a certified segment of the 4,600-mile North County National Scenic Trail between Crown Point in eastern New York and Lake Sakakawea State Park in central North Dakota. The 0.7 Nelson Swamp Interpretive Trail is contiguous with the Link Trail.

Madison County Link Trail at Nelson Swamp

The 13 miles of designated cross-country ski trails on Stoney Pond SF are also popular for snowshoeing and hiking. The Stoney Pond Loop trail (Trail #1) receives high use during the summer season because of its proximity to the Camping Area and access to scenic vistas along the shoreline.

Cross Country Skiing

A 13-mile cross country ski trail system is located on Stoney Pond State Forest. Two parking areas on Jones Road with map kiosks and registration boxes service the trail system.
Based on registration data, approximately 1,000 skiers use the trail system each winter and most reside within 25 miles of Stoney Pond SF. Demand has remained relatively flat since the trail system was established in 1988. In 2018 a Volunteer Stewardship Agreement (VSA) was issued to local residents of Stoney Pond State Forest to maintain the entire 13-mile cross country ski trail system.

Horse Riding

Three horse trails were designated on the unit in the 2007 Tioughnioga unit management plan including a carriage trail and riding trail on DeRuyter SF totaling 2.5 miles and a riding trail on Stoney Pond SF totaling 4.3 miles. The DeRuyter carriage trail follows the PFAR and receives little to no use. The DeRuyter riding trail was intended to connect with a larger network of trails on private land but was not established and subsequently the state land trail was never built. The Stoney Pond riding trail follows ski trials #3,6 &7 but most equestrians use the entire network of ski trails.

Demand for horse riding opportunities is expected to increase. Between 2007 and 2012, when the last agriculture census was conducted, the number of resident horses and ponies in Madison County increased by 43% to 2,587 (USDA, 2012). A 2013 study by Cornell Cooperative Extension revealed that 49% of the county's resident horses are used for recreational purposes and the average owner has 1-4 horses (Cornell Cooperative Extension, 2013).

Mountain Biking

Unless posted with "No Bicycle" signs, trails on the unit are open to mountain biking. Town roads, abandoned roads, Public Forest Access Roads and haul roads provide additional opportunities for mountain biking on the Unit.

Stoney Pond trails receive moderate use for mountain biking. A popular regional mountain bike trail facility is located within ten miles of the unit at Highland Forest County Park and appears to reduce demand for Stoney Pond trails.

Snowmobiling

A well-established network of snowmobile corridor trails is located within the region and segments of this system pass through all four properties on the unit. Under a Volunteer Stewardship Agreement (VSA), the Snow Valley Riders Snowmobile Club maintain three miles of trails on DeRuyter SF, Stoney Pond SF and Nelson Swamp UA. Under a separate VSA, the Moonlight Riders Snowmobile Club maintain 2.3 miles of trails on Morrow Mt. SF.

Snowmobiling on State Forest

Snowmobile registration provides one indication of demand for this activity. Following eight years of steady increase, statewide snowmobile registration peaked in the 2002-03 season at 172,200. Since that time, registration has declined by approximately 47% to 91,542 in the 2015-2016 season. Lack of sufficient snowfall is one factor contributing to declining registration in New York State (NYSOPRHP, 2016).

Other Recreational Activities

While no data is available for other recreation activities such as geocaching, fossil hunting, jogging, target shooting, and pleasure driving, casual observation reveals that all these activities occur on the Tioughnioga Unit.

Overall Assessment of the Level of Recreational Development

It is important that recreational use is not allowed to incrementally increase to an unsustainable level. DEC must consider the impact on the unit from increased use on other management goals or other recreational uses. DEC must consider the full range of impacts, including long-term maintenance and the balancing of multiple uses. The Unit has a level of development consistent with local recreational demand. The Tioughnioga Unit provides opportunities for dispersed recreation that requires a low level of development. Activities such as hunting, camping, snowmobiling, hiking, nature observation, and geocaching are all consistent with the character and features of the Unit.

Universal Access

DEC has an essential role in providing universal access to recreational activities that are often rustic and challenging by nature, and ensuring that facilities are not only safe, attractive and sustainable, but also compatible with resources. For more information on universal access policies, please see SPSFM page 173 at http://www.dec.ny.gov/lands/64567.html. Currently there are two facilities on the unit with universal access. The 0.8-mile Nelson Swamp Interpretive Trail provides access to a viewing platform along the Chittenango Creek and passes through a variety of habitats. There is a 0.9-mile Motorized Access Program for People with Disabilities (MAPPWD) route on Morrow Mountain State Forest. Both sites have accessible parking areas. In addition, three camp sites at Stoney Pond Camping Area provide universal access.

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.

Mineral Resources

Oil, Gas and Solution Mining Exploration and Development
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. As surface managers, the Division of Lands and Forests will evaluate any concerns as they pertain to new natural gas leases on State Forest lands. Consistent with past practice, prior to any new leases, DEC will hold public meetings to discuss all possible leasing options and environmental impacts. A comprehensive tract assessment will be completed as part of this process. For more information on natural gas and other mineral resource policies, please see SPSFM page 225 at http://www.dec.ny.gov/lands/64567.html.

There are currently no oil and gas leases nor are there any inactive oil or gas wells on state lands within the Unit.

Although there has been no historic drilling with in the Unit boundaries, there are a considerable amount of commercially produced gas wells to the east and southeast of the Unit. Within 14 miles from the Morrow Mt. SF are the Lebanon and Bradley Brook gas fields there are approximately 100 wells, the majority of which were drilled between 1997 and 2011. The wells

produce from the Herkimer, Oneida, Oswego and Queenston formations and are between 2,100 feet and 5,000 feet in depth.

Pipelines

The Department, pursuant to ECL § 9-0507, may lease State lands for the construction and placement of oil and gas pipelines only if a portion of the mineral resources to be transported was extracted from State lands. Pipeline and road development must be in compliance with State Forest tract assessments, the Strategic Plan for State Forest Management, and the Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program (NYSDEC, 1992).

Pipelines will be located immediately adjacent to Public Forest Access Roads. The location of the roads and pipelines will be in compliance with tract assessments. Pipelines may be located in stands managed for closed canopy conditions only along pre-existing roads that intersect such area. Additional surface disturbance associated with such construction will be considered only in areas other than stands which are managed for relatively unbroken canopy conditions. Areas managed for unbroken canopy conditions may be referred to using various terms such as “uneven-aged,” “uneven-aged variable retention,” “all aged,” “high canopy,” “closed canopy” or others.

Pipeline development on State land will not be permitted if the Department determines that it creates a significant long-term conflict with any management activities, public use of the State Forests, or with other management objectives in this plan. All pipelines will be gated to restrict motorized access, and if necessary hardened crossings or bridges will be installed to allow heavy equipment access across pipelines. These requirements will be satisfied by the Lessee.

Exceptions to the above guidance must be approved by the Division of Lands and Forests, in consultation with the Division of Mineral Resources.

Mining

Mineral deposits available in central New York State include shale, sand, gravel, peat, bluestone, salt, oil, and natural gas. There are presently no commercial mining contracts, permits, or other mineral resource operations on any state lands within the Unit. Under Article 7 of the New York consolidated Laws/Public Lands, any citizen of the United States may apply for permission to explore and /or extract any mineral on state lands. However, current NYS DEC policy is to decline any commercial mining application(s) associated with state lands.

Sand and gravel and hard rock resources exist in the areas surrounding the Unit, and operations to extract these resources are located on privately-owned land. Historically, there were approximately twenty sand, gravel, shale or peat operations within or immediately adjacent to the Unit boundary. Most of the mines were operated by municipalities and have since been reclaimed. The active mines in the area are typically small and permitted by local construction companies. A total of five active mining operations exist within two miles of lands within the Unit, with four being sand and gravel operations and one peat operation. The two closest mines in proximity to State Forests are a twenty-eight acre sand and gravel mine located two miles

north of the DeRuyter State Forest and a six-acre sand and gravel mine located within one-half mile to the north of Nelson Swamp Unique Area.

Supporting Local Communities

Tourism

State Forests can be an economic asset to the local communities that surround them. It is estimated that more than three out of every four Americans participate in active outdoor recreation of some sort each year. When they do, they spend money, generate jobs, and support local communities. For more information, please see SPSFM page 245 at http://www.dec.ny.gov/lands/64567.html.

Taxes Paid

Approximately 76% of state lands within the Tioughnioga Unit were assessed for real property tax in2018. State lands within Nelson Swamp Unique Area are exempt from real property assessments. In 2015, based on $4,048,150 in total assessments, $97,711 were paid in school, fire and town taxes for state lands within the Tioughnioga Unit. See IX for additional information on real property assessments and taxes paid (Madison County, 2018).

Forest Products

Timber

Forest management on the Unit provides a renewable supply of hardwood and softwood timber. Production includes sawlogs, **pulpwood**, pole stock, firewood and chips. For more information, please see SPSFM page 251 at http://www.dec.ny.gov/lands/64567.html.

Based on the NYSDEC Stumpage Price Reports for the central and western regions, the median average price for black cherry has dropped 50% since 2008 while sugar maple and white ash have increased 8% and 168% respectively (NYSDEC 2006-15). Weak demand for black cherry lumber in the export market is one factor contributing to falling prices. The threat of emerald ash borer has resulted in a dramatic increase in the supply of white ash saw logs in the regional market, and yet, **stumpage** price for this species has defied economic logic with an equally dramatic increase.

There are eight hardwood sawmills with an annual production capacity in excess of five million board feet within 50 miles of the unit. All eight firms have bid on State Forest hardwood stumpage offered through the Sherburne office. In 2016, approximately 1.2 MMbf (million board feet) of State Forest hardwood **sawtimber** and 1,268 cords of hardwood pulpwood/ firewood was sold through the Sherburne office.

Based on bids received for State Forest pine and spruce stumpage in the Sherburne office, prices have steadily increased between 2008 and 2016. Over this eight year period, there was a 30% increase in the average stumpage price paid for red pine and a 42% increase for Norway spruce. The majority of red pine sawlogs harvested from State Forests within the region are transported to Angelica, NY for dimension lumber. A smaller percentage of red pine is processed in Booneville, NY for utility poles or locally for cabin logs. Most, if not all, spruce sawlogs are exported to mills in Quebec, Canada for processing into dimension lumber. Pulpwood is transported to Ticonderoga and Deposit, NY or paper mills in Pennsylvania. In 2016, approximately 5.8MMbf of State Forest spruce sawtimber and 5.5 MMbf (million board feet) of pine sawtimber was sold through the Sherburne office. An additional 1.1MMbf of larch sawtimber was also sold through the Sherburne office.

Harvesting Larch Timber on State Forest

In 2016, 42 households in Chenango and Madison Counties participated in the home firewood program administered through the Sherburne office. A total of 319 cords of firewood were sold in small lots to households in these two counties. Based on census data from the 2011-2015 American Community Survey 5-Year Estimates, approximately 370 households in the four

towns within which the Tioughnioga unit is located rely on firewood as a primary source for home heating (US Census Bureau)

Non-Timber Forest Products

Berries, mushrooms and other fruits are harvested from State Forests on the Unit. Part 190.8(g) of New York Codes, Rules and Regulations restricts the harvesting of berries, mushrooms and other fruits except for personal consumption. Harvesting of living plants is not permitted.

Maple syrup is the most important non-timber forest products in New York State with approximately 360,000 gallons produced in 2012 and a market value of $15.7 million. In 2012, there were 3,510 gallons of maple syrup produced on twenty-one farms in Madison County. This represents a 19% increase in production since 2007 and suggests a stronger demand for maple products in the immediate future (USDA, 2012).

Chicken-of-the-Woods mushrooms, Stoney Pond State Forest

Forest Health

Forest health is pursued with the goal of maintaining biodiversity. Any agent that decreases biodiversity can have a deleterious effect on the forest as a whole and its ability to withstand stress. Forest health in general should favor the retention of **native species** and natural communities or species that can thrive in site conditions without interrupting biodiversity. For

more information on forest health, please see SPSFM page 277 at http://www.dec.ny.gov/lands/64567.html.

Invasive Species

Globalization and international trade has dramatically increased the number of non-native species in the United State. While many of these species have no adverse impacts, those that are invasive disrupt ecosystem function, reduce biodiversity and degrade **natural areas**. Invasive species have been identified as one of the greatest threats to biodiversity, second only to habitat loss. Invasive species may potentially be introduced through natural means via wind or animals, or by humans through the movement of firewood, off-road motor vehicles or equipment, or the planting of infested vegetation. The known invasive species present on the Unit are listed below.

Table 11. Invasive Species Present on the Unit

Plants	Status
Garlic Mustard	Common on the Unit near openings and on disturbed sites.
European Buckthorn	Uncommon, but present on the Unit
Common Reed	Uncommon, but present on the Unit
Japanese Barberry	Uncommon, but present on the Unit.
Honeysuckle	Common on the Unit
Multiflora Rose	Common on the Unit
Pale swallowwort	Uncommon, but present on the Unit.
Japanese knotweed	Uncommon, but present on the Unit.
Insects	
Gypsy moth	Present but does not cause significant tree mortality.
Viburnum Leaf Beetle	
Hemlock Wooly Adelgid	Within 25 miles of the Unit
Emerald Ash Borer	Within 25 miles of the Unit
Diseases	
Beech Bark Disease	Common on the Unit.
Dutch Elm Disease	Common on the Unit
Animals	
	No known invasive animal species a on the Unit.

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


Pale Swallowwort (Photo: A. Blum)

Managing Deer Impacts

White-tailed deer have a significant impact on forest regeneration and are perhaps the greatest challenge facing **sustainable forest management**. Adult deer consume approximately 5–7 pounds of plant material each day and prefer sugar maple, white ash, and red oak while avoiding American beech, striped maple, and hophornbeam. While many plants can survive occasional browsing, repeated browsing can often cause direct mortality and diminish long term forest productivity.

Several long-term studies to monitor deer population and impacts on forest regeneration were begun in 2007. Over 1,000 sample plots are examined each year on Beaver Meadow State Forest in Chenango County to estimate deer population and the intensity of browse. An additional 78 permanent plots have been established on the same forest to examine growth trends in relation to estimated deer population. Based on nine years of survey data, the estimated population on Beaver Meadow State Forest is 19.0 deer per square mile (NYSDEC, 2006).

In 2010 Beaver Meadow State Forest was enrolled in DEC's Deer Management Assistance Program (DMAP), which offered free antlerless harvest tags to visiting hunters in an attempt to reduce the deer population and the browse damage. The program has been administered from the Sherburne DEC office and has been active for seven years.

II. Summary of Eco-Region Assessments

Eco-Region Assessment

To practice ecosystem management, the larger natural and cultural landscape around the unit must be assessed. The Tioughnioga Unit is located within the High Allegheny Plateau (HAP) Ecoregion which includes the southern tier of New York and the northern tier of Pennsylvania (Zaremba and Anderson et. al. 2003).

Well known features in HAP include the Catskills, The Shawangunks, The Kittatinny Ridge, The Poconos, Allegany State Park, Allegheny National Forest, and a large mass of Pennsylvania state-owned land. The HAP ecoregion 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. There are large and significant managed areas in HAP, including three large intact forested areas: the Catskills, the Allegheny National Forest/Allegany State Park complex, and the Pennsylvania state land in central PA.

Landscape Assessment

To determine current landscape conditions, a 100,000-acre area was defined surrounding the unit. The area includes the entire Town of Nelson and sections of the Madison County Towns of Cazenovia, DeRuyter, Eaton, Georgetown and Fenner and sections of the Onondaga County

Towns of Fabius and Pompey. Approximately 50% of this landscape is forested and 30% is in agricultural use. Wetlands and open water occupy 6.7% of the landscape with grassland and shrub occupying 8.3%. A small percentage of the overall landscape is developed and this land is concentrated in and around the Villages of Cazenovia and Morrisville and the Route 20 corridor located between these two communities. See Appendix XII for a Map of Land Cover Classification of the Tioughnioga and Surrounding Landscape.

Table 12. Land Cover Classification

Land Cover Classifications	Acres	Percent
Deciduous Forest	39,634	39.6
Evergreen Forest	7,556	7.6
Mixed Forest	3,281	3.3
Woody Wetlands	3,886	3.9
Emergent Wetlands	461	0.5
Open Water	2,284	2.3
Cultivated Crops	15,845	15.8
Pasture/Hay	14,979	15.0
Grassland	1,692	1.7
Shrub, Seedling/Saplings	6,556	6.6
Highly Developed	18	0.02
Moderately Developed	163	0.2
Lightly Developed	497	0.5
Developed Open	3,067	3.1
Barren Open	81	0.1
Totals	**100,000**	**100**

Local Landscape Conditions

Dairy Agriculture continues to be an important part of the local landscape and economy. Data from the USDA census of agriculture reveal that between 2007 -2012 the dairy herd in Madison County increased by 6% to 20,248 cows (USDA, 2012). The emergence of a regional yogurt industry, with its reliance on fluid milk, along with continued demand from the metropolitan regions of New York State suggests that dairy farming will continue to be an important land use in Madison County.

Local Landscape Conditions. New Woodstock, NY

During the same period, there was a 43% increase in the number of horses and ponies in the county (USDA, 2012). Large equine facilities and academic programs associated with Cazenovia College and Morrisville State College along with a number new and expanding private stables have established the area as an important center for equine science, management and recreation.

Another important development has been the establishment of the Fenner Wind Farm. The farms 20 wind turbines are 329 feet from the ground to a blade at full height and are visible from many of the hilltops within the surrounding towns. The turbines produce 30 megawatts of power, a sufficient amount of energy for about 7,800 homes (Potrikus, 2016).

The parcelization of land and the development that frequently follows continues to change local landscape conditions. New residential and commercial developments have been established on former agricultural lands in Cazenovia and Nelson while in more remote sections of Georgetown and DeRuyter parcels have been marketed for vacation homes and hunting camps. Between 2006 -16 the number of parcels within the five towns where the unit is located

increased by 2.5%, adding 186 parcels to the tax rolls (Madison County Real Property Tax Services, 2016).

In his study of Oneida County New York, Germain (2006) suggests that parcelization will have implications for the forest products industry. "The general decline in parcel size, and more importantly the shift in ownership to smaller acreage classes, suggests that declining economies of scale attributable to more landowners holding smaller parcels is a legitimate concern for forest management and future timber supply." Simply put, wood procurement will be more challenging with increasing parcelization.

Rural housing, Sheds, NY

Parcelization has introduced new features and activities into the landscape that have changed both the configuration of land ownership and the relationship between people and nature. Residential development on former cropland shifts land use from production of commodities to consumption of amenity values such as scenery and recreation. Similarly, remote forest parcels harvested periodically for timber production are marketed as "rural retreats" and used seasonally for hunting, camping and to temporarily escape the routines of urban life. Together these changes inevitably impact ecological patterns and processes that shape the configuration of local landscapes.

Habitat Related Demands

As the private landscape is increasingly characterized by smaller parcels and more isolated decision-making, state owned lands have emerged as relatively large blocks of forest under single ownership. Currently, New York State Forests and Wildlife Management Areas represent the largest single parcels in Madison County with most individual properties exceeding 1000 acres in

size. These large blocks of public forest land provide opportunities to manage for ecological conditions not likely to occur on private lands and to focus attention on the habitat needs of area-sensitive species.

There is a scarcity of both late and early **successiona**l forests conditions in the High Allegheny Plateau (HAP). Extensive forest clearing in the 19th century and subsequent regrowth in the 20th century has produced a wide distribution of forest landscapes of the same age and structure. The extent of habitat conditions necessary for wildlife species dependent on young and old forests is limited. Unit management planning promotes the development of scarce habitat conditions and the application of strategies to conserve biodiversity.

Late Successional Forest on DeRuyter State Forest

III. Management Goals, Objectives and Actions

It is the goal of the Department to manage State lands for multiple uses to serve the needs of the People of New York. Management will be advanced to ensure the biological improvement and protection of the Tioughnioga Unit and to optimize the many benefits to the People that these lands provide. This strategy considers both the social and environmental conditions of the larger landscape within which the Unit is linked and the broader cultural context which structure human relations with nature. Management will advance biological diversity, protect the Units cultural and natural resources, cultivate an ethic of sustainable land use and ultimately optimize the range of public benefits that the Unit provides.

Management will respond to human values and continually seek to engage people in a dialogue about the future of state lands. Participatory planning provides the information necessary for decision-making and the opportunity for different people to define a common interest in state land. Open discussion between individuals and groups with divergent expectations of state lands will uncover common ground and often identify conflict before it escalates to an unmanageable level. Meaningful participation is contingent on fostering dialogue and raising awareness about natural and cultural history, ecology, and sustainable land management. Shared learning between all stakeholders is key for advancing adaptive management and achieving the Departments primary goal of serving the People of New York.

GOAL 1: Provide Healthy and Biologically Diverse Forest Ecosystems.

The Tioughnioga unit management plan provides a framework for maintaining ecological patterns and processes that conserve biodiversity. Conceptually, the plan is based on the work of Malcom Hunter (1990, 1997, 1999) and Jerry Franklin (1987, 1989, 1992) who have advanced ecological forestry to conserve biodiversity in managed forests.

A key feature of ecological forestry is the concept of disturbance regimes and how natural episodes such as wind and fire can be replicated in silvicultural systems to produce timber while at the same time creating ecological conditions that support a diversity of species. Hunter argues that maintaining a full range of landscape conditions offers the best assurances against losses of biodiversity. This the “coarse filter approach” conserves diverse ecosystems and landscapes to provide habitat for the vast majority of species. “With an effective coarse filter strategy in place, the more costly and information sensitive fine filter management can be focused on for species of special concern” (Seymour & Hunter 1999).

Unit management planning allows for establishment of diverse ecological conditions and the deliberate sequencing and distribution of disturbances for controlling landscape characteristics, Management objectives were developed to support diverse conditions including early successional habitats (grass/shrub), riparian and wetland areas, even and **uneven aged** forest stands and late successional **old growth** forests. Management actions are intended to create and maintain a full range of ecological conditions suitable for a diversity of species.

The extent and distribution of cover types across the unit have been planned with consideration of habitat connectivity which allows for the movement of species, material and energy through a landscape (Noss & Cooperrider, 1994). Habitat connectivity has important effect on the abundance of species in that spatial arrangement of habitats affects the location, foraging patterns and persistence of organisms (Spies & Turner, 1999).

Conserving biodiversity on the Unit will be guided by five principles:

(1) Maintenance of landscape connectivity.

(2) Maintenance of a diversity of ecological conditions across the landscape.

(3) Maintenance of stand structural complexity including the establishment of multiple **age classes** and the creation and persistence of habitat features such as snags, **cavity trees** and **coarse woody debris**.

Coarse woody debris (CWD)

(4) Protection of aquatic ecosystems including ponds, wetlands, streams, springs, and **riparian zones.**

(5) Implementation of multiple management strategies at the stand, forest and landscape level to provide suitable habitat for a wide variety of species.

For information on ecosystem management, see SPSFM page 39 at http://www.dec.ny.gov/lands/64567.html.

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

Protection of soil and water quality is one of the highest management priorities and is the foundation of sustainable forest management. Headwaters streams of both the St. Lawrence and Susquehanna Rivers are located on the Unit and management activities on these State Forest will ultimately impact downstream water quality. The primary management objective for all streams on the Unit is the production and maintenance of clean water.

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. SMZs consist of protection buffers around ponds, streams, wetlands, vernal pools and spring seeps to prevent disturbances that could potentially impact water quality. SMZs are established to minimize impacts associated with timber harvesting, road and trail construction, and mineral extraction. 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 Comply with the NYS publication Best Management Practices for Water Quality (NYSDEC, 2011) as described in the Strategic Plan for State Forest Management pages 110-112 during all timber harvesting and other management activities.

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

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

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

Action 1.1.6 Protect 1,211 acres of **forested wetlands**, shrub wetlands, open wetlands, ponds and riparian forests. Ponds, wetland**s** and riparian forests are extremely complex and diverse ecosystems that provide multiple environmental and social benefits. They are distinct ecological communities that support a diversity of plant and animal species not often found elsewhere in the landscape (Calhoun, 1999).

Protection of riparian zones will maintain stream bank stability to ensure a clean supply of water and protect the habitat of native fish and other aquatic species. Timber harvesting and road construction are not permitted in wetland and riparian forests. Logging trails may cross riparian zone**s** using Best Management Practices to protect water quality. Riparian forests are vulnerable to impacts associated with logging and other disturbances with the potential of increasing stream sedimentation, disrupting habitat conditions and diminishing overall water quality. In the absence of disturbance, these areas will develop into **late successional forest**. See Appendix XI "Proposed Management Direction" maps.

Riparian Zone Forest

Action 1.1.7 Restrict timber harvesting on 286 acres of steep slopes and inaccessible sites. Sites suitable for harvesting are designated inaccessible if riparian, wetland and other protection zones will be significantly impacted as a result of this activity.

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

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

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

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

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

The application of brine will not be permitted on those sections of the following town roads that pass through state land and Public Forest Access Roads on the unit except adjacent to residences where brine application is permitted for dust control:

Table 13. Roads with No Brine Application

Forest	Town	Road
DeRuyter SF	DeRuyter	Stanton Road
DeRuyter SF	DeRuyter	Fairbanks Road
DeRuyter SF	DeRuyter	PFAR
Morrow Mt. SF	Georgetown	Firetower Road
Morrow Mt. SF	Georgetown	Morrow Road
Morrow Mt. SF	Georgetown	Parker Hill Road
Morrow Mt. SF	Georgetown	PFAR
Morrow Mt. SF	Georgetown	Mack Road
Stoney Pond SF	Nelson	Greene Road

Stoney Pond SF	Nelson	Jones Road
Stoney Pond SF	Nelson	Stoney Pond Road
Nelson Swamp UA	Nelson	Judd Road
Nelson Swamp UA	Nelson	Lyon Road

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

Land cover classification (p.51) reveals that 8.3% of the landscape within which the Tioughnioga Unit consists of shrub and grassland habitats. These early successional conditions are declining as shrub and grasslands mature and transition to forest. Extensive forest clearing throughout central New York during the 19 century has resulted in very limited amounts of late successional forest habitats. Together, early and late successional habitats represent vegetation cover types that are either declining or rare in the local landscape.

