NEW YORK
STATE OF
OPPORTUNITY.

Department of
Environmental
Conservation

LIVINGSTON
UNIT MANAGEMENT PLAN
FINAL

Towns of Conesus, Grove, Groveland, Mount Morris, Nunda, Ossian, and West Sparta

Counties of Livingston and Allegany

September 2019

DIVISION OF LANDS AND FORESTS
Bureau of Forest Resource Management, Region 8

DIVISION OF FISH AND WILDLIFE
Bureau of Wildlife, Region 8

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JUL 0 1 2019

MEMORANDUM

TO: The Record

FROM: Basil Seggos, Commissioner

SUBJECT: Livingston UMP

The Livingston Unit Management Plan has been completed. The Plan is consistent with Department policy and procedure, involved public participation and is consistent with the Environmental Conservation Law, Rules and Regulations. The plan includes management objectives for a ten year period and is hereby approved and adopted.

NYS Department of Environmental Conservation's Mission

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

Preface

It is the policy of the New York State Department of Environmental Conservation (NYS DEC) to manage state lands for multiple benefits to serve the people of New York State. This Unit Management Plan (UMP) is the first step in carrying out that policy. The plan has been developed to address management activities on this Unit for the next 10-year period. Some management recommendations may extend beyond the 10-year period.

Factors such as budget constraints, wood product markets, and forest health problems may necessitate deviations from the scheduled management activities.

The Unit Management Planning Process

New York State's management policy for public lands follows a multiple use concept established by New York's Environmental Conservation Law. This allows for diverse enjoyment of state lands by the people of the state. Multiple use management addresses all demands placed on these lands, such as: watershed management, timber management, wildlife management, mineral resource management, rare plant and community protection, recreational use, taxes paid, and aesthetic appreciation. For more information regarding the Unit Management Planning process please refer to the Strategic Plan for State Forest Management (SPSFM) at www.dec.ny.gov/lands/64567.html.

In this plan, an initial resource inventory and other information is provided, followed by an assessment of existing and anticipated uses and demands. This information is used to set goals and management objectives. Management actions tables provide an estimated cost and timetable for accomplishing these objectives.

Prepared by the Livingston Unit Management Planning Team:

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Acknowledgments

The Livingston Unit Management Planning Team would like to gratefully acknowledge the efforts of all those who contributed to this plan. We particularly would like to thank the following people for information and review they provided:

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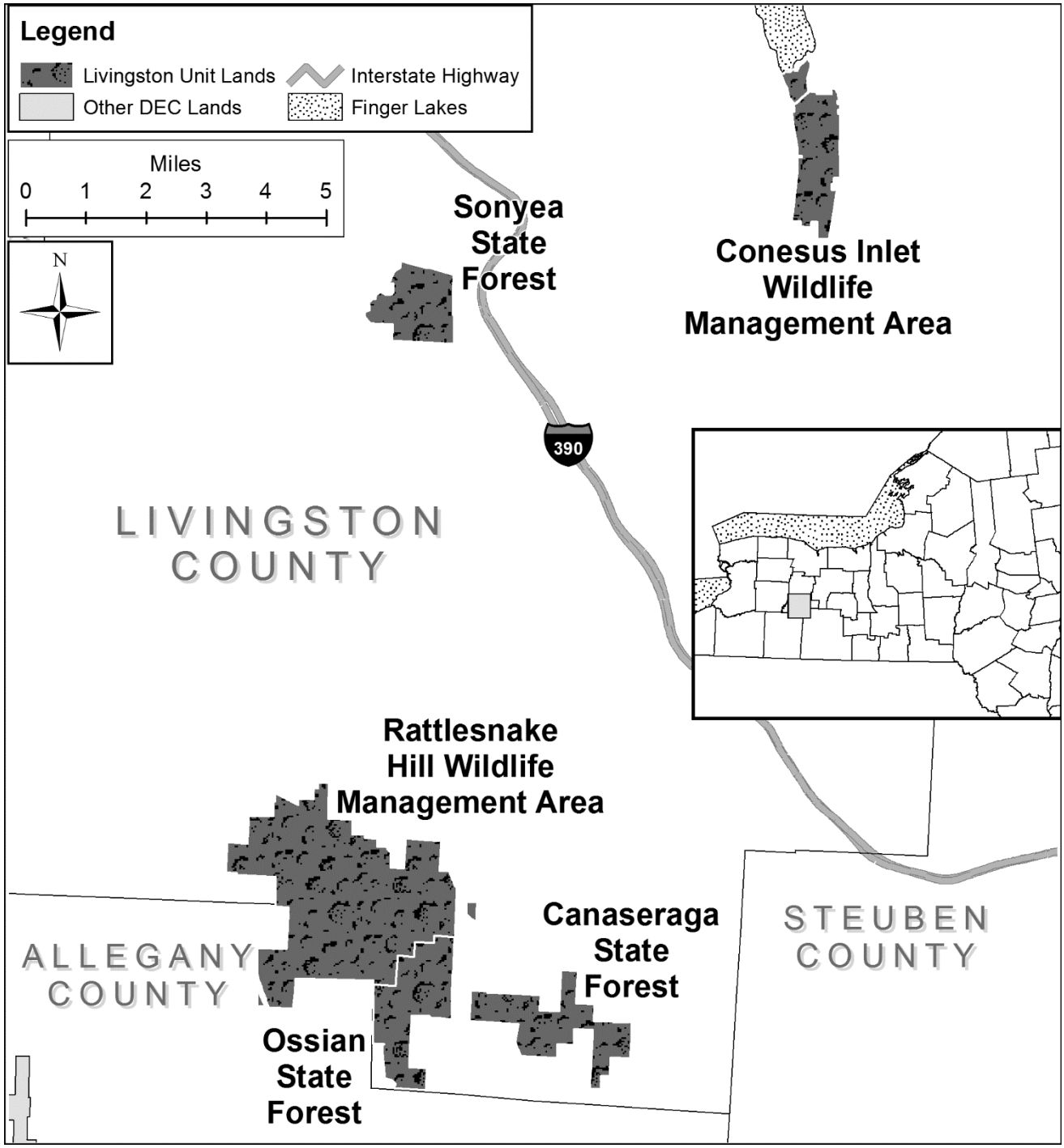
LIVINGSTON UNIT LOCATION MAP

Additional maps are in Appendix N: Maps, starting on page 206.



INFORMATION ON THE UNIT

Identification

The approximately 9,750 acre Livingston Unit (Unit) is comprised of three state forests and two wildlife management areas. For management purposes, each state forest was consecutively numbered in the order in which they were acquired in each county, or two county combinations. Wildlife management areas are commonly referred to by name.

These five properties are managed by two different Bureaus within NYS DEC; Under the Division of Fish and Wildlife - Bureau of Wildlife or, under the Division of Lands & Forests - Bureau of Forest Resource Management.

The foresters and forest technicians within the Bureau of Forest Resource Management manage more than 780,000 acres of State Forests (SF), which include Reforestation Areas, Multiple Use Areas, Unique Areas, and State Nature and Historical Preserves. These lands are managed by the Bureau to provide watershed protection, wildlife habitat, ecosystem health, timber production, and recreation opportunities. This Unit includes Canaseraga State Forest, Ossian State Forest and Sonyea State Forest.

The Bureau of Wildlife is responsible for managing all the wildlife species in the State of New York. In addition, wildlife biologists and technicians are responsible for more than 200,000 acres of land that has been purchased by the State and designated as Wildlife Management Areas (WMA) or occasionally, Unique Areas or Multiple Use Areas. These lands are managed by the Bureau to provide quality wildlife habitat and wildlife dependent recreational opportunities. Within this Unit that includes Rattlesnake Hill Wildlife Management Area and Conesus Inlet Wildlife Management Area.

The Division of Operations serves as the centralized support service unit to design, build, operate and maintain NYS DEC’s infrastructure.

The use of these lands is important to the economy and to the health and well-being of the people of the state.

Table 1: Size of the State Lands in this Unit Management Plan

Name	State Forest Number	Acreage	Est. Boundary Line (Total Exterior)*	Est. Road Frontage*
Canaseraga State Forest	Livingston Reforestation Area #1	1,285	10.8 miles	5.9 miles
Ossian State Forest	Livingston Reforestation Area #2	1,293	8.4 miles 2.2 miles in common with Rattlesnake Hill WMA	2.5 miles
Sonyea State Forest	Livingston Reforestation Area #3	926	5.4 miles	3.7 miles
Rattlesnake Hill Wildlife Management Area		5,105	20.6 miles 2.2 miles in common with Ossian SF	5.9 miles
Conesus Inlet Wildlife Management Area		1,141	8.7 miles	6.1 miles
	Total	9,805	51.7 miles	24.1 miles

*Exterior boundary and road frontage are calculated values from ArcGIS; road frontage is on roads open for public vehicle use, and does not include NYS DEC interior administered roads. In areas where NYS DEC owns on both sides of a road only one length was added to the total.

Table 2: Web Page and Location

Name	NYS DEC Web Page	County	Town(s)	WMU
Canaseraga State Forest	www.dec.ny.gov/lands/38932.html	Livingston	Ossian	9P
Ossian State Forest	www.dec.ny.gov/lands/37464.html	Livingston	Ossian	9P
Sonyea State Forest	www.dec.ny.gov/lands/37457.html	Livingston	Mount Morris, Groveland, and West Sparta	8M
Rattlesnake Hill Wildlife Management Area	www.dec.ny.gov/outdoor/24443.html	Livingston and Allegany	Ossian, Nunda, and Grove	9P
Conesus Inlet WMA	www.dec.ny.gov/outdoor/24432.html	Livingston	Conesus and Groveland	8M

History of the Livingston Unit

The Genesee Valley and adjacent highlands, including the state-owned lands of the Livingston Unit, were inhabited prior to the Revolutionary War by the Seneca Iroquois Nation. This tribe was part of a larger group, known as the Iroquois Confederacy. The Iroquois, or Haudenosaunee – meaning “people of the long house”- consist of six tribes or nations: the Mohawks, the Oneidas, the Onondagas, the Cayugas, the Senecas and the Tuscaroras (joining the confederacy in 1722). The Iroquois thrived by hunting, fishing and farming the local landscape; their population was estimated around 9,000 just before the outbreak of the American Revolutionary War in 1775. During the Revolutionary War, General John Sullivan was ordered to attack the Seneca and Cayuga Nations with the goal of ending their military assistance to the British, which had done a great deal of damage to New York and Pennsylvania frontier settlements. This began a series of skirmishes that eventually led to the removal of the Senecas from the valley. In 1779, Native Americans and British Troops ambushed Sullivan’s scouts at Groveland Hill near Conesus Inlet Wildlife Management Area. Fifteen scouts were killed and two were captured and tortured at a location near Geneseo called “Big Tree”. In retaliation, Sullivan’s army burned villages and crops, thereby effectively putting the Seneca and Cayuga Nations out of the war. Many of the troops in the invading American army took note of the richness of the area in forest and farmland resources that help make it a prime post war settlement location.

In 1788, Oliver Phelps and Nathaniel Gorham purchased 2,600,000 acres from the State of Massachusetts, which owned all the land known as “western” New York. The pre-emption line delineated the boundary between New York and “western” New York. In 1789 part of this land was granted by quick-claim deed to Arnold Potter. After this Potter offered the land to settlers at very low prices. In 1790, they sold 1,250,000 acres to Robert Morris, who sold 750,000 acres to William Pulteney. Colonel Charles Williamson was the chief land agent for the Pulteney purchase. He sub-divided the Pulteney tract and sold by contract to individual homesteaders.

It is known that the upland portion of Livingston County was almost completely forested in 1779. The Genesee Valley, in contrast, was largely grassland intermixed with small stands of predominantly oaks. This “oak opening” ecotype, containing prairie grasses and oaks, is more typical of Midwestern states. The Senecas helped perpetuate the “oak openings” by burning them to maintain wildlife and agriculture.

By the late 1800's only 30% of the land area was forested, the remainder having been cleared for agriculture. The Industrial Revolution, combined with soils poorly suited to long-term agriculture, began another change. By 1900, many agricultural farms in the upland areas of Livingston County were abandoned and over time these areas reverted back to forest land.

In response to the decline of agriculture and the demand that the abandoned and eroding farmlands be returned to productive activity, the New York State legislature passed the “Reforestation Act of 1929" followed shortly by the 1931 Hewitt Amendment. Shortly afterwards, the nation was plunged into the Great Depression, accelerating the abandonment of agricultural lands.

Wildlife Management Areas in New York, have a varied history of acquisition. Many were gifted to New York State by the Federal Government or other cooperating public or private organization. Some parcels were purchased with Bond Act funds or Federal Aid in Wildlife Restoration Program funds. The latter which is commonly called the Pittman-Robertson Act is a federal fund supported by hunters from their purchase of firearms and ammunition.

In 1933, the Civilian Conservation Corps (CCC) was started. Thousands of young men were assigned to plant millions of trees on the newly acquired state and national lands. In addition to tree planting, these men were engaged in road and trail building, erosion control, watershed restoration, forest protection, and other projects.

During the war years of 1941-1945, little was accomplished on the state and national 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 and the Environmental Quality Bond Acts of 1972, 1986 and 1996 contained provisions for the acquisition of State Forest lands, unique properties, and areas which provide open space or special recreational opportunities. These lands would serve multiple purposes involving the conservation and development of natural resources, including the preservation of scenic areas, watershed protection, forestry, and recreation. Today, properties purchased under these acts are collectively known as Unique Areas, Multiple Use Areas or lumped in with earlier purchases as part of a State Forest or Wildlife Management Area.

Canaseraga State Forest History

Canaseraga SF was purchased from four different owners, one in 1930, two in 1932 and the forth in 1940, and all under the Reforestation Act. Three were purchased from individuals and the forth from Canaseraga Bank. All purchases were made under the authority of the Reforestation Act/Hewitt Amendment. All the parcels are taxable and appear on Roll Section 3 (Taxable Lands of the State).

Ossian State Forests History

Ossian SF was purchased from nine different owners, five in 1930, and one each in 1934, ‘38 and ‘46, all under the Reforestation Act. One of the owners sold two different parcels, one of which became part of Ossian SF and the other part of Canaseraga SF. All purchases were made under the authority of the Reforestation Act/Hewitt Amendment. All the parcels are taxable and appear on Roll Section 3 (Taxable Lands of the State).

Sonyea State Forest History

Sonyea SF has a somewhat different historical background. There is a debate over the origin of the name Sonyea. In Seneca Nation language, it means “The Valley of the Eternal Sun”. Others believe Sonyea is derived from the first letters of State of New York Epileptic Association.

The land occupied by Sonyea State Forest was purchased in 1804 by William Fitzhugh and Charles Carroll from the Pultney Association. They later split the property between them. William Fitzhugh gave the Sonyea area to his oldest son, Dr. Daniel Fitzhugh. In 1836, Dr. Fitzhugh sold the Sonyea area of 1,670 acres to The Society of Christian Believers (Shakers) for $92,000.

In 1894, the Shakers sold the property for $115,000 to the State of New York for the Craig Colony Hospital for Epileptics. The land contained 30 buildings. The first patients were admitted in 1896. In 1968, the Craig Colony changed its focus to care for individuals with mental retardation.

In 1974, New York State Department of Mental Hygiene deemed the property surplus and transferred part of the area to the NYS DEC under a “transfer of jurisdiction”, thus becoming a state forest. It appears that the area acquired by NYSDEC was made taxable as state forest property and it does appear on Roll Section 3 (Taxable Lands of the State). The balance of the property acquired from the Shakers is currently owned and operated by NYS Department of Corrections and Community Supervision.

Sonyea State Forest contains remnants of the route of the Genesee Valley Canal (1840-1878) and the Pennsylvania Railroad Rochester Branch (1882-1963), following the course of the Keshequa Creek. Sections of the original canal, locks, and railroad grade are evident today, although large sections have washed away. In 2000 the State purchased the corridor, splitting management responsibilities between NYS DEC and NYS Office of Parks, Recreation and Historic Preservation (Parks), then in 2011 the NYS DEC portion of the trail was transferred to Parks. Visit www.nysparks.com/parks/189/details.aspx for additional information on the Genesee Valley Greenway.

A cemetery of unknown origin is surrounded by Sonyea SF. Most of the 200 graves are only marked with numbered metal markers, or as is the case with one, a painted wooden stake. One exception is a granite gravestone for a women named Charity Savage. Research indicates Charity entered Craig Colony Hospital in 1898 from New York City. She died in 1909 from pneumonia and other complications. The gravestone may have been placed by her family sometime after her death, because the stone looks newer than 1909.

Savage’s gravestone is an indication the cemetery was an early burial ground for Craig Colony patients from 1896 to 1910. After 1910, it appears Craig Colony patients were buried in the Craig Colony Cemetery located on the north side of Keshequa Creek.

Rattlesnake Hill Wildlife Management Area History

The majority of Rattlesnake Hill WMA was acquired by the federal government under provisions of the Bankhead-Jones Farm Tenant Act of 1937. It was placed under long term lease to NYS DEC in 1940-41. The surface and ¼ of the mineral estate was conveyed to the State in 1961 by quit-claim deed.

The remaining ¾ of the mineral estate was reserved by the federal government and is managed by the US Department of the Interior, Bureau of Land Management, Eastern States Office. Property was also conveyed subject to: easements or rights-of-way for roads, railroads, utilities, etc. as they existed at the time of acquisition; minerals and mineral rights

outstanding in third parties and mineral leases issued by the grantor. (There are none known to exist); rights of any permittee who had been issued a special use permit by the grantor (there are none believed to have survived to the present); and the above mentioned ¾ interest in the mineral estate, including, but not limited to, coal, oil, gas, sand, gravel, stone, and clay. The State is given the right to use such sand, gravel, stone, and clay as may be necessary to "operate the property."

A large portion of this conveyance was acquired by the United States through condemnation. See Equity Decree #2164 of 9/26/1938; file 576; as it concerns Tract 56, Parts a&b. This amounted to 1,242.88 acres. Records of this action are believed to be filed among the records of the US District Court for the Western District of New York, located in Buffalo. The title of the case is believed to be "*The United States vs. The State of New York, et al."*

One small parcel was later given to the state, and additional sections were purchased under the Environmental Bond Act of 1972 funding.

The land was largely unsettled as late as the Civil War. Then, from 1870 to 1900 much of it was clear-cut for wood products including lumber, "chemical" wood to produce methyl alcohol, charcoal production and firewood for home heating. Large blocks of land were owned by railroad companies. Once the area was clear-cut, the companies sold land at very reasonable prices to settlers who established farms.

The property has numerous house foundations, an old sawmill site and charcoal pits. Remnants of a narrow-gauge rail line to transport supplies on and off the "hill" exist. The clear-cutting, farming, and numerous fires started by steam railroad engines contributed to the current mix of vegetation on the area.

Conesus Inlet Wildlife Management Area History

Conesus Inlet WMA was started in the 1960s, with the majority of the property acquired through appropriation (condemnation) in 1969. A $40,000 grant from the US Department of Interior was the source of funding for most of the parcels. Other sources of funding included the 1960 and 1972 state environmental quality bond acts.

Pursuant to RPTL Section 532(g): Any *lands acquired, within the Town of Conesus, by the State; on or after December 15, 1989; are taxable for all purposes.* There is one tract associated with Conesus Inlet WMA that is held under this provision.

There are two permanent easements that cross the property: A 20 foot wide easement to Livingston County Water & Sewer District for a water line, and an easement, with no width specified, to the Atlantic Pipeline Co. This easement is believed to have been transferred, at some point in the past, to Sun Logistics.

NYS DEC has a permanent easement to regulate, control, or restrict hunting, fishing, or trapping on a privately-owned parcel of land along Guiltner Road. This does not allow public access.

Terrain

The five properties that make up this Unit are rather varied in terms of terrain, from 610 to 2,032 feet above mean sea level, North American Datum of 1983.

Canaseraga SF varies in elevation from 1,360 to 1,942 feet. Significant terrain features include Scott Hill and Black Creek. Aspect is variable. Rock outcrops are very limited, and generally occur in association with stream courses.

Ossian SF varies in elevation from 1,480 to 1,980 feet. Significant terrain features include Hovey Gully and Scovill Hill. Aspect is variable. Rock outcrops occur on all stream courses, and are particularly prevalent in Hovey Gully.

Sonyea SF varies in elevation from 610 to 860 feet. Significant terrain features include Keshequa Gorge and Two Mile Creek. Aspect is variable. Rock outcrops are a prominent feature of Keshequa Gorge.

Rattlesnake Hill WMA varies in elevation from 1,301 to 2,032 feet. Significant terrain features include East Hill, Dannack Hill, and Canaseraga Creek. Aspect is variable. Rock outcrops are particularly notable along the unnamed stream which runs easterly from Newville Road.

Conesus Inlet WMA varies in elevation from 818 to 860 feet. Significant terrain features include Conesus Lake, Conesus Inlet, and Conesus Swamp. Aspect is variable although the property does not have the same variety of slope as other properties in this Unit. Rock outcrops do occur, but are limited to stream courses and are not particularly notable.

Climate

Climatic data is supplied by the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS).

The average length of the freeze-free growing season in Livingston County is 159 days. The average daily high temperature in winter is 32° F and the average daily minimum temperature is 17°F. In summer, the average daily high temperature is 68°F and the average daily minimum temperature is 53°F.

Livingston County annual precipitation averages 31.03 inches. Precipitation is well distributed throughout the year and is usually adequate for all crops. Average seasonal snowfall is 52 inches. In winter snow depths vary greatly with elevation, but on the average, snow depths are measurable for 5 months. Monthly totals of 8 to 28 inches of snow are common from December through March.

Sunshine occurs for 65% of daylight hours in the summer and 30% in the winter. The prevailing wind is from the west to southwest. Average wind speed is at its highest, 14 mph, in February.

Taxes

State Forest lands acquired for reforestation purposes pursuant to Section 9-0501 of the Environmental Conservation Law are subject to taxation for all purposes except county tax.

Taxes on taxable state land are handled just like a private owner's taxes except all the tax bills (or rolls) are sent from the County Treasurers and go directly to the State Comptroller. The Comptroller then pays the taxes to the County Treasurer's office, who then gives the money to the towns and school districts, or collects less in owed moneys.

Reforestation Areas in the Towns of Ossian, Groveland, West Sparta, and Mount Morris in Livingston County are subject to taxation as the above paragraph states. These lands are listed on Roll Section 3 as Taxable Lands of the State.

In general, Wildlife Management Areas are exempt from real property tax. The entirety of Rattlesnake Hill WMA appears on Roll Section 8 Wholly Exempt Properties. Most of Conesus Inlet WMA appears on Roll Section 8, Wholly Exempt Properties. The exception is Tax Parcel 110.00-01-47.11, which is taxable state land.

See also the History of the Livingston Unit section (pg. 11), and Appendix C: Taxes paid on NYS DEC Lands (pg. 153), lists the estimated taxes paid in 2014 on the lands of the Livingston Unit Management Area. Further details may be found in Section 534 of the Real Property Tax Law.

Landscape View of Existing Uses

The purpose of this section is to take a brief look at land use patterns beyond the boundaries of NYS DEC ownership. This plan only applies to the Livingston Unit, but it does not exist in a vacuum.

The uses and conditions of the adjacent private and/or publicly owned land will impact the Unit and will be considered when planning actions on the Unit. This type of “landscape look” is valuable in helping to place the Unit in its proper context.

The following table was created from the 2011 U.S. Geological Survey’s National Land Cover Dataset. Note that this is a unified, nationwide, dataset. This dataset is also multi-resolution. All data for this table was extracted at a scale of 1:24,000. As such, results should be directly comparable from one town to the next. Note further that, given that the data is multi-resolution a different scale may produce slightly different results than this table displays.

As shown in the following table, all eight towns are well forested; in general, the towns furthest to the north show somewhat less forested land, due to the prevalence of better agricultural land in these locations, and agricultural abandonment, with succession to forest land, becomes much more prevalent in the south.

Table 3: USGS Land Use and Land Cover Data

Please note that this data was extracted from the USGS Land Use and Land Cover data. Also note that the data is displayed, by town, for the entire town. See Table 2: Web Page and Location (pg. 10) and Appendix N: Maps (pg. 206) for which NYS DEC properties in which town.

	Ossian	Nunda	Conesus	West Sparta	Groveland	Mount Morris	Burns	Grove
Open Water	0.08%	0.08%	8.36%	0.01%	1.96%	0.72%	0.04%	0.47%
Developed, Open Space	2.21%	4.71%	3.82%	4.32%	4.18%	3.00%	2.35%	2.46%
Developed, Low Intensity	0.06%	0.29%	0.21%	1.03%	1.96%	0.42%	0.10%	0.07%
Developed, Medium Intensity	0.04%	0.04%	0.14%	0.08%	0.57%	0.04%	0.02%	0.04%
Developed, High Intensity	0.00%	0.01%	0.01%	0.01%	0.05%	0.01%	0.00%	0.01%
Barren Land (Rock, Sand, Clay)	0.04%	0.02%	0.02%	0.00%	0.02%	0.07%	0.00%	0.02%
Forest, Deciduous	37.67%	34.83%	38.91%	30.39%	14.52%	19.71%	45.06%	53.14%
Forest, Evergreen	4.47%	3.28%	2.46%	1.04%	1.09%	2.02%	5.31%	5.36%
Forest Mixed	12.08%	10.83%	8.36%	4.95%	4.35%	6.83%	4.52%	5.65%
Scrub, Shrub	6.50%	9.64%	10.11%	6.74%	5.21%	5.01%	4.15%	3.95%
Herbaceous, Grassland	0.48%	0.31%	0.41%	0.31%	0.29%	0.12%	0.30%	0.16%
Hay, Pasture	20.35%	26.76%	18.59%	21.55%	27.94%	30.31%	10.84%	12.02%
Crops Cultivated	14.64%	8.00%	3.63%	28.13%	32.24%	27.30%	24.35%	13.78%
Wetlands, Woody	1.13%	0.85%	2.86%	1.07%	4.21%	1.66%	2.65%	2.47%
Wetlands, Woody Herbaceous	0.25%	0.35%	2.11%	0.37%	1.41%	2.78%	0.31%	0.40%

Roads

The State Forest Transportation system provides for both public and administrative access to the Unit. The Livingston Unit is accessed by a combination of Town, County and State Highways and public forest access roads (for those areas administered by the Division

of Lands & Forests) or the same categories of public highways and administrative access roads (for those areas administered by the Division of Fish and Wildlife).

Some portions of these roads are not maintained for winter travel. Many abandoned roads and old farm lanes are used as recreational trails. Roads and trails are constructed to standards that will provide reasonably safe travel and to keep maintenance costs at a minimum. There are six types of transportation corridors providing different levels of access, depending on the standards to which they are constructed. NYS DEC reserves the right to limit access to state lands when public safety or resource damage issues occur.

The next several paragraphs give brief descriptions of the six types of roads that can be found on lands administered by the Division of Lands & Forests.

Public Forest Access Roads - Permanent, unpaved roads which may be designed for all-weather use depending upon their location, surfacing and drainage. These roads provide primary access for administration and public use within the Unit. The design standards for these roads are those of the Class A and Class B access roads as provided in the Unpaved Forest Road Handbook (8/04)

Haul Roads - Permanent, unpaved roads which are not designed for all weather travel, but may have hardened or improved surfaces with artificial drainage. They are constructed according to best management practices primarily for the removal of forest products or other management needs. They provide limited access within the Unit for log trucks and other heavy equipment. These roads may or may not be open for public motor vehicle use, depending on management priorities and objectives. They may serve as recreational access corridors but are not maintained according to specific standards or schedules. The design standards for these roads are below those of the Class B access roads as provided in the Unpaved Forest Road Handbook.

Access Trails - Temporary, unpaved roads which do not provide all weather access within the Unit. They are not designed for long term and repeated use by heavy equipment. These corridors were originally constructed for the seasonal removal of forest products by skidding to landings or other staging areas. Constructed according to best management practices, these trails may be used to support other management objectives such as recreational access corridors. Maintenance is limited to activities which minimally support seasonal access objectives.

Recreational Trail - Unpaved recreational corridors which do not provide all weather access within a Unit and are designed to achieve specific recreational access objectives. Constructed according to best management practices, and following accepted regional standards for design, these trails may be used to support multiple types of seasonal recreation access. Maintenance is limited to activities which minimally support the access objectives and design.

Public Road - Permanent, paved or unpaved roads primarily designed for motor vehicle travel which are maintained by federal, state or local government. These roads may or may not provide year-round access.

Rights-Of-Way (ROW) - Permanent, paved or unpaved roads which allow the NYS DEC access to state forest properties while crossing private land, or, corridors across state forests allowing access to private in-holdings.

The public forest access roads and haul roads are all maintained by NYS DEC and the access trails that are accessible by mower are also maintained. The public forest access roads are open to the public use all year round but are not maintained during the winter months. The haul roads and access trails are used by the public for hiking, biking, cross country skiing, and snowshoeing. The public forest access roads, haul roads and some of the access and recreation trails are used by NYS DEC for administrative access. See Appendix N: Maps (pg. 206) for names and types of roads and trails. There are also many other unmarked trails connecting some of the access trails.

In general, the various properties of this Unit are well served by State, County, and Town roads systems. All town and county highways are assumed to exist as a result of a prescriptive easement. Stated another way, they were established by use, rather than through a specific legal dedication process, and there are no deeds conferring the right to construct them. Since these are prescriptive easements they are limited to the width actually occupied by the highway, subject to a 49.5 foot (3 Rods) maximum width. The only exception to this might be where recent road or bridge projects necessitated acquisition of a dedicated easement. The prescriptive easement is for highway purposes only; no right exists to “sub-let” the easement to utility companies.

All state highways were acquired through appropriation by NYS DOT. The deeds from the previous owners to NYS DEC generally exclude these areas. The state highway boundaries depicted in this plan are reasonably accurate. However, prior to beginning projects which involve the state highways, reference should be made to the actual appropriation documents for the pertinent highway segment.

Table 4: State, County, and Town Highways Which Serve the Various State Lands in This Plan.

See also Appendix N: Maps, page 206.

Area	Road Name	Jurisdiction
Canaseraga State Forest	Bonner Rd	Town of Ossian
	Scott Hill Rd	Town of Ossian
	Blank Hill Rd	Town of Ossian
	White Rd	Town of Ossian
	Interior Roads and Parking	NYS DEC
Ossian State Forest	Scoville Rd	Town of Ossian / NYS DEC
	Interior Roads and Parking	NYS DEC
Sonyea State Forest	Union Corners Rd	Town of Mount Morris
	Moyer Rd	Town of Mount Morris
	Interior Roads and Parking	NYS DEC
	County Route 54	Livingston County

Area	Road Name	Jurisdiction
Rattlesnake Hill Wildlife Management Area	Ebert Rd	Town of Nunda
	Dannack Hill Rd	Town of Ossian
	Walsworth Rd	Town of Nunda
	England Hill Rd	Town of Grove
	State Route 70	NYS DOT
	Interior Roads and Parking	NYS DEC
Conesus Inlet Wildlife Management Area	State Route 256	NYS DOT
	County Route 33 / Sliker Hill Rd	Livingston County
	Guiltner Rd	Town of Conesus
	East Swamp Rd	Town of Conesus
	Interior Roads and Parking	NYS DEC

Concurrent Use & Occupancy, Deeded Exceptions, Easements, Rights of Way, and Memorandum of Understanding (MOU)

Concurrent occupancy and use agreements, or boundary line agreements, are known for this Unit. There are deeded exceptions for utility rights of way and easements as they may exist on the date of acquisition by the state for all areas in this Unit Management Plan. As part of our inventory efforts, a reasonably accurate GIS coverage has been created of the utilities in place as of the summer of 2015.

Utility companies include:

- Electricity: National Grid
- Telephone: Frontier Communications
- Telephone: Iroquois Telephone
- Petroleum: Sunoco Sun Logistic
- Water and Sewer: Livingston County Water and Sewer Authority

Deeded exceptions for minerals are shown in the Mineral Resources section (pg. 34).

Conesus Inlet WMA

Conesus Inlet WMA has 31 acres (portion of stand 940) under active agricultural agreement with a local farmer; 5-year agreement active through 2019. Also, 117 acres (separate portion of stand 940) of grass fields are enrolled in the Wildlife Habitat Incentive Program through Livingston county NRCS. This agreement lasts through 2017. Finally, 9 acres (separate portion of stand 940) are under cooperative agreement with a local farmer to cut hay; this 5-year agreement is active through 2017.

Sun Logistic has a gas pipeline that runs across Conesus Inlet WMA from State Route 256 to East Swamp Rd.

Livingston County Water and Sewer Authority has a hydrant water line along East Swamp road and County Route 33, and a waterline easement from Dacola Shores Rd across to S. Love Lane. There is also a sewer pump station just outside the boundary adjacent to the Cove Lane hand launch.

Overhead utilities that run along Guiltner Rd, E. Swamp Rd, CR 33 and State Route 256. There is an electrical station (Conesus Lake station 52) adjacent to the WMA boundary on State Route 256.

Rattlesnake Hill WMA

There is an overhead electric transmission line along a short section of the Rattlesnake Hill WMA on Dannack Hill Rd. This line runs along the most eastern part of the property. Also, a buried Iroquois Telephone cable line runs along the western side of CR 54.

Easements

A 33.5-acre hunting easement exists at the south end of the Conesus Inlet WMA, along Guiltner Rd. This easement grants NYS DEC the right to regulate, control and/or restrict hunting, fishing and trapping but does not provide public access. Work was done in the mid 1990s to permanently acquire this land but was unsuccessful.

An easement also exists for the section of Conesus Inlet that crosses onto the adjoining landowner just north of Guiltner road.

There are two permanent easements for utilities which cross Conesus Inlet WMA:

- A 20-foot wide easement to Livingston County Water & Sewer District for a water line.
- An easement, with no width specified, to the Atlantic Pipeline Co. This easement is believed to have been transferred, at some point in the past, to Sun Logistics.

Exterior rights – of – way exist in favor of the state appear in the following areas:

Conesus Inlet WMA - A short section of an unknown width exists along East Swamp Rd, which was conveyed in 1969.

Sonyea SF, Ossian SF, Canaseraga SF, and Rattlesnake WMA - No known exterior ROW exists in favor of the State.

Memorandum of Understanding (MOU)

Sonyea SF - MOU between NYS DEC and NYS Office of Parks, Recreation and Historic Preservation (OPRHP), dated 3-3-2016, is a 20-year agreement (DEC# AM10024) for the

Genesee Valley Greenway State Park trail relocation and maintenance through the SF. See also Trails (pg. 26) and Appendix L: MOU between NYS OPRHP and NYS DEC on pg. 196.

Recreation

The Livingston Unit provides recreational opportunities within an hour drive of metropolitan Rochester, and less than a half-hour drive to the Villages of Dansville, Mt. Morris, and Geneseo. As is often the case, recreational use can be concentrated in certain areas and have seasonal variation. Recreational uses currently supported by this UMP are not considered to be interfering with wildlife dependent recreation. In fact, wildlife-related recreation, including wildlife viewing, hunting, fishing and trapping, is the dominant and important use of the Unit. Users are encouraged to adhere to ethical standards and consider other recreationists.

There are different regulations regarding public use of Wildlife Management Areas, State Forests and State Parks. Please pay attention to what kind of public land you are using, and what activities are allowed, and what activities are not allowed.

Many of the recreation facilities started out as farm lanes, skid roads, town roads, log landings, etc. After they were no longer used for the original purpose they were converted to recreational use. On occasion, as part of the active timber management, sections of trails, roads, parking lots, etc. may need to be temporarily closed to public use.

Depositing or leaving rubbish or waste material is prohibited. Cutting, removing, or destroying any living, or standing dead trees or plants is prohibited. Hunting, trapping, and fishing are allowed during legal season; consult the NYS DEC Hunting and Trapping, and the Fishing Regulations Guides for seasons, hours, and bag limits.

Additional information on the planned actions related to recreation can be found in the Public Recreation and Use Management section on page 106. Appendix D: Facilities (pg. 154) is a table of recreation and other facilities located on this Unit.

Recreation Opportunity Spectrum

The Recreation Opportunity Spectrum (ROS) is a USDA Forest Service developed scale of recreational settings, activities, and opportunities. This rainbow of opportunities ranges from an urban park to the primitive wilderness. Although NYS DEC does not follow the precise categories that the Forest Service does, and NYS DEC properties are not divided into the same categories, it is a useful guideline when considering recreational use and expectations of a Unit. State forests and state wildlife management areas fall near the primitive/wilderness end, in that it has much less development than Central Park in NY City, but not as remote as the backcountry of Alaska.

The Forest Service web site at www.treesearch.fs.fed.us/pubs/6014 has additional information on the Recreation Opportunity Spectrum.

Recreation Opportunities on the Unit Include:

- Fishing
- Hunting
- Trapping
- Camping
- Hiking/Running
- Canoe/kayak/boating
- Wildlife observation
- Mountain biking
- Snowmobiling
- Orienteering
- Geocaching
- Horseback Riding
- Snowshoeing
- Picnicking
- Photography
- Nature Study
- Cross-Country Skiing

Off-Road Vehicle Use

There are no designated Off-Road Vehicle (ORV) trails on this Unit. New York State Vehicle and Traffic Law prohibits All-Terrain Vehicle (ATV) use on Public Highways which, by definition, also include Public Forest Access Roads, unless such roads are specifically designated for ATV use. ATV and ORV riding is not a specific program offered on Public Lands owned in fee and managed by the NYS DEC. Existing management actions, poor soils, conflicts with other uses, impacts on neighboring residents, safety concerns, maintenance costs and challenges, and existing issues with illegal ATV and ORV use were some of the factors that have prevented the NYS DEC from developing ORV or ATV trails in the past. However, people with qualifying mobility impairments, who possess a valid permit from the NYS DEC, may operate ATVs on specifically designated and signed accessible trails. See Access for Persons with Disabilities (pg. 29), or visit www.dec.ny.gov/outdoor/2574.html. For more information regarding ATV access to State Forests please refer to the Strategic Plan for State Forest Management, found online at www.dec.ny.gov/lands/64567.html.

Camping

Different camping regulations apply to state forests and wildlife management areas. Check current regulations prior to arriving.

Overnight camping is permitted on State Forests, however camping is not allowed within 150 feet of any road, trail, spring, stream, pond, or other water source unless it is a designated campsite, see below for a list of designated sites. For groups of less than 10 people and for up to 3 nights, no permit is required. Longer stays, up to 14 days, and/or larger groups are allowed to camp with a free permit obtained from the NYS DEC Forest Rangers, at the Bath sub-office. Regardless of location, camping sites must be left in a neat, clean, and sanitary condition.

Overnight camping is not allowed on Conesus Inlet WMA. Limited camping is allowed at Rattlesnake Hill WMA only by permit for organized groups but not during open hunting season. Camping permits for the two Rattlesnake Hill WMA camp sites are available from the NYS DEC Wildlife Office in Avon.

As stated earlier, camping is not allowed within 150 feet of any road, trail, spring, stream, pond, or other water source unless it is a designated campsite. The following is a list of designated sites, for the Livingston Unit.

Information on the Unit

Designated Primative Camping Sites:

- Canaseraga SF
    - Right Fork Truck Trail Parking Lot
    - Left Fork Truck Trail Parking Lot
- Ossian SF
    - Evergreen Pond has four sites along its shores
    - Intersection of Scoville Rd Truck Trail and Back Road to Rattlesnake
    - Northwest Parking lot
- Sonyea SF
    - Toadfest Point
    - Waterfall
    - Shaker Access Road Camp Sites
- Rattlesnake Hill WMA – by permit only, organized groups only
    - Ebert Rd Parking Lot #6/Site A
    - Lean-to/Site B
- Conesus Inlet WMA - none

These are primitive camping sites, some have a fire ring and a semi-flat spot to set up on, but not all of them do. See also the Recreation and Other Facilities Maps in Appendix N: Maps (pg. 213) and Public Recreation and Use Management (pg. 106).

Hunting and Trapping

Hunting and trapping are valuable wildlife management methods and popular outdoor activities on the lands and waters of the Unit (see also the Recreation (pg. 21), Fish, Wildlife and Habitat (pg. 48) and Timber and Vegetation (pg. 38) sections). For hunting, both big and small game opportunities exist, with white-tailed deer being the most popular species hunted. NYS DEC uses the number of bucks taken per square mile as its primary index to the total deer population size. As of the writing of this plan, deer population size is slightly above NYS objectives in Wildlife Management Unit (WMU) 8M, but only recently so; it has spent the majority of the time since 2004 below the objective of 3.9 bucks per square mile in the harvest. The management strategy will be to reduce the population slightly, then keep it steady around the objective. In WMU 9P, the deer population has been significantly below the objective of 6.0 bucks per square mile harvested since 2004, but holding steady just over 4.0. The significant gap between desired and actual buck harvest in 9P may stem from the fact that, at 6.0, the objective is among the highest in the state, and might be in need of revision, considering the difficulty NYS DEC has seen in raising the population. Regardless of the buck harvest in relation to objective in the individual WMUs, deer hunting on lands of the Livingston Unit is excellent, as the two units have similarly high deer densities in comparison to other WMUs in the state.

Because of the extent of forest cover on the areas, deer hunting on lands of the Livingston Unit is primarily a forest-based activity, with the exception of Conesus Inlet WMA. There, the large wetland occupies the majority of the area, restricting hunting to mostly Shrubland and field habitats around the periphery. Still, deer hunting at Conesus Inlet is a popular fall activity, and several nice bucks are taken there each year. For a more wilderness deer hunting experience, hunters can try Rattlesnake Hill WMA, which has large areas of unbroken mature woods. Deer hunters perform a valuable service to the State and local

communities by being the tool NYS DEC uses to bring about deer management in the State and on the lands of the Livingston Unit. Deer hunters are reminded that permanent tree stands are prohibited on the Unit, as well as on all state lands. Also prohibited is any equipment that damages trees, including screw-in steps, eye-hooks, etc.

Small game hunting prospects are numerous and varied on lands of the Livingston Unit. Ruffed grouse, woodcock, cottontail rabbit, grey squirrel, turkey and raccoon are some favorite species pursued. Due to the extensive marsh habitat found on the Unit, particularly on Conesus Inlet WMA, waterfowl hunting is a very popular activity. Canada and snow geese plus many species of ducks can be found during the fall and winter seasons. Ring-necked pheasants, no longer stocked on Conesus Inlet WMA, are in scarce supply, as they are in the rest of the state.

For trapping, all major furbearers of Western New York are present on the Unit, including mink, muskrat, red fox, grey fox, raccoon, bobcat, coyote, beaver, skunk and opossum. Although no specific harvest or population estimates exist for Livingston Unit lands in particular, DEC does compile and maintain estimates for most of the species listed above on a county, or WMU, basis. These results can be found in Appendix H: Wildlife Harvests and Hunting Use (pg. 185).

Season dates for hunting and trapping seasons on the Unit follow those for WMUs 8M and 9P, and range from early September through late March, with the bulk of activity occurring from October through December. As far as other laws or regulations are concerned, all existing federal and state rules apply, as well as any that may be specific to Livingston and Allegany Counties. Rifle use for big game hunting is one such law promulgated at the county level. At the time of this writing, both counties allow rifles for big game hunting. No additional restrictions, bag limit changes, or special permits exist on Unit lands, other than those noted above, nor are any being contemplated in the near future. River otter and fisher are two relatively recently returned species to the furbearer scene in Western NY, and their numbers are growing. A fisher season was instituted beginning in 2016 for parts of the southern tier, including WMU 9P but not 8M. There is currently no open season for trapping river otter in western NY.

Fishing

Fishing opportunities are provided by several small streams that contain trout and several small ponds, which provide mostly warm-water fisheries. See Appendix B: Animals of the Livingston Unit (pg. 136) for a list of fish that have been found nearby.

Two ponds on Rattlesnake Hill WMA are each annually stocked with 200 brook trout fall fingerlings. Three streams, Canaseraga Creek, Hovey Gully, and Sugar Creek provide fishing for trout. Sugar Creek is annually stocked with 700 brown trout fall fingerlings. Keshequa Creek, Conesus Inlet, the Main Marsh on Conesus Inlet WMA and Bullhead Pond (at the southwest corner of Rattlesnake Hill WMA) are warm-water fisheries.

The Conesus Inlet WMA is dominated by the 400-acre impoundment created in the late 1980’s when an earthen dike/dam was constructed immediately upstream from tributary 2a of the Inlet just south of South McMillan Creek. The dike is oriented E-W and is about 3,400 feet

in length. Seventeen tributaries of Conesus Inlet flow into the impoundment. South McMillan Creek and 3 tributaries enter Conesus Inlet downstream from the impoundment. All of these waters are class C and all except Conesus Inlet are intermittent. The impoundment is known to contain some largemouth bass, northern pike, bluegills and assorted minnow species. It is unlikely that the impoundment provides significant angling opportunity. It is very shallow and is a good candidate for fish kills due to oxygen depletion under winter ice cover. In the spring of 1998, the main marsh on Conesus Inlet WMA was stocked with 15 million walleye fry as an experimental stocking to see if they would grow to yearlings in the marsh and later contribute to the Conesus Lake fishery. Unfortunately, later fisheries surveys have failed to conclusively identify recruitment of these fry into adults in Conesus Lake.

Conesus Lake offers a variety of warm water fish such as northern pike, stocked tiger muskellunge, large and small mouth bass, walleye, and panfish. Special regulations have been enacted on Conesus Inlet and North MacMillan Creek to protect spawning walleye and northern pike. Fishing is prohibited in certain portions of this area from March 1 until the opening of walleye season in May. However, many people visit Conesus Inlet WMA at this time of year to view the northern pike and walleye spawning runs by utilizing the accessible Fish Walk trail constructed for that purpose.

Cove Lane Parking lot, at the northern end of Conesus Inlet WMA, provides for shore line fishing along the Conesus Inlet and Conesus Lake. As well as a hand launch for small boats into Conesus Inlet.

Public Fishing Rights

This UMP does not cover or include actions on any Public Fishing Rights (PFR). However, since 1935, NYS DEC has worked with private landowners to ensure access to the prime fishing waters of the state. During that time, more than 1,300 miles of PFR easements have been purchased on more than 400 streams across the state. PFRs are permanent easements purchased by DEC from private landowners, giving sportsmen and women right-of-way access to fish and walk along the bank. Fishing rights also allow the public to park in designated parking areas and to access the stream via marked footpaths. Please note: NYS DEC has only purchased rights for the public to fish along a stream corridor, not the land itself. The land where PFR exists remains in private ownership.

Fishing Access Sites

Fishing Access Sites (FAS) consist of NYS DEC owned land with the primary purpose of providing public fishing access and are FAS managed by the Bureau of Fisheries. This includes boat launches on public waters and parking areas along streams and rivers to provide shoreline fishing. No FAS in the vicinity of this Unit are included in this plan.

Trails

There are some designated recreation trails on the Livingston Unit, in addition to old roads, skid trails, and deer trails to explore. A few of these trails are currently marked and mapped, others are not. No attempt has been made to catalog these informal “herd paths” which exist on the Unit. All trails on the Unit can be used for walking, running, cross-country

skiing, and snowshoeing. On State Forests biking is permitted, unless posted as prohibited. On Wildlife Management Areas, biking and horseback riding are currently permitted, unless posted otherwise. Motorized vehicle use, including ATVs, is prohibited, except where specifically permitted by signs, posted notice, or DEC permit. See the tables in Appendix D: Facilities (pg. 154) and maps in Appendix N: Maps (pg. 206).

Canaseraga SF and Ossian SF have no marked and designated recreational trails. They both have Public Forest Access Roads, Ossian has a haul road, and both have old skid trails and other "herd paths" that are open for exploring at any time.

Sonyea SF is crossed by the Genesee Valley Greenway State Park, a 90-mile rail-trail corridor that follows the old route of the Genesee Valley Canal/Pennsylvania Railroad Rochester Branch, and is owned and managed by NYS Office of Parks, Recreation and Historic Preservation (OPRHP) (www.nysparks.com/parks/189/details.aspx). The original path of the canal/railroad was along the banks of the Keshequa Creek, and portions are still there and usable, however large sections have washed away downstream. As a result of this damage the official path through Sonyea SF has been moved to along the town and Public Forest Access Roads at the top of the hill. In 2016 a 20-year Memorandum of Understanding (MOU) was signed between NYS DEC and OPRHP covering the maintenance and management of the moved section of trail. (See Appendix L: MOU between NYS OPRHP and NYS DEC on pg. 196) The original location of the railroad grade is still open for public use, at least what is left of it is, and it is popular to walk past the gate and down about a third of a mile into the Keshequa Gorge and along about a mile of what is left of the railroad grade along the creek bank. Two short spur trails lead down to the water's edge, one to a waterfall and the other to Toadfest Point, both areas are used for camping and picnicking.

Rattlesnake Hill WMA has an extensive array of multiple use trails. These trails are primarily intended to provide non-motorized access for wildlife-dependent recreation; however, non-wildlife dependent activities are allowed (e.g., hiking, horseback riding, and mountain biking). Large, organized group events on WMA lands require a Temporary Revocable Permit (TRP) from the NYS DEC Wildlife Office in Avon. Public use of WMA lands statewide are currently being reviewed, with particular attention to activities that are not dependent on wildlife and could potentially conflict with the primary uses of WMA lands (hunting, trapping, wildlife observation, and fishing). If non-wildlife dependent activities are found to be incompatible with the primary purposes of WMA lands, they may be restricted.

The Finger Lakes Trail (FLT) crosses the south western corner of Rattlesnake Hill WMA and is maintained by the Finger Lakes Trail Conference (FLTC) under a Volunteer Stewardship Agreement. Approximately 2 miles of this trail are on the WMA and is restricted to foot-traffic only, except where it overlaps England Hill Road. The total length of the FLT is about 585 miles, with Allegany State Park at one end and the Catskill Forest Preserve at the other. This portion of the Finger Lakes Trail is a segment of the North Country National Scenic Trail, a 4,600-mile trail which extends from New York to North Dakota.

During the winter about 4.8 miles of interior roads on Rattlesnake Hill WMA are used as a snowmobile connector trail, which are groomed under an AANR or VSA agreement.

Conesus Inlet WMA has approximately 2 miles of multiple use trails, all in the northwest corner of the area. Approximately 1 mile of trail starts north of Sliker Hill Road and connects

to Dacola Shores Road, with a side trail leading to an observation platform on the lakeshore. Approximately 0.6 miles of trail connects the main parking lot on State Route 256 with the dike and parking lot at the northwest corner of the main impoundment. This parking lot, at the intersection of Route 256 and Sliker Hill Road, is the start of a short section of fully accessible trail leading to the dike. Known as the Fish Walk, this section of trail runs alongside South McMillan Creek, the main inlet to Conesus Lake. For a short time in the spring, large spawning Walleye and Northern Pike can be seen at close range swimming up the creek, much to the amazement of curious visitors. A late March-early April visit to the Fish Walk has become somewhat of an annual rite of spring for many in the area, as well as first-timers to the WMA. Although they are not designated as such, many people find the dikes on several of the small ponds on the area to serve as de facto trails, especially after their annual maintenance mowing. Most of these dikes are located in the south portion of the WMA.

Viewing Platforms and Boardwalks

There is a total of 6 boardwalks/viewing platforms at Conesus Inlet WMA. Three were built and installed by DEC's Division of Operations in 1997. These are located south of Sliker Hill Rd/CR 33 along the western edge of the main impoundment. The trail leading to these boardwalks was rebuilt in 2015 after severe flooding and rain had deteriorated most of the surrounding area. The trail is MAPPWD (see Access for Persons with Disabilities, pg 29), and the boardwalks are accessible. Two small viewing platforms were built and installed in 2013 by the Livingston County Highway department adjacent to the bridge on CR 33/Sliker Hill Rd. These were built to provide the public a safe area off the shoulder of the road. These platforms are within the footprint of the highway right-of-way and maintained by Livingston County. The most recent boardwalk is located just south of Conesus Lake off the end of Dacola Shores Rd. This project was a collaboration between NYS DEC and the Town of Conesus as part of the Adopt a Natural Resource Stewardship Program. This boardwalk and trail connect a parking lot on Sliker Hill Rd with Dacola Shores Rd.

Rattlesnake Hill WMA has one viewing platform along the southwest side of State Route 70 overlooking the marsh. This platform was constructed in 2013 by the Division of Operations and is accessible to all.

There are no platforms or boardwalks at either Ossian, Canaseraga or Sonyea SF.

Application of the Americans with Disabilities Act

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.

Consistent with ADA requirements, the Department incorporates accessibility for people with disabilities into the siting, planning, construction and alteration of recreational facilities and assets supporting them.

In addition, Title II of the ADA requires in part, that services, programs and activities of the Department, when viewed in their entirety, are readily accessible to and usable by people with disabilities. The Department is not required to take any action which would result in a fundamental alteration to the nature of the service, program or activity or would present an undue financial or administrative burden. When accommodating access to a program, the Department is not necessarily required to make each existing facility and asset accessible, as long as the program is accessible by other means or at a different facility.

This plan incorporates an inventory of all the recreational facilities and assets on the unit or area, and an assessment of the programs, services and facilities provided to determine the level of accessibility. 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.

For outdoor recreation facilities not covered under the current ADA standards, the Department will use standards provided under the Architectural Barriers Act, to lend credibility to the assessment result and to offer protection to the natural resource.

All new facilities, and parts of facilities that are constructed for public use, are to be accessible to people with disabilities. Full compliance is not required where DEC can demonstrate that it is structurally impracticable to meet the requirements. Compliance is considered structurally impracticable only in those rare circumstances where the unique characteristics of terrain prevent the incorporation of accessibility features. Compliance is still required for parts of the facility that can be made accessible to the extent that it is not structurally impracticable, and for people with various types of disabilities.

A record of accessibility determination is kept with the work planning record. Any new facilities, assets and accessibility improvements to existing facilities or assets proposed in this plan are identified in the section containing proposed management actions.

For further information contact the ADA Coordinator at accessibility@dec.ny.gov

See the Access Management (pg. 70), Public Recreation and Use Management (pg. 106), Appendix D: Facilities (pg. 154), and Appendix N: Maps (pg. 206) sections.

Access for Persons with Disabilities

Wheelchairs are allowed anywhere pedestrians are allowed on state lands. The Federal/ADA definition of a wheelchair is:

> ***Wheelchair*** *- A manually-operated or power-driven device designed primarily for use by an individual with a mobility disability for the main purpose of indoor, or of both indoor and outdoor locomotion. This definition does not apply to Federal wilderness areas; wheelchairs in such areas are defined in section 508(c)(2) of the ADA, 42 U.S.C. 12207 (c)(2).*

Currently the only trail that meets the federal standards for wheelchair accessibility on the Livingston Unit is the Fish Walk on Conesus Inlet WMA, see the Trails section (pg. 26) for additional information. This is the exception, and in most other locations the ground is not firm

and stable enough, and/or the slope is too steep, and/or the path is too narrow. Other trails and roads may present opportunities for people with motorized wheelchairs. Any construction of new trails will include an accessibility assessment.

While no ATV routes currently exist on this Unit, specific routes allow ATV use by permitted persons with disabilities under the NYS DEC Commissioners Policy #3 (CP-3). This program is known as the Motorized Access Program for People with Disabilities (MAPPWD). A permit must first be obtained from NYS DEC. Individuals with qualifying disabilities may apply for a permit to operate an ATV or other vehicle on trails designated by the NYS DEC.

Both Conesus Inlet WMA and Rattlesnake Hill WMA have MAPPWD trails on them with just under 10 miles on Rattlesnake Hill WMA and about 1.0 mile on Conesus Inlet WMA. For further information, contact the NYS DEC at 7291 Coon Road, Bath, New York 14810. Planned changes to the MAPPWD trails on the Unit are located in the Public Recreation and Use Management (pg. 106) section of the Goals and Objectives chapter. See also Recreation (pg. 21), Appendix D: Facilities (pg. 154) and Appendix N: Maps (pg. 206) of this plan or the Strategic Plan for State forest Management, found online at www.dec.ny.gov/lands/64567.html.

Geology

Most surface geology in the Finger Lakes region and Southern Tier of New York was influenced by the processes of glaciation that occurred during the Pleistocene Epoch. Ice sheets from the last glacial episode (Wisconsinan) retreated from the area approximately 11,000 years ago, leaving behind numerous sedimentary deposits and surficial features; including elongated scour features. Some of these scour features filled with water creating numerous lakes, small and large; the larger ones are now called the Finger Lakes.

Most soils and sediments in the region are related to past glacial activity, and subsequent weathering and erosion processes over the last 20,000 years. The underlying parent rocks (rocks that were subjected to the processes of glaciation, weathering and erosion) of this region are sedimentary rocks; primarily shale and sandstone with some limestone - that were deposited in shallow seas that existed in this region during the Devonian Period of the Paleozoic Era, approximately 370 million years ago. Any post-Devonian rocks have been eroded from the region. The presence of rounded igneous and metamorphic clasts is indicative of past glacial activity transporting material into the region from the Canadian Shield to the north. The resulting surfacial geology of the state lands in this UMP is similar due to the proximity of the properties.

Soils

Soils are defined as the upper layer of earth; that portion of the earth's crust where plants grow. Under ordinary circumstances it is a black, dark brown, gray, or yellowish material, typically consisting of a mixture of organic remains, sand, silt, clay, and rock particles.

Each county in New York State has a soil survey conducted by the USDA, which maps the soil type (in which similar soils are grouped together) and the slope and drainage classes. This survey also contains numerous other products relating to soil use and soil management.

Due to the fact that the county soil surveys were completed during different time periods, data and especially soil type names may appear to change on the county line, while the actual differences in soil characteristics are not that great.

The information below, for each individual property, has been compiled from their respective county soil surveys. Specific descriptions of the various soil types may be found at: www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/class/data/?cid=nrcs142p2_053587

Additional soil data is listed and mapped in Appendix N: Maps (pg. 206).This table contains the top three soil types found on each property, along with the major drainage class, also for the top three soil types.

Table 5: Soils

State Land Name	Major Soil Type and Drainage Information
Canaseraga State Forest	Volusia channery silt loam, Mardin channery silt loam, and Fremont channery silt loam. Volusia and Mardin soils are classed as “somewhat poorly drained” Fremont soil type is classed as “somewhat poorly drained” All soils, except Fremont, have an impermeable layer (fragipan) at 15 to 30 inches below the surface.
Ossian State Forest	Volusia channery silt loam, Mardin channery silt loam, and Lordstown flaggy silt loam Volusia and Mardin soils are classed as “somewhat poorly drained” Lordstown soil is classed as “well drained”
Sonyea State Forest	Odessa silt loam, Howard gravelly loam, and Steep ledgy land. Odessa soil type is classed as “somewhat poorly drained” to “moderately well drained”, depending on slope class. Howard soil type is classed as “well drained”. Steep ledgy land is class as “somewhat excessively drained”
Rattlesnake Hill WMA	Volusia channery silt loam, Almond silt loam, and Lordstown channery silt loam. Volusia soils are classed as “somewhat poorly drained” Almond is classed as “somewhat poorly drained”. Lordstown is classed as “well drained”. The Volusia soils have an impermeable layer (fragipan) at 15 to 30 inches below the surface.
Conesus Inlet WMA	Wayland silty clay loam, Carlisle muck, and Eel silty clay loam. Wayland is listed as “poorly drained to very poorly drained”. Water is often in the surface horizon. Carlisle is listed as a muck soil (large amounts of decayed organic material form the surface). Often has water in the surface horizon.

State Land Name	Major Soil Type and Drainage Information
	Eel soil is classed as “moderately well drained”. Water is usually 1 ½ feet below the surface, at some point during the year, although it is often flooded. There are no impermeable layers noted in these soils. However, since the surface horizon is usually saturated or super-saturated, presence or absence of an impermeable layer does not have large management implications.
“channery” denotes accumulation of thin, flat, coarse rock fragments “gravelly” differs from “channery” only in that the coarse fragments are somewhat rounded. “flaggy” differs from “channery” only in that the coarse fragments are larger	

Surface Geology

Parent material or surficial deposits, that overlay the bedrock in the Unit are predominantly glacial till with intermittent bedrock outcrops on the flanks and crests of ridges and hills and most likely due to erosion of overlying glacial till causing the exposure of the bedrock. Kame sand and gravel deposits adjacent to glacial ice occur in Ossian and Canaseraga SFs. Outwash sand and gravel deposits are associated with glacial melt-water fluvial systems are found in the northwest corner of Rattlesnake Hill WMA. Some of these deposits are found near Rattlesnake Hill WMA, Ossian SF and Canaseraga SF. Deposits of lacustrine silt and clay and recent alluvium comprise the surficial deposits beneath Sonyea SF. Swamp deposits exist overlying lacustrine deposits in wetland areas within the Conesus Inlet WMA. Detailed descriptions of the surficial geologic materials deposited around the state lands within this Unit are provided in Table 6: Parent Material and Bedrock (pg. 33).

Further information on the surface geology of the region is provided by the: “Surficial Geologic Map of New York – Finger Lakes Sheet,” New York State Museum - Geologic Survey, Map and Chart Series #40, 1986, and the “Quaternary Geology of New York - Niagara Sheet”, New York State Museum and Science Service Map and Chart Series Number 28, Ernest H. Muller, 1977.

Bedrock Geology

Bedrock underlying the Finger Lakes region and Allegheny Plateau of the Southern Tier of New York is inclusive of sedimentary rock units deposited in association with ancient seas and their marine-fluvial-deltaic environments of deposition during the Cambrian [550-500 million years ago (mya)], Ordovician (500-440 mya), Silurian (440-400 mya) and Devonian (400-350 mya) Periods of the Paleozoic Era.

Younger bedrock units deposited during the post-Devonian periods (such as Mississippian and Pennsylvanian periods) have been subsequently eroded away by erosional and glacial processes. Underlying the Paleozoic rocks are pre - Paleozoic Era rocks or Pre-Cambrian rocks generally considered to be composed of igneous and metamorphic rocks. These rocks are generally referred to as “basement” rocks.

Subsurface rock formations dip (become deeper) to the south-southwest at an average dip angle of about one degree or deepens 100 feet per each mile traveled to the south/southwest. The “Geologic Map of New York - Finger Lakes and Niagara Sheets”, Map and Chart Series #15, 1970, depicts progressively older rock units outcropping farther to the north, confirming the southerly dip of strata in the region.

Geologic structural features in the region generally trend in a northeast to southwest direction. North-south trending faults have also been identified in the region. Additional information regarding area structural features can be obtained from the “Preliminary Brittle Structures Map of New York,” New York State Museum Map and Chart Series No.31E, 1974.

Bedrock of the Livingston Unit

The majority of the state lands within this Unit contain bedrock that are shales, siltstones, sandstones of the Canadaway, Java, Sonyea, and West Falls Groups that were deposited during the Upper Devonian Period. Commonly these rock units are at the surface (outcropping) or near the surface beneath surficial deposits (subcropping). The older rock formations form the bedrock in the northern portions of the Unit due to the structural dip to the south.

Further information on the bedrock geology of the region is provided by the: “Geologic Map of New York - Finger Lakes and Niagara Sheets” - New York State Museum and Science Service - Map and Chart Series #15, 1970.

Table 6: Parent Material and Bedrock

State Land Name	**Parent Material and Bedrock**
Ossian State Forest	Glacial Till - deposition of clay, silt, sand, gravel, cobbles, and boulders beneath glacial ice. Kame Deposits - coarse to fine sand and gravel deposited adjacent to glacial ice occur to the east and through the central portion of the SF. Bedrock –shales, siltstones, and sandstones of the Upper Devonian Canadaway Group.
Canaseraga State Forest	Glacial Till - deposition of clay, silt, sand, gravel, cobbles, and boulders beneath glacial ice. Kame Deposits – coarse to fine sand and gravel deposited adjacent to glacial ice occur in the southern portion of the SF. Outwash Sand and Gravel - coarse to fine gravel with sand deposited by streams flowing from the glacial ice that occur in the southeast portion of the State Forest. Bedrock - Shales, siltstones, and sandstones of the Upper Devonian Canadaway Group

State Land Name	Parent Material and Bedrock
Sonyea State Forest	Lacustrine Silt and Clay – laminated clay and silt deposited in proglacial lakes. Recent alluvium and alluvial fan – fine sand to gravel generally confined to flood plains in a valley which may be overlain by silt in larger river valleys. Bedrock – shales of the Lower Beers Hill member of the Upper Devonian West Falls Group in the upland areas and Cashaqua Shale member of the Upper Devonian Sonyea Group.
Rattlesnake Hill WMA	Glacial Till - deposition of clay, silt, sand, gravel, cobbles, and boulders beneath glacial ice. Located in the southern portion of the WMA along the slopes near the valley floor Outwash Sand and Gravel – coarse to fine gravel with sand deposited by streams flowing from the glacial ice that occur mainly in the northwest corner of the WMA. Bedrock – Shales, siltstones, and sandstones of Machias formation of the Upper Devonian Canadaway Group in the upland areas with the Hanover Shale formation of the Upper Devonian Java Group in stream valleys. Bedrock outcrops commonly occur along the western slopes of the WMA and are also found in the northeast corner of the WMA.
Conesus Inlet WMA	Swamp Deposits – Peat, muck, organic silt and sand in poorly drained unoxidized areas that overlie lacustrine silt and clay. Lacustrine sand, silt, and clay – laminated clay and silt deposited in proglacial lakes and sand as a near-shore deposit associated with a large water body. These deposits occur along the western edge and in the southern portion of the WMA. Bedrock - Shales of the Lower Beers Hill member of the Upper Devonian West Falls Group in the upland areas and Cashaqua Shale member of the Upper Devonian Sonyea Group.

Mineral Resources

Oil and Gas

Section 23-1101 of the Environmental Conservation Law and the State Finance Law authorize NYS DEC to make leases on behalf of the State for exploration, production and development of oil and gas on state lands. On all state lands, gas well drilling, pipelines, and related road development must be in compliance with the Governor's and Commissioner's directives, Tract Assessments, the Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program (1992), this UMP and any other relevant documents.

The Final Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program for Horizontal Drilling and High-Volume Hydraulic Fracturing to Develop the Marcellus Shale and Other Low-Permeability Gas Reservoirs (FSGEIS) was issued May 2015 and the subsequent Findings Statement issued in June 2015. These documents constitute NYS DEC's findings in accordance with the State

Environmental Quality Review Act with respect to whether permits related to high-volume hydraulic fracturing in the Marcellus Shale and other low-permeability gas reservoirs can be issued. The findings conclude that high-volume hydraulic fracturing is prohibited in the state at this time.

New York State manages the surface estate through the NYS DEC Division of Lands and Forests or the NYS DEC Division of Fish and Wildlife, and the mineral estate is managed through the NYS DEC Division of Mineral Resources.

Historical Drilling & Production

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

Numerous hydrocarbon wells have been drilled in the area surrounding state lands in the Livingston Unit targeting natural gas production from the Medina Sandstone at depths typically ranging between 2,500 feet in the northern portion of the area, to 4,000 feet in the southern portion of the area as the rock formations dip and increase in depth to the south. Gas has been historically produced from the Medina Sandstone in the Conesus, Groveland, Sparta, and Hunt Hollow Fields and Pools. Drilling has also occurred to obtain gas production from shales of the Middle Devonian Hamilton Group (which includes the Marcellus Shale) within the Unit area. Natural gas has been produced historically from the shales of the Hamilton Group in the Dansville Field. See Appendix N: Maps (pg. 206).

Drilling began in 1923 in the area with the discovery of natural gas from shale formations in the Hamilton Group in the Dansville Field. This field is located within the Towns of North Dansville and West Sparta, Livingston County approximately four miles northeast of Canaseraga SF and Rattlesnake Hill WMA. There were 13 wells in the field drilled to depths that typically ranged from 1,000 to 1,400 feet. Drilling in the field resumed between 1980 and 1982 when an additional six wells were drilled. All wells in the field were drilled to obtain gas from shales in the Hamilton Group with the exception of one well that was drilled into the Medina Sandstone formation to a depth of 2,850 feet. Most of these wells are currently producing gas for residences and/or farms. There are currently no commercially productive gas wells within this field.

From 1956 to 1958, two wells were drilled to the Medina Sandstone to explore for natural gas in the Conesus Field. This field is located within the Town of Conesus, Livingston County less than one mile east of Conesus Inlet WMA. One well drilled to a depth of 3,411 feet was reportedly productive but no production information is available. There is no commercial production associated with this field.

Drilling and exploration for natural gas from the Medina Sandstone occurred from 1979 through 1980 in the Sparta and Groveland Fields. Four wells were drilled with depths ranging from 2,302 to 4,100 feet in the Towns of Sparta and Groveland, Livingston County. The Sparta Field is located more than six miles south of Conesus Inlet WMA. The Groveland Field is located approximately one-half mile northeast of Sonyea SF. These wells are not producing gas commercially.

Information on the Unit

Eight wells in the Towns of Ossian, Nunda, West Sparta, and Portage in Livingston County were drilled in 1980 to the Medina Sandstone at depths ranging from 3,225 to 4,366 feet in the Hunt Hollow Pools. The Hunt Hollow Pools are located within three miles north of Rattlesnake Hill WMA. Four of these wells have been plugged and only three of these wells are active producers. These wells are not commercially productive but are being produced for residences and/or farms.

Recent Drilling and Production

Since 1982, there has been no drilling activity near the properties within this Unit and no commercial gas production. Wells that are currently producing commercially closest to state lands within this Unit area are producing from the Medina Sandstone formation in the Silver Lake and Castile Fields, both distant from this Unit. The Silver Lake Field is located more than six miles northwest of Sonyea SF and the Castile Field is located more than eight miles northwest of Rattlesnake Hill WMA.

Mineral Leasing Activity

Initial title review indicates that the mineral estate associated with the areas covered by this Unit are as follows:

- Canaseraga, Ossian, and Sonyea SFs - There is nothing in the documents vesting title in the People of the State of New York to indicate a split mineral estate.
- Conesus Inlet WMA – Part of the property has nothing in the documents vesting title in the People of the State of New York to indicate a split mineral estate, and part of the property was purchased subject to any and all oil and gas leases, the status of which is unknown as of the writing of this plan.
- Rattlesnake Hill WMA – The surface and ¼ of the mineral estate was conveyed to the state and the remaining ¾ of the mineral estate was reserved by the federal government and is managed by the US Department of the Interior, Bureau of Land Management, Eastern States Office.

This information is offered with the qualification that further mineral reservations may exist and that no expressed or implied warranty of title is offered in this document. See also Appendix N: Maps (pg. 206).

Future Leasing Activity

In the future, NYS DEC may receive requests to nominate lands contained in this Unit for oil and gas leasing. In the unlikely event of this occurrence, the procedures outlined in Appendix K: Procedures for Oil & Gas Procurement section on page 194 will be used. Additional information related to oil and gas leasing of state land can be found on the Division of Mineral Resources website at www.dec.ny.gov/energy/1528.html, in the Strategic Plan for State Forest Management at www.dec.ny.gov/lands/64567.html, and in the Mineral Resource Management section (pg. 118) of this plan.

Previous interest in exploration for natural gas has mostly been in developing production from the Medina Sandstone. Little interest has been shown in leasing, drilling, and exploration for natural gas in the Unit area since the early 1980s. Gas prices and economic

incentive will dictate if there will be any interests in developing production from the Medina Sandstone or other conventional natural gas reservoirs in the area.

Aside from any prohibited activity, it is unlikely that leasing and drilling for natural gas in the Marcellus Shale will occur in this area because of the limited gas reserve potential due to the limited thickness and much shallower depths (near surface to less than 3,000 feet) of the formation within the area. No exploration or extraction of the Marcellus Shale using high-volume hydraulic fracturing will be considered in New York State, including on state lands, per the May 2015 FSGEIS and its June 2015 Findings Statement that concluded that high-volume hydraulic fracturing is prohibited in New York State at this time.

Mining

Sand, Gravel, Hard Rock and Other Mineable Materials

There are no mining contracts, permits or operations located on state lands included in the Livingston 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.

Gravel and hard rock resources do exist in the areas surrounding and including some of the state properties in this Unit. The parent geology of several of the state lands in the southern portion of the Unit mostly consists of poorly sorted glacial till of variable texture along with exposed or near surface (within one meter) bedrock outcrops. Sand and gravel mines are common in areas of glacial kame or outwash deposits, or more recent alluvial deposits that are generally found in stream or lake valleys. Most of Conesus Inlet WMA has lacustrine silt and clay deposits along with swampy deposits consisting of peat and muck. Peat is a resource that is mined throughout the state.

Although there are no mines within the state lands comprising this Unit, privately owned mining operations do exist within one-half mile to two miles of state lands in the Unit (see Appendix N: Maps, pg. 206). There are a few mine sites near state lands in the Unit that are no longer in operation and have undergone reclamation returning the land to a productive use. Sand and gravel resources in kame and outwash deposits exist in portions of Canaseraga SF, Ossian SF, and in a very small portion (northwest corner) of Rattlesnake Hill WMA. Recent alluvial deposits in the western portion of Sonyea SF may contain sand and gravel resources.

There is an inactive abandoned 30-acre sand and gravel mine within approximately one-half mile from the northeast corner of Sonyea SF in the Town of Groveland, Livingston County. Two other small sand and gravel mines located within one-half mile of Sonyea SF in the Towns of Groveland and Mt. Morris have been reclaimed.

Although there are no active mines in the area, two small sand and gravel mines existed within one-half mile to the north and east of Conesus Inlet WMA in the Town of Conesus, Livingston County. These mines have been reclaimed.

Information on the Unit

An active 35-acre sand and gravel mine exists in the Town of Burns, Allegany County and there is an active 29-acre sand and gravel mine in the Town of Ossian, Livingston County. Both mines are located approximately one to one and one-half miles to the south and east of the southeast corner of Canaseraga SF. These mining operations occur in outwash sand and gravel deposits that exist along the valleys south and east of the state forest.

An active 67-acre sand and gravel mine exists in the Town of Nunda, Livingston County less than one mile west of the northern portion of Rattlesnake Hill WMA. Outwash sand and gravel deposits occur in this area also.

There are only a few active sand and gravel mining operations located close to lands comprising the Livingston Unit. Surficial deposits surrounding these state lands are generally glacial till or lacustrine deposits that would not yield large amounts of sand and gravel. Most of the mines in the area are small and are permitted by the local municipalities or local construction companies. Hard rock quarries are not found in the immediate area of the Livingston Unit. Bedrock may be exposed or near the surface but is not generally considered suitable for a commercial mining operation.

Timber and Vegetation

Plant communities are by nature dynamic and ever changing. Young stands of trees get older, and species composition changes with time. Disturbances from fire, wind, insects, disease, timber harvest, and other land use practices have been an important part of the history of New York forests and have determined the composition and structure of today's landscape. By applying different management or silvicultural practices, land managers can affect change in vegetative types, stages, and associated use by wildlife. The production of forest products is a clearly stated goal in the Reforestation Law of 1929 and is consistent with the proposed management actions in Livingston Unit Management Plan. Future management is covered in the Timber and Vegetation Management section starting on page 74 and in Appendix F: Vegetation Management (pg. 163) and in Appendix N: Maps (pg. 206). For more information regarding timber management on State Forest please refer to Chapters 2 and 6 of the Strategic Plan for State Forest Management at www.dec.ny.gov/lands/64567.html. In addition to this UMP, Wildlife Management Areas have a Habitat Management Plan (HMP) which also covers the timber and vegetation management on the property. As of the writing of this plan, Rattlesnake Hill WMA has a complete HMP, and Conesus Inlet WMA's HMP is in process.

Inventory of Current Vegetative Types and Stages

Division of Lands and Forests policy requires that a forest inventory be conducted every 10 years and whenever forest stands are changed by any silviculture operation or by the forces of nature. Forest inventory is the critical task in the vegetation management planning process, as it forms the basis for all science based vegetative management decisions in this plan. While not policy, the Bureau of Wildlife intends to follow the same inventory schedule on the properties they manage.

A stand is a group of plants with similar characteristics that are analyzed and treated as a single unit. Each property is divided into one or more compartments, and each compartment

divided into stands. Compartments are given a letter designation, and stands a number. This letter-number combination is used for tracking, mapping and planning the actions and activities that happen in and on NYS DEC owned land.

Forest inventory is accomplished by a statistical analysis of stands. Samples are taken from random locations (called plots) within each stand. Information collected during a forest inventory includes, among other items, tree and shrub species and size, forest type, tree density, forest health issues, topography, drainage, previous management, and site limiting factors. The required number of plots for each stand is dependent on the variability of the stand. As variability decreases, so will the number of inventory plots per stand, subject to a minimum number.

For each plot, data is recorded in the field on a hand-held data recorder, and then electronically transferred via the internet to servers in Albany. For the inventory used in the 2000 Livingston Unit Management Plan the data was recorded in the field on paper, then transferred to a DOS computer program in the Bath office.

How the maps are created has also changed. It used to be hand drawn on aerial photos, and dot grids used to manually calculate acreage. Now it is digitally drawn using ArcGIS on the computer over top of corrected aerial photos. Then the computer program calculates acreage to a much more accurate degree.

The properties within this Unit have been inventoried within the past 10 years. The data gathered was used to create Table 7: Vegetative Types and Stages (pg. 40) as well as several maps located in Appendix N: Maps (pg. 206), plan the management activities in the Timber and Vegetation Management section (pg. 74) and the Appendix F: Vegetation Management (pg. 163) for this UMP.

During the inventory process notes are made and GPS data taken on areas that fall into Special Management Zones, protection forest, historic sites, waterfalls and other interesting natural features.

The Livingston Unit vegetation contains a mix of species, but the forested portion is dominated by oak-hemlock, northern hardwood, oak, transition hardwood, and swamp hardwood, mostly pole timber or sawtimber sized natural hardwood forests. The dominant species of trees are red oak, green ash, sugar maple, hemlock, and red maple, other species present to a lesser extent include hickories, white and black oaks, white ash, white and red pine, aspen, birches, walnut, cottonwood, beech, Norway spruce and apple.

In the Finger Lakes region of New York, northern hardwood forests predominate on the north facing slopes and oak-hickory forests occupy the south facing slopes. Past man-made disturbances have created even more diversity. Many of the formerly agricultural fields, for example, have reverted to pioneer forest types comprised of aspen, red maple and white pine. On the Unit there are relatively few seedling/sapling size stands. These stands are typically even-aged. (All of the trees in a stand are approximately the same age.)

On most of this Unit the non-forest land is a small portion of the land area, and includes wetland, pond, road, grassland and shrubland cover. The exception is on Conesus Inlet WMA, which is mostly wetland and/or pond.

Information on the Unit

The conifer segment is largely plantation, mostly red pine, Norway spruce, white pine, and larch. Hemlock and white pine comprise most of the natural conifer stands. In addition, some of the hardwood forest stands have a softwood component made up of white pine and/or hemlock.

Summaries of each property, and information on each stand, is available in Appendix F: Vegetation Management (pg. 163), and maps are available in Appendix N: Maps (pg. 206).

Table 7: Vegetative Types and Stages

Inventory completed in 2011-2016	Acres by Ave. Tree Diameter Size Class					
Vegetative Type	0-5 in (seedling-sapling)	6-11 in (pole)	12+ in (sawtimber)	Other	Total (Acres)	% of Total
Natural Forest Hardwood	258	2,074	2,815		5,147	53%
Natural Forest Conifer/Conifer Hardwood*	0	333	763		1,096	11%
Plantation	31	314	1,396		1,754	18%
Wetland (Forest)	0	288	28		316	3%
Wetland (Open/emergent and/or Shrub)				496	496	5%
Ponds				264	264	3%
Grassland/Shrubland				530	530	5%
Other (Road, ROW, Parking, ownership conflict, etc.)				160	160	2%
Total (Acres)	289	3,009	5,002	1,450	9,750	
% of Total	3%	31%	51%	15%		100%

*Total percent of all conifer species is 33%, or more, of the total for the stand.

Changes in the Vegetative Types and Stages between 2000 and 2016

Table 8, below, is the Vegetative Types and Stages Table from the 2000 Livingston Unit Management Plan. At the time these records were estimated from the most recent inventories available. Although recent inventory data was available for state forests, it was not available for wildlife management areas. To account for the 20-year-old inventory on Rattlesnake Hill WMA, trees were “grown” into the next size class. Consequently, the accuracy of the 2000 Livingston Unit summary is biased by the estimated Rattlesnake Hill figures which make up over 50% of the total acreage.

However, when Table 7 (above) is compared to Table 8 (below) it is possible to see some of the vegetative change that has happened in the time between the writing of these Unit Management Plans. However, some of that change is a result of how inventory is done, and the computer programs used to crunch the numbers.

In addition, small ponds, roads, and small parking lots used to be included in the adjoining stand acreage and are now separated out. Additional acres of wetland, and some of the pond, are a result of beaver activity and better type mapping. Forested wetlands are now separated out from up-land (dry) forested areas and from open/emergent/shrub wetlands as they are managed in different ways.

The timber vegetation has grown. The number of acres with an average tree size of 12 inches or better (sawtimber size) has increased from 45% to 51% of the total acres, and the number of acres of seedling/sapling has dropped dramatically from 10% to 3% of the total acres. How this impacts future timber management will be discussed in the Timber and Vegetation Management section on page 74.

The numbers of acres of plantation decreased for two reasons. Some of it died and collapsed and converted to native seedling on its own, some was harvested and re-grew to (mostly hardwood) seedlings. Natural forest conifer changed dramatically, mostly due to changes in how much conifer is needed to qualify as natural forest conifer vs. natural forest hardwood.

Table 8: Vegetative Types and Stages as reported in the 2000 Livingston Unit Management Plan

(Some differences are a result of technology and inventory changes, but general trends can be seen.)

Vegetative Type	**Acres by Size Class**				**Total Acres**	**% of Total**
2000 Livingston UMP	**0 - 5 in**	**6 - 11 in**	**12+ in**	**other**		
Natural Forest Hardwood	953	1,948	3,412		6,313	65.3%
Natural Forest Conifer	46	57	83		186	1.9%
Plantation		718	865		1,583	16.4%
Wetland				920	920	9.5%
Ponds				27	27	0.3%
Open/Brush				384	384	4.0%
Other (Roads, Parking lots, etc.)				256	256	2.6%
Total (Acres)	999	2,723	4,360	1,587	9,669	
% of Total	10.3%	28.2%	45.1%	16.4%		100%

Green Certification of State Forests

Only the State Forests in this Unit are included in the certificate. The Wildlife Management Areas are not green certified for timber production. However, Best Management Practices for water and timber production are followed on all NYS DEC lands.

In 2000, New York State DEC-Bureau of Forest Resource 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 NYS DEC 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 NYS DEC's ability to award a new agreement until early 2007.

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

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

NYS DEC 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. NYS DEC'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.

High Conservation Value Forest (HCVF)

Under the Green Certificate, High Conservation Value Forests are those portions of State Forests which have known high conservation values that NYS DEC feels should take precedent over other land use and management decisions. Areas identified as having exceptional values may be harvested, but 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.

As of the writing of this plan there are no HCVF identified in Canaseraga SF or Ossian SF.

There are several locations at Sonyea SF that are identified for “Special Treatment” to protect known communities of twin-leaf, woodland agrimony, green gentian, Appalachian tiger beetle and blue-tipped dancer. These communities have been mapped and the locations will be reviewed prior to any management actions.

See also the Strategic Plan for State Forest Management (www.dec.ny.gov/lands/64567.html) and Wetlands and Water Resources (pg. 54), Watershed and Wetlands Protection Management (pg. 94), and Timber and Vegetation Management (pg. 74), sections for further information on watershed protection. See www.dec.ny.gov/lands/42947.html and Appendix N: Maps (pg. 206).

Special Management Zones

Under the State Forest Green Certificate, Special Management Zones (SMZ) have been mapped out on the included properties. SMZ’s are areas around specific features (intermittent streams, vernal pools, wetlands, etc.) where management must be modified as compared to what is permissible in the general forest zone. WMAs are not under Green Certification; however, SMZs have been mapped out on these properties and follow the same guidelines. See Appendix N: Maps (pg. 206) for maps showing computer generated locations of these zones, the actual configuration of the zones can only be done following field reconnaissance, which is beyond the scope of this plan. See also the Fish, Wildlife and Habitat (pg. 48), Timber and Vegetation Management (pg. 74) Fish and Wildlife Habitat Management (pg. 96) and, Watershed and Wetlands Protection Management (pg. 94) sections for further details.

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 www.dec.ny.gov/lands/42947.html. No RSAs are currently designated on the Livingston Unit.

Significant Plants and Communities

An ecological community is a variable assemblage of interacting plant and animal populations that share a common environment. As part of the New York Natural Heritage Program inventory, a classification has been developed to help assess and protect the biological diversity of New York State. The Natural Heritage Program inventory is a regularly updated database of information on rare animals, rare plants, and significant natural communities of New York State.

The presence of at-risk species and communities on the Livingston Unit and in the surrounding landscape has been investigated to inform appropriate management actions and protections. This investigation was conducted in the development of this UMP and the associated inventory of forest resources. A more focused assessment will be conducted before undertaking specific management activities in sensitive sites. Appropriate protections may include reserving protection of at-risk species, please see SPSFM page 115 at http://www.dec.ny.gov/lands/64567.html

Investigation included the following:

- A formal plant survey was conducted on this Unit in 2006 by the New York Natural Heritage Program
- Element Occurrence Records for the New York Natural Heritage Programs Biological and Conservation Data System were consulted for information.

- Consultation of NHP species guides
- Consultation of NYS Comprehensive Wildlife Strategy

Communities and rare species are the mapping units or "elements" of the Heritage inventory. Each community and species element is assigned an "element rank" consisting of a combined global and state rank. The global rank reflects the rarity of the element throughout the world and the state rank reflects the rarity within New York State (The Nature Conservancy 1982). Global ranks for communities are not currently standardized by The Nature Conservancy, so the ranks listed in the community descriptions are estimated global ranks. (Ecological Communities of New York State. Carol Reschke, 1990).

- Global Ranks – reflects the rarity of the element throughout the world.
    - G1 = Critically imperiled throughout its range due to extreme rarity (5 or fewer occurrences, or very few remaining individuals, acres, or miles of stream) or extremely vulnerable to extinction due to biological factors.
    - G2 = Imperiled throughout its range due to rarity (6 – 20 occurrences, or very few remaining individuals, acres, or miles of stream) or highly vulnerable to extinction due to biological factors.
    - G3 = Either very rare throughout its range (21 – 100 occurrences), with a restricted range (but possibly locally abundant), or vulnerable to extinction due to biological factors.
    - G4 = Apparently secure throughout its range (but possibly rare in parts of its range).
    - G5 = Demonstrably secure throughout its range (however it may be rare in certain areas).
    - TU = Status of the subspecies or variety unknown.
- State Ranks – reflects the rarity within New York State.
    - S1 = Typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or especially vulnerable to extirpation in New York State for other reasons.
    - S2 = Typically 6 – 20 occurrences, few remaining individuals, acres, or miles of stream, or very vulnerable to extirpation in New York State for other reasons.
    - S3 = Typically 21 – 100 occurrences, limited acreage, acres, or miles of stream New York State.
    - S4 = Apparently secure in New York State.
    - S5 = Demonstrably secure in New York State.
    - SH = No extant sites known in New York but it may be rediscovered.

Rare plants and communities have been systematically surveyed by New York's Natural Heritage Program on Sonyea SF (2006), Rattlesnake Hill WMA and Conesus Inlet WMA, *(1996 and 1997)*.

Several rare plants or communities have been identified on Sonyea State Forest:
1. Giant pine-drops *(Pterospora andromedea)* Endangered G5S1, 1920 record
2. Twin-leaf *(Jeffersonia diphylla)* Rare, G5S2, 1989 record
3. Woodland agrimony *(Agrimonia rostellata)* Rare, G5S2, 1989 record
4. Green gentian *(Frasera caroliniensis)* Rare, G5S2, 1989 record

5. Maple-basswood rich mesic forest, Vulnerable, G4S3
6. Puttyroot (*Aplectrum hyemale*), historical specimen found 1920.

Canaseraga and Ossian State Forests were formally surveyed in 2006 by the New York Natural Heritage Program as required under the Green Certification program. There are no known rare plants or communities identified on these two State Forests.

No significant plants or communities are known to be at Rattlesnake Hill WMA. However, four small patches of a rich hemlock-hardwood peat swamp were noted. These patches were not of sufficient size to warrant listing according to current protocol.

One significant community, a silver maple-ash swamp, is known at Conesus Inlet WMA. This is a large, mature swamp with minimal disturbance, few exotics, and only a single road fragmenting one end. The swamp is surrounded by emergent marsh, forested uplands, and agricultural lands.

For information related to fauna within this unit, refer to the Fish, Wildlife and Habitat section (pg. 48).

Grassland Focus Areas

Grasslands are an important and increasingly rare habitat across New York State. These dynamic habitats are home to many types of birds and other wildlife, including several that are listed as threatened or endangered. In many areas grasslands are fragmenting and disappearing due to changing land-use patterns, natural vegetative succession, and development.

New York State Grassland Focus Areas are parts of New York State that are of special importance to grassland birds. These focus areas were determined by analyzing data from the 2000-2005 Breeding Bird Atlas (BBA) and additional NYS DEC bird surveys. In this way, important geographical areas for rare grassland birds have been identified.

The target grassland bird species for Grassland Focus Areas are: bobolink, eastern meadowlark, grasshopper sparrow, Henslow's sparrow, horned lark, northern harrier, savannah sparrow, sedge wren, short-eared owl, upland sandpiper and vesper sparrow. Several of these species were detected during the BBA in survey blocks that overlap with the Livingston Unit, however, these blocks include large areas and the detection may not have occurred on the Unit.

All of the properties in the Livingston Unit, except the eastern two thirds of Canaseraga State Forest, overlap with the Western New York Grassland Focus Area. It is important to note that the properties within the Unit are generally forested or wetland and therefore do not provide significant grassland habitat suitable for grassland birds. See Appendix N: Maps (pg. 206), Appendix B: Animals of the Livingston Unit (pg. 136), Timber and Vegetation Management (pg. 74) and Fish and Wildlife Habitat Management (pg. 96) for further details.

This plan does not and cannot cover any actions or activities on private land within the Grassland Focus Area. For assistance in managing your own grassland, please visit

www.dec.ny.gov/pubs/32891.html or contact the NYS DEC Bureau of Wildlife in the Bath or Avon offices.

Forest Matrix Blocks and Least Cost Path Corridors

The identification of large, unfragmented forested areas, also called matrix forest blocks, is an important component of biodiversity conservation and forest ecosystem protection. Changes in both land use and climate will stimulate the alteration of movement patterns and range shifts for many species as they respond to changes in habitat availability and configuration along with changes in temperature, precipitation and the distribution of other species.

Research that combines data from natural, dynamic disturbance processes (e.g., fires, tornados, downbursts, ice storms, etc.) with the habitat needs of forest dwelling species in the Northeast U.S. has generated suggestions for how large forest blocks need to be in order to provide adequate blocks of continuous closed forests space for maintaining viable populations of a number of species. The two principal factors used to assess and recommend an appropriate size for proposed conservation areas of forested ecosystems, within a given EcoRegion, are the home range of wide-ranging animal species and historical patch sizes that result from natural disturbance events within the landscape. Based on these assessments, a set of priority matrix forest blocks have been identified within four of the terrestrial EcoRegions within New York.

Securing connections between major forested landscapes and their imbedded matrix forest blocks is important for the maintenance of viable populations of species, especially wide-ranging and highly mobile species, and ecological processes such as dispersal and pollination over the long term. Identifying, maintaining, and enhancing these connections represents a critical adaptation strategy if species are to shift their ranges in response to climate change and other landscape changes. Various nonprofit, state, and federally funded connectivity modeling efforts have been completed or are underway around New York State. Using these models, least cost path (LCP) corridors between identified matrix forest blocks have been predicted. An LCP corridor represents 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.

All of Ossian SF, Canaseraga SF and over 90 percent of Rattlesnake Hill WMA are located within the same tier 1 forest matrix block. Neither Conesus Inlet WMA nor Sonyea SF are located within a forest matrix block or linkage zones. See Appendix N: Maps (pg. 206) and Chapter 2 of the Strategic Plan for State Forest Management at www.dec.ny.gov/lands/64567.html. The forested acres of the Unit that are outside the Forest Matrix Block will still be primarily managed for forest, along with all the other things listed in the Goals and Objectives chapter.

In addition, this plan does not, and cannot, cover any actions or activities on private land within the Forest Matrix Block but outside the boundaries of the Unit. For assistance in managing your own forest, please contact the NYS DEC Bureau of Private Land Services for help. Visit www.dec.ny.gov/lands/4972.html or call the Bath or Avon offices.

Fish, Wildlife and Habitat

The fish, wildlife and their habitats found here are products of the landscape's history. Like many places in Western New York, European settlement in the 1700s and the decline of Native American cultures set the stage for widespread changes in the distribution and richness of wildlife resources. Human-induced changes in land cover, along with unregulated exploitation of fish and wildlife resources, caused the decline of many wildlife species. Forests were either cut heavily or burned, resulting in most of the land being cleared for farming and pasturing. Most big game animals as well as native brook trout and other creatures of pristine and wild environments were either eliminated or their populations greatly reduced. Streams filled with sediments. Wetlands were filled. Wild fires were suppressed. Very little of the landscape was left untouched.

In the 1930s the Great Depression set the stage for the landscape pendulum to swing in a different direction. As farms failed, a large portion of the area started to revert back to forest. The resulting young forests lacked significant age to provide timber products, but the wildlife species that were adapted to these transitional habitats quickly colonized these areas and rapidly moved back onto the landscape. Cottontail rabbits and other farm wildlife that once were in great supply diminished, and species of young forests such as grouse and deer took advantage of the returning woodlands.

Today, forests have matured and wooded habitats are one of the predominate environments on the Livingston Unit. Many of the wildlife species frequenting the Unit are those commonly associated with such habitats. Black bears, white-tailed deer, wild turkey, raccoon, woodpeckers and owls now exist where farm wildlife species thrived at the beginning of the 20th century.

Although comprising only a small portion of the area's natural land, freshwater wetlands nonetheless are perhaps the Livingston Unit's most productive wildlife habitats, and are home to many species of reptiles, amphibians, shore birds, waterfowl, aquatic mammals, fish, invertebrates, and insects. A majority of the Unit's wetland habitat can be found on Conesus Inlet WMA, due to a dike at the northern end of the area built in 1986, which resulted in over 300 hundred acres of emergent and wooded wetland. From a regulatory standpoint, all or parts of five different NYS protected freshwater wetlands can be found on the Livingston Unit, in addition to many smaller Federally-protected wetlands.

Old fields, shrubby fields, or grasslands make up about 5% of the Unit's land, but provide needed interspersion amidst the more common habitats. Woodcock, bobolink, vesper sparrows, meadow voles and northern harriers are some of the species using these more open habitats.

Ecological Zones and EcoRegions

The Livingston Unit lies within two different Ecological Subzones; the Erie-Ontario Plain (Sonyea SF), and the Central Appalachians Subzone (Conesus Inlet WMA and Rattlesnake Hill WMA's, and Canaseraga and Ossian SFs) See Appendix N: Maps (pg. 206).

The Lake Erie-Ontario Plain Subzone is some 5,200 square miles in size, and is characterized by relatively flat topography, good soils and an abundance of agriculture. Together with a mixture of small woodlots, abundant wetlands, and old fields makes for diverse wildlife habitat and a large assemblage of species.

The Central Appalachians Subzone encompasses an area of approximately 8,830 square miles, with elevations ranging between 1,000-2,200 feet above sea level. The landscape is dominated by forests, reverting farm lands and occasional dairy farms. Habitat present for wildlife includes numerous structural types from old field and brush land, to mature forest.

The Livingston Unit is located on the transition between the New York Great Lakes Plain EcoRegion (GL) and the New York High Allegheny Plateau EcoRegion (HAP). The Nature Conservancy has defined an EcoRegion as an area of ecological homogeneity, which is defined by similarities in soil, physiography, climate, hydrology, geology and vegetation. EcoRegions are mapped with well-defined boundaries, but rarely in nature do such abrupt changes occur. See Appendix N: Maps (pg. 206). The Great Lakes Plain EcoRegion extends from northeastern Minnesota across to north central New York, and south to northern Indiana and Ohio. The entire landscape was glaciated during the last Ice Age, and is characterized by level lake plains, level to gently rolling lowlands, and hillier upland areas. Elevation across the EcoRegion ranges from 300 to over 2,000 feet. Michigan's Porcupine and Huron Mountains and Minnesota's North Shore are some of the areas with higher elevations, while the southern shores of Lakes Michigan, Erie and Ontario have lower elevations and less relief.

Historically, the northern part of the Great Lakes EcoRegion was dominated by northern hardwood forests, pine forests, and spruce-fir forests. The vast majority of these forests were cut over by 1910 and is now in second growth; some areas are even in third growth. Much of the GL EcoRegion in New York was dominated by tallgrass prairies and savannas, with some beech-maple and other hardwood forests mixed in.

The High Allegheny Plateau EcoRegion is mostly located along the southern tier of New York and the northern tier of Pennsylvania. The EcoRegion is defined by high elevation features at the northern end of the Appalachian Plateau. Most of this EcoRegion is above 1200 feet. Many northern species and communities reach their southern limit in HAP, while many southern species extend into the EcoRegion but not beyond. 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. These three different drainages contribute to the high overall aquatic diversity in the EcoRegion. The northern and eastern portions of the EcoRegion were glaciated, including the area of the Livingston Unit.

White Tail Deer and Bear

The Livingston Unit includes two different Wildlife Management Units (WMUs), 8M (Conesus Inlet WMA and Sonyea SF) and 9P (Rattlesnake Hill WMA and Canaseraga SF and Ossian SF). There are 92 Wildlife Management Units in the state, ranging in size from approximately 100 to 3,000 square miles each. Each WMU not only encompasses land containing similar physical attributes such as topography, soils, land cover, and elevation, but

also of similar human-related attributes such as population density, development, and road density.

Deer populations in each of the state's WMUs are managed at levels recommended by citizen representatives through a structured process in each WMU. Up until 2016, the process was done via Citizen Task Forces (CTFs); committees of citizen stakeholders representing various deer-related stakes. The Department now uses a survey-based process to gather information on citizens' preferences. Surveys will be mailed to homeowners throughout the state in 2018 and 2019. The 92 WMUs have been grouped into 23 WMU Aggregates for the purpose of collecting and analyzing data relevant for deer population management. Survey results, in combination with data on deer impacts on forest regeneration, will be used to guide deer population management decisions.

In the units that have not gone through the new public input process, the deer management target in each WMU is expressed as a Buck Take Objective (BTO), the number of adult bucks harvested per square mile. This is DEC's primary index to deer population size. The Buck Take Objectives for the two WMUs comprising the Livingston Unit, as well as the last five years of actual buck harvests per sq. mi. are shown in Table 9 below. See also Appendix H: Wildlife Harvests and Hunting Use (pg. 185) for tables on the number of animals harvested.

Table 9: Buck Take Objectives and Recent Buck Takes Per Sq. Mi. for the Two WMUs of the Livingston Unit

WMU	BTO	2010	2011	2012	2013	2014
8M	**3.9**	3.7	3.5	4.4	3.9	4.8
9P	**6.0**	4.1	4.1	4.3	4.0	4.3

WMU 8M has not strayed too far from the objective over the last five years except in 2014 when the buck take per square mile went up to 4.8, signifying an expanding population. WMU 9P has been chronically under objective over the same time span, indicating a deer population that has held relatively stable.

The northward expansion of black bear populations into the western Finger Lakes has been well-documented, and the harvest of bears on lands of the Unit is becoming more and more likely, especially on the southern properties. Black bear populations thrive in areas with significant mature forest cover. Bear habitat in WMU 8M is transitional in that it straddles both the Appalachian Plateau bear range in the south and the poorer bear habitat of the Lake Plains to the north. Here, bear harvest has averaged only two per year over the last five years. Because of its more fragmented habitat and greater human presence, moderate to high permanent bear populations are unlikely to occur into the future there. In contrast, WMU 9P is within our traditional permanent bear range, and harvests there have averaged 22 over the last five years. Visitors to Rattlesnake Hill or Canaseraga and Ossian state forests are much more likely to see black bears than those visiting Sonyea SF or Conesus Inlet WMA.

Small Mammals, Reptiles, and Birds

The habitats of the Livingston Unit are home to most, if not all, of the common furbearers of Western New York including beaver, muskrat, red and grey fox, raccoon, coyote, mink, opossum, and skunk. Fisher, bobcat and river otter are all expanding their range in Western New York and have been well documented in Livingston and Allegany Counties.

Upland game birds of the Unit include wild turkey, ruffed grouse, woodcock, and crow. Due to low numbers in New York State generally, and the lack of substantial suitable habitat on the Unit in particular, wild ring-necked pheasants are rare.

Indigenous waterfowl include Canada goose and several species of both diving and puddle ducks such as mallards, wood ducks, teal, mergansers, ring-necks and bufflehead. Common loons are occasional visitors as well. By far the greatest number and diversity of waterfowl are to found on the Conesus Inlet WMA, although Rattlesnake Hill has some good waterfowl habitat as well.

Common small mammals include red and grey squirrel, cottontail rabbit, white-footed mouse, meadow vole, weasel, and several species of bats, although numbers of the latter have declined in recent years due to the effects of White-nose Syndrome.

Common reptiles found within the Unit include the milk, water and garter snakes, and snapping and painted turtles, both of which are found in the lakes and ponds of the Unit. Painted turtles can often be viewed sunning themselves on logs or along the shore, particularly in the Conesus marsh, or in some of the ponds on Rattlesnake Hill. Both of these species are almost entirely aquatic except when they come on shore to find appropriate soils to lay their eggs. See Appendix B: Animals of the Livingston Unit page 136 for lists for occurrences from the most recent Breeding Bird Atlas and Herp Atlas projects.

Songbird assemblages inhabiting the Livingston Unit are dictated by the habitat types present. Forests are the predominate cover type on the Unit, and species such as the wood thrush, blue jay, Canada warbler, scarlet tanager and oven bird will be favored. The fields and shrublands on the Unit are typically inhabited by such songbird species as American goldfinch, common yellowthroat, field and song sparrows, and yellow warbler.

Invertebrates

Invertebrates are the largest component of animal diversity within the Livingston Unit, of which the most notable groups are: annelids (e.g., earthworms), arachnids (e.g., spiders, ticks), crustaceans (e.g., crayfish, woodlice), insects, and mollusks (e.g., snails, mussels). Due to this large diversity and the associated difficulty for comprehensive survey, little is known about the characteristic habitats, natural assemblages, or the current status of many of these species. By managing for a diversity of habitats, the Unit will best provide the requirements of these numerous invertebrates.

Certain invertebrates have received far more attention than others, due to their conspicuous behavior and appealing coloration, such as butterflies and dragonflies, and

especially those listed as Endangered, Threatened, or classified as a Species of Greatest Conservation Need (pg. 53).

Regional and statewide efforts to identify invertebrate species presence and abundance have documented occurrences within the Unit. These efforts include: the New York State Dragonfly and Damselfly Survey, the New York State Natural Heritage Program, and Rattlesnake Hill WMA butterfly, damselfly and dragonfly surveys. See Appendix B: Animals of the Livingston Unit (pg. 136) for a list of the species detected during these surveys.

One invertebrate species observed on the Unit is classified as a Species of Greatest Conservation Need: Appalachian tiger beetle, found on Sonyea SF in 2005.

Threatened, Endangered or Special Concern Species

There are two endangered, five threatened, and eight special concern species listed under the New York State Endangered and Threatened Species Regulations (6 NYCRR Part 182) known to occur on the Unit. All native species present or formerly present in New York listed as endangered or threatened by the federal government are included in New York's listing.

In some cases, management on lands of the Unit is carried out to favor the preferred habitat types of rare species known to occur. In other cases, the species listed below exist where they do in part because their habitat on state lands is protected from disturbance and development. Additional information can be found in the Fish and Wildlife Habitat Management section on page 96.

The black tern, an endangered migratory waterbird that nests on floating vegetation in open marshes and eats insects and fish, has been observed foraging at Conesus Inlet WMA during spring migration. There are no known occurrences of black tern nesting attempts at this WMA.

Five threatened species have been known to inhabit the Livingston Unit in recent years. This includes the bald eagle, least bittern, northern harrier, pied-billed grebe and timber rattlesnake. Bald eagles have nested at Conesus Inlet WMA within the past decade and are often seen in the area year-round. Least bittern and pied-billed grebe are wetland birds, and during the breeding season the grebe has been documented at Swain Swamp (partially within Rattlesnake Hill WMA) and both species have been observed at Conesus Inlet WMA. The northern harrier is a grassland hawk, once referred to as marsh hawk, and has been regularly found foraging the marsh at Conesus Inlet WMA. The timber rattlesnake, greatly reduced in New York from historic killing and illegal collection, was once common at Rattlesnake Hill WMA and Ossian SF, however occurrences are now very rare.

At least eight special concern species are known to occur on or near the Unit. Forest breeding raptors, such as red-shouldered hawk, Cooper's hawk and sharp-shinned hawk may be found in the mature forests that dominate much of the Unit. Territorial red-shouldered hawk pairs and active nests have been documented on both Rattlesnake Hill WMA and Ossian State Forest. The American bittern, osprey and red-headed woodpecker have all been observed on several occasions at Conesus Inlet WMA. According to the New York State Breeding Bird Atlas (BBA), the yellow-breasted chat, a young forest songbird, has had

probable breeding on or near Conesus Inlet WMA, and the cerulean warbler, a mature forest songbird, has had probable breeding on or near Conesus Inlet WMA, Rattlesnake Hill WMA and Sonyea State Forest.

Summer surveys for threatened and endangered bat species occurred on Rattlesnake Hill WMA in 2016 and 2017. These surveys were specific to forest management project sites and consisted of acoustical recording and analysis of echolocation sounds to identify bat species. Results from 2016 showed a probable absence of Indiana bat (endangered) and northern long-eared bat (threatened). Recordings from the summer of 2017 will be analyzed during the winter of 2017. These species hibernate underground in caves and abandoned mines, and in the summer forage and roost in forests. If found present, management activities would need to consider ways to avoid potential impacts to these species.

Nearly the entire Livingston Unit is within the Western Finger Lakes Grassland Bird Focus Area (except most of Canaseraga State Forest). According to the BBA, several listed grassland bird species have been documented in survey blocks that overlap the Unit. However, WMAs and State Forests within the Unit do not contain significant grassland habitat suitable for grassland bird breeding. These species typically require large patches of grassland (25+ acres) in an open landscape and grasslands found on the Unit are generally small and adjacent to forest. Nevertheless, it is possible that these species may occasionally be found in larger grasslands on the Unit, most likely during migration. For information on grassland management see Grass and Brush Management in the Timber and Vegetation Management section (pg. 85).

See Appendix B: Animals of the Livingston Unit (pg. 136) for lists of known species located on or near the Livingston Unit.

Species of Greatest Conservation Need

The State Wildlife Grants program is a federal program that provides funds at the state level for conservation efforts aimed at preventing fish and wildlife populations from declining, reducing the potential for these species to be listed as endangered. In order to access these grant funds, New York State was required to develop a State Wildlife Action Plan (SWAP) that focuses on the “species of greatest conservation need.” This includes those species that are deemed rare, imperiled and those for which status has not been established. NYS DEC staff produced a list of 366 Species of Greatest Conservation Need (SGCN), of which 167 are High Priority SGCN. The list of species is certainly not exhaustive but includes those species for which systematic assessments had been made by staff of NYS DEC’s Division of Fish and Wildlife and the New York Natural Heritage Program. For further information on how the list was compiled, visit the web site www.dec.ny.gov/animals/7179.html which also has the entire list of species.

High Priority Species of Greatest Conservation Need observed on lands of the Livingston Unit include, but are not limited to: Appalachian tiger beetle, black tern, bobolink, brown thrasher, Canada warbler, red-headed woodpecker, timber rattlesnake, Indiana bat, northern long-eared bat, and yellow-breasted chat.

Wetlands and Water Resources

Water is an important determinant of what type and quality of habitat is found in any given area. Generally speaking, the Northeastern United States has plenty of water in the form of precipitation, surface and ground water. See also the Climate section (pg. 15), Watershed and Wetlands Protection Management section (pg. 94) an inventory of streams and ponded waters in Appendix E: Water Resources (pg. 156), and maps in Appendix N: Maps (pg. 206).

Streams

This Unit is located within the Genesee River basin. The streams within the Unit range from intermittent, meaning that stream flow does not occur year-round, to high quality trout streams with year-round flow. The majorities of the streams are class “C” and have fishery resources consisting of sucker and minnow species. Major named creeks consist of Keshequa Creek, Twomile Creek, Black Creek, Bennett Creek, Hovey Gully, Canaseraga Creek, Sugar Creek, Conesus Inlet, North and South McMillan creeks. Approximately 4 miles are classified C(T) under the NYS Water Resources Regulations, and includes Keshequa Creek, Sugar Creek, Hovey Gully and Canaseraga Creek.

Ponded Waters

The line between wetland and pond is subjective and based on the amount of wetland vegetation present. A pond generally has less than 25% cover of vegetation or soil.

Ponds and Lakes

There are numerous unnamed beaver ponds, vernal pools, small dugouts, water holes, and other small ponds located throughout the Unit. The smaller ones, that do not have fish, provide valuable habitat for reptiles and amphibians, such as salamanders and frogs. The larger ponds can support fish, although not all of them do so. The volume and depth of water varies seasonally, with some drying up during the summer, and others holding water year-round. Some were created by humans, some were created by dams from beavers, and others are a result of glacial terrain features, but all provide a range of ponded water habitat.

One that is particularly easy to overlook is the vernal pool. Vernal pools (vernal meaning spring) in the Northeast are generally found in forests and are typically wet on a seasonal basis. In addition to being only seasonally wet, they tend to be extremely small, usually only fragments of an acre in size. No matter how inconspicuous they are, their contribution to the forest ecosystem in which they are found is monumental. Spotted salamanders, wood frogs, and many other amphibians and invertebrates depend on these pools as breeding sites.

There are three named ponds on the Unit, Evergreen Pond and Paradox Pond on Ossian SF, and Swain Pond (also called Bullhead Pond) partially on Rattlesnake Hill WMA. At least 40 other ponds of various sizes exist on the Unit, with most range in size from less than an acre to about 15. The largest is a 400-acre impoundment on Conesus Inlet WMA.

Conesus Inlet WMA's northern border is the shoreline of Conesus Lake, the western most Finger Lake, which is about 3,400 acres in size. Fish species include alewife, bluegill, brown bullhead, largemouth bass, northern pike, pumpkinseed, smallmouth bass, tiger musky, walleye and yellow perch.

Wetlands

Wetlands (swamps, marshes, bogs, and similar areas) are areas saturated by surface or ground water sufficient to support distinctive vegetation adapted for life in saturated soil conditions. Wetlands serve as natural habitat for many species of plants and animals and absorb the forces of flood and tidal erosion to prevent loss of soil. Wetlands cleanse water by filtering out natural and many manmade pollutants, which are then broken down or immobilized. In wetlands, organic materials are also broken down and recycled back into the environment, where they support the food chain. Wetlands are one of the most productive habitats for feeding, nesting, spawning, resting and cover for fish and wildlife, including many rare and endangered species.

Wetlands, though sometimes difficult to define, are easily accepted as valuable assets to the watersheds involved. Wetlands come in many shapes and sizes, some more obvious than others; however, human ability to notice them has nothing to do with how important they are to the environment. They have many widely recognized benefits including flood attenuation, water quality improvement, wildlife habitat, and groundwater recharge. Wetlands also play a major role in the global carbon cycle because they are an important carbon sink for atmospheric carbon dioxide. Despite their small proportion of land area, wetlands constitute as much as 25 percent of global terrestrial carbon.

Conesus Inlet WMA has several larger constructed wetland complexes. South of Sliker Hill Rd/CR 33 is a large wetland complex in which the main impoundment as well as three smaller impoundments to the east, west, and south were all created by construction of a berm and water control structures to capture and hold water to form emergent marshes with areas of open water. This habitat benefits waterfowl, marshbirds, and furbearers such as muskrat, mink and otter, and also supports a limited warm water fishery. The habitat in these impoundments can be managed through occasional drawdowns that allow vegetation to re-establish on exposed soils, and then be reflooded. When drawn down, the exposed flats are prime shorebird habitat as well.

North of the road are the Northern Pike spawning marshes, which were constructed by the US Army Corps of Engineers to compensate for the loss of Northern Pike spawning habitat by the construction of the flood control dam at the north end of Conesus Lake. The spawning marshes were designed to flood with water from the lake during spring snow-melt runoff, to provide vegetated shallow water habitat for Northern Pike to reproduce in.

Information about wetlands in this plan comes from two GIS data sets maintained by NYS DEC as part of the Master Habitat Databank. These sets are titled as New York Regulatory Freshwater Wetlands and National Wetlands Inventory. A considerable amount of additional information has also been developed from personal observation by cooperating partners and NYS DEC staff. Many of these wetlands are man-made, constructed under the CCC program or more recent habitat improvement programs.

Information on the Unit

There are five New York State-protected freshwater wetlands located within the state lands of the Livingston Unit, see Table 10: NYS Freshwater Wetlands on the Livingston Unit (pg. 56).

Table 10: NYS Freshwater Wetlands on State Lands of the Livingston Unit

Wetland	Location	Size on NYS DEC	Class*	Type
CO-1	Conesus Inlet WMA, along Conesus Inlet	838.6 ac.	I	Palustrine; Forested/shrub, Emergent and Pond subtypes
CN-1**	Ossian SF, Scoville Road	27.2 ac.	II	Palustrine; Forested/shrub, Emergent and Pond subtypes
OS-1	Rattlesnake Hill WMA, west of England Hill Road	27.6 ac.	II	Lacustrine, Palustrine; Forested/shrub, Emergent and Pond subtypes
OS-3	Rattlesnake Hill WMA, south of Ebert Road	24.6 ac.	II	Palustrine; Forested/shrub, Emergent and Pond subtypes
CN-1**	Rattlesnake Hill WMA, Canaseraga Creek	12.1 ac.	I	Palustrine; Emergent subtype

* See Appendix G: Glossary pg. 177 for definitions.
**The double CN-1 is a mapping/nomenclature error that will be fixed in the future.

In addition, there are numerous large and small wetlands identified in the National Wetlands Inventory coverage, the majority of which overlap the state wetlands described above.

Table 11: National Wetlands Inventory of the Livingston Unit

Wetland Type	Number of Each Type	Acres*
Palustrine, emergent	30	396.1
Palustrine forested/shrub	56	504.5
Pond	53	38.2
Lacustrine (lake)	1**	0.3
Totals	140	939.1

*This water acreage will change with water level and field delineation.
** Conesus Lake.

Please see also the map in Appendix N: Maps (pg. 206) for spatial information and site specific data, Appendix E: Water Resources (pg. 156) and Appendix G: Glossary (pg. 177) for definitions.

Aquifers

Most of the private residence water wells in this area tap fractured bed rock as their main source of supply. Flow rates are rather low (probably in the area of 1 – 5 gpm).

Information about aquifers in this Unit comes from one GIS data set maintained by NYS DEC as part of the Master Habitat Databank. This set is titled Unconsolidated Aquifers @ 250K. This GIS coverage identifies many types of unconsolidated aquifers, including:

- Confined, Unconsolidated (none occurring in this Unit)
- Main, Unconsolidated; with the following sub-types (with several sub-types occurring in this Unit):
    - Confined, No Overlying Surfical Aquifer
    - Confined, Unknown Depth and Thickness
    - Kame, Kame Terrace, Kame Moraine, Outwash or Alluvium
    - Lacustrine or Eolian
    - Moraine
    - Primary Aquifer Region
    - Unconfined, High Yield
    - Unconfined, Mid Yield
    - Unknown

As per the above data set, portions of the Livingston Unit overlie unconsolidated aquifers.

Conesus Inlet WMA is located over two large aquifers. The first, and by far the smaller, aquifer is described as “lacustrine/eolian,” with flow rates (or yield) of <10 gpm. The second, and by far larger, aquifer is described as confined with no overlying surficial aquifer, with flow rates (yield) of 5 – 500 gpm.

On Rattlesnake Hill WMA there are two smaller aquifer areas, both located in valley bottoms along State Route 70 and County Route 54. They are different parts of the same feature. This aquifer is described as an “unconfined, high yield”, aquifer. Flow rate (yield) is estimated as >100 gpm.

On Canaseraga SF, Ossian SF, and Sonyea SF no aquifers are noted.

Use of Best Management Practices for water quality has been shown to protect both surface and underground water quality. Further information on these BMP’s is provided by the publication: *New York State Forestry Best Management Practices for Water Quality: BMP Field Guide.*

Note that 1:24,000 aquifer mapping has not yet been extended to this area. Once this happens, changes are likely to occur, particularly for the state forest areas, where features could be expected to be smaller and more discernable than might be displayed at the 1:250,000 scale.

Towers

This part of New York State has the potential for generating electricity with windmills or the construction of towers for radio or cell transmission. There are currently no windmills, or applications for windmills, for power generation on any of the properties of the Unit. NYS DEC does not have the legal authority to lease State Forests, Unique Areas or Wildlife Management Areas for the construction of windmills, new power lines, or commercial towers. However, this plan does not cover any actions or construction on any adjacent privately-owned lands.

Historic, Archaeological and Cultural Resources

The term cultural resource encompasses a number of categories of human created resources including structures, archaeological sites and related resources. NYS DEC 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.

Archaeological sites are, simply put, any location where materials (artifacts, ecofacts) or modifications to the landscape reveal evidence of past human activity. This includes a wide range of resources ranging from pre-contact Native American camps and villages to Euroamerican homesteads, cemeteries and graves as well as mills and other industrial sites. Such sites can be entirely subsurface or can contain above ground remains such as foundation walls or earthwork features. This Unit contain numerous cellar holes, barn foundations, stone lined water wells, steel well casings, fencing, railroad grades and other features related to historic occupation.

As a part of the SEQR review associated with the approval of this plan NYS DEC will arrange for the archaeological site inventories maintained by the New York State Museum and the OPRHP to be searched in order to identify known archaeological resources that might be located within or near the Unit. See Appendix J: SEQR (pg. 192). The two inventories overlap to an extent but do not entirely duplicate one another. The purpose of this effort was to identify any known sites that might be affected by actions proposed within the Unit and to assist in understanding and characterizing past human use and occupation of the Unit.

The quality of the site inventory information varies a great deal in all respects. Very little systematic archaeological survey has been undertaken in New York State, especially on public lands. Therefore, all current inventories must be considered incomplete. Even fewer sites have been investigated to any degree that would permit their significance to be evaluated. Many reported site locations result from 19th century antiquarian information, or artifact collector reports that have not been field verified. Often very little is known about the age, function or size of these sites. This means that reported site locations can be unreliable or be polygons that encompass a large area. Should systematic archaeological inventory be

undertaken at some point in the future it is very likely that additional resources will be identified. (For more information on historic and cultural resources, see Chapter 3 of the Strategic Plan for State Forest Management, found online at www.dec.ny.gov/lands/64567.html.)