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

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

The New York State Comprehensive Wildlife Conservation Strategy (NYSDEC, 2005) recommends maintaining or increasing the amount of early successional forest and shrub land in the Susquehanna Basin. According to the CWCS, 92% of the bird species that depend upon early successional habitat are in decline in New York State. Some of the species designated in the CWCS as Species of Greatest Conservation Need that require early successional habitat include American woodcock, brown thrasher, Canada warbler and ruffed grouse. See Section F.

Wildlife Resources in this plan or the CWCS, Susquehanna Basin, at http://www.dec.ny.gov/animals/30483.html for additional information.

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

Action 1.2.1 Maintain 216 acres of early successional habitats on the Unit.
Early successional habitats including mowed fields, shrublands and stands dominated by apple trees will be maintained through periodic mowing and releasing shrubs from **overstory** trees. An additional 228 acres will be temporarily in an early successional habitat condition following conversion of red pine plantations to hardwood seedlings and saplings. See Appendix XII, Proposed Management Direction, maps for locations of these areas.

Mowed Field at Stoney Pond State Forest

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

Action 1.2.2 Increase the amount of late successional stage forest on the Unit.
Forest stands designated within a protection category occupy 1,648 or 35% of the Unit.
These stands will be excluded from timber harvesting and will ultimately develop late successional forest characteristics. Included in this designation are forest wetlands, riparian zones, inaccessible areas, recreational sites, steep slopes, and Natural Areas.

Natural areas are forests withdrawn from planned disturbances such as timber harvesting. Within natural areas, ecological patterns and processes will operate without direct human intervention and, together with riparian and wetland forests, will develop late successional characteristics with old trees, structural complexity and a seemingly chaotic appearance. Natural areas are a critical component of any effort to conserve biodiversity because they develop ecological conditions distinct from those in forests managed for commodity production. Disturbances associated with timber harvesting will trigger change that set them apart from natural areas. Natural areas also provide important reference areas against which to compare changes in working forests, such as the long-term effects of timber harvesting on biodiversity

See Appendix XII, Current Cover Types and Management Directions, for locations of protected or natural areas.

Objective 1.3 Protect rare species and significant ecological communities.

The New York Natural Heritage Program identifies rare, threatened and endangered species and significant ecological communities within the State. Spreading globeflower (*Trollius laxus*), a rare plant, and striped coralroot (*Coralloriza striata var. striata*), an endangered plant, both occur within Nelson Swamp Unique Area. Much of Nelson Swamp UA is classified as a northern white cedar swamp, a significant ecological community.

For additional information on at-risk species and communities, see the SPSFM, Chapter 3, pgs. 115-126.

Action 1.3.1 Continue to manage subpopulations of spreading globeflower through selective removal of overstory trees and understory plants (Scanga, 2009). Treat populations of invasive *Phragmites* that are impacting subpopulations of spreading globeflower adjacent to gas pipeline ROW. Treatments will be conducted in collaboration with researchers currently involved with globeflower conservation at Nelson Swamp and botanists from the Natural Heritage program.

Action 1.3.2 Prioritize acquisition of private parcels within Nelson Swamp to ensure protection of northern white cedar communities and associated rare plants. Consolidation of the current

fragmented ownership pattern within the swamp will enhance opportunities for ecosystem management and allow for perpetual protection of rare species. Public ownership is the most effective means for conservation of rare species as it provides the resource necessary for long term monitoring, research and enforcement which go beyond individual ownership and abilities.

Action 1.3.3 Conduct a survey of rare species and ecological communities on newly acquired lands. Involve Natural Heritage staff in conducting surveys on newly acquired parcel

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

Table 14. Rare Plant Species that May Potentially Occur on the Unit

Common Name, *Scientific name*	**Habitat**
Schweintz's sedge, Carex schweintzi	Calcareous wet, seepy areas, often near rich fens, marshes, swamps. Edges of small drainage channels or perennially wet ditches that have strongly calcareous water.
Hill's Pondweed, *Potamogeton hillii*	An aquatic plant of alkaline waterways including ponds, streams, lakes, ditches, and other impoundments.
Puttyroot, *Aplectrum hyemale*	This is an orchid of rich woods, often found near limestone outcrops or in calcareous talus. The moisture of the soil varies from mesic upland sites to damp low ground areas. Most of the woods are deciduous or mixed deciduous-evergreen.
Spreading globeflower, *Trollius laxus*	In addition to Nelson Swamp may also be found in open areas of calcareous wetlands, including casually grazed pastures, openings in cedar, tamarack, or hemlock swamps, rich sloping fens, rich graminoid fens, powerline right-of-ways through rich shrub swamps, seepage areas, and other such sites.

Table 15. Rare Animals that May Potentially Occur on the Unit

Common Name, *Scientific name*	**Habitat**
Pied-billed grebe, *Podilymbus podiceps*	Inhabits quiet marshes, marshy shorelines of ponds, shallow lakes, or marshy bays and slow moving streams with sedgy banks or adjacent marshes.
Arrowhead spiketail, *Cordulegaster obliqua*	Arrowhead spiketails oviposit and spend most of their time at small spring fed streams and seeps with soft bottoms and sometimes rocks. These streams are usually in forested areas although the seepage areas themselves may be in small areas of more open habitat types such as meadows dominated by ferns and other moisture dependent herbaceous plants. Adults may feed in forest clearings in the vicinity of the principal breeding habitat.

Bald Eagle, *Haliaeetus leucocephalus*	Typically found near large bodies of water, such as bays, rivers, and lakes, that support a healthy population of fish and waterfowl, their primary food source. Generally, Bald Eagles tend to avoid areas with human activities.

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

Objective 1.4 Conserve and Enhance Fish and Wildlife Habitat.

Management actions are intended to create and ultimately maintain a full range of ecological conditions to support and sustain a diversity of fish and wildlife species.

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

Beech snag with cavities

Dead, dying and down trees provide habitat for multiple species, serve as germination sites (nurse logs) for plants, and facilitate nutrient recycling. Standing dead and dying trees are critical

for many birds that require cavity nest sites and wood boring insects to forage. CWD is used by both vertebrates and invertebrates for forage, cover and drumming sites for ruffed grouse. The moist environment below logs is especially beneficial to reptiles and amphibians. Logs in streams provide cover for fish and increase ecological complexity within aquatic habitats. The nutrient rich humus that forms during wood decomposition is critical for regeneration hemlock and yellow birch. And finally, nutrients such as nitrogen and phosphorus are released during decomposition and logs in advanced stages of decay are excellent site for the formation of mycorrhizae.

Action 1.4.2 Manage North American beaver *(Castor canadensis)* where their actions threaten rare species or ecological communities, roads, culverts, trails or other access related infrastructure. Beaver are an important part of aquatic ecosystems because of their ability to create diverse habitat conditions that are beneficial to a wide array of species. They are an abundant species on the Unit. However, their actions can also have negative impacts to rare species or access infrastructure resulting in the need for costly repairs. Beaver problems will be addressed on a case by case basis after consultation with Bureau of Wildlife staff.

Action 1.4.3 Protect active nesting sites for raptors listed as species of Special Concern.

Many raptors in New York are listed as species of special concern. Within the breeding blocks in and around the Unit are: sharp-shinned hawk, Cooper's hawk, osprey, northern goshawk, and red-shouldered hawk. Each species has specific habitat requirements when nesting. The birds may occupy territory seasonally, or return to the same location yearly. During breeding season, usually between April and July, human activity near nests may disrupt breeding or cause the adult birds to abandon their young. The Bureau of Wildlife staff will be consulted and management activities will be adapted to minimize disturbance to birds that are known to be nesting on the Unit. Adaptive management strategies and actions will be developed and applied on a case by case basis. These strategies may place restrictions on timber harvesting and gas exploration activities and could include: setbacks, no-cut or no disturbance zones, or seasonal restrictions. For recreational uses, actions may include trail closures or rerouting of trails (Crocall 2013).

Bureau of Wildlife staff have reported an increase in bald eagle nesting within the region and recommend a 660' buffer to restrict management activities between 1/1-9/30. Any new nests will be reported to BOW staff to avoid impacts to these federally protected species.

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

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

Action 1.4.5.2 Maintain a minimum of 575 acres of mixed hardwood-conifer forest type consisting of white pine, hemlock, red pine, Scotch pine and hardwood species for nesting habitat for northern goshawks.

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

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

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

Conifer trees are an important habitat feature used by a wide variety of wildlife species for shelter and cover. Populations of red crossbills have been identified within the breeding blocks in and around the Unit. These birds are adapted to feed on conifer seeds and regional populations are linked to the extensive conifer plantation located on State forests.

Action 1.4.8 Maintain apple trees on 9 acres.
Apple trees provide food for many species and are a legacy of 19th century settlement.

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

Forests are dynamic systems and periodic monitoring is necessary to document change. Monitoring of forests, wetlands, rare species, forest health and other conditions allow forestry staff to develop the necessary management strategies for adapting to change.

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

Action 1.5.2 Monitor Rare Species and Species of Special Concern through efforts by the New York Natural Heritage Program and develop an action plan as appropriate.

Action 1.5.3 Participate in the implementation of systemic statewide early detection program(s) to minimize amount of time between infestation and detection. Conduct annual

insect and disease aerial surveys. As resources are available the Division will continue to conduct the aerial surveys for the entire state including this Unit.

Action 1.5.4 Monitor invasive species populations and encourage other partners or outside agencies to conduct periodic invasive species assessments of the Unit.

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

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

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

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

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

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

Silviculture is a systematic approach for controlling the structure and composition of forest stands. It defines treatments necessary for establishing regeneration, maintaining productivity and capturing environmental and social befits. Silviculture will be applied to advance forest health, produce timber and maintain a diversity of ecological conditions. Both even and **uneven aged silviculture** will be applied to stands representing 49% of the Unit's land area.

Even-aged silviculture is a system for maintaining and regenerating forest stands in which the trees are approximately the same age. Conifer plantations and regrown natural forests are typical even aged stands on the Unit. Intermediate harvests such as **thinning** will favor the retention of robust **crop trees** to support stand regeneration. Application of **even aged silviculture** will focus on conversion of red pine plantation to native hardwood species, regeneration of Norway spruce and tending of native hardwood stands. **Rotation** under even aged silviculture is the time

between stand establishment and final harvest. It occurs when mature trees are harvested to regenerate a new stand. Clearcutting and seed tree methods for stand regeneration will be sequenced to optimize diversity of forest conditions across the Unit.

Uneven-aged silviculture is a system for maintaining and regenerating forest stands with at least three distinct age classes. **Stand structure** is controlled through the application of the **selection system**. This system favors shade tolerant species such as sugar maple, hemlock and beech and creates a stratified stand structure of different tree heights. Regeneration and control of uneven age stand structure will be accomplished using the single tree selection and **group selection** methods with periodic treatments favoring the retention of the most vigorous shade tolerant species in all age classes.

In addition to retaining dead and dying trees for snags, cavities and future CWD, additional trees with unique characteristics will be retained as **biological legacy** trees to comply with DEC Program Policy, ONR-DLF-2 / Retention on State Forests.

Action 1.6.1 Conduct silvicultural treatments on 2,156 acres over next 20 years. Most treatments will be accomplished through the state forest sales program with harvesting operations conducted under contractual agreements between the Department and private timber buyers.

Action 1.6.1.1 Treat a total of 1,346 acres using even aged silviculture over the next 20 years.

Action 1.6.1.1.1 Convert 228 acres of red pine plantations to native hardwood species. Red pine stands of low vigor with adequate advanced regeneration will be clearcut. Treatments will be conducted during the dormant season to increase survival of understory trees. The young forest condition emerging following conversion will temporarily provide early successional habitat.

Action 1.6.1.1.2 Thin 170 acres of red pine, white pine and Scotch pine plantations to improve growing conditions of residual trees. In select stands, pine thinnings will be combined with patch conversion to hardwood species and **release** of understory shrubs.

Action 1.6.1.1.3 Thin 607 acres of Norway spruce to improve growing conditions of residual trees.

Mechanized thinning in Norway spruce plantation

Action 1.6.1.1.4 Thin 161 acres of mixed Norway spruce and pine plantations. In select stands, thinning will be combined with patch conversion to hardwood species, shelterwood treatments, and application of the variable intensity harvest system.

Action 1.6.1.1.5 Treat 180 acres of natural forest to perpetuate the northern hardwood forest type. Treatments will include improvement thinning, and pre-commercial **timber stand improvements**.

Action 1.6.1.2 Treat a total of 810 acres using uneven-aged silviculture over the next 20 years.

Action 1.6.1.2.1 Treat 719 acres of natural forest to perpetuate the northern hardwood forest type. Treatments will include improvement thinning, single tree selection and a combination of single tree selection and group selection.

Action 1.6.1.2.2 Treat 91 acres of natural forest to perpetuate the northern hardwood-hemlock forest type. Treatments will include single tree selection and a combination of single tree and group selection.

Appendix X is an annual summary of acres scheduled for treatment on the Unit over next twenty years.

Action 1.6.2 Maintain 2,233 acres (48%) of the Unit in stands where planted or native conifer species represent at least 10% of the basal area. Native conifers, including hemlock, northern white cedar, balsam fir, tamarack and white pine, will be maintained on 911 acres or 23% of the Unit. Plantation conifers including Norway spruce, larch, red pine, white pine, Scotch pine and white spruce will be maintained on 1,322 acres or 29% of the Unit. All management of plantations will comply with the Department program policy ONR-DLF-1 / Plantation Management on State Forests (2011). More information on the Plantation Management policy can be found at http://www.dec.ny.gov/docs/lands_forests_pdf/policysfplantation.pdf .

Action 1.6.3 Maintain and enhance forest conditions to promote the benefits of the Linkage Zone between the Chenango Highlands and Rome Sand Plains/ Oneida Lake Matrix Block**s** by implementing the following practices:

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

Objective 1.7 Establish adequate regeneration following stand treatments.

Successful regeneration of native trees under current deer densities is the greatest challenge in State Forest management. Deer browsing has resulted in insufficient levels of stocking following regeneration treatments. The proliferation of striped maple, hophornbeam, beech and other species that are not browsed by deer has exacerbated the problem by competing with desirable regeneration. Establishing adequate stocking of regeneration requires reducing the number of deer, increasing the amount of sunlight reaching the forest floor and eliminating completion from understory plants.

Action 1.7.1 Reduce the number of deer on the Unit by continuing to support big game hunting on the Unit and promoting the take of antlerless deer.

Action 1.7.2 Use group selection to increase sunlight in stands designated for uneven-aged management.

Action 1.7.3 Eliminate vegetation that competes with desirable regeneration through the application of herbicide, hand cutting and uprooting.

Action 1.7.4 Evaluate stocking levels 5-10 years after silvicultural treatments and adapt management to establish adequate regeneration.

Action 1.7.5 Stay informed about new research on deer management and forest regeneration.

Table 16. Present and Future Cover Types

Vegetation Type	Current Acres	% of Unit	Objective Acres	% of Unit
Northern Hardwoods	1467	32	1824	39
N. Hardwoods & Natural Conifer	902	20	902	20
N. Hardwoods & Plantation Conifer	1692	36	1322	28
Grass, Brush, Apple	203	4	216	5
Ponds and Open or Alder Wetlands	336	7	336	7
Shale pits	1	<1	1	<1
Roads	46	1	46	1
Total	**4,646**	**100**	**4,646**	**100**

GOAL 2: Protect and Maintain State Forest Assets and Visual Resources of the Unit

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

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

Historic and archaeological sites located on the Unit, as well as undiscovered sites, are protected by provisions of the New York State Historic Preservation Act (SHPA-Article 14 PRHPL), Article 9 of the Environmental Conservation Law, 6NYCRR Section 190.8 (g) and Section 233 of Education Law. Unauthorized excavation and removal of materials from any of these sites is prohibited by Article 9 of Environmental Conservation Law and Section 233 of Education Law. In some cases, additional protection may be afforded these resources by the federal Archaeological Resources Protection Act (ARPA). *(SPSFM pg141)*

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

Action 2.1.1 Protect all cultural resource sites, including new discoveries from disturbances associated with timber harvesting and other management activities. Recent forest inventory identified 19 sites with historic features including cellarholes, foundations and stone structures associated with the West Shore Railroad. Stone walls will not be dismantled, while efforts will be made to accommodate access using existing gateways. Hedgerows, shade and fruit trees, and other ornamental plants associated with cultural sites will not be harvested.

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

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

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

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

Action 2.2.2 Maintain 2.5 miles of Public Forest Access Roads (PFAR) and 0.2 miles of administrative roads and all associated road culverts.

Road shoulders are mowed annually with periodic grading, resurfacing and culvert replacement.

Public Forest Access Road, Morrow Mountain State Forest

Action 2.2.3 Maintain 1 shale pits to provide material for the maintenance of Department facilities.

The DeRuyter State Forest shale pit will provide shale necessary for truck trail maintenance. Shale extracted from this pit will be used exclusively for State land construction projects and will not available for commercial use. The mine is operated under the regulatory threshold as less than 750 cubic yards or 1,000 tons of material is removed within any 12-successive calendar months. Therefore, the site is not subject to jurisdiction under the Mined Land Reclamation Law and there is no requirement for a New York State mining permit. A mined land use plan and permit will be required for excavations greater than the regulatory threshold.

Action 2.2.4 Maintain fourteen parking areas to provide safe access into the Unit. Existing parking areas requiring periodic resurfacing, grading and sign replacement. See Table 8 for a list of parking areas on the Unit.

Action 2.2.5 Maintain six gates on the Unit. Gates have been installed to restrict unauthorized vehicle access while at the same time allowing access for management activities and permitted uses. See Table 9 for list of gates on the Unit.

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

Maintaining visible boundary lines is necessary for resource management and protection.

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

Table 17. Schedule of Boundary Line Maintenance on the Unit

Year	Forest	Miles
2022-23	DeRuyter	9.52
2022-23	Morrow Mountain	15.21
2019-20	Stoney Pond	11.96
2019-20	Nelson Swamp	18.55
Totals		**55.24**

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

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

The visual quality of the state forest landscape will be considered when planning management actions near roads, trails and recreation sites. For additional information on the management of visual resources, see the *SPSFM, 2011, pg127*.

Action 2.4.1 Manage the visual corridors along approximately 8.6 miles of town roads and state highways, 2.7 miles of Public Forest Access Road corridors and 35.4 miles of trails for visual qualities associated with forest landscapes.

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

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

Action 2.4.4 Use materials compatible with the rustic character of State Forests for construction projects.

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

GOAL 3: Provide Forest Based Recreational Opportunities for People of All Ages and Abilities.

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

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

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

Objective 3.1 Provide recreational opportunities compatible with the resources on the Unit and maintain recreational facilities to ensure ecosystem sustainability.

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

Action 3.1.1 Provide opportunities to access the Tioughnioga Unit on 28.2 miles of existing recreational trails. Trails will be maintained to allow for safe passage, free of obstructions including deadfalls, interfering vegetation and hazardous trees. Trails will also be maintained to restrict soil erosion, sedimentation and other environmental impacts that diminish the health and productivity of the Unit's natural resources.

Action 3.1.1.1 Maintain 5.3 miles of snowmobile trails on the Unit through Volunteer Stewardship Agreements (VSA) with Snow Valley Riders and Moonlight Riders snowmobile clubs.

Action 3.1.1.2 Maintain 2.5 miles of hiking trails on the Unit through VSAs with the Finger Lakes Trail Conference and Central New York Chapter of the North Country Trail Association.

Action 3.1.1.3 Maintain the 13-mile Stoney Pond Ski Trail System with DEC Operations staff and a VSA with local volunteers.

Action 3.1.1.4Maintain a 4.3-mile horse trail on Stoney Pond State Forest and a 1.5 mile horse carriage trail on DeRuyter State Forest with DEC Operations staff.

Action 3.1.2 Encourage additional recreation groups or individuals to enroll in Volunteer Stewardship Agreements. VSAs provide the opportunity for people to participate in state land management and to advance the goals and objectives set forth in this plan.

Action 3.1.3 Maintain Stoney Pond Camping Area and Day Use Area with DEC Operations staff including periodic mowing of lawn areas, removal of hazardous trees, and litter removal. Significant expansion and improvements have been made to the Camping Area since release of the original Tioughnioga unit management plan in 2007. Campers will continue to obtain a no fee camping permit to reserve individual sites and a private service will continue to provide two portable sanitary units within the Camping Area between May 1 and September 30.

Action 3.1.4 Redesign Stoney Pond Boat Launch to enhance accessibility, accommodate temporary vehicle/ trailer use and improve drainage.

Action 3.1.5 Maintain Stoney Pond and Little Stoney Pond through annual dam mowing and debris removal from drop boxes.

Action 3.1.6 Continue to allow dispersed recreation activities such as camping, hunting, trapping, hiking, fishing and nature observation.

Action 3.1.7 Maintain recreational facilities to provide a safe user experience through annual inspections and removal of hazardous. Temporarily close recreation trails that pass through active timber harvesting areas.

Action 3.1.8 Prohibit public ATV use on the Unit except on a 0.9-mile trail designated under the Motor Access Program for People with Disabilities MAPPWD.

Action 3.1.9 Reconstruct the lean-to on DeRuyter State Forest.

3.1. 10 Construct a 0.3 mile universal access trail within Nelson Swamp Unique Area The proposed trail is one segment of a 1.2 mile “loop trail” that will utilize Nelson Town land and recently installed sidewalks within the hamlet of Nelson. The 0.3 mile NSUA segment will

include an elevated boardwalk through open wetland and a 25 foot bridge to cross the Chittenango Creek.

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

Application of the Americans with Disabilities Act (ADA)

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

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

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

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

Action 3.2.1 Maintain a 0.9 mile ATV Access (MAPPWD) Route for people with qualifying disabilities on Morrow Mountain State Forest.

Action 3.2.2 Maintain the 0.7 mile Nelson Interpretive Trail. This site offers universal access though a diversity of habitats including meadow, cedar swamp and the Chittenango Creek.

Action 3.2.2.1 Resurface trail tread with crushed and compacted stone to maintain universal accessibility.

Action 3.2.2.2 Replace interpretive signage.

Action 3.2.2.3 Repair viewing platform, two benches and one kiosk as needed.

Action 3.2.3 Maintain three accessible campsites at Stoney Pond Camping Area and continue to reserve these sites for people with disabilities when issuing campsite permits.

Action 3.2.4 Redesign Stoney Pond boat launch to provide universal access.

Objective 3.3 Provide and enhance information on the Unit.

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

Action 3.3.1 Design and install two new kiosks to include a State Forest map and information on the history, ecology and management of the individual property:

Table 18. Proposed Kiosk Location on the Unit

Forest	Stand	Location
DeRuyter State Forest	A-44	Stanton Road/ PFAR
Morrow Mountain State Forest	A-10	Mack Road/ PFAR

Action 3.3.2 Maintain all signs communicating information to the public on the Unit including:

- Identification signs for two PFARs totaling 6.0 miles.
- Four existing State forest identification signs
- Four (two existing and two proposed) State forest kiosks
- Fourteen designated parking area signs

Action 3.3.3 Maintain four State Forest identification signs, one located on each of the four properties on the Unit. For a list of identification signs, see Table 7.

Goal 4: Provide Economic Benefits to the People of the State

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

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

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

New York's public and private forests contribute over $9.9 billion annually to the State's economy through the forest products industry and an additional $8.2 billion in forest-based recreation and tourism. Over 43,000 people are directly employed in forest-based manufacturing industries and over 31,000 people are employed in forest recreation based businesses. (North East State Foresters Association, 2013).

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

Action 4.1.1 Treat an average of approximately 108 acres each year through timber sales.
Timber sold is harvested and manufactured by private firms which employ forest workers, truck drivers, and employees of wood products manufacturing establishments. In 2016, $6.2 million was generated in direct sales from timber harvest on 6,093 acres of New York State Forest. Approximately 27% of this revenue was generated from State Forests in Chenango and Madison Counties.

Hardwood lumber production, Smyrna, NY

Action 4.1.2 Provide suitable locations for maple sugar tapping. Sections of the following stands capable of supporting a gravity-fed collection system are designated for maple sugar tapping.

Table 19. Propose Maple Sugar Tap Locations on the Unit

Forest	Stand
Stoney Pond SF	A-12
Stoney Pond SF	A-26

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

Action 4.2.1 Provide annual tax payments to the Towns of Cazenovia, DeRuyter, Georgetown and Nelson and the Cazenovia, DeRuyter, Morrisville/Eaton and Otselic Valley School Districts.

In 2015, New York State paid $91,950 in combined town and school district taxes for State forests on the Unit. See Appendix IX for additional information on real property taxes.

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

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

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

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

Action 4.3.2 Restrict surface mining.

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

Objective 4.4 Provide support to local communities through forest-based tourism.
New York forest-based recreations and tourism businesses employ about 32,000 people and support a payroll of $965 million annually (North East State Foresters Association, 2013). Recreation activities enjoyed on the Unit, such as hunting, snowmobiling, and hiking contribute to the local economy through the participant’s purchase of supplies, food and lodging.

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

Action 4.4.2 Conduct public programs. Engaging citizens, conservation organizations and students in a dialogue about forest history, ecology and management provides the forum necessary for advancing cooperative management. Public programs include guided walks, lectures and collaborative projects to improve trails or other state land facilities.

Public program at Nelson Swamp

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

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

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

IV. Management Action Tables

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.