Within the Livingston Unit there are no known pre-contact Native American archaeological sites. The New York State Museum and OPRHP archaeological site inventories, as well as the Rochester Museum and Science Center, contain numerous pre-contact Native American archaeological sites located in the vicinities of the Conesus Inlet WMA and Sonyea SF properties. Most of NYS DEC lands in this Unit are located on highlands. Although Native Americans occasionally used these lands for hunting and fishing, it is unlikely settlements were located on these upland areas. The large number of recorded sites is a reflection of the intensity of professional and amateur interests in the archaeological heritage of this part of New York State.

See the History of the Livingston Unit (pg. 11) section for a few notable locations on the different properties that make up this Unit. The Craig Colony for Epileptics has been determined eligible for inclusion in the State and National Registers of Historic Places. This includes portions of Sonyea SF, including the cemetery.

Historic and Archaeological Site Protection

The archaeological sites located within this land 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 and Section 233 of Education Law. Should any actions be proposed which would impact these sites they will be reviewed in accordance with SHPA, and the Seneca Nation of Indians Tribal Historic Preservation Office will be consulted. 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). The above laws would also apply to the Craig Colony cemetery. In New York State cemetaries and burials are also protected by Sections 4216, 4217 and 4218 of the Public Health Law.

Archaeological Research

Any known archaeological sites located on this Unit as well as additional unrecorded sites that may exist on the property may be made available for appropriate research. Any future archaeological research conducted on the property will require the 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 different research questions.

FUNDING, PUBLIC COMMENTS, POLICY CONSTRAINTS, and ILLEGAL USE

This plan strives to manage the diversity of the Livingston Unit's biological and social resources for multiple use to serve the needs of the people of New York State. In order to manage the Livingston Unit for multiple use, NYS DEC must manage the ecosystem in a holistic manner while reconciling the many and sometimes conflicting demands on the ecosystem. This must be done within the framework of Environmental Conservation Law (ECL), Rules and Regulations, the Strategic Plan for State Forest Management, and NYS DEC policies and procedures. Within these constraints, a need exists for protection, goods, services, safe public water, and the perpetuation of open space.

Many issues, including public needs, form the basis for the objectives and management actions set forth in this plan. The NYS DEC recognizes that planning must be done today to ensure effective management in the future.

On the Livingston Unit, many different issues and needs form the basis for the objectives and management actions set forth in this plan. As the need for open space and outdoor recreation increased over the past years, so too have the facilities on state lands been modified and expanded to meet that demand. The NYS DEC recognizes that the welfare of this area requires a "focus" towards the future. Planning must be done now to insure orderly and environmentally sound management in the future.

In summation, a complex combination of needs, issues and constraints on these demands together with the inventory of available resources will form the basis for the goals, objectives, and subsequent management actions which comprise this plan. For more information regarding statewide management of State Forests please refer to the Strategic Plan for State Forest Management at www.dec.ny.gov/lands/64567.html.

Funding

Currently the Bureau of Forest Resource Management and Bureau of Wildlife have limited budgets to manage all of NYS DEC's lands.

Funding, when available, is primarily derived from:

- Capital construction account (State General Fund monies)
- Rehabilitation & improvement account (State General Fund monies)
- Special Revenue Other (SRO) account. State forests only. Note: The primary source of revenue for the SRO account is from commercial sales of forest products on State Forests.
- Environmental Protection Fund (EPF). This account is primarily funded from real estate transfer tax and other appropriations by the legislature. Appropriations from

this fund may be used for a wide variety of projects including habitat enhancement for plants and animals, recreational facilities and forestry improvements such as pre-commercial thinning, artificial regeneration, and control of invasive species.

- New York Works. Fund to rebuild New York State's aging infrastructure and help the economy.
- Conservation Fund. Wildlife Management Areas only. A state fund consisting primarily of income from the sale of sporting licenses, fines from penalties from fish and wildlife law violations, sale of products off lands administered by the Division of Fish and Wildlife and Return a Gift to Wildlife donations. Revenues attributable to the sale of oil and gas leases from Wildlife Management Areas are deposited into the Conservation Fund.
- Wildlife Restoration Program Funds. These are federal funds commonly referred to as Pittman-Robertson Funds. This is a federal program established from money received from excise taxes on the sale of sporting guns and ammunition. Use of land purchased, or activities funded, are federally regulated to certain activities.
- Sportfish Restoration Program Funds. These are federal funds commonly referred to as Dingell-Johnson Funds. This is a federal program established from money received from excise taxes on the sale of fishing equipment, and motorboat and small engine fuels. Use of land purchased, or activities funded, are federally regulated to certain activities.
- State Wildlife Grants. This program is a federal program that provides funds at the state level for the identification of species in greatest conservation need and provide for the protection and restoration of their populations and habitats

Regional allocations from these accounts must be shared by all NYS DEC lands within the region. There is no specific budget established to manage an individual site. Funding is distributed based on priorities for all areas within the region. Tasks listed in the work schedule in this plan are contingent upon available funding and commitments associated with higher priority projects within the region.

Cooperative partnerships using Volunteer Stewardship Agreements with private conservation organizations or other interested parties, or through Temporary Revocable Permits issued to municipal or county agencies can be used to complete projects on the Livingston Unit. These partnerships are a valuable supplemental source for providing needed services.

Occationally projects may also be accomplished during commercial sales of forest products. However, these services are limited to certain activities within the sale area.

Summary of Public Comments

As part of the Unit Management Planning process, NYS DEC is committed to active citizen participation. To achieve that involvement, adjacent property owners, local government officials, media and others potentially interested in the Unit were identified and placed on a mailing list. While public comments are accepted at any time, the formal citizen participation process began in February 2016, when an introductory letter was sent to those identified on the Livingston Unit Management Plan mailing list. This letter briefly described the lands identified in the Unit and potential topics to be covered by the plan. It also asked for

verbal or written comments related to the Livingston Unit Management Plan. Public comments and staff-identified issues have been summarized below. See below for a complete list of public comments received as a result of the February 2016 scoping letter. See Appendix A: Public Comment (pg. 123) for the letters and emails received as a result of the scoping letter.

The following is an overall summary of public comments received:

- Continue to manage for multiple uses;
- Conesus Lake has too many weeds; allow use of weed mats; problems with water runoff and trash;
- Add a canoe launch to Conesus Outlet;
- Better maintain hiking trails, ask loggers to construct trails after logging is completed;
- Develop volunteer program to restore hiking trails;
- Encourage use of single use foot trails, no multiple use trails;
- Change boundaries of WMU 9P and WMU 8M;
- Sell standing timber for timber harvest;
- Harvest at least 150 acres per year from state forests and WMAs;
- Encourage native forbs and leafy plant species in vacant areas and hemlock in coniferous areas; and
- If regeneration is a concern, plant clover and chicory and oats or winter wheat.

Summary of public comments received related to Timber Management:

A public comment suggested that DEC continue to sell standing timber harvests on the state forests and WMAs. At least 150 acres per year could be harvested in the state lands in the Unit through commercial thinning, shelterwood or overstory harvests. Allow forests to be managed for healthy forest succession, create a mix of forest age structure; allow for about 500 acres of old growth; encourage native forbs and leafy plant species to grow in landing areas and vacant open areas. Plant clover and chicory or in open areas, oats and winter wheat; encourage new growth of hemlock trees; that loggers construct trails after logging is complete.

Summary of public comments received related to Water Resources:

Public comments were that there were too many weeds and toxic algae in Conesus Lake, wanted a pipe under the road to be cleaned out regularly and noted illegal disposal of trash in the hills that flows into lake.

Summary of public comments received related to Wildlife, Fish and Habitat:

Public support was noted for healthy wildlife populations as a source of a variety of recreations. One suggestion was to move the northern boundary of Wildlife Management Unit (WMU) 9P from Route 436 to Route 70 to put most of Rattlesnake Hill in WMU 8M. Another asked to maintain critical food and habitat for many wildlife species. No public comments were received related to fish management.

Summary of public comments received related to Public Recreation and Use:

On public comment asked for a canoe launch at Conesus Outlet. Another asked DEC to promote single use foot trails, not multiple use trails and requested that the trails not be shared with ATVs, mountain bikes or horses.

Summary of public comments received related to Cooperative Agreements:

There was one suggestion for a volunteer program to better maintain designated walking trails.

Policy Constraints

The laws, regulations, and policies listed below provide broad guidelines within which this plan is prepared. The Environmental Conservation Law of the State of New York is available to the public at local libraries, NYS DEC offices, from private vendors, and at www.dec.ny.gov/regulations/regulations.html on the internet.

Laws

State Laws

- Environmental Conservation Law
- State Finance Law
- State Historic Preservation Act (SHPA) - Article 14 PRHPL

Environmental Conservation Law (ECL):

- 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 of 1972
- ECL Article 71 - Enforcement

New York Code Rules and Regulations (6NYCRR)

- Title 6
    - Chapter I - Fish and Wildlife
    - Chapter II - Lands and Forests
    - Chapter III - Air Resources
    - Chapter IV - Quality Services
    - Chapter V - Resource Management Services
    - Chapter VI - State Environmental Quality Review
    - Chapter VII- Subchapter A
        - - Implementation of EQBA of 1972
    - Chapter X - Division of Water Resources

NYS DEC Policies and Guidelines

- Strategic Plan for State Forest Management
- Young Forest Initiative Strategic Plan
- State Wildlife Action Plan
- Public Use of State Lands Managed by the Bureau of Wildlife
- Temporary Revocable Permits
- Motor Vehicle Use
- Timber Management
- Unit Management Planning
- Pesticides
- Prescribed Burns
- Inventory
- Acquisition
- Road Construction
- Motorized Access Permit for People with Disabilities Policy (MAPPWD) / Commissioners Police #3 (CP-3)
- Best Management Practices (Water quality)
- General Freshwater Wetlands Permit for Wildlife Management Area Management Activities
- Bureau of Fisheries Fish Stocking Policies
- Archaeological Site Protection
- Archaeological Research
- Volunteer Stewardship Agreements
- Memorandum of Understanding with BLM for FYO 2004/2005 (leasing of gas wells)
- Draft ATV Policy for Public ATV Access to Recreation Programs
- Plantation Management on State Forests
- State Forest Rutting Guidelines

- Retention on State Forests
- Clearcutting on State Forests
- Rules for Establishment of Special Management Zones on State Forests and Wildlife Management Areas
- Rutting Guidelines For Timber Harvesting on Wildlife Management Areas
- Retention Guidance on Wildlife Management Areas
- Plantation Management Guidance on Wildlife Management Areas
- Etc.

Federal Law

- Americans with Disabilities Act
- Federal Wetland Law 404 - Water quality
- Federal Land Policy and Management Act of 1976 (FLPMA)
- National Environmental Policy Act of 1969 (NEPA)
- General Stormwater SPDES Permit.
- Etc.

Current Known Illegal Use

Regular patrols are made by law enforcement officials such as Forest Rangers, Environmental Conservation Officers and even local Sheriff Deputies on NYS DEC lands. But with the limited resources available it is difficult to stop all illegal activities such as:

- ATV and dirt bike use
- Off road driving
- Dumping / littering
- Vandalism
- Construction of permanent blinds and/or tree stands
- Harvest of ginseng and protected plants or animals
- Poaching
- Underage drinking
- Boundary line encroachments / trespass
- Non-permitted use of state land
- Shooting of breakable targets
- Cultivation of marijuana
- Meth labs

Whenever possible, fines or other punishments as the law allows are imposed. As money and other resources allow the damage is fixed, dumping is cleaned up and illegal plants are removed.

Encroachments

There are several encroachments and/or trespasses, which are listed in Appendix M: Known Encroachments and/or Trespass, page 205.

GOALS AND OBJECTIVES

Vision

The vision of this plan is to ensure the biological integrity, improvement and protection of the Livingston Unit. This shall be done within the multiple use concept of management, which strives to serve the needs of the people of New York State by providing a broad based, biologically diverse ecosystem. Management will be considered over a broad geographical area, not only to ensure the biological diversity and protection of the ecosystem, but also to optimize the many benefits to the public that these lands provide.

The Environmental Conservation Law holds the legal mandate enabling the Department of Environmental Conservation to manage the state forests, wildlife management areas, unique areas, multiple use areas and other state lands under its administration.

As stated earlier, it is NYS DEC's policy to manage state lands to serve the needs of the people and environment of New York State. This management will be carried out not only to ensure the ecological enhancement and protection of the ecosystem, but also to optimize the many benefits to the public that wild land provides. Management will be directed toward those activities that will enhance the resources of the land. They will be carried out in a manner that reflects the land designation and the land's capability for these uses and strives to optimize the benefits of state lands to the public.

NYS DEC lands within Livingston Unit are unique compared with most private properties in the surrounding landscape. Private landowners have differing management objectives and property size is often smaller. State lands provide large expanses open to public recreation. State land management planning horizons extend over a very long time frame. This allows for a commitment to provide healthy and diverse ecosystems and to manage and enhance unique vegetative types.

To achieve the vision, this plan will provide specific management goals with measurable planning objectives. The objectives will be augmented and supported by a plan of action and a timetable. We have chosen, for planning purposes, to separate these into categories, while recognizing that they are interrelated.

Overall 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. NYS DEC

will manage State Forests and Wildlife Management Areas so that they demonstrate a high degree of health as measured by multiple criteria, including the biodiversity that they support.

Goal 2 – Maintain Man-made State Forest and Wildlife Management Area Assets

Man-made assets on State Forests and Wildlife Management Areas 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 NYS DEC's intent to ensure that all man-made items on State Forests and Wildlife Management Areas are adequately maintained to safely perform their intended function.

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

State Forests and Wildlife Management Areas 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 property, NYS DEC will endeavor to provide recreational opportunities to all those who wish to experience the outdoors in a relatively undeveloped setting.

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

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

Goal 5 – Provide a Legal Framework for Forest Conservation and Sustainable Management of State Forests and Wildlife Management Areas

Staff must have clear and sound guidance to direct their decisions and actions. Likewise, the public must have clear information regarding what they are and are not allowed to do on State Forests and Wildlife Management Areas. Both of these are provided by well-written laws, regulations and policies. NYS DEC will work to improve existing legal guidance that has proved to be inadequate, and create new guidance that is needed but does not yet exist.

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. See also the Application of the Americans with Disabilities Act (ADA) section on page 28.

Consistent with ADA requirements, the NYS DEC incorporates accessibility for people with disabilities into the planning, construction and alteration of recreational facilities and assets supporting them. An assessment was conducted, in the development of this plan, to determine appropriate accessibility enhancements. However, NYS DEC is not required to make each of its existing facilities and assets accessible so long as the NYS DEC's programs, taken as a whole, are accessible.

New facilities, assets and accessibility improvements to existing facilities or assets proposed in this Unit are identified in several of the tables found in this Goals and Objectives chapter.

Management Objectives and Actions

For easier reading, the remainder of this chapter has been divided into sections by topic, although admittedly many objectives and/or actions are interrelated and could be found under more than one section.

Each topic includes a Management Objectives and Actions table, in which each action has been given a priority code and an estimated cost for the 10 year plan period.

Factors such as budget and staff constraints, and other environmental health problems may necessitate deviations from the scheduled management activities.

Priority codes:

1) C=Critical, Necessary to ensure public health and safety; To stabilize structures so as to not lose the money and time invested in them; Mandated by legislation.
2) H=High, Necessary for public use, and/or to improve habitat or other natural resources. Often this will be for new projects.
3) L=Low, Important for the enhancement of public use, habitats or other natural resources.

Estimated 10 yr. Cost:

The figures for the 10-year costs are *estimates* for budgetary planning purposes. Actual costs are determined at the time the action takes place. As required by New York State Policy, lowest acceptable bid will be used for all state contracts. Budgeted amounts are not directly allocated to these individual action costs, and actual amount received is likely to be much less than the total amounts indicated in the table. See the Funding section on page 60 for further discussion on budgeting for this and other state lands under NYS DEC management.

Access Management

Access is a basic necessity for both public use and land management. The management goal for access is to maintain an infrastructure system sufficient to manage the Unit's natural resources and provide for public use of the area.

For all facilities see Appendix N: Maps (pg. 206) for their location and names, and Appendix D: Facilities (pg. 154) for number and size.

Signs

Most of the identification signs on the properties are in good repair, however over time they fade or are damaged by vandalism and/or weather. At the time of writing of this plan, only Sonyea SF and Rattlesnake Hill WMA are in need of new signs. On Sonyea SF, one located near the northern border and the other at south end of Union Corners Rd, and at Rattlesnake Hill WMA one is needed on Dannack Hill Rd.

Roads

The existing public road infrastructure provides adequate public access throughout most of the Unit. Some portions of the town roads are seasonal and are not maintained for winter travel. Other roads have been officially abandoned; others have not been maintained in years. Some have continued to have vehicle traffic, others have not. (When a road is officially abandoned it may revert to whoever owns the property it crosses, subject to any outstanding deed restrictions.)

Additional information can be found in the Roads section (pg. 17), and information on encroachments and/or trespasses are listed in Appendix M: Known Encroachments and/or Trespass (pg. 205).

Canaseraga SF and Ossian SF – a few sections of NYS DEC maintained road need additional gravel or grading.

Sonyea SF – NYS OPRHP will continue to maintain the Genesee Valley Greenway over the existing roads. If the towns of West Sparta or Mount Morris ever abandon Union Corners Rd the State of New York should acquire a permanent easement for public access to Sonyea SF.

Rattlesnake Hill WMA – the large culvert on Memorial Highway Haul Rd is washed out and needs to be replaced.

If additional property is added per the Land Acquisition Management (pg. 115) section it will be evaluated for possible road issues.

Parking

There are 37 unpaved parking areas on the Unit with a wide range of condition and size. Many of them could use a fresh layer of gravel or the boundaries defined in some fashion.

If additional property is added per the Land Acquisition Management (pg. 115) section it will be evaluated for possible parking lot locations.

Gates

Use of gates and rock barricades to restrict motor access to haul roads and access trails will continue. The costs to upgrade haul roads for public access are prohibitive. In addition, access restrictions are needed to maintain the "backwoods character" of the land as well as protecting sensitive areas.

NYS DEC reserves the right to limit access to state lands when public safety issues occur, and/or damage to the infrastructure or other resources is likely. To aid in this process several additional gates have been listed for construction, but the majority of the time will be locked open to allow easy public use.

Staff have identified the need for additional gates and/or other barricades at the following locations:

- Canaseraga SF
    - Blank Hill Rd – Locked open most of the time.
    - Scott Hill Rd – Locked open most of the time.
    - Bonner Hill Rd – Locked open most of the time.
- Ossian SF
    - Scoville Rd, at the boundary lines – locked open most of the time.
- Sonyea SF
    - No new ones at this time, but existing ones should be replaced with the saloon style as they fail.
- Rattlesnake Hill WMA
    - No new ones at this time, but existing ones should be replaced with the saloon style as they fail.
- Conesus Inlet WMA
    - No new ones at this time, but existing ones should be replaced with the saloon style as they fail.

If additional property is added per the Land Acquisition Management (pg. 115) section it will be evaluated for possible gate locations.

Boundary Line

There is approximately 51.7 miles of boundary line for this Unit, which is maintained with signs and painted blazes. This includes 2.2 miles of boundary in common between Rattlesnake Hill WMA and Ossian SF. In addition, there is approximately 24 miles of road frontage on public roads, which is generally signed but not painted, this includes about 6.9 miles of road-side boundary.

Current policy is to repaint the blazes and re-sign these boundaries every five to ten years to clearly delineate state lands. Road frontage should be posted as needed. Signs along the roads tend to disappear more quickly than boundary signs out of the public eye. Hence, the road side signs will probably need more frequent replacement.

Goals and Objectives

Staff identified several known issues with boundary line encroachment or trespass. A re-survey of boundaries in question may be necessary in some of these cases and will serve as first priority for the survey crew's time, in other locations a ruling from the judiciary will be required to solve deed issues. See Appendix M: Known Encroachments and/or Trespass (pg. 205).

Table 12: Management Objectives and Actions for Access Management

Management Objectives		**Mgt. Act. No.**	**Management Actions**	**Frequency of Action***	**Priority Code** (Pg. 69)	**Estimated 10 yr Cost** (Pg. 69)
1	Identify need for additional access	1.0	Evaluate site(s)	As Needed	H	10 Work Days
		1.1	Receive public comments	On-Going	C	5 Work Days
		1.2	Solicit public comments	Every 10 yrs (as part of the UMP process)	C	5 Work Days
2	Maintain roads	2.0	Inspect culverts	Annually or after weather damage	L	40 Work Days
		2.1	Replace culverts on about a 25 year interval, or when failure occurs.	As needed.	C	$4,000 per culvert
		2.2	Public Forest Access Roads - grade and maintain surface.	Minimum of every 2 years, or after weather damage.	H	$2,000 per mile
		2.3	Haul Roads - grade and maintain surface.	Minimum of every 5 yrs, or after weather damage.	H	$2,000 per mile
		2.4	Mow road right of way	At least annually.	H	2 Work Days and $500 per mile
		2.5	Replace culvert on Rattlesnake Hill WMA Memorial Highway.	Once	L	$200,000
3	Construct roads	3.0	None proposed	Not in this plan period	L	n/a

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 69)	Estimated 10 yr Cost (Pg. 69)
4	Maintain parking areas	4.0	Litter removal	At least annually.	C	50 Work Days
		4.1	Maintain all parking areas	Every 5 yrs	C	$10,000
		4.2	Maintain informational signs	Annually	C	$1,000
		4.3	Mow all parking areas	Annually	H	100 Work Days
5	Control access	5.0	Locate, construct and install gates per Gates section on page 71.	Year 1 and 2	C	5 Work Days and $6,000 per gate
		5.1	Maintain gates and signs	Annually	H	100 Work Days
		5.2	Enforce NYS DEC policies	On-Going	C	Unable to predict costs.
6	Identify state property boundary lines.	6.0	Paint and post boundaries	Annually	H	80 Work days and $10,000
		6.1	Identify and resolve boundary encroachment issues.	ASAP	C	Unable to predict costs.
		6.2	Survey and blaze boundaries.	When encroach-ment issues are discovered, or line evidence disappears.	C	Contracted out - $4,500 to $5,500 per mile. NYS DEC surveyors – 12 to 15 work days per mile
7	Maintain signs	7.0	Repair and replace area signs as they are vandalized or fade.	On-Going	L	$500 per sign
		7.1	Change signs per above.	Once	L	
		7.2	Repair, replace and post other signs as needed.	On-going	L	50 Work Days

*Factors such as budget and staff constraints, and other environmental health problems may necessitate deviations from the scheduled management activities.

There may be additional unforeseen work in this category. Development of new or additional facilities will only be under taken after due consideration in the Unit Management Planning process.

Timber and Vegetation Management

Plant communities are, by nature, dynamic and ever-changing. Young stands get older and species composition changes with time. Management of vegetation can accelerate or slow down these inevitable changes in vegetative types and stages. The Livingston Unit Management Plan strives to maintain a balance of vegetative types and vegetative stages, the purpose of which is to enhance species diversity and abundance.

NYS DEC forestry staff 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 that 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. In addition, passive management strategies will be used 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.

Timber and Vegetation Management Policies

The authority to sell forest products from NYS DEC administered lands is provided by the Environmental Conservation Law. To perpetuate the growth, health, and quality of the forest resources, the NYS DEC has implemented a sustained yield timber management program for State Forest lands.

The Division of Lands and Forests timber harvesting program on State Forests is governed in part by a Timber Management Handbook, which includes both policies and guidelines to insure that management is carried out in a deliberate and professional manner. The Timber Management Handbook directs and regulates the practice of timber management on NYS DEC lands administered by the Division of Lands and Forests (Sonyea SF, Ossian SF and Canaseraga SF). This handbook contains technical references, as well as direction on regulation, allowable cutting, silvicultural systems and procedures. For further discussion of Commercial Timber Sales, see Chapters 2, 3 and 6 in the Strategic Plan for State Forest Management (2011).

Other sources of direction for NYS DEC timber and vegetation management activities includes the Strategic Plan for State Forest Management, Commissioner's policies, Division directives and the guidance and thresholds established in the State Forest Commercial Sales Program Environmental Impact Statement (EIS). All timber management activities that may be carried out will comply with the applicable guidelines and directives, as authorized under the Environmental Conservation Law. Direction is also given in the NYS DEC publication Best Management Practices for Water Quality, and the Management Rules for Special Management Zones, Plantation Management on State Forests, Rutting Guidelines, and Retention on State Forests.

The Division of Fish and Wildlife have utilized timber harvests on WMAs for many decades. Habitat management on Bureau of Wildlife managed lands is governed in part by the Programmatic Environmental Impact Statement on Habitat Management Activities of the DEC Division of Fish and Wildlife (1979). This document provides current types of upland habitat management permitted on DFW owned lands, including timber harvests.

Traditionally, timber sales on WMAs have followed many of the same guidelines and policies created and used by Lands and Forests, as described above. Recently the Bureau of Wildlife has adopted many of those same policies or created similar policies and guidelines for harvests conducted on their lands. Habitat Management Plans (HMPs) will be written for each WMA in which specific management objectives and plans will be clearly defined. These documents will work in conjunction with other supporting documents, such as this UMP. As of the writing of this plan, existing HMPs for the WMAs in this Unit include the Rattlesnake Hill Habitat Management Plan, completed in 2016. An HMP for Conesus Inlet WMA is expected to be completed in 2018.

Timber and Vegetative Management Objectives

Staff members have identified management objectives that strive to maintain a balance of vegetative types and stages, which are different and unique to each area. Vegetation management objectives are dictated by the areas' land designation. For example, Wildlife Management Areas base these decisions primarily on benefits to wildlife; State Forests are managed to provide watershed protection, wildlife habitat, ecosystem health, timber production, and recreation opportunities; Unique Areas protecting the cultural resources that make the area unique, and Multiple Use Areas on a combination of timber management, wildlife and recreation. The proposed timber and vegetative management is intended to enhance biodiversity, produce healthy and sustainable forest resources and enhance wildlife habitat diversity.

A decline in young stands has been observed throughout the northeast due to the control of natural disturbances such as wildfire, the decline in even-aged timber management on private lands, and the decrease in agricultural abandonment and succession. Young forests are temporary and typically follow a disturbance. With less disturbances, they quickly age into pole and saw timber stands and disappear from the landscape. Although management for a diversity of vegetative types and stages has occurred on many state properties, statewide there is need for a higher percentage in a young stage.

To address this issue, and the accompanying decline in associated wildlife species, Division of Fish and Wildlife (DFW) developed the Young Forest Initiative (YFI) in 2015. The YFI aims to restore young forest habitat on most WMAs across the state. The objective of the initiative is to create and maintain at least 10% of each WMA's forested area as young forest in perpetuity. This program is one of the primary considerations dictating timber and vegetation management decisions on properties administered by the Bureau of Wildlife within this plan, as well as in the Habitat Management Plan (HMP) for each WMA.

The identification of large, unfragmented forested areas, also called matrix forest blocks, is an important component of biodiversity conservation and forest ecosystem protection. Ossian SF, Canaseraga SF and Rattlesnake Hill WMA are located within the Rattlesnake Hill

Tier 1 block. See Appendix N: Maps (pg. 206), Chapters 2 and 6 of the Strategic Plan for State Forest Management at www.dec.ny.gov/lands/64567.html, and the HMP for each Wildlife Management Area.

The identification of large, unfragmented grassland areas, also called Grassland Focus Areas, is also an important component of biodiversity conservation and grassland ecosystem protection. Ossian SF, Canaseraga SF, Sonyea SF, Rattlesnake Hill WMA and Conesus WMA area located within the Western New York Grassland Focus Area.

The identification of wetlands is also an important component of biodiversity conservation and wetland ecosystem protection. There are no NYS regulated wetlands identified in Sonyea SF or Canaseraga SF. The remainder of the areas in the Unit contain NYS regulated wetlands within their respective boundaries. See also the Wetlands and Water Resources (pg. 54) and Watershed and Wetlands Protection Management (pg. 94) sections for additional information.

Inventory

Division of Lands and Forests policy requires that a forest inventory be conducted every 10 years and whenever forest stands are changed by any silviculture operation or by the forces of nature. Forest inventory is the critical task in the vegetation management planning process, as it forms the basis for all science based vegetative management decisions in this plan. While not policy, the Bureau of Wildlife intends to follow the same inventory schedule on the properties they manage.

A stand is a group of plants with similar characteristics that are analyzed and treated as a single unit. Each property is divided into one or more compartments, and each compartment divided into stands. Compartments are given a letter designation, and stands a number. This letter-number combination is used for tracking, mapping and planning the actions and activities that happen in and on NYS DEC owned land.

The properties within this Unit have been inventoried within the past 10 years, and will be inventoried again between 2020 and 2027.

Current and Future Vegetation Types and Stages

The properties within this Unit are characterized by a variety of vegetative types. Northern hardwood forests predominate on the north facing slopes and oak-hickory forests generally occupy the south facing slopes. Past man-made disturbances have created even more diversity. Many of the formerly agricultural fields for example have reverted back to “pioneer” forest types comprised of aspen, red maple and white pine.

As noted above, the management objective is to strive to maintain a balance of vegetative types and stages for each property, with the ideal balance being different for each area.

Timber size class is broken down into three different classifications: seedling/sapling is up to 5 inches in diameter, pole timber is 6 to 11 inches and sawtimber is 12 inches and up. See also the Vegetative Types and Stages table on page 40, Appendix F: Vegetation Management (pg. 163) and Appendix N: Maps (pg. 206).

Stand composition and vegetative type are influenced by many things. For these areas, the most important factors would be:

1) Site capability
2) Seed source
3) Past management
4) Deer density
5) Invasive pests

Please note that it is impossible to predict exactly what the percentages of the various types and stages will be at the end of this plan period. This is due to two factors:

1) The significant role played by natural forces in the type and stage exhibited by any stand.
2) The fact that most tree species do not lend themselves to management over a 10 year period. In some cases it may require 40 - 50 years before the results of any given management action can be adequately assessed.

Most of the Livingston Unit does not have a significant component of grassland/shrubland openings. These areas are important to wildlife and vegetation diversity and will be maintained as such. Most of the existing fields will not be allowed to convert to seedling/sapling, which means they will need to be mowed, brush hogged or burned on a regular basis.

Canaseraga SF is a forested upland tract, dominated by sawtimber size stands with a mix of hardwood, natural conifer and plantation types. A very small portion is in the seedling/sapling stage, increasing this through regeneration will benefit the forest health and provide for future forest products.

Ossian SF is a forested upland tract, dominated by pole and sawtimber size classes. About half of it is hardwood, the rest is split between conifer stands and conifer plantations. With no stands in the seedling/sapling size class it has an un-balanced spread of stages. This size class needs to be increased through the process of regeneration harvests.

Sonyea SF is a largely forested upland tract, but also includes about 104 acres of grassland / shrubland, and the large steep slopes into the Keshequa Gorge. It is within a Grassland Focus Area (pg. 85), so maintaining the grassland is important. Most of the forested portion is hardwood sawtimber, with very little falling into any of the other types and stages. Increasing the seedling/sapling size class by regeneration harvests will help balance out the stages of this forest. Because of the low numbers of conifer types, efforts will be made to encourage the regeneration of native conifer species.

Rattlesnake Hill WMA is a mostly forested upland tract and includes steep slopes, several streams, grassy openings, constructed ponds and marshes, and a portion of Canaseraga Creek wetlands. Existing forest habitat is dominated by pole and sawtimber natural hardwoods interspersed with natural conifer stands and conifer plantations. Approximately 1,000 acres of this forested area is designated as protection management to protect steep slopes and waterways and provides climax forest habitat. A small percentage of Rattlesnake Hill WMA is young forest regenerating from previous forest management, which are generally

small (< 10 acres) and scattered throughout the northern part, with one large block (105 acres) near the southern boundary. Forest habitat goals for the next decade include increasing the acreage of young forest on the property from 195 acres currently, to just under 500 acres. This regeneration effort will benefit both wildlife habitat and the forest health as many of the stands are composed of mature hardwoods. Another important goal is to reduce the acreage of conifer plantations. This will be done through overstory removals and thinning to prep stands for future regeneration management. Visit www.dec.ny.gov/outdoor/24443.html for the HMP for this area.

Conesus Inlet WMA is located at the south end of Conesus Lake. This lowland area is composed primarily of emergent marsh, open water and forested wetland. There are some small upland forested areas along the edge of the marshes, but most of the forested stands are composed of swamp hardwoods. Vegetation management goals include increasing the acreage of young forest habitat to approximately 40 acres as there is currently no young forest on Conesus. In addition the impoundments will be managed for quality emergent marsh habitat. Visit www.dec.ny.gov/outdoor/24432.html for the HMP for this area.

Overall, on all of the Livingston Unit, for a better distribution of stages, seedling/sapling acres should be created, primarily out of the stands currently of sawtimber size. Success in this objective will be measured simply by an increase in seedling/sapling acres.

Old Growth Forest

The NYS DEC Bureau of Forest Resource Management has adopted the following definition for Old Growth forests.

> **Old-Growth Forest** - 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.

NYS DEC staff have not found any sections of the Unit that meet the above criteria. It does have stands of big trees, stands with old trees, and stands with big, old trees. Much of

the area within the Unit was previously used for farming or cleared for chemical wood, and ample evidence of this still exists in the form of old stone walls, foundations and wire fence along old hedge rows.

NYS DEC is not implying that only Old Growth Forests are worthy of inclusion in State Forest Protection Areas, instead, the intent is to establish a consistent, science based approach to identify and classify old growth stands. NYS DEC staff will continue to protect areas other than old growth including sites where there are rare or endangered species, unique natural communities or areas where long term protection can promote greater biodiversity in the landscape.

As time passes, and with no further human disturbance of the stand of trees, it is possible to gradually revert to a state similar to old-growth. This is a century's long process; however there are areas of this Unit where this may eventually occur.

Commercial Timber Sales

The primary method used to influence the timber and vegetation on state land is the commercial harvest of timber. See the current timber and other vegetation in Table 7: Vegetative Types and Stages (pg. 40) and the Timber and Vegetation (pg. 38) section.

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

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

At the local scale, there is a somewhat different demand for wood products. While many local loggers supply larger mills with hardwood logs, lesser valued products such as hemlock or larch logs and firewood can be profitably cut and sold to local markets. Hemlock and larch are often sawn by small local band mills for use in barn construction. Firewood is cut by individuals for their own use or for resale to home owners.

Forest areas being considered for timber harvesting are prioritized based on the following criteria:

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

4) Current distribution of vegetative stages within the Unit Management Plan area and surrounding landscape, including the EcoRegion habitat gaps as per the Strategic Plan for State Forest Management and the desired 10% young forest on WMAs as per the Strategic Plan for Implementing the Young Forest Initiative;
5) Ability to regenerate stands (if a regeneration harvest)
6) Existing timber and vegetation management needs from other unit management plans
7) Market conditions,
8) Potential growth response of stands to treatment.

By law, any trees to be removed in a harvest must be designated, and paid for, prior to removal. Designation is made by NYS DEC forestry or wildlife staff. After designation is completed, a fair market appraisal is conducted. No products may be sold at less than the fair market value. Forest stands are prioritized for treatment based on the criteria outlined above, and the desired future conditions identified by this Unit Management Plan. Prioritization is done by NYS DEC foresters.

The Environmental Conservation Law requires that different procedures are employed based on the appraised value of a timber sale. Sales that are appraised greater than $10,000 are called revenue sales and sales that are appraised at less than $10,000 are known as local sales. Revenue sale contracts must be approved by DEC's Central Office staff, and revenue sale contracts valued at $25,000 or more must be approved by the Office of the State Comptroller. The Regional Forester has the authority to execute local sale contracts. All sales valued at more than $500 (and those less than $500 which are thought to have substantial public interest) are publically advertised and competitively bid. Law requires that forest product sales can only be awarded to the highest responsible bidder. The Regional sub-office in Bath maintains a mailing list of prospective bidders for forest product sales. Those interested in receiving bid information should contact the Bath office or visit www.dec.ny.gov/lands/69749.html for a list of currently advertised and recently closed bids.

There may be an opportunity to use up to 50% of the appraised timber sale value for in kind service work. This work must be necessary to access the sale and/or achieve management objectives. Examples of such work include but are not limited to: control of interfering/undesirable vegetation, establishing desirable regeneration and road construction and improvement. An assessment of the potential for this type of work will be done with each sale.

See Appendix F: Vegetation Management (pg. 163), or the HMPs, for additional information regarding scheduled timber harvests in the Unit.

Special Management Zones, Forest Retention and Rutting Guidelines

All silvicultural actions taken on Division of Lands and Forest properties are constrained by the Strategic Plan for State Forest Management, and policies for Special Management Zones, Forest Retention Guidelines, and Rutting Guidelines. Visit the web at: www.dec.ny.gov/lands/64567.html for additional information. For properties managed by the Division of Fish and Wildlife a similar set of guidance documents have been created specific

to forest management on Wildlife Management Areas. Visit the web at: www.dec.ny.gov/outdoor/104218.html for additional information.

The Special Management Zones establish zones around specific features (intermittent streams, vernal pools, wetlands, etc.) where management must be modified as compared to what is permissible in the general forest zone. The final configuration of the zones can only be done during sale layout, following field reconnaissance, which is beyond the scope of this plan. See also the Fish, Wildlife and Habitat (pg. 48) and the Watershed and Wetlands Protection Management (pg. 94) sections for further details.

The Retention on State Forests and Retention Guidance on Wildlife Management Areas are NYS DEC's strategy for conserving biodiversity in stands managed for timber production. Retention and recruitment of snags, cavity trees, coarse woody debris (CWD), fine woody material (FWM) and other features will advance the structural and compositional complexity necessary for conserving biodiversity and maintaining long term ecosystem productivity.

The Rutting Guidelines for Timber Harvests and TRPs provide a tool to assist NYS DEC staff when conducting a timber harvest or Temporary Revocable Permit (TRP) on State Forests. A well planned and laid out access system, utilizing appropriate best management practices (BMPs), concentrates site disturbance, soil compaction, and rutting to these limited corridors while protecting water quality and overall site productivity of the general harvest area.

Protection Forest

Per the Timber Management Handbook protection areas receive special consideration whenever management activities, of any kind, are planned which may impact these areas. Examples include:

- seasonal harvest limitations,
- restrictions of type and/or size of harvesting equipment,
- special considerations for access.

Some protection areas are managed specifically to restrict or prohibit management activities. These practices may also be employed on other areas not designated as protection forest whenever site or vegetation protection is needed. Examples include: poorly drained soils, slopes over 15%, presence of historical or archeological features, recreational use, wildlife considerations, and preparation for forest regeneration. Wetlands do represent unique habitat types, and require Special Management Zones (pg. 43).

As part of the inventory process, 28 stands with a total of 1,345 acres have been designated as protection forest. This includes stands that are forested, forested wetland and wetland. The following stands have been given protection status:

- Canaseraga SF – Stands: A-2 (4 acres), B-29 (14 acres), and C-740 (2 acres) this was done in order to protect some historical sites, wetland and floodplain.
- Ossian SF - Stands: B-23 (26 acres) and A-5 (22 acres) this was done in order to protect some wetland and floodplain.

- Sonyea SF - Stands: A-3 (14 acres), A-2 (66 acres) and A-17 (47 acres) this was done in order to protect the floodplain and cliffs adjacent to Keshequa Creek.
- Rattlesnake WMA - Stands: B-3 (21 acres), C-6 (133 acres), D-27 (58 acres), D-39 (8 acres), D-920 (16 acres), E-5 (87 acres), E-7 (69 acres), F-9 (23 acres), F-13 (18 acres), F-14 (14 acres), F-16 (35 acres), F-17 (59 acres), G-1 (232 acres), G-7 (7 acres), G-8 (25 acres), H-4 (185 acres), I-29 (58 acres), and J-2 (13 acres). This was done in order to protect steep hillsides, waterways, wetlands and to ensure a connective corridor of climax forest.
- Conesus Inlet WMA - Stands: A-5 (28 acres) and A-7 (186 acres). Stand A-5 is protected due to its close proximity to a known bald eagles' nest. A-7 is due to the significant plant community located here: the silver maple/ash swamp. This will change significantly with the impending EAB arrival.

Green Certification

NYS DEC 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. NYS DEC'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

In 2000, New York State DEC-Bureau of Forest Resource 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). The green certification program does not include those lands managed by NYS DEC Division of Fish and Wildlife i.e., Rattlesnake Hill WMA or Conesus Inlet WMA.

To become certified, NYS DEC 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.

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

Current and Future Management

Due to the current vegetative types, stages, and species assemblages presented by these forests, we expect that the even-age system will continue to be the primary silvicultural system applied to the properties of this Unit during this planning period. Note that this is only for this planning period, and may change as vegetative types and stages change.

Silvicultural techniques used to manage the forests within this Unit will include:

- thinning and regenerating even-aged stands
- converting even-age stands to all-aged stands (where site and species assemblages are favorable)
- establishing protection areas to maintain and enhance diversity
- protecting ecologically sensitive areas such as stream banks, wetlands, and steep slopes from intensive management.

The objective is to maintain and enhance well-adapted, native species in the Unit by using the most current silvicultural knowledge.

In some areas, difficulties with regenerating oak, conifer and other shade-intolerant and mid - tolerant species, have led to shade tolerant species such as Sugar and Red Maple becoming well-established. The presence of shade tolerant species will challenge the land managers' abilities to meet the overall vegetative goals of balancing forest types and stages.

When the time comes to regenerate these oak stands, it may be necessary to use techniques (such as prescribed fire, scarification, pesticide, fencing, etc.) that are not well known in this area. Outreach to user groups and the general public will be critical in explaining the science behind these techniques, why they are required, and why it is critical to reproduce the existing oak stands. In some cases, the completion of additional forms, plans, and/or SEQR may be required.

See Appendix F: Vegetation Management (pg. 163) for a stand by stand listing of commercial timber harvests planned for the 10 years of the Livingston Unit Management Plan. Appendix N: Maps (pg. 206) includes maps of the planned commercial treatments.

Across the region, it is important to note the stands of inadequate access, intensive recreational use, limited staff resources, steep hillsides, and/or wetland terrain of the properties in the Unit do not lend itself well to timber harvesting on <u>all</u> of the land area.

Appendix F: Vegetation Management (pg. 163) does not include any non-commercial treatments for any stands. Non-commercial means that the trees are too small to sell for profit. As a result, the work must be done by trained staff, trained volunteers, or through a procurement contract paid for by NYS DEC. When people and/or money to contract the work becomes available, stands will be evaluated, starting with the ones in the seedling-sapling and pole timber sizes.

Plantation Management

Portions of Sonyea SF, Ossian SF, Canaseraga SF, and Rattlesnake Hill WMA have softwood plantations consisting mostly of red pine, Norway spruce and Scotch pine. The only hardwood plantation is two small stands of red oak on Rattlesnake Hill WMA. Most of the softwood stands are in the process of reverting to natural hardwoods. Any management of the plantations on State Forest will need to comply with the forest retention standards.

Natural succession within aging plantations is likely to follow one of two very different pathways. The first would be characterized by slow decline of the existing softwood overstory

and a gradual release of the current crop of young seedling/sapling hardwoods in the seedling understory. The second would be characterized by the existing softwood overstory being removed by a single catastrophic event (i.e. ice storm, heavy late season snow, unusual wind event, aggressive insect attack, etc.). This pathway would result in a much more rapid release of seedlings in the understory.

The composition of the understory is the key in both cases. Note that, particularly in the case of the second scenario, if the understory is dominated by shrub species, a forested stand may not be the result. Rather a shrub savannah may result, which might (depending on site factors) slowly succeed to a young hardwood stand.

In both scenarios there is also the possibility that, if site factors are favorable, some of the softwood species from the original plantation may participate in the new stand. Anecdotal evidence suggests that we should expect this, at least through the seedling - sapling stage. Long term persistence of these species on these sites may be somewhat less likely. Data regarding this type of situation has not been gathered long enough to have much information on the likely outcome. See also the discussion relating to desired conifer component for this management Unit.

The objective for managing plantations should be to try to mimic the first scenario. The stand is thinned to a density that will allow the establishment of desirable tree species in the understory of the stand. This treatment is later followed by the removal of the rest of the softwood overstory, once the number of new, young, trees in the understory is sufficient to assure a new stand.

While this is the primary objective, it is recognized that there will be those situations where nature will take its course and the second scenario will be played out. Once the catastrophic event occurs, the decision on salvaging the remaining woody material on the site will need to be made. This will be done on a case by case basis, depending on site and regeneration factors. It is impossible for us to estimate, at this time, the acreage that could be involved in salvage operations.

Most of the plantations within the Unit do not occur on soil types that are conducive to success by plantation conifer species. Therefore, this plan does not propose to replant any plantations. The better course is to allow these areas to succeed (either through management intervention or by natural forces) to native, natural, vegetation. This may, or may not, include a significant conifer component.

Conifer Component

Forest ecologists have identified conifers as an important component of the ecosystem. Whether planted or natural, they bring diversity and serve as a habitat niche for native wildlife species. About 18% of the Unit is in conifer plantations, and about 11% of the Unit is in natural conifer stands. For the purposes of this plan a natural conifer stand is any stand where conifer species compose more than 33% of the stand, and it was of natural origins, not planted.

Care must be taken to assure continuation and successful regeneration of these stands; this is especially important in drainage areas where Eastern Hemlock is the dominant tree

species. Rarely would conversion of natural conifer stands to hardwood stands occur as a result of management actions. In many cases, particularly in regards to stands dominated by Eastern Hemlock, this will amount to a modified all–aged treatment. Stand regeneration efforts in these cases may stretch over a number of years.

Grassland and Shrubland Management

Statewide, grasslands are one of the most important parts of biodiversity, and these dynamic habitats are home to a significant community of bird species, including the threatened Henslow's sparrow and northern harrier hawks. Due to changing land-use patterns, natural vegetative succession, and development, grasslands are fragmenting and disappearing.

The Grassland Focus Areas (see Appendix N: Maps, pg. 206) were determined by analyzing the 2nd New York State Breeding Bird Atlas data for grassland birds for the entire state. To further refine the focus areas, NYS DEC conducted point counts during the spring and summer of 2005.

Overall the Unit does not have a significant amount of grassland/shrubland openings, in that it is only about 5% of the total land area. Conesus Inlet WMA has the largest percentage of grassland/shrubland areas, at about 20%. Over the 10 years of this plan that amount should remain constant or increase by no more than 120 acres (1% of the land area). The majority of that will take place on Rattlesnake Hill WMA. Clearing to create these openings will depend on funding, because of this, an exact year of action has not been picked.

Grassland consists of more than just grass species, but also includes native companion forb species such as milkweed, butterfly weed and brown-eyed Susan. Some of these respond well to fire, others respond well to less frequent mowing, but all will eventually lose to brush without some intervention. Almost none will survive in a mowed lawn setting. The frequency and timing of mowing or burning will influence what species return the following year, and which will not.

Existing, and future, grassland and shrubland openings will need to be maintained, or they will revert to forest. Grass needs to be mowed at least every 3 years, and brush hydro-axed about every 5 to 15 years. If it isn’t mowed or burned the grassland converts to brush and then the brush grows into trees. Succession may be set back further by converting forest or brush to grass, as funding becomes available, this may be done.

Grassland areas over 25 acres or of any size that have documented presence of a listed species will be managed following the current grassland management BMPs. Generally, this requires avoiding mowing during the sensitive nesting or wintering seasons dependent on species present.

Applying lime and/or fertilizer can enhance the health of grasses over invasive plants such as spotted or brown knapweed, black or pale swallow-wort, burdock or goldenrod. A more expensive option for fields that have little or no grasses left growing is to use standard agricultural practices to return it to grassland. This includes mowing, plowing, tilling, and herbicide application and seeding. Additional paperwork, such as a herbicide application plan and SEQR are required prior to applying herbicide.

Fire can also be used to maintain an area in grasses. Most warm-season type grasses grow best following a fire. The soil heats up earlier in the spring with the black ash left after a burn, and the ash also provides a source of readily available nutrients for the growing grasses. Additional paperwork, such as a burn plan and SEQR are required prior to doing a controlled burn.

Typically, grassland acres are created out of timber acres by removing the woody plants, including stumps and roots, and planting grass seed. If created, the soil pH will be tested, and lime may be applied prior to seeding if funding allows. Best Management Practices would be used to control erosion.

Prescribed Fire

Prescribed fire is not currently utilized in this Unit. However, prescribed fire can help to maintain Oak-Savanah ecosystems by regenerating the warm season grasses and killing interfering shrub and herbaceous vegetation. It can also help regenerate oak trees by removing leaf litter, exposing mineral soil and killing the interfering shrub layer.

Prescribed fire is a great management tool but requires lots of time and resources. Where and when funding allows, prescribed fire may be considered at the following properties: Sonyea SF, Ossian SF, Canaseraga SF, Rattlesnake Hill WMA and Conesus Inlet WMA.

If prescribed fire will be used, a prescribed fire plan must be prepared and approved. The fire plan must state objectives that assist in managing the plant community and achieve the UMP goals.

Issues that should be considered in preparing a prescribed fire plan are:

- Protecting adjoining landowners properties
- Public perception on “controlled burns” escaping prescription
- Smoke management
- Publicity from prescribed fire operations
- Visibility of the fire from surrounding towns and major highways and potential for 911 phone calls during burns
- Public forum/meetings to provide an opportunity to voice concerns and provide a setting for input and education about prescribed fire

Wetlands

Conesus Inlet WMA and Rattlesnake Hill WMA have areas with significant wetlands, both forested and open. Management activities to maintain and enhance these are a priority and will occur as funding allows. These wetland areas are important because they provide valuable habitat to various fish and wildlife species, and they provide the public with wetland related recreation opportunities. See the Fish and Wildlife Habitat Management (pg. 96) and the Watershed and Wetlands Protection Management (pg. 94) sections for further details.

Agricultural Cooperative Agreements

Conesus Inlet WMA currently has 40 acres under agricultural cooperative agreements and 117 acres of grassland is enrolled in the Wildlife Habitat Incentive Program through Livingston county NRCS. If the current agreements expire without renewal, the fields will be returned to grassland and managed per the Grass and Brush Management (pg. 85) section.

Forest Health Threats

DON'T MOVE FIREWOOD! New York State regulations prohibit firewood from being brought into New York unless it has been heat treated to kill pests. The regulation also limits the transportation of untreated firewood to less than 50 miles from its origin. Many other states have similar restrictions on firewood transportation across state boundaries. The reason for this is other than their own feet and wings, the primary way exotic invasive pests spread is by hitching a ride on un-treated firewood or shipping containers.

Some levels of insect, disease and natural disaster are recognized as being a beneficial factor in shaping our vegetation. Various endemic and epidemic occurrences of insect, diseases, fires and storms periodically impact the vegetative communities of New York State, including properties within this Unit. The NYS DEC staff will continue to observe the effects of these factors which influence the vegetation on the Unit. Native insect species such as Fall Cankerworms are cyclic in population and may be expected to impact vegetation at some time in the future as they have in the past. By closely monitoring these outbreaks management actions may be able to lessen undesirable impacts.

However, invasive exotic insects, fungi, animals, or plants can cause big problems. Some exotics, such as chestnut blight, and beech bark disease, invaded years ago, and have all but exterminated the chestnut and beech tree. The hope is to avoid this again, by closely monitoring for new arrivals, and if possible eliminating them from North America before they can spread. At the time of this writing, infestation of introduced insect invaders posing threats to New York’s forests include: Emerald Ash Borer, Sirex Wood Wasp, Hemlock Woolly Adelgid, the Asian Longhorned Beetle and Southern Pine Beetle.

Insects, fungus, wind, ice or snow storms can all cause unexpected but devastating damage to stands of trees. In the event of such widespread damage occurring, a salvage cut may be the best action. A salvage cut removes the dead and/or dying trees, and functions as a regeneration cut on an even aged management that Mother Nature initiated. This cannot be scheduled at this time, but has the potential to completely re-arrange the cutting schedule in Appendix F: Vegetation Management (pg. 163) If this happens, there is the potential to be a lot more acres regenerated.

Invasive plants are also crowding out native species. Current exotic invaders include Purple Loosestrife, Buckthorn, Honeysuckle, Garlic Mustard, Giant Hogweed, Multiflora Rose, and Japanese Knotweed. Unfortunately, there are many more that are not listed here. As money and time allow, they will be monitored, and when found, management actions taken. Depending on the species and location, actions could include prescribed burns, pesticides, or mechanical removal.

Integrated Pest Management

The application of control methods will be determined using Integrated Pest Management (IPM). IPM is a science-based decision-making process that guides land managers when investigating a pest situation. The IPM approach determines the most appropriate and cost-effective management solution for the specific pest situation. IPM includes identification of the pest, understanding the use and significance of a site or the importance of protecting unique resources, and education of the people involved. IPM also establishes pest tolerance levels and monitoring protocols. Then, with the help of technical experts and on a case–by-case basis, NYS DEC foresters develop an effective, site specific and low risk strategy to manage the pest. This includes altering conditions which attracted pests to the site in the first place. IPM often involves changing human behavior as well.

The following priorities will guide the application of control methods with varying degrees of environmental impacts. The most negatively impactful methods hold the lowest priority and will not be applied unless all higher priority methods are not effective. Low priority methods will be applied in concert with higher priority methods in order to increase effectiveness. As new technologies are developed, they will be incorporated into management actions following appropriate review and assessment.

1) Silvicultural Remedies - Changes in forest composition and structure may create conditions that are less favorable to some invasive species.
2) Hunting - With the exception of Eurasian Boar (pg. 102) many invasive and nuisance species can be kept in balance within the ecosystem by applying hunting as addressed within the Deer Management section of the Strategic Plan for State Forest Management.
3) Mechanical Control - Digging, pulling or cutting may be effective in altering site conditions to control invasives and directly controlling some plant species.
4) Grazing - Although many invasive plants may be resistant to applied scientific grazing, this method may be appropriate for some species. Grazing on DEC administered lands would require the availability of an agricultural partner along with staff and funding resources.
5) Biological Control - Biological control is the science of reconnecting invasive organisms with the specialized natural enemies that often limit their density in their native ranges. The U.S. Department of Agriculture’s Animal and Plant Health Inspection Service (APHIS) is responsible for controlling introductions of species brought into the United States for biological control, in accordance with the requirements of several plant quarantine laws, the National Environmental Policy Act, and the Endangered Species Act. Petitions for release of plant biological control agents are judged by a Technical Advisory Committee, which represents the interests of a diverse set of federal and other agencies. (Van Driesche, et al. 2002)
6) Herbicide Treatment - All pesticide/herbicide use will conform to guidelines identified in the Active Forest Management section of the “Strategic Plan for State Forest Management”

Emerald Ash Borer

Exotic invasive species from other continents can cause serious forest health threats. One such threat currently causing concern is the Emerald Ash Borer (EAB) (*Agrilus planipennis*). A native of Asia, it was first detected as a well-established infestation in Michigan, USA and Ontario, Canada in 2002. In 2009 it was detected in New York, and in 2010 found in northern Livingston County and central Steuben County. Every year since more EAB infestations have been found, and unfortunately additional ones are expected in the future.

EAB infests all species of ash (*Fraxinus* spp.) and has devastated millions of ash trees in North America. Adult beetles leave distinctive D-shaped exit holes in the outer bark of the branches and the trunk. Adults are roughly 3/8 to 5/8 inch long with metallic green wing covers and a coppery red or purple abdomen. They may be present from late May through early September but are most common in June and July. Signs of infection include tree canopy dieback, woodpecker damage, yellowing, and browning of leaves.

Current efforts are pointed toward delineating the infestation area and slowing the insect's spread to other parts of the state. NYS DEC current planning is contained in a document called the Emerald Ash Borer Management Response Plan a.k.a. The SLAM Document (SLow Ash Mortality), the goal of which is to keep as many ash trees alive as long as possible, in as much of New York State as possible, for as long as possible. Additional information can be found at: www.dec.ny.gov/animals/7253.html including a PDF of the SLAM Document.

It is only a matter of time before EAB spreads across the entire state and forever changes New York forests. The most significant impact will be seen in wetland areas where ash is the dominant species. Many of the hillside stands have a much smaller percentage of ash, but very few have no ash trees at all. Some of the lowland areas have so very few other tree species that the primary tall vegetation left will be brush and standing dead ash snags.

Giant Hogweed and Knotweed

Giant Hogweed is an invasive exotic plant that can cause severe skin and eye irritation, painful blistering, permanent scarring and blindness. It can grow up to 14+ feet tall and has huge leaves and large showy clusters of white flowers. It is a native of the Caucasus Mountain region between the Black and Caspian Seas. It was introduced to Europe and the United Kingdom in the late nineteenth century and to the United States in the early twentieth century as an ornamental garden plant, and is now in the wild in Western and Central New York.

State wide this plant is being tracked and eliminated where possible. If you see this plant, *don't touch it*! Additional information is available on www.dec.ny.gov/animals/39809.html. It has infested the Unit, at various locations. As of the writing of this plan, the primary control method has been herbicide spraying. In the future physical removal may be attempted.

Knotweed, a.k.a. "bamboo", was originally imported as a garden plant in the 1880s, for its green foliage and August-blooming flowers. Unfortunately it spreads aggressively, growing quickly along forest edges, stream banks and disturbed areas. Growing to 10 feet tall, it spreads over large areas with dense growth and crowds out native plants. Once mostly found

on the valley floor it is increasingly found on the hill tops. It is resistant to many herbicides, and easily re-sprouts from roots or stems when cut or mowed. Nevertheless, NYS DEC staff is attempting to minimize its impact with herbicide treatments.

As of the writing of this plan, Sonyea SF, Conesus Inlet WMA and Rattlesnake Hill WMA all have known locations of Japanese Knotweed.

White-tailed deer

White tailed deer are a native species that generally exist now at higher population levels than were found historically. Deer love to eat young tree seedlings, and by doing so, play a major role in the success or failure of establishing young forests, particularly those comprised of shade-intolerant species such as oak or cherry.

NYS DEC uses Deer Management Permits (DMPs) as the primary means of deer population control, as they allow for the taking of antlerless deer only, the only way to manage a deer herd. NYS DEC encourages hunters to harvest as many antlerless deer as is legally possible on this Unit.

For further information on see the Nuisance Wildlife portion of the Fish and Wildlife Habitat Management (pg. 102) section.

Sirex Wood Wasp and Hemlock Woolly Adelgid

Often, stands that are stressed by overcrowding become susceptible to forest health threats. One forest health threat in that category is the Sirex wood wasp (*Sirex Noctilio*). The Sirex wood wasp is a devastating pest of pine plantations. It is native to Europe and Asia and has destroyed millions of pines in Australia, South America and South Africa. In September of 2004, a Sirex wood wasp was discovered in a research trap in Fulton, New York. An expanded trapping effort in 2006 confirmed the presence of Sirex in most counties in western New York.

Utilizing literature from around the world, NYS DEC has developed management direction in regard to dealing with the Sirex wood wasp. The literature suggests that dominant trees with a good crown ratio in managed/thinned stands experienced very little to no damage from Sirex. Unhealthy, suppressed and over-crowded trees in unmanaged stands, on the other hand, experienced mortality rates of up to 65% over a three year period in one study. As the infestation in New York is still young, we do not yet know what the impacts will be. Therefore, silvicultural management options are not limited to liquidation cuts or work to convert stands to a non-pine species composition, unless this is a management objective for other valid silvicultural reasons. Periodic, judicious application of thinning operations to maintain stand densities at levels recommended in applicable stocking guides for optimum growth is currently NYS DEC's approach to silviculture in consideration of the potential threat of Sirex.

One aggressive insect pest which preys on the Eastern Hemlock tree is the Hemlock Woolly Adelgid (HWA). The HWA is native to parts of Asia and was first discovered in New York in 1985. It is in the family Adelgidae, which is related to aphids. The adelgid uses long mouthparts to extract sap and nutrients from hemlock needles, this prevents free growth, causing needles to discolor from deep green to grayish green, and to drop early. The loss of

new shoots and needles seriously impairs tree health, resulting in death of the hemlock after several years.

To battle the hemlock-killing insects, a team of entomologists from Cornell University, U.S. Forest Service (USFS) and University of Massachusetts-Amherst are releasing *Laricobius nigrinus* beetles into a stand of HWA infested hemlocks. L. nigrinus beetles are native to the Pacific Northwest, where the black, 3-milllimeter-long beetle keeps HWA in check by preying on them. No predators to the HWA live in the northeast United States, as a result the HWA spread unchecked, killing many hemlocks. HWA avoids predators by growing in the winter, but L. nigrinus beetles also feed and grow during winter. The beetle has been studied for a long time, and it only feeds on adelgids, and will only successfully reproduce on a diet of HWA.

It is unclear what will take the hemlocks place on the landscape but a deciduous tree will subject the soil and water to more sun then typical before HWA.

Table 13: Management Objectives and Actions for Vegetation

See page 163 - Appendix F: Vegetation Management for a schedule of stands and management actions, and on page 206 - Appendix N: Maps and Table 7: Vegetative Types and Stages is on page 40.

Management Objectives		**Mgt. Act. No.**	**Management Actions**	**Frequency of Action***	**Priority Code** (Pg. 69)	**Estimated 10 yr Cost** (Pg. 69)
1	Maintain knowledge of forest stands.	1.0	Perform forest stand inventories.	Every 10 years	C	250 Work Day's
2	Maintain healthy vegetation and rare community types.	2.0	Practice Integrated Pest Management, including early detection and monitoring for new invasive species.	On-Going	C	Unable to predict future pest problems. A new invasion could greatly increase the cost.
		2.1	Manage deer population to reduce damage to the low growing vegetation (understory).	Annually	H	Accomplished by hunting license sales, producing brochures, etc.

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 69)	Estimated 10 yr Cost (Pg. 69)
		2.2	If widespread damage occurs, evaluate the damaged stands for salvage cut, or other management action.	After damage occurs.	C	Unable to predict costs.
		2.3	Deal with invasive exotic organisms. Specific actions will be based on species and location, but include prescribed burn, biological control, pesticide and mechanical removal.	After invasive is found.	H	Unable to predict costs.
		2.4	Mechanical or herbicide removal of Giant Hogweed.	Annually	L	40 Work Days and $5,000
		2.5	Herbicide removal of Japanese knotweed and phragmities.	Annually	L	200+ Work Days and $20,000+
		2.6	Biological control of hemlock woolly Adelgid, and other pests.	On-Going	L	Unable to predict costs.
3	Protect water and soil quality	3.0	During Timber and Vegetation Management, follow Best Management Practices (BMP's) for water quality per NYS DEC's "Timber Management Handbook"	On-Going	C	See 5.0, 6.0 and 6.1
		3.1	Designate stands, or portions of stands, into the protection or Special Management Zones category that have factors that require special considerations.	On-Going	C	See 1.0
		3.2	See also Watershed and Wetlands Protection Management on page 94 and Fish and Wildlife Habitat Management on page 96.	On-Going	C	--
Strive to maintain a healthy balance of vegetative types and stages:						
4	Grassland / Shrubland /	4.0	Create about 120 acres. (increase of 1.2% of land area)	By year 10	L	$2,000 per acre

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 69)	Estimated 10 yr Cost (Pg. 69)
	Ag Openings (532 current acres, plus 120 additional acres)	4.1	Maintain current 285 acres of grassland or brushland. By mowing or burning on a minimum of a 3 year rotation or a 5yr rotation of hydro-axing. (2.9% of land area)	Mow grassy openings prior to April 15, or after July 15. Any burns will take place March-May when favorable conditions are present.	H	$200 per acre to mow. $100 per acre to burn. $300 per acre to hydro-axe.
		4.2	Maintain current 157 acres of agricultural agreements. (1.6% of land area)	On-going	L	10 to 20 Work Days
		4.3	Reclamation of grassy openings using standard agricultural practices, including mowing, plowing, tilling, herbicide application and seeding.	When grassland habitat converts to undesirable vegetation.	L	$500 per acre
		4.4	No action on 17 acres of brushland, allow to revert to forest. (0.2% of land area)	n/a	L	No cost.
5	All Age silviculture – about a 20 yr cutting rotation	5.0	Stand entry on 339 acres located on 11 stands. (3.5% of land area)	See schedule, Appendix F: Vegetation Mgmt. (pg. 163)	L	75 to 200 Work Days
6	Even Age silviculture, Natural hardwood at about a 100 yr rotation	6.0	Regenerate 970 acres located on 26 stands over 10 years (9.9% of land area)		H	100 to 300 Work Days
		6.1	Thin/intermediate cut 995 acres located on 27 stands over 10 years (10.2% of land area)		H	150 to 350 Work Days

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 69)	Estimated 10 yr Cost (Pg. 69)
	Plantation softwood at about a 75 yr rotation	6.2	Implement the Young Forest Initiative (YFI) on WMA's by converting approximately 10% of the forested acres on WMAs back to young forests.		H	See 6.0
7	Pre-commercial work	7.0	If funding or staffing becomes available, the seedling/sapling and smaller pole size stands will be evaluated for pre-commercial thinning.	When funding and/or staffing are available.	L	1 Work Day per 100 acres evaluated
8	Roads, ponds, wetlands etc.	8.0	Maintain per Maintenance and Facilities Management, page 113, Public Recreation and Use Management, page 106, and Fish and Wildlife Habitat Management, page 96.	On-Going	H	--

*Factors such as budget and staff constraints, and other environmental health problems may necessitate deviations from the scheduled management activities.

Watershed and Wetlands Protection Management

The Reforestation Law of 1929 mandates watershed protection as one of the most basic goals of the state forest system, and the history of this Unit has been one of active and comprehensive protection of its watershed.

Conesus Inlet WMA has a large wetland complex in which the water level can be controlled. Approximately 4% of the habitat on the Unit is forested wetland and about 4% is emergent/open/shrub wetland, with the majority of that being on Conesus Inlet WMA and Rattlesnake Hill WMA. In total, the Unit has five State-protected freshwater wetlands, 140 Federally-protected wetlands, about 4 miles of trout streams, numerous smaller streams, tributaries, and about 3% in ponds and vernal pools.

NYS DEC's responsibility for administration and enforcement of the Environmental Conservation Law includes many provisions for protecting watershed and wetlands resources. The New York State Freshwater Wetlands Act (ECL Article 24) and the Water Resources Law (ECL Article 15, Title 5) are the best examples. Compliance with these regulations is required by NYS DEC when conducting management activities or construction projects that involve protected wetlands, water bodies, or streams. In addition, New York State Forestry Best Management Practices for Water Quality will be followed for all silvicultural practices on state lands. These guidelines require specific conservation practices which protect soils and water quality. Management objectives follow these regulations and

best management practices and are clearly consistent with sound conservation practices and public desires.

Regulated activities within protected wetlands, streams and water bodies include such things as clear-cutting vegetation and construction of ponds or road crossings. Normal maintenance and repair of existing structures is generally exempt from permit requirements. Well-managed water resources have multiple benefits, including quality fish and wildlife habitats, aesthetically pleasing sites, groundwater protection, floodwater retention, and various recreational activities.

Since many of the water resources of the area are concentrated in the flatter portions of the Unit, there is a need to identify areas that both have potential, and also need, additional water resources. Over time these new aquatic features will be integrated into the Unit's upland areas. This will mainly be accomplished by the construction of small dug out ponds, often as a result of, or in conjunction with, the harvest of forest products.

See also Wetlands and Water Resources (pg. 54), Timber and Vegetation Management (pg. 74) Fish and Wildlife Habitat Management (pg. 96), and Public Recreation and Use Management (pg. 106).

Table 14: Management Objectives and Actions for Watershed and Wetlands Protection Management

Management Objectives		**Mgt. Act. No.**	**Management Actions**	**Frequency of Action***	**Priority Code** (Pg. 69)	**Estimated 10 yr Cost** (Pg. 69)
1	Protect water and wetland resources	1.0	Utilize Best Management Practices (BMP's) for water quality on timber sales, recreation facilities, and any other construction.	On-Going	C	Part of the planning and con-struction process.
		1.1	Control erosion through proper road and trail maintenance.	On-Going	C	
		1.2	Comply with the Protection of Waters and Freshwater Wetlands Acts.	On-Going	C	Part of other actions
		1.3	Follow Objective 3 in Timber and Vegetation Management, page 91.	On-Going	C	Part of other actions
2	Enhance and restore wetland habitat.	2.0	Maintain water levels in the wetland impoundments as needed, including periodic drawdowns to encourage desirable vegetation growth and percent cover	On-going	L	--

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 69)	Estimated 10 yr Cost (Pg. 69)
		2.1	Evaluate vegetation response to periodic water level drawdown in impoundments	On-Going	L	--
3	Provide additional open water resources	3.0	Identify areas with potential, and need for additional or improved wetland/water resources.	On-Going	L	Part of other actions
		3.1	Construct new wetland/flood plain improvement features.	As needed	L	Up to $100,000 per each
		3.2	Construct new water features in upland areas.	On-Going	L	Up to $10,000 per each.

*Factors such as budget and staff constraints, and other environmental health problems may necessitate deviations from the scheduled management activities.

Fish and Wildlife Habitat Management

The general fish and wildlife habitat goals for the lands of the Unit are to maintain and enhance habitat for fish and wildlife species and to provide public access for activities including hunting, fishing, trapping, hiking, bird watching, and other compatible outdoor recreational pursuits.

Management for forest-dwelling birds and mammals will largely be driven by the age of the specific forest stand, its physical structure, and its species composition. Most of the Unit (except Conesus Inlet WMA) is dominated by oak-hickory or northern hardwoods forest types, which are largely in the sawtimber size/age class. Efforts toward achieving a balance of age classes should continue, so wildlife species diversity and abundance are maintained. This includes establishing young forests by regeneration methods such as shelterwood or clear cutting, as well as maintaining and encouraging older age classes via thinning. All can be accomplished through continued harvest of forest products. Natural conifers are an important component of the predominantly hardwood stands on the Unit and should receive consideration to ensure that they remain as a component in future stands.

A significant portion of forests on the Unit are conifer plantations. Though such stands are used by fewer wildlife species than more diverse forest stands, conifers do provide important habitat for many species. Vegetative management should encourage the conversion of plantations to naturally stocked stands of greater diversity. A white pine and hemlock component in natural hardwood stands greatly enhances wildlife habitat.

Wildlife species favoring grassland or young forest habitat will benefit from careful management to create and maintain these habitat types. Though all habitat types slowly change over time through the process of succession, nowhere is this more evident than with grasslands and young forests. Without conscious effort to keep these habitats in their respective successional stages through active management, they will quickly transition to

older structural vegetative states; a major reason why these habitats are relatively scarce. The Young Forest Initiative (YFI) of New York State is designed to create and maintain at least 10% of forest area on WMAs as young forest in perpetuity. (See Timber and Vegetation Management page 74) Numerous small grassy openings exist within the upland forests of the Unit and provide important food and cover diversity for forest wildlife. Grassland areas should be maintained whenever possible and establishment of additional grassland habitat could occur when opportunities arise through timber management or other permitted activities.

Many species of wildlife, from turkeys to salamanders, require sufficient water resources. Although a number of streams, marshes, ponds, and water holes can be found on the Unit (especially at Conesus Inlet WMA), a large percentage of the upland forests lack water and wetland environments. Inventory of existing sources will help identify areas with the greatest need. Dug-outs and vernal pools should be created as opportunity arises, particularly in association with timber sales. Several impounded marshes have been constructed at Rattlesnake Hill WMA and Conesus Inlet WMA to provide habitat for breeding and migratory waterfowl. Water levels in impoundments with water control structures should be adjusted as needed to stimulate vegetative growth favored by waterfowl.

There is a robust diversity of amphibian and reptile species on lands of the Unit. Management efforts should include creation of dugouts for amphibian breeding and activity centers, as well as protection of sensitive vernal pools and bog sites. Protection of all wetlands should enhance these species as well as others. In particular, a significant portion of the Conesus Inlet WMA contains a large silver maple-ash swamp. Its location between forested habitats to the east and west make this an important area for seasonal migration of breeding woodland salamanders. Unfortunately, because roads exist between swamp and forest, there is a relatively high degree of amphibian mortality in this location during migration. The area could benefit from strategies to reduce this source of mortality.

Wild ring-necked pheasant populations have been declining since the 1970’s due mainly to nesting and winter habitat loss, and wild pheasants currently exist in very low densities in Western NY, including the Livingston Unit. Although state-reared pheasants were historically released on Conesus Inlet WMA, the decision was made in 2011 to discontinue the practice as a re-examination of the distribution of human residences around the area revealed relatively little pheasant hunting habitat existed further than 500 feet from occupied dwellings (500 feet being the minimum distance at which a firearm can be legally discharged without the owner’s consent). State-reared pheasants previously earmarked for Conesus Inlet WMA are now being released on the Hemlock-Canadice State Forest approximately five miles to the east.

In general, a diverse assemblage of wildlife species comes from diverse habitats. Important are a diversity of structure, shape, age, vegetation, food, water, and shelter. The beauty of creating good wildlife habitat is that it need not be a one-time endeavor. Improvements can occur gradually as resources and strategies come to light. To maximize opportunity and efficiency, many habitat improvements on the lands of the Livingston Unit can and will occur in conjunction with other work being done on the areas. Timber and fuel wood sales, agricultural cooperative agreements, and Volunteer Stewardship Agreements all can be a source of manpower to accomplish habitat projects.

Conesus Inlet WMA Wetland Complex

The largest and most ecologically significant feature of the Conesus Inlet WMA is the emergent and forested wetland that occupies the majority of the area. A dike constructed by NYS DEC in the late 1980's at the north end of the property resulted in the flooding of over 300 acres, creating habitat for many species of waterfowl, amphibians, reptiles, aquatic mammals/birds, and insects. Bald eagles have nested in and around the marsh since 2006, and the open water area is a prime destination for migrating waterfowl and waterfowl hunters alike.

Impoundment water levels are regulated by a control structure at the northwest corner of the marsh at the edge of the dike. Habitat conditions in the marsh are monitored by DEC Wildlife staff, and when rejuvenation of emergent and submergent vegetation is desired to increase habitat value, growing-season water level drawdowns are performed. These drawdowns are not done on any fixed schedule, but rather on an as-needed basis. Drawdowns not only provide increased food and cover for wildlife the season after, but also great shorebird habitat while water levels are low the season of the drawdown. Birders flock to the area during this time to observe the diversity of shorebirds present.

The large wetland complex on the Conesus Inlet WMA also provides an important water quality benefit to Conesus Lake and its residents and users, by filtering and settling out sediments that otherwise would flow directly into the lake via the inlet. Wetlands such as the Conesus marsh also serve as enormous sponges, trapping and detaining storm water flows, then releasing it slowly to attenuate overly high lake levels and downstream flooding.

Fisheries Management on Conesus Inlet WMA Wetland Complex

The Northern Pike spawning marshes at the north end of the Conesus Inlet WMA were constructed by the US Army Corps of Engineers to compensate for the loss of Northern Pike spawning habitat by the construction of the flood control dam at the north end of Conesus Lake. The spawning marshes were designed to flood with water from the lake during spring snow-melt runoff. Northern Pike migrate to vegetated shallow water habitat at this time of year to spawn. Successful Northern Pike spawning requires that Conesus Lake be at elevation 819.0 ft. NGVD by March. A guide curve of lake level management was developed and agreed upon by Conesus Lake interests at the time the spawning beds were designed. The US Army Corps of Engineers requires that the dam owner (DEC) and operator (Conesus Lake Compact) to maintain lake levels in accordance with this guide curve. Water levels in the spawning marshes are maintained during the spawning season with box-style water level control structures.

Threatened and Endangered Species

Threatened and endangered species exist on portions of the Livingston Unit. Efforts to identify, improve and/or create critical habitats need to continue. See also the Threatened, Endangered or Special Concern Species section on page 52.

Bats

Several bat species have declined significantly due to the spread of white-nose syndrome, a fungal disease first found in New York in 2006. The Indiana bat (endangered) and northern long-eared bat (threatened) both hibernate in caves and abandoned mines, and use various forests as summer habitat. They typically roost under loose bark on snags or live trees and reproduce in maternity colonies at similar sites. Summer habitat is not a limiting factor for these species; however, avoiding disturbances to potential maternity colonies is important.

In an effort to avoid possible impacts to these species, surveys will occur on properties managed by the Division of Fish and Wildlife before timber harvests are allowed to occur in the spring and summer. If threatened or endangered bat species are found to be present on a WMA, timber harvests should be restricted to only occur from October 1 through March 31 to avoid disturbing potential maternity colonies. Survey results from the summer of 2016 showed a probable absence of both Indiana and northern long-eared bats in a planned timber harvest site on Rattlesnake Hill WMA. Survey data recorded in the summer of 2017 from a different planned timber harvest site on Rattlesnake Hill WMA will be analyzed during the winter of 2017.

Bald Eagle

Nesting bald eagles have been present within the large wetlands at Conesus Inlet WMA since 2006. The bald eagle nearly disappeared from New York in the late 1960s, with a single known breeding pair remaining. New York's Bald Eagle Restoration Project (1976-1988) undertook an unprecedented effort to bring back a breeding population of eagles to New York by importing young birds from other states and hand rearing them to independence (a process known as hacking). This effort has been a resounding success and bald eagles have steadily increased over recent decades to the point that several new nests are found in the region every year now.

The bald eagle is protected by both state and federal laws. The Bald and Golden Eagle Act (Eagle Act) and the Migratory Bird Treaty Act (MBTA) protect bald eagles at the federal level, while the Endangered Species Act (ESA) (Article 11 of the Environmental Conservation Law) protects the bald eagle as a threatened species at the state level. New York State generally follows the National Bald Eagle Management Guidelines (U.S. Fish and Wildlife Service, May 2007) as minimum protection for nesting bald eagles. Any permanent impacts (i.e. clearing or road construction) are prohibited within 330 feet of the nest. Temporary impacts that include loud machinery or vehicles are prohibited within 660 feet of the nest tree during the breeding season including courtship, nest building, egg laying/incubation, hatching/rearing young, and fledging (December through August). At minimum, and to be compliant with federal laws, the federal guidelines will be followed including establishing the 330 and 660 foot buffers.

Management of bald eagles on the Livingston Unit will be consistent with recommendations in the federal bald eagle management guidelines and the NYS Conservation Plan for Bald Eagles, which generally call for no-entry buffers of 330 feet around a nest and 660 foot buffers from any heavy equipment operation or timber harvests.

Buffers will be maintained around nest sites for at least 3 years beyond the time that eagles are last documented using that site.

Wetland Birds

Wetland-dependent birds face a variety of threats, including the loss of wetland habitat to development, wetland contamination from agricultural and industrial runoff, the replacement of hemi-marshes with dense monocultures of cattail, and the invasion of non-native plant species, such as purple loosestrife and phragmites.

The approximately 400 acre marsh at Conesus Inlet WMA provides important wetland habitat for breeding and migratory threatened and endangered wetland birds. The black tern, endangered in New York, has been documented foraging at this marsh during spring migration, and the least bittern and pied-billed grebe, both threatened, have successfully nested here. The Red-headed woodpecker, a Species of Special Concern nests in snags in and adjacent to the marsh.

Management objectives should ensure that the high quality of this habitat persists. This can be accomplished by controlling invasive vegetation, preventing sedimentation through runoff, and adjusting water levels to promote a desired balance of vegetation to open water.

Grassland Birds

Grasslands are an important and increasingly rare habitat across New York State. These dynamic habitats are home to many types of birds and other wildlife, including several that are listed as threatened or endangered. In many areas grasslands are fragmenting and disappearing due to changing land-use patterns, natural vegetative succession, and development.

Habitat loss and degradation have resulted in sharp declines in grassland bird populations in New York since 1966, according to Breeding Bird Survey (BBS) data. See Appendix B: Animals of the Livingston Unit (pg. 136) for a list of the birds from the 2000-2005 NYS Breeding Bird Atlas blocks that overlap the Livingston Unit.

New York State Grassland Focus Areas are parts of New York State that are of special importance to grassland birds. These focus areas were determined by analyzing data from the 2000-2005 Breeding Bird Atlas (BBA) and additional NYS DEC bird surveys. In this way important geographical areas for rare grassland birds have been identified. All of the properties in the Unit, except the eastern two thirds of Canaseraga State Forest, overlap with the Western New York Grassland Focus Area. See Appendix M: Maps (pg. 205).

It is important to note that the lands of the Unit are generally forested or wetland and therefore do not provide significant grassland habitat suitable for grassland birds, which typically prefer large areas of contiguous habitat, often in an open landscape. A few grasslands that may have potential to support rare grassland birds do occur on the Unit and are located along the roads surrounding the large marsh at Conesus Inlet WMA and the fields in the north end of Sonyea SF. See Grassland Focus Areas (pg.46), and the Grass and Brush Management section of Timber and Vegetation Management (pg. 74) for further details.

To learn more about protecting grassland birds on private lands visit www.dec.ny.gov/pubs/32891.html and for information on the Landowner Incentive Program Habitat Protection Project.

Timber Rattlesnakes

The timber rattlesnake is greatly reduced from its historic range and population size in New York State. A previous bounty system, collection for the illegal reptile trade, and habitat loss have led to this dramatic decline and the rattlesnake's listing as a threatened species in New York. Remnant populations do, however, exist throughout the state and den sites are known to occur in western New York.

As the name suggests, Rattlesnake Hill WMA was historically a reliable location to encounter rattlesnakes. There are two known den sites near Rattlesnake Hill WMA and the adjacent Ossian State Forest. No confirmed observations of rattlesnakes have been documented at either of these sites within the past twenty years.

Although current presence of rattlesnakes on the Unit is unknown, habitat management in suitable areas should avoid potential impacts, and enhancement of rattlesnake habitat would be favorable. This can be accomplished by limiting timber harvest activities to winter months near den sites, skid trails and landings should be 330 feet, or more, from basking/gestational sites and little to no soil disturbance within 660 feet of the den. The creation of areas of young forest will provide beneficial habitat for rattlesnakes with basking locations and ambush cover for catching prey.

Other Rare Animals

Although not listed as endangered, threatened, or SGCN, two rare species that warrant recognition were identified on the Unit during the New York Natural Heritage Program biodiversity inventory of Rattlesnake Hill WMA in 1995. These are the Wehrle's salamander and West Virginia white.

The range of the Wehrle's salamander in New York is limited to the southwestern part of the state. Those found at Rattlesnake Hill WMA suggest an isolated population at the extreme northern limits of the species' range. These salamanders typically breed in damp logs, moss, and rock crevices, often on hillsides near streams. This breeding habitat generally occurs within special management zones on the Unit and should persist without additional protection.

The West Virginia white has been observed at Rattlesnake Hill WMA and Ossian State Forest as recently as 2005. The West Virginia white is a forest butterfly with uncertain population size and range status, but is considered to be experiencing significant declines. This butterfly is dependent upon the presence of toothwort, its larval host plant, and is sensitive to forest fragmentation. In stands where toothwort exists, there should be special consideration to ensure its persistence. Efforts should also be made to control garlic mustard, a non-native invasive species, mistaken for toothwort by the adult butterfly, but which larvae cannot survive on.

Nuisance Wildlife

Special attention to deer management is warranted given the ability of high white-tailed deer populations to negatively impact vegetative species diversity, as well as the major role they play in the success or failure of establishing young forests, particularly those comprised of shade-intolerant species such as oak or cherry. In accordance with established procedures and goals used by NYS DEC to determine deer management decisions, a reduction in the number of deer on the landscape by liberal harvest via hunting is encouraged. (See the White-tailed deer section on page 90 for a more detailed discussion of deer management on land in and surrounding the Unit).

Lands of the Unit have a growing population of resident Canada geese. Canada geese are a valuable natural resource that provides recreation and enjoyment to many. However, resident Canada geese can cause problems including public health concerns for drinking water supplies, overgrazing grass areas, accumulations of dropping and feathers on lawn areas used by people, nutrient loading to water bodies, aggressive behavior by nesting and brood-rearing birds, and safety hazards near roads. Geese may also cause problems for nearby landowners when birds move off state land and onto other properties.

To minimize the potential impact of geese on state and nearby private lands, efforts should be made to stabilize or reduce the resident goose population as necessary on the Unit. To accomplish this, a multi-faceted approach may be necessary, the first is to encourage goose hunting (where legal) on the area, posting of “No Feeding Waterfowl” signs near problem areas, and reproductive inhibition via the treatment of nests to prevent hatching.

The term feral swine is often used to describe all swine species that are living unconfined in the wild. DEC's goal is to eradicate feral swine from New York's landscape. Feral swine (aka Eurasian Boar) in New York can have tremendous negative impacts on native plants, native wildlife, livestock, agriculture, and humans including:

- Eurasian boars eat hard mast (acorns and other nuts) and directly compete with deer, bear, turkey, squirrel and waterfowl for food.
- Eurasian boars consume the nests and eggs of ground nesting birds and reptiles.
- Eurasian boars will kill and eat fawns and young domestic livestock.
- Eurasian boars will eat almost any agricultural crop as well as tree seeds and seedlings.
- Their rooting and wallowing habits destroy crops and native vegetation, cause erosion, and negatively affect water quality.
- Eurasian boars have razor sharp tusks and can be aggressive toward humans and their pets.
- Eurasian boars carry and can transmit several serious diseases including swine brucellosis, E. coli, trichinosis, and pseudorabies to livestock and/or humans. Some of these diseases, if introduced to domestic swine, can decimate the pork industry.

Prior to 2014, hunting feral swine (Eurasian Boars) in New York was allowed. Recent experience however, has shown that indiscriminate hunting, as illogical as it sounds, is actually counter-productive in helping the problem. Feral swine often travel in groups

numbering 20 or more. Shooting individual pigs as opportunities arise is ineffective as an eradication method, often causing remaining animals to disperse permanently, and thus expand into unoccupied habitat. To eliminate this possibility, NYS DEC in 2014 made the hunting of feral swine illegal. This regulation also prohibits possession, sale, transport or marketing of live Eurasian Boars. Also prohibited is disturbing traps set for wild boars by managing authorities

As of the writing of this plan, no reports of free-ranging feral swine have been received in recent years in the general geographic area covered by this Unit.

Mute swans are a non-native, invasive waterfowl species first brought to this country from Europe and released in the late 1800s for their aesthetic value. Since then they have expanded their range in the state and now number over 2,000. Mute swans are the largest birds in New York State, and highly territorial. They aggressively outcompete native waterfowl for breeding and feeding sites, and instances of aggression towards humans are commonplace when they feel their territory has been encroached. Mute swans on the Unit will be managed according to the NYS Mute Swan Management Plan, at the time of this writing, the mute swan plan would call for any swans detected on state lands to be removed, preferably by non-lethal means, but lethally if needed.

Beaver, while often viewed as a valuable furbearer, can pose serious nuisance and damage issue. Their main job in life, other than reproducing, is in building dams and creating water impoundments that they use for mobility, safety from predators, and food acquisition and storage. They are one of only a handful of wildlife species that are capable of modifying their own environment, and they do it well. Their numbers in New York are secure and expanding, and they can be found in every county in good numbers. A preferred method of beaver control is increased removals via trapping during the normal trapping seasons. Of particular concern, and often requiring immediate action is beavers constructing dams that cause damage to roads, trails or other infrastructure. In addition to building the classic beaver dam and pond, beavers will block culverts or water control structures to raise water levels, which can lead to failure of these structures and possible risks to human safety. Often the beavers will rebuild the blockage overnight and require nearly daily maintenance. In many cases the only solution to these situations is to remove the beaver blockages and the beavers as well, through immediate trapping outside the season.

Table 15: Management Objectives and Actions for Fish and Wildlife Habitat Management

Management Objectives		**Mgt. Act. No.**	**Management Actions**	**Frequency of Action***	**Priority Code** (Pg. 69)	**Estimated 10 yr Cost** (Pg. 69)
1	Manage habitats for endemic	1.0	Create Habitat Management Plan for Conesus Inlet WMA.	Once	C	See Timber and

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 69)	Estimated 10 yr Cost (Pg. 69)
	wildlife species. See also: Timber and Vegetation Management (pg. 74)	1.1	Conduct all forms of woody vegetation management to achieve balanced forest structure.	On-Going	H	Vegetation Management (pg. 74)
		1.2	Implement the Young Forest Initiative (YFI) on WMA's by converting approximately 10% of the forested acres on WMAs back to young forests.	On-Going	H	
		1.3	Manage conifers in natural forests	On-Going	L	
		1.4	Maintain and enhance grassland habitats by mowing and/or burning	At least every three years.	H	
		1.5	Convert plantations to natural communities	On-Going	H	
		1.6	Develop and maintain small ponds and dugouts to act as amphibian activity centers.	On-Going	L	Up to $10,000 per each.
		1.7	Manage marsh water levels to stimulate vegetative growth favored by Northern Pike, waterfowl and marsh birds.	Annually	H	80 Work Day's
		1.8	Monitor invasive exotic plants or animals. Specific actions will be based on species and location, but include prescribed burn, biological control, pesticide and mechanical removal.	After invasive is found.	L	Unable to predict costs.
2	Encourage public use of wildlife resources	2.0	Assist local groups in utilizing and protecting wildlife resources	Annually	L	Unable to predict costs.
		2.1	Work with local and governmental groups to improve access to and information about wildlife habitat under the Volunteer Stewardship Agreements or Adopt-a-Natural-Resource Program	Annually	H	See Public Recreation and Use Manage-ment, Mainten-ance and Facilities

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 69)	Estimated 10 yr Cost (Pg. 69)
		2.2	Maintain parking lots, trails, roads and other recreation facilities.	On-Going	H	Manage-ment and Access Manage-ment
3	Manage fish populations to provide public use through angling.	3.0	Sample ponds and streams to evaluate current fishing opportunities.	As Needed	L	3 Work Days per location
		3.1	Stock ponds on Rattlesnake Hill WMA, Canaseraga Creek and Sugar Creek with Trout.	Annually	H	30 Work Days
4	Manage and reduce nuisance wildlife populations.	4.0	Monitor for and deal with nuisance wildlife. Specific actions will be based on species and location.	On-Going	L	Unable to predict costs.
		4.1	Monitor and remove beaver and beaver debris from culverts and water control structures	As Needed	C	10 to 100 Work Days
5	Manage and increase rare, threatened, endangered or SGCN species populations	5.0	Identify, protect and enhance rare & threatened plant and animal communities and habitats.	Annually	C	50 to 100 Work Days
		5.1	Identify, protect, and improve habitat for threatened/ endangered species.	On-Going	C	Unable to predict costs.
		5.2	Survey for, identify, protect, and improve habitat for SGCN	On-Going, or as funding is available	L	Unable to predict costs.
		5.3	Monitoring of bald eagle nesting sites	On-Going	C	10 Work Days
		5.4	Establishment of a floating sanctuary around the active bald eagle nest site(s)	As Needed	C	Unable to predict costs.
		5.5	Monitoring of rattlesnake den sites.	On-Going	H	10 Work Days
		5.6	Protection of rattlesnake den sites and adjacent area.	As-Needed	C	Unable to predict costs.

*Factors such as budget and staff constraints, and other environmental health problems may necessitate deviations from the scheduled management activities.

Public Recreation and Use Management

One goal of the NYS DEC is to “Connect New Yorkers to Nature” by providing suitable opportunities for the public enjoyment of compatible recreational pursuits in a natural setting. Recreational use, especially fishing and hunting, is a dominant and important use of most of the state land comprising the Livingston Unit. Dispersed recreation will continue to be encouraged over almost all of the Unit. See also the Recreation section on page 22.

Activities on the Livingston Unit are subject to NYS DEC's Rules and Regulations for the Use of State Lands, 6 NYCRR Part 190, and Part 51, as well as any other applicable state statutes, rules and regulations. Non-wildlife dependent uses of Wildlife Management Areas cannot be allowed to occur if they interfere with the primary purpose of providing wildlife habitat and wildlife dependent recreation. None of the existing lawful uses of this Unit are considered to be interfering with wildlife dependent recreation.

Under Environmental Conservation Law, NYS DEC is charged with managing for a wide range of beneficial uses that can be attained without excessive environmental degradation or undesirable consequences. The public has a role in identifying both beneficial uses and undesirable consequences. Recreational opportunities will be planned from a perspective of possibilities available throughout Region 8. For a list of facilities available on the Livingston Unit see Appendix D: Facilities (pg. 154) and Appendix N: Maps (pg. 206).

Development of new or additional facilities will only be undertaken after due consideration through the Unit Management Planning process. Other than facilities specified in this Unit Management Plan, stewardship activities will be limited to maintenance and rehabilitation of existing facilities.

Many of the recreation facilities on this, and other state lands, started out as farm lanes, logging skid road, railroads, town roads, log landings, etc. After they were no longer used for the original purpose many were converted to recreational use. Occasionally, forest product sales may affect recreational facilities. Depending upon the sale, there may be an opportunity to enhance the recreational facility. Potential enhancements include: relocation of a trail, conversion of a skid trail to a recreational trail, creation of parking areas, installation of vehicle control barriers and other structures. An assessment of impacts and possible enhancements will be done with each and every sale. As part of the active timber management, sections of multiple use trail, roads, parking lots, etc. may need to be temporarily closed to public use.

Protecting the Environment

DON'T MOVE FIREWOOD! New York State regulations prohibit firewood from being brought into New York unless it has been heat treated to kill pests. The regulation also limits the transportation of untreated firewood to less than 50 miles from its origin. Many other states have similar restrictions on firewood transportation across state boundaries. The reason for this is other than their own feet and wings, the primary way exotic invasive pests spread is by hitching a ride on un-treated firewood or shipping containers.

CLEAN, DRAIN, DRY! To help stop invasive species from contaminating New York's lakes and rivers please do not launch boats within five days of boating on other waters, wash down your boats after removing them from other water, check your trailer and propellers, and do not "bring" any water from other lakes or streams.

No trash facilities are provided, please don't litter – if you carry it in, carry it out. Leave the state land as you would like to find it.

Camping

Camping is generally prohibited on Wildlife Management Areas. However, on Rattlesnake Hill WMA there is a designated site that organized groups can use after they have received a permit. It is only available during the months of March, April, and June through September. Camping is not allowed on Conesus Inlet WMA.

Camping is allowed on state forests for groups less than 10 and for up to 3 nights. Longer stays and/or larger groups are allowed to camp with a permit obtained from the NYS DEC Forest Rangers, contact the Bath sub office.

Evergreen Pond on Ossian SF and Toadfest Point on Sonyea SF are heavily used for camping. Neither location has any form of sanitary facilities. In both cases the area needs to be evaluated and sanitary facility's provided. In locations where no pit privy or other sanitary facilities are available, dispose of human waste by digging a hole 6"-8" deep at least 150 feet from water or campsites and then cover with leaves and soil.

See the Camping section on page 23 for a list of designated camp sites on the Unit.

Hunting, Fishing and Trapping

Hunting and trapping are allowed during open seasons, with the correct license and tags; consult the NYS DEC Hunting and Trapping Guides for state wide regulations, seasons, hours, and bag limits. Game varies depending on the habitat available; see the Timber and Vegetation Management (pg. 74), Watershed and Wetlands Protection Management (pg. 94) and the Fish and Wildlife Habitat Management (pg. 96) sections for information on plans for maintaining and modifying the currently available habitats.

Permanent tree stands are prohibited. However, on State Forests a temporary tree stand or blind is allowed, provided that it does not injure any trees, is properly marked or tagged with the owner's name and address or valid hunting or fishing license number, and is placed and used during big game season, migratory game bird season, or turkey season, but no more than thirty days in one location per calendar year, per 6 NYCRR §190.8. On Wildlife Management Areas per 6NYCRR part 51 leaving of personal property is prohibited, so only a temporary tree stand or blind is allowed.

Most streams on the Unit are small and do not provide much of a fishing resource, but a few streams provide very significant fisheries. See Fishing section on page 25 for additional information. On Rattlesnake Hill WMA two ponds are stocked with Trout.

Trails

Public Forest Access Roads, Haul Roads and Recreational Trails combined with existing logging skid roads and utility lines form a network to access recreational opportunities. Parking areas, informational signs and maps help identify and promote public enjoyment and compatible uses. See also Trails (pg. 26), Access Management (pg. 70), Maintenance and Facilities Management (pg. 113), Appendix D: Facilities (pg. 154), and Appendix N: Maps (pg. 206).

Many of the trails on the Livingston Unit can be used for hiking, snowshoeing, and skiing. As a multiple use trail, different users must follow some basic trail etiquette rules in order to minimize conflicts. Basic trail etiquette includes: respect other trail users, pass on the right, bikers yield to hikers, and stay on marked trail (please do not cause damage by heedlessly trampling trailside vegetation).

Snowmobile trails in New York State open after big game season ends in each zone, as long as the ground is snow covered. On Wildlife Management Areas snowmobiles are limited to designated trails only. Snowmobiles are also allowed to cross the Unit on town roads that the town has opened to use by snowmobiles. Please contact the individual towns to find out which roads are open to snowmobiles.

About two miles of the Finger Lakes Trail crosses the south western corner of Rattlesnake Hill WMA and is maintained as a foot-traffic only trail by the Finger Lakes Trail Conference (FLTC) under a Volunteer Stewardship Agreement.

While horseback riding is permitted on most trails at Rattlesnake Hill WMA, the primary horse trail system for NYS DEC Region 8 will continue to be the Six Nations Trail System, located on Sugar Hill and Goundry Hill State Forests in Schuyler County. No additional horse trails or facilities will be added to the Livingston Unit.

Sonyea SF is crossed by the Genesee Valley Greenway State Park, which is owned and managed by OPRHP. The original path of the canal/railroad was along the banks of the Keshequa Creek, and portions are still there and usable, however large sections have washed away downstream. As a result of this damage the official path through Sonyea SF has been moved to along the town and Public Forest Access Roads at the top of the hill. In 2016 a 20-year Memorandum of Understanding (MOU) was signed between NYS DEC and OPRHP covering the maintenance and management of the moved section of trail. (See Appendix L: MOU between NYS OPRHP and NYS DEC on pg. 196) The original location of the railroad grade is still open for public use, at least what is left of it is, and it is popular to walk past the gate and down about a third of a mile into the Keshequa Gorge and along about a mile of what is left of the railroad grade along the creek bank. Two short spur trails lead down to the water’s edge, one to a waterfall and the other to Toadfest Point, both areas are used for camping and picnicking.

Conesus Inlet WMA has several trails, one wheelchair accessible, some with boardwalks, some constructed by NYS DEC, some by the town of Conesus, and others by volunteers. See Trails section on page 26 for more information. The Fish Walk ends at a grass covered dike. Many of the visitors will continue on to it, but it was not constructed with heavy foot

traffic in mind, as a result it is showing erosion and other wear issues. The top of the dike needs to be hardened in order to withstand the additional use it is getting.

Bicycles are currently allowed on existing roads and State Forest multiple use trails not posted as closed to bicycle use, per 6NYCRR §190.8s. Expansion of the existing trail system to include more miles open to bicycle use is possible, but NYS DEC will not expand the existing trail system on the Unit without the active participation of volunteer members of an organized club.

In all cases, any volunteers doing trail construction and maintenance would need to be working under a Volunteer Stewardship Agreement (VSA) and/or Temporary Revocable Permit (TRP). Any trail would need to follow trail Best Management Practices to control erosion, with the exact location approved by the Regional Forester, Regional Wildlife Manager, or his designee. NYS DEC does not have the authority to authorize trail construction across private land; the organization planning the trail is responsible for acquiring permission prior to constructing to the boundary line.

Trail Access for People with Disabilities

Wheelchairs are allowed anywhere pedestrians are allowed on state lands. The Federal/ADA definition of a wheelchair is:

> ***Wheelchair*** *- A manually-operated or power-driven device designed primarily for use by an individual with a mobility disability for the main purpose of indoor, or of both indoor and outdoor locomotion. This definition does not apply to Federal wilderness areas; wheelchairs in such areas are defined in section 508(c)(2) of the ADA, 42 U.S.C. 12207 (c)(2).*

Currently there is only one trail that meets federal standards for wheelchair accessibility on the Livingston Unit – the Fish Walk trail near the north end of Conesus Inlet WMA. In the many cases that don't meet the standards it is because the ground is not firm and stable enough, and/or the slope is too steep, and/or the path is too narrow. Too steep a slope can be difficult to change, but firm and stable conditions can be created in some locations. If money becomes available for upgrading, the existing trails and roads will be evaluated for improving universal accessibility. Other trails and roads may present opportunities for people with motorized wheelchairs. Any construction of new trails will include an accessibility assessment.

While no general public ATV trails currently exist on the Livingston Unit, on a statewide basis specific routes have been designated as a Motorized Access Program for People with Disabilities (MAPPWD) route, pursuant to NYS DEC Commissioners Policy #3 (CP-3). Prior to use, individuals with qualifying disabilities must apply and receive a permit to operate an ATV, or other vehicle, on trails designated by the NYS DEC. Not all routes are open to all types of vehicle, and some are open only seasonally for MAPPWD use. For further information, visit www.dec.ny.gov/outdoor/2574.html or contact the NYS DEC at 7291 Coon Road, Bath, NY 14810.

Goals and Objectives

Currently there are MAPPWD routes located on both Conesus Inlet WMA and Rattlesnake Hill WMA. (See the Appendix D: Facilities (pg. 154) and Appendix N: Maps (pg. 206) sections for additional information.)

ATV/ORV Trails

Off-Road Vehicle (ORV) or All-Terrain Vehicle (ATV) trails will not be developed on this Unit. A number of factors have contributed to this decision. As stated in NYS DEC's Strategic Plan for State Forest Management, ATV riding is not a program offered on state lands. The development of ATV access can be considered under this policy if it is necessary to provide access to programs and activities on the Unit. In addition, environmental sensitivity, soil conditions, wetlands, and steep slopes on this Unit are unsuitable for ATV use. Current illegal ATV activity has occasionally created management and maintenance challenges.

Table 16: Management Objectives and Actions for Public Recreation and Use Management

Management Objectives		**Mgt. Act. No.**	**Management Actions**	**Frequency of Action***	**Priority Code** (Pg. 69)	**Estimated 10 yr. Cost** (Pg. 69)
1	Identify additional recreation needs.	1.0	Receive public input.	On-Going	C	100 Work Days
		1.1	Monitor use patterns	On-Going	L	50 Work Days
		1.2	Solicit public input.	Every 10 years	C	10 Work Days
		1.3	Evaluate user satisfaction from comments received.	On-Going	H	10 Work Days
2	Coordinate with volunteer groups, and other agencies/ municipalities through the use of Cooperative Agreements, Volunteer Stewardship	2.0	Identify resources and/or volunteer groups to form additional partnerships.	On-Going	L	10 Work Days
		2.1	Assist the various VSA or AANR adopting organizations and individuals in maintenance and enhancement of the trails and other recreation facilities.	On-Going	H	10-100 DEC Work Days
		2.2	Follow the MOU between OPRHP and NYS DEC.	On-Going	C	

Management Objectives		**Mgt. Act. No.**	**Management Actions**	**Frequency of Action***	**Priority Code** (Pg. 69)	**Estimated 10 yr. Cost** (Pg. 69)
	Agreements, or Adopt-a-Natural-Resource Agreements, to construct and/or maintain existing and/or future recreational facilities	2.3	Encourage rehabilitation of trail sections that are unsuitable for existing use.	On-Going	H	5 Work Days
		2.4	Provide resources or utilize opportunities as needed to maintain and enhance existing trail(s)	On-Going	C	10 Work Days
		2.5	Minimize conflicts between user groups	On-Going	H	30 Work Days
		2.6	Discourage illegal use of motorized vehicles.	On-Going	H	30 Work Days
3	Determine feasibility and/or compatibility of proposed additional recreational opportunities .	3.0	In house review of proposed projects	As Needed	L	40 Work Days
		3.1	Add proposed projects to this UMP by amendment. (This includes a 30 day public comment period.)	As Needed	L	30-300 Work Days
		3.2	Negotiate and enter into VSA agreements with sponsoring volunteer groups.	As Needed	H	5 Work Days per VSA agreement
4	Provide additional recreational opportunities Including maintaining and improving access for persons with disabilities.	4.0	Construct and maintain new facilities as supported by the UMP.	By year 10	H	See specific action.
		4.1	Provide technical support for volunteer groups.	As Needed	L	Unable to predict costs.
		4.2	Construct barriers to discourage unauthorized motorized use of skid trails and abandoned roads after logging operations.	If damage is anticipated or observed on the skid trail or road.	C	$1- 4,000 per location.

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 69)	Estimated 10 yr. Cost (Pg. 69)
		4.3	Issue permits to allow camping on Rattlesnake Hill WMA for organized groups only during March, April, and June through September.	On-Going	L	20 Work Days
		4.4	Conesus Inlet WMA – improve the dike at the end of the Fish Walk to recreation trail level of use.	By year 10	L	
		4.4	Work with organized volunteer groups to expand the trail opportunities available.	On-Going	L	Highly variable.
		4.5	Evaluate and improve some trails/roads to greater universal accessibility	On-Going	C	Highly variable
5	Advocate wildlife-based recreation	5.0	Encourage bird watching, hunting, fishing, trapping etc. according to New York State regulations.	On-Going	L	Unable to predict costs.
		5.1	See also Fish and Wildlife Habitat Management	On-Going	H	--
6	Maintain existing and future recreational facilities.	6.0	See also Maintenance and Facilities Management, and Access Management	On-Going	H	--
		6.1	Mow and/or trim brush back on trails.	At least annually.	H	Work Days
		6.2	Remove blow-down from trails	As needed	H	Part of 6.1
		6.4	Stabilize or repair recreational trail issues such as mud or erosion using Best Management Practices.	After issues are discovered and when funds or volunteers are available	H	$0-$100,000 Cost will vary depending on issue.

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 69)	Estimated 10 yr. Cost (Pg. 69)
		6.5	Evaluate and provide sanitary facilities at heavily used designated camp sites.	Once each	H	Highly variable
		6.6	Maintain viewing platforms and boardwalks.	As Needed	H	Cost will vary depending on issue.
7	Increase awareness of public recreation opportunities	7.0	Provide brochures and maps for users at kiosks, NYS DEC offices, and NYS DEC web page.	Check at least monthly	H	30 Work Days
		7.1	Place and maintain kiosks or signs at parking areas and other high use areas.	By year 10	H	$5,000 and 15 Work Days per each
		7.2	Update maps and brochures to reflect new facilities / trails / land acquisitions.	As Needed (At least every 5 yrs.)	H	5-10 Work Days per each
		7.3	Update kiosks	Annually or as needed	H	10 Work Days
8	Enhance visual appeal	8.0	Establish a litter-free environment by promoting carry in/carry out policy.	On-Going	H	Unable to predict costs.
		8.1	Remove litter from state land.	At least Annually	H	10 to 100 Work Days

*Factors such as budget and staff constraints, and other environmental health problems may necessitate deviations from the scheduled management activities.

Maintenance and Facilities Management

The goal is to maintain the facilities on the Unit to ensure its integrity, character, and safety. This must be done with the limited money and staff resources that are available. It is the policy of the NYS DEC to use staff and money resources in the most efficient and effective way possible, and to encourage the use of volunteers to maintain facilities when possible. See also the Access Management (pg. 70) and Public Recreation and Use Management (pg. 106) sections for additional facilities information.

Goals and Objectives

The constructed dams, dikes and other water impoundment structures located on the Unit must be inspected and maintained both for public safety and to keep the desired wildlife habitat. This will be done in consultation with NYS DECs Dam Safety Unit within the Division of Water. For further information on wetland management see the Fish and Wildlife Habitat Management section (pg. 96).

Many of the dikes and water control structures on Conesus Inlet WMA are over 30 years old, and in many years the spring water runoff is more than they were engineered to handle. The system, which includes the dike, spillways and water control pipes need to be evaluated, maintained and improved to meet current and future anticipated water and habitat needs.

All trees eventually fall down. Those located in the forest rarely harm any humans or human property, however trees located at areas of higher concentrated recreational use should be evaluated for the level of risk, and those with an Imminent or Probable risk level removed or trimmed. As EAB (or other tree killing pests) invade the Unit the number of hazard trees will increase. It is not possible to have trees with no risk of falling, however the odds of injury or death can be reduced by removing the trees with the highest level of risk to users. Trees in areas of higher use will be evaluated a minimum of every five years, more frequently when possible. Initial evaluation will be a Level 1: Limited Visual Assessment, with a Level 2: Basic Assessment done on those that do not pass the Level 1. All risk trees will be dealt with as needed after discovery by inspection, public notification or other method.

Table 17: Management Objectives and Actions for Maintenance and Facilities Management

Management Objectives		**Mgt. Act. No.**	**Management Actions**	**Frequency of Action***	**Priority Code** (Pg. 69)	**Estimated 10 yr. Cost** (Pg. 69)
1	Maintain constructed ponds / potholes / marshes (In consultation with the Division of Water, Dam Safety Unit)	1.0	Inspect for problems.	Annually	C	80 Work Days
		1.1	Repair dikes, control boxes, etc.	As Needed	C	Highly variable $1,000 to $20,000 per each
		1.2	Excavate bottom of ponds.	As Needed	L	
		1.3	Monitor for, and clear any culvert or bridge blockages caused by beaver activities	On-gong	C	See Fish and Wildlife Habitat Manage-ment
2	Solicit volunteer groups to	2.0	Promote Volunteer Stewardship Agreements (VSA)	On-Going	L	See Public Recreation and Use

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 69)	Estimated 10 yr. Cost (Pg. 69)
	help maintain facilities	2.1	Enter into agreements with volunteer groups.	On-Going	L	Manage-ment
3	Maintain existing and future facilities.	3.0	Identify needed maintenance	On-Going	C	20 Work Days
		3.1	Evaluate for and remove hazard trees in high recreational use areas.	On-Going	C	30-100 Work Days
		3.2	Do the needed maintenance, as money allows.	On-Going	C	See Public Recreation and Use Manage-ment
		3.3	Enhance law enforcement efforts.	On-Going	C	Unable to predict costs.
4	Maintain existing and future roads.	4.0	Identify needed maintenance	On-Going	C	20 Work Days
		4.1	Do the needed maintenance, as money allows.	On-Going	C	See Access Manage-ment
		4.2	Enhance law enforcement efforts.	On-Going	C	Unable to predict costs.

*Factors such as budget and staff constraints, and other environmental health problems may necessitate deviations from the scheduled management activities.

Land Acquisition Management

New York State has been a leader in recognizing the value of open, undeveloped land. The Livingston Unit is a large block of relatively undeveloped public land in the Finger Lakes Region and is an important part of the landscape.

The acquisition of land by NYS DEC in New York State is guided by the New York State Open Space Conservation Plan. The Open Space Conservation Plan serves as a blueprint that identifies the priority projects, policies and programs that will enhance land acquisition from willing sellers for the future. The plan, issued jointly by NYS DEC and the Office of Parks, Recreation and Historic Preservation, relies on the input of Regional Advisory Committees, local governments and the public.

The Open Space Conservation Plan is required to be updated every three years. In 2016 NYS DEC and the NYS Office of Parks Recreation and Historical Preservation issued a plan,

entitled, “New York State Open Space Conservation Plan”. It is available for viewing on the internet at www.dec.ny.gov/lands/317.html, see link for current version.

These plans bring together: 1) an objective analysis of the State’s resources; 2) the knowledge and insight of professionals inside state agencies; and most importantly, 3) the informed and valuable ideas of the public, local government and the private sector.

New York State may acquire land by donation, fee title purchase, easement, purchase of some of the rights such as development and recreation, or land swap by action of the New York State Legislature.

NYS DEC will consider parcels if they: improve public access, consolidate public ownership by eliminating in-holdings, enhance recreational opportunity, protect significant ecological areas, are scenically important, contain threatened or endangered species, are of exceptional historical or cultural importance, improve watershed protection, or resolve other issues.

Table 18: Management Objectives and Actions for Land Acquisition Management

The management objectives in this table are not listed in priority order; i.e. management objective 1 is not more important than management objective 9.

Management Objectives		**Mgt. Act. No.**	**Management Actions**	**Frequency of Action***	**Priority Code** (Pg. 69)	**Estimated 10 yr. Cost** (Pg. 69)
1	Provide improved access to the Unit.	1.0	Identify land acquisition needs that improve access to state lands.	On-Going	L	Unable to predict costs.
		1.1	Acquire desired properties from willing sellers as funding permits.	On-Going	L	Unable to predict costs.
2	Consolidate public ownership by eliminating in holdings	2.0	Identify land acquisition needs, which simplify the NYS DEC’s boundaries.	On-Going	L	Unable to predict costs.
		2.1	Acquire desired properties from willing sellers as funding permits.	On-Going	L	Unable to predict costs.
3	Enhance recreational opportunity.	3.0	Identify land acquisition needs that improve recreational opportunities.	On-Going	L	Unable to predict costs.
		3.1	Acquire desired properties from willing sellers as funding permits.	On-Going	L	Unable to predict costs.

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 69)	Estimated 10 yr. Cost (Pg. 69)
4	Protect significant ecological areas.	4.0	Identify land acquisition with potential to protect areas with significant ecological value.	On-Going	C	Unable to predict costs.
		4.1	Acquire by fee simple or easements on desired properties from willing sellers as funding permits.	On-Going	C	Unable to predict costs.
5	Protect scenically important areas.	5.0	Identify land acquisitions that are scenically important.	On-Going	L	Unable to predict costs.
		5.1	Acquire desired properties from willing sellers as funding permits.	On-Going	L	Unable to predict costs.
6	Contain rare, threatened or endangered species.	6.0	Identify land acquisition with rare, threatened or endangered species.	On-Going	C	Unable to predict costs.
		6.1	Acquire by fee simple or easement desired properties from willing sellers as funding permits.	On-Going	C	Unable to predict costs.
7	Are of exceptional historical or cultural importance	7.0	Identify land acquisition with exceptional historical or cultural importance.	On-Going	L	Unable to predict costs.
		7.1	Acquire desired properties from willing sellers as funding permits.	On-Going	L	Unable to predict costs.
8	Improve watershed protection	8.0	Identify land acquisition which improves watershed protection.	On-Going	L	Unable to predict costs.
		8.1	Acquire by fee simple or easement desired properties from willing sellers as funding permits.	On-Going	L	Unable to predict costs.
9	Resolve other issues (split mineral estate, title	9.0	Identify issues (See Appendix M: Known Encroachments and/or Trespass, pg. 205, for partial list)	On-Going	C	Unable to predict costs.

Management Objectives	Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 69)	Estimated 10 yr. Cost (Pg. 69)
problems, etc.).	9.1	Attempt to resolve such issues	On-Going	C	Unable to predict costs.

*Factors such as budget and staff constraints, and other environmental health problems may necessitate deviations from the scheduled management activities.

Mineral Resource Management

On all NYS DEC state lands, well drilling, pipelines, and related road development must be in compliance with Tract Assessments, the Strategic Plan for State Forest Management (2011), the Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program (1992), and the applicable Unit Management Plan. However, high-volume hydraulic fracturing is prohibited at this time in New York State per the May 2015 FSGEIS and its June 2015 findings. See Appendix K: Procedures for Oil & Gas Procurement (pg. 194) for a description of the process to lease oil and/or gas rights from NYS DEC lands. For history and information on oil, gas and mining in the area, see the Mineral Resources (pg. 34) and Appendix N: Maps for maps of the mineral resource development on the adjacent landscape.

Management of Mineral Resources

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

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

Pipeline Development

NYSDEC may permit the construction of oil and gas pipelines under the terms and conditions of an oil and gas lease; and only if a portion of the mineral resources to be transported was extracted from state lands.

Pipeline and road development under an existing oil and gas lease must be in compliance with Tract Assessments, the Strategic Plan for State Forest Management, the Generic Environmental Impact Statement on the Oil, Gas, and Solution Mining Regulatory Program, and any applicable Habitat Management Plan for the Wildlife Management Areas.

Procedures for Mineral and Rock Procurement

Under Article 7 of the New York Consolidated Laws / Public Lands, if a party wishes to explore and/or procure minerals and/or rock (including salt) from state lands they must be issued a permit, consent, or lease from the General Services Office. Prior to operations, a mining permit or drilling permit in the case of solution mining, must be obtained from the Division of Mineral Resources and a Temporary Revocable Permit (for access and use of land) must be obtained from the Division of Lands and Forests or the Division of Fish and Wildlife. Mining operations are regulated by the Division of Mineral Resources.

There are no mining contracts, permits, or operations on any areas in this Unit. Under Article 7 of the New York State Consolidated Laws, any citizen of the United States may apply for permission to explore and/or extract any mineral on state lands. However, current NYS DEC policy is to decline any commercial mining permit application(s) pertaining to this Unit.

Surface Use for Evaluation of Mineral Resources

In the event a party desires to use the surface estate to conduct geophysical (such as a seismic survey), geochemical and/or surface sampling procedures on NYS DEC lands after leasing they must first obtain a Temporary Revocable Permit (TRP) for the access and use of state lands. Only the lessee, or parties authorized by the lessee, can be issued a TRP for these purposes. A TRP can be applied for through the NYS DEC Division of Lands and Forests or Division of Fish and Wildlife.

For further information contact the NYS DEC Mineral Resource staff, Region 8, 6274 East Avon-Lima Road, Avon, New York 14414-9591. Additional contacts include; New York State Department of Environmental Conservation- Division of Mineral Resources, Bureau of Resource Development and Reclamation, 3rd Floor, 625 Broadway, Albany, New York 12233-6500.

For further discussion of Mineral Resources, see Chapter 5 of the Strategic Plan for State Forest Management.

Table 19: Management Objectives and Actions for Mineral Resources Management

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 69)	Estimated 10 yr. Cost (Pg. 69)
1	Decide to approve or not approve extraction of mineral resources.	1.0	Per Appendix K: Procedures for Oil & Gas Procurement, pg. 194.	After nomina-tions are received	C	Unable to predict costs, which will vary greatly
2	Administer mineral estate	2.0	DMN monitors lease, production and royalty payments for oil and gas. OGS does same for other minerals.	Every Time	C	Unable to predict costs.
3	Pipeline access and construction	3.0	Granted and directed by terms of lease agreement administered by DMN.	Every Time	C	Unable to predict costs.
		3.1	L&F and/or Wildlife reviews proposed operations and if approved, issues a Temporary Revocable Permit (TRP)	Every Time	C	Unable to predict costs.
		3.2	L&F and/or Wildlife enforce TRP provisions.	Every Time	C	Unable to predict costs.

*Factors such as budget and staff constraints, and other environmental health problems may necessitate deviations from the scheduled management activities.

Archaeological and Historic Resources Management

The archaeological sites located within this 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 and Section 233 of Education Law. Should any actions that would impact these resources be proposed they will be reviewed in accordance with 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 the Education Law.

The archaeological sites located on this Unit as well as additional unrecorded sites that may exist on the Unit may be made available for appropriate research. All future archaeological research to be conducted on the Unit 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, and the Seneca Nation of Indians Tribal Historic Preservation Office at 716-945-9427.

Table 20: Management Objectives and Actions for Archaeological and Historic Resources

Management Objectives		**Mgt. Act. No.**	**Management Actions**	**Frequency of Action***	**Priority Code** (Pg. 69)	**Estimated 10 yr Cost** (Pg. 69)
1	Preservation of historical and archaeo-logical resources	1.0	Comply with state historic preservation act and other relevant state and federal laws.	On-Going	C	Unable to predict costs.
		1.1	Consultation with the Seneca Nation of Indians Historical Preservation Office.	As Needed	C	Unable to predict costs.

*Factors such as budget and staff constraints, and other environmental health problems may necessitate deviations from the scheduled management activities.