Forest Type Code

Forest Type Codes	Definition
APP	Apple
BR	Brush, woody shrub species
CEDAR	Northern White Cedar
HE	Hemlock
HE WP	Hemlock & White Pine
LA NS	Larch & Norway Spruce
NH	Northern Hardwood
NH HE	Northern Hardwood & Hemlock
NH NS	Northern Hardwood & Norway Spruce
NH RP	Northern Hardwood & Red Pine
NH WP	Northern Hardwood & White Pine
NS	Norway spruce
NS NH	Norway Spruce & Northern Hardwood
OF	Old Field, grass areas mowed for habitat
PIT	Shale or gravel pit
POND	Open water bodies, including beaver ponds and constructed ponds
ROAD	Road
RP	Red pine
RP NH	Red Pine & Northern Hardwood
RP NS	Red Pine & Norway Spruce
SP	Scotch Pine
SP NS	Scotch Pine Norway Spruce
WET-ALDER	Wet areas dominated by alder or other wetland shrub species
WET-OPEN	Wet areas dominated by non-woody vegetation
WP	White pine
WP HE	White Pine & Hemlock
WP NH	White Pine & Northern Hardwood
WS	White Spruce
WS NH	White Spruce & Northern Hardwood

OBJECTIVE TYPE CODES

Forest Type Codes	Definition
APP	Apple
BR	Brush, woody shrub species
CEDAR	Northern White Cedar
HE	Hemlock
HE WP	Hemlock & White Pine
NH	Northern hardwoods
NH NS	Northern Hardwood & Norway Spruce
NH RP	Northern Hardwood & Red Pine
NH SP	Northern Hardwood & Scotch Pine
NH WP	Northern Hardwood & White Pine
NH WS	Northern Hardwood & White Spruce
NH	Northern Hardwood
NS	Norway spruce
NS NH	Norway Spruce & Northern Hardwood
OF	Old Field, grass areas mowed for habitat
PIT	Shale or gravel pit
POND	Open water bodies, including beaver ponds and constructed ponds
ROAD	Road
RP	Red pine
RP BR	Red Pine & Brush
WET-ALDER	Wet areas dominated by alder or other wetland shrub species
WET-OPEN	Wet areas dominated by non-woody vegetation
WP	White pine
WP HE	White Pine & Hemlock
WP NH	White Pine & Northern Hardwood
WS NH	White Spruce & Northern Hardwood

MANAGEMENT DIRECTION CODES

Management Direction Code	Definition
APP	Apple trees.
BR	Brush: Shrub species other than apple.
E	Even-aged: 100-160 year rotation for natural stands; up to 140 years for plantations.
EVR	Even-aged, Variable Retention: Principles of even-aged silviculture applied while retaining individuals or groups of trees in the harvested stand for the next rotation.
NA	Natural Area: Forest area managed to develop and sustain late successional conditions.

Management Direction Code	Definition
OF	Old Field: Grassy or herbaceous areas mowed for habitat.
PIT	Shale Pit
ROW	Utility Right-Of-Way
U	Uneven-aged: Stands managed to develop multiple age classes with a 20 year **cutting interval**.
ZA	Protection – Inaccessible: Stands which are not environmentally or economically unfeasible to access.
ZF	Protection – Recreation: Stands excluded from harvesting to protect recreation assets or facilities.
ZH	Protection – Historic: Stands excluded from harvesting to protect historic or cultural resources.
ZR	Protection - Riparian: Stands excluded from harvesting to protect stream banks and other zones near water features.
ZS	Protection – Steep: Stands excluded from harvesting to protect steep slopes.
ZV	Protection – Visual: Stands excluded from harvesting to protect visual resources.
ZW	Protection – Wetlands: Stands excluded from harvesting to protect wetlands.

Treatment Codes

Treatment Code	Definition
CTR	Crop tree release
FW	Firewood thinning
GS	Group selection: removal of trees in groups up to 2 acres in size to regenerate a mix of species with various **shade tolerance**s.
H	Apply herbicide to control interfering vegetation or invasive species
IN	Improvement thinning, removing mostly low grade timber with some sawtimber
M	Mow to maintain grass or prevent succession to forest cover
PU	Spruce harvest - pulp or sawtimber
R-Tires	Remove Tire Dump
RA	Release apple trees
RC	Convert red pine plantation to northern hardwood species
RE	Remove over-story trees to maintain grass or brush types.
RT	Pine or larch thinning
STS	Single tree selection: individual trees across all size classes are removed to uniformly thin the stand. This system encourages the development of shade tolerant species.
TAP	Tap sugar maple trees for sap production.
TSI	Timber stand improvement: A non-commercial thinning to improve stand quality.

Treatment Code	Definition
VIH	Variable intensity harvest: thinning with intentionally varied marking rules including removal in groups or patches, thinning and unthinned areas.

Table of Forest Stand Management Actions

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT DIR
MADISON 09	A	1.00	27.1	WS NH	Plantation	S-S	NH		U
MADISON 09	A	2.00	15.7	NH	Natural Forest	PT	NH	IN	U
MADISON 09	A	3.00	3.3	NH	Natural Forest	SST	NH		ZW
MADISON 09	A	4.10	29.7	RP NS	Plantation	SST	NH NS	PU RT	E
MADISON 09	A	4.20	31.5	SP NS	Plantation	SST	NH NS	PU RT	E
MADISON 09	A	5.00	6.6	NH	Natural Forest	PT	NH	STS	E
MADISON 09	A	6.00	4.0	RP	Plantation	SST	NH NS	PU RT	E
MADISON 09	A	7.00	5.9	NH	Natural Forest	PT	NH	STS	U
MADISON 09	A	8.00	8.1	NH	Natural Forest	PT	NH	STS	U
MADISON 09	A	9.00	7.1	SP	Plantation	SST	NH		ZA
MADISON 09	A	10.00	13.4	NH	Natural Forest	PT	NH		ZA
MADISON 09	A	11.00	1.3	SP	Plantation	SST	NH		ZA
MADISON 09	A	12.00	3.3	SP	Plantation	SST	NH		ZA
MADISON 09	A	13.00	33.1	NH HE	Natural Forest	SST	NH HE	STS	U
MADISON 09	A	14.00	24.9	RP NS	Plantation	SST	NH NS	PU RT	E ZH
MADISON 09	A	15.00	47.1	RP NS	Plantation	SST	NH NS	PU RT RC	EVR
MADISON 09	A	16.00	1.3	PIT	PIT	Null	PIT		PIT
MADISON 09	A	17.00	2.8	NH	Natural Forest	SST	NH	CTR	E
MADISON 09	A	18.00	18.2	NH	Natural Forest	SST	NH	STS	U
MADISON 09	A	19.00	48.3	NH	Natural Forest	PT	NH	STS GS	U
MADISON 09	A	20.00	30.1	NH HE	Plantation	PT	NH HE		ZR
MADISON 09	A	21.00	36.4	LA NS	Plantation	SST	NH NS	PU	E
MADISON 09	A	22.00	4.2	NH	Natural Forest	PT	NH		E
MADISON 09	A	23.00	12.8	NH	Natural Forest	PT	NH	IN	E
MADISON 09	A	24.00	3.1	BR	Brushy Fields	Null	BR	RE	BR
MADISON 09	A	25.00	1.2	BR	Plantation	PT	BR	RE	BR

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT DIR
MADISON 09	A	26.00	102.4	NS	Plantation	SST	NS NH	PU	E
MADISON 09	A	27.00	1.7	BR	Brushy Fields	Null	BR	RE	BR
MADISON 09	A	28.00	6.6	BR	Brushy Fields	Null	BR	RE	BR
MADISON 09	A	29.00	7.5	NS	Plantation	SST	NS NH	PU	E
MADISON 09	A	30.00	1.9	NH	Natural Forest	PT	NH		ZR
MADISON 09	A	31.00	5.3	RP	Plantation	PT	NH RP		ZA
MADISON 09	A	32.00	11.2	RP	Plantation	SST	NH RP		ZA
MADISON 09	A	33.00	9.8	RP	Plantation	SST	NH RP		ZA
MADISON 09	A	34.00	7.9	NH HE	Natural Forest	PT	NH HE		ZR
MADISON 09	A	35.00	2.0	NH HE	Natural Forest	PT	NH HE		ZR
MADISON 09	A	36.00	16.9	NH HE	Natural Forest	PT	NH HE	STS	U
MADISON 09	A	37.00	1.0	BR	Brushy Fields	Null	BR	RE	BR
MADISON 09	A	38.00	6.5	RP	Plantation	PT	NH RP		ZA
MADISON 09	A	39.00	11.9	NH	Natural Forest	S-S	NH		ZA
MADISON 09	A	40.00	14.9	RP	Plantation	PT	NH RP		ZA
MADISON 09	A	41.00	7.2	NH	Natural Forest	PT	NH		ZA
MADISON 09	A	42.00	11.6	RP NS	Plantation	SST	NH NS	RC	E
MADISON 09	A	43.00	2.2	NH	Wetlands (Open)	Null	NH		ZR ZH
MADISON 09	A	44.00	3.5	RP	Plantation	SST	NH	RC	E
MADISON 09	A	45.00	9.8	NS	Plantation	PT	NS NH	PU	E
MADISON 09	A	46.00	9.1	NH HE	Natural Forest	PT	NH HE		NA
MADISON 09	A	47.00	10.9	NH	Natural Forest	PT	NH	STS	U
MADISON 09	A	48.00	3.3	NH	Natural Forest	PT	NH	IN	E
MADISON 09	A	49.00	9.6	RP	Plantation	SST	NH	RC	E
MADISON 09	A	50.00	15.2	RP NS	Plantation	SST	NH NS		ZS
MADISON 09	A	51.00	5.5	NS NH	Plantation	PT	NH NS		ZR
MADISON 09	A	52.00	34.6	NS NH	Plantation	PT	NS NH		E
MADISON 09	A	53.00	3.3	NS	Plantation	PT	NH	PU	E
MADISON 09	A	54.00	27.3	NH	Natural Forest	SST	NH		ZS

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT DIR
MADISON 09	A	55.00	26.3	NS	Plantation	PT	NS		ZS
MADISON 09	A	56.00	11.8	NS	Plantation	PT	NH NS	PU	E
MADISON 09	A	57.00	3.2	NS	Plantation	SST	NH NS	PU	E
MADISON 09	A	58.00	2.6	NH	Natural Forest	PT	NH		ZR
MADISON 09	A	59.00	2.3	NS	Plantation	SST	NH NS	PU	E
MADISON 09	A	60.00	29.8	NH HE	Natural Forest	SST	NH HE	STS GS	U
MADISON 09	A	61.00	8.1	NH	Natural Forest	PT	NH		NA
MADISON 09	A	62.00	10.5	NH	Natural Forest	PT	NH		NA
MADISON 09	A	63.00	3.6	BR	Natural Forest	S-S	BR	RE	BR
MADISON 09	A	64.00	5.2	NS	Plantation	PT	NH NS		ZR ZH
MADISON 09	A	65.10	23.9	RP	Plantation	PT	NH	RT	EVR
MADISON 09	A	65.20	15.2	RP NS	Plantation	SST	NH NS	RC	E
MADISON 09	A	66.00	7.2	NH	Natural Forest	SST	NH	STS	U
MADISON 09	A	67.00	3.1	NS	Plantation	PT	NH	PU	E
MADISON 09	A	68.00	1.5	NS	Plantation	PT	NH	PU	E
MADISON 09	A	69.00	1.4	NS NH	Natural Forest	S-S	NH		NH
MADISON 09	A	70.00	4.9	NH NS	Natural Forest	PT	NH NS		ZR
MADISON 09	A	71.00	7.3	NH	Natural Forest	S-S	NH		ZR ZW ZH
MADISON 09	A	72.00	7.2	RP	Plantation	PT	NH RP		ZA
MADISON 09	A	73.00	2.0	NS	Plantation	PT	NH NS		ZR
MADISON 10	A	1.00	3.2	NH HE	Natural Forest	SST	NH HE		ZA
MADISON 10	A	2.00	6.1	NH HE	Natural Forest	SST	NH HE		ZR
MADISON 10	A	3.00	9.1	NH HE	Natural Forest	PT	NH HE		ZA
MADISON 10	A	4.00	16.0	NH	Natural Forest	PT	NH	STS	U
MADISON 10	A	5.00	1.2	BR	Brushy Fields	Null	BR		BR
MADISON 10	A	6.00	6.0	NH	Natural Forest	PT	NH	TSI	E
MADISON 10	A	7.00	6.8	NS	Plantation	SST	NH NS		E
MADISON 10	A	8.00	6.8	NS	Plantation	SST	NH NS		ZW ZR

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT DIR
MADISON 10	A	9.00	0.5	POND	Pond	Null	POND		ZW
MADISON 10	A	10.00	1.2	NS	Plantation	MST	NS NH		ZA ZH
MADISON 10	A	11.00	3.1	RP	Plantation	SST	NH	SW	E
MADISON 10	A	12.10	9.1	NS	Plantation	SST	NS NH		ZR ZH
MADISON 10	A	12.20	11.6	NS	Plantation	MST	NH NS	VIH	E
MADISON 10	A	13.00	2.7	RP	Plantation	SST	NH	SW	E
MADISON 10	A	14.00	1.9	NH	Natural Forest	SST	NH		ZH
MADISON 10	A	15.00	10.2	NH	Natural Forest	PT	NH		ZR
MADISON 10	A	16.00	4.6	NH	Natural Forest	SST	NH	STS H	U
MADISON 10	A	17.00	3.7	NH	Natural Forest	SST	NH	STS H	U
MADISON 10	A	18.00	9.6	NH	Natural Forest	PT	NH	STS H	U
MADISON 10	A	19.00	10.9	NH HE	Natural Forest	PT	NH HE		ZR
MADISON 10	A	20.00	9.3	NH	Natural Forest	SST	NH	STS	U
MADISON 10	A	21.00	7.9	NH	Natural Forest	PT	NH	STS H	U
MADISON 10	A	22.00	3.1	NH HE	Natural Forest	PT	NH HE		ZR
MADISON 10	A	23.00	5.6	NH	Natural Forest	SST	NH		ZR
MADISON 10	A	24.00	33.8	NH	Natural Forest	PT	NH	IN	U
MADISON 10	A	25.00	4.0	NH	Natural Forest	SST	NH	IN	U
MADISON 10	A	26.00	14.3	NH	Natural Forest	PT	NH	GS H	U
MADISON 10	A	27.00	12.8	NH	Natural Forest	MST	NH	STS H	U
MADISON 10	A	28.00	20.5	NS	Plantation	MST	NS NH	PU	E
MADISON 10	A	29.00	11.8	NS	Plantation	MST	NS NH	PU	E
MADISON 10	A	30.00	1.9	NH	Forested Wetlands	PT	NH		ZW
MADISON 10	A	31.00	11.3	NH HE	Natural Forest	LST	NH HE		ZS
MADISON 10	A	32.00	38.2	NH	Natural Forest	SST	NH	STS	U
MADISON 10	A	33.00	38.1	NS	Plantation	SST	NH	VIH	E
MADISON 10	A	34.00	10.1	NS	Plantation	SST	NS NH	PU	E
MADISON 10	A	35.00	5.9	WET A	Wetlands (Alder)	Null	WET A		ZW
MADISON 10	A	36.00	4.6	RP NS	Plantation	SST	NH	PU	E

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT DIR
MADISON 10	A	37.00	16.7	NH	Forested Wetlands	SST	NH		ZR
MADISON 10	A	38.00	10.6	RP	Plantation	SST	NH	RC	E
MADISON 10	A	39.00	19.9	NS	Plantation	MST	NH NS	PU	E
MADISON 10	A	40.10	45.7	NH	Natural Forest	PT	NH	STS GS H	U
MADISON 10	A	40.20	20.3	NH	Natural Forest	PT	NH		U
MADISON 10	A	41.00	4.1	NH	Natural Forest	SST	NH	STS H	U
MADISON 10	A	42.00	0.8	NS	Plantation	SST	NH NS		E
MADISON 10	A	43.00	2.8	RP	Plantation	SST	NH		E
MADISON 10	A	44.00	4.4	NH	Natural Forest	SST	NH		ZR
MADISON 10	A	45.00	7.6	NH HE	Natural Forest	SST	NH HE		ZR
MADISON 10	A	46.00	2.1	NH	Natural Forest	PT	NH		NA
MADISON 10	A	47.00	2.0	NH HE	Natural Forest	PT	NH HE		NA
MADISON 10	A	48.00	24.8	NH HE	Natural Forest	PT	NH HE		NA
MADISON 10	A	49.00	2.0	HE	Natural Forest	PT	HE		NA
MADISON 10	A	50.00	28.7	NH HE	Natural Forest	PT	NH HE		NA
MADISON 10	A	51.00	4.9	NH HE	Natural Forest	PT	NH HE		ZS
MADISON 10	A	52.00	19.4	NH	Natural Forest	PT	NH	IN	E
MADISON 10	A	53.00	12.5	BR	Brushy Fields	Null	BR	RE	BR ZH
MADISON 10	A	54.00	0.8	RP	Plantation	PT	NH		E
MADISON 10	A	55.00	15.7	RP	Plantation	SST	NH		E
MADISON 10	A	56.00	16.5	NH	Natural Forest	MST	NH	STS	U
MADISON 10	A	57.00	6.4	NS	Plantation	SST	NS NH	VIH	E
MADISON 10	A	58.00	13.8	RP NS	Plantation	SST	NH NS	RC	E ZH
MADISON 10	A	59.00	2.8	NH	Natural Forest	PT	NH		ZW
MADISON 10	B	1.00	1.9	NH	Natural Forest	SST	NH	STS	U
MADISON 10	B	2.00	20.9	NH	Natural Forest	PT	NH	STS	U
MADISON 10	B	3.00	21.8	RP	Plantation	SST	NH	RC	E
MADISON 10	B	4.00	2.1	NS	Plantation	SST	NS		E
MADISON 10	B	5.00	1.3	NH HE	Natural Forest	SST	NH HE		ZR

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT DIR
MADISON 10	B	6.00	15.2	NH	Natural Forest	SST	NH	STS GS	U
MADISON 10	B	7.00	3.9	NH	Natural Forest	SST	NH		ZA
MADISON 10	B	8.00	36.3	RP	Plantation	SST	NH RP		ZA
MADISON 10	B	9.00	7.2	NH	Natural Forest	SST	NH		ZA
MADISON 10	B	10.00	44.7	NS	Plantation	SST	NS NH	PU	E ZH
MADISON 10	B	11.00	5.1	NH	Natural Forest	SST	NH		E
MADISON 10	B	12.00	15.6	NH	Natural Forest	SST	NH		E
MADISON 10	B	13.00	24.6	NS	Plantation	MST	NS NH	PU	E
MADISON 10	B	14.00	3.5	NH	Natural Forest	SST	NH		E
MADISON 10	B	15.00	68.2	NH	Natural Forest	SST	NH	STS GS	U
MADISON 10	B	16.00	14.7	NH	Natural Forest	S-S	NH		E
MADISON 10	B	17.00	1.2	NH	Natural Forest	MST	NH		ZR
MADISON 10	B	18.00	7.6	NS	Plantation	SST	NS NH	PU	E
MADISON 10	B	19.00	13.9	NH HE	Natural Forest	SST	NH HE		ZR
MADISON 10	B	20.00	21.1	NS	Plantation	SST	NH	PU	E
MADISON 10	B	21.00	22.7	NS	Plantation	SST	NH NS	PU	E
MADISON 10	B	22.00	35.4	NH	Natural Forest	SST	NH	STS GS	U
MADISON 10	B	23.00	6.7	RP	Plantation	SST	NH	RC	E
MADISON 10	B	24.00	30.1	NS	Plantation	SST	NH	PU	E
MADISON 10	B	25.00	25.8	NS	Plantation	PT	NH NS	PU	E ZH
MADISON 10	B	26.00	6.6	NH HE	Natural Forest	SST	NH HE		ZR
MADISON 10	B	27.00	13.0	NH HE	Natural Forest	SST	NH HE		ZA ZS
MADISON 10	B	28.00	3.0	NH HE	Natural Forest	PT	NH HE		ZR ZS
MADISON 10	B	29.00	3.0	NS NH	Plantation	SST	NH		ZR
MADISON 10	B	30.00	3.7	NS	Plantation	SST	NH NS	PU	E
MADISON 10	B	31.00	5.8	WS	Plantation	PT	NH WS		
MADISON 10	B	32.00	33.5	NS	Plantation	MST	NH NS	PU	E
MADISON 10	B	33.00	31.5	NH	Natural Forest	SST	NH	STS GS H	U
MADISON 10	B	34.00	10.3	NS	Plantation	SST	NH NS	PU	E

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT DIR
MADISON 10	B	35.00	8.9	NH	Natural Forest	SST	NH	STS GS	U
MADISON 10	B	36.00	20.1	NH	Natural Forest	SST	NH	STS	E
MADISON 10	B	37.00	0.8	WET A	Wetlands (Alder)	Null	WET A		ZW
MADISON 10	B	38.00	3.7	NH	Natural Forest	SST	NH		ZW
MADISON 10	B	39.00	17.6	NS	Plantation	SST	NH NS	PU	E
MADISON 10	B	40.00	2.6	NH	Natural Forest	MST	NH		ZS
MADISON 10	B	41.00	1.2	OF	Brushy Fields	Null	OF		ZF
MADISON 10	B	42.00	11.2	NH	Natural Forest	SST	NH		ZS
MADISON 13	A	1.00	14.6	NH	Natural Forest	PT	NH		E
MADISON 13	A	3.00	7.6	WS	Plantation	PT	NH		E
MADISON 13	A	4.00	29.0	NH	Natural Forest	SST	NH		NA
MADISON 13	A	5.00	4.8	NH HE	Forested Wetlands	SST	NH HE		ZW
MADISON 13	A	6.00	2.1	WET A	Wetlands (Alder)	Null	WET A		ZW
MADISON 13	A	7.00	8.8	NH	Natural Forest	PT	NH		NA
MADISON 13	A	8.00	72.4	RP	Plantation	PT	NH	RC	E ZH
MADISON 13	A	9.00	11.4	NH RP	Natural Forest	PT	NH		E
MADISON 13	A	10.00	70.6	NS	Plantation	SST	NS NH	PU	E
MADISON 13	A	11.00	41.9	NH	Natural Forest	PT	NH		E ZH
MADISON 13	A	12.00	6.7	NH	Natural Forest	PT	NH	TAP	E
MADISON 13	A	13.00	21.7	WS	Plantation	PT	WS NH		E
MADISON 13	A	14.10	17.0	NH	Natural Forest	SST	NH	IN	E
MADISON 13	A	14.20	2.5	WET A	Wetlands (Alder)	Null	WET A		ZW
MADISON 13	A	15.10	66.7	SP	Plantation	PT	NH SP	RT RE	EVR
MADISON 13	A	15.20	3.4	WET O	Wetlands (Open)	Null	WET O		ZW
MADISON 13	A	15.31	7.6	BR	Wetlands (Alder)	Null	BR	RE	BR
MADISON 13	A	15.32	1.2	NH	Natural Forest	SST	NH		ZV
MADISON 13	A	16.00	14.8	NH	Natural Forest	SST	NH BR	RE	EVR
MADISON 13	A	17.10	4.7	RP	Plantation	PT	BR	RC RE	BR

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT DIR
MADISON 13	A	17.20	3.4	RP	Plantation	PT	BR	RC RE	BR
MADISON 13	A	18.00	5.3	NH	Natural Forest	PT	BR	RE	BR
MADISON 13	A	19.00	1.4	NS	Plantation	PT	NH NS		E
MADISON 13	A	20.00	2.4	BR	Brushy Fields	Null	BR	RE	BR
MADISON 13	A	21.00	6.5	NH HE	Forested Wetlands	PT	NH HE		ZR ZW
MADISON 13	A	22.10	12.8	NH	Forested Wetlands	PT	NH		ZR ZW
MADISON 13	A	22.20	3.2	WET A	Natural Forest	PT	WET A		ZW
MADISON 13	A	23.10	1.8	RP	Plantation	PT	NH		E
MADISON 13	A	23.20	3.4	RP	Forested Wetlands	SST	NH RP		ZW
MADISON 13	A	23.30	68.9	RP	Plantation	PT	RP BR	RT RE	EVR
MADISON 13	A	24.00	6.3	NH	Natural Forest	PT	NH		NH
MADISON 13	A	25.00	2.6	NH	Natural Forest	PT	NH	FW	E
MADISON 13	A	26.00	2.6	NH	Natural Forest	SST	NH	TAP	E
MADISON 13	A	27.00	4.6	NH	Natural Forest	PT	NH		ZW
MADISON 13	A	28.10	26.0	NH	Natural Forest	PT	NH	IN	E ZH
MADISON 13	A	28.20	1.5	NH	Natural Forest	PT	NH		ZW
MADISON 13	A	29.00	3.0	NS	Plantation	SST	NH NS	PU	E
MADISON 13	A	30.10	6.3	RP	Plantation	SST	NH	PU RT	E
MADISON 13	A	30.20	2.5	NH	Natural Forest	SST	NH		ZH
MADISON 13	A	30.30	0.9	NH RP	Natural Forest	PT	NH RP		ZR
MADISON 13	A	30.40	2.7	RP	Plantation	SST	NH	RT	E
MADISON 13	A	31.00	1.8	WP	Plantation	SST	WP	RT	E
MADISON 13	A	32.10	6.9	NH	Natural Forest	PT	NH	FW	E
MADISON 13	A	32.20	4.0	NH	Natural Forest	SST	NH	FW	E
MADISON 13	A	33.00	3.1	NH	Natural Forest	PT	NH	FW	E
MADISON 13	A	34.00	38.4	NS	Plantation	SST	NS NH	PU	E
MADISON 13	A	35.00	2.9	WP	Plantation	SST	WP	RT	E
MADISON 13	A	36.00	3.9	WP	Plantation	SST	WP		ZV
MADISON 13	A	37.00	10.6	RP NH	Plantation	SST	NH	RC	E