PUBLIC INVOLVEMENT

Initial Mailing

Livingston Unit Management Plan's citizen participation activities commenced with an initial mailing in **March 2016,** outlining management plan objectives.

The initial mailing's targeted audience consisted of previously identified:

- Adjacent Property owners
- Local Town & County Officials
- Local Media
- Recreational Groups
- Interested Industry Groups
- First Nations
- Wildlife Groups
- Other General Environmental Groups

Based on those returned and other public comments received, the mailing list was amended to add other interested parties and/or correct outdated names and addresses.

Public comments received from the initial mailing are listed in Appendix A: Public Comment (pg. 123) with a summary in the Summary of Identified Issues section starting on page 61.

Second Mailing

Upon completion of the draft Livingston Unit Management Plan, a second mailing will be sent to those on the updated mailing list, including the media, summarizing objectives of the draft plan, listing local document repositories and announcing a public meeting. Repositories will include local libraries, the Bath and Avon NYS DEC offices, and NYS DEC's web page. A notice will also be posted in the Environmental Notices Bulletin (ENB) two weeks prior to the meeting.

Public Meeting

One public meeting will be held near the Livingston Unit Management Plan area to present the draft plan and receive comments on it. Following the end of a 30-day public comment period, any modifications based on public comment will be made and a responsiveness summary will be in Appendix A: Public Comment (pg. 127) of the final plan.

Final Notice

Those who commented, and any on the updated mailing list, will receive a notice of availability of the final plan. Document repositories will again be identified and any significant modifications based on public comment will be noted.

APPENDICES

Appendix A: Public Comment

Initial Mailing Responses

The steps of the public participation portion of this Unit Management Plan are located in the Public Involvement chapter (pg. 122).

For the Livingston Unit Management Plan public comments were received as a result of a scoping letter mailed March 2016. A letter asking for comments was mailed to a previously identified audience including adjacent property owners, local government officials, recreational groups, forest industry groups, wildlife groups and other general environmental groups and the local media. A total of 5 written comments were received.

A Summary of Identified Issues from all of the comments received from the scoping mailing is located on page 61 of this Unit Management Plan.

Comments Received on the scoping mailing:

To Whom It May Concern:

My family has owned the property at XXXX South Cove Lane for over 45 years. My concerns include:

1. The pipe put under the road to divert the run off from the hill needs to cleaned out regularly. Years ago it was cleaned out regularly and we had few problems. Now when we have steady, heavy rain, it flows over the road and down into our properties. This negates the purpose of why the pipe was installed. We had fewer problems when it use to run down the culvert between my neighbor's property. What was done is not working.

2. The weed problem on our cove is increasing to the point where we can no longer dive off the dock and swim. The toxic algae appears every year. The amount of sludge/decayed seaweed that washes up on our beaches is increasing. The last property before the inlet is a mucky mess. While it was always more mucky than the rest of ours, it's awful now. Our neighbors rent their cottage and the renters can not believe the amount of weeds and how "unswimmable" it is. Renters have left because of how bad it is in Aug. Also, the weeds don't help the motors on our boats. A possible solution would be to give us weed mats to see if that would help the problem.

3. Put a camera up in the hills (David Gray Hill Rd.) to see who is dumping the trash that washes down into our properties and the lake.

I love Conesus Lake and only want to see it remain as beautiful as it is. Please don't forget about us down at the inlet - the nature of the cove has changed over the years and not for the better. Thank you for your time.

Frances Duford

*****

Good morning,

I have a suggestion for the Conesus Outlet

Many people come to watch the fish spawn, but then there's nothing else for them to do, so they leave the area. If there was a way for them to launch a canoe they would stay for awhile and maybe afterwards they would visit a restaurant or some shops, which would bring more business to Conesus.

I am a resident of Conesus and would like to see more business come into the area. Please add me to your mailing list for any future notices:

Anna Pellegrino, XXXX Sliker Hill Road, Conesus, NY

****

I don't know if I'll get a chance to submit anything formal soon as I'm off next week and part of the following, but I assume you're adding the Finger Lakes Trail to the UMP as it exists now in Rattlesnake Hill WMA. I think our main comments will be the usual: single use foot trail wherever possible - no multiple use, especially ATVs in light of the recent proposed legislation. Mountain biking has become a much bigger deal since this UMP was written. We definitely do not want to share a trail with bikes. I skimmed through the old UMP and noticed a lot of talk about horses. We'd obviously not favor sharing our trail with horses either, unless part of our trail is already on a horse trail (I've never been there). Otherwise, we'll plan on submitting formal comments on the draft next year.

Steve Catherman, Finger Lakes Trail Conference

****

Subject: Suggestions for new UMP

I have hunted deer every single season for the past 50 years on Rattlesnake Wildlife Management Area and surrounding state lands. For the past 11 years I have resided in the town of Ossian. I have several suggestions for redefining the UMP.

First, consider moving the northern boundary of Deer Management Unit 9P from Route 436 to Route 70. This would put most of Rattlesnake Hill and the town of Ossian in DMU 8M. Currently, the area is severely overpopulated with deer. They routinely decimate both farmers' crops and private landscaping. Yet it is almost impossible to obtain a permit for 9P, so the nuisance problem just gets worse every year.

Next, while I approve of the current logging program, I would suggest that after the logging process is complete, the logger could construct various trails for easier access to the state lands. Since they would have all of the necessary equipment on site, it would take minimal time and effort, and all of the state lands could certainly benefit from more and better defined trails.

Lastly, there are existing designated walking trails within the state lands that are not being properly maintained. As a frequent hiker, I have come across fallen trees, swampy areas, and overgrown sections that have been neglected for many years. If budget constraints are a concern, why not develop a volunteer program to help restore and maintain these areas?

Thank you for considering my suggestions. If you have any questions or comments regarding my ideas, you can reach me via email at xxxxxxxx@msn.com or by phone at 607-xxx-xxxx.

Sincerely,
David Hundley

*****

Subject: Livingston UMP Comments

Dear Management Plan Writers,

I am commenting on the Livingston UMP.

First I want to encourage you to continue to sell standing timber for timber harvests on the state forests and wildlife management areas in the plan.

I completely respect the wishes of some people to have mature, old growth and un touched sections of the forest; however, leaving too much of the forest untouched will result in loss of critical food and habitat for many wildlife species.

I believe the state foresters managing the Livingston UMP do a great job at knowing what needs to be cut and what should be left to keep growing.

I have bought numerous timber from the DEC in region 8. My experience has allowed me to see that the state foresters are very concerned with the aesthetics of the timber harvest. There doesn't need to be concern that harvesting timber will make the state forests and wildlife management areas less appealing to the public.

There will of course be people who do not think the state should ever sell timber, but most of those people do not understand the importance of managing a forest.

I feel that at least 150 acres per year could be harvested from the state forests and WMAs in the Livingston UMP. This could be in the form of commercial thinning, shelterwood or over-story removal harvests.

I fell this acreage would allow most of the forest to be managed for healthy forest succession. Which would create the necessary mix of forest age structure for all species of wildlife to thrive.

It would also allow for about 500 acres of old growth, un-touched forest to exist.

Native forbs and leafy plant species should be encouraged to grow in landing areas and vacant open areas.

In an area where lack regeneration is a concern because of deer browse, highly desirable plants such as clover and chicory should be planted. If too heavy of winter browsing is a concern, landings and vacant open areas should be planted with oats or winter wheat.

Tree tops will also provide good browse for deer in deep snow conditions; this will also help the survival of new growth.

New growth of hemlock trees should be encouraged in coniferous forest because of their wildlife benefits.

I do not have much experience in water quality management, so I really can't comment on that aspect of the plan.

In closing please continue to manage the Livingston UMP for multiple purposes.

Sincerely,
Josh Ferguson, Forester, Wagner Hardwoods, LLC

Draft Public Meeting Responses

Written and verbal comments on the draft plan were received during the February 15, 2017 public meeting held at the Dansville High School, Dansville, NY. Electronic written comments were included until a timestamp of midnight March 20, 2017, or with a US Post Office date stamp of March 20, 2017, or earlier.

A Summary of the verbal comments and NYS DEC responses:

These comments have been summarized and consolidated for easier reading.

Comment: I have a Red Pine plantation about 65 years old. What's left after the ice storm damage is dying of old age. Under it is a blanket of pines needles, surrounded by hardwoods. If I pull out the needles, would I get some growth, some seedlings?

Reply: This plan does not, and cannot, cover any actions or activities on private land outside the boundaries of the Unit. For assistance in managing your own forest, please contact the NYS DEC Bureau of Private Land Services for help. Visit www.dec.ny.gov/lands/4972.html or call the Bath or Avon offices.

However, the heavy shadows caused by the overstory trees is likely a bigger cause of the lack of seedlings, as most seedlings can push through leaf/needle litter. As the overstory continues to die more sunlight will reach the ground and more seedlings will survive. This process can be speed up by harvesting the mature trees. NYS DEC recommends hiring a consultant forester to assist in managing your own property.

Comment: I own land that backs up to Canaseraga State Forest. How does this affect us? Do we have to do anything? Is any action required on our behalf?

Reply: Actions within this plan should have no direct impact on adjoining private land. No action is required by any neighbors or other citizens; however the public comment period provides a time for anyone to offer suggestions or concerns to the NYS DEC land managers.

Comment: You need a microphone.

Reply: Noted, and will be corrected the next time.

Comment: On Rattlesnake Hill, there are a lot of old apple trees. Do you plan to prune any of the apple trees?

Reply: Over the past couple years, staff have done apple tree releases on Rattlesnake Hill WMA, specifically north of Dannack hill extension road just east of the gate by the lean-to. The apple trees were being over topped by surrounding trees. These trees surrounding the apple trees were cut to provide more resources to them, allowing more, better quality apples to be produced for wildlife. The apple trees themselves were also pruned to get rid of dead and dying limbs, improving the overall health and vigor of the trees. Opportunistic apple tree releasing/pruning will continue as areas for improvement are identified, and staff time allows.

Comment: Could you attach that to a timber sale?

Reply: Yes, if it was identified as a goal in the timber sale prescription and was located in the sale block. Generally, any apple trees located within a sale block are left uncut and cleared around to provide diversity and promote apple production for wildlife.

Comment: There are a lot of road building, wide trails on Rattlesnake Hill. Is here a plan to make it better looking? More interesting? For bicyclists? The road seems unnaturally wide and straight, not part of a WMA. Are there any directives to re-do roads, to make them curvy?

Reply: The primary function of a haul road (gated, seasonal gravel road) on Rattlesnake Hill WMA is to provide access to the property for management, whether it be forest management (timber sales), wetland management, mowing, etc. Because of this, it is important that these roads be designed and maintained to support this type of traffic. The roads do provide access to other users: hikers, horses, etc.; however the actual function and management of these roads must support the highest-use / primary function, which would be vehicle traffic. Maintenance to these roads is done by the NYS DECs Division of Operations. Improvements to existing roads and additional roads may be needed for specific management actions and can also be done through a private contractor.

Comment: Are there enough roads now or will there be more?

Reply: There is good access to most of the property currently. There may be need for additional roads in the future for specific management actions.

Comment: Are they usually gated?

Reply: Many of the roads on Rattlesnake Hill WMA are gated and closed to public vehicle traffic; however, they are open to foot and horse traffic. Additionally, there are recreation trails, Public Forest Access Roads (PFARs) and town roads that provide access to the property. Access to certain gated roads may be granted with a CP-3 permit through the *Motorized Access Program for People with Disabilities (MAPPWD)*. For more information, see the Recreations section (pg. 22) section.

Comment: Are they (Rattlesnake Hill) logged every year?

Reply: Scheduled management on Rattlesnake Hill WMA is described in the Timber and Vegetation Management section of this document, and in further detail in the Rattlesnake Hill WMA Habitat Management Plan (2016). Forest managements has occurred on the property previous to and since the State took ownership in 1961, with significant, recent management occurring in the early 2000s and since 2010.

Comment: I have had it [logging] done twice. [on private property] The second time it was a total disaster. Is there a better company to use?

Reply: NYS DEC strongly encourages you to hire a professional forester consultant to assist you in managing your own private property. For assistance in getting started please contact the NYS DEC Bureau of Private Land Services for help. Visit www.dec.ny.gov/lands/4972.html or call the Bath or Avon offices.

Comment: You mentioned significant taxes early on. Is there any income from forestry [logging]?

Reply: The revenue from timber sales on State Forests is deposited into the Special Revenue Other (SRO) account, the revenue from timber sales on Wildlife Management Areas is deposited into the Conservation Fund. See the Funding section on page 60 for additional information.

Comment: If you are going to log it, why divide wildlife management areas from state forests?

Reply: Good land management will look very similar if it is on State Forests, Wildlife Management Areas, Federal Land or private land. The differences between the types of state owned land have to do with what legislation it was purchased under. See the History of the Livingston Unit on page 11 for additional information. These different legislation, and corresponding regulations, does result in slight differences in management actions and priorities.

Comment: Ten years ago, there was a clear cut on Rattlesnake Hill. There was a nice road to a pine grove. The sluice wiped out. Do you have any plans to replace it? At the cross road extension, trees fell across the trail. It used to be a well-defined trail, now there are a lot of trees. It is hard to drag a deer across there.

Reply: There are no immediate plans to replace the culvert that washed out on the haul road north of Ebert road. The road up to and beyond the wash out is in good condition and it is ideal to put in a replacement bridge; however, this is contingent upon future resources and funding. Depending on the original purpose of the trail, it may get regular maintenance or was abandoned and left to grow in. If there is an official, designated trail that needs maintenance, please contact the property manager or the local Forest Ranger.

Comment: When you install the saloon gates on Canaseraga State Forest, do you plan to build a parking lot?

Reply: The gates on Canaseraga SF will be locked open most of the time. They will be placed such that if they are locked closed there will be room for a vehicle or two to park near them, but no large parking lot will be constructed at the same time as the gates are.

Comment: Are there any plans to improve Evergreen Pond at Ossian State Forest? A lot of people camp without sanitary facilities. There's also a lot of litter.

Reply: Plans are underway to improve the sanitary facilities at Evergreen Pond. See the Public Recreation and Use Management section, starting on page 106 for additional information. The quick solution is to rent port-a-johns, longer term is to construct one, or more, pit privies. Budgets and staffing are limited, so if possible this will be done using volunteer labor, but if that doesn't work NYS DEC staff will be used. Because of the low staffing levels, the litter at Evergreen Pond, and other locations, is not picked up as frequently as would be preferred. As a result, NYS DEC is very dependent on volunteers, both officially and as general users, being willing to clean up after themselves and others.

Comment: What does it take to be a volunteer? What are the limits to what a volunteer can do? Can they trim apple trees, pick up trash?

Reply: Volunteering is done with a Volunteer Stewardship Agreement (VSA), either as part of a club/group or as an individual. Volunteers must follow all state and national safety standards, and minors may only sign up with approval from a parent/guardian, but other than that, volunteering is largely limited to what the volunteer is willing and able to do. Trimming apple trees, cleaning up trash, painting gates, repairing (or constructing) privies/trails/lean-tos are all possible actions that a group of volunteers can and have done in the past. Please don't start any work without signing up as an official volunteer first.

Written comments received after the draft plan public meeting:

Comment: My name is Adam Reitz and I am the trails chairman for GROC. Thank you for the notification about this master plan. After reviewing the current plan draft, we have a few questions. In addition to sending our comments to the email address below, who can offer us (GROC) insight into the possibilities of shared-use trails for the parcels in this unit? Would that be you?

Thoughts/questions:

- Sonyea SF is currently open to off-road cycling. Is that correct?
- Is the land manager open to the idea of additional/new trails?
- Sonyea is close enough to Rochester to receive support from GROC
- The eventual trail network would have to total between 8 and 10 miles to be considered a destination for cyclists (currently 2.8 miles)
- Ideally, all trails would be shared-use and sustainably designed/built

GROC has had great success working with land managers in Monroe and Ontario counties. We've invested thousands of volunteer hours to construct and maintain shared-use trails, with an economic value of ~$400,000.00. We are always looking to foster new relationships and are open to exploring opportunities.

Thank you for your time and consideration!

Adam

Hello,

Sonyea State Forest is a beautiful forest with excellent potential for a few new trails. New trails could provide access to some of the forest's less-accessible areas and better host activities such as hiking, trail running and off-road cycling. Genesee Regional Off-road Cyclists is a volunteer-based nonprofit that can help to inventory Sonyea SF's current trails and make recommendations for sustainable improvements. GROC can also help plan, design and build some new trails that lay lightly on the land in a harmoniously integrated way, helping forest visitors enjoy more of what it has to offer.

Sincerely,
Adam

Reply: None of the roads and trails on Sonyea SF are currently marked as closed to bicycling, and that includes the Genesee Valley Greenway which passes through the property. Bicycles are currently allowed on existing roads and State Forest multiple use trails not posted as closed to bicycle use, per 6NYCRR §190.8s. Expansion of the existing trail system to include more miles open to bicycle use is possible, but NYS DEC will not expand the existing trail system on the Unit without the active participation of volunteer members of an organized club. However, the property is only 922 acres, with a large portion of that is cliff or field, which means it would be challenging to fit 8+ miles of trail in.

In all cases, any volunteers doing trail construction and maintenance would need to be working under a Volunteer Stewardship Agreement (VSA) and/or Temporary Revocable Permit (TRP). Any trail would need to follow trail Best Management Practices to control erosion, with the exact location approved by the Regional Forester, Regional Wildlife Manager, or his designee. NYS DEC does not have the authority to authorize trail construction across private land; the organization planning the trail is responsible for acquiring permission prior to constructing to the boundary line.

Comment: Here are my comments/observations about Conesus inlet WMA. As a life long resident of Dacola Shore Rd, which is surrounded by the inlet and lake:

1 The Beaver are overrunning the canal and now have a large dam build across it adjacent to Dacola shores road. Observation the canal is at spring levels and rising which will cause flooding of our property. A plan needs to address protecting private property on dacola shores road. The town blames the state for not allowing culverts to be put in that will drain in to the lake. regardless it will still end up in the lake after flooding us out and costing home owners a lot of stress and money. Some kind of compromise must be met.

2. leasing the land to farmers to grow crops on dacola shores is a good idea and eliminated the unsightly appearance weeds growing 6feet high across the street and blocking the view of drivers to see approaching deer that inhabit the state land.

3. your mowing plan should include all of the land boarding the nature trail bordering Dacola Shores Road to keep the ticks at bay.

4. The land surrounded by west lake road-slicker hill road and Dacola shores road should be restricted to small game hunting with shotgun and big game hunting only with crossbow or compound bow and not rifles.

Dave Szczygiel
Dacola Shores Road

Reply:

Beaver can be legally trapped on the WMA during the open season, and when they are causing flooding issues outside the season, NYS DEC works to mitigate those issues by removing dam material and beavers from the problem areas. The area is very flat with poor drainage which is the main cause of flooding of the private lands along Dacola Shores. NYS DEC is open to allowing the Town to install drainage structures across the state lands,

but the Town has not yet worked to obtain the necessary easements, and the drains will not work very well when the lake levels are high.

Mowing plans are based on habitat and access needs, and mowing has little impact on ticks. Habitat management regarding mowing schedules and areas planted to crops will be addressed in detail in the Habitat Management Plan that is being developed.

Discharge of firearms for hunting is prohibited within 500 feet of any houses by the Environmental Conservation Law. There are no plans to restrict hunting on the WMA beyond the statewide laws and regulations.

Comment: To whom it may concern:

This letter is in response to request for public comment on the 10 year plan for the wild lands in/about Livingston county. I am writing primarily as a mountain biker.

It was a great decision to open the Letchworth spur of the FLT to mountain biking. Not only has use and visibility of this trail improved since that decision, but more organized groups have taken part in trail maintainance. It is one of the few areas in the county for such extensive riding. As one who frequents it's northern sections I can say I've seen excellent cooperation between users. I utilize the trail as a biker, hiker, trail runner, snow shoe and even nordic skier when conditions allow. I regularly take my dog with me as well. There have been countless times I've seen other users in my travels and our parties display polite shared trail use etiquette. For instance, bikers will announce their presence, hikers will corral their dogs, and runner will pass hikers in a friendly cooperative manner. The northern parts of this trail are even more enjoyable thanks to a volunteer from GROC leaf blowing the trail each fall making it much more safe and foot/tire friendly.

This cooperative effort shines on this portion of the trail and should be carried over to other lands, notably Rattlesnake Hill WMA. The Hill has great potential for further trail development and bringing heightened attention from the mtn bike community (both GROC and WNYMBA) would serve this parcel well. Recently logging road construction, or single track trail deconstruction has escalated in the Hill much to the detriment of local trail enthusiasts. I have ridden bike on some the fire road areas and would like to see greater access for the biking community to this parcel, as well as less access for whatever process is destroying the trail and potential for wilderness recreation and enjoyment.

Thank you for your attention to these comments,

Have a great day!
Paul Kreher

Reply:

The primary purpose of Rattlesnake Hill WMA is to provide high quality wildlife habitat that enhances wildlife populations while providing wildlife-dependent recreational opportunities. Recent logging and road improvements on the WMA are associated with habitat management activities. An increase of trails is not currently desired on the WMA because it would remove wildlife habitat, and existing trails provide sufficient access for wildlife-

dependent recreation. Mountain biking is not a wildlife-dependent recreation activity and therefore is not a priority for the WMA. At Rattlesnake Hill WMA, mountain biking is currently allowed on all roads and trails except the Finger Lakes Trail (see Recreation and Other Facilities Maps in Appendix N).

Public uses of WMA lands statewide are currently being reviewed, with particular attention to activities that are not dependent on wildlife and could potentially conflict with the primary uses of WMA lands (hunting, trapping, wildlife observation and fishing). If mountain biking, or other non-wildlife related recreation, is found to disturb wildlife habitat or interfere with wildlife-dependent recreation, they may be restricted.

Comment: To whom it may concern:

I would like to share my concern regarding the status of biking and hiking opportunities at Rattlesnake Hill WMA in Ossian NY.

I have been visiting this area on and off over the past 20 years. For the past 3 years, I have brought our local boy scout troop (Geneseo Troop 4070) there for an overnight in the lean to (with DEC reservations, key borrowing and such).

What I have seen over the last 3 years seems to be an escalation of road building activity that has tainted this once wild area for the worse. Once nice secluded hiking trails or single track has been bulldozed and changed into a wide swath of raised dirt/mud service road. These trails used to be idea for trail running, hiking or mountain biking. While these trails were not always maintained or clearly marked, they were utilized nonetheless. More recently however, these trails are unusable to the hiker, trail runner, or biker. It appears the single track has been widened and bulldozed or something to make way for logging trucks (or ATV's or snow mobiles). In any case, the trails are now 8 feet or more wide, WAY too muddy in most seasons (scouts go in late sept and trails were a mess). I am not aware of the DEC motives and plans for this area. I suspect access and logging are chief reasons for the road building. In any case, it is NOT condusive to enjoyable trail use by any means.

This wild area is a true gem in our area. NO where else in the county can church youth groups or scouts stay overnight in a secluded lean to. Very few places offer the potential for a large swath of wild land to be utilized for recreational pursuits such as biking, hiking, hunting, bird watching, horseback riding, or other activity. Keeping wild lands actually wild is what the focus for this parcel should be in my opinion. Widening existing roads to the point of making them suitable only to large motorized vehicles and unusable to human foot traffic is entirely the wrong direction.

Our scouts have had to curtail a number of hikes, or bike excursions due to the state of these once usable trails. Please keep what is currently left in the wild character it is. If further trail work is needed, keep the trails usable to FOOT traffic, mainly single track hike/bike trails. Wider road like surfaces are not suitable.

Thank you for taking the time and attention for these comments.

Sincerely
Paul Kreher

Assistant Scout Master
BSA Troop 4070 Geneseo, NY

Reply:

Permitted group camping at the Rattlesnake Hill WMA lean-to is intended to foster an appreciation of wildlife and wildlife-dependent recreation. The primary purpose of Rattlesnake Hill WMA is to provide high quality wildlife habitat that enhances wildlife populations while providing wildlife-dependent recreational opportunities. Some of the old roadways on Rattlesnake Hill WMA have recently been reopened to allow equipment access for habitat management purposes (timber harvest, wetland restoration, mowing, wildlife survey activities, etc,). Some of these roadways had not received significant maintenance in many years and had grown in, and will likely revert to that state in the future if not maintained for access. DEC's ability to understand and enhance wildlife habitat on the WMA requires access to various parts of the property. Haul roads on the WMA are gated to prevent unnecessary vehicular traffic that could disrupt wildlife or wildlife-dependent recreation. Although some non-wildlife dependent uses are allowed on these haul roads, such as hiking, biking, and horseback riding, these activities are secondary uses. There are currently no plans to create bike trails on the WMA, but they are allowed on existing roadways and trails. The remote and intact wild character of Rattlesnake Hill WMA is an important attribute of habitats on the property. This quality has persisted through decades of state management and is expected to continue.

Comment: On page 27 of the UMP paragraph 4 you stated that the North County National Scenic Trail is 3,200 miles long. It should be stated that it is 4,600 miles Long.

Thank you,
Peter Wybron
Finger Lakes Trail
Regional Trail Coordinator - Genesee East

Reply: The sentence has been corrected.

Comment: Livingston UMP Draft Plan

Please consider the following comments on the draft Livingston UMP:

I feel that the draft plan addresses most of our concerns to see that the Finger Lakes Trail (FLT) is designated as a hiking trail. We obviously would not favor sharing the FLT with mountain bikes, horses, or ATV's. The FLT is designed as a footpath only hiking trail and provides public access to Rattlesnake Hill WMA and provides recreational opportunities such as hiking, running, cross-country skiing, snow-shoeing and other approved natural activities. I would ask that your statements about the FLT which appear in the draft plan be included in the final document of the Livingston UMP, and that you strongly state that the FLT is a footpath only hiking trail. I would ask that you add a statement, on pages 27 & 107 of the draft plan, that the FLT is a hiking–only trail or that it is a footpath only hiking trail.

Thank you for the opportunity to comment on the Livingston UMP. I look forward to working in partnership with you in the future on projects to enhance the FLT and New York state lands.

Peter Wybron
Finger Lakes Trail Conference
Regional Trail Coordinator – Genesee East

Reply: The language regarding the Finger Lakes Trail has been edited to say that it is a foot-traffic only trail except where it overlaps with England Hill Road.

Comment:

1) Select site on state forest to establish a Big Tree Grove. Manage site to grow trees as big as possible. Most people don't know how big some trees can grow if given an opportunity and managed for that purpose.
2) On Ossian State Forest on road that turns off Scoville Rd and goes toward Hovey Gully there used to be a great scenic overlook, looking southwest toward Hovey Gully and Route 70. Trees have now grown up and obscured the view. Please consider removing trees to re-establish scenic overlook. The view was near the high point on that road. It was a wonderful view.

William Maracle
Dansville, NY 14437

Reply: While not called a "big tree grove", there are many locations on both State Forests and Wildlife Management Areas that have big trees, and will continue to have big trees until Mother Nature decides to kill them with a storm, old age, insect attack or fungus infestation. There are no planned hilltop scenic overlooks in this Unit. It is possible one would be temporarily created from a timber management action.

The creation of a scenic vista is not one of the actions of this plan, however timber management actions will occationally create temporary views.

Appendix B: Animals of the Livingston Unit

These are not intended to be all-inclusive lists, some animals will be missed, and some may no longer be found on these areas.

Species of Greatest Conservation Need (SGCN)

The State Wildlife Grants program provides funds for conservation efforts aimed at preventing fish and wildlife populations from declining, reducing the potential for these species to be listed as endangered. In order to access these grant funds, New York State was required to develop a State Wildlife Action Plan (SWAP) that focuses on the "species of greatest conservation need." This includes those species that are deemed rare, imperiled and those for which status has not been established. NYS DEC staff produced a list of 366 Species of Greatest Conservation Need (SGCN), of which 167 are High Priority SGCN. The list of species is certainly not exhaustive, but includes those species for which systematic assessments had been made by staff of the NYS DEC Division of Fish and Wildlife and the New York Natural Heritage Program. For further information on how the list was compiled, visit the web site www.dec.ny.gov/animals/7179.html which also has the entire list of species.

Birds

Based on information included in the 2000-2005 NYS Breeding Bird Atlas (BBA), eight atlas blocks overlap with the Livingston Unit (2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C). Within these blocks a total of 142 different species were observed. Of the observed birds, there was confirmed breeding of 88 species, probable breeding of 44 species, and possible breeding of 10 species. Of these species, 1 is NYS Endangered, 6 are NYS Threatened, 12 are NYS Special Concern species, 103 are protected, 17 are Game Species, and 3 are unprotected. In addition, 32 of these species are also listed as NYS Species of Greatest Conservation Need. For information about the BBA and to view data, visit the web site www.dec.ny.gov/animals/7312.html.

It should be noted that because the BBA blocks do not follow exactly the outline of the properties that make up the Livingston Unit, some of the birds identified during this effort would have been found adjacent to, but not within, the state land.

Map of Breeding Bird Atlas Blocks

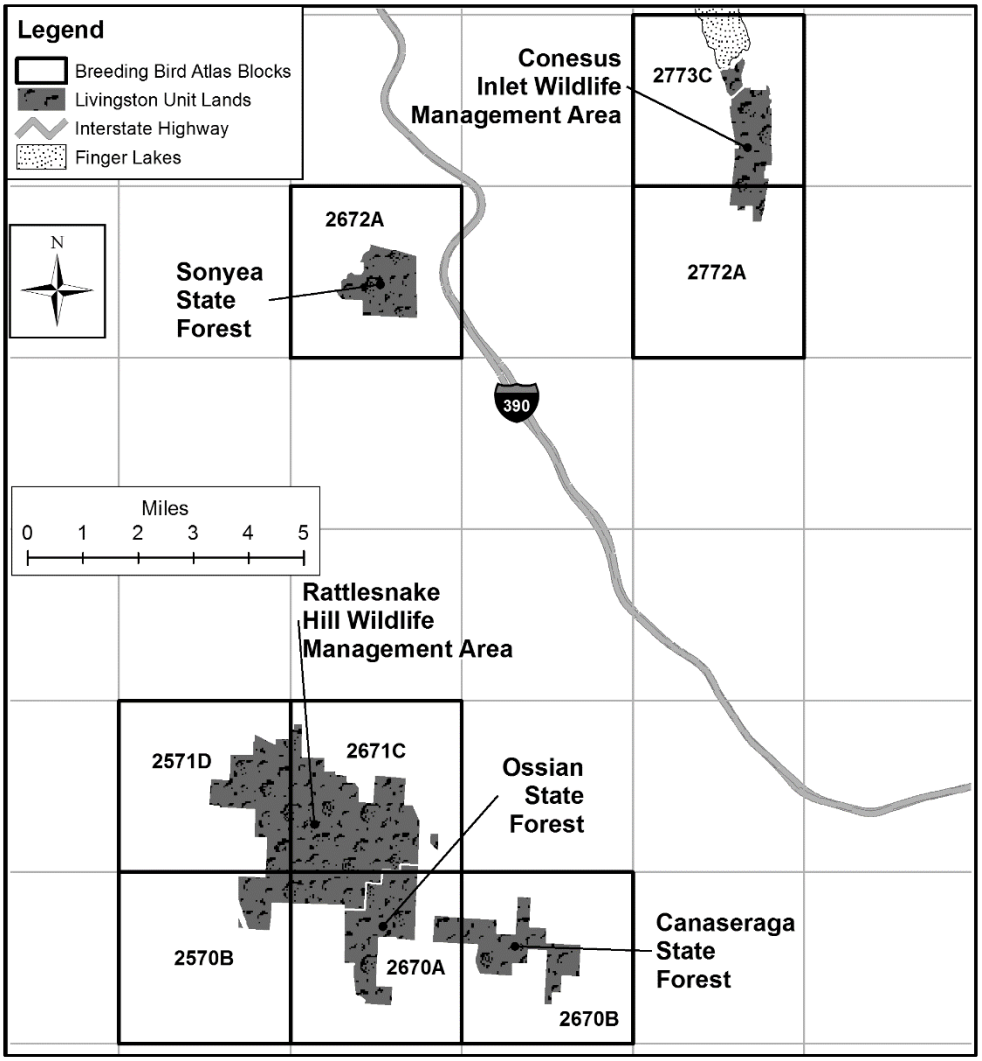


Table 1B: Birds

This is from the 2000-2005 NYS Breeding Bird Atlas blocks that overlap the properties that make up the Livingston Unit.

Common Name	Scientific Name	NY Legal Status	Block Numbers
Acadian Flycatcher	*Empidonax virescens*	Protected	2672A, 2773C
Alder Flycatcher	*Empidonax alnorum*	Protected	2570B, 2571D, 2670B, 2672A, S772A, 2773C
American Bittern	*Botaurus lentiginosus*	Special Concern	2772A, 2773C
American Black Duck	*Anas rubripes*	Game Species	2773C

Common Name	Scientific Name	NY Legal Status	Block Numbers
American Coot	*Fulica americana*	Game Species	2773C
American Crow	*Corvus brachyrhynchos*	Game Species	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
American Goldfinch	*Spinus tristis*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
American Kestrel	*Falco sparverius*	Special Concern	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
American Redstart	*Setophaga ruticilla*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
American Robin	*Turdus migratorius*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
American Woodcock	*Scolopax minor*	Game Species	2571D, 2671C, 2772A, 2773C
Bald Eagle	*Haliaeetus leucocephalus*	Threatened	2773C
Baltimore Oriole	*Icterus galbula*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Bank Swallow	*Riparia riparia*	Protected	2570B, 26571D, 2672A, 2772A, 2773C
Barn Swallow	*Hirundo rustica*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Barred Owl	*Strix varia*	Protected	2571D, 2670A, 2671C, 2773C
Belted Kingfisher	*Megaceryle alcyon*	Protected	2670B, 2672A, 2772A, 2773C
Black Tern	*Chlidonius niger*	Endangered	2773C
Black-and-white Warbler	*Mniotilta varia*	Protected	2570B, 2671C, 2773C
Black-billed Cuckoo	*Coccyzus erythropthalmus*	Protected	2670A, 2772A, 2773C
Blackburnian Warbler	*Setophaga fusca*	Protected	2670A, 2670B, 2671C, 2672A, 2773C
Black-capped Chickadee	*Poecile atricapillus*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Black-throated Blue Warbler	*Setophaga caerulescens*	Protected	2570B, 2670A
Black-throated Green Warbler	*Setophaga virens*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2773C
Blue Jay	*Cyanocitta cristata*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Blue-gray Gnatcatcher	*Polioptila caerulea*	Protected	2672A, 2772A, 2773C

Common Name	Scientific Name	NY Legal Status	Block Numbers
Blue-headed Vireo	*Vireo solitarius*	Protected	2571D, 2670A, 2670B, 2671C, 2772A, 2773C
Blue-winged Teal	*Anas discors*	Game Species	2773C
Blue-winged Warbler	*Vermivora pinus*	Protected	2570B, 2571D, 2671C, 2672A, 2772A, 2773C
Bobolink	*Dolichonyx oryzivorus*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Broad-winged Hawk	*Buteo platypterus*	Protected	2570B, 2571D, 2670A, 2670B, 2671C
Brown Creeper	*Certhia americana*	Protected	2570B, 2571D, 2670A, 2671C, 2773C
Brown Thrasher	*Toxostoma rufum*	Protected	2570B, 2571D, 2670B, 2671C, 2672A, 2772A, 2773C
Brown-headed Cowbird	*Molothrus ater*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Canada Goose	*Branta canadensis*	Game Species	2570B, 2571D, 2670B, 2671C, 2672A, 2772A, 2773C
Canada Warbler	*Cardellina canadensis*	Protected	2570B, 2670A, 2670B, 2671C, 2773C
Carolina Wren	*Thryothorus ludovicianus*	Protected	2670B, 2671C, 2672A, 2772A, 2773C
Cedar Waxwing	*Bombycilla cedrorum*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Cerulean Warbler	*Setophaga cerulea*	Special Concern	2571D, 2773C
Chestnut-sided Warbler	*Dendroica pensylvanica*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2772A, 2773C
Chimney Swift	*Chaetura pelagica*	Protected	2570B, 2670A, 2670B, 2672A, 2773C
Chipping Sparrow	*Spizella passerina*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Cliff Swallow	*Petrochelidon pyrrhonota*	Protected	2670B, 2672A, 2772A, 2773C
Common Grackle	*Quiscalus quiscula*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Common Moorhen	*Gallinula chloropus*	Game Species	2773C
Common Raven	*Corvus corax*	Protected	2670A, 2772A
Common Yellowthroat	*Geothlypis trichas*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C

Common Name	Scientific Name	NY Legal Status	Block Numbers
Cooper's Hawk	*Accipiter cooperii*	Special Concern	2670A, 2670B, 2672A, 2773C
Dark-eyed Junco	*Junco hyemalis*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Downy Woodpecker	*Picoides pubescens*	Protected	2570B, 2571D, 2672A, 2772A, 2773C
Eastern Bluebird	*Sialia sialis*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Eastern Kingbird	*Tyrannus tyrannus*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Eastern Meadowlark	*Sturnella magna*	Protected	2570B, 2571D, 2670B, 2671C, 2672A, 2772A, 2773C
Eastern Phoebe	*Sayornis phoebe*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Eastern Screech-Owl	*Megascops asio*	Protected	2672A, 2772A, 2773C
Eastern Towhee	*Pipilo erythrophthalmus*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Eastern Wood Peewee	*Contopus virens*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
European Starling	*Sturnus vulgaris*	Unprotected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Field Sparrow	*Spizella pusilla*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Golden-crowned Kinglet	*Regulus satrapa*	Protected	2671C
Grasshopper Sparrow	*Ammodramus savannarum*	Special Concern	2570B, 2571D, 2672A
Gray Catbird	*Dumetella carolinensis*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Great Blue Heron	*Ardea herodias*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Great Crested Flycatcher	*Myiarchus crinitus*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Great Horned Owl	*Bubo virginianus*	Protected	2671C, 2672A, 2772A, 2773C
Green Heron	*Butorides virescens*	Protected	2570B, 2670A, 2670B, 2672A, 2772A, 2773C
Hairy Woodpecker	*Picoides villosus*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Henslow's Sparrow	*Ammodramus henslowii*	Threatened	2570B

Common Name	Scientific Name	NY Legal Status	Block Numbers
Hermit Thrush	*Catharus guttatus*	Protected	2570B, 2670A, 2670B, 2671C, 2672A
Hooded Merganser	*Lophodytes cucullatus*	Game Species	2570B, 2672A, 2773C
Hooded Warbler	*Wilsonia citrina*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Horned Lark	*Eremophila alpestris*	Special Concern	2672A, 2772A, 2773C
House Finch	*Carpodacus mexicanus*	Protected	2570B, 2571D, 2670A, 2670B, 2672A, 2772A, 2773C
House Sparrow	*Passer domesticus*	Unprotected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
House Wren	*Troglodytes aedon*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2772A, 2773C
Indigo Bunting	*Passerina cyanea*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Killdeer	*Charadrius vociferus*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Least Bittern	*Ixobrychus exilis*	Threatened	2773C
Least Flycatcher	*Empidonax minimus*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2772A, 2773C
Long-eared Owl	*Asio otus*	Protected	2671C, 2773C
Louisiana Waterthrush	*Parkesia motacilla*	Protected	2571D, 2670B, 2671C, 2773C
Magnolia Warbler	*Dendroica magnolia*	Protected	2570B, 2670A, 2671C, 2772A, 2773C
Mallard	*Anas platyrhynchos*	Game Species	2570B, 2571D, 2670B, 2672A, 2772A, 2773C
Marsh Wren	*Cistothorus palustris*	Protected	2773C
Mourning Dove	*Zenaida macroura*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Mourning Warbler	*Geothlypis philadelphia*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2773C
Mute Swan	*Cygnus olor*	Protected	2570B
Northern Cardinal	*Cardinalis cardinalis*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Northern Flicker	*Colaptes auratus*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Northern Harrier	*Circus cyaneus*	Threatened	2570B, 2571D, 2670B, 2671C, 2773C

Common Name	Scientific Name	NY Legal Status	Block Numbers
Northern Mockingbird	*Mimus polyglottos*	Protected	2670B, 2672A, 2772A, 2773C
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Protected	2570B, 2670A, 2670B, 2672A, 2772A, 2773C
Northern Waterthrush	*Seiurus noveboracensis*	Protected	2570B, 2671C, 2772A, 2773C
Osprey	*Pandion haliaetus*	Special Concern	2772A
Ovenbird	*Seiurus aurocapilla*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Pied-billed Grebe	*Podilymbus podiceps*	Threatened	2570B, 2773C
Pileated Woodpecker	*Dryocopus pileatus*	Protected	2570B, 2571D, 2670A, 2670B, 2672A, 2772A, 2773C
Pine Warbler	*Setophaga pinus*	Protected	2670B
Prairie Warbler	*Setophaga discolor*	Protected	2570B, 2571D
Purple Finch	*Carpodacus purpureus*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2772A, 2773C
Purple Martin	*Progne subis*	Protected	2772A, 2773C
Red-bellied Woodpecker	*Melanerpes carolinus*	Protected	2570B, 2670B, 2672A, 2772A, 2773C
Red-breasted Nuthatch	*Sitta canadensis*	Protected	2570B, 2571D, 2670B, 2671C, 2672A, 2773C
Red-eyed Vireo	*Vireo olivaceus*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Red-headed Woodpecker	*Melanerpes erythrocephalus*	Special Concern	2773C
Red-shouldered Hawk	*Buteo lineatus*	Special Concern	2570B, 2670A, 2670B, 2773C
Red-tailed Hawk	*Buteo jamaicensis*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Red-winged Blackbird	*Agelaius phoeniceus*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Ring-necked Duck	*Aythya collaris*	Game Species	2773C
Ring-necked Pheasant	*Phasianus colchicus*	Game Species	2671C, 2672A, 2772A, 2773C
Rock Pigeon	*Columba livia*	Unprotected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C

Common Name	Scientific Name	NY Legal Status	Block Numbers
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	Protected	2570B, 2571D, 2670A, 2670B, 2672A, 2772A, 2773C
Ruby-throated Hummingbird	*Archilochus colubris*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2773C
Ruffed Grouse	*Bonasa umbellus*	Game Species	2571D, 2670B, 2671C, 2672A, 2772A, 2773C
Savannah Sparrow	*Passerculus sandwichensis*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Scarlet Tanager	*Piranga olivacea*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Sedge Wren	*Cistothorus platensis*	Threatened	2571D
Sharp-shinned Hawk	*Accipiter striatus*	Special Concern	2670B, 2671C, 2773C
Song Sparrow	*Melospiza melodia*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Sora	*Porzana carolina*	Game Species	2773C
Spotted Sandpiper	*Actitis macularius*	Protected	2672A, 2773C
Swamp Sparrow	*Melospiza georgiana*	Protected	2570B, 2670A, 2772A, 2773C
Tree Swallow	*Tachycineta bicolor*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Tufted Titmouse	*Baeolophus bicolor*	Protected	2570B, 2670A, 2670B, 2672A, 2772A, 2773C
Turkey Vulture	*Cathartes aura*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Veery	*Catharus fuscescens*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2772A, 2773C
Vesper Sparrow	*Pooecetes gramineus*	Special Concern	2672A, 2772A, 2773C
Virginia Rail	*Rallus limicola*	Game Species	2773C
Warbling Vireo	*Vireo gilvus*	Protected	2570B, 2571D, 2670A, 2671C, 2672A, 2772A, 2773C
White-breasted Nuthatch	*Sitta carolinensis*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Wild Turkey	*Meleagris gallopavo*	Game Species	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2773C
Willow Flycatcher	*Empidonax traillii*	Protected	2571D, 2670A, 2671C, 2672A, 2772A, 2773C

Common Name	Scientific Name	NY Legal Status	Block Numbers
Wilson's Snipe	*Gallinago delicata*	Game Species	2571D, 2772A, 2773C
Winter Wren	*Troglodytes hiemalis*	Protected	2570B, 2670A, 2671C
Wood Duck	*Aix sponsa*	Game Species	2570B, 2670A, 2670B, 2772A, 2773C
Wood Thrush	*Hylocichla mustelina*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Yellow Warbler	*Dendroica petechia*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2772A, 2773C
Yellow-bellied Sapsucker	*Sphyrapicus varius*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2772A, 2773C
Yellow-billed Cuckoo	*Coccyzus americanus*	Protected	2772A, 2773C
Yellow-breasted Chat	*Icteria virens*	Special Concern	2773C
Yellow-rumped Warbler	*Setophaga coronata*	Protected	2570B, 2571D, 2670A, 2670B, 2671C, 2672A, 2773C
Yellow-throated Vireo	*Vireo flavifrons*	Protected	2670B, 2672A, 2773C

Thanks to the New York State Breeding Bird Atlas for supplying Atlas data, and to the volunteer participants who gathered data for the project.

Table 2B: Bird Species of Greatest Conservation Need (SGCN)

Birds that were identified during the 2000-2005 Breeding Bird Atlas, on blocks that overlap with the properties of the Livingston Unit.

Common Name	Scientific Name	SGCN Level
American black duck	*Anas rubripes*	High Priority SGCN
Barn owl	*Tyto alba*	High Priority SGCN
Black Tern	*Chlidonias niger*	High Priority SGCN
Bobolink	*Dolichonyx oryzivorus*	High Priority SGCN
Brown thrasher	*Toxostoma rufum*	High Priority SGCN
Canada warbler	*Cardellina canadensis*	High Priority SGCN
Eastern meadowlark	*Sturnella magna*	High Priority SGCN
Grasshopper Sparrow	*Ammodramus savannarum*	High Priority SGCN
Henslow's Sparrow	*Ammodramus henslowii*	High Priority SGCN
Horned Lark	*Eremophila alpestris*	High Priority SGCN
Red-headed Woodpecker	*Melanerpes erythrocephalus*	High Priority SGCN
Sedge Wren	*Cistothorus platensis*	High Priority SGCN
Vesper Sparrow	*Pooecetes gramineus*	High Priority SGCN

Common Name	**Scientific Name**	**SGCN Level**
Yellow-breasted Chat	*Icteria virens*	High Priority SGCN
American Bittern	*Botaurus lentiginosus*	SGCN
American kestrel	*Falco sparverius*	SGCN
American woodcock	*Scolopax minor*	SGCN
Bald Eagle	*Haliaeetus leucocephalus*	SGCN
Black-billed cuckoo	*Coccyzus erythropthalmus*	SGCN
Black-throated blue warbler	*Setophaga caerulescens*	SGCN
Blue-winged warbler	*Vermivora pinus*	SGCN
Cerulean Warbler	*Dendroica cerulea*	SGCN
Least Bittern	*Ixobrychus exilis*	SGCN
Long-eared owl	*Asio otus*	SGCN
Louisiana waterthrush	*Parkesia motacilla*	SGCN
Northern Goshawk	*Accipiter gentilis*	SGCN
Northern Harrier	*Circus cyaneus*	SGCN
Pied-billed Grebe	*Podilymbus podiceps*	SGCN
Red-shouldered Hawk	*Buteo lineatus*	SGCN
Ruffed grouse	*Bonasa umbellus*	SGCN
Scarlet tanager	*Piranga olivacea*	SGCN
Wood thrush	*Hylocichla mustelina*	SGCN

Reptiles and Amphibians

Based on information presented in the 1990-2007 NYS Amphibian and Reptile Atlas Project (Herp Atlas Project, www.dec.ny.gov/animals/7140.html), 30 different species were found on or near the Livingston Unit. Of these reptile and amphibian species, five are Species of Greatest Conservation Need.

It should be noted that because the Herp Atlas blocks do not follow the exact outline of the properties in the Livingston Unit, some of the reptiles and amphibians identified during this effort will have been found adjacent to, but not within, the state land.

Map of Herp Atlas Project blocks

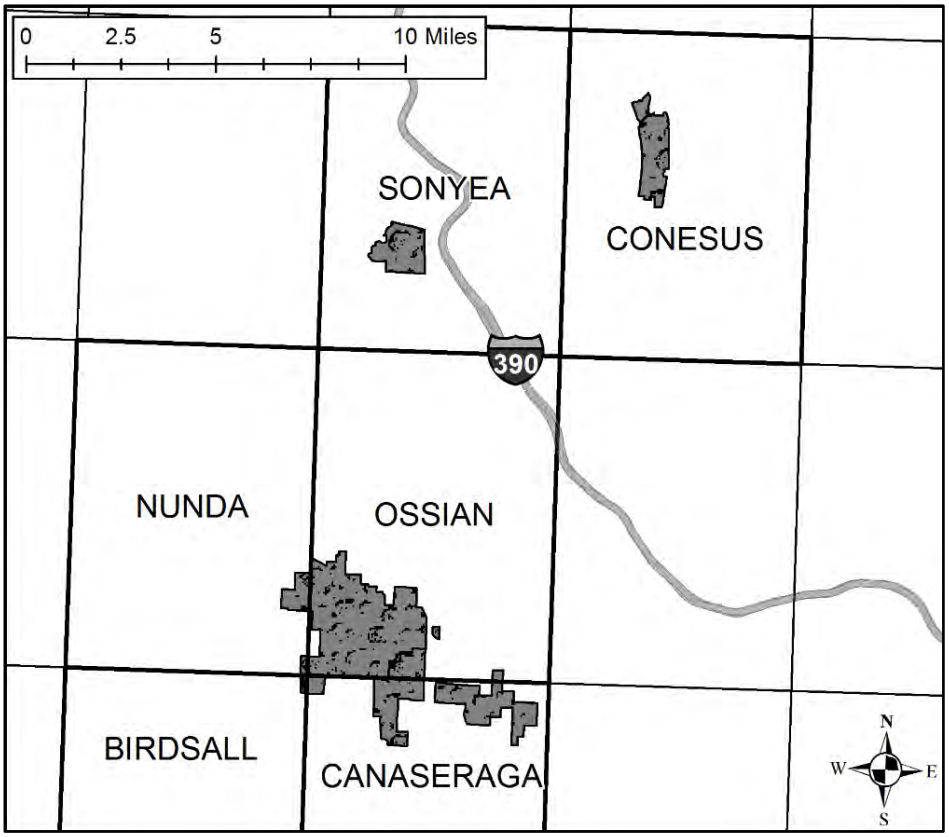


Table 3B: Reptiles and Amphibians

This list is summarized from the NYS Amphibian and Reptile Atlas, 1990-2007.

Common Name	Scientific Name	USGS Quad names
Allegheny dusky salamander	*Desmognathus ochrophaeus*	Nunda, Birdsall, Ossian, Canaseraga, Sonyea, Conesus
Blue-spotted x Jefferson complex	*Ambystoma laterala x jeffersonianum*	Nunda
Bullfrog	*Rana catesbiana*	Canaseraga, Conesus

Common Name	**Scientific Name**	**USGS Quad names**
Common gartersnake	*Thamnophis sirtalis*	Birdsall, Nunda, Ossian, Canaseraga, Sonyea, Conesus
Eastern American toad	*Bufo americanus*	Nunda, Ossian, Canaseraga, Birdsall, Sonyea
Eastern milksnake	*Lampropeltis triagulum*	Nunda, Canaseraga, Sonyea, Conesus
Eastern ribbonsnake	*Thamnophis sauritus*	Birdsall, Sonyea, Conesus
Gray treefrog	*Hyla versicolor*	Nunda, Sonyea
Green frog	*Rana clamitans*	Birdsall, Nunda, Ossian, Canaseraga, Sonyea, Conesus
Northern brownsnake	*Storeria dekayi*	Canaseraga, Conesus
Northern dusky salamander	*Desmognathus fuscus*	Nunda, Birdsall, Ossian, Canaseraga, Sonyea
Northern leopard frog	*Rana pipiens*	Ossian, Canaseraga, Birdsall, Sonyea, Conesus
Northern redback salamander	*Plethodon cinereus*	Ossian, Nunda, Canaseraga, Sonyea, Conesus
Northern red-bellied snake	*Storeria occiptomaculata*	Birdsall, Nunda, Ossian, Canaseraga, Sonyea, Conesus
Northern slimy salamander	*Plethodon glutinosus*	Nunda, Canaseraga, Sonyea, Conesus
Northern spring salamander	*Gyrinophilus porphyriticus*	Nunda, Ossian, Canaseraga, Birdsall
Northern two-lined salamander	*Eurycea bislineata*	Nunda, Ossian, Canaseraga, Birdsall, Sonyea, Conesus
Northern watersnake	*Nerodia sipedon*	Ossian, Birdsall, Conesus
Painted turtle	*Chrysemys picta*	Ossian, Canaseraga, Birdsall, Sonyea, Conesus
Pickerel frog	*Rana palustris*	Ossian, Canaseraga, Birdsall
Red-spotted newt	*Notophthalmus viridescens*	Nunda, Birdsall, Ossian, Canaseraga, Sonyea, Conesus
Ring-necked snake	*Diadophis punctatus*	Ossian, Nunda, Canaseraga
Smooth greensnake	*Opheodrys vernalis*	Ossian, Nunda, Canaseraga, Conesus
Snapping turtle	*Chelydra serpentia*	Birdsall, Canaseraga, Sonyea, Conesus
Spotted salamander	*Ambystoma maculatum*	Nunda, Birdsall, Ossian, Canaseraga, Sonyea
Spring peeper	*Pseudacris crucifer*	Birdsall, Nunda, Ossian, Canaseraga, Sonyea, Conesus
Timber rattlesnake	*Crotalus horridus*	Canaseraga
Wehrle's salamander	*Plethodon wehrlei*	Ossian, Canaseraga, Nunda

Common Name	Scientific Name	USGS Quad names
Western chorus frog	*Pseudacris triseriata*	Canaseraga, Ossian, Birdsall, Conesus
Wood frog	*Rana sylvatica*	Birdsall, Nunda, Ossian, Canaseraga, Sonyea

Table 4B: Reptile and Amphibian Species of Greatest Conservation Need

Reptiles and Amphibians identified within the 1990-2007 Herp Atlas on blocks that overlap with the Livingston Unit.

Common Name	Scientific Name	SGCN Level
Eastern ribbonsnake	*Thamnophis sauritus*	SGCN
Smooth greensnake	*Opheodrys vernalis*	SGCN
Snapping turtle	*Chelydra serpentia*	SGCN
Timber rattlesnake	*Crotalus horridus*	High Priority SGCN
Western chorus frog	*Pseudacris triseriata*	SGCN

Fish Species

Recent surveys include electrofishing on many small streams within the Unit and gill netting on Conesus Lake, Conesus Inlet, and South McMillian Creek. The following is a list of fish species within this unit management plan area. See also Table 1E: Streams (pg. 157) for additional information. It should be noted that this list may exclude some species that are present and omit species that are rare.

Table 5B: Fish Species by common name and scientific name:

Common Name	Scientific Name
Alewife	*Alosa pseudoharengus*
Northern pike	*Esox lucius*
Tiger Muskellunge	*E. lucius X E. masquinongy*
Common Carp	*Cyprinus carpio*
White sucker	*Catestomus commersoni*
Brown Bullhead	*Ameiurus nebulosus*
Rock bass	*Ambloplites rupestris*
Pumpkinseed	*Lepomis gibbosus*
Bluegill	*Lepomis macrochirus*
Smallmouth bass	*Micropterus dolomieu*
Largemouth bass	*Micropterus salmoides*
Black Crappie	*Pomoxis nigromaculatus*
Yellow perch	*Perca flavescens*

Common Name	Scientific Name
Walleye	*Sander vitreus*

Invertebrates

Based on information obtained from the New York State Dragonfly and Damselfly Survey (2005-2009), the New York State Natural Heritage Program, and Rattlesnake Hill WMA butterfly, damselfly and dragonfly surveys (1994 and 1996): 1 beetle species, 37 butterfly species, 16 damselfly species, 26 dragonfly species, and 2 species of moth were found in or near the Livingston Unit. Of these invertebrate species, one is a Species of Greatest Conservation Need.

It should be noted that due to the vast diversity of invertebrate species and the difficulty of effective comprehensive survey, this list only depicts a small portion of the invertebrate community on the Unit.

Table 6B: Invertebrates

Common Name	Scientific Name	Type	Sub-Unit(s)
Appalachian tiger beetle	*Cicindela ancocisconensis*	Beetle	Sonyea State Forest
Acadian hairstreak	*Satyrium acadia*	Butterfly	Rattlesnake Hill WMA
American lady	*Vanessa virginiensis*	Butterfly	Rattlesnake Hill WMA
Aphrodite fritillary	*Speyera aphrodite*	Butterfly	Rattlesnake Hill WMA
Banded hairstreak	*Satyrium calanus*	Butterfly	Rattlesnake Hill WMA
Cabbage white	*Pieris rapae*	Butterfly	Rattlesnake Hill WMA
Clouded sulphur	*Colias philodice*	Butterfly	Rattlesnake Hill WMA
Common checkered-skipper	*Pyrgus communis*	Butterfly	Rattlesnake Hill WMA
Common wood nymph	*Cercyonis pegala*	Butterfly	Rattlesnake Hill WMA
Compton tortoiseshell	*Nymphalis vau-album*	Butterfly	Rattlesnake Hill WMA
Dun skipper	*Euphyes vestris*	Butterfly	Rattlesnake Hill WMA
Eastern tailed blue	*Everes comyntas*	Butterfly	Rattlesnake Hill WMA
European skipper	*Thymelicus lineola*	Butterfly	Rattlesnake Hill WMA
Eyed brown	*Lethe eurydice*	Butterfly	Rattlesnake Hill WMA
Great spangled fritillary	*Speyeria cybele*	Butterfly	Rattlesnake Hill WMA
Harris's checkerspot	*Chlosyne harrisii*	Butterfly	Rattlesnake Hill WMA
Least skipper	*Ancyloxypha numitor*	Butterfly	Rattlesnake Hill WMA
Leonard's skipper	*Hesperia leonardus*	Butterfly	Rattlesnake Hill WMA
Little glassywing	*Ponperius verna*	Butterfly	Rattlesnake Hill WMA
Little wood satyr	*Megisto cymela*	Butterfly	Rattlesnake Hill WMA
Meadow fritillary	*Boloria bellona*	Butterfly	Rattlesnake Hill WMA
Milbert's tortoiseshell	*Aglais milberti*	Butterfly	Rattlesnake Hill WMA

Common Name	Scientific Name	Type	Sub-Unit(s)
Monarch	*Danaus plexippus*	Butterfly	Rattlesnake Hill WMA
Mourning cloak	*Nymphalis antiopa*	Butterfly	Rattlesnake Hill WMA
Northern broken dash	*Wallengrenia egeremet*	Butterfly	Rattlesnake Hill WMA
Northern pearly eye	*Lethe anthedon*	Butterfly	Rattlesnake Hill WMA
Orange sulphur	*Colias eurytheme*	Butterfly	Rattlesnake Hill WMA
Pearl crescent	*Phyciodes tharos*	Butterfly	Rattlesnake Hill WMA
Peck's skipper	*polites peckius*	Butterfly	Rattlesnake Hill WMA
Question mark	*Polygonia interrogationis*	Butterfly	Rattlesnake Hill WMA
Red-spotted purple	*Limentis arthemis astyanax*	Butterfly	Rattlesnake Hill WMA
Red admiral	*Vanessa atalanta*	Butterfly	Rattlesnake Hill WMA
Spicebush swallowtail	*Papilio troilus*	Butterfly	Rattlesnake Hill WMA
Spring azure	*Celestrina ladon*	Butterfly	Rattlesnake Hill WMA
Tiger swallowtail	*Papilio glaucus*	Butterfly	Rattlesnake Hill WMA
Viceroy	*Limenitis archippus*	Butterfly	Rattlesnake Hill WMA
White admiral	*Limentis arthemis arthemis*	Butterfly	Rattlesnake Hill WMA
West Virginia white	*Pieris virginiensis*	Butterfly	Ossian State Forest & Rattlesnake Hill WMA
Amber-winged spreadwing	*Lestes eurinas*	Damselfly	Rattlesnake Hill WMA
Aurora damsel	*Chromagrion conditum*	Damselfly	Rattlesnake Hill WMA
Blue-tipped dancer	*Argia tibialis*	Damselfly	Sonyea State Forest
Eastern forktail	*Ischnura verticalis*	Damselfly	Conesus Inlet WMA & Rattlesnake Hill WMA
Eastern red damsel	*Amphiagrion saucium*	Damselfly	Rattlesnake Hill WMA
Ebony jewelwing	*Calopteryx maculata*	Damselfly	Rattlesnake Hill WMA
Elegant spreadwing	*Lestes inaequalis*	Damselfly	Rattlesnake Hill WMA
Emerald spreadwing	*Lestes dryas*	Damselfly	Rattlesnake Hill WMA
Fragile forktail	*Ischnura posita*	Damselfly	Rattlesnake Hill WMA
Hagen's bluet	*Enallagma hageni*	Damselfly	Rattlesnake Hill WMA
Marsh bluet	*Enallagma ebrium*	Damselfly	Rattlesnake Hill WMA
Northern spreadwing	*Lestes disjunctus*	Damselfly	Rattlesnake Hill WMA
Sedge sprite	*Nehalennia irene*	Damselfly	Rattlesnake Hill WMA
Skimming bluet	*Enallagma geminatum*	Damselfly	Rattlesnake Hill WMA
Spreadwing damselfly	*Lestes rectangularis*	Damselfly	Rattlesnake Hill WMA
Sweetflag spreadwing	*Lestes forcipatus*	Damselfly	Rattlesnake Hill WMA
Band-winged meadowhawk	*Sympetrum semicinctum*	Dragonfly	Rattlesnake Hill WMA

Common Name	Scientific Name	Type	Sub-Unit(s)
Beaverpond clubtail	*Gomphus borealis*	Dragonfly	Rattlesnake Hill WMA
Black-tipped darner	*Aeshna tuberculifera*	Dragonfly	Rattlesnake Hill WMA
Blue dasher	*Pachydiplax longipennis*	Dragonfly	Conesus Inlet WMA & Rattlesnake Hill WMA
Calico pennant	*Celithemis elisa*	Dragonfly	Rattlesnake Hill WMA
Chalk-fronted corporal	*Ladona julia*	Dragonfly	Rattlesnake Hill WMA
Cherry-faced meadowhawk	*Sympetrum internum*	Dragonfly	Rattlesnake Hill WMA
Common baskettail	*Epitheca cynosura*	Dragonfly	Rattlesnake Hill WMA
Common whitetail	*Plathemis lydia*	Dragonfly	Rattlesnake Hill WMA
Crimson-ringed whiteface	*Leucorrhinia glacialis*	Dragonfly	Rattlesnake Hill WMA
Delta-spotted spiketail	*Cordulegaster diastatops*	Dragonfly	Rattlesnake Hill WMA
Dot-tailed whiteface	*Leucorrhinia intacta*	Dragonfly	Rattlesnake Hill WMA
Dusky clubtail	*Gomphus spicatus*	Dragonfly	Rattlesnake Hill WMA
Eastern pondhawk	*Erythemis simplicicollis*	Dragonfly	Conesus Inlet WMA & Rattlesnake Hill WMA
Four-spotted chaser	*Libellula quadrimaculata*	Dragonfly	Rattlesnake Hill WMA
Frosted whiteface	*Leucorrhinia frigida*	Dragonfly	Rattlesnake Hill WMA
Green darner	*Anax junius*	Dragonfly	Rattlesnake Hill WMA
Hudsonian whiteface	*Leucorrhinia hudsonica*	Dragonfly	Rattlesnake Hill WMA
Lilypad clubtail	*Arigomphus furcifer*	Dragonfly	Rattlesnake Hill WMA
Painted skimmer	*Libellula semifasciata*	Dragonfly	Rattlesnake Hill WMA
Ruby meadowhawk	*Sympetrum rubicundulum*	Dragonfly	Conesus Inlet WMA
Twelve-spotted skimmer	*Libellula pulchella*	Dragonfly	Rattlesnake Hill WMA
Unicorn clubtail	*Arigomphus villosipes*	Dragonfly	Rattlesnake Hill WMA
Widow skimmer	*Libellula luctuosa*	Dragonfly	Rattlesnake Hill WMA
White-faced meadowhawk	*Sympetrum obtrusum*	Dragonfly	Conesus Inlet WMA
Yellow-legged meadowhawk	*Sympetrum vicinum*	Dragonfly	Conesus Inlet WMA
Ctenucha Moth	*Ctenucha sp.*	Moth	Rattlesnake Hill WMA
Hummingbird moth	*Hemaris sp.*	Moth	Rattlesnake Hill WMA

Table 7B: Invertebrate Species of Greatest Conservation Need

Common Name	Scientific Name	SGCN Level
Appalachian tiger beetle	*Cicindela ancocisconensis*	High Priority SGCN

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Burger, M.F. and J.M. Liner. 2005. Important Bird Area of New York: Habitats Worth Protecting. 2nd Ed. Audubon New York, Albany, NY. 352 pp.

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New York State Amphibian and Reptile Atlas Project Interim Report [Internal Data]. 1990 - 2007. Albany (New York): New York State Department of Environmental Conservation.

White, Erin L., Jeffrey D. Corser, and Matthew D. Schlesinger. 2010. The New York dragonfly and damselfly survey 2005-2009: Distribution and status of the odonates of New York. New York Natural Heritage Program, Albany, New York. 424 pp.

Appendix C: Taxes paid on NYS DEC Lands

Additional information is included in the Taxes section (pg. 16) and History of the Livingston Unit section (pg. 11).

Real Property Tax Law 532 establishes that certain State owned land categories pay all appropriate taxes assessed to those lands as if they were privately owned without improvements. For additional information refer to www.state.ny.us, click on 'state laws' in the bottom right corner of the webpage, scroll down and click on Real Property Tax and navigate to Article 5, Title 2 for more information on RPTL 532. See also Taxes section on page 16 for further information.

State Land	Town	County	Tax Parcel	Acres*	Estimated Taxes Paid in 2014
Canaserasga State Forest	Ossian	Livingston	224.00-01-17.00	84.9	$102,588
			224.00-01-06.00	587.17	
			224.00-01-05.00	218.50	
			225.00-01-06.00	184.00	
			225.00-01-09.00	154.70	
Ossian State Forest	Ossian	Livingston	220.00-01-01.00	381.20	
			223.00-01-03.00	117.90	
			223.00-01-02.00	238.04	
			223.00-01-05.00	104.30	
			223.00-01-06.00	49.60	
			223.00-01-09.00	251.90	
Sonyea State Forest	West Sparta	Livingston	146.00-01-01.00	309.70	$14,296
	Mount Morris	Livingston	133.00-01-33.00	124.65	$1,118
			133.00-01-11.00	3.30	
	Groveland	Livingston	134.00-01-03.00	487.18	$16,605
Rattlesnake Hill WMA	Nunda	Livingston	209.00-01-24.00	2118.80	None
	Ossian		210.00-01-20.00	1451.20	
	Grove	Allegany	011.00-01-04.00	1242.12	
			011.00-01-09.00	154.27	
			011.00-01-01.00	26.42	
Conesus Inlet WMA	Conesus	Livingston	119.00-01-17.00	1023.80	None
			110.00-01-47.11	48.50	$7,150
			110.00-01-47.20	81.60	None

*All acreage is taken from the respective tax rolls. The listed acreage (particularly in the case of State Forest properties), probably will not total to the figure given in other published sources.

Appendix D: Facilities

Table 1D: Facilities

	Canaserasga SF	Ossian SF	Sonyea SF	Rattlesnake Hill WMA	Conesus Inlet WMA
Public Forest Access Rd	4.0 miles	2.1 miles	0.8 miles	1.7 miles	0.3 miles
Haul Road	-	0.9 miles	-	9.4 miles	0.2 miles
Access Trails	-	0.2 miles	0.3 miles	2.5 miles	-
Right-of-Way	-	-	-	-	0.2 acres off of East Swamp rd.
Gates	-	3	2	12	3
Unpaved Parking lots	3	2	4	16	14
Facility ID Signs	3	3	-	5	5
Kiosks	-	-	-	2	5
Finger Lakes Trail Hiking Trail	-	-	-	2.0 miles	-
Multiple Use Trails	-	-	1.5 mile of Genesee Valley Greenway 1.3 miles of Keshequa Gorge 2.8 total miles	12.3 miles	2.0 miles
Designated Snowmobile Trail	-	-	-	4.8 miles	-
MAPPWD Routes (pg. 29)	-	-	-	9.7 miles	1.0 miles
Boundary Line	10.8 miles	8.4 miles	5.4 miles	20.6 miles	9.3 miles
Constructed Pond	-	4 ponds	2 ponds	34 ponds	22 ponds

	Canaserasga SF	**Ossian SF**	**Sonyea SF**	**Rattlesnake Hill WMA**	**Conesus Inlet WMA**
Water Control Structure	-	4	-	10	7
Dikes	-	0.2 miles	-	2.5 miles	2.7 miles
Wildlife Viewing Platforms and Boardwalks	-	-	-	1	6
Other	1 deer exclosure	1 hand boat launch 2 fire rings 3 picnic tables	Canal and Railroad remnants 1 Anti-Invasive plant & boot-brush sign	1 Lean-to 1 pit privy	1 paved ADA path - The Fish Walk 1 hand boat launch 1 vehicle ford
Bird Houses / Bat Boxes	2	2	-	36	12+
Bridge	-	-	-	-	2 (foot bridges)
Primitive Campsite	2	6	5	2 (by permit only, organized groups only)	0

Table 2D: Summary of All Facilities on the Livingston Unit Management Plan Area

	Unit total
Public Forest Access Rd	8.8 miles
Haul Road	10.5 miles
Access Trails	3.0 miles
Right-of-Way	0.2 acres
Gates	20
Unpaved Parking lots	37
Facility ID Signs	16
Kiosks	7
Finger Lakes Trail Hiking Trail	2.0 miles
Multiple Use Trails	17.1 miles
Designated Snowmobile Trail	4.8 miles
MAPPWD Routes (pg. 29)	10.7 miles
Boundary Line	54.5 miles
Constructed Ponds	62 ponds
Water Control Structure	10
Dikes	5.4 miles
Wildlife Viewing Platforms and Boardwalks	7
Other	(see above)
Bird Houses / Bat Boxes	52
Bridge	2
Primitive Campsite	12

Appendix E: Water Resources

Table 1E: Streams

WIN - Watershed Index Number: Numbering system used by NYSDEC to identify individual streams/ponds/lakes. (PA- water flows to Pennsylvania, Ont – water flows to Lake Ontario)

Water Classifications:

1) Class AA- A source of water supply for drinking, culinary or food processing purposes; primary and secondary contact recreation; and fishing
2) Class AA(T)-Same as Class AA plus it is designated as trout waters
3) Class C - Fishing and any other usages except for bathing or as a source of water supply for drinking, culinary, or food processing purposes.
4) Class C(T) - Same as Class C plus it is designated as trout waters
5) Class C(TS) - Same as Class C plus waters are suitable for trout spawning

Name	**WIN**	**Perennial/ Intermittent**	**Class**	**Fisheries Resource**
Black Creek	ONT 117-66-30	1.3	C	Dace
Bennett Creek	ONT 117-66-32	0.2	C	Intermittent
Tributaries of Bennett Creek	ONT 117-66-32-1-1	0.5	C	Intermittent
	ONT 117-66-32-1-1-2	0.3	C	Intermittent
	ONT 117-66-32-1a	0.2	C	Intermittent
	ONT 117-66-32-1a-1	0.8	C	Intermittent
	ONT 117-66-39	0.4	C	Intermittent
Tributary of Sugar Creek	ONT 117-66-28-6	1.2	C	Intermittent
Keshequa Creek	ONT 117-66-3	1.5	A	SMB*, Minnows
Tributary of Keshequa Creek	ONT 117-66-3-1a	0.1	C	Intermittent
Twomile Creek	ONT 117-66-8-3	0.8	C	Unknown
Tributary of Twomile Creek	ONT 117-66-8-3-1a	1.1	C	Intermittent

Name	WIN	Perennial/ Intermittent	Class	Fisheries Resource
Canaseraga Creek	ONT 117-66	0.5	C(TS)	Brown Trout
Tributaries of Canaseraga Creek	ONT 117-66-47	1.8	C	Intermittent
	ONT 117-66-47a	0.5	C	Intermittent
	ONT 117-66-47-1	0.8	C	Intermittent
	ONT 117-66-48	1.0	C	Intermittent
	ONT 117-66-48-a	0.8	C	Intermittent
	ONT 117-66-48-a-1	0.5	C	Intermittent
	ONT 117-66-49	0.6	C	Intermittent
	ONT 117-66-49a	0.1	C	Intermittent
	ONT 117-66-P5392-P104-2	0.3	C	Intermittent
	ONT 117-66-P5392-P104-2-1	0.2	C	Intermittent
Hovey Gully	ONT 117-66-41	4.1	C(T)	Brook Trout
Tributaries of Hovey Gully	ONT 117-66-41-2	0.5	C	Intermittent
	ONT 117-66-41-2-2	0.3	C	Intermittent
	ONT 117-66-41-4	0.8	C	Intermittent
	ONT 117-66-41-5	0.9	C	Intermittent
	ONT 117-66-41-5a	1.0	C	
Sugar Creek	ONT 117-66-28	0.3	C	Brown Trout
Tributaries of Sugar Creek	ONT 117-66-28-7	1.4	C	Minnows (?), Intermittent above T2
	ONT 117-66-28-7-1a	0.7	C	Intermittent
	ONT 117-66-28-7-2	0.8	C	Intermittent
	ONT 117-66-28-7-2-a	0.5	C	Intermittent
	ONT 117-66-28-7-3	0.6	C	Intermittent
	ONT 117-66-28-9	0.7	C	Intermittent
	ONT 117-66-28-9-5	0.1	C	Intermittent
Conesus Inlet	ONT 117-40-P67-10	2.8	C	Walleye, Northern Pike, Suckers, Minnow, Bluegills

Name	WIN	Perennial/ Intermittent	Class	Fisheries Resource
South McMillan Creek	ONT 117-40-P67-10-2	0.5		Walleye, Suckers

Short portions of Tributaries 26, 2c, 2d, 3, 3c, 3d, 3h, 3g, 3f, 3e, 3a, 2i, 2g, 2f and 2e of Conesus Inlet enter the WMA upstream from the large NYS DEC earthen dike near the north end of the area.

Table 2E: Impounded Waters

Property	Name	Fisheries Index Number (FIN #)	Acres on property
Canaseraga SF			0.0
Conesus Inlet WMA	East Swamp Road Impoundment #1		7.6
	East Swamp Road Impoundment #2		0.3
	East Swamp Road Impoundment #3		0.4
	East Swamp Road Impoundment #4		0.1
	East Swamp Road Impoundment #5		0.2
	East Swamp Road Impoundment #6		0.1
	East Swamp Road Impoundment #7		0.9
	East Swamp Road Impoundment #8		0.6
	East Swamp Road Impoundment #9		0.1
	Giltner Road Impoundment #1		17.9
	Giltner Road Impoundment #2		1.1
	Route 256 Impoundment #1		0.7
	Route 256 Impoundment #2		6.3
	Route 256 Impoundment #3		0.3
	Route 256 Impoundment #4		0.3
	Sliker Hill Road Impoundment #1		408.9
	Sliker Hill Road Impoundment #2		1.7
	Sliker Hill Road Impoundment #3		3.9
	Sliker Hill Road Impoundment #4		0.8
	Spawning Marsh #1		5.0
	Spawning Marsh #2		2.5
	Spawning Marsh #3		1.7
Ossian SF	Evergreen Pond	ONT-117-66-41-2-P5334	5.4
	Paradox Pond		1.4
	Truck Trail to Nowhere Impoundment		0.4
	Boundary Cut Impoundment #1		0.5

Property	Name	Fisheries Index Number (FIN #)	Acres on property
Rattlesnake Hill WMA	Cromwell Road Impoundment #1		0.4
	Cromwell Road Impoundment #2		0.04
	Cromwell Road Impoundment #3		0.1
	Dannack Hill Road Impoundment #1	ONT-117-66-41-P5537	0.6
	Dannack Hill Road Impoundment #2 (Trout Pond 2)	ONT-117-66-41-P5224	1.5
	Dannack Hill Road Impoundment #3 (Trout Pond 1)	ONT-117-66-28-7-P5225	1.2
	Dannack Hill Road Impoundment #4		1.3
	Ebert Road Impoundment #1		0.5
	Ebert Road Impoundment #2		1.3
	Ebert Road Impoundment #3		1.7
	Ebert Road Impoundment #4		0.5
	Ebert Road Impoundment #5		3.0
	Ebert Road Impoundment #6		8.5
	Ebert Road Impoundment #7	ONT-117-66-28-7-2-A-P5223	1.1
	England Hill Road Impoundment #1	ONT-117-66-47-1-P5222	0.9
	England Hill Road Impoundment #2		0.4
	England Hill Road Impoundment #3		2.8
	England Hill Road Impoundment #4		12.6
	England Hill Road Impoundment #5	ONT-117-P5216	14.8
	England Hill Road Impoundment #6		2.8
	England Hill Road Impoundment #7	ONT-117-66-41-5-P5217	12.3
	England Hill Road Impoundment #8		0.2
	England Hill Road Impoundment #9		0.3
	Jeep Trail Impoundment #1		0.03
	Jeep Trail Impoundment #2		0.9
	Jeep Trail Impoundment #3		0.9
	Jeep Trail Impoundment #4		0.3
	Jeep Trail Impoundment #5		0.1
	Jeep Trail Impoundment #6		0.7
	Jeep Trail Impoundment #7	ONT-117-66-28-7-1A-P5226	1.2
	Memorial Highway Impoundment #1		0.1
	Route 70 Impoundment #1 (Swain Pond)	ONT-117-66-P104	12.1
	Walsworth Road Impoundment #1		0.6
Sonyea SF			0.0

Table 3E: National Wetlands Inventory by NYS DEC Property

Further information on the classification code for each wetland type can be found at http://107.20.228.18/decoders/wetlands.aspx.

Property	Wetland Type	Classification Code	Acres on property
Canaseraga SF	None	None	0
Ossian SF	Palustrine, forested/shrub	PFO4/1E	13.0
		PFO4E	7.2
		PSS1E	1.7
	Palustrine, emergent	PEM1E	0.4
		PEM1B	0.9
	Palustrine, freshwater pond	PUBHh	5.2
		PUBFb	1.5
Sonyea SF	Palustrine, forested/shrub	PFO1A	21.3
		PSS1A	1.4
		PSS1E	0.3
	Palustrine, freshwater pond	PUBHh	0.3
Conesus Inlet WMA	Palustrine, forested/shrub	PFO1/EM1E	20.2
		PFO1C	32.2
		PFO1E	309.6
		PFO4E	12.4
		PSS1/EM1C	10.7
		PSS1/FO1E	17.0
		PSS1A	4.0
		PSS1E	3.1
	Palustrine, emergent	PEM1/FO1E	140.1
		PEM1/SS1E	86.4
		PEM1C	4.5
		PEM1Cd	41.3
		PEM1E	73.8
		PEM1F	0.1
	Palustrine, freshwater pond	PUBFh	1.2
		PUBFx	0.9
		PUBHh	2.0
	Lacustrine, lake	L1UBH	0.3
Rattlesnake Hill WMA	Palustrine, forested/shrub	PFO1A	10.3
		PFO1E	18.2
		PFO4E	7.0
		PSS1/EM1E	2.4
		PSS1/FO1E	0.8

Property	Wetland Type	Classification Code	Acres on property
		PSS1B	4.7
		PSS1E	6.0
		PSS1F	0.6
		PSS1Fh	0.7
	Palustrine, emergent	PEM1/SS1F	9.5
		PEM1E	22.3
		PEM1F	14.3
		PEM1Fh	2.4
	Palustrine, freshwater pond	PUBF	4.1
		PUBFh	6.0
		PUBFx	3.9
		PUBH	0.5
		PUBHh	12.6

Appendix F: Vegetation Management

See also maps on Appendix N: Maps, page 206 and Timber and Vegetation and Timber and Vegetation Management starting on pages 38 and 74. The Habitat Management Plans for Rattlesnake WMA and Conesus Inlet WMA will have additional details on habitat management for those properties.

A stand is a group of plants with similar characteristics that are analyzed and treated as a single unit. Each property is divided into one or more compartments, and each compartment divided into stands. Compartments are given a letter designation, and stands a number. This letter-number combination is used for tracking, mapping and planning the actions and activities that happen in and on NYS DEC owned land.

The following table list the anticipated period of time for bidding out the start of the treatment of these stands. Many factors can influence the actual start date for these events, including, but not limited to; staff time and other resources, invasive insect or plant issues, weather, local/regional/worldwide markets, and deer or other animal populations. Most, but not all, of these will be sold in sales of more than one stand, and most will take more than one year to plan, sell, and cut.

These lists only include commercial sales of timber; they do not include any non-commercial treatments for any stands. Non-commercial means that the trees are too small to sell for profit. As a result, the work must be done by trained staff, trained volunteers, or through a procurement contract paid for by NYS DEC. When people and/or money to contract the work becomes available, stands will be evaluated, starting with the ones in the seedling-sapling and pole timber sizes.

Abbreviation	Definition
SS	Seedling/sapling size - A stand with an average D.B.H. of 0 to 5 inches.
PT	Poletimber size - A stand with an average D.B.H. of 6 to 11 inches.
ST	Sawtimber size - A stand with an average D.B.H. of 12 inches or larger.
AA	All-aged cut - To continue, or encourage, a forest stand to contain trees of two or more age classes. Both regenerating and thinning at the same time.
Regen	Regeneration -To reestablish a forest stand with tree seedlings. Cut styles that do this include; clearcut or overstory removal cut (one cut removes all the overstory trees); or a Shelterwood or Seed tree Cut (one or more cuts to get sunlight on the ground before the final cut). This indicates the first entry; later cuts will be timed based on the growth response of the vegetation. Depending on type of cut and the size of the area treated additional SEQR may be required.
Thin	Thinning - An intermediate cut to encourage faster growth.
Protection	An area which requires special management considerations. (Special cutting regimen, no treatment, short rotation, or long rotation.) See Page 81.
No Access	Inadequate access to treat, if access improves treatment may (or may not) be scheduled.

Tables 1F: Canaseraga SF

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
A	1	30	Plantation	ST	Regen	
A	2	4	Hardwood	ST	Protection	
A	3	30	Con Natural	ST		Thin
A	4	22	Con Natural	ST		Thin
A	5	9	Plantation	PT		
A	6	23	Plantation	ST		Regen
A	7	28	Hardwood	SS		
A	8	14	Plantation	PT		
A	9	5	Hardwood	PT		
A	10	34	Con Natural	ST	AA	
A	11	44	Hardwood	ST	AA	
A	12	6	Hardwood	SS		
A	13	9	Plantation	ST		
A	14	6	Plantation	PT		
A	711	7	Other		Other (roads, etc.)	
A	910	1	Pond		Wetland or pond	
B	1	31	Hardwood	ST		Thin
B	2	17	Con Natural	PT		
B	3	17	Hardwood	ST		
B	4	3	Plantation	PT		
B	5	5	Hardwood	SS		
B	6	8	Con Natural	ST	Thin	
B	7	12	Hardwood	ST		
B	8	96	Hardwood	ST	Thin	
B	9	57	Con Natural	ST	AA	
B	10	43	Con Natural	ST	AA	
B	11	7	Plantation	ST		Regen
B	12	21	Plantation	ST		Regen
B	13	15	Hardwood	PT		
B	14	21	Plantation	ST		Regen
B	15	33	Plantation	PT	Thin	
B	16	12	Plantation	ST	Thin	
B	17	19	Plantation	ST		
B	18	10	Plantation	PT		
B	19	55	Con Natural	ST	AA	
B	20	26	Plantation	ST		
B	21	31	Plantation	SS		
B	22	38	Hardwood	PT		
B	23	9	Plantation	ST		
B	24	8	Plantation	ST		
B	25	14	Con Natural	PT		AA

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
B	26	18	Hardwood	PT		AA
B	27	7	Hardwood	PT		
B	28	13	Plantation	ST		Regen
B	29	14	Con Natural	PT	Protection	
B	711	27	Other		Other (roads, etc.)	
B	712	1	Other		Other (roads, etc.)	
C	1	7	Hardwood	ST		AA
C	2	15	Plantation	PT		
C	3	2	Plantation	PT		
C	4	18	Hardwood	PT		
C	8	33	Hardwood	PT		
C	10	34	Hardwood	PT		
C	11	16	Hardwood	PT		
C	12	48	Hardwood	PT		
C	13	69	Con Natural	ST		Thin
C	14	16	Hardwood	ST		Thin
C	15	6	Hardwood	PT		
C	16	3	Hardwood	PT		
C	17	12	Hardwood	ST		
C	18	10	Hardwood	PT		
C	19	17	Plantation	ST		
C	740	2	Other		Other (roads, etc.) & Protection	
C	950	2	Grassland/Shrubland		No action	
C	951	15	Grassland/Shrubland		No action	

Canaseraga SF	Acres by Ave. Tree Diameter Size Class				Total (Acres)	% of Total
Vegetative Type	0-5 in	6-11 in	12+ in	Other		
Natural Forest Hardwood	39	251	239		529	41.17%
Natural Forest Conifer/Conifer Hardwood*	0	45	318		363	28.25%
Plantation	31	92	215		338	26.30%
Wetland (Forest)	0	0	0		0	0.00%
Wetland (open/emergent and/or shrub)				0	0	0.00%
Ponds				1	1	0.08%
Open/Brush				17	17	1.32%
Other (Road, ROW, Parking, etc.)				37	37	2.88%
Total (Acres)	70	388	772	55	1,285	
% of Total	5.45%	30.19%	60.08%	4.28%		

Tables 2F: Ossian SF

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
A	1	42	Plantation	SST		
A	2	65	Hardwood	PT		
A	3	26	Plantation	SST		
A	4	35	Plantation	SST		
A	5	22	Con Natural	PT	Protection	
A	6	18	Con Natural	PT		
A	7	42	Hardwood	ST	Thin	
A	8	7	Hardwood	ST		
A	9	30	Plantation	SST		
A	10	5	Con Natural	SST		
A	11	47	Hardwood	ST		Thin
A	12	19	Hardwood	PT		
A	13	21	Plantation	SST		
A	14	106	Con Natural	SST	Thin	
A	15	20	Hardwood	ST		
A	16	16	Hardwood	PT		
A	17	16	Hardwood	ST		
A	18	12	Hardwood	PT		
A	19	11	Plantation	SST	Thin	
A	20	48	Con Natural	PT		
A	711	12	Other		Other (roads, etc.)	
A	910	2	Pond		Wetland or pond	
A	911	2	Pond		Wetland or pond	
A	912	7	Pond		Wetland or pond	
A	913	7	Pond		Wetland or pond	
A	914	10	Pond		Wetland or pond	
B	1	16	Con Natural	SST		
B	2	28	Plantation	SST		
B	3	15	Plantation	SST		
B	4	38	Hardwood	ST		AA
B	5	28	Plantation	PT		
B	6	10	Hardwood	ST		Thin
B	7	17	Hardwood	PT		
B	8	36	Con Natural	SST		
B	9	9	Plantation	SST		
B	10	32	Hardwood	ST		AA
B	12	19	Con Natural	SST		AA
B	13	15	Plantation	SST		Thin
B	14	29	Hardwood	PT		
B	15	16	Hardwood	PT		
B	16	29	Hardwood	ST		

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
B	17	18	Con Natural	PT		
B	18	72	Hardwood	PT		
B	19	49	Hardwood	PT		
B	20	12	Plantation	PT		
B	21	52	Hardwood	PT		
B	22	27	Hardwood	PT		
B	23	26	Con Natural	PT	Protection	
B	24	7	Hardwood	PT		
B	25	3	Hardwood	PT		
B	26	23	Hardwood	PT		
B	711	6	Other		Other (roads, etc.)	
B	930	6	Wetland		Wetland or pond	
B	931	7	Wetland		Wetland or pond	

Ossian SF	Acres by Ave. Tree Diameter Size Class				Total (Acres)	% of Total
Vegetative Type	0-5 in	6-11 in	12+ in	Other		
Natural Forest Hardwood	0	407	241		648	50.1%
Natural Forest Conifer/Conifer Hardwood*	0	132	182		314	24.3%
Plantation	0	40	232		272	21.0%
Wetland (Forest)	0	0	0		0	0.0%
Wetland (open/emergent and/or shrub)				13	13	1.0%
Ponds				28	28	2.2%
Open/Brush				0	0	0.0%
Other (Road, ROW, Parking, etc.)				18	18	1.4%
Total (Acres)	0	579	655	59	1,293	
% of Total	0.0%	44.8%	50.7%	4.6%		

Tables 3F: Sonyea SF

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
A	1	37	Con Natural	ST		
A	2	66	Hardwood	ST	Protection – No Access	
A	3	14	Hardwood	ST	Protection – No Access	
A	4	19	Hardwood	PT		Thin
A	5	20	Hardwood	ST		
A	6	8	Hardwood	PT		

Com-partment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
A	7	153	Hardwood	ST	Regen	
A	8	50	Hardwood	PT		
A	9	17	Con Natural	ST		
A	10	59	Hardwood	ST		
A	11	50	Hardwood	ST	Thin	Regen
A	12	16	Hardwood	PT		
A	13	19	Hardwood	PT		
A	14	27	Hardwood	PT		
A	15	52	Hardwood	ST		
A	16	7	Plantation	ST		
A	17	47	Hardwood	ST	Protection – No Access	
A	18	7	Hardwood	ST		
A	19	4	Hardwood	SS		
A	21	77	Hardwood	ST	Thin	Regen
A	22	30	Hardwood	PT		
A	711	20	Other		Other (roads, etc.)	
A	740	1	Other		Other (roads, etc.)	
A	910	20	Pond		Wetland or pond	
A	911	1	Pond		Wetland or pond	
A	940	79	Grassland/Shrubland		Mow, cut or burn	
A	950	26	Grassland/Shrubland		Mow, cut or burn	

Sonyea SF	Acres by Ave. Tree Diameter Size Class				Total (Acres)	% of Total
Vegetative Type	0-5 in	6-11 in	12+ in	Other		
Natural Forest Hardwood	4	169	545		718	77.54%
Natural Forest Conifer/Conifer Hardwood*	0	0	54		54	5.83%
Plantation	0	0	7		7	0.76%
Wetland (Forest)	0	0	0		0	0.00%
Wetland (open/emergent and/or shrub)				0	0	0.00%
Ponds				21	21	2.27%
Open/Brush				105	104	11.34%
Other (Road, ROW, Parking, etc.)				21	21	2.27%
Total (Acres)	4	169	606	147	926	
% of Total	0.43%	18.25%	65.44%	15.87%		

Tables 4F: Rattlesnake Hill WMA

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
A	1	18	Plantation	ST		thin
A	2	12	Hardwood	ST		
A	3	8	Hardwood	PT		
A	4	17	Hardwood	ST		
A	5	36	Plantation	ST		thin
A	6	19	Hardwood	PT		
A	7	7	Hardwood	PT		
A	8	17	Hardwood	PT		
A	9	19	Hardwood	PT		
A	10	51	Plantation	ST		thin
A	11	5	Hardwood	ST		
A	12	7	Hardwood	ST		
A	13	6	Hardwood	PT		
A	711	11	Other		Other (roads, etc.)	
A	910	1	Pond		Wetland or pond	
A	940	3	Grassland/Shrubland		Mow, cut or burn	
A	950	8	Grassland/Shrubland		Mow, cut or burn	
B	1	44	Con Natural	PT		
B	2	29	Hardwood	PT		
B	3	21	Con Natural	ST	Protection	
B	4	19	Hardwood	PT		
B	5	27	Plantation	ST		
B	6	11	Hardwood	PT		
B	7	16	Hardwood	PT		
B	8	10	Hardwood	PT		
B	11	53	Plantation	ST		thin
B	12	47	Hardwood	PT		
B	13	7	Hardwood	PT		
B	14	30	Hardwood	ST		
B	15	36	Hardwood	PT		
B	711	6	Other		Other (roads, etc.)	
B	910	1	Pond		Wetland or pond	
B	940	20	Grassland/Shrubland		Mow, cut or burn	
C	1	21	Plantation	ST		
C	2	9	Hardwood	PT		
C	3	9	Hardwood	ST		
C	4	57	Plantation	ST		thin
C	5	8	Hardwood	PT		
C	6	133	Hardwood	ST	Protection	
C	7	50	Con Natural	PT		
C	8	50	Hardwood	ST		regen

Com-partment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
C	9	33	Hardwood	PT		4 ac. regen
C	10	14	Plantation	ST		thin
C	11	11	Con Natural	PT		
C	12	6	Hardwood	PT		
C	13	9	Hardwood	PT		
C	14	9	Hardwood	ST		
C	15	13	Hardwood	ST		
C	16	7	Hardwood	ST		
C	910	3	Pond		Wetland or pond	
C	940	4	Grassland/Shrubland		Mow, cut or burn	
C	950	3	Grassland/Shrubland		Mow, cut or burn	
D	1	16	Plantation	ST		thin
D	2	19	Hardwood	ST		
D	3	9	Hardwood	PT		
D	4	5	Plantation	ST		
D	5	10	Hardwood	PT		
D	6	11	Hardwood	ST		
D	7	9	Hardwood	ST		
D	8	6	Hardwood	ST		
D	9	7	Con Natural	ST		
D	10	17	Plantation	ST	regen	
D	11	8	Hardwood	ST		
D	12	6	Hardwood	PT		
D	13	25	Hardwood	ST		
D	14	15	Plantation	PT		
D	15	15	Plantation	ST		
D	16	17	Hardwood	PT		
D	17	24	Con Natural	ST		
D	18	11	Con Natural	ST		
D	19	32	Hardwood	ST		
D	20	41	Hardwood	SS		
D	21	35	Hardwood	PT		
D	22	18	Hardwood	PT		
D	23	15	Hardwood	PT		
D	24	11	Plantation	ST		
D	25	7	Hardwood	SS		
D	26	35	Hardwood	SS		
D	27	58	Con Natural	ST	Protection	
D	28	7	Plantation	ST	regen	
D	29	9	Plantation	ST		
D	30	11	Con Natural	PT		
D	31	8	Plantation	ST		
D	32	23	Hardwood	ST		

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
D	33	16	Hardwood	PT		
D	34	14	Hardwood	SS		
D	35	10	Plantation	PT		
D	36	6	Hardwood	SS		
D	37	33	Con Natural	ST		
D	38	10	Hardwood	ST		
D	39	8	Plantation	ST	Protection	
D	40	6	Hardwood	PT		
D	41	17	Plantation	ST		
D	42	4	Hardwood	ST		
D	43	9	Hardwood	SS		
D	44	19	Plantation	PT		
D	45	40	Hardwood	ST		
D	46	7	Plantation	ST	regen	
D	47	13	Hardwood	SS		
D	48	9	Hardwood	PT		
D	710	2	Other		Other (roads, etc.)	
D	711	14	Other		Other (roads, etc.)	
D	910	2	Pond		Wetland or pond	
D	920	16	Wetland		Wetland or pond / Protection	
D	940	10	Grassland/Shrubland		Mow, cut or burn	
D	950	14	Grassland/Shrubland		Mow, cut or burn	
D	951	21	Grassland/Shrubland		Mow, cut or burn	
E	1	29	Hardwood	PT		
E	2	19	Hardwood	PT		
E	3.1	10	Hardwood	SS		
E	3.2	10	Plantation	ST		
E	4	107	Hardwood	ST		
E	5	87	Hardwood	ST	Protection	
E	6	163	Hardwood	ST	60 ac. regen	100 ac. regen
E	7	69	Hardwood	ST	Protection	
E	8	29	Hardwood	ST		
E	9	9	Hardwood	ST		
E	10	39	Hardwood	ST		
E	11	10	Hardwood	ST		
E	710	2	Other		Other (roads, etc.)	
E	910	3	Pond		Wetland or pond	
E	911	21	Pond		Wetland or pond	
E	930	7	Wetland		Wetland or pond	
E	940	3	Grassland/Shrubland			
E	941	28	Grassland/Shrubland			
E	950	4	Grassland/Shrubland			
F	1	22	Hardwood	PT		

Com-partment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
F	2	17	Plantation	PT		
F	3	17	Plantation	ST		
F	4	45	Plantation	ST		
F	5	33	Hardwood	ST		
F	6	19	Hardwood	PT		
F	7	6	Hardwood	SS		
F	8	31	Hardwood	SS		
F	9	23	Hardwood	ST	Protection	
F	10	14	Plantation	ST	regen	
F	11	18	Hardwood	ST		
F	12	17	Plantation	ST		
F	13	18	Hardwood	ST	Protection	
F	14	14	Con Natural	ST	Protection	
F	15	15	Plantation	ST		
F	16	35	Con Natural	ST	Protection	
F	17	59	Hardwood	ST	Protection	
F	18	79	Hardwood	ST		
F	19	242	Hardwood	PT		
F	20	5	Hardwood	PT		
F	710	2	Other		Other (roads, etc.)	
F	711	9	Other		Other (roads, etc.)	
F	712	2	Other		Other (roads, etc.)	
F	910	2	Pond		Wetland or pond	
F	911	6	Pond		Wetland or pond	
F	920	13	Wetland		Wetland or pond	
F	921	6	Wetland		Wetland or pond	
F	940	8	Grassland/Shrubland		Mow, cut or burn	
G	1	232	Plantation	ST	Protection	
G	2	179	Hardwood	ST		regen
G	3	17	Hardwood	ST		
G	4	13	Plantation	PT	regen	
G	5	10	Hardwood	PT		
G	6	8	Hardwood	ST		
G	7	7	Hardwood	PT	Protection	
G	8	25	Hardwood	ST	Protection	
G	9	11	Hardwood	ST		regen
G	711	2	Other		Other (roads, etc.)	
G	910	1	Pond		Wetland or pond	
G	930	17	Wetland		Wetland or pond	
G	931	15	Wetland		Wetland or pond	
G	932	17	Wetland		Wetland or pond	
H	1	22	Plantation	ST	regen	
H	2	61	Hardwood	PT		

Com-partment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
H	3	31	Hardwood	ST		
H	4	185	Hardwood	PT	Protection	
H	5	118	Hardwood	ST		
H	711	3	Other		Other (roads, etc.)	
H	910	1	Pond		Wetland or pond	
H	930	15	Wetland		Wetland or pond	
H	940	5	Grassland/Shrubland		Mow, cut or burn	
I	1	31	Con Natural	PT		
I	2	35	Hardwood	PT		
I	3	16	Plantation	ST		
I	4	43	Hardwood	SS		
I	5	7	Hardwood	PT		
I	6	19	Plantation	ST		
I	7	28	Hardwood	PT		
I	8	21	Plantation	ST	regen	
I	9	6	Hardwood	PT		
I	10	13	Plantation	ST		
I	11	73	Plantation	PT	29 ac. regen	
I	12	6	Hardwood	PT		
I	13	30	Plantation	PT		
I	14	25	Plantation	ST		
I	15	13	Plantation	ST		
I	16	9	Con Natural	PT		
I	17	10	Plantation	ST		
I	18	8	Hardwood	ST		
I	19	6	Hardwood	PT		
I	20	8	Hardwood	PT		
I	21	14	Hardwood	PT		
I	22	46	Plantation	ST	thin	
I	23	10	Hardwood	PT		
I	24	15	Hardwood	ST		
I	25	6	Con Natural	ST		
I	26	12	Hardwood	ST	regen	
I	27	9	Hardwood	PT	regen	
I	28	10	Plantation	ST	thin	
I	29	58	Hardwood	ST	Protection	
I	30	5	Plantation	PT		
I	31	22	Hardwood	ST		
I	32	8	Hardwood	PT		
I	33	27	Hardwood	ST		
I	34	19	Hardwood	PT		
I	35	21	Hardwood	PT		
I	711	6	Other		Other (roads, etc.)	

Com-partment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
I	910	2	Pond		Wetland or pond	
I	930	5	Wetland		Wetland or pond	
I	940	36	Grassland/Shrubland			
I	950	4	Grassland/Shrubland			
J	1	8	Hardwood	PT		
J	2	13	Hardwood	ST	Protection	
J	711	1	Other		Other (roads, etc.)	
J	950	9	Grassland/Shrubland		Mow, cut or burn	

Rattlesnake Hill WMA	Acres by Ave. Tree Diameter Size Class				Total (Acres)	% of Total
Vegetative Type	0-5 in	6-11 in	12+ in	Other		
Natural Forest Hardwood	215	1,241	1,766		3,222	63.11%
Natural Forest Conifer/Conifer Hardwood*	0	156	209		365	7.15%
Plantation	0	182	942		1,124	22.02%
Wetland (Forest)	0	0	0		0	0.00%
Wetland (open/emergent and/or shrub)				111	111	2.15%
Ponds				43	43	0.83%
Open/Brush				180	180	3.53%
Other (Road, ROW, Parking, etc.)				60	60	1.18%
Total (Acres)	215	1,579	2,917	394	5,105	
% of Total	4.21%	30.93%	57.14%	7.72%		

Tables 5F: Conesus Inlet WMA

Com-partment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
A	1	36	Forested Wetland	PT	Wetland or pond	
A	2	71	Wetland		Wetland or pond	
A	3	9	Forested Wetland	PT	Wetland or pond	
A	4	32	Forested Wetland	PT	Wetland or pond	
A	5	28	Forested Wetland	ST	Wetland or pond	
A	7	186	Forested Wetland	PT	Wetland or pond	
A	8	24	Hardwood	ST		regen
A	9	6	Forested Wetland	PT	Wetland or pond	
A	10	9	Forested Wetland	PT	Wetland or pond	
A	11	10	Forested Wetland	PT	Wetland or pond	

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
A	12	6	Hardwood	PT		regen
A	711	16	Other		Other (roads, etc.)	
A	712	3	Other		Other (roads, etc.)	
A	723	5	Other		Other (roads, etc.)	
A	910	171	Pond		Wetland or pond	
A	920	118	Wetland		Wetland or pond	
A	921	183	Wetland		Wetland or pond	
A	940	217	Grassland/Shrubland		40 Acres in Agricultural Agreement, 117acres in the Wildlife Habitat Incentive Program. Remainder Mow, cut or burn	
A	950	11	Grassland/Shrubland		Mow, cut or burn	

Conesus Inlet WMA	Acres by Ave. Tree Diameter Size Class				Total (Acres)	% of Total
Vegetative Type	0-5 in	6-11 in	12+ in	Other		
Natural Forest Hardwood	0	6	24		30	2.63%
Natural Forest Conifer/Conifer Hardwood*	0	0	0		0	0%
Plantation	0	0	0		0	0%
Wetland (Forest)	0	288	28		316	27.70%
Wetland (open/emergent and/or shrub)				372	372	32.60%
Ponds				171	171	14.99%
Open/Brush				228	228	19.98%
Other (Road, ROW, Parking, etc.)				24	24	2.10%
Total (Acres)	0	294	52	795	1,141	
% of Total	0%	25.77%	4.56%	69.68%		

Table 6F: Summary of Timber and Vegetation Management for this Planning Period

See also maps on Appendix N: Maps, page 233 and Timber and Vegetation, and Timber and Vegetation Management, starting on pages 38 and 74.

Management Action		**Total Number of Stands**	**Total Acres**	**Percent of Land Area**
Even Aged Silviculture	Regenerate	26	970	9.9%
	Thin/Intermediate cut	27	995	10.2%
All Aged Silviculture	Stand Entry	11	339	3.5%
Grassland/Shrubland Openings	Mow, cut or burn		285	2.9%
	Ag. Agreement		157	1.6%
	No Action		17	0.2%
	Create		120	1.2%
	Total	62	2,883	29.5%

Appendix G: Glossary

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

Acronym - A word formed by combining the initial letters of a multipart name, such as NATO from North Atlantic Treaty Organization or by combining the initial letters or parts of a series of words, such as radar from radio detecting and ranging.

All-Aged - A forest containing trees of two or more age classes.

Allegheny Hardwoods - Composed primarily of black cherry, white ash, and tulip poplar. May contain lesser amounts of sugar maple, beech, red maple, red oak and basswood.

Allowable cut - The amount of wood fiber that may be harvested annually or periodically for a specified area over a stated period in accordance with the objectives of management.

Alluvium - Clay, silt, sand, gravel or similar material deposited by running water.

Anticlinal - Rock layers that are folded so that the layers are inclined away from each other (like the legs of a capital A).

Basal Area - The cross sectional area of a tree at breast height, measured in square feet. (Forestry Handbook, 2nd Edition, 1984, p.287) For a stand: the total basal area per unit of area, usually expressed as square feet per acre. (Silvicultural Systems for the Major Forest Types of the United States@, USDA Ag. Hndbk. #445, 1973, p.103)

Bedrock - Hard lithified or consolidated rock units that underlie the unconsolidated or partially-consolidated surface (geology) sediments and soils deposited during recent sedimentation and glacial sedimentation.

Best Management Practices (BMP) - Practices and techniques that control erosion of soil or other contaminants from the site.

Board Foot - A piece of lumber 1 inch thick, 12 inches wide and 1 foot long, or its equivalent.

Buffer Strips - A strip of vegetation used to protect sensitive areas from soil erosion and siltation.

Canadian Shield - the stable portion or nucleus of the North American continent, primarily igneous and metamorphic rocks, located primarily in northeastern Canada, Michigan, Wisconsin and Minnesota.

Clast - A fragment of rock

Classified Water Bodies - A system whereby water bodies are protected under Environmental Conservation Law.

Clearcut - The removal of a forest overstory. This practice is done in preparation of the reestablishment of a new forest through regeneration. One form of even aged management.

Climax Forest – A plant community that is dominated by trees representing the last stage of succession for that specific locality and environment. It is a relatively stable and undisturbed plant community that has evolved through major stages and adapted to its environment. See also Old Growth Forest, but with potential for more evidence of human disturbance

Conifer - Needle bearing trees.

Conifer Stand - A forest stand containing 50% or more conifer species.

D.B.H. - (diameter at breast height) - The diameter of a tree at roughly breast height or 4.5 feet from the ground.

Defoliated - Complete, or almost complete removal of leaves from a living tree.

Dip - The angle that strata (rock layers) or planar features deviate from horizontal.

Dug-Out - A 500 square foot by 3 feet deep pot hole constructed of earth and containing water.

Early Successional Forest - Trees and brush that grow after disturbance such as plowing, fire or clearcut. Common species include grass, raspberries/black berries, white pine, aspen, red maple, black cherry, birch etc.

Early Successional Wildlife Species - Animal species which require early vegetative stages such as grass, brush, aspen.

Ecological Diversity - The number of species living in an ecosystem.

Ecological Subzone - A geographic area containing fauna and flora which are adapted to that particular area.

EcoRegion – (Ecological Region) - NYS DEC is using the The Nature Conservancy definition of an area of ecological homogeneity, which are defined by similarities in soil, physiography, climate, hydrology, geology and vegetation.

Ecosystem - A complex of living organisms and their environment.

Element Rank - Communities and rare species are the mapping units or "elements" of the Heritage inventory. Each community and species element is assigned and "element rank" consisting of a combined global and state rank. The global rank reflects the rarity of the element throughout the world and the state rank reflects the rarity within New York State (The Nature Conservancy 1982). Global ranks for communities are not currently standardized by

The Nature Conservancy, so the ranks listed in the community descriptions are estimated global ranks. (Ecological Communities of New York State. Carol Reschke, 1990).

Emergent – a class of wetlands that are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants. All water regimes are included except subtidal and irregularly exposed. These areas are often further described by subclasses, such as “persistent”, “nonpersistent”, etc.

Endangered - Native plants (and animals) in danger of extinction throughout all or a significant portion of their ranges within the state and requiring remedial action to prevent such extinction (NYCRR Title 9 Part 193.3)

Erosion - To wear away by the action: water, wind, or ice.

Even Aged - A forest in which all of the trees are essentially the same age.

Faulting - a fracture or crack that has had movement parallel to the fracture's surface

Fluvial - pertaining to sediments deposited by stream or river actions

Fragipan - An impervious subsurface soil layer (sometimes known as “hardpan”) which restricts rooting and internal soil drainage.

Glacier- a large mass of ice and snow that is moving on the land's surface

Hardwood Forest - A forest stand in which each of the two predominant species by percent is a hardwood.

Hardwoods – Broad leafed trees.

Haul roads - Are permanent, unpaved roads but are not designed for all-weather travel. They are constructed primarily for the removal of forest products and provide only limited access within the Unit. Public motor vehicle use is not allowed, but pedestrian travel is encouraged. All administrative roads are gated and warning signs are posted. The standards for these roads are those of Class C roads as provided for in the Forest Road Handbook.

Herbaceous Opening - A non-forest vegetative type consisting of grasses and forbs.

Homocline - geologic structure that is dipping or inclined in one direction and at the same angle of inclination

Initialism - An abbreviation consisting of the first letter or letters of words in a phrase (for example, IRS for Internal Revenue Service), syllables or components of a word (TNT for trinitrotoluene), or a combination of words and syllables (ESP for extrasensory perception) and pronounced by spelling out the letters one by one rather than as a solid word.

Intermediate cut – Thinning cut that extracts salable trees from an area and that are aimed primarily at controlling the growth of stands through adjustments in stand density.

Kame - a short ridge, hill, or mound of stratified glacial deposits

Lacustrine - sediments deposited in association with the processes within a lake

Lacustrine Wetland – (Federal wetland designation) includes wetlands and deep-water habitats with all of the following characteristics: (1) situated in a topographic depression or a dammed river channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% aerial coverage; and (3) total area exceeds 8 ha (20 acres). Similar wetland and deep-water habitats totaling less than 8 ha are also included in the Lacustrine System if an active wave-formed or bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 m (6.6 feet) at low water. Lacustrine waters may be tidal or nontidal, but ocean derived salinity is always less than 0.5 %.

Large Coarse Woody Debris - The accumulation of dead woody material, both standing and fallen, which occurs in a forest stand.

Lean-To - A small, open fronted, log shelter used for overnight camping.

Legacy Plantation - The CCC, and later work crews, established a legacy of sound stewardship on state forest land through the planting of millions of trees. Where possible, NYS DEC will designate some plantations to help carry on this legacy. Although no living creature lives forever, these plantations would be grown beyond economic maturity and maintained for as long as possible. Every effort will be made to not deliberately regenerate these stands, although thinning to improve the health of the trees will occasionally occur.

Linements - linear trends of weakness or fractures in the earth's crust

Log Landing - An area to which logs are skidded and then loaded for removal.

MCFGPD - thousand cubic feet of gas per day

Moraine - sediment that is accumulated due to the actions of a glacier

Multiple Use - A management philosophy by which many uses are derived for a specific land area.

Natural Regeneration - The regrowth of a forest stand by natural means.

Natural Forest - A forest established by natural regeneration.

Natural Forest Conifer/Conifer Hardwood Forest - A forest stand in which total percent of all conifer species is 33%, or more, of the total for the stand.

No Entry / No Surface Occupancy Lease - A lease to explore and develop underground mineral resources without any surface disturbance. Above ground facilities and equipment to remove mineral resources must be located off the subject property.

Northern Hardwoods - Largely composed of sugar maple, American beech, yellow birch, and hemlock. These species are generally long-lived and may adapt to all-aged management.

Oak Opening - a globally rare plant community, also known as an oak savannah. The community is composed of native prairie grasses and associated plants usually surrounded by oak/hickory forests. Oak Openings are maintained by periodic burning. Historically, fires were set by Native Americans or caused by lightning strikes. Oak Openings can be variable in size, from just an acre to several thousand-acre complexes.

Off - Site - The species are growing (or at least have been planted) where these species would not ordinarily be found, due to unfavorable site conditions.

Old-Growth Forest - 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 - The upper portion of a community of plants, the canopy of the trees in a forest.

Palustrine Wetland – (Federal wetland designation) includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 %. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2 m at low water; and (4) salinity due to ocean-derived salts less than 0.5 %

Pioneer Hardwood - Early Successional trees that are hardwood, such as black cherry, white birch, red maple and aspen.

Plantation - A forest established by planting.

Pole Sized - A young tree with a D.B.H. of 6 to 11 inches.

Pre-Commercial - To do a stand treatment when the trees are too small to sell for profit, requiring the payment of someone to do the work.

Prescribed Fire - The intentional setting of forest or grass land on fire under carefully controlled conditions to achieve a vegetative or wildlife management goal adhering to a written and approved prescribed fire burn plan.

Protection Management/Forest - An area which requires special management considerations. (Special cutting regimen, short rotation, long rotation, or no treatment.)

Public Forest Access Roads - Are constructed and maintained to accommodate motor vehicle traffic, they are permanent, unpaved roads. They may be designed for all-weather use depending on their location and surfacing. These roads provide primary access within a Unit. The standards for these roads are those of the Class A and Class B access roads as provided for in the Forest Road Handbook.

Rare Plants - Native plants that have from 20 to 35 extant sites or 3,000 to 5,000 individuals statewide. (NYCRR Title 9 Part 193.3)

Regeneration - To reestablish a forest stand with tree seedlings. The act of replacing old trees, either naturally or artificially. Also refers to the new growth that develops.

Riverine Wetland – (Federal wetland designation) includes all wetlands and deep-water habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) habitats with water containing ocean-derived salts in excess of 0.5 ‰. A channel is “an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water”.

Rotation - The length of time between the establishment and the harvest of a forest stand.

Salvage cut – The harvest of dead, dying, damaged or deteriorating trees primarily to put the wood to use before it becomes worthless.

Sawtimber Sized - A tree with a D.B.H. of 12 inches or greater.

Seedling/Sapling Sized - A young tree with a D.B.H. of less than 6 inches.

Selective Harvesting - Removal of the mature timber, usually the oldest or largest trees.

Shade Intolerant - Tree species that require full sunlight to survive past the seedling stage.

Shade Tolerant - Tree species that can survive in the shade cast by older trees.

Sidetrack Well - An inclined well that is drilled from a predetermined depth within an existing well

Site - A group of features (such as slope, aspect, soil type, etc.) which characterize a given area of land.

Silviculture - The establishment, development, care, and reproduction of forest stands.

Softwoods - Needle bearing trees, conifers

Species Diversity - The occurrence of a variety of plants and animals.

Stand - A group of plants with similar characteristics that are treated as a single unit in a management plan.

Stand Analysis - A systematic method of evaluating stands to determine the need for treatment.

Stand Treatment - Work done in a stand which is directed towards the management of the stand.

State Forest - Lands owned by the state of New York and administered by the Department of Environmental Conservation which are managed for the establishment and maintenance of forests for watershed protection, the production of timber, and for recreation and kindred purposes.

Stratigraphic - The layering and sequence of mapable rock units.

Succession - The gradual supplanting of one community of plants and animals by another.

Surficial - Of, or relating to, the surface.

Sustained Yield - The maintenance of a continuous flow of a particular product.

Synclinal - Rock layers that are folded so that the layers are inclined towards each other (like the letter V)

Thinning cut – Intermediate cut that extracts salable trees from an area and that are aimed primarily at controlling the growth of stands through adjustments in stand density.

Till - Unstratified glacial deposits consisting of clay, sand, gravel, and boulders

Temporary Revocable Permit (TRP) - Authority for the issuance of temporary use permits is provided by 3-0301 of the ECL. Permits may be granted for the temporary use of state land by the public within stated guidelines and legal constraints so as to protect the state lands and their resources.

Top Lopping - The cutting of limbs from the tops of felled trees to reduce fire danger and improve visibility. On state forests top lopping of conifers is required by law.

Trail Head - The intersection of a trail with a trail head.

Understory - The layer of plants that grow in the shade of the forest.

Uneven Aged - A forest containing trees of two or more age classes.

Unique Area - Land owned by the state acquired due to its special natural beauty, wilderness character, geological, ecological or historical significance for the state nature and historic preserve, and may include lands within a forest preserve county outside the Adirondack and Catskill Parks.

Vegetative Stage - A description of a plant community based on the age of the component plants.

Vegetative Type - A description of a plant community based on species composition.

Vernal Pool - A small body of water that is present in the spring, but dries up by mid-summer.

Vertical Well - a well that is straight into the ground or is 90 degrees from horizontal.

Water Hole - A laid up stone cistern often built by C.C.C. volunteers and originally used for water for fire protection purposes.

Watershed - The land area from which a stream receives its water.

Wetland - Land or area saturated and sometimes partially or intermittently covered with water.

Class I, II, III or IV - The designation placed upon a mapped wetland by NYS DEC as required by 6NYCRR. The four classes rank wetlands according to their ability to perform wetland functions and provide wetland benefits. Class I is the most critical.

Wheelchair - Means a manually-operated or power-driven device designed primarily for use by an individual with a mobility disability for the main purpose of indoor, or of both indoor and outdoor locomotion. This definition does not apply to Federal wilderness areas; wheelchairs in such areas are defined in section 508(c)(2) of the ADA, 42 U.S.C. 12207 (c)(2).

Wildlife Management Unit (WMU) - The geographical units NYS DEC uses to set hunting and trapping seasons in New York State. Wherever possible, the boundaries between units were placed on County or State Highways or large streams or rivers making them clearly identifiable on the ground. In the few cases where this was not possible, or for legal reasons, political boundaries (e.g., county boundaries) had to be used.

Yield - The production of a commodity such as; forest products, water, or wildlife.

Young Forest - a forest regenerating from a past disturbance, characterized by a dense understory where tree seedlings, saplings, woody vines, shrubs, grasses and flowering plants grow together. Young forests are temporary and typically last 10 to 20 years. See also Seedling/Sapling Sized.

Appendix H: Wildlife Harvests and Hunting Use

NYS DEC collects harvest data for game animals at various scales. Deer and Black Bear harvest information is collected and reported at the Wildlife Management Unit (WMU) level via hunter reports through the DEC Automated Licensing System (DECALS). Beaver harvest information, up until the 2009-10 season, was obtained via pelt sealing; a process whereby each individual pelt had a seal affixed by a Dept. representative, thus resulting in a full count of beaver harvested, not an estimate as with other species listed in this document. After the 2009-10 season, beaver harvest, like other furbearers and small game species, was obtained via mail survey of a random sample of hunters or trappers, which produces a statistically accurate estimate of animals harvested.