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT DIR
MADISON 13	A	38.10	2.0	NH	Natural Forest	PT	NH		E
MADISON 13	A	38.20	4.9	NH	Natural Forest	PT	NH	CTR	E
MADISON 13	A	39.00	12.8	NH	Natural Forest	SST	NH	CTR	E
MADISON 13	A	40.00	20.8	NH	Natural Forest	SST	NH		NA
MADISON 13	B	1.00	14.3	NH	Natural Forest	SST	NH		ZF
MADISON 13	B	3.00	16.4	NH	Natural Forest	SST	NH		ZF
MADISON 13	B	4.00	13.2	RP NH	Plantation	SST	NH RP		ZF
MADISON 13	B	5.00	13.5	RP	Plantation	SST	NH RP		ZF
MADISON 13	B	6.00	9.6	NH HE	Forested Wetlands	PT	NH HE		ZW
MADISON 13	B	7.00	22.9	NH HE	Natural Forest	SST	NH HE		ZW
MADISON 13	B	8.00	10.6	WET O	Wetlands (Open)	Null	WET O		ZW
MADISON 13	B	9.00	11.2	RP	Plantation	SST	NH RP		ZA
MADISON 13	B	10.10	28.7	NH	Natural Forest	SST	NH	STS	U
MADISON 13	B	10.20	7.9	NH HE	Forested Wetlands	SST	NH HE		NA
MADISON 13	B	11.10	4.7	OF	Field	Null	OF	M	OF
MADISON 13	B	11.20	1.4	APP	Natural Forest	PT	APP	RA	APP
MADISON 13	B	11.30	9.0	BR	Natural Forest	PT	BR	RE	BR
MADISON 13	B	12.10	13.1	WET O	Wetlands (Alder)	Null	WET O		ZW
MADISON 13	B	12.20	46.1	WET A	Wetlands (Open)	Null	WET A		ZW
MADISON 13	B	12.30	10.6	NH	Natural Forest	SST	NH		ZW
MADISON 13	B	12.40	2.6	NH	Forested Wetlands	Null	NH		ZW ZR
MADISON 13	B	13.00	11.1	NH HE	Natural Forest	SST	NH HE	STS	U
MADISON 13	B	14.00	2.5	NH	Natural Forest	PT	NH		U
MADISON 13	B	15.00	3.9	OF	Field	Null	OF	M	OF ZH
MADISON 13	B	16.00	1.6	HE	Natural Forest	PT	HE		ZW
MADISON 13	B	17.00	4.8	NH	Natural Forest	PT	NH		E
MADISON 13	B	18.00	8.0	NH	Natural Forest	SST	NH	IN	E
MADISON 13	B	19.00	15.1	NH	Natural Forest	SST	NH	STS GS	U
MADISON 13	B	20.00	19.3	OF	Field	Null	OF	M	OF

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT DIR
MADISON 13	B	22.00	7.0	NH	Natural Forest	PT	NH		NH
MADISON 13	B	23.00	4.2	WP	Plantation	SST	WP		ZF
MADISON 13	B	24.00	6.6	WP	Plantation	SST	WP		ZF
MADISON 13	B	25.00	4.9	WP	Plantation	SST	WP		ZF ZR
MADISON 13	B	26.00	13.2	WP	Plantation	SST	WP		ZF ZH
MADISON 13	B	27.00	1.4	WET O	Brushy Fields	Null	WET O		ZW
MADISON 13	B	28.00	7.1	WP	Plantation	SST	WP		ZF
MADISON 13	B	29.00	10.7	WET A	Wetlands (Alder)	Null	WET A		ZW
MADISON 13	B	30.10	29.0	WP	Plantation	SST	WP		ZF
MADISON 13	B	30.20	12.7	NH	Natural Forest	SST	NH		ZF
MADISON 13	B	30.30	6.8	WP	Plantation	SST	WP		ZR
MADISON 13	B	31.00	3.2	NH HE	Forested Wetlands	SST	NH HE		ZR ZW
MADISON 13	B	32.00	1.6	NH HE	Forested Wetlands	SST	NH HE		ZW
MADISON 13	B	33.00	4.9	POND	Ponds	Null	POND		ZW
MADISON 13	B	34.00	44.2	POND	Ponds	Null	POND		ZW
MADISON 13	B	35.00	4.2	WP	Forested Wetlands	PT	WP		ZF ZW
MADISON 13	B	36.00	28.2	WP	Plantation	SST	WP		ZF
MADISON 13	B	37.00	11.2	WP	Plantation	MST	WP		ZF
MADISON 13	B	38.00	3.6	WP	Plantation	SST	WP		ZF
MADISON 13	B	39.00	3.8	WP	Plantation	SST	WP		ZF
MADISON 13	B	40.00	20.9	WP	Plantation	SST	WP		ZF
MADISON 13	B	41.00	2.7	NH	Natural Forest	PT	NH		ZR
MADISON 13	B	42.00	9.0	NH HE	Forested Wetlands	SST	NH HE		ZR
MADISON 13	B	44.00	58.2	NH	Natural Forest	MST	NH	STS GS	U
MADISON 13	B	45.00	25.0	NH	Natural Forest	MST	NH	STS GS	U
MADISON 13	B	46.00	3.9	NH	Forested Wetlands	PT	NH		ZW
MADISON 13	B	47.00	9.4	NH	Natural Forest	PT	NH	STS	U
MADISON 13	B	48.10	66.2	NH	Natural Forest	SST	NH	STS GS	U
MADISON 13	B	48.20	13.3	NH	Forested Wetlands	SST	NH		ZF ZW

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT DIR
MADISON 13	B	48.30	3.8	NH HE	Forested Wetlands	SST	NH HE		ZF ZW
MADISON 13	B	49.00	13.2	NH	Natural Forest	SST	NH		ZF
MADISON 13	B	51.00	1.7	RP	Plantation	SST	RP	TSI	E
MADISON 13	B	52.00	4.0	NH	Natural Forest	SST	NH		ZR ZH
MADISON 13	B	53.00	10.1	RP	Forested Wetlands	SST	NH RP		ZR
MADISON 13	B	54.00	9.0	NH	Natural Forest	SST	NH		ZF
MADISON 13	B	55.00	1.8	NS	Plantation	PT	NS NH	TSI	E
MADISON 13	B	56.00	2.3	RP	Plantation	PT	NH	TSI	E
MADISON 13	B	57.00	2.0	NS	Plantation	PT	NS NH	TSI	E
MADISON 63	A	1.00	5.1	NH	Natural Forest	PT	NH		NA
MADISON 63	A	2.00	3.4	WET O	Wetlands (Open)	Null	WET O		ZW
MADISON 63	A	3.00	1.1	BR	Brushy Fields	Null	BR		NA
MADISON 63	A	4.00	3.1	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	A	5.00	2.1	NH HE	Natural Forest	MST	NH HE		NA
MADISON 63	A	6.00	4.5	NH HE	Natural Forest	MST	NH HE		NA
MADISON 63	A	7.00	13.7	BR	Wetlands (Alder)	Null	OF	M	OF
MADISON 63	A	8.00	14.4	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	A	9.00	6.5	HE	Forested Wetlands	SST	HE		NA
MADISON 63	A	10.00	5.8	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	A	11.00	6.8	WET A	Wetlands (Alder)	Null	WET A		ZW
MADISON 63	A	12.00	1.2	BR	Wetlands (Alder)	Null	BR		NA
MADISON 63	A	13.00	6.7	WET A	Wetlands (Alder)	Null	WET A		ZW
MADISON 63	A	14.00	5.0	BR	Brushy Fields	Null	BR		NA
MADISON 63	A	15.00	3.8	WET O	Wetlands (Alder)	Null	WET O		ZW
MADISON 63	A	16.00	3.0	WET A	Wetlands (Alder)	Null	WET A		ZW
MADISON 63	A	17.00	1.7	WET A	Wetlands (Alder)	Null	WET A		ZW
MADISON 63	A	18.00	1.0	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	A	19.00	2.6	NH HE	Forested Wetlands	SST	NH HE		NA

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT DIR
MADISON 63	A	20.00	3.9	NH HE	Forested Wetlands	PT	NH HE		NA
MADISON 63	A	21.00	4.4	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	B	1.00	7.4	BR	Wetlands (Alder)	Null	BR	R-TIRES	ZW
MADISON 63	B	2.00	40.7	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	B	3.00	1.9	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	B	4.00	1.2	WET O	Wetlands (Alder)	Null	WET O		ZW
MADISON 63	B	5.00	3.9	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	B	6.00	46.8	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	B	7.00	2.1	WP NH	Natural Forest	LST	WP NH		NA
MADISON 63	B	8.00	1.3	WET O	Wetlands (Alder)	Null	WET O		ZW
MADISON 63	B	9.00	7.5	NH HE	Natural Forest	SST	NH HE		ZR
MADISON 63	B	10.00	7.1	BR	Wetlands (Alder)	Null	BR	RA	BR
MADISON 63	B	11.00	3.0	NH	Natural Forest	SST	NH		NA
MADISON 63	B	12.00	2.1	CEDAR	Natural Forest	SST	CEDAR		NA
MADISON 63	B	13.00	43.9	WET O	Wetlands (Alder)	Null	WET O		ZR ZW
MADISON 63	B	14.00	30.0	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	B	15.00	4.7	NH HE	Forested Wetlands	PT	NH HE		NA
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF
MADISON 63	B	17.00	20.0	WET O	Wetlands (Open)	Null	WET O		ZW
MADISON 63	B	18.00	15.0	BR	Brushy Fields	Null	OF	M	OF
MADISON 63	B	19.00	3.0	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	B	20.00	2.0	BR	Grasslands	Null	BR		ROW
MADISON 63	B	21.00	2.3	BR	Wetlands (Open)	Null	BR		ROW
MADISON 63	B	22.00	42.0	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	B	23.00	23.9	BR	Brushy Fields	Null	OF	M	OF
MADISON 63	B	24.00	1.3	BR	Wetlands (Alder)	Null	BR		ZF
MADISON 63	C	1.00	2.4	BR	Natural Forest	PT	BR		BR
MADISON 63	C	2.00	3.3	OF	Field	Null	OF	M	OF
MADISON 63	C	3.00	2.3	CEDAR	Forested Wetlands	PT	CEDAR		ZW

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT DIR
MADISON 63	C	4.00	9.2	NH HE	Forested Wetlands	SST	NH HE		ZR
MADISON 63	C	5.00	8.0	NH	Natural Forest	SST	NH		NA
MADISON 63	C	6.00	4.3	NH	Forested Wetlands	PT	NH		ZW
MADISON 63	C	7.00	3.7	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	C	8.00	5.3	HE WP	Forested Wetlands	PT	HE WP		ZW
MADISON 63	C	9.00	4.0	NH WP	Forested Wetlands	SST	NH WP		ZW
MADISON 63	C	10.00	0.7	NH	Forested Wetlands	PT	NH		ZW
MADISON 63	C	11.00	4.5	OF	Trail	Null	OF		ZF ZH
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF
MADISON 63	C	13.00	9.7	NH HE	Forested Wetlands	SST	NH HE		NA
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF
MADISON 63	C	15.00	7.7	NH WP	Forested Wetlands	SST	NH WP		ZW
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF
MADISON 63	C	17.00	7.3	NH HE	Forested Wetlands	SST	NH HE		NA
MADISON 63	C	18.00	4.4	WET A	Forested Wetlands	Null	WET A		ZW
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF
MADISON 63	C	20.00	66.3	HE	Forested Wetlands	PT	NH HE		ZW
MADISON 63	C	21.00	13.6	WET O	Wetlands (Open)	Null	WET O		ZW
MADISON 63	C	22.00	2.9	WET A	Wetlands (Alder)	Null	WET A		ZW
MADISON 63	C	23.00	2.1	WET O	Wetlands (Open)	Null	WET O		ZW
MADISON 63	C	24.00	4.3	HE	Forested Wetlands	SST	HE		ZW
MADISON 63	C	25.00	0.4	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	C	26.00	0.7	NH	Natural Forest	SST	NH		NA
MADISON 63	C	27.00	15.2	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	C	28.00	1.1	HE	Forested Wetlands	SST	HE		NA
MADISON 63	C	29.00	2.5	WET O	Wetlands (Open)	Null	WET O		ZW
MADISON 63	C	30.00	22.8	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	C	31.00	11.8	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	C	32.00	0.9	WET A	Wetlands (Alder)	Null	WET A		ZW

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT DIR
MADISON 63	C	33.00	1.4	WET A	Wetlands (Alder)	Null	WET A		ZW
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF
MADISON 63	C	35.00	6.4	NH WP	Forested Wetlands	SST	NH WP		ZF
MADISON 63	C	36.00	8.9	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	C	37.00	37.5	HE	Forested Wetlands	SST	HE		ZW
MADISON 63	C	38.00	24.9	NH	Forested Wetlands	PT	NH		ZR
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF
MADISON 63	C	40.00	2.1	NH	Natural Forest	SST	NH		NA
MADISON 63	C	41.00	1.8	NH	Natural Forest	PT	NH		NA
MADISON 63	C	42.00	2.2	HE	Forested Wetlands	SST	HE		ZW
MADISON 63	C	43.00	5.1	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	C	44.00	1.4	NH	Natural Forest	PT	NH		NA
MADISON 63	C	45.00	2.6	HE	Forested Wetlands	SST	HE		ZW
MADISON 63	C	46.00	40.4	WET A	Wetlands (Alder)	Null	WET A		ZW
MADISON 63	C	47.00	1.3	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	C	48.00	5.7	WET O	Wetlands (Open)	Null	WET O		ZW
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF
MADISON 63	C	50.00	5.4	HE WP	Forested Wetlands	PT	HE WP		ZW
MADISON 63	C	51.00	1.5	WP	Forested Wetlands	SST	WP		ZW
MADISON 63	C	52.00	18.7	WET A	Wetlands (Alder)	Null	WET A		ZW
MADISON 63	C	53.00	9.6	NH	Forested Wetlands	SST	NH		ZW
MADISON 63	C	54.00	14.7	HE WP	Forested Wetlands	SST	HE WP		ZW
MADISON 63	C	55.00	4.0	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	C	56.00	2.3	NH	Natural Forest	PT	NH		NA
MADISON 63	C	57.00	41.5	CEDAR	Forested Wetlands	PT	CEDAR		ZW
MADISON 63	C	58.00	3.4	NH	Natural Forest	SST	NH		NA
MADISON 63	C	59.00	6.3	WP HE	Forested Wetlands	SST	WP HE		ZW

Table of Scheduled Stand Treatments

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT_DIR	YEAR
MADISON 63	B	1.00	7.4	BR	Wetlands (Alder)	Null	BR	R-TIRES	ZW	2018
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2018
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2018
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2018
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2018
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2018
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2018
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2018
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2018
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2018
MADISON 09	A	15.00	47.1	RP NS	Plantation	SST	NH NS	PU RT RC	EVR	2019
MADISON 13	A	12.00	6.7	NH	Natural Forest	PT	NH	TAP	E	2019
MADISON 13	A	25.00	2.6	NH	Natural Forest	PT	NH	FW	E	2019
MADISON 13	A	26.00	2.6	NH	Natural Forest	SST	NH	TAP	E	2019
MADISON 13	A	30.10	6.3	RP	Plantation	SST	NH	PU RT	E	2019
MADISON 13	A	30.40	2.7	RP	Plantation	SST	NH	RT	E	2019
MADISON 13	A	31.00	1.8	WP	Plantation	SST	WP	RT	E	2019
MADISON 13	A	32.10	6.9	NH	Natural Forest	PT	NH	FW	E	2019
MADISON 13	A	32.20	4.0	NH	Natural Forest	SST	NH	FW	E	2019
MADISON 13	A	33.00	3.1	NH	Natural Forest	PT	NH	FW	E	2019
MADISON 13	A	34.00	38.4	NS	Plantation	SST	NS NH	PU	E	2019
MADISON 13	A	35.00	2.9	WP	Plantation	SST	WP	RT	E	2019
MADISON 13	B	11.20	1.4	APP	Natural Forest	PT	APP	RA	APP	2019
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2019
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2019

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT_DIR	YEAR
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2019
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2019
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2019
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2019
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2019
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2019
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2019
MADISON 10	A	28.00	20.5	NS	Plantation	MST	NS NH	PU	E	2020
MADISON 10	A	29.00	11.8	NS	Plantation	MST	NS NH	PU	E	2020
MADISON 10	A	34.00	10.1	NS	Plantation	SST	NS NH	PU	E	2020
MADISON 10	A	36.00	4.6	RP NS	Plantation	SST	NH	PU	E	2020
MADISON 10	A	39.00	19.9	NS	Plantation	MST	NH NS	PU	E	2020
MADISON 10	A	57.00	6.4	NS	Plantation	SST	NS NH	VIH	E	2020
MADISON 13	B	11.30	9.0	BR	Natural Forest	PT	BR	RE	BR	2020
MADISON 63	A	7.00	13.7	BR	Brushy Field	Null	OF	M	OF	2020
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2020
MADISON 63	B	18.00	15.0	BR	Brushy Fields	Null	OF	M	OF	2020
MADISON 63	B	23.00	23.9	BR	Brushy Fields	Null	OF	M	OF	2020
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2020
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2020
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2020
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2020
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2020
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2020
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2020
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2020
MADISON 10	B	20.00	21.1	NS	Plantation	SST	NH	PU	E	2021

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT_DIR	YEAR
MADISON 10	B	21.00	22.7	NS	Plantation	SST	NH NS	PU	E	2021
MADISON 10	B	23.00	6.7	RP	Plantation	SST	NH	RC	E	2021
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2021
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2021
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2021
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2021
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2021
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2021
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2021
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2021
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2021
MADISON 10	A	32.00	38.2	NH	Natural Forest	SST	NH	STS	U	2022
MADISON 10	A	40.10	45.7	NH	Natural Forest	PT	NH	STS GS H	U	2022
MADISON 10	A	56.00	16.5	NH	Natural Forest	MST	NH	STS	U	2022
MADISON 13	B	11.10	4.7	OF	Brushy Fields	Null	OF	M	OF	2022
MADISON 13	B	15.00	3.9	OF	Field	Null	OF	M	OF ZH	2022
MADISON 13	B	20.00	19.3	OF	Field	Null	OF	M	OF	2022
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2022
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2022
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2022
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2022
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2022
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2022
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2022
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2022
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2022
MADISON 10	A	52.00	19.4	NH	Natural Forest	PT	NH	IN	E	2023

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT_DIR	YEAR
MADISON 10	A	53.00	12.5	BR	Brushy Fields	Null	BR	RE	BR ZH	2023
MADISON 13	A	14.10	17.0	NH	Natural Forest	SST	NH	IN	E	2023
MADISON 13	A	15.10	66.7	SP	Plantation	PT	NH SP	RT RE	EVR	2023
MADISON 13	A	18.00	5.3	NH	Natural Forest	PT	BR	RE	BR	2023
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2023
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2023
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2023
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2023
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2023
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2023
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2023
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2023
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2023
MADISON 09	A	13.00	33.1	NH HE	Natural Forest	SST	NH HE	STS	U	2024
MADISON 09	A	36.00	16.9	NH HE	Natural Forest	PT	NH HE	STS	U	2024
MADISON 09	A	37.00	1.0	BR	Brushy Fields	Null	BR	RE	BR	2024
MADISON 09	A	47.00	10.9	NH	Natural Forest	PT	NH	STS	U	2024
MADISON 09	A	48.00	3.3	NH	Natural Forest	PT	NH	IN	E	2024
MADISON 09	A	65.10	23.9	RP	Plantation	PT	NH	RT	EVR	2024
MADISON 09	A	65.20	15.2	RP NS	Plantation	SST	NH NS	RC	E	2024
MADISON 09	A	67.00	3.1	NS	Plantation	PT	NH	PU	E	2024
MADISON 09	A	68.00	1.5	NS	Plantation	PT	NH	PU	E	2024
MADISON 63	B	10.00	7.1	BR	Wetlands (Alder)	Null	BR	RA	BR	2024
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2024
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2024
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2024
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2024
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2024

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT_DIR	YEAR
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2024
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2024
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2024
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2024
MADISON 10	A	33.00	38.1	NS	Plantation	SST	NH	VIH	E	2025
MADISON 13	B	10.10	28.7	NH	Natural Forest	SST	NH	STS	U	2025
MADISON 13	B	13.00	11.1	NH HE	Natural Forest	SST	NH HE	STS	U	2025
MADISON 13	B	18.00	8.0	NH	Natural Forest	SST	NH	IN	E	2025
MADISON 13	B	19.00	15.1	NH	Natural Forest	SST	NH	STS GS	U	2025
MADISON 13	B	44.00	58.2	NH	Natural Forest	MST	NH	STS GS	U	2025
MADISON 13	B	45.00	25.0	NH	Natural Forest	MST	NH	STS GS	U	2025
MADISON 13	B	47.00	9.4	NH	Natural Forest	PT	NH	STS	U	2025
MADISON 13	B	48.10	66.2	NH	Natural Forest	SST	NH	STS GS	U	2025
MADISON 63	A	7.00	13.7	BR	Brushy Field	Null	OF	M	OF	2025
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2025
MADISON 63	B	18.00	15.0	BR	Brushy Fields	Null	OF	M	OF	2025
MADISON 63	B	23.00	24	BR	Brushy Fields	Null	OF	M	OF	2025
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2025
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2025
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2025
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2025
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2025
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2025
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2025
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2025
MADISON 10	A	16.00	4.6	NH	Natural Forest	SST	NH	STS H	U	2026
MADISON 10	A	17.00	3.7	NH	Natural Forest	SST	NH	STS H	U	2026

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT_DIR	YEAR
MADISON 10	A	18.00	9.6	NH	Natural Forest	PT	NH	STS H	U	2026
MADISON 10	A	20.00	9.3	NH	Natural Forest	SST	NH	STS	U	2026
MADISON 10	A	21.00	7.9	NH	Natural Forest	PT	NH	STS H	U	2026
MADISON 10	A	24.00	33.8	NH	Natural Forest	PT	NH	IN	U	2026
MADISON 10	A	25.00	4.0	NH	Natural Forest	SST	NH	IN	U	2026
MADISON 10	A	26.00	14.3	NH	Natural Forest	PT	NH	GS H	U	2026
MADISON 10	A	27.00	12.8	NH	Natural Forest	MST	NH	STS H	U	2026
MADISON 10	A	41.00	4.1	NH	Natural Forest	SST	NH	STS H	U	2026
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2026
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2026
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2026
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2026
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2026
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2026
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2026
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2026
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2026
MADISON 09	A	42.00	11.6	RP NS	Plantation	SST	NH NS	RC	E	2027
MADISON 09	A	44.00	3.5	RP	Plantation	SST	NH	RC	E	2027
MADISON 09	A	45.00	9.8	NS	Plantation	PT	NS NH	PU	E	2027
MADISON 09	A	49.00	9.6	RP	Plantation	SST	NH	RC	E	2027
MADISON 09	A	53.00	3.3	NS	Plantation	PT	NH	PU	E	2027
MADISON 10	B	10.00	44.7	NS	Plantation	SST	NS NH	PU	E ZH	2027
MADISON 10	B	13.00	24.6	NS	Plantation	MST	NS NH	PU	E	2027
MADISON 10	B	18.00	7.6	NS	Plantation	SST	NS NH	PU	E	2027
MADISON 13	B	11.10	4.7	OF	Brushy Fields	Null	OF	M	OF	2027
MADISON 13	B	15.00	3.9	OF	Field	Null	OF	M	OF ZH	2027
MADISON 13	B	20.00	19.3	OF	Field	Null	OF	M	OF	2027

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT_DIR	YEAR
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2027
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2027
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2027
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2027
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2027
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2027
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2027
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2027
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2027
MADISON 09	A	60.00	29.8	NH HE	Natural Forest	SST	NH HE	STS GS	U	2028
MADISON 13	A	8.00	72.4	RP	Plantation	PT	NH	RC	E ZH	2028
MADISON 13	A	23.30	68.9	RP	Plantation	PT	RP BR	RT RE	EVR	2028
MADISON 13	A	29.00	3.0	NS	Plantation	SST	NH NS	PU	E	2028
MADISON 13	A	37.00	10.6	RP NH	Plantation	SST	NH	RC	E	2028
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2028
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2028
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2028
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2028
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2028
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2028
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2028
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2028
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2018
MADISON 09	A	2.00	15.7	NH	Natural Forest	PT	NH	IN	U	2029
MADISON 09	A	5.00	6.6	NH	Natural Forest	PT	NH	STS	E	2029
MADISON 09	A	7.00	5.9	NH	Natural Forest	PT	NH	STS	U	2029
MADISON 09	A	8.00	8.1	NH	Natural Forest	PT	NH	STS	U	2029

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT_DIR	YEAR
MADISON 09	A	14.00	24.9	RP NS	Plantation	SST	NH NS	PU RT	E ZH	2029
MADISON 09	A	17.00	2.8	NH	Natural Forest	SST	NH	CTR	E	2029
MADISON 09	A	18.00	18.2	NH	Natural Forest	SST	NH	STS	U	2029
MADISON 09	A	19.00	48.3	NH	Natural Forest	PT	NH	STS GS	U	2029
MADISON 09	A	66.00	7.2	NH	Natural Forest	SST	NH	STS	U	2029
MADISON 10	A	11.00	3.1	RP	Plantation	SST	NH	SW	E	2029
MADISON 10	A	12.20	11.6	NS	Plantation	MST	NH NS	VIH	E	2029
MADISON 10	A	13.00	2.7	RP	Plantation	SST	NH	SW	E	2029
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2029
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2029
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2029
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2029
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2029
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2029
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2029
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2029
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2029
MADISON 09	A	23.00	12.8	NH	Natural Forest	PT	NH	IN	E	2030
MADISON 09	A	24.00	3.1	BR	Brushy Fields	Null	BR	RE	BR	2030
MADISON 09	A	25.00	1.2	BR	Plantation	PT	BR	RE	BR	2030
MADISON 10	A	38.00	10.6	RP	Plantation	SST	NH	RC	E	2030
MADISON 10	A	58.00	13.8	RP NS	Plantation	SST	NH NS	RC	E ZH	2030
MADISON 10	B	3.00	21.8	RP	Plantation	SST	NH	RC	E	2030
MADISON 13	B	51.00	1.7	RP	Plantation	SST	RP	TSI	E	2030
MADISON 13	B	55.00	1.8	NS	Plantation	PT	NS NH	TSI	E	2030
MADISON 13	B	56.00	2.3	RP	Plantation	PT	NH	TSI	E	2030
MADISON 13	B	57.00	2.0	NS	Plantation	PT	NS NH	TSI	E	2030
MADISON 63	A	7.00	13.7	BR	Brushy Field	Null	OF	M	OF	2020

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT_DIR	YEAR
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2030
MADISON 63	B	18.00	15.0	BR	Brushy Fields	Null	OF	M	OF	2030
MADISON 63	B	23.00	24	BR	Brushy Fields	Null	OF	M	OF	2030
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2030
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2030
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2030
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2030
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2030
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2030
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2030
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2030
MADISON 09	A	26.00	102.4	NS	Plantation	SST	NS NH	PU	E	2031
MADISON 09	A	27.00	1.7	BR	Brushy Fields	Null	BR	RE	BR	2031
MADISON 09	A	28.00	6.6	BR	Brushy Fields	Null	BR	RE	BR	2031
MADISON 09	A	29.00	7.5	NS	Plantation	SST	NS NH	PU	E	2031
MADISON 13	A	10.00	70.6	NS	Plantation	SST	NS NH	PU	E	2031
MADISON 13	A	19.00	1.4	NS	Plantation	PT	NH NS		E	2031
MADISON 13	A	20.00	2.4	BR	Brushy Fields	Null	BR	RE	BR	2031
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2031
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2031
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2031
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2031
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2031
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2031
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2031
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2031
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2031