Deer and Black Bear

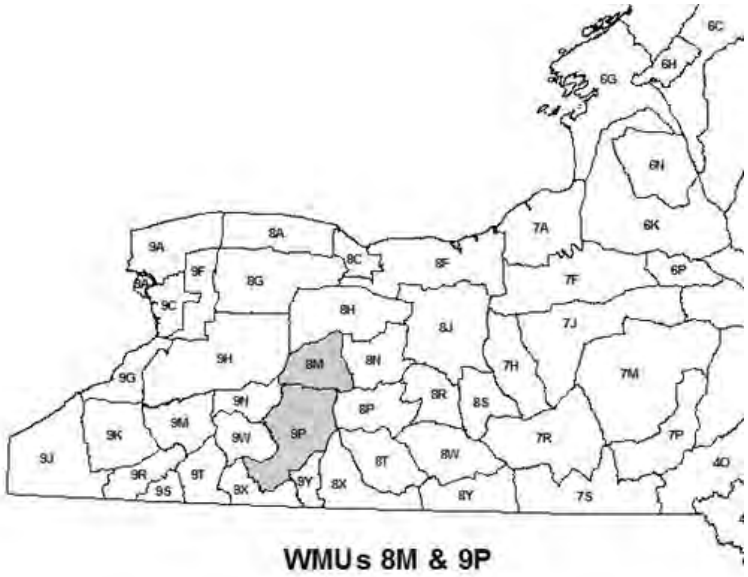


Table 1H: Calculated Legal Deer Harvest, WMU 8M

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Bucks	1,050	1,055	1,017	1,051	1,124	1,077	1,365	1,191	1,466	1,323
Total Deer	2,342	2,606	2,715	2,538	2,484	2,512	2,844	2,790	3,338	3,189

Table 2H: Calculated Legal Deer Harvest, WMU 9P

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Bucks	2,476	2,572	2,368	2,266	2,394	2,411	2,486	2,325	2,498	2,486
Total Deer	4,785	5,550	4,892	4,708	4,655	4,108	4,218	4,003	4,336	4,151

Table 3H: Reported Black Bear Harvest, WMU's 8M and 9P

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
8M	*	*	n/a	1	2	3	3	1	1	2
9P	*	*	n/a	21	13	30	16	29	24	22

*No season

Wild Turkey

Wild turkey harvest estimates, for both spring and fall seasons, are compiled and reported at the county level, thus the information below is only presented for the counties of the Livingston Unit; Livingston and Allegany.

Livingston & Allegany Counties

Table 4H: Spring Wild Turkey Harvest

For Livingston & Allegany Counties only.

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Livingston	344	520	506	567	288	289	296	275	373	321
Allegany	762	1390	947	940	727	486	527	436	531	425

Table 5H: Fall Wild Turkey Harvest

For Livingston & Allegany Counties only.

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014
Livingston	82	68	94	30	38	34	27	30	54
Allegany	325	279	391	201	254	152	123	122	98

Furbearers and Small Game

All Small Game and Furbearer harvest data is now collected and compiled at the zone level. The lands of the Livingston Unit fall entirely within the Western Zone (see below)

Table 6H: Furbearer Harvests, Western Zone

Year	2005-06	2006-07	2007-08	2008-09	2009-10
Mink	6,132	7,720	4,770	3,486	3,296
Muskrat	53,820	93,779	35,030	29,606	37,654
Raccoon	19,301	27,796	18,638	22,621	18,726
Skunk	2,180	2,998	2,535	2,493	2,199
Opossum	6,113	9,536	7,351	7,825	5,528
Weasel	221	271	392	243	269
Red Fox	8,996	12,408	11,953	9,051	7,958
Gray Fox	3,770	3,456	2,260	2,147	1,967
Coyote	3,545	3,362	4,098	3,540	2,972
Beaver*					

Year	2010-11	2011-12	2012-13	2013-14	2014-15
Mink	5,300	7,226	7,836	5,554	18,491
Muskrat	46,821	65,074	61,660	50,531	165,466
Raccoon	20,590	28,733	31,941	35,953	44,200
Skunk	1,970	3,123	3,146	2,549	5,795
Opossum	7,585	7,914	9,989	12,346	12,297
Weasel	265	344	480	245	1,633
Red Fox	10,696	13,872	16,778	14,604	22,570
Gray Fox	2,258	2,231	3,205	2,953	7,330
Coyote	3,261	4,136	5,148	5,607	15,233
Beaver*	9,547	13,124	11,532	11,181	23,910
Bobcat**				115**	84

*Beaver harvest data obtained via pelt sealing prior to 2010-11

**Bobcat harvest data obtained via pelt sealing, and only a portion of the Western Zone in 2013-14

Table 7H: Small Game Harvests, Western Zone

Year	2005-06	2006-07	2007-08	2008-09	2009-10
Grouse	21,907	30,065	20,908	28,487	18,460
Pheasant	14,899	22,895	22,439	21,365	22,242
Crow**	42,633	60,457	53,763	79,264	58,254
Rabbit	40,199	84,004	100,097	98,965	57,875
Squirrel	104,960	154,156	140,765	197,652	122,862
Raccoon	14,309	18,007	16,466	23,677	11,424
Red Fox	5,532	5,540	9,037	8,232	3,177
Gray Fox	3,319	1,304	2,068	2,220	2,421
Coyote	7,376	11,244	14,321	16,648	5,901

Year	2010-11	2011-12	2012-13*	2013-14	2014-15
Grouse	15,207	16,028	n/a	9,926	19,524
Pheasant	17,916	23,470	n/a	11,264	29,718
Crow**	46,397	39,335	n/a	24,090	n/a
Rabbit	51,012	58,634	n/a	41,154	50,539
Squirrel	114,762	122,256	n/a	96,026	99,522
Raccoon	9,538	8,587	n/a	3,792	8,294
Red Fox	7,630	3,925	n/a	2,788	6,479
Gray Fox	2,277	572	n/a	1,338	2,765
Coyote	12,799	8,505	n/a	5,911	11,231

*No Small Game harvest survey was conducted for the 2012-13 season

**Starting with the 2014-15 season, the US Fish & Wildlife Service estimates crow harvest.

Appendix I: Acronym & Initialism Glossary

Definitions are found in Appendix G: Glossary on page 177, or in the body of this plan.

In strict usage, the term *acronym* refers to a word made from the initial letters or parts of other words, such as *sonar* from *so(und) na(vigation and) r(anging).* The distinguishing feature of an acronym is that it is pronounced as if it were a single word, in the manner of *NATO* and *NASA.* Acronyms are often distinguished from initialisms like *FBI* and *NIH,* whose individual letters are pronounced as separate syllables. While observing this distinction has some virtue in precision, it may be lost on many people, for whom the term *acronym* refers to both kinds of abbreviations. (American Heritage® Dictionary of the English Language, Fifth Edition. (2011))

ABA = Architectural Barriers Act of 1968

ADA = Americans with Disabilities Act

ADAAG = Americans with Disabilities Act Accessibility Guidelines

APHIS = (U.S. Department of Agriculture's) Animal and Plant Health Inspection Service

ATV = All-Terrain Vehicle

BBA = Breeding Bird Atlas

BMP = Best Management Practice

BTO = Buck Take Objective

CCC = Civilian Conservation Corps

CTFs = Citizen Task Forces

CWD = Coarse Woody Debris

DBH = Diameter at Breast Height

DMP = Deer Management Permits

ECL = Environmental Conservation Law

ESA = Endangered Species Act

FAS = Fishing Access Sites

FLTC = Finger Lakes Trail Conference

FSC® = Forest Stewardship Council®

FSGEIS = Final Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program for Horizontal Drilling and High-Volume Hydraulic Fracturing to Develop the Marcellus Shale and Other Low-Permeability Gas Reservoirs

FWM = Fine Woody Material

GEIS = Generic Environmental Impact Statement

GL = (New York) Great Lakes Plain EcoRegion

HAP = (New York) High Allegheny Plateau EcoRegion

HCVF = High Conservation Value Forest

HMP = Habitat Mangement Plan

L&F = (Division of) Lands and Forests

LCP = Least Cost Path

LEAF = Long Environmental Assessment Form

LUMP = Livingston Unit Management Plan

MAPPWD = Motorized Access Program for People with Disabilities

MBTA = Migratory Bird Treaty Act

MOU = Memorandum of Understanding

MYA = million years ago

NRCS - Natural Resource Conservation Service

NYCRR = New York Code of Rules and Regulations

NYS DEC = New York State Department of Environmental Conservation

NYS DOT = New York State Department of Transportation

OPRHP = (New York State) Office of Parks, Recreation and Historic Preservation

ORV = Off-Road Vehicle

PEIS = Programmatic Environmental Impact Statement

PFR = Public Fishing Rights

ROS = Recreation Opportunity Spectrum

ROW = Rights-Of-Way

SEQR = State Environmental Quality Review

SF = State Forest

SFI® = Sustainable Forestry Initiative®

SGCN = Species of Greatest Conservation Need

SHPA = (New York) State Historic Preservation Act

SMZ = Special Management Zones

SONYEA/Sonyea = State Of New York Epileptic Association (maybe)

SWAP = State Wildlife Action Plan

TRP = Temporary Revocable Permit

UA = Unique Area

USDA = United States Department of Agriculture

USGS = United States Geological Survey

VSA = Volunteer Stewardship Agreement

WMA = Wildlife Management Area

WMU = Wildlife Management Unit

YFI = Young Forest Iniative

Appendix J: 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 properties of the Livingston Unit are managed by two different NYS DEC Divisions, therefore separate environmental impact statements are used to ensure that management activities comply with the State Environmental Quality Review Act (SEQR).

Properties managed by the Division of Lands and Forests (State Forests)

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.

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:

- Forest management activities occurring on acreage occupied by protected species ranked S1, S2, G1, G2 or G3
- Pesticide applications adjacent to plants ranked S1, S2, G1, G2 or G3
- Aerial pesticide spraying by airplane or helicopter
- 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.
- Well drilling plans
- 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
- 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 State Forest 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 NYS DEC 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.

Properties managed by the Division of Fish and Wildlife (Wildlife Management Areas)

Management activities performed on WMAs were evaluated by a series of Programmatic Environmental Impact Statements (PEIS) prepared in 1979 and 1980. These documents describe established and accepted activities for fish and game management, habitat management, and public use, and evaluate their potential beneficial and adverse impacts. These activities may have significant site-specific impacts and criteria for site specific assessments were included in these PEISs.

As of the writing of the UMP, a supplement to the PEIS for habitat management is being drafted that will provide additional review for habitat management activities that occur on WMAs. All management activities on WMAs proposed in this UMP will adhere to the criteria established in these PEISs, and the future supplement, for additional site specific environmental review.

Actions not covered by the GEIS or a PEIS

Any action taken by NYS DEC on this Unit that is not addressed in this Unit Management Plan and is not addressed in the Strategic Plan for State Forest Management or the Division of Fish and Wildlife’s Programmatic Environmental Impact Statements, may need a separate site specific environmental review.

Appendix K: Procedures for Oil & Gas Procurement

Additional information can be found in the Mineral Resource (pg. 34) and Mineral Resource Management (Pg. 118) sections.

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

- Which areas will not, or cannot, be leased;
- Which areas can be leased with full rights granted (100% surface entry and no special conditions required);
- Which areas may require special environmental and safety conditions; and
- Which areas may be leased with no surface-disturbance/entry conditions (non-drilling clause).

This review is conducted by the area's land manager (Division of Lands and Forests or Division of Fish and Wildlife). A Tract Assessment identifies sensitive resources within the Unit. These resources include, wetlands, lakes/ponds/streams and other riparian zones, steep slopes, recreational trails and other recreation areas, unique ecological communities, habitats of threatened, endangered or special concern species, High Conservation Value Forests, archeological and cultural sites and scenic vistas and view sheds.

A public meeting on the proposed oil and/or gas lease will be held to provide information about natural gas development specific to the nominated land and receive comments during a 30-day public comment period following the meeting. NYS DEC will consider all comments prior to making a decision on what areas, if any, will be leased.

If NYS DEC decides to pursue leasing, the site-specific conditions for limiting impacts on natural resources will be drafted by the Division of Mineral Resources in coordination with Forestry and/or Wildlife and incorporated into the contract documents. These conditions will include, but not be limited to, criteria for site selection, mitigation of impacts and land reclamation upon completion of drilling. A number of factors are considered: riparian areas, steep slopes, significant recreation areas, presence of rare, threatened or endangered species or unique ecological communities, are all areas which may be excluded from surface disturbance. Certain land management strategies, such as reserves, where timber harvesting is precluded, which may be incompatible with oil and gas well development, may result in exclusion from surface disturbance. This determination is made as part of the Tract Assessment process on a case-by-case basis. Any parcel designated as a non-surface entry lease will no longer be subject to the process detailed above due to the prohibition of surface disturbance(s). Exceptions to these Tract Assessments are possible if additional analysis, protective measures, new technology, or other issues warrant a change in the compatibility status of an area.

If it is determined that oil and gas exploration and development can proceed on these state lands, a lease sale is conducted. The Division of Mineral Resources is the state's oil and gas leasing agent for these lands. Lease sales are then conducted through a competitive bid process administered by the Division of Mineral Resources and in accordance with Article 23, Title 11 of the Environmental Conservation Law and State Finance Law.

Revenues from State Reforestation Areas and Multiple Use Areas (State Forests) are deposited into the General Fund while revenues from Wildlife Management Areas are deposited into the Conservation Fund.

In the event leases are granted and the drilling of a well is desired by the lessee on the leased property, an Application for Permit to Drill, Deepen, Plug Back or Convert a Well Subject to the Oil, Gas and Solution Mining Law (form 85-12-5) must be submitted to the Division of Mineral Resources. Site-specific impacts will then be identified by NYS DEC staff during review process and inspection of the proposed well site. The Strategic Plan for State Forest Management, and the Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program is used to guide NYS DEC in determining whether the proposal will have a significant impact on the environment. Conditions are then attached to the drilling permit as well as the Temporary Revocable Permit (TRP) which covers the mitigation and/or control of surface disturbances.

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

Appendix L: MOU between NYS OPRHP and NYS DEC

DEC# AM10024

MEMORANDUM OF UNDERSTANDING
BETWEEN THE
NYS OFFICE OF PARKS, RECREATION AND HISTORIC PRESERVATION
AND THE
NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FOR COOPERATION AND COORDINATION IN THE CONTINUITY AND
MAINTENANCE OF THE GENESEE VALLEY GREENWAY
IN THE SONYEA STATE FOREST

THIS MEMORANDUM OF UNDERSTANDING ("MOU") made ~~February~~ March 3, 2016, by and between the New York State Office of Parks, Recreation and Historic Preservation, having its principal place of business located at 625 Broadway, Albany, New York 12207, ("PARKS") and the New York State Department of Environmental Conservation, having its principal place of business located at 625 Broadway, Albany, New York 12233-0001, ("the Department" or "DEC"), (collectively the "Parties").

WITNESSETH

WHEREAS, the Genesee Valley Greenway State Park ("Greenway") is a 90-mile long open space corridor in western New York that follows the route of the Genesee Valley Canal and the Pennsylvania Railroad Rochester Branch; and

WHEREAS, the Greenway is a public, multi-use trail with a variety of natural and historic resources that provides opportunities for public recreation, an off-road link to communities, parks, other trails, and attractions in the region and for preservation of open space and natural and cultural resources; and

WHEREAS, subdivisions 1, 2 and 6 of Section 3.09 of the Parks, Recreation and Historic Preservation Law ("PRHPL") authorize PARKS to operate, improve and maintain the Greenway; and

WHEREAS, erosion of the existing portion of the rail bed that traverses the Sonyea State Forest in the towns of Groveland and Mt. Morris has made it difficult to utilize this portion of the former Western New York and Penn railroad/rail bed. For that reason, PARKS seeks to re-route the Greenway trail on a certain pathway in the Sonyea State Forest that is depicted generally on the aerial photograph as the "DEC Detour" (Attached as Exhibit A) and is hereinafter referred to as the "Premises."

WHEREAS, PRHPL subdivision 6 of Section 3.09 authorizes PARKS to enter into agreements such as this MOU with other state agencies relating to projects and programs that benefit the public; and

WHEREAS, Sections 1-0101, 3-0301, and 9-0105 of the Environmental Conservation Law ("ECL") authorize DEC to "exercise care, custody, and control" of state lands, including the Sonyea State Forest; and

WHEREAS, PARKS desires to secure the assistance of the Department to coordinate and cooperate in establishing continuity and maintenance of the Greenway trail as it traverses the Sonyea State Forest; and

WHEREAS, trail improvement and maintenance under this MOU will be guided by the Genesee Valley Greenway State Park Management Plan ("GVG Management Plan") and the Strategic Plan for State Forest Management ("SPSFM");

NOW, THEREFORE, in consideration of the above, it is agreed by and between the Parties as follows:

1. Effective Date/Term/Termination

(a) The effective date of this MOU shall be the date it is fully executed by the Parties.

(b) This MOU shall continue for a term of twenty (20) years from the effective date.

(c) The Parties may terminate this MOU at any time by giving at least one hundred eighty (180) days prior notice by email and regular mail to the other party's MOU Administrative Contact named herein.

(d) The MOU may be renewed or amended in writing by mutual agreement of the Parties.

2. Access to the Premises

The Department agrees to allow Parks to access the Premises for the purposes of: (1) improving the trail on the Premises, (2) making the Premises available for public use, and (3) maintaining the Premises as part of the Greenway, hereinafter referred to as the "Project."

3. Project Scope of Work

PARKS shall access the Premises utilizing existing service roads and trails for the purpose of making minimal trail improvements such as minor surface treatment and drainage enhancement, installation of signage and gates, and ordinary trail maintenance as needed, hereinafter referred to as "Work." "Ordinary trail maintenance" shall include mowing, pruning and brushing, and garbage removal. Any work not described above proposed to be undertaken by PARKS must be expressly approved in writing by the Department.

4. Width of Trail

The width of the Premises shall be twelve feet in order to allow for maintenance of the constructed trail, and adjacent buffer areas and shoulders. Initially, the width of the trail surface (tread) shall not be greater than eight feet, and may be

widened to twelve feet as agreed upon by the Parties. In no case shall the maximum width of the trail corridor (trail surface and adjacent areas) be wider than 12 feet. The surface of the trail tread shall accord with the GVG Management Plan.

5. **Motorized vehicles or equipment**

Motorized vehicles or equipment are permitted on the Premises in accordance with the GVG Management Plan for trail improvement and maintenance and for emergency response or patrol vehicles such as fire, police and ambulance.

6. **Funding**

PARKS will fund the full amount of the costs of this Project.

7. **Oversight**

PARKS shall, on a reasonably timely basis given the character of the Work involved, provide DEC with copies of all relevant documents relating to the Work performed, including but not limited to, its own separate work orders, meeting minutes, trail inspection or other reports, photographs, test results and any other documents relating to the Work.

8. **Communications**

PARKS shall provide to DEC an annual report indicating all construction or rehabilitation work performed on the premises in the previous calendar year, and a work plan indicating all construction and rehabilitation work it may intend to perform in the coming calendar year. Likewise, DEC shall provide to PARKS an annual work plan indicating all construction or rehabilitation work it may intend to perform, as well as timber sales that may be offered for bid on Sonyea State Forest in the coming calendar year that may impact the premises or the users

thereof. Neither the report nor the work plans need include "ordinary trail maintenance" as defined in Paragraph 3.

9. MOU Administration.

PARKS and DEC shall each appoint an Administrative Contact named herein, who is an employee within each agency, respectively, to resolve matters that may arise in implementing this MOU and to receive notices from the other party. The Administrative Contact may be changed by either party by giving the other party advance written notice of the change. The Administrative Contacts shall:

(a) contact all appropriate agency employees;
(b) coordinate agency responsibilities, including accepting written notices and telephone calls; and
(c) ensure uniformity in agency operating procedures.

PARKS Administrative Contact:

Name:	Rich Parker
Title:	Regional Director, Genesee State Park Region
Address:	1 Letchworth State Park Castile, New York 14427
Telephone:	(585) 493-3601
Fax:	(585) 493-5272
E-mail Address:	Richard.Parker@parks.ny.gov

With a copy to:
PARKS Counsel's Office
Counsel@parks.ny.gov

DEC Administrative Contact:

Name:	Mark Gooding
Title:	Regional Forester
Address:	6274 East Avon-Lima Road, Avon, NY 14414-9516
Telephone:	(585) 226-5371
Fax:	(585) 226-6323
E-mail Address:	mark.gooding@dec.ny.gov

10. Cooperation and Joint Responsibilities.

The Parties hereby agree to cooperate to the best of their ability with each other and with other third parties with respect to resolution of issues involving the Project. In the event the Parties are unable to agree on the resolution of a dispute

hereunder at the staff level, the Administrative Contacts from the Parties, or their designees, will meet within ten (10) business days of either party's request to resolve the dispute. In the event they are not able to resolve the dispute at this meeting, they may agree to further appropriate dispute resolution procedures. In the event that a resolution cannot be reached, this MOU shall be terminated in accordance with Paragraph 1 (c). PARKS improvements to, and use and maintenance of the Premises will not interfere with the DEC's use or jurisdiction over the Sonyea State Forest and will be consistent with and not to the exclusion of the rights of the general public and in compliance with DEC regulations and policies relating to State Forests.

11. Permits and Approvals

PARKS is responsible for complying with SEQRA and coordinating with the Department as an involved agency, and applying for all required permits and regulatory approvals prior to Work and use of the Premises.

12. Artifacts and Items of Historical or Archaeological Significance/Remediation

PARKS shall be responsible for complying with the State Historic Preservation Act and shall turn over to DEC any artifact or item of historical significance uncovered within the Premises, and shall be responsible for complying with Environmental Conservation Law statutes and regulations should any remediation work be required as a result of the Work on the Premises.

13. Entireties

This MOU constitutes the entire understanding between the Parties with respect to the use of the Premises and supersedes all previous oral or written agreements, understandings and representations between the Parties with respect to the

Premises. No other understanding, oral or otherwise, regarding the subject matter of the MOU shall be deemed to exist or to bind any of the Parties.

14. Executory Clause

In accordance with Section 41 of the State Finance Law neither party shall have any liability under this MOU beyond funds available and appropriated for this MOU.

(Page 8 of MOU is blank)

IN WITNESS WHEREOF, the Parties have executed this MOU on the date and year indicated.

NYS OFFICE OF PARKS, RECREATION AND HISTORIC RESERVATION

Recommended by the Genesee Region of Parks

Date: 2-22-16

By: Richard E. Parker
Richard Parker, Regional Director
Genesee State Park Region

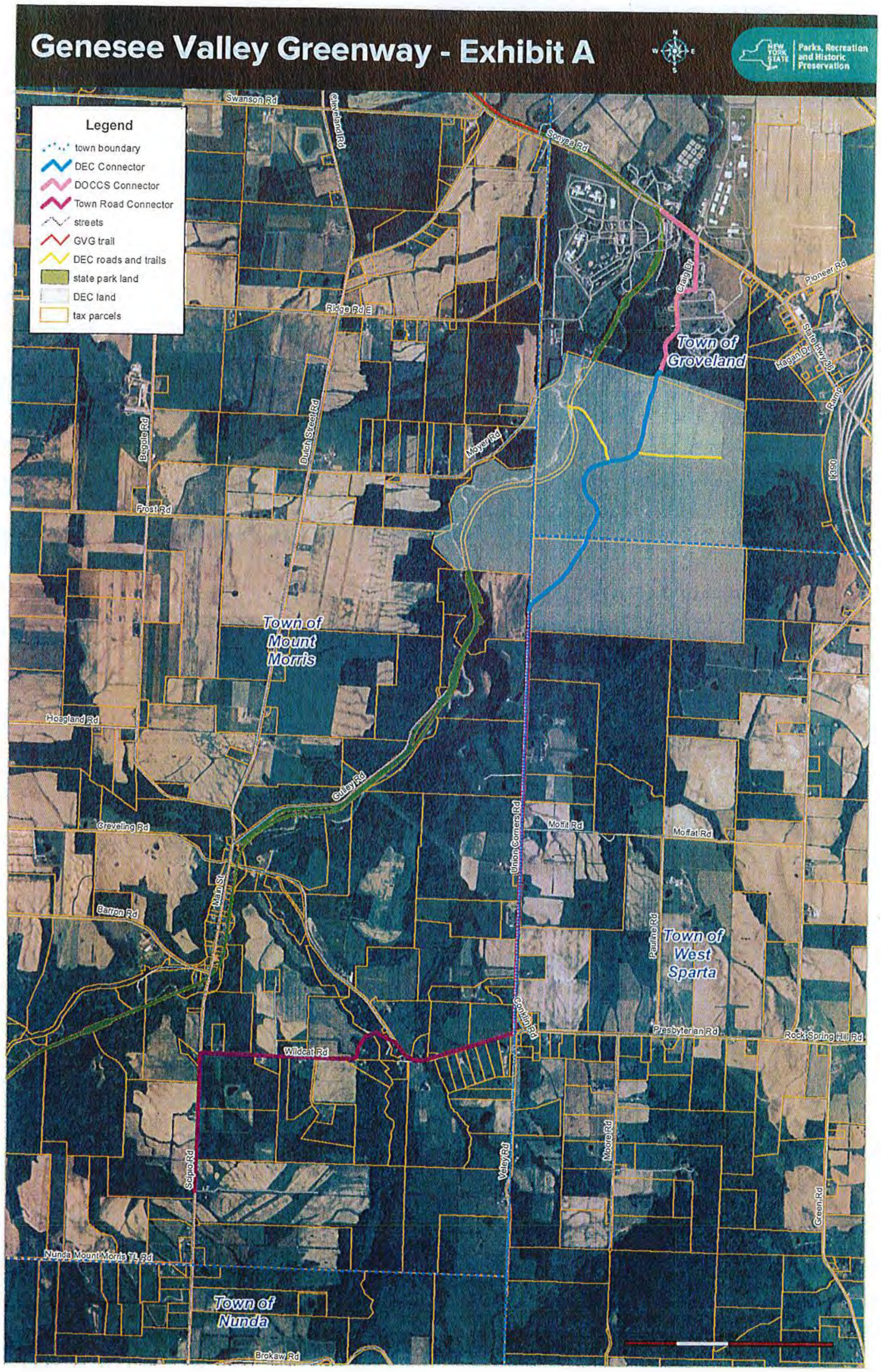
Approved by OPRHP
Date: 3/3/16

By: Andy Beers
Andy Beers
Executive Deputy Commissioner

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Date: 2/9/16

By: Nancy W. Lussier
Nancy W. Lussier
Director
Division of Management and Budget Services


Genesee Valley Greenway - Exhibit A
Parks, Recreation and Historic Preservation
Legend
town boundary
DEC Connector
DOCCS Connector
Town Road Connector
streets
GVG trail
DEC roads and trails
state park land
DEC land
tax parcels
Town of Groveland
Town of Mount Morris
Town of West Sparta
Town of Nunda
Swanson Rd
Sonyea Rd
Pioneer Rd
Ridge Rd E
Dutch Street Rd
Meyer Rd
Frost Rd
Hoagland Rd
Creveling Rd
Barron Rd
Main St
Union Corners Rd
Moffat Rd
Presbyterian Rd
Rock Spring Hill Rd
Wildcat Rd
Scipio Rd
Valley Rd
Moore Rd
Green Rd
Nunda Mount Morris TL Rd
Brokaw Rd

Appendix M: Known Encroachments and/or Trespass

For information on known, legal, access to and across the properties of the Unit see the Roads (pg. 17), and Rights of Way, Concurrent Use & Occupancy, and Deeded Exceptions (pg. 20) sections.

Canaserage State Forest

As of the writing of this plan, no known encroachments and/or trespass exist.

Ossian State Forest

As of the writing of this plan, no known encroachments and/or trespass exist.

Sonyea State Forest

As of the writing of this plan, no known encroachments and/or trespass exist.

Rattlesnake Hill WMA

As of the writing of this plan, no known encroachments and/or trespass exist.

Conesus Inlet WMA

Issues with residents on the West side of Dacola Shore road encroaching onto state land was resolved in 2015. This was solved by building a recreational trail on the property line in conjunction with the Town of Conesus.

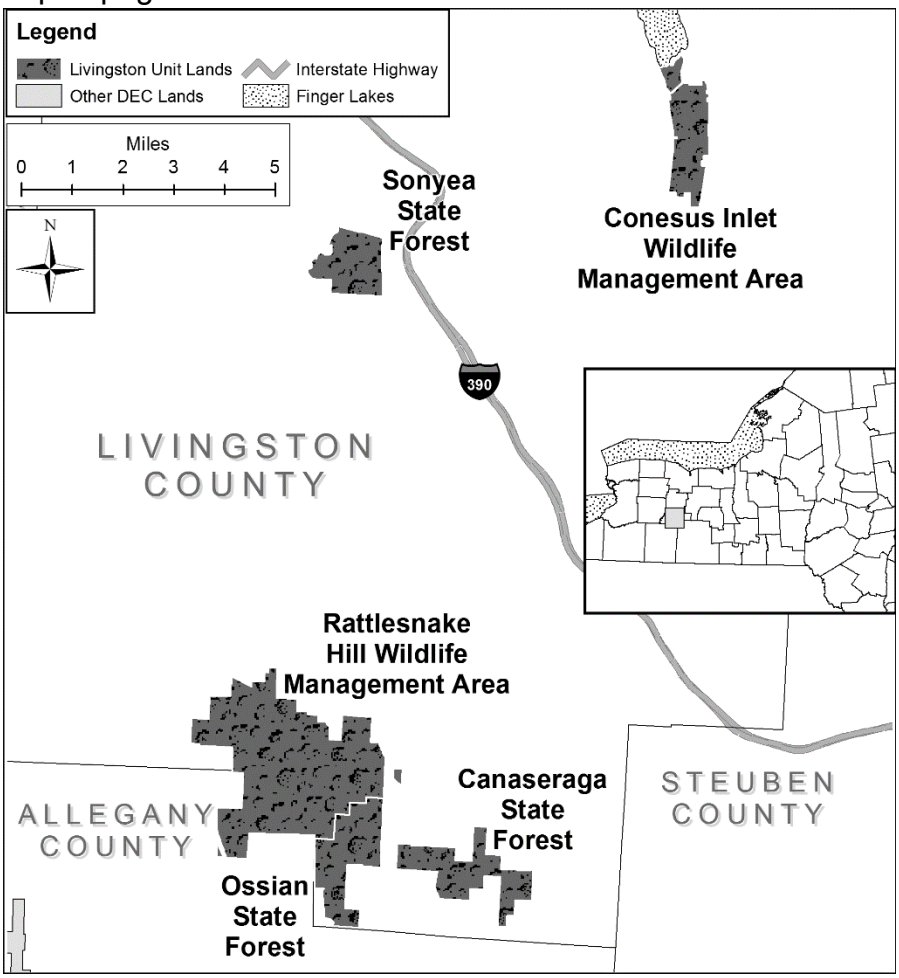
There are several other encroachment issues along South Cove lane, including a garage half on state land. These issues are known and work is being done to resolve these issues as of the writing of the plan.

Lastly, a portion of the driveway to the fishing access site on County Route 33 is on the adjoining owner’s property to the west. As of the writing of this plan, this issue has not yet been resolved.

Appendix N: Maps

ALL of the following maps are made with the best available data, but are not intended to be survey quality. Additional information on the topics covered can be found in the rest of this UMP.

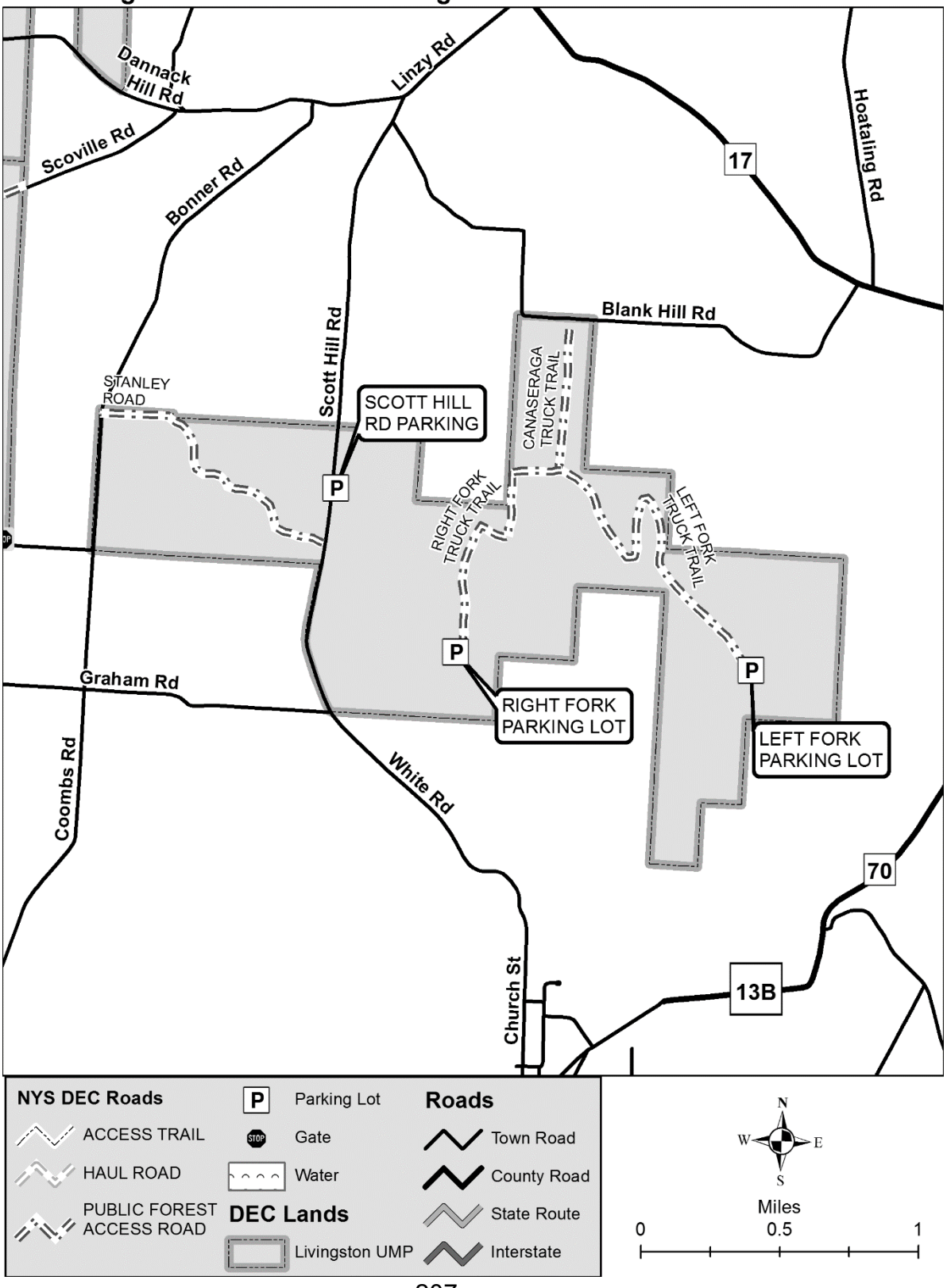
Map topics include:



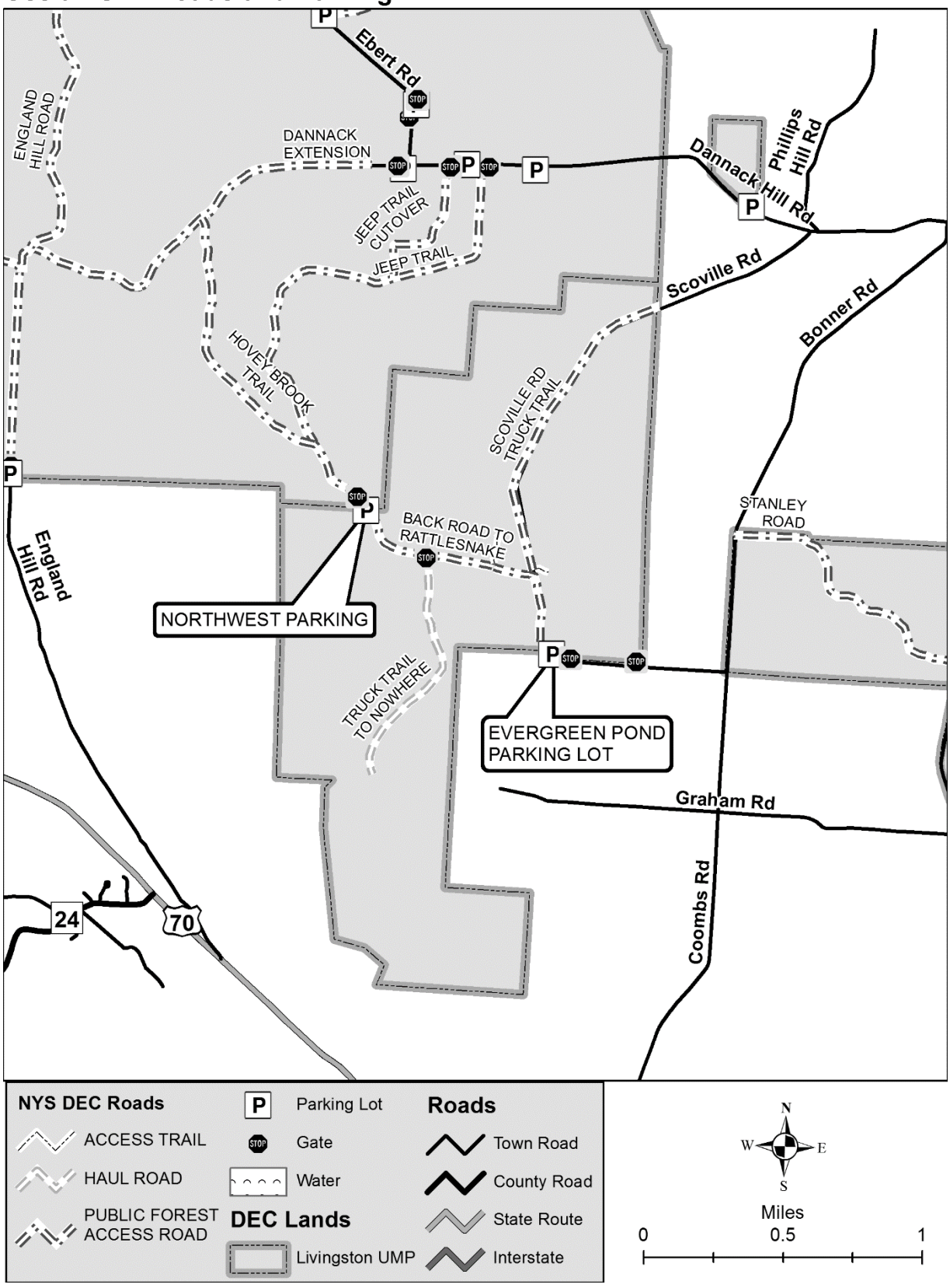
Roads and Parking Lots

Additional information can be found in the Roads (pg. 17), Access Management (pg. 70), Maintenance and Facilities Management (pg. 113) and Appendix D: Facilities (pg. 154) sections.

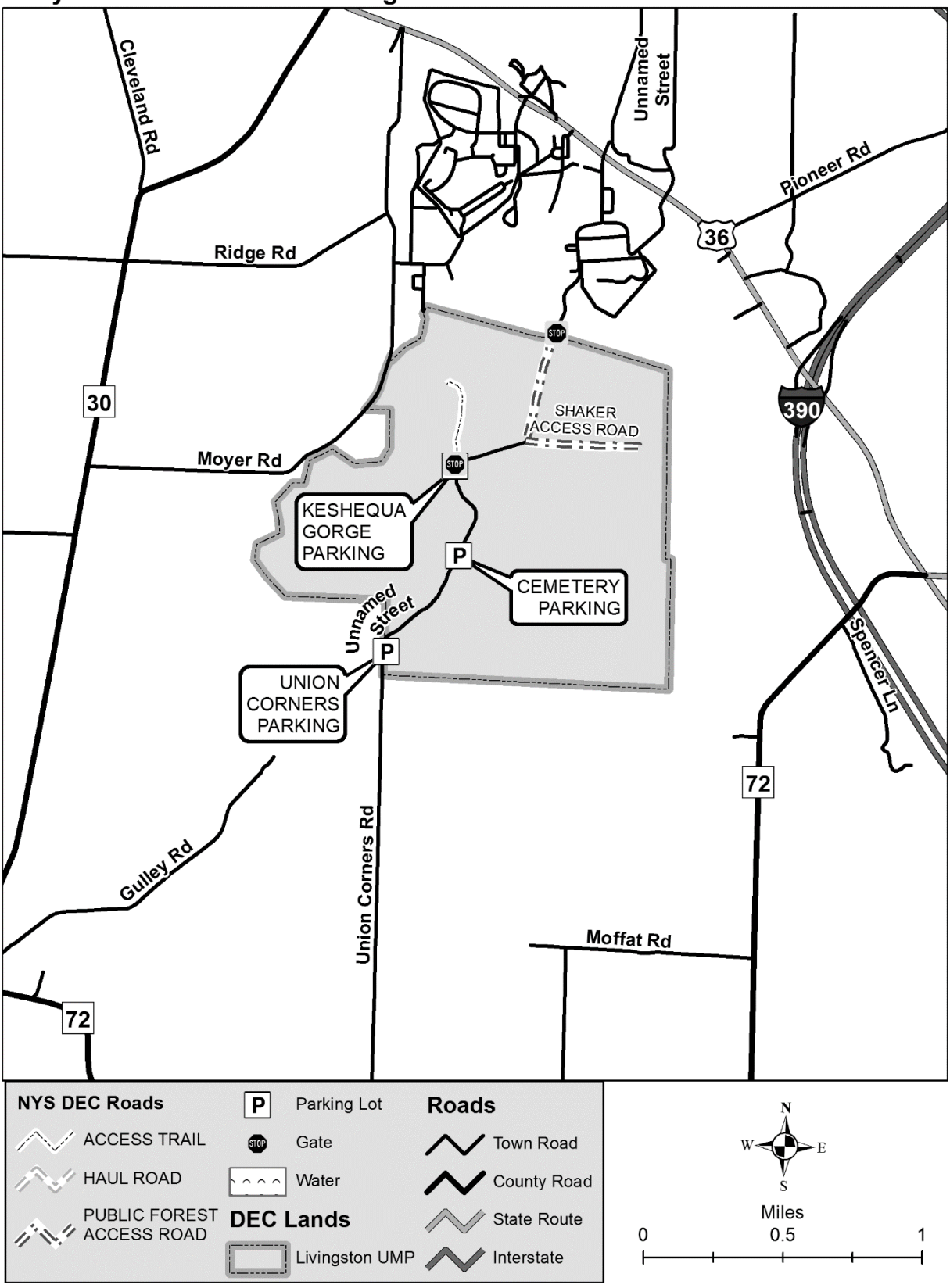
Canaseraga SF - Roads and Parking



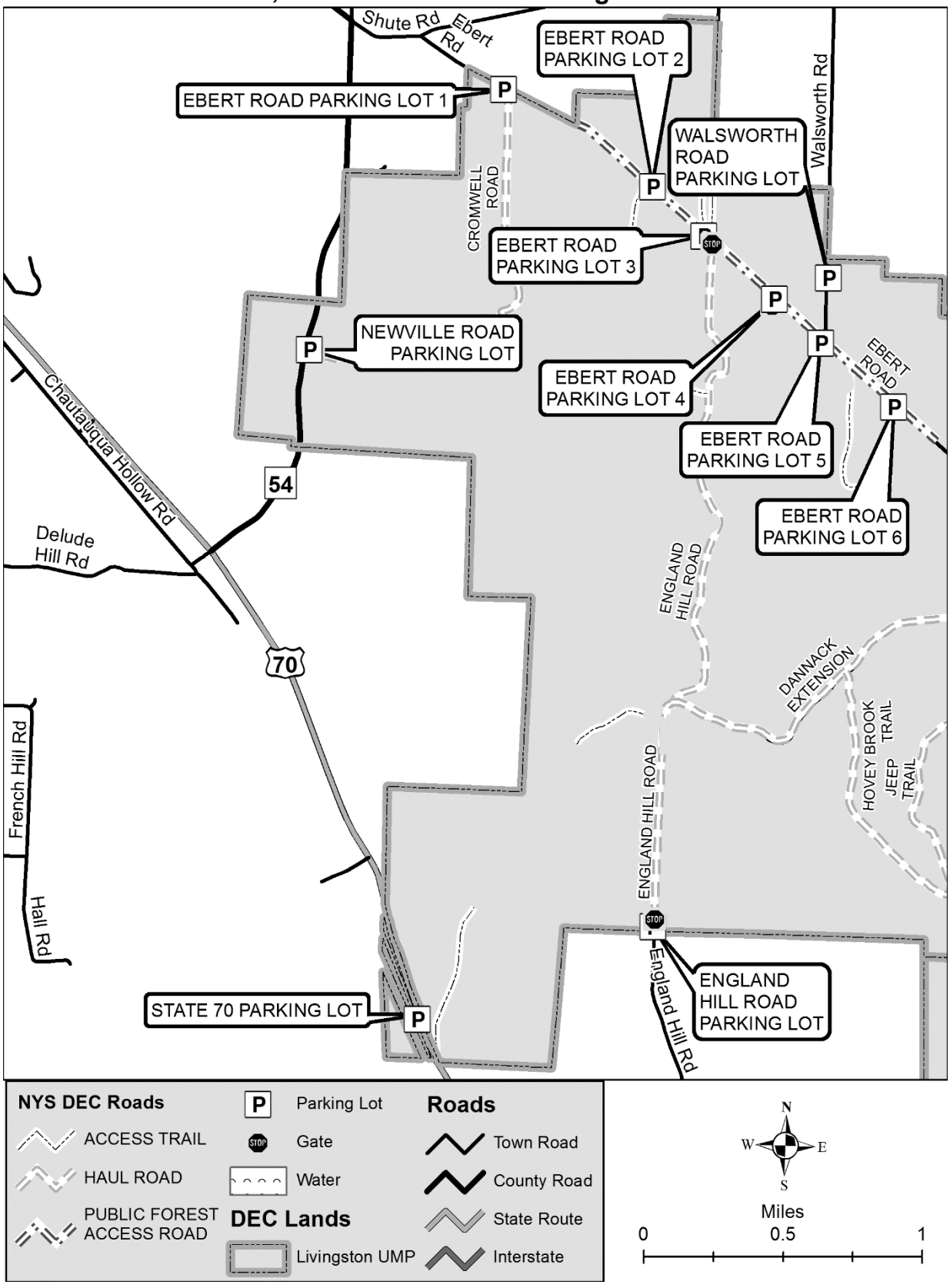
Ossian SF - Roads and Parking



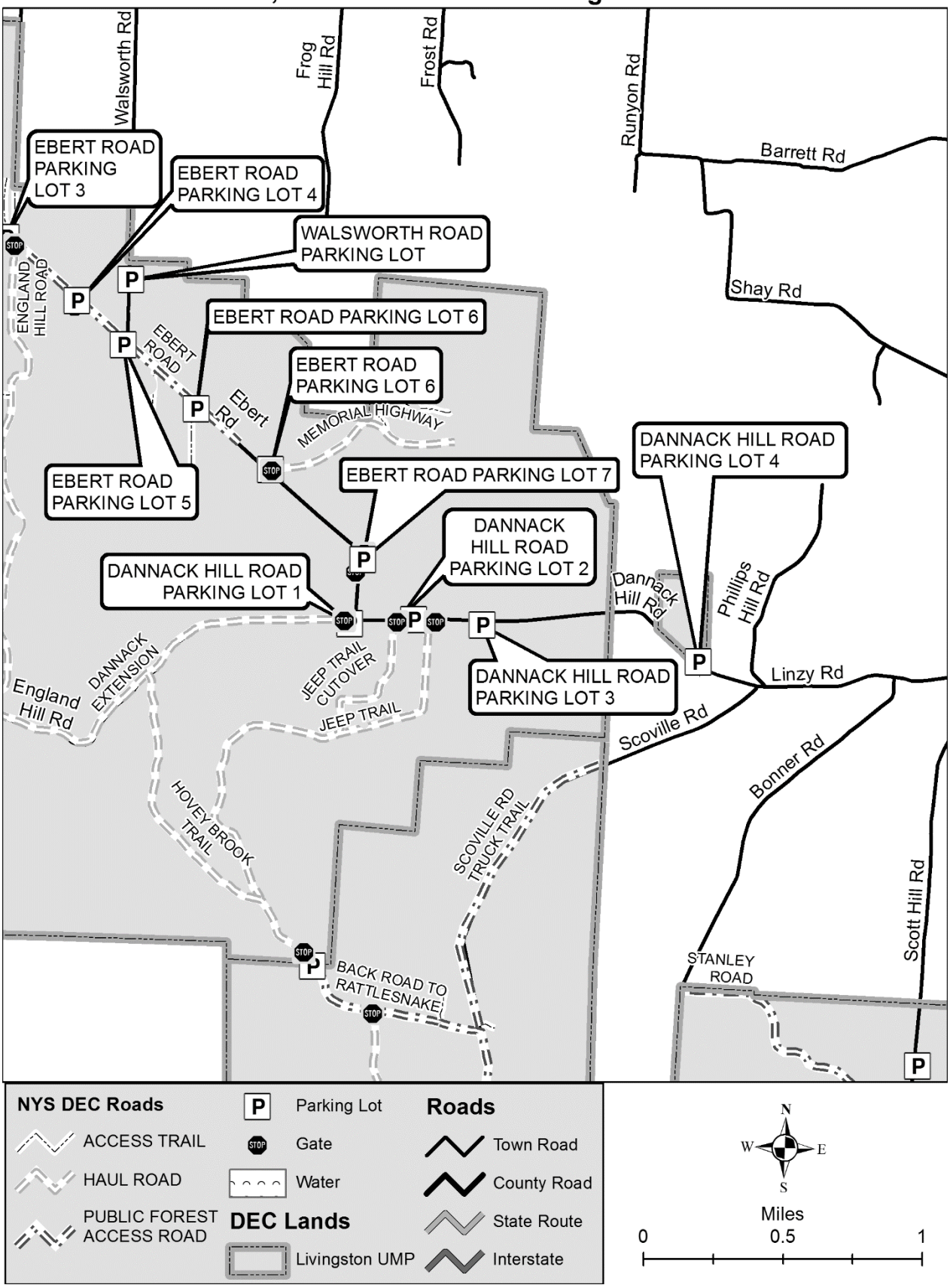
Sonyea SF - Roads and Parking



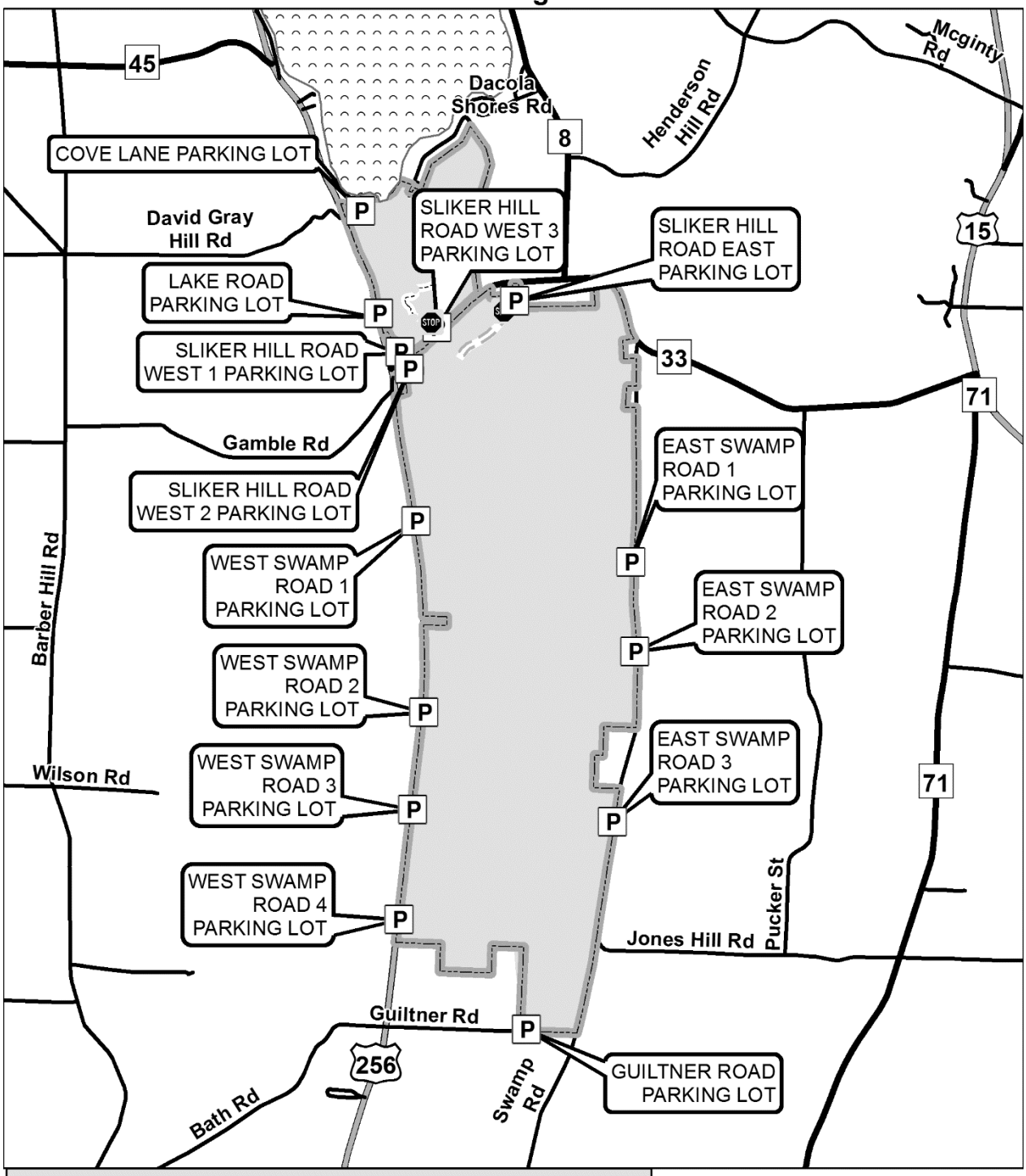
Rattlesnake Hill WMA, West - Roads and Parking



Rattlesnake Hill WMA, East - Roads and Parking



Conesus Inlet WMA - Roads and Parking

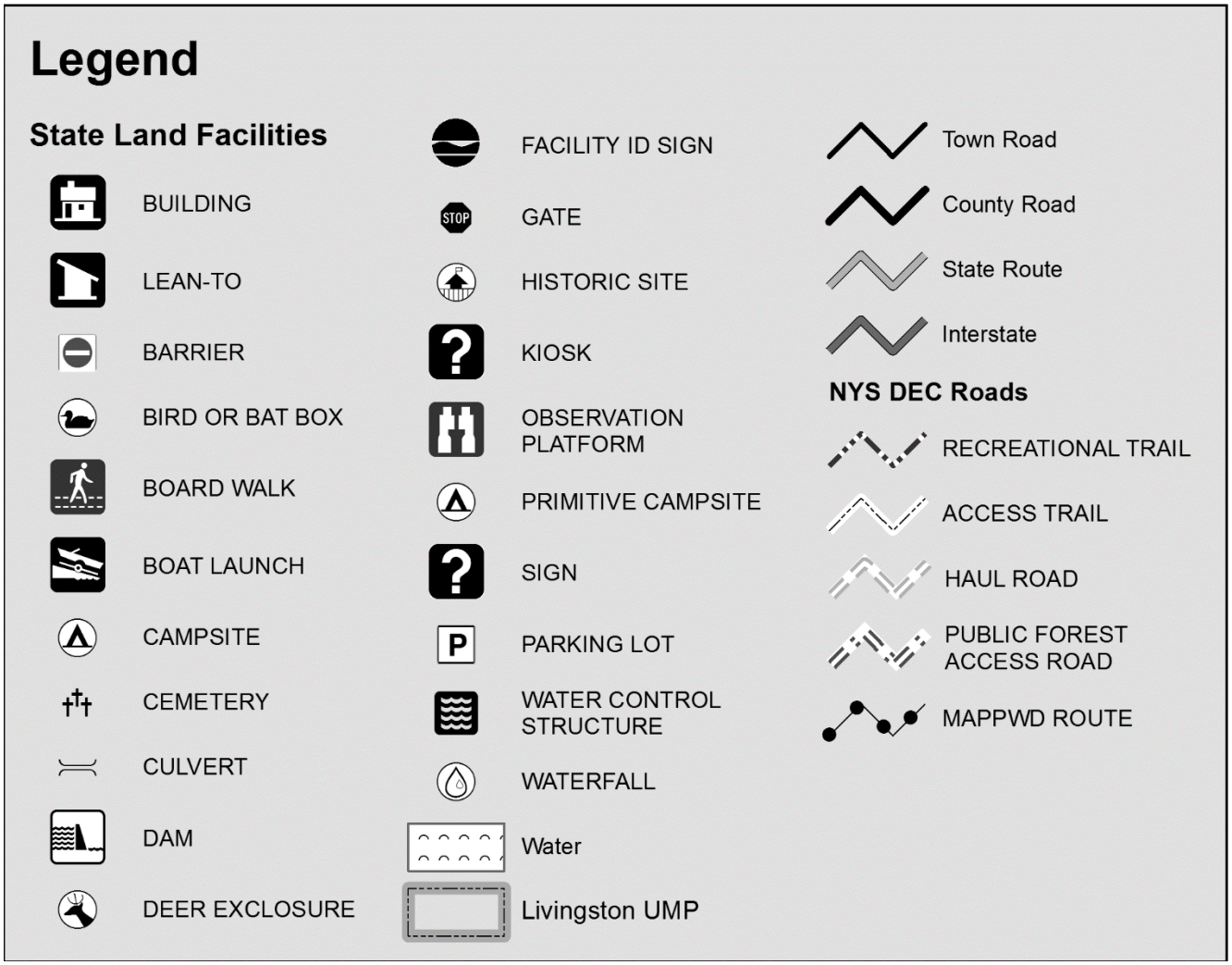


Recreation and Other Facilities

For Additional Information see: Access Management (pg. 70), Recreation (pg.22), Public Recreation and Use Management (pg. 106), Maintenance and Facilities Management (pg 113), and Appendix D: Facilities (pg. 154).

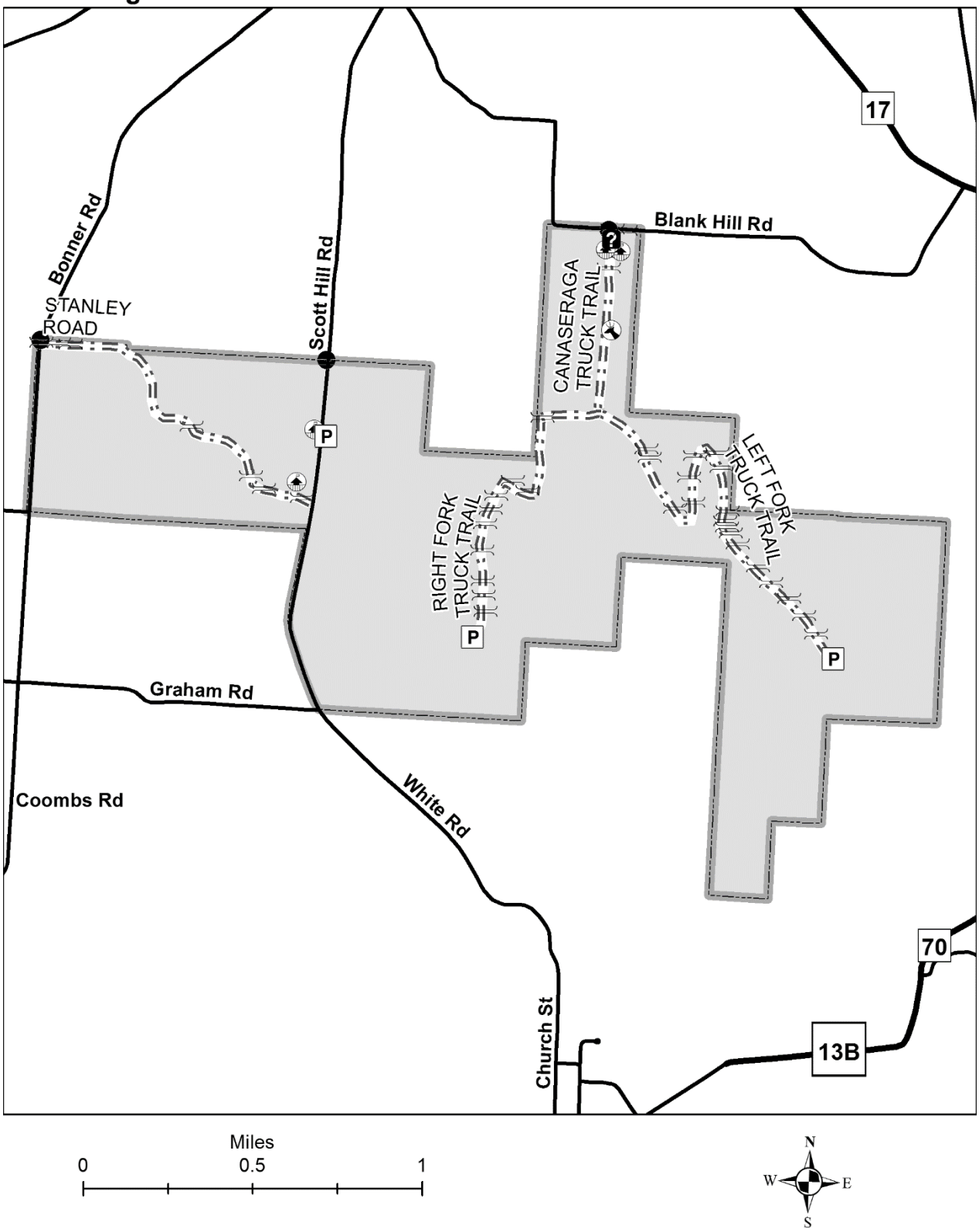
Some facilities will be missing from these maps. For example many culverts, bird/duck/bat houses, historic sites and some log landings and access trails (old farm lanes) have not yet been GPSed.