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT_DIR	YEAR
MADISON 13	A	28.10	26.0	NH	Natural Forest	PT	NH	IN	E ZH	2032
MADISON 13	A	38.20	4.9	NH	Natural Forest	PT	NH	CTR	E	2032
MADISON 13	A	39.00	12.8	NH	Natural Forest	SST	NH	CTR	E	2032
MADISON 13	B	11.10	4.7	OF	Brushy Fields	Null	OF	M	OF	2032
MADISON 13	B	15.00	3.9	OF	Field	Null	OF	M	OF ZH	2032
MADISON 13	B	20.00	19.3	OF	Field	Null	OF	M	OF	2032
MADISON 63	B	18.00	15.0	BR	Brushy Fields	Null	OF	M	OF	2032
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2032
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2032
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2032
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2032
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2032
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2032
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2032
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2032
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2032
MADISON 10	B	1.00	1.9	NH	Natural Forest	SST	NH	STS	U	2033
MADISON 10	B	2.00	20.9	NH	Natural Forest	PT	NH	STS	U	2033
MADISON 10	B	6.00	15.2	NH	Natural Forest	SST	NH	STS GS	U	2033
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2033
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2033
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2033
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2033
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2033
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2033
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2033
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2033
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2033

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT_DIR	YEAR
MADISON 10	B	33.00	31.5	NH	Natural Forest	SST	NH	STS GS H	U	2034
MADISON 10	B	35.00	8.9	NH	Natural Forest	SST	NH	STS GS	U	2034
MADISON 10	B	36.00	20.1	NH	Natural Forest	SST	NH	STS	E	2034
MADISON 13	A	15.31	7.6	BR	Wetlands (Alder)	Null	BR	RE	BR	2034
MADISON 13	A	16.00	14.8	NH	Natural Forest	SST	NH BR	RE	EVR	2034
MADISON 13	A	17.10	4.7	RP	Plantation	PT	BR	RC RE	BR	2034
MADISON 13	A	17.20	3.4	RP	Plantation	PT	BR	RC RE	BR	2034
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2034
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2034
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2034
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2034
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2034
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2034
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2034
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2034
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2034
MADISON 09	A	21.00	36.4	LA NS	Plantation	SST	NH NS	PU	E	2035
MADISON 09	A	56.00	11.8	NS	Plantation	PT	NH NS	PU	E	2035
MADISON 09	A	57.00	3.2	NS	Plantation	SST	NH NS	PU	E	2035
MADISON 09	A	59.00	2.3	NS	Plantation	SST	NH NS	PU	E	2035
MADISON 09	A	63.00	3.6	BR	Natural Forest	S-S	BR	RE	BR	2035
MADISON 63	A	7.00	13.7	BR	Brushy Field	Null	OF	M	OF	2035
MADISON 63	B	18.00	15.0	BR	Brushy Fields	Null	OF	M	OF	2035
MADISON 63	B	23.00	23.9	BR	Brushy Fields	Null	BR	M	OF	2035
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2035
MADISON 63	B	18.00	15.0	BR	Brushy Fields	Null	OF	M	OF	2035
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2035

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT_DIR	YEAR
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2035
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2035
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2035
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2035
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2035
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2035
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2035
MADISON 10	A	4.00	16.0	NH	Natural Forest	PT	NH	STS	U	2036
MADISON 10	A	6.00	6.0	NH	Natural Forest	PT	NH	TSI	E	2036
MADISON 10	B	15.00	68.2	NH	Natural Forest	SST	NH	STS GS	U	2036
MADISON 10	B	22.00	35.4	NH	Natural Forest	SST	NH	STS GS	U	2036
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2036
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2036
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2036
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2036
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2036
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2036
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2036
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2036
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2036
MADISON 10	B	24.00	30.1	NS	Plantation	SST	NH	PU	E	2037
MADISON 10	B	25.00	25.8	NS	Plantation	PT	NH NS	PU	E ZH	2037
MADISON 10	B	30.00	3.7	NS	Plantation	SST	NH NS	PU	E	2037
MADISON 10	B	32.00	33.5	NS	Plantation	MST	NH NS	PU	E	2037
MADISON 10	B	34.00	10.3	NS	Plantation	SST	NH NS	PU	E	2037
MADISON 10	B	39.00	17.6	NS	Plantation	SST	NH NS	PU	E	2037
MADISON 13	B	11.10	4.7	OF	Brushy Fields	Null	OF	M	OF	2037

FOREST	COMP	STAND	ACRES	TYPE	STATUS	SIZE	FUTURE TYPE	TREATMENT	MGT_DIR	YEAR
MADISON 13	B	15.00	3.9	OF	Field	Null	OF	M	OF ZH	2037
MADISON 13	B	20.00	19.3	OF	Field	Null	OF	M	OF	2037
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2037
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2037
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2037
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2037
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2037
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2037
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2037
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2037
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2037
MADISON 09	A	4.10	29.7	RP NS	Plantation	SST	NH NS	PU RT	E	2038
MADISON 09	A	4.20	31.5	SP NS	Plantation	SST	NH NS	PU RT	E	2038
MADISON 09	A	6.00	4.0	RP	Plantation	SST	NH NS	PU RT	E	2038
MADISON 63	B	16.00	3.9	OF	Field	Null	OF	M	OF	2038
MADISON 63	C	2.00	2.6	OF	Field	Null	OF	M	OF	2038
MADISON 63	C	12.00	8.5	OF	Field	Null	OF	M	OF	2038
MADISON 63	C	14.00	0.9	OF	Field	Null	OF	M	OF	2038
MADISON 63	C	16.00	5.8	OF	Field	Null	OF	M	OF	2038
MADISON 63	C	19.00	2.6	OF	Field	Null	OF	M	OF	2038
MADISON 63	C	34.00	3.9	OF	Field	Null	OF	M	OF	2038
MADISON 63	C	39.00	2.0	OF	Field	Null	OF	M	OF	2038
MADISON 63	C	49.00	4.6	OF	Field	Null	OF	M	OF	2038

V. GLOSSARY

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).

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 - 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.

Clearcut / Clearcutting- 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.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Ecosystem management - the appropriate integration of ecological, economic, and 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 silviculture - 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.

Eya- a nestling (unfledged) hawk or falcon.

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

Forest- an assemblage of tree and associated 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.

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 Forest – Those areas where there is a significant component of trees greater than 140 years old. Forests in this age are beginning to develop old-growth characteristics such as large size, large snags, large cavities, rough bark and large dead trees and fallen logs.

Linkage Zone- A mapped corridor between major forested landscapes and their imbedded matrix forest blocks representing the most favorable dispersal path for forest species based on a combination of percent natural forest cover in a defined area, barriers to movement, and distance traveled.

Mast - all fruits of trees and shrubs used as food for wildlife. Hard mast includes nut-like fruits such as acorns, beechnuts, and chestnuts. Soft mast includes the fleshy fruits of black cherry, dogwood and serviceberry.

Matrix Block - Large contiguous areas dominated by forest cover whose size and natural condition allow for the maintenance of ecological processes, viable occurrences of matrix forest communities, embedded large and small patch communities, and embedded species populations. These areas represent the most viable examples of the dominant forest communities throughout the state.

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

Multiple use - a strategy of land management fulfilling two or more objectives, e.g. forest products removal and recreation.

Native species - an indigenous species that is normally found as part of a particular ecosystem.

Natural area - an ecological community where physical and biological processes are allowed to operate without direct human intervention. (Helms, 1998)

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

Northern hardwood forest - a forest type usually made up of sugar and red maple, American beech, yellow birch, and to a lesser extent black cherry and white ash. This type represents about 70 percent of all forests in New York State.

Old growth -
1.) forests that approximate the structure, composition, and functions of native forest prior to European settlement. They vary by forest type, but generally include more large trees, canopy layers, standing snags, native species, and dead organic matter than do young or intensively managed forests.
2.) the definition of "Old Growth Forest" involves a convergence of many different, yet interrelated criteria. Each of these criteria can occur individually in an area that is not old growth; however, it is the presence of all of these factors that combine to differentiate "Old Growth Forest" from other forested ecosystems. These factors include: An abundance of late successional tree species, at least 180 - 200 years of age in a contiguous forested landscape that has evolved and reproduced itself naturally, with the capacity for self perpetuation, arranged in a stratified forest structure consisting of multiple growth layers throughout the canopy and forest floor, featuring (1) canopy gaps formed by natural disturbances creating an uneven canopy, and (2) a conspicuous absence of multiple stemmed trees and **coppices**. Old growth forest sites typically (1) are characterized by an irregular forest floor containing an abundance of coarse woody materials which are often covered by mosses and lichens; (2) show limited signs of human disturbance since European settlement; and (3) have distinct soil horizons that include definite organic, mineral, illuvial accumulation, and unconsolidated layers. The understory displays well developed and diverse surface herbaceous layers.

Overstory - that portion of the trees in a forest forming the upper or uppermost canopy layer.

Pioneer - a plant capable of invading bare sites (newly exposed soil) and persisting there or colonizing them until supplanted by successional species.

Plantation - a stand composed primarily of trees established by planting or artificial seeding - a plantation may have tree or understory components that have resulted from **natural** regeneration.

Public forest access roads - permanent, unpaved roads marked for motor vehicle use. They may be designed for all-weather use depending on their location and surfacing. These roads provide primary access within the Unit. The standards for these roads are those of the Class A and Class B access roads.

Pulpwood - low grade or small diameter logs used to make paper products, wood chips, etc.

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.
3.) a treatment designed to free shrub and apple species from overstory trees.

Residual stand - a stand composed of trees remaining after any type of intermediate harvest.

Riparian zone - an area adjoining a body of water, normally having soils and vegetation characteristic of floodplains or areas transitional to upland zones. These areas help protect the water by removing or buffering the effects of excessive nutrients, sediments, organic matter, pesticides, or pollutants.

Rotation - the period of years required to establish and grow timber crops to a specified maturity. Rotation being the predetermined time frame between successive harvest/ regeneration cuts in a given stand under even-aged management.

Sapling - a small tree, usually defined as being between 1 and 5 inches diameter at breast height.

Sawtimber - trees that are generally 12 inches and larger **diameter at breast height**.

Seedling - a young tree originating from seed that is less than 4 feet tall.

Seedling/sapling - trees less than 6 inches **diameter at breast height**.

Seed tree method - the removal of the mature timber in one cutting, except for a small number of trees left singly, or in small groups, as a source of seed for natural regeneration.

Selection system - the removal of trees over the entire range of size classes either singly or in groups at relatively short intervals, resulting in continuous establishment of reproduction. Individual trees are chosen for removal due to their maturity because they are of poor quality or thinning is needed to improve the growth rate of the remaining trees.

Shade tolerance - the ability of a tree species to germinate and grow at various levels of shade.
Shade tolerant: having the capacity to compete for survival under shaded conditions.
Shade intolerant: having the capacity to compete for survival only under direct sunlight conditions; light demanding species.

Shelterwood cut/method - a regeneration action designed to stimulate reproduction by implementing a series of cuts over several years that will gradually remove the overstory trees. Gradual reduction of stand density protects understory trees and provides a seed source for stand regeneration.

Silviculture - the art and science of controlling the establishment, growth, composition, health, and quality of forests and woodlands to meet the diverse needs and values of landowners and society on a sustainable basis.

Snags - standing, dead trees, with or without cavities; function as perches, foraging sites and/or a source of cavities for dens, roosting and/or nesting for wildlife.

Softwoods - generally refers to needle and/or cone bearing trees (conifers) belonging to the botanical group Gymnospermae.

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.

Stumpage - The value of timber as it stands uncut.

Succession - the natural series of replacements of one plant community (and the associated fauna) by another over time and in the absence of disturbance.

Sustainable forest management - management that maintains and enhances the long-term health of forest ecosystems for the benefit of all living things, while providing environmental, economic, social and cultural opportunities for present and future generations.

Temporary Revocable Permit (TRP) - a Department permit which authorizes the use of State land for a specific purpose for a prescribed length of time.

Thinning - a silvicultural treatment made to reduce stand density of trees primarily to improve growth of remaining trees, enhance forest health, or recover potential mortality.

Threatened species - a species likely to become endangered in the foreseeable future, throughout all or a significant portion of its range, unless protected.

Timber stand improvement (TSI) - pre-commercial silvicultural treatments, intended to regulate stand density and species composition while improving wood product quality and fostering individual tree health and vigor, through the removal of undesirable trees.

Understory - the smaller vegetation (shrubs, seedlings, saplings, small trees) within a forest stand, occupying the vertical zone between the overstory and the herbaceous plants of the forest floor.

Uneven-aged silviculture - a planned sequence of treatments designed to regenerate a stand with three or more age classes.

Watershed - a region or area defined by a network of stream drainage. A watershed includes all the land from which a particular stream or river is supplied.

Wetland - a transitional area between aquatic and terrestrial ecosystems that is inundated or saturated for periods long enough to produce hydric soils and support hydrophytic vegetation.

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VII. APPENDICIES

APPENDIX I. Wetlands on the Unit

FOREST	COMPART	STAND	FOREST TYPE	ACRES
MADISON 09	A	3.0	NH	3.3
MADISON 09	A	71.0	NH	7.3
MADISON 10	A	8.0	NS	6.8
MADISON 10	A	9.0	POND	0.5
MADISON 10	A	30.0	NH	1.9
MADISON 10	A	35.0	NH HE	5.9
MADISON 10	A	59.0	NH	2.8
MADISON 10	B	37.0	NH	0.8
MADISON 10	B	38.0	NH	3.7
MADISON 13	A	5.0	NH HE	4.8
MADISON 13	A	6.0	WET A	2.1
MADISON 13	A	14.2	WET A	2.5
MADISON 13	A	15.2	WET O	3.4
MADISON 13	A	21.0	NH HE	6.5
MADISON 13	A	22.1	NH	12.8
MADISON 13	A	22.2	WET A	3.2
MADISON 13	A	23.2	RP	3.4
MADISON 13	A	27.0	NH	4.6
MADISON 13	A	28.2	NH	1.5
MADISON 13	B	6.0	NH HE	9.6
MADISON 13	B	7.0	NH HE	22.9
MADISON 13	B	8.0	WET O	10.6
MADISON 13	B	12.1	WET O	13.1
MADISON 13	B	12.2	WET A	46.1
MADISON 13	B	12.3	NH	10.6
MADISON 13	B	12.4	NH	2.6
MADISON 13 *	**B**	**16.0**	**HE**	**1.6**
MADISON 13	B	27.0	WET O	1.4
MADISON 13	B	29.0	WET A	10.7
MADISON 13	B	31.0	NH HE	3.2
MADISON 13	B	32.0	NH HE	1.6
MADISON 13	B	33.0	POND	4.9
MADISON 13	B	34.0	POND	44.2
MADISON 13	B	35.0	WP	4.2
MADISON 13	B	46.0	NH	3.9
MADISON 13	B	48.2	NH	13.3

FOREST	COMPART	STAND	FOREST TYPE	ACRES
MADISON 13	B	48.3	NH HE	3.8
MADISON 63	A	2.0	WET O	3.4
MADISON 63	A	4.0	CEDAR	3.1
MADISON 63	**A**	**7.0**	**BR**	**13.7**
MADISON 63	**A**	**8.0**	**CEDAR**	**14.4**
MADISON 63	**A**	**9.0**	**HE**	**6.5**
MADISON 63	**A**	**10.0**	**CEDAR**	**5.8**
MADISON 63	**A**	**11.0**	**WET A**	**6.8**
MADISON 63	**A**	**12.0**	**BR**	**1.2**
MADISON 63	**A**	**13.0**	**WET A**	**6.7**
MADISON 63	**A**	**15.0**	**WET O**	**3.8**
MADISON 63	**A**	**16.0**	**CEDAR**	**3.0**
MADISON 63	**A**	**17.0**	**WET A**	**1.7**
MADISON 63	**A**	**18.0**	**CEDAR**	**1.0**
MADISON 63	**A**	**19.0**	**NH HE**	**2.6**
MADISON 63	**A**	**21.0**	**CEDAR**	**4.4**
MADISON 63	B	1.0	BR	7.4
MADISON 63	**B**	**2.0**	**CEDAR**	**40.7**
MADISON 63	**B**	**3.0**	**CEDAR**	**1.9**
MADISON 63	**B**	**4.0**	**WET O**	**1.2**
MADISON 63	**B**	**5.0**	**CEDAR**	**3.9**
MADISON 63	**B**	**6.0**	**CEDAR**	**46.8**
MADISON 63	B	8.0	WET O	1.3
MADISON 63	**B**	**13.0**	**WET O**	**43.9**
MADISON 63	**B**	**14.0**	**CEDAR**	**30.0**
MADISON 63	B	17.0	WET O	20.0
MADISON 63	B	19.0	CEDAR	3.0
MADISON 63	**B**	**21.0**	**BR**	**4.4**
MADISON 63	**B**	**22.0**	**CEDAR**	**42.0**
MADISON 63	**C**	**3.0**	**CEDAR**	**2.3**
MADISON 63	**C**	**4.0**	**NH HE**	**9.2**
MADISON 63	C	5.0	BR	8.0
MADISON 63	C	6.0	NH	4.3
MADISON 63	C	7.0	CEDAR	3.7
MADISON 63	C	8.0	HE WP	5.3
MADISON 63	C	9.0	NH WP	4.0
MADISON 63	C	10.0	NH	0.7
MADISON 63	**C**	**13.0**	**NH HE**	**9.7**
MADISON 63	C	15.0	NH WP	7.7
MADISON 63	**C**	**17.0**	**NH HE**	**7.3**

FOREST	COMPART	STAND	FOREST TYPE	ACRES
MADISON 63	C	18.0	WET A	4.4
MADISON 63	**C**	**20.0**	**HE**	**66.3**
MADISON 63	**C**	**21.0**	**WET O**	**13.6**
MADISON 63	**C**	**22.0**	**WET A**	**2.9**
MADISON 63	**C**	**23.0**	**WET O**	2.1
MADISON 63	**C**	**24.0**	**HE**	4.3
MADISON 63	**C**	**25.0**	**CEDAR**	0.4
MADISON 63	**C**	**27.0**	**CEDAR**	**15.2**
MADISON 63	C	29.0	WET O	2.5
MADISON 63	**C**	**30.0**	**CEDAR**	**22.8**
MADISON 63	**C**	**31.0**	**CEDAR**	**11.8**
MADISON 63	**C**	**32.0**	**WET A**	**0.9**
MADISON 63	C	33.0	WET A	1.4
MADISON 63	**C**	**36.0**	**CEDAR**	**8.9**
MADISON 63	**C**	**37.0**	**HE**	**37.5**
MADISON 63	**C**	**38.0**	**NH**	**24.9**
MADISON 63	**C**	**42.0**	**HE**	**2.2**
MADISON 63	**C**	**43.0**	**CEDAR**	**5.1**
MADISON 63	C	45.0	HE	2.6
MADISON 63	**C**	**46.0**	**WET A**	**40.4**
MADISON 63	**C**	**47.0**	**CEDAR**	**1.3**
MADISON 63	**C**	**48.0**	**WET O**	**5.7**
MADISON 63	**C**	**50.0**	**HE WP**	5.4
MADISON 63	C	51.0	WP	1.5
MADISON 63	**C**	**52.0**	**WET A**	**18.7**
MADISON 63	**C**	**53.0**	**NH**	**9.6**
MADISON 63	**C**	**54.0**	**HE WP**	**14.7**
MADISON 63	**C**	**55.0**	**CEDAR**	**4.0**
MADISON 63	**C**	**57.0**	**CEDAR**	**41.5**
MADISON 63	**C**	**59.0**	**WP HE**	**6.3**
TOTAL				**1049.7**

*** Bold indicates all or part of the stand is within NYS Classified Wetland CA-5,CA-16, CA-18 and MO-14**

APPENDIX II Code Definitions

The protective status of species listed in Appendices III and V is based on Federal and State regulations. Following column entries for common and scientific names, a "protective status" category appears. The following definitions are adopted for the terms as used in The Checklist of Amphibians, Reptiles, Birds, and Mammals of New York State, Including their Protective Status.

Code	Federal Definitions
E	*Endangered Species* are determined by the U. S. Department of the Interior to be in danger of extinction throughout all or a significant portion of their range. All such species are fully protected, including their habitat.
T	*Threatened Species* are determined by the U. S. Department of the Interior as likely to become endangered within the foreseeable future throughout all or a significant portion of their range. All such species are fully protected.
UN	*"Unprotected"* under Federal Law.
Code	**State Definitions**
P	*Protected* wildlife means "wild game, protected wild birds, and endangered species of wildlife" as defined in the Environmental Conservation Law.
E	*Endangered Species* are determined by the DEC to be in imminent danger of extinction or extirpation in New York State, or are federally listed as endangered. All such species are fully protected under New York State Environmental Conservation Law.
T	*Threatened Species* are determined by the DEC as likely to become endangered within the foreseeable future in New York State, or are Federally listed as threatened. All such species are fully protected under the New York State Environmental Conservation Law.
SC	*Special Concern Species* are those native species that are not yet recognized as endangered or threatened, but for which documented evidence exists relating to their continued welfare in New York State. The Special Concern category exists within DEC rules and regulations, but such designation does not in itself provide any additional protection. However, Special Concern species may be protected under other laws.
GS	*Game species* are defined as "big game", "small game", or "game bird" species as stated in the Environmental Conservation Law; many normally have an open season for at least part of the year, and are protected at other times.
UN	*Unprotected* means that the species may be taken at any time without limit. However, a license to take may be required.

APPENDIX III Birds

Breeding Birds Surveyed On or Within the Vicinity of the Unit

Common Name	Scientific Name	Breeding Status	NY Legal Status
Acadian Flycatcher	*Empidonax virescens*	PO	Protected (P)
Alder Flycatcher	*Empidonax alnorum*	CO	Protected
American Crow	*Corvus brachyrhynchos*	CO	Game Species
American Goldfinch	*Spinus tristis*	CO	Protected
American Kestrel	*Falco sparverius*	CO	Protected
American Redstart	*Setophaga ruticilla*	CO	Protected
American Robin	*Turdus migratorius*	CO	Protected
American Woodcock	*Scolopax minor*	CO	Game Species (GS)
Baltimore Oriole	*Icterus galbula*	CO	Protected
Bank Swallow	*Riparia riparia*	CO	Protected
Barn Swallow	*Hirundo rustica*	CO	Protected
Barred Owl	*Strix varia*	PR	Protected
Belted Kingfisher	*Megaceryle alcyon*	PR	Protected
Black-and-white Warbler	*Mniotilta varia*	CO	Protected
Black-billed Cuckoo	*Coccyzus erythropthalmus*	PR	Protected
Blackburnian Warbler	*Dendroica fusca*	CO	Protected
Black-capped Chickadee	*Poecile atricapillus*	CO	Protected
Black-throated Blue Warbler	*Dendroica caerulescens*	PR	Protected
Black-throated Green Warbler	*Dendroica virens*	CO	Protected
Blue Jay	*Cyanocitta cristata*	CO	Protected
Blue-headed Vireo	*Vireo solitarius*	CO	Protected
Blue-winged Teal	*Anas discors*	PO	Game Species
Blue-winged Warbler	*Vermivora pinus*	CO	Protected
Bobolink	*Dolichonyx oryzivorus*	CO	Protected
Broad-winged Hawk	*Buteo platypterus*	CO	Protected
Brown Creeper	*Certhia americana*	PR	Protected
Brown Thrasher	*Toxostoma rufum*	PR	Protected
Brown-headed Cowbird	*Molothrus ater*	CO	Protected
Canada Goose	*Branta canadensis*	CO	Game Species
Canada Warbler	*Wilsonia canadensis*	CO	Protected
Cedar Waxwing	*Bombycilla cedrorum*	CO	Protected
Chestnut-sided Warbler	*Dendroica pensylvanica*	CO	Protected
Chimney Swift	*Chaetura pelagica*	CO	Protected
Chipping Sparrow	*Spizella passerina*	CO	Protected
Cliff Swallow	*Petrochelidon pyrrhonota*	CO	Protected

APPENDIX III Birds

Common Name	Scientific Name	Breeding Status	NY Legal Status
Common Grackle	*Quiscalus quiscula*	CO	Protected
Common Merganser	*Mergus merganser*	CO	Game Species
Common Raven	*Corvus corax*	PR	Protected
Common Yellowthroat	*Geothlypis trichas*	CO	Protected
Cooper's Hawk	*Accipiter cooperii*	CO	Special Concern (SC)
Dark-eyed Junco	*Junco hyemalis*	CO	Protected
Downy Woodpecker	*Picoides pubescens*	CO	Protected
Eastern Bluebird	*Sialia sialis*	CO	Protected
Eastern Kingbird	*Tyrannus tyrannus*	CO	Protected
Eastern Meadowlark	*Sturnella magna*	CO	Protected
Eastern Phoebe	*Sayornis phoebe*	CO	Protected
Eastern Screech-Owl	*Megascops asio*	CO	Protected
Eastern Towhee	*Pipilo erythrophthalmus*	CO	Protected
Eastern Wood-Pewee	*Contopus virens*	CO	Protected
European Starling	*Sturnus vulgaris*	CO	Unprotected (U)
Field Sparrow	*Spizella pusilla*	CO	Protected
Fish Crow	*Corvus ossifragus*	PR	Protected
Golden-crowned Kinglet	*Regulus satrapa*	PR	Protected
Golden-winged Warbler	*Vermivora chrysoptera*	PO	Special Concern
Gray Catbird	*Dumetella carolinensis*	CO	Protected
Great Blue Heron	*Ardea herodias*	CO	Protected
Great Crested Flycatcher	*Myiarchus crinitus*	CO	Protected
Great Horned Owl	*Bubo virginianus*	PR	Protected
Green Heron	*Butorides virescens*	PR	Protected
Hairy Woodpecker	*Picoides villosus*	CO	Protected
Hermit Thrush	*Catharus guttatus*	CO	Protected
Hooded Merganser	*Lophodytes cucullatus*	CO	Game Species
Horned Lark	*Eremophila alpestris*	PR	Special Concern
House Finch	*Carpodacus mexicanus*	CO	Protected
House Sparrow	*Passer domesticus*	CO	Unprotected
House Wren	*Troglodytes aedon*	CO	Protected
Indigo Bunting	*Passerina cyanea*	CO	Protected
Killdeer	*Charadrius vociferus*	CO	Protected
Least Flycatcher	*Empidonax minimus*	CO	Protected
Louisiana Waterthrush	*Seiurus motacilla*	CO	Protected
Magnolia Warbler	*Dendroica magnolia*	PR	Protected
Mallard	*Anas platyrhynchos*	CO	Game Species
Mourning Dove	*Zenaida macroura*	CO	Protected
Mourning Warbler	*Oporornis philadelphia*	CO	Protected
Nashville Warbler	*Vermivora ruficapilla*	CO	Protected

APPENDIX III Birds

Common Name	Scientific Name	Breeding Status	NY Legal Status
Northern Cardinal	*Cardinalis cardinalis*	CO	Protected
Northern Flicker	*Colaptes auratus*	CO	Protected
Northern Goshawk	*Accipiter gentilis*	PR	Special Concern
Northern Mockingbird	*Mimus polyglottos*	PO	Protected
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	CO	Protected
Northern Waterthrush	*Seiurus noveboracensis*	CO	Protected
Osprey	*Pandion haliaetus*	PO	Special Concern
Ovenbird	*Seiurus aurocapilla*	CO	Protected
Pied-billed Grebe	*Podilymbus podiceps*	PR	Threatened (T)
Pileated Woodpecker	*Dryocopus pileatus*	PR	Protected
Pine Siskin	*Spinus pinus*	CO	Protected
Prairie Warbler	*Dendroica discolor*	PO	Protected
Purple Finch	*Carpodacus purpureus*	CO	Protected
Red Crossbill	*Loxia curvirostra*	CO	Protected
Red-bellied Woodpecker	*Melanerpes carolinus*	PO	Protected
Red-breasted Nuthatch	*Sitta canadensis*	CO	Protected
Red-eyed Vireo	*Vireo olivaceus*	CO	Protected
Red-shouldered Hawk	*Buteo lineatus*	CO	Special Concern
Red-tailed Hawk	*Buteo jamaicensis*	CO	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	CO	Protected
Ring-necked Pheasant	*Phasianus colchicus*	PO	Game Species
Rock Pigeon	*Columba livia*	PR	Unprotected
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	CO	Protected
Ruby-throated Hummingbird	*Archilochus colubris*	CO	Protected
Ruffed Grouse	*Bonasa umbellus*	CO	Game Species
Savannah Sparrow	*Passerculus sandwichensis*	CO	Protected
Scarlet Tanager	*Piranga olivacea*	CO	Protected
Sharp-shinned Hawk	*Accipiter striatus*	PR	Special Concern
Song Sparrow	*Melospiza melodia*	CO	Protected
Spotted Sandpiper	*Actitis macularius*	PR	Protected
Swainson's Thrush	*Catharus ustulatus*	PR	Protected
Swamp Sparrow	*Melospiza georgiana*	CO	Protected
Tree Swallow	*Tachycineta bicolor*	CO	Protected
Tufted Titmouse	*Baeolophus bicolor*	CO	Protected
Turkey Vulture	*Cathartes aura*	PR	Protected
Veery	*Catharus fuscescens*	CO	Protected
Vesper Sparrow	*Pooecetes gramineus*	CO	Special Concern
Virginia Rail	*Rallus limicola*	PO	Game Species
Warbling Vireo	*Vireo gilvus*	CO	Protected
White-breasted Nuthatch	*Sitta carolinensis*	CO	Protected

Common Name	Scientific Name	Breeding Status	NY Legal Status
White-throated Sparrow	*Zonotrichia albicollis*	CO	Protected
Wild Turkey	*Meleagris gallopavo*	CO	Game Species
Willow Flycatcher	*Empidonax traillii*	PR	Protected
Wilson's Snipe	*Gallinago delicata*	PR	Game Species
Winter Wren	*Troglodytes troglodytes*	PR	Protected
Wood Duck	*Aix sponsa*	CO	Game Species
Wood Thrush	*Hylocichla mustelina*	CO	Protected
Yellow Warbler	*Dendroica petechia*	CO	Protected
Yellow-bellied Sapsucker	*Sphyrapicus varius*	CO	Protected
Yellow-billed Cuckoo	*Coccyzus americanus*	PO	Protected
Yellow-rumped Warbler	*Dendroica coronata*	CO	Protected
Yellow-throated Vireo	*Vireo flavifrons*	PR	Protected

Source: from 2000-2004 New York State Breeding Bird Atlas Data.

APPENDIX IV Reptiles & Amphibians

Reptiles and Amphibians On or Near the Vicinity of the Tioughnioga Unit

Common Name	Scientific Name	NYS Legal Status
Spotted Salamander	*Ambystoma maculatum*	Game Species -No season
Red-spotted Newt	*Notophthalmus v. viridescens*	Game Species – No season
Northern Dusky Salamander	*Desmognathus fuscus*	Game Species – No season
Allegheny Dusky Salamander	*Desmognathus ochrophaeus*	Game Species – No season
Four Toed Salamander	*Hemidactylium scatatum*	Game Species- No Season
Northern Redback Salamander	*Plethodon c. cinereus*	Game Species – No season
Northern Slimy Salamander	*Plethodon glutinosus*	Game Species - No Season
Northern Spring Salamander	*Gyrinophilus p. porphyriticus*	Game Species – No season
Northern Two-lined Salamander	*Eurycea bislineata*	Game Species – No season
Eastern American Toad	*Bufo a. americanus*	Game Species
Gray Treefrog	*Hyla versicolor*	Game Species
Northern Spring Peeper	*Pseudacris c. crucifer*	Game Species
Bullfrog	*Rana catesbeiana*	Game Species
Green Frog	*Rana clamitans melanota*	Game Species
Wood Frog	*Rana sylvatica*	Game Species
Northern Leopard Frog	*Rana pipiens*	Game Species
Pickerel Frog	*Rana palustris*	Game Species
Common Snapping Turtle	*Chelydra s. serpentina*	Game Species
Painted Turtle	*Chrysemys picta*	Game Species – No season
Northern Water Snake	*Nerodia s. sipedon*	Game Species – No season
Northern Redbelly Snake	*Storeria o. occipitomaculata*	Game Species – No season
Common Garter Snake	*Thamnophis sirtalis*	Game Species – No season
Northern Ringneck Snake	*Diadophis punctatus edwardsii*	Game Species – No season
Eastern Milk Snake	*Lampropeltis t. triangulum*	Game Species – No season

Source: Reptiles and Amphibians Atlas from 1990-2007 via NYS DEC website, as well as the Checklist of Amphibians, Reptiles, Birds, and Mammals of New York State (2010) and Herp Atlas layer in ArcMap.

APPENDIX V Mammals

Mammals on or Near the Vicinity of the Tioughnioga Unit

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*	P	UN	GS
Common Muskrat	*Ondatra zibethicus*	P	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 Bat	*Myotis leibii*	P	UN	P-SC
Eastern Chipmunk	*Tamias striatus*	C	UN	UN
Eastern Cottontail	*Sylvilagus floridanus*	C	UN	GS
Eastern Gray Squirrel	*Sciurus carolinensis*	P	UN	GS
Eastern Pipistrelle	*Pipistrellus subflavus*	P	UN	UN
Eastern Red Bat	*Lasiurus borealis*	P	UN	UN
Fisher	*Martes pennanti*	P	UN	GS
Gray Fox	*Urocyon cinereoargentus*	C	UN	GS
Hairy-tailed Mole	*Parascalops breweri*	P	UN	UN
Hoary Bat	*Lasiurus cinereus*	C	UN	UN
House Mouse	*Mus musculus*	C	UN	UN
Indiana Mytosis	*Myotis sodalis*	P	E	E
Least Shrew	*Cryptotis parva*	P	UN	UN
Little Brown Bat	*Myotis lucifugus*	C	UN	UN
Long-tailed Weasel	*Mustela frenata*	P	UN	GS
Masked Shrew	*Sorex cinereus*	P	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*	P	UN	UN
Northern Mytosis (Keen's Myotis)	*Myotis septentrionalis*	C	UN	UN
Norway Rat	*Rattus norvegicus*	C	UN	UN
Porcupine	*Erethizon dorsatum*	P	UN	UN
Pygmy Shrew	*Sorex hoyi*	P	UN	UN
Red Fox	*Vulpes vulpes*	C	UN	GS

Common Name	Scientific Name	Confirmed/ Predicted	Protective Status	
			Federal	State
Red Squirrel	*Tamiasciurus hudsonicus*	P	UN	UN
River Otter	*Lutra canadensis*	C	UN	GS
Short-tailed Weasel (Ermine)	*Mustela erminea*	P	UN	GS
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*	P	UN	UN
Southern Flying Squirrel	*Glaucomys volans*	P	UN	UN
Southern Red-backed Vole	*Clethrionomys gapperi*	P	UN	UN
Star-nosed Mole	*Condylura cristata*	P	UN	UN
Striped Skunk	*Mephitis mephitis*	P	UN	GS
Virginia Opossum	*Didelphis virginiana*	P	UN	GS
White-footed Mouse	*Peromyscus leucopus*	P	UN	UN
White-tailed Deer	*Odocoileus virginianus*	C	UN	GS
Woodchuck	*Marmota monax*	P	UN	UN
Woodland Jumping Mouse	*Napaeozapus insignis*	P	UN	UN
Woodland Vole	*Microtus pinetorum*	P	UN	UN

Sources: Adapted from The New York Gap Program, U.S. EPA Hexagons 351 and Checklist of Amphibians, Reptiles, Birds and Mammals of New York State: Including Their Protective Legal Status, 2010.

APPENDIX VI Fish

Resident Fish Species On The Unit

Common Name	Scientific Name
Black crappie	*Pomoxis nigromaculatus*
Bluegill	*Lepomis macrochirus*
Brook trout	*Salvelinus fontinalis*
Brown trout	*Salmo trutta*
Burbot	*Lota lota*
Central stoneroller	*Campostoma anomalum*
Chain pickerel	*Esox niger*
Common shiner	*Notropis cornutus*
Creek chub	*Semotilus atronawlatus*
Cutlips minnow	*Exoglossum maxillingua*
Eastern Blacknose Dace	*Rhinichthys atratulus*
Fallfish	*Semotilus corporalis*
Golden shiner	*Notemigonus crysoleucas*
Largemouth bass	*Micropterus salmoides*
Longnose Dace	*Rhinichthys cataractae*
Pumpkinseed	*Lepomis gibbosus*
Redside Dace	*Clinostomus elongatus*
Sculpin	*Cottus spp.*
Smallmouth bass	*Micropterus dolomieui*
Tessellated darter	*Etheostoma olmstedi*
Walleye	*Sander vitreus*
White sucker	*Catostomus commersonnii*

APPENDIX VII TREES

Tree Species on the Unit

Common Name	Scientific Name
Alder, Speckled	*Alnus rugosa*
Apple	*Malus spp.*
Ash, Black	*Fraxinus nigra*
Ash, Green	*Fraxinus pennsylvanicum*
Ash, White	*Fraxinus americana*
Aspen, Bigtooth	*Populus grandidentata*
Aspen, Quaking	*Populus tremuloides*
Basswood, American	*Tilia americana*
Beech, American	*Fagus grandifolia*
Birch, Black	*Betula lenta*
Birch, Gray	*Betula populifolia*
Birch, Yellow	*Betula alleghaniensis*
Buckthorn, Alder-leaved	*Rhamnus alnifolia*
Buckthorn, European	*Rhamnus cathartica*
Butternut	*Juglans cinerea*
Cedar, Northern white	*Thuja occidentalis*
Cherry, Black	*Prunus serotina*
Cherry, Pin	*Prunus pensylvanicum*
Chokecherry	*Prunus virginiana*
Chestnut, American	*Castanea denta*
Elm, American	*Ulmus americana*
Elm, Slippery	*Ulmus rubra*
Fir, Balsam	*Abies balsamea*
Hawthorn	*Crataegus spp.*
Hickory, Bitternut	*Carya cordiformis*
Hickory, Shagbark	*Carya ovate*
Hemlock, Eastern	*Tsuga canadensis*
Hophornbeam, American	*Ostrya virginiana*
Hornbeam, American	*Carpinus caroliniana*
Larch, European	*Larix decidua*
Larch, Japanese	*Larix leptolepis*
Locust, Black	*Robinia pseudoacacia*
Maple, Mounatain	*Acer spicatum*
Maple, Red	*Acer rubrum*
Maple, Striped	*Acer pensylvanicum*
Maple, Sugar	*Acer saccharum*
Mountain Ash, American	*Sorbus americana*

Common Name	Scientific Name
Oak, Burr	*Quercus macrocarpa*
Oak, Northern Red	*Quercus rubra*
Oak, Swamp White	*Quercus bicolor*
Pine, Jack	*Pinus banksiana*
Pine, Red	*Pinus resinosa*
Pine, Scotch	*Pinus sylvestris*
Poplar, Balsam	*Populus balsamifera*
Pine, White	*Pinus strobus*
Plum, American	*Prunus americana*
Serviceberry, Eastern	*Amelanchier canadensis*
Spruce, Norway	*Picea abies*
Spruce, Red	*Picea rubens*
Spruce, White	*Picea glauca*
Sumac, Staghorn	*Rhus typhina*
Tamarack	*Larix laricina*
Willow, Black	*Salix nigra*

Source: State Forest Inventory Database (SFID);
Leopold, D. Vascular Plants at Nelson Swamp. 1997

APPENDIX VIII PROPERTY TAXES

2018Local Taxes Paid on the Unit

Town	State Forest	Acres Assessed	Total Assessment ($)	School Tax ($)	Town Tax ($)	Fire District Tax ($)	Total Tax Paid ($)
Cazenovia	MRA#9	50	71,150	1,249	104	97	1,450
DeRuyter	MRA#9	922	932,800	19,290	1,493	1,247	22,030
Georgetown	MRA#10	1,131	1,245,700	23,917	9,321	3,601	36,839
Nelson	MRA#13	1,469	1,798,500	30,304	4,972	2,115	37,391
Total		3,572	4,048,150	**74,760**	**15,890**	**7,060**	**97,710**

Madison County Office of Real Property Tax Services: *2015 Final Assessment Rolls*

Appendix IX Summary of Stand Treatments

YEAR	Harvest Pine/ Spruce (acres)	Harvest Hardwood (acres)	Mow Fields (acres) *	Release Shrub (acres)	TOTAL (acres)
2018			35		35
2019	93	17	35		145
2020	73	0	88	9	170
2021	51	0	35		86
2022	0	100	63		163
2023	67	42	35	18	162
2024	51	61	35	1	148
2025	38	222	88		348
2026	0	104	35		139
2027	115	0	63		178
2028	155	30	35		220
2029	42	113	35		190
2030	54	13	88	4	159
2031	182	0	35	11	228
2032	0	44	63		107
2033	0	37	35		72
2034	8	75	35	8	126
2035	53	0	88	4	145
2036	0	129	35		164
2037	121	0	63		184
2038	65	0	35		100
TOTAL	**1,168**	**987**	**1,059**	**55**	

** 35 acres of fields in Nelson Swamp UA are mowed annually under a formal agreement with area farmers.*

APPENDIX X LAWS, RULES & REGULATIONS

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

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 XI STATE ENVIRONMENTAL QUALITY REVIEW (SEQR)

This Plan and the activities it recommends will be in compliance with State Environmental Quality Review (SEQR), 6NYCRR Part 617. The State Environmental Quality Review Act (SEQRA) requires the consideration of environmental factors early in the planning stages of any proposed action(s) that are undertaken, funded or approved by a local, regional or state agency. The Strategic Plan for State Forest Management (SPSFM) serves as the Generic Environmental Impact Statement (GEIS), regarding management activity on State Forests. To address potential impacts, the SPSFM establishes SEQR analysis thresholds for each category of management activity.

Management actions in this Plan are within the thresholds established in the SPSFM, therefore these actions do not require additional SEQR. Any future action that does not comply with established thresholds will require additional SEQR prior to conducting the activity.

STATE ENVIRONMENTAL QUALITY REVIEW ACT
This Unit Management Plan (UMP) does not propose pesticide applications of more than 40 acres, any clearcuts of 40 acres or larger, or prescribed burns in excess of 100 acres. Therefore the actions in the plan do not exceed the thresholds set forth in the Strategic Plan/Generic Environmental Impact Statement for State Forest Management**.**
This Unit Management Plan also does not include any of the following:
1. Forest management activities occurring on acreage occupied by protected species ranked S1, S2, G1, G2 or G3
2. Pesticide applications adjacent to plants ranked S1, S2, G1, G2 or G3
3. Aerial pesticide spraying by airplane or helicopter
4. Any development of facilities with potable water supplies, septic system supported restrooms, camping areas with more than 10 sites or development in excess of other limits established in this plan.
5. Well drilling plans
6. Well pad densities of greater than one well pad in 320 acres or which does not comply with the limitations identified through a tract assessment
7. Carbon injection and storage or waste water disposal

Therefore the actions proposed in this UMP will be carried out in conformance with the conditions and thresholds established for such actions in the Strategic Plan/Generic Environmental Impact Statement , and do not require any separate site specific environmental review (see 6 NYCRR 617.10[d]).

Actions not covered by the Strategic Plan/Generic Environmental Impact Statement
Any action taken by the Department on this unit that is not addressed in this Unit Management Plan and is not addressed in the Strategic Plan/Generic Environmental Impact Statement may need a separate site specific environmental review.

APPENDIX XII STONEY POND CAMPING AREA RULES

1. From May 1 – September 30 **camping is allowed at designated sites by permit only**. Free permits can be obtained from the office above Monday – Friday from 8:00 AM until 3:30 PM. **The applicant must be 18 years of age or older.** Permits must be signed by the applicant and produced upon request by **ANY** Law Enforcement Officer.

2. Arrival time at the campsite is **after 1:00 PM** on the first camping date of the permit. Departure time from the campsite is **before 11:00 AM** on the last camping date of the permit.

3. The maximum length of stay on **ANY one site or a combination of sites** is 14 nights per season. **No more than eight (8) people are allowed per campsite.** A new permit **will not be issued** for the same address until an issued permit expires.

4. There is a limit of **two (2)** vehicles per campsite including motor homes. **Both license plate numbers are required** on the permit. The permit **will not be** issued without both plate numbers.

5. You are camping at your own risk. **Do not** leave your belongings or children unattended. Dogs and other pets must be safely restrained.

6. **Quiet hours are from 10:00 PM until 7:00 AM.** Day users must leave by 11:00 PM.

7. Cutting, defacing or injuring in **ANY** manner **ANY** live trees, shrubs or plants is prohibited.

8. **Carry out all rubbish.** Throwing glass, cans, aluminum foil, food waste or any other rubbish into the fire pit is prohibited.

9. Swimming and/or bathing in the pond is prohibited. **Use of boats with gas powered motors is prohibited.** The overnight mooring or beaching of boats is prohibited.

10. ATV use is prohibited. Off road operation of **ANY** vehicle is prohibited. Horses are not permitted in the camping area.

11. Fires are allowed **only** in the fire rings provided by the DEC. **Only** dead and downed wood from the forest may be used for campfires. Burning of scrap wood from construction or demolition **is not allowed. No fires are allowed on the boat launch site.**

12. **DO NOT MOVE FIREWOOD!** You could be spreading pests and diseases that kill our forests! A firewood regulation is in place to protect our forests and prevent the spread of invasive pests and diseases. **Do not transport firewood over 50 miles or without a Self-Issued Certificate for Transport and Possession of NY-Sourced Untreated**

Firewood for Personal Use form. Tickets will be issued if the proper paperwork is not completed to clarify the origin of your firewood.

13. Violation of any provisions of this notice shall be grounds to revoke the permit and remove the violators from the camping area.

Appendix XIII Table of State, County and Town Roads Crossing State Lands On The Unit

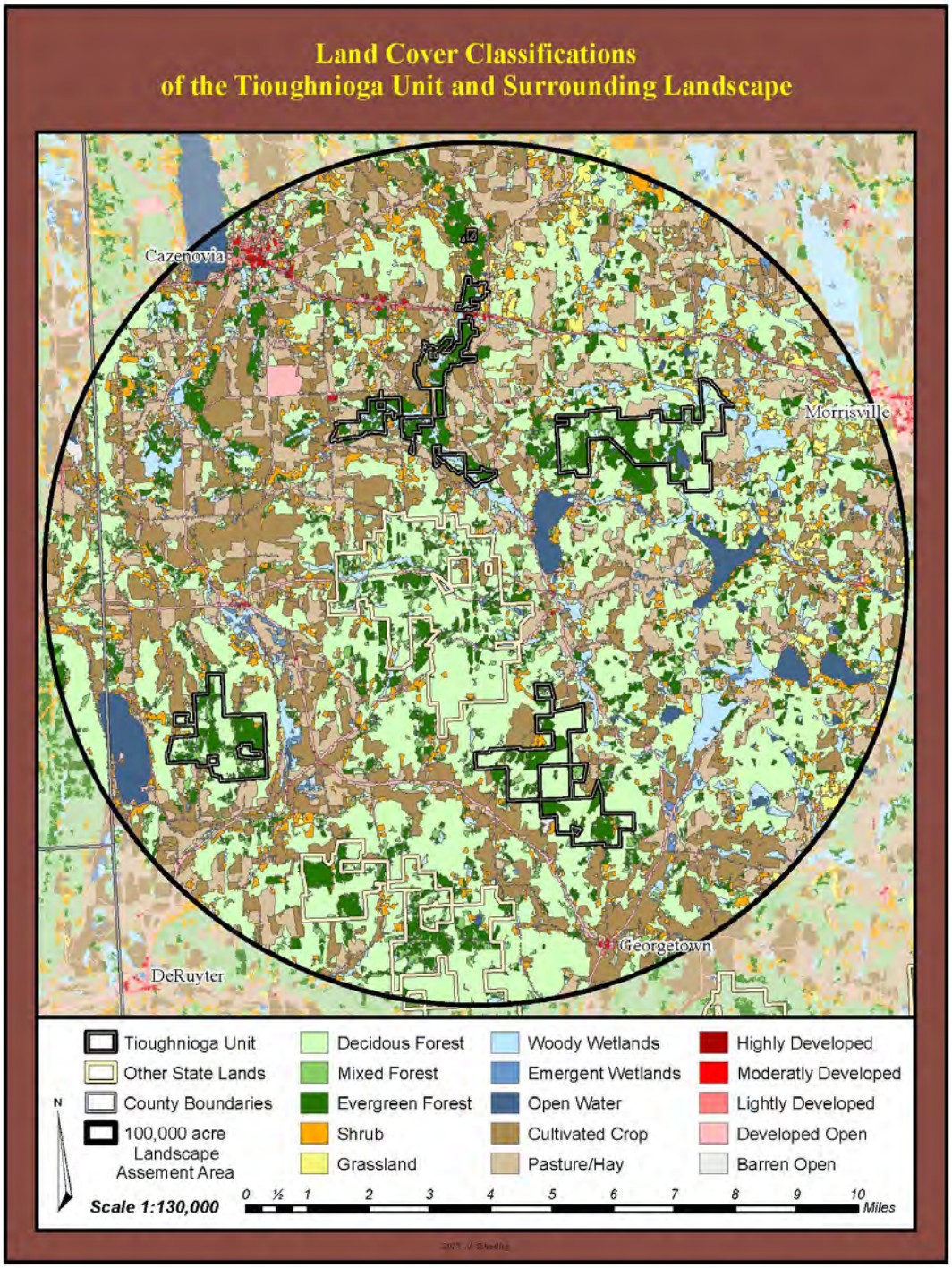
Forest	Road Name	Juristiction	Status
MRA#9	Stanton Road	Town of DeRuyter	Unplowed
MRA#9	Fairbanks Road	Town of DeRuyter	Unplowed
MRA#10	Firetower Road	Town of Georgetown	Plowed
MRA#10	Morrow Road	Town of Georgetown	Plowed
MRA#10	Parker Hill Road	Town of Georgetown	Unplowed
MRA#13	Green Road	Town of Nelson	Plowed (partial)
MRA#13	Jones Road	Town of Nelson	Plowed
MRA#13	Hughes Road	Town of Nelson	Plowed
MRA#13	Stoney Pond Road	Town of Nelson	Unplowed
NSUA	Rt. 20	NYSDOT	Plowed
NSUA	Hardscrabble Road	Madison County	Plowed
NSUA	Constine Bridge Road	Madison County	Plowed
NSUA	Nelson/ Erieville Road	Madison County	Plowed
NSUA	Lyon Road	Town of Nelson	Plowed
NSUA	Thomas Road	Town of Nelson	Plowed
NSUA	Judd Road	Town of Nelson	Plowed
NSUA	Nourse Road	Town of Nelson	Plowed

APPENDIX XIV SCHEDULE OF CONSTRUCTION PROJECTS

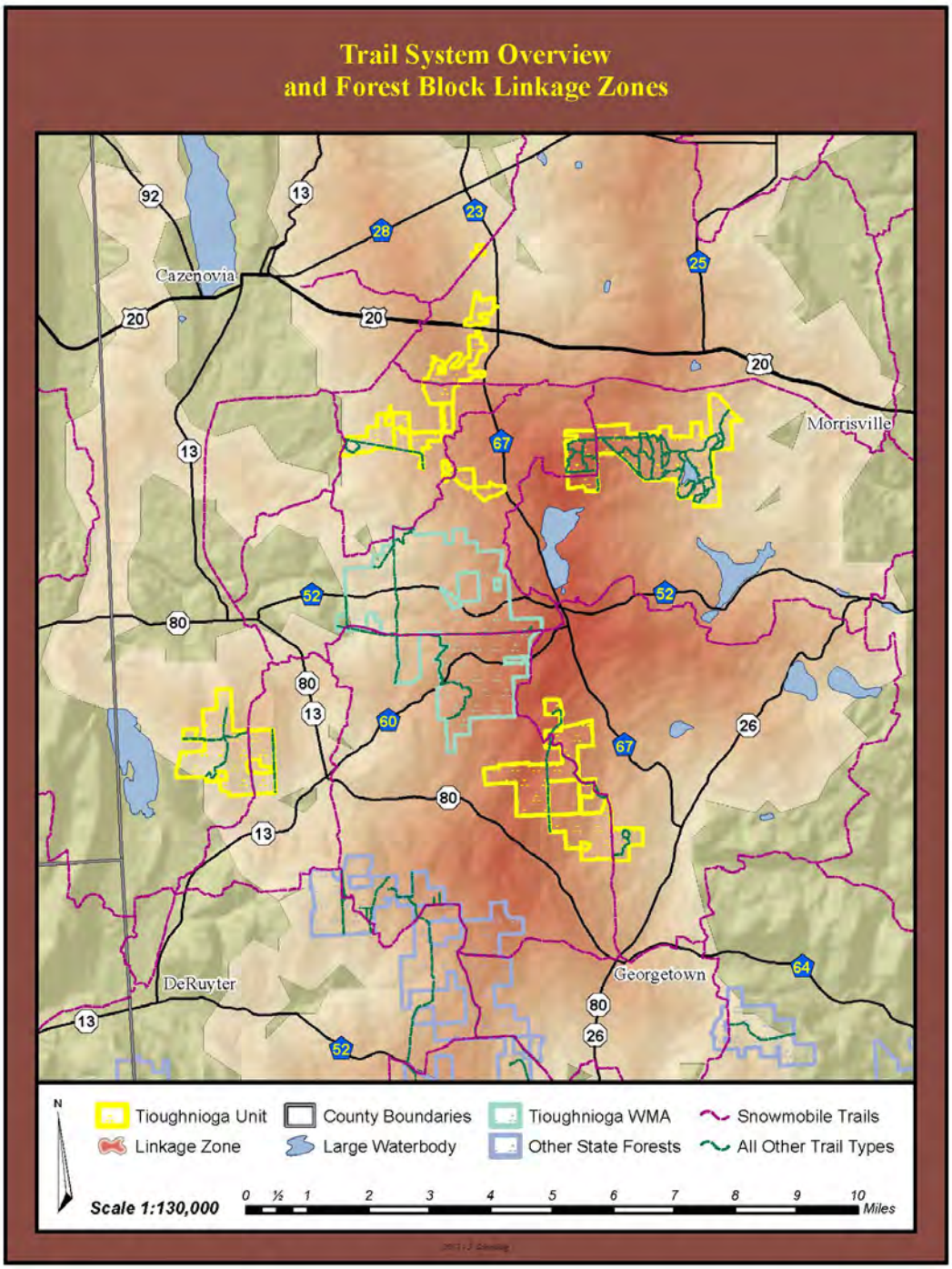
FOREST	PROJECT	YEAR
MRA#9,10,13 and NSUA	Install signs at designated parking areas	2019
NSUA	Construct universal access trail	2019
MRA#9,10	Install kiosk	2019
MRA#13	Redesign boat launch to provide universal access	2021
MRA#9	Reconstruct lean-to	2023
NSUA	Rehabilitate interpretive trail	2024

VIII. MAPS

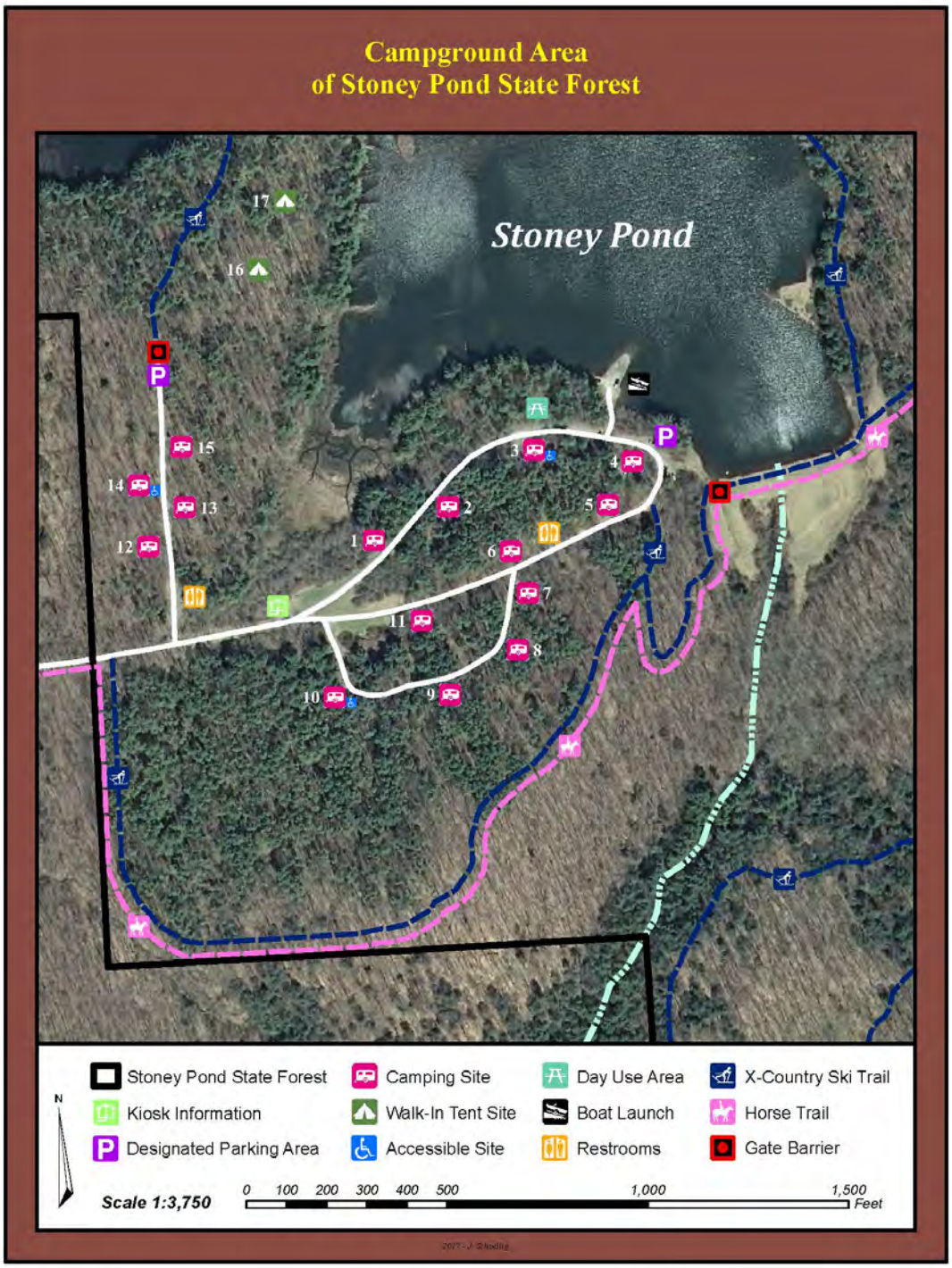
Land Cover Classification of the Unit and Surrounding Landscape for the Tioughnioga UMP



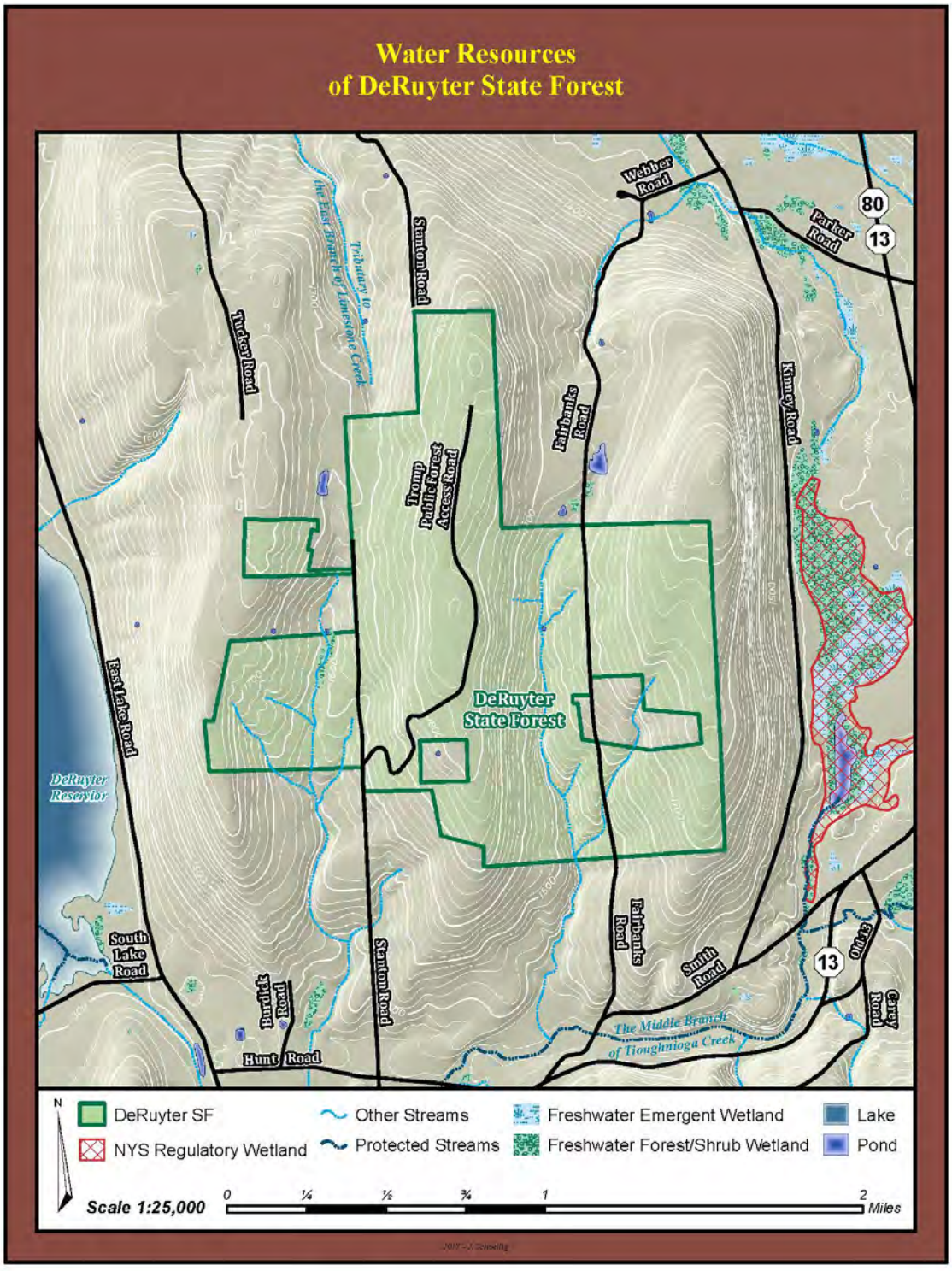
Trail System Overview and Forest Block and Linkage Zones on the Tioughnioga Unit



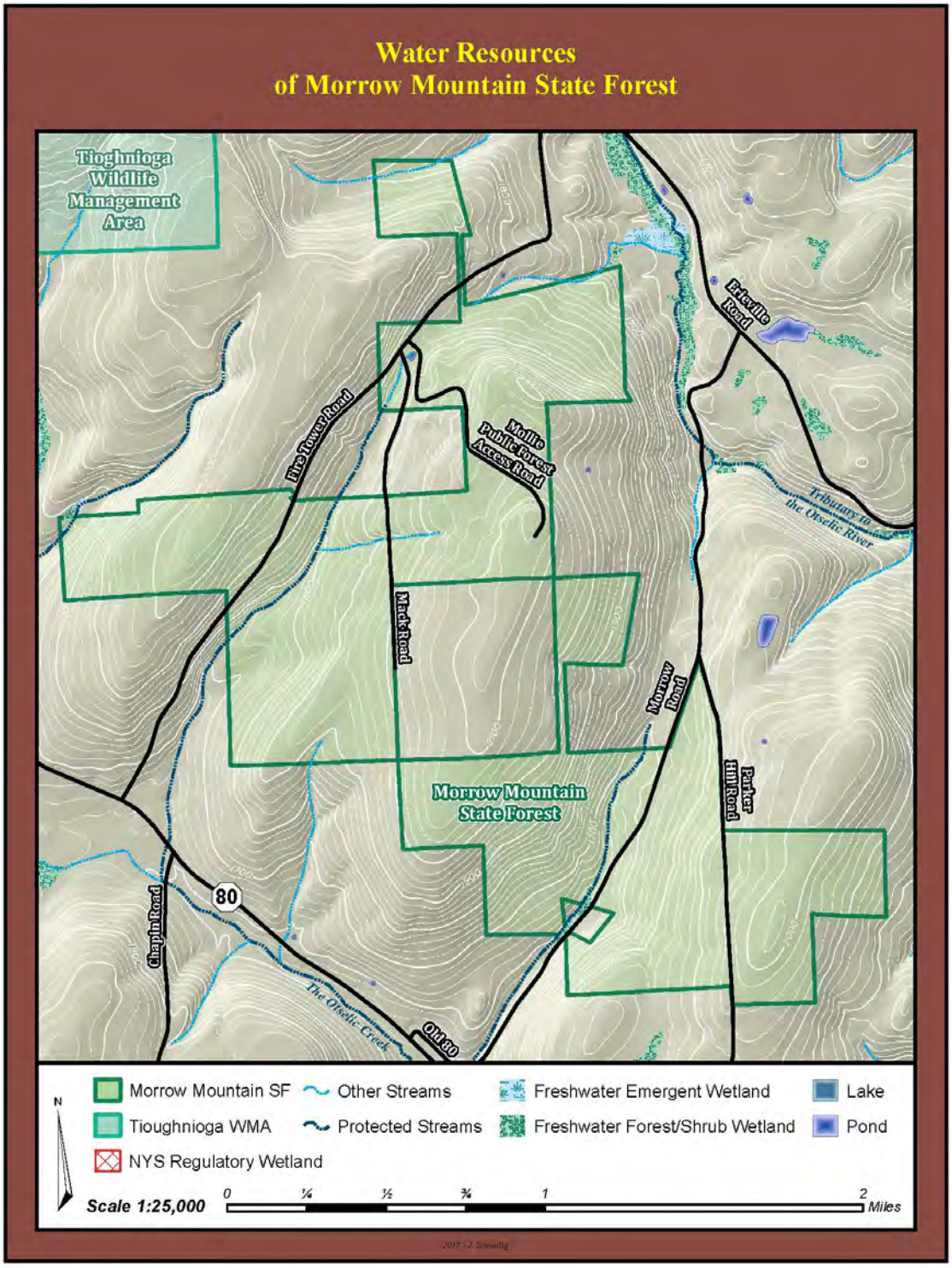
Campground on Stoney Pond State Forest



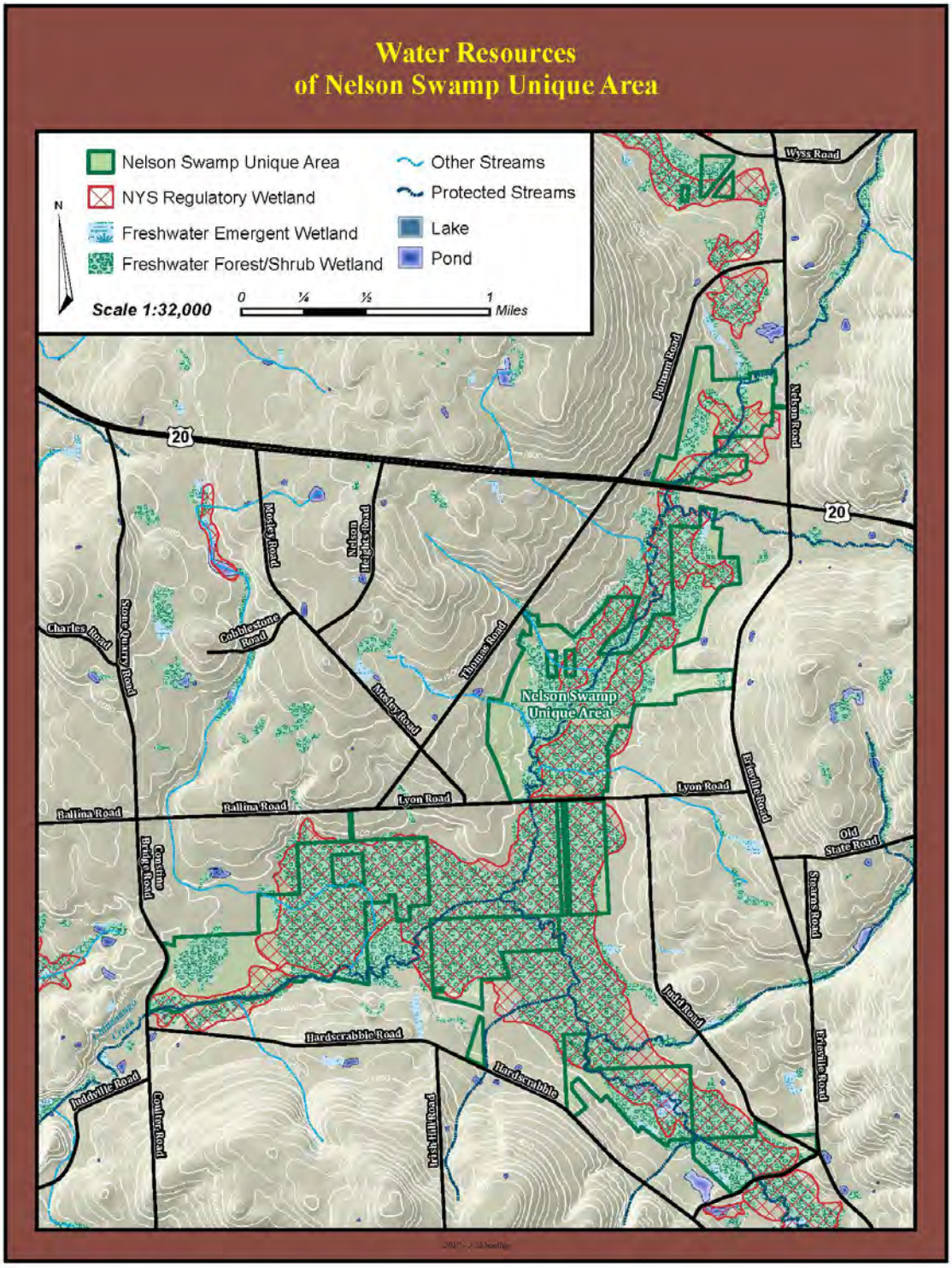
Water Resources
DeRuyter State Forest



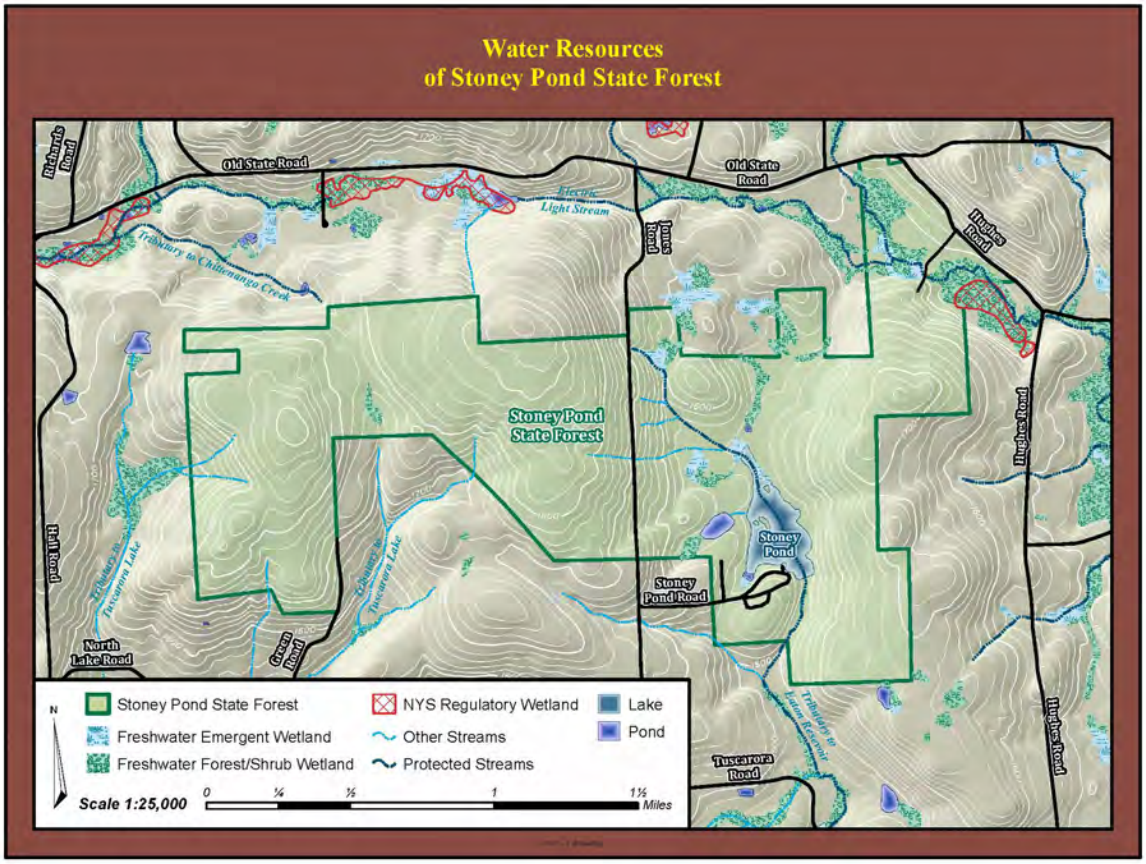
Morrow Mountain State Forest



Nelson Swamp Unique Area

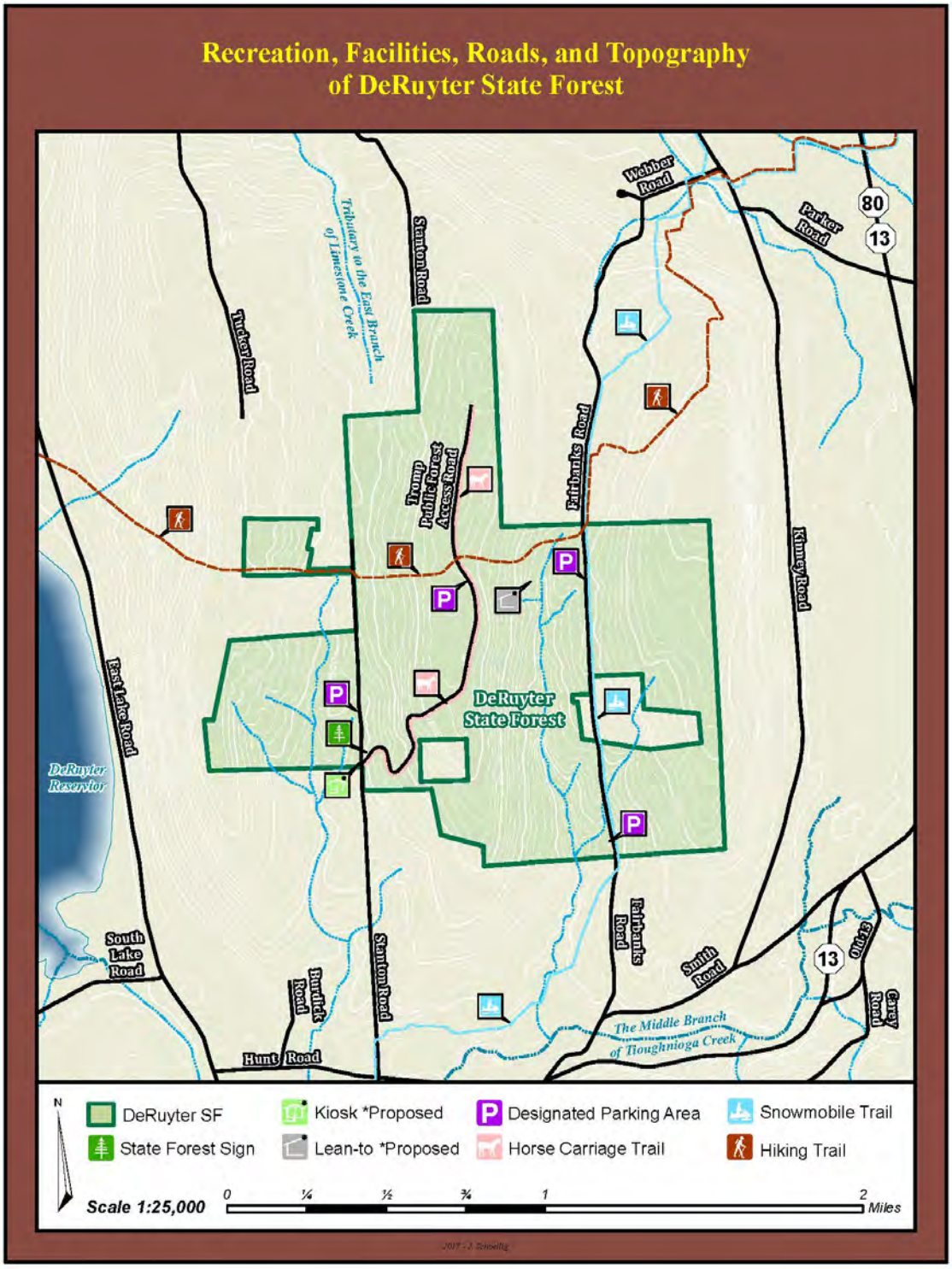


Stoney Pond State Forest

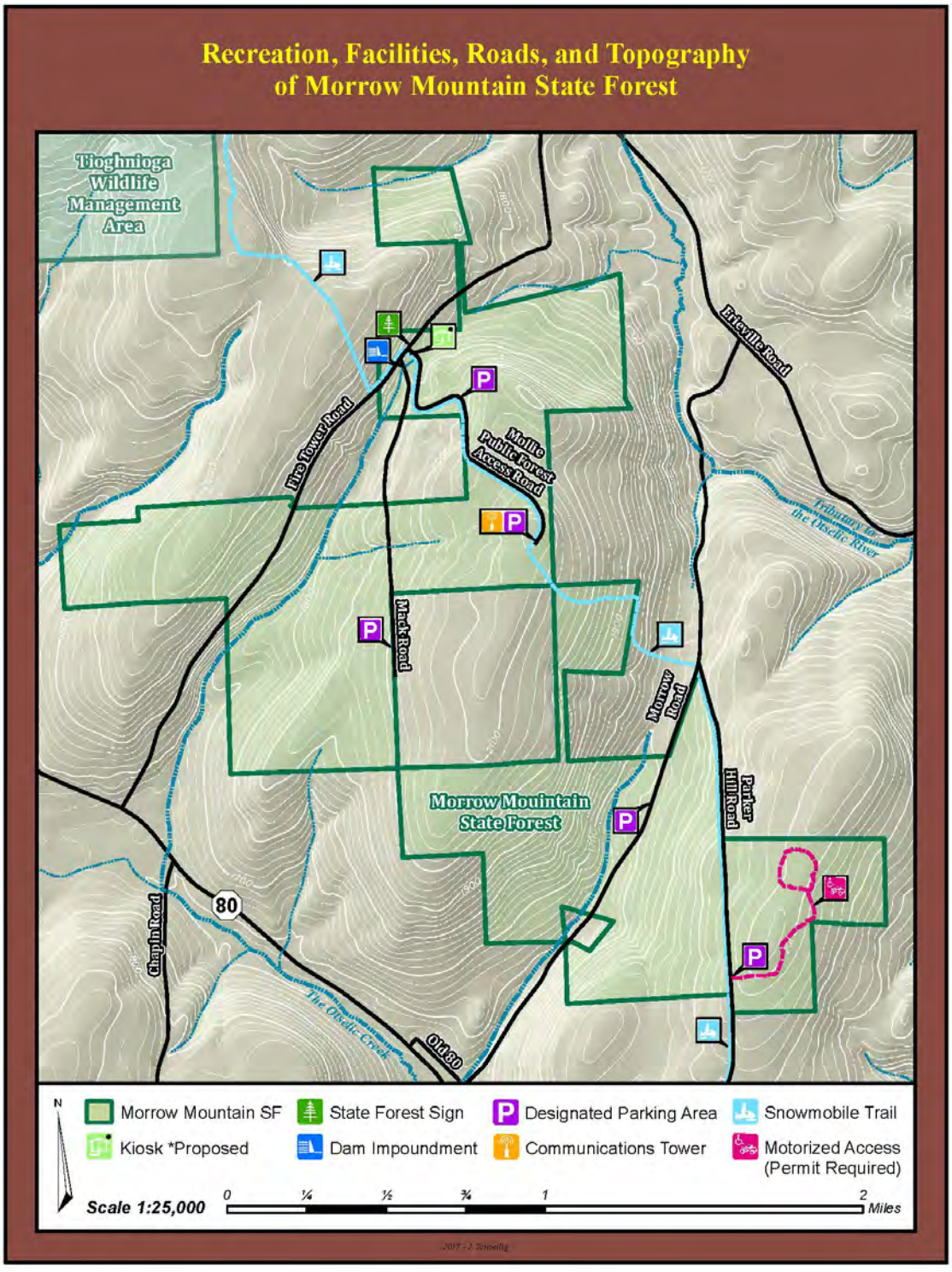


Recreation, Facilities, Roads and Topography

DeRuyter State Forest



Morrow Mountain State Forest



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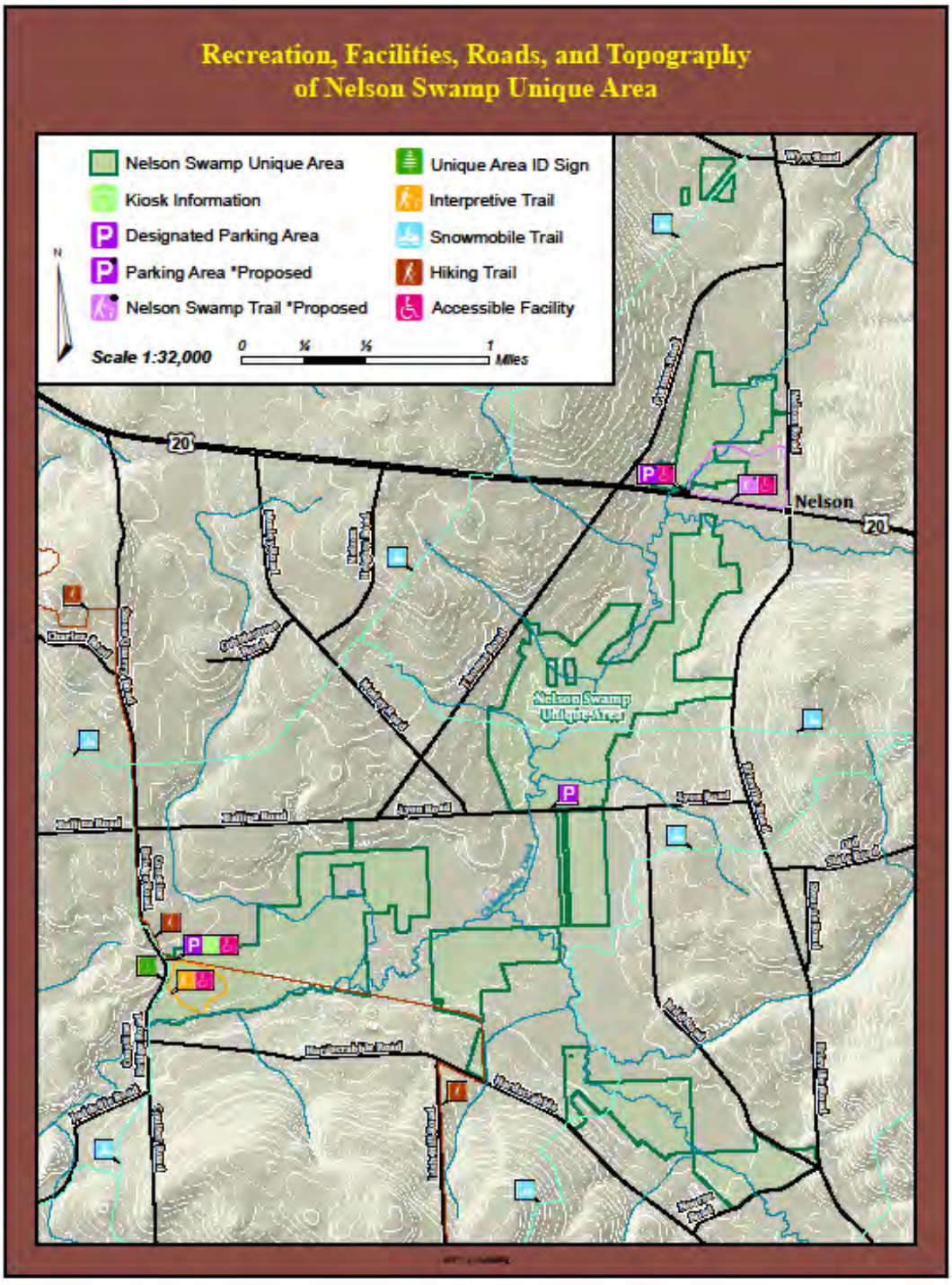
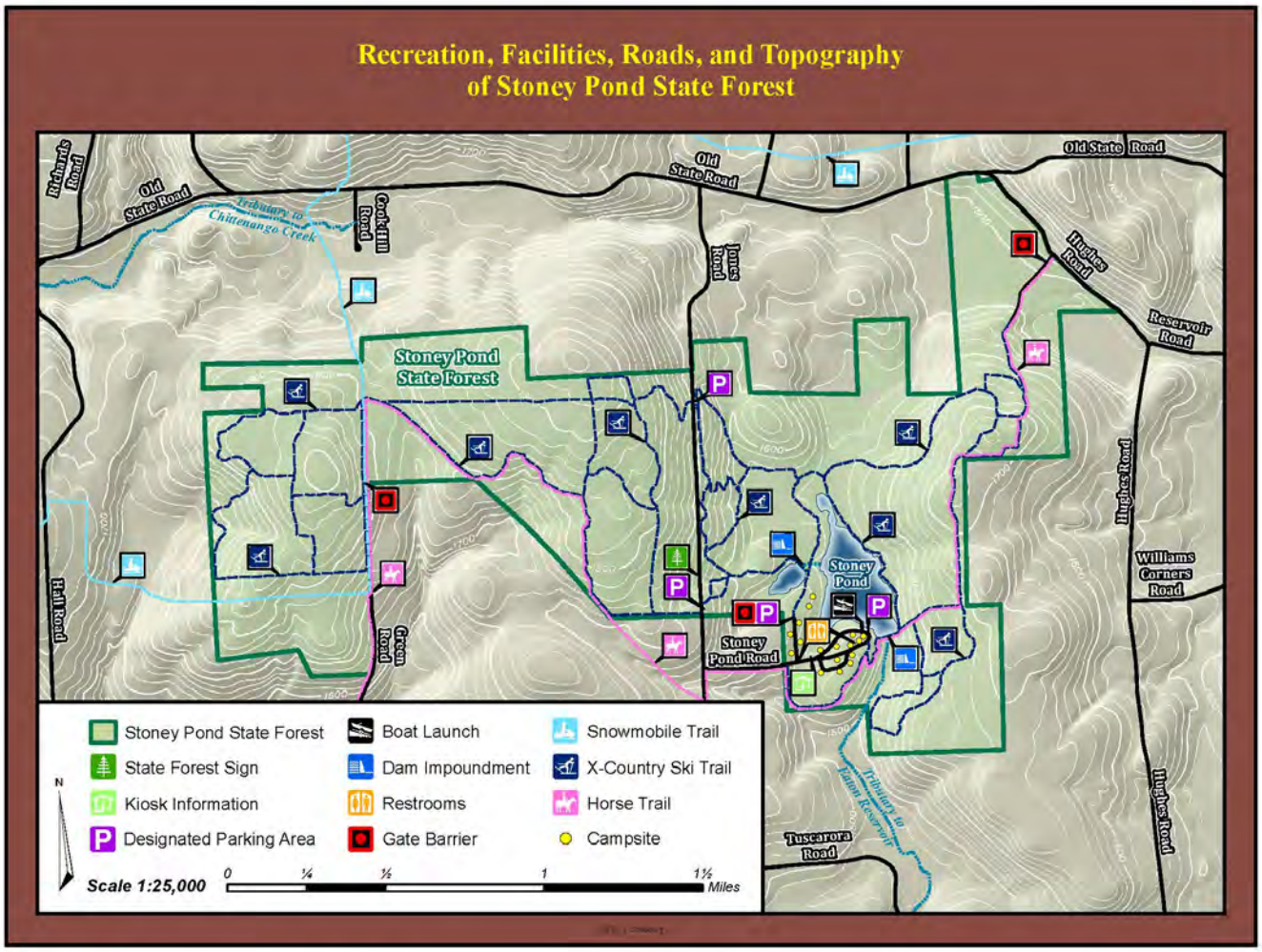


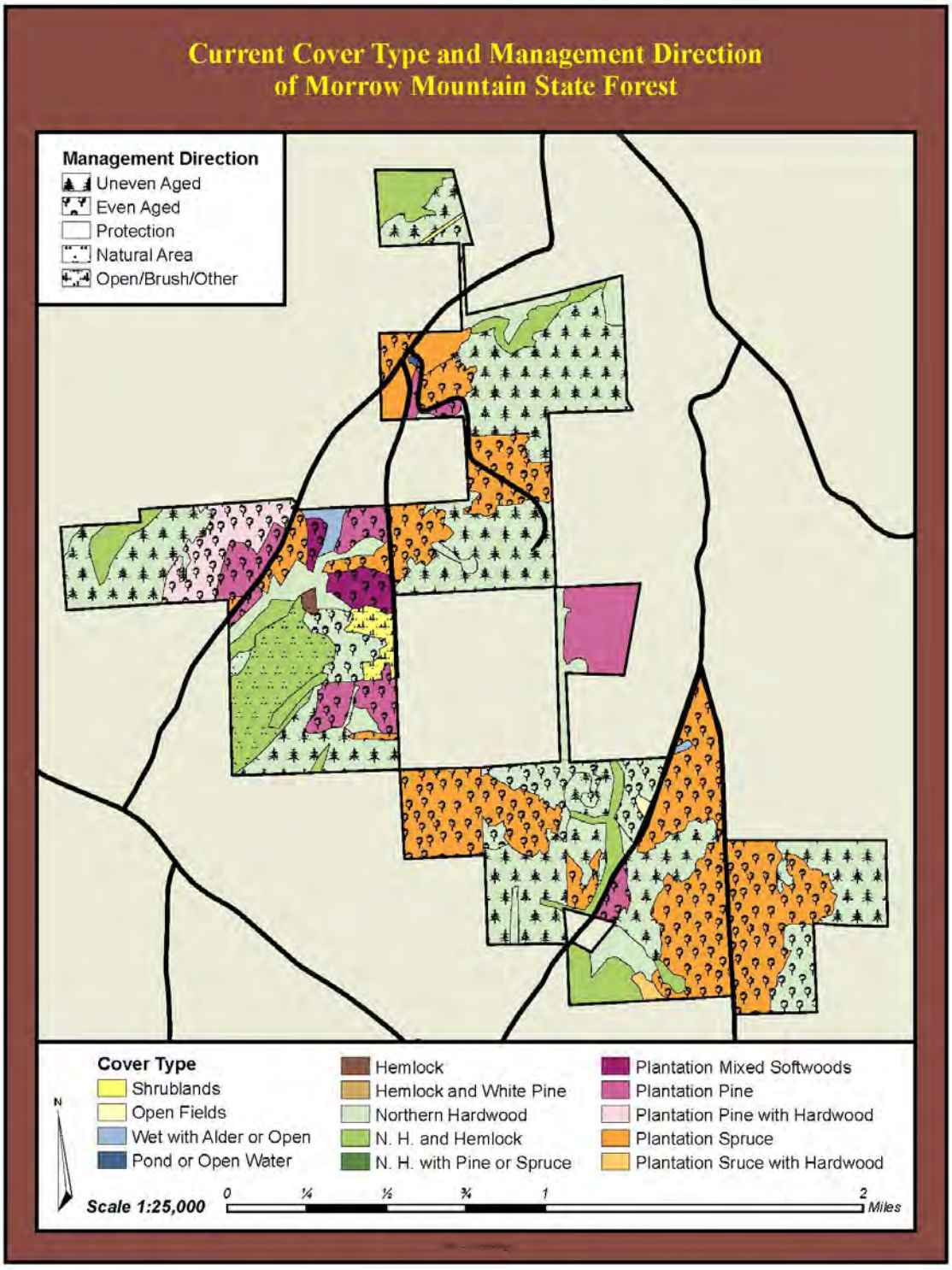
Stoney Pond State Forest



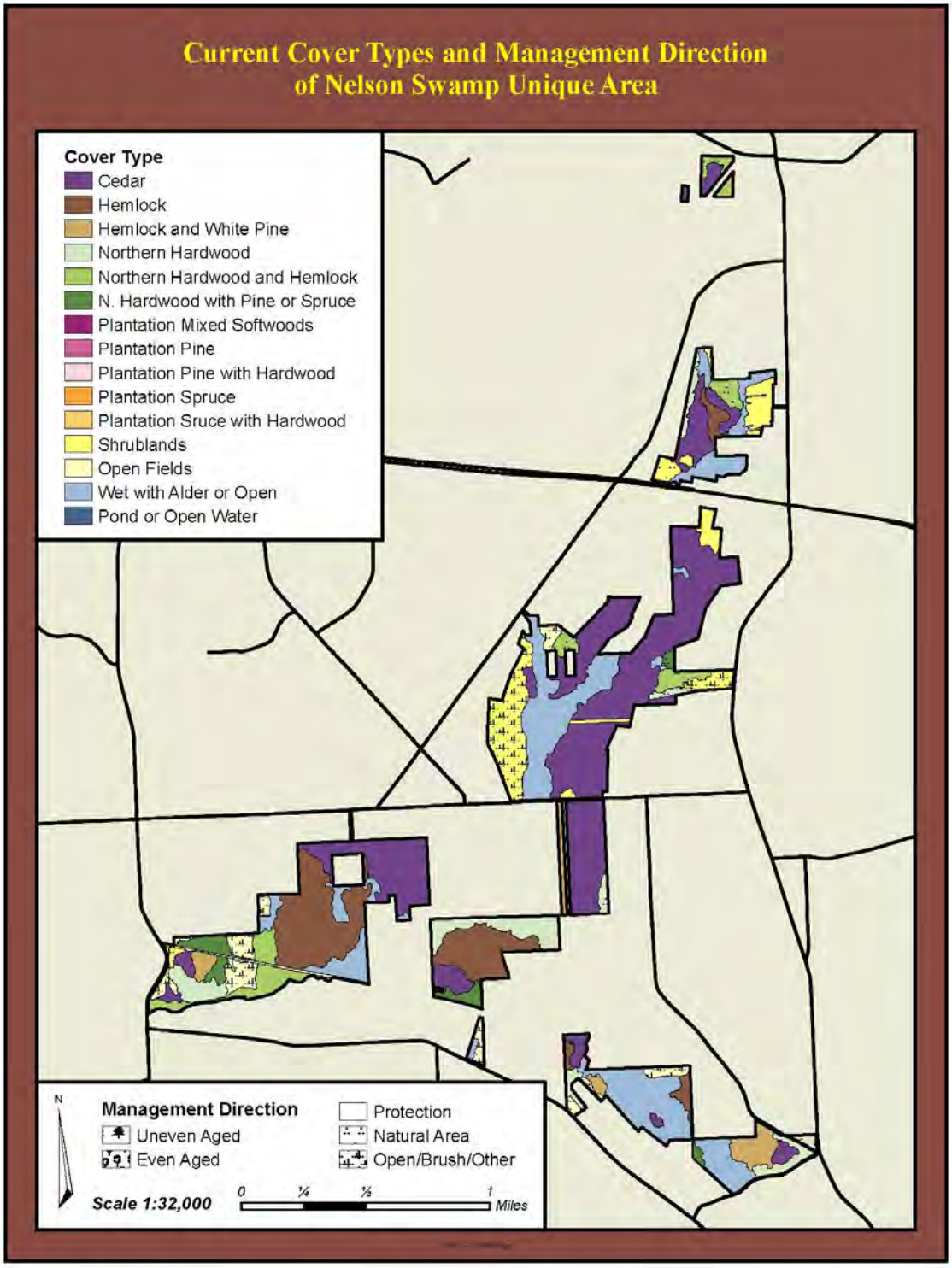
Current Cover Types and Management Direction

DeRuyter State Forest

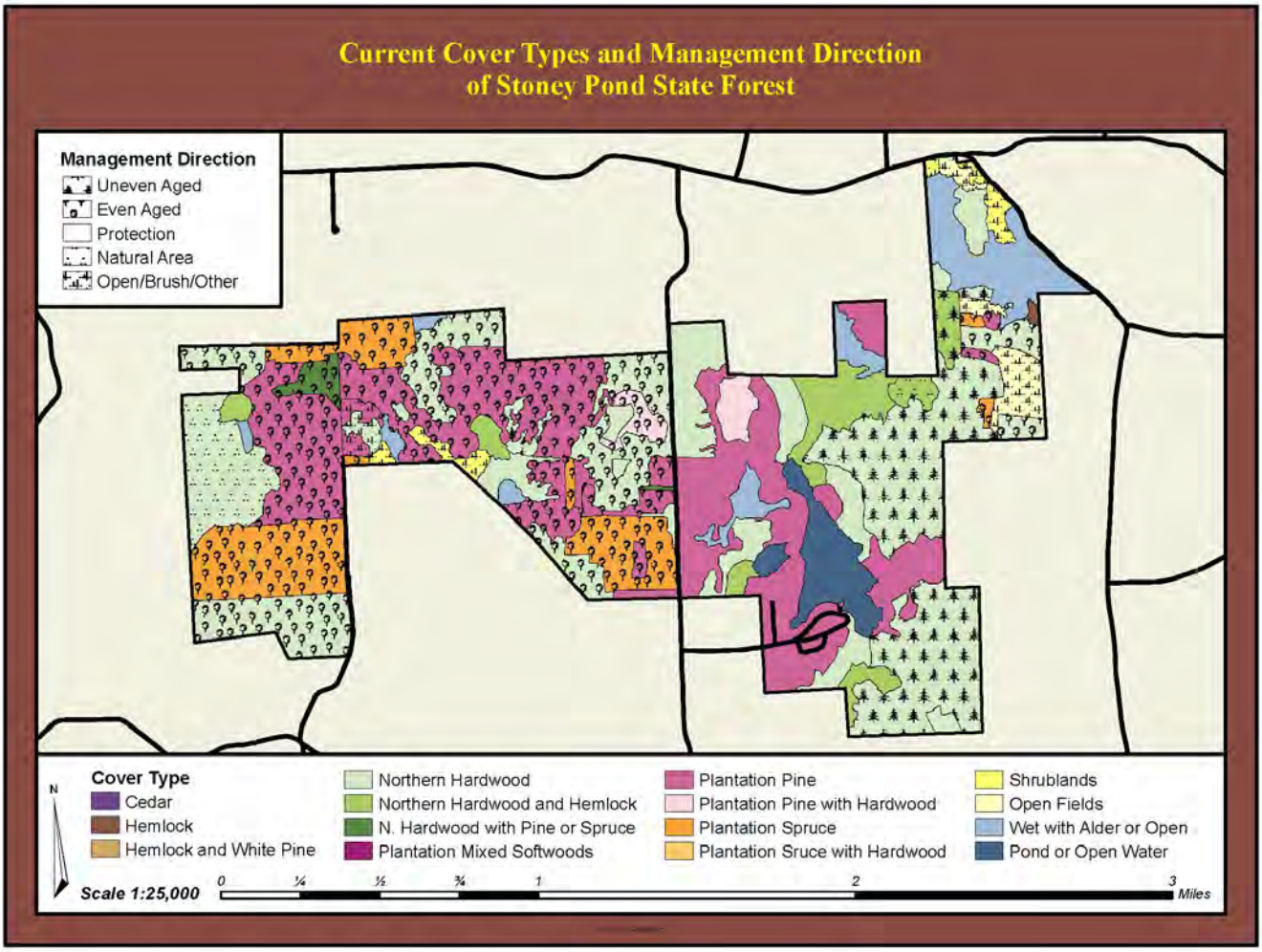
Morrow Mountain State Forest



Nelson Swamp Unique Area



Stoney Pond State Forest

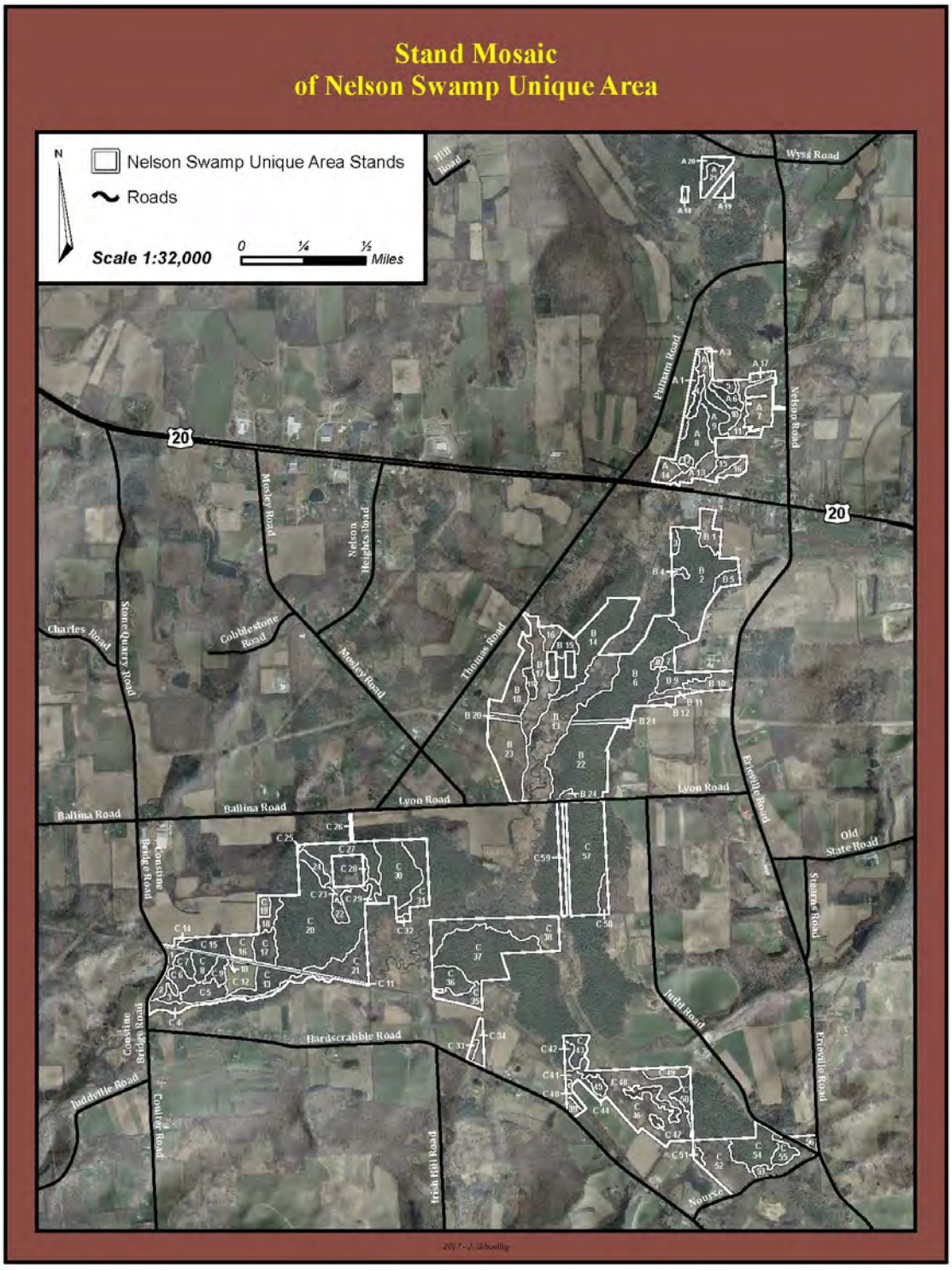


Stand Maps

DeRuyter State Forest

Morrow Mountain State Forest

Nelson Swamp Unique Area



Stoney Pond State Forest