Legend for the following 8 maps:



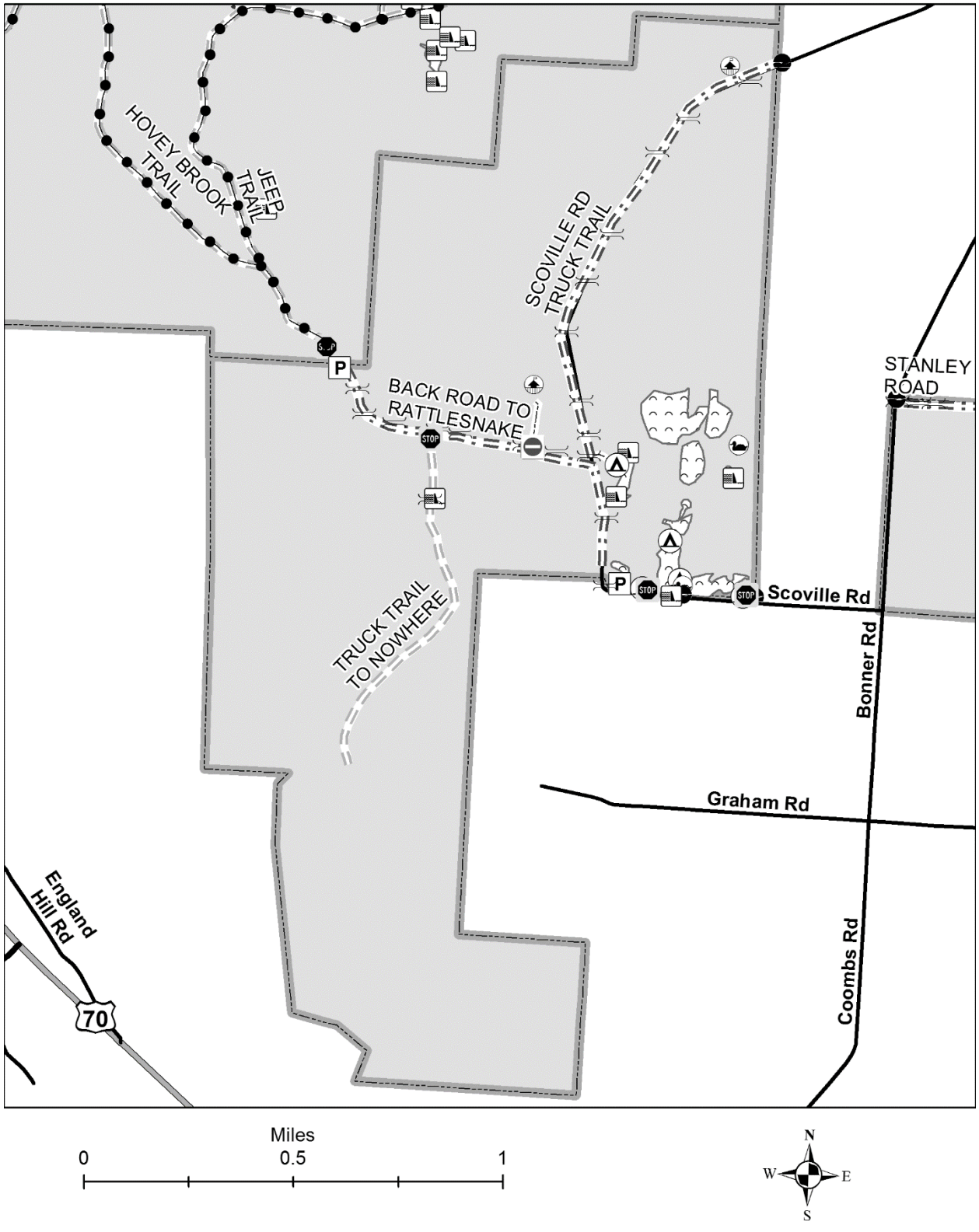
Legend for all Facilities maps is located on page 213.

Canaseraga SF - Facilities



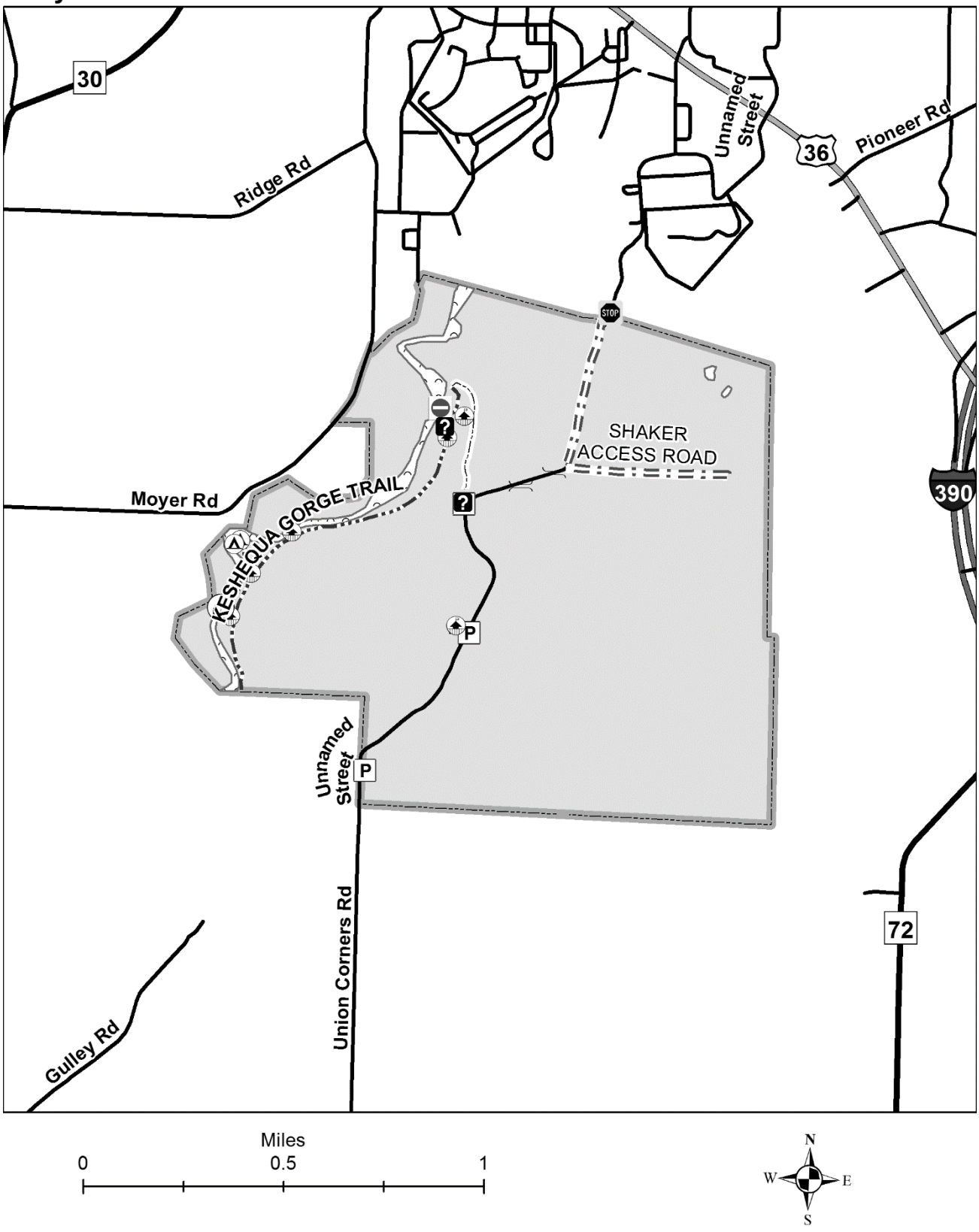
Legend for all Facilities maps is located on page 213.

Ossian SF - Facilities



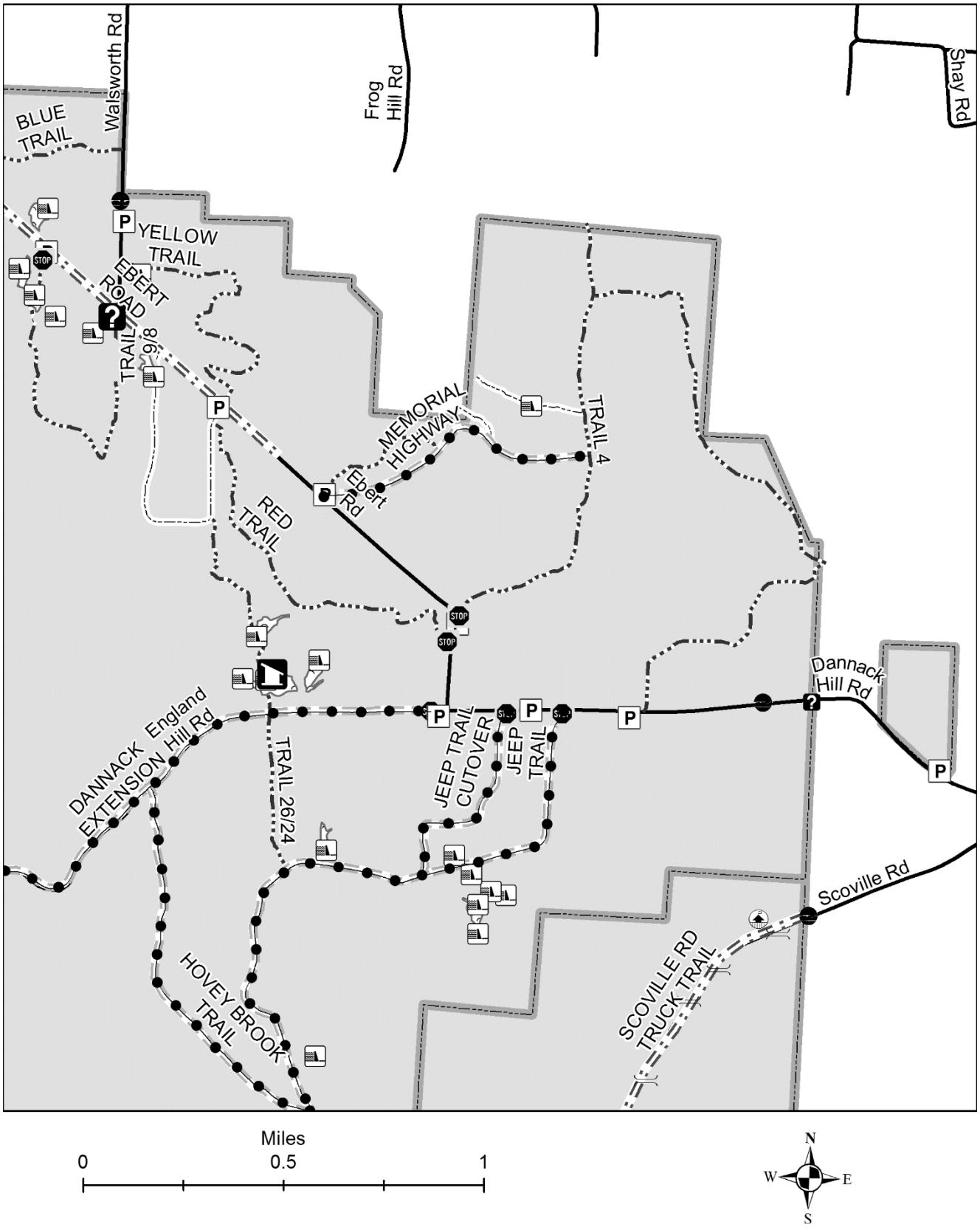
Legend for all Facilities maps is located on page 213.

Sonyea SF - Facilities



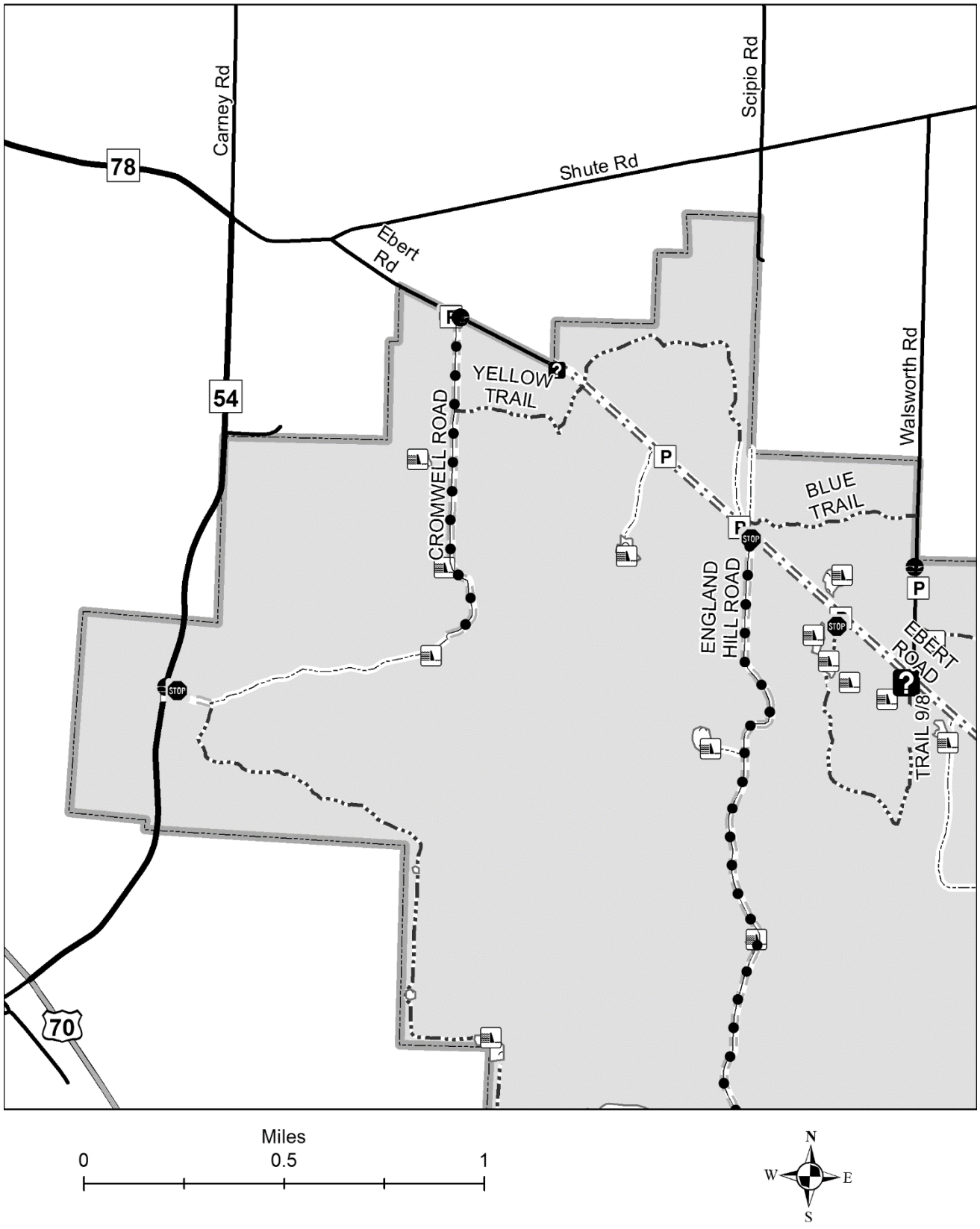
Legend for all Facilities maps is located on page 213.

Rattlesnake Hill WMA East - Facilities



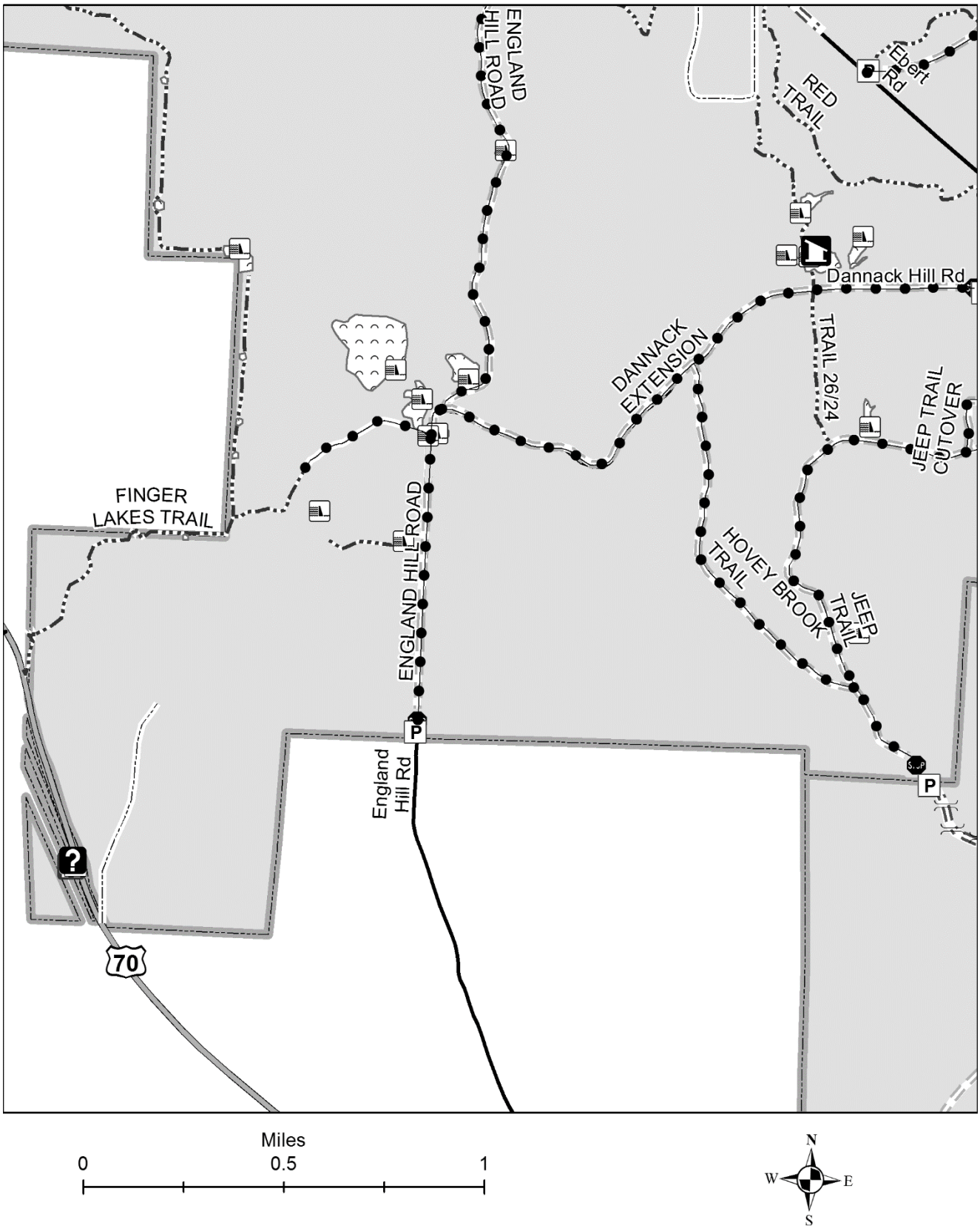
Legend for all Facilities maps is located on page 213.

Rattlesnake Hill WMA Northwest - Facilities



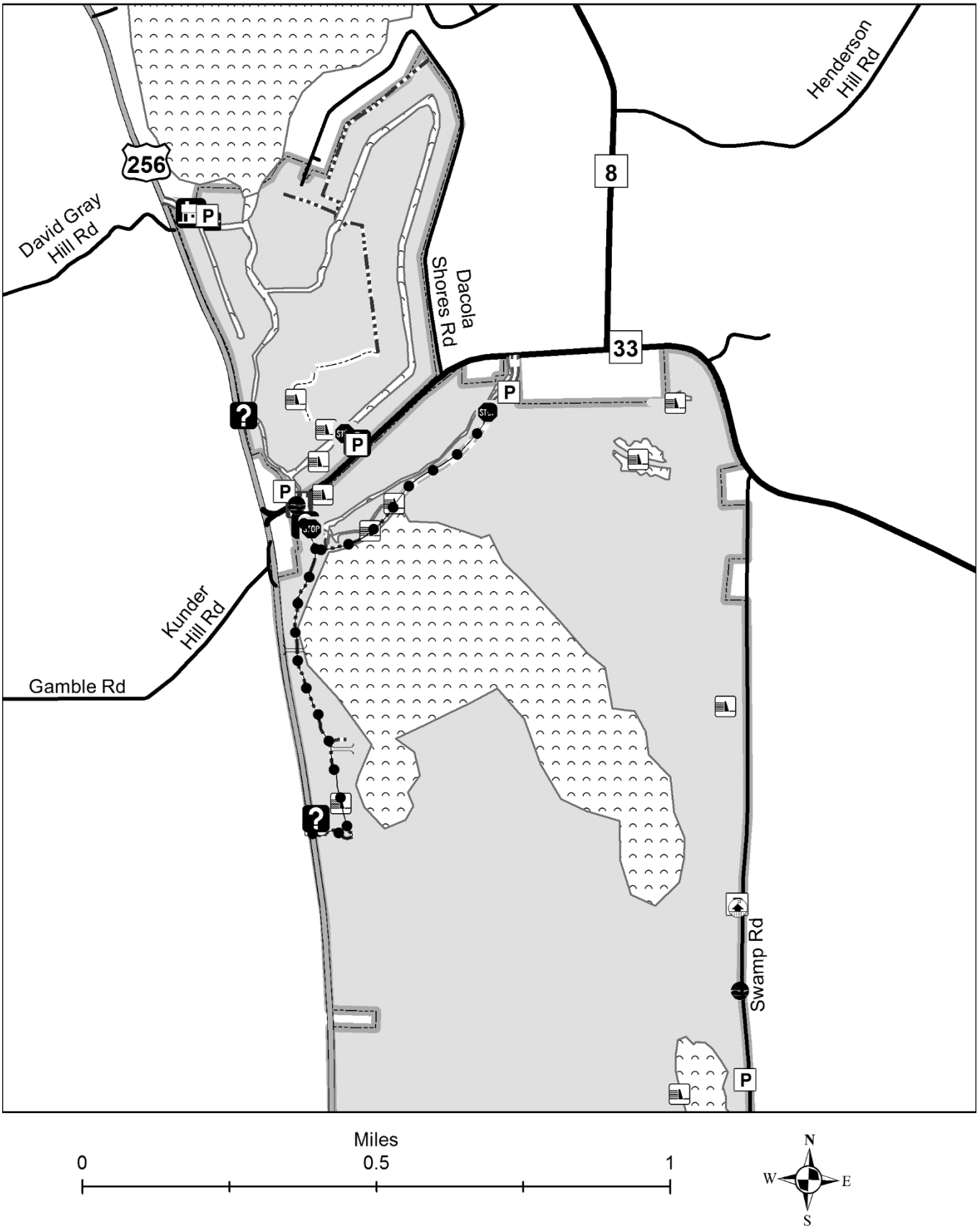
Legend for all Facilities maps is located on page 213.

Rattlesnake Hill WMA Southwest - Facilities



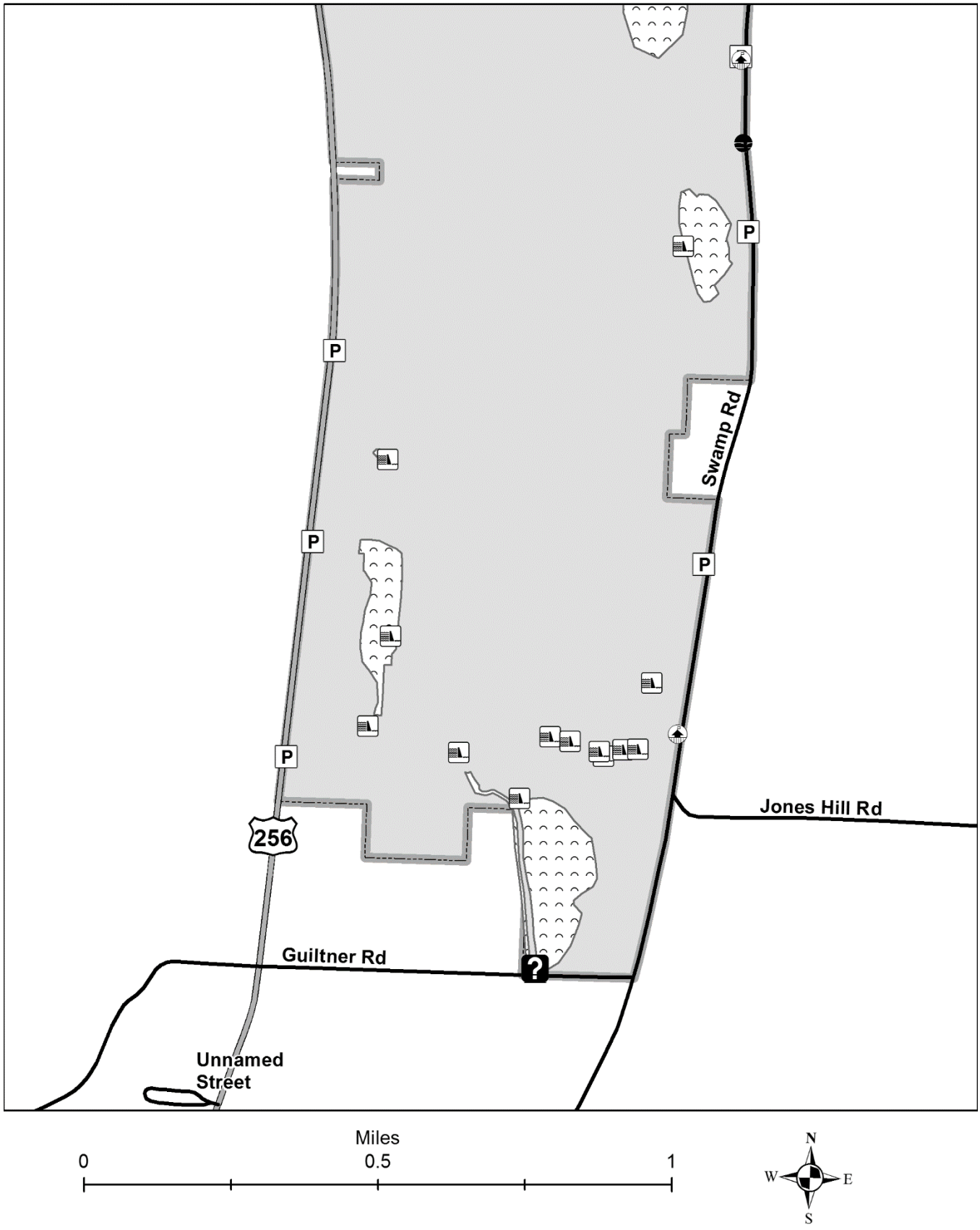
Legend for all Facilities maps is located on page 213.

Conesus Inlet WMA North - Facilities



Legend for all Facilities maps is located on page 213.

Conesus Inlet WMA South - Facilities

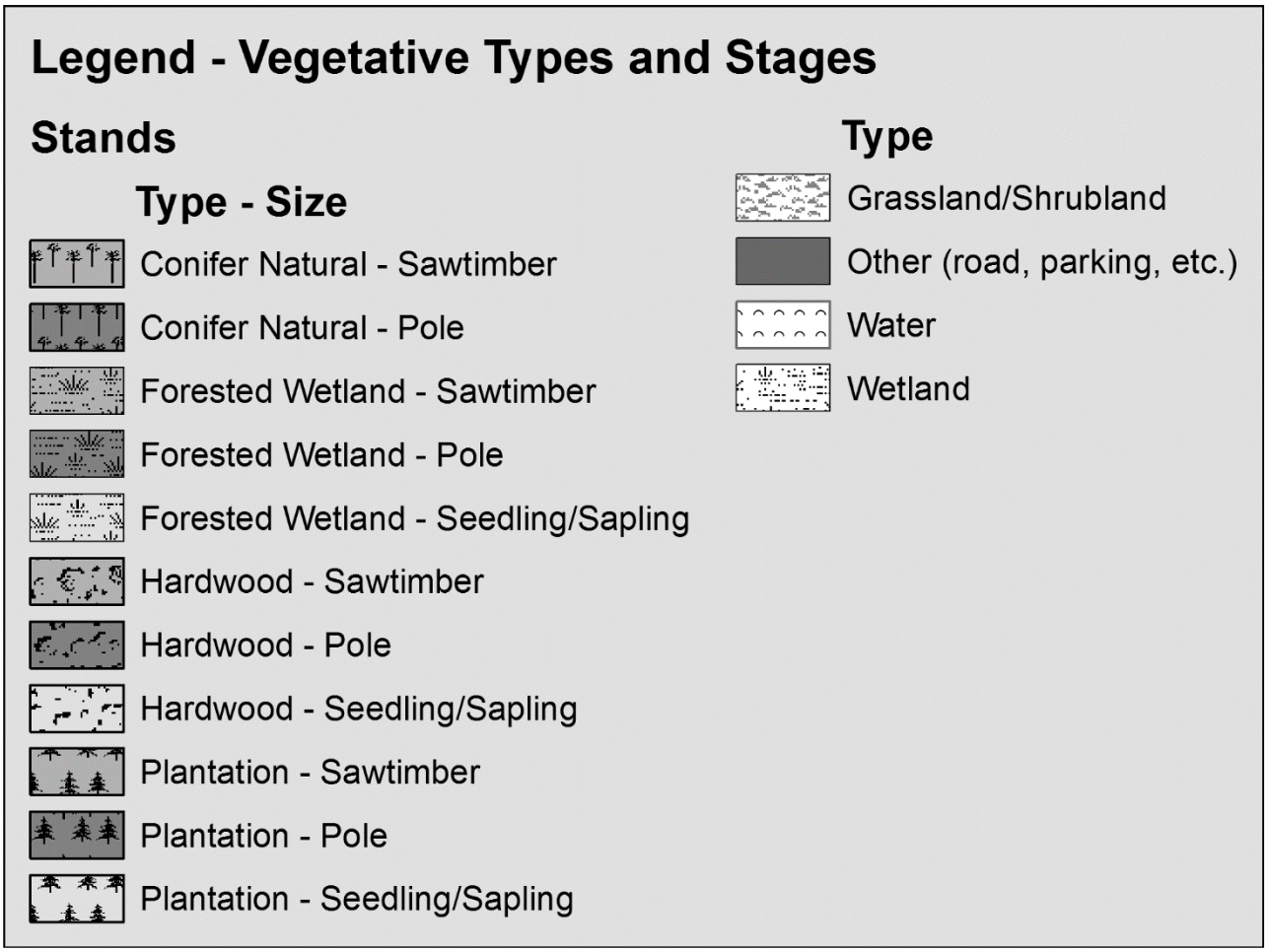


Vegetative Types and Stages

See Also: Timber and Vegetation (pg. 38), Timber and Vegetation Management (pg. 74), and Appendix F: Vegetation Management (pg. 163). A stand is a group of plants with similar characteristics that are analyzed and treated as a single unit. Each property is divided into one or more compartments, and each compartment divided into stands. Compartments are given a letter designation, and stands a number. This letter-number combination is used for tracking, mapping and planning the a ctions and activities that happen in and on NYS DEC owned land.

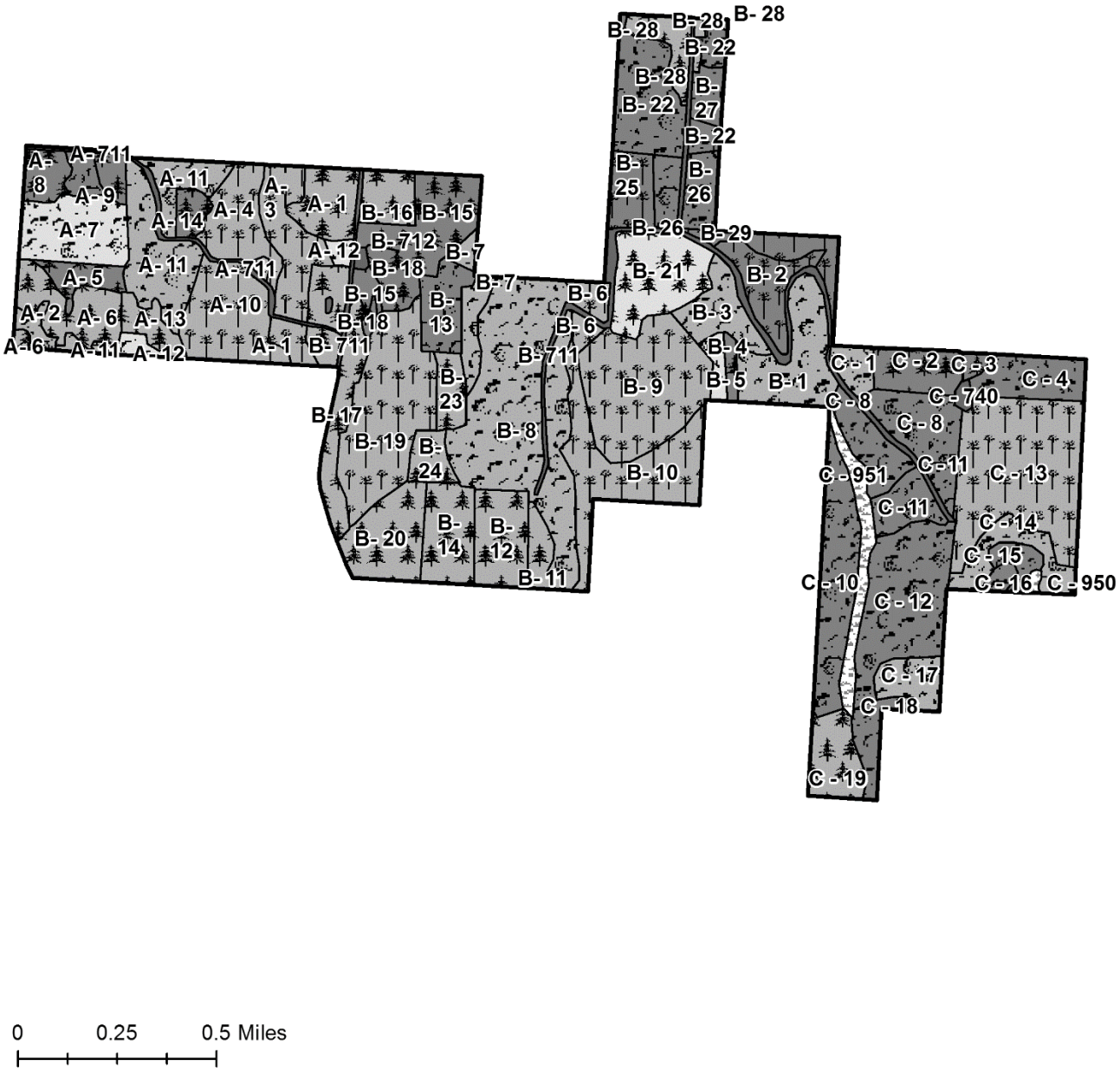
The properties within this Unit were inventoried between 2011 and 2016. The data gathered was used to create “Table 7: Vegetative Types and Stages” (pg. 40) as well as the following maps.

Legend for the following 8 maps:



Legend for all Vegetative Types and Stages maps is located on page 222.

Canaseraga SF - Vegetative Types & Stages

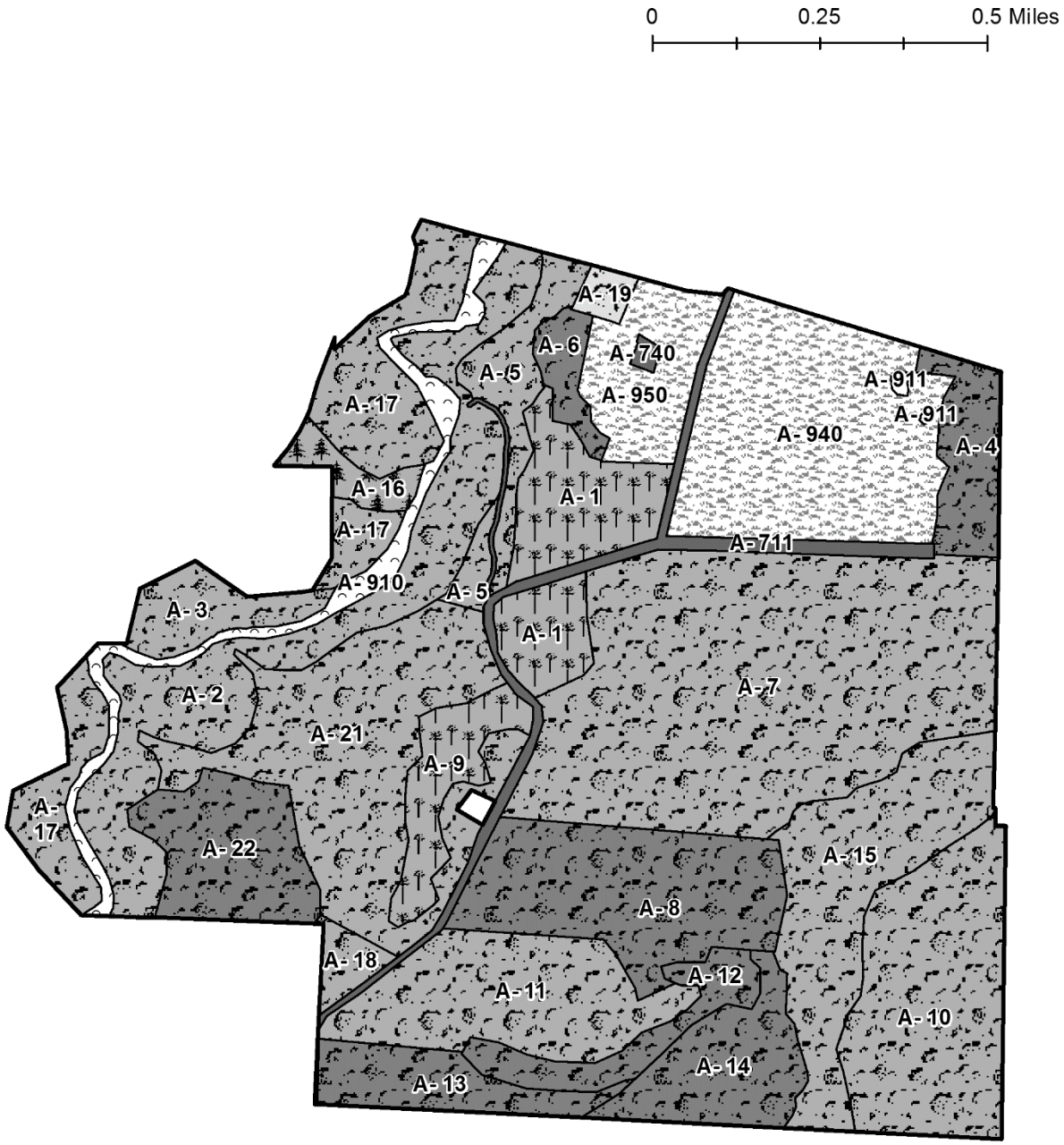


Legend for all Vegetative Types and Stages maps is located on page 222

Ossian SF - Vegetative Types & Stages

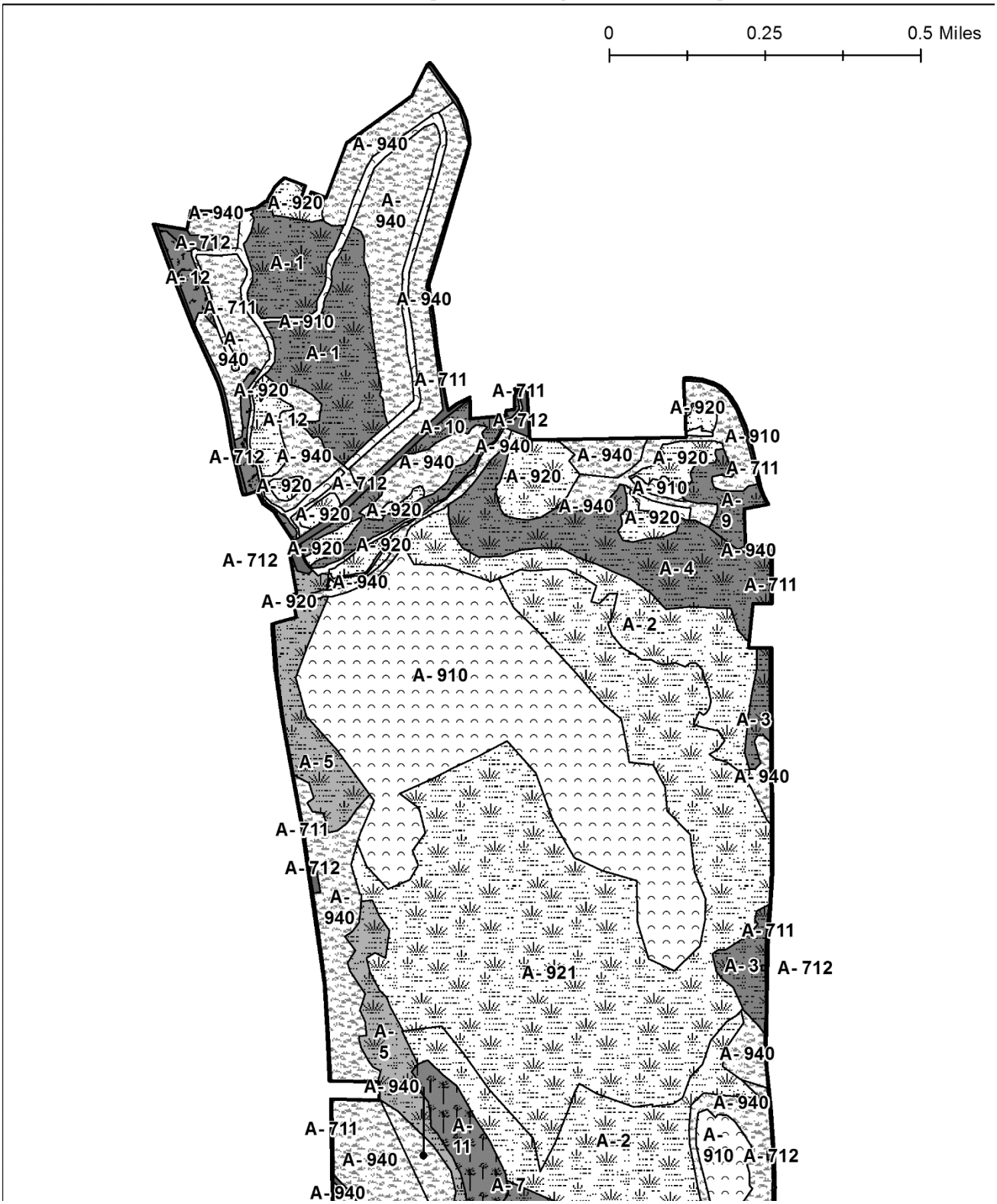
Legend for all Vegetative Types and Stages maps is located on page 222.

Sonyea SF - Vegetative Types & Stages



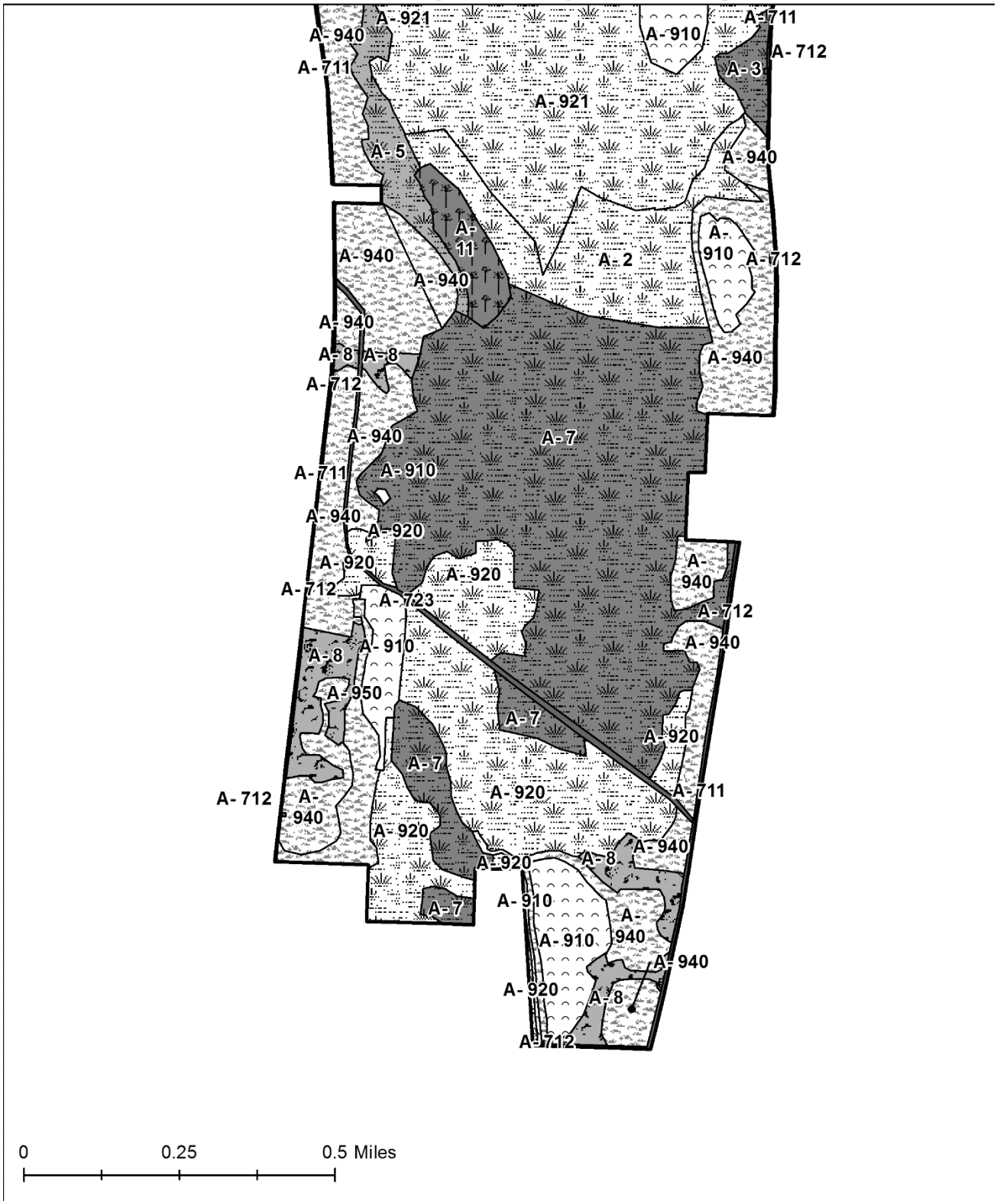
Legend for all Vegetative Types and Stages maps is located on page 222.

Conesus Inlet WMA North - Vegetative Types & Stages



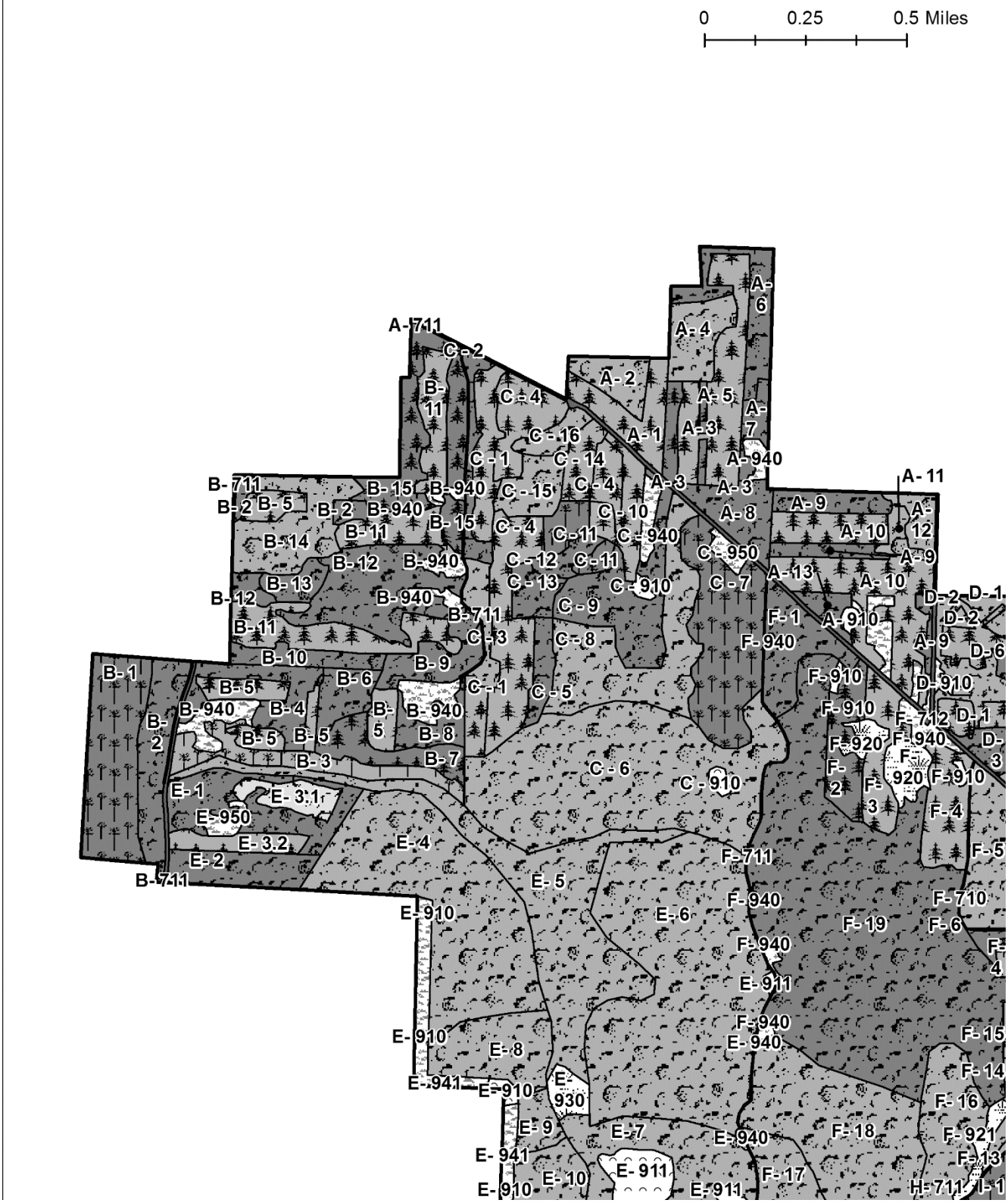
Legend for all Vegetative Types and Stages maps is located on page 222.

Conesus Inlet WMA South - Vegetative Types & Stages



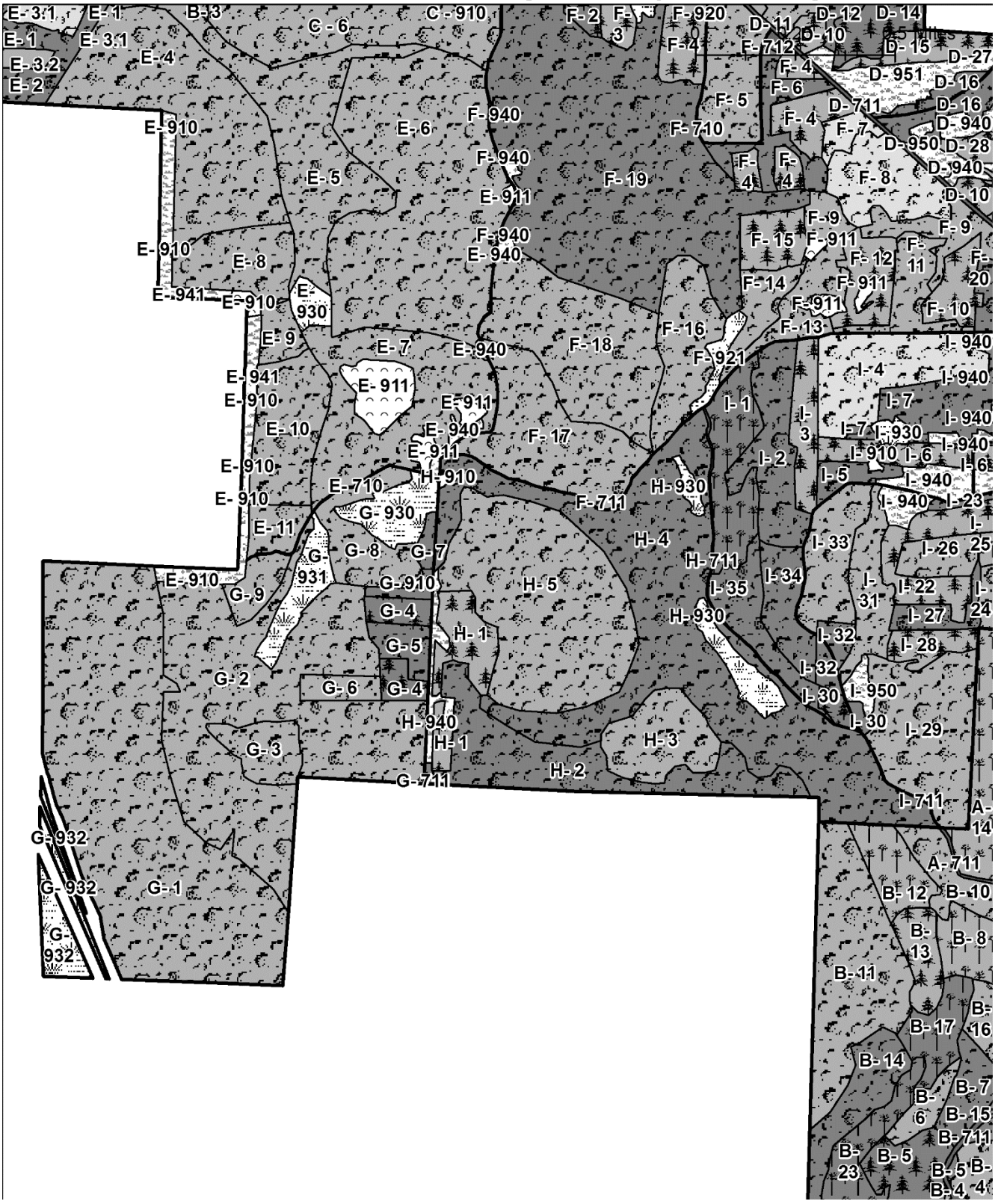
Legend for all Vegetative Types and Stages maps is located on page 222.

Rattlesnake Hill WMA Northwest - Vegetative Types & Stages



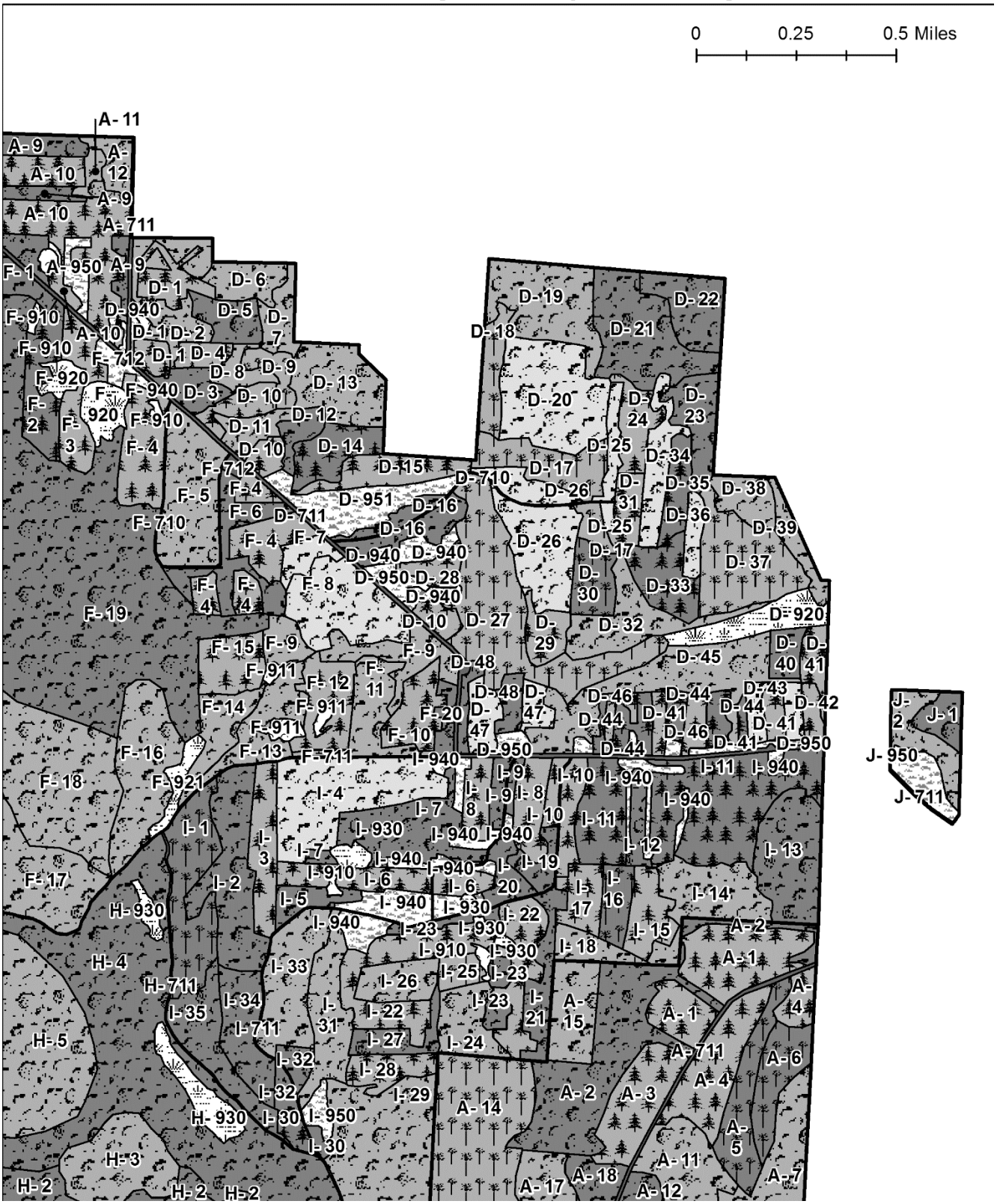
Legend for all Vegetative Types and Stages maps is located on page 222.

Rattlesnake Hill WMA Southwest - Vegetative Types & Stages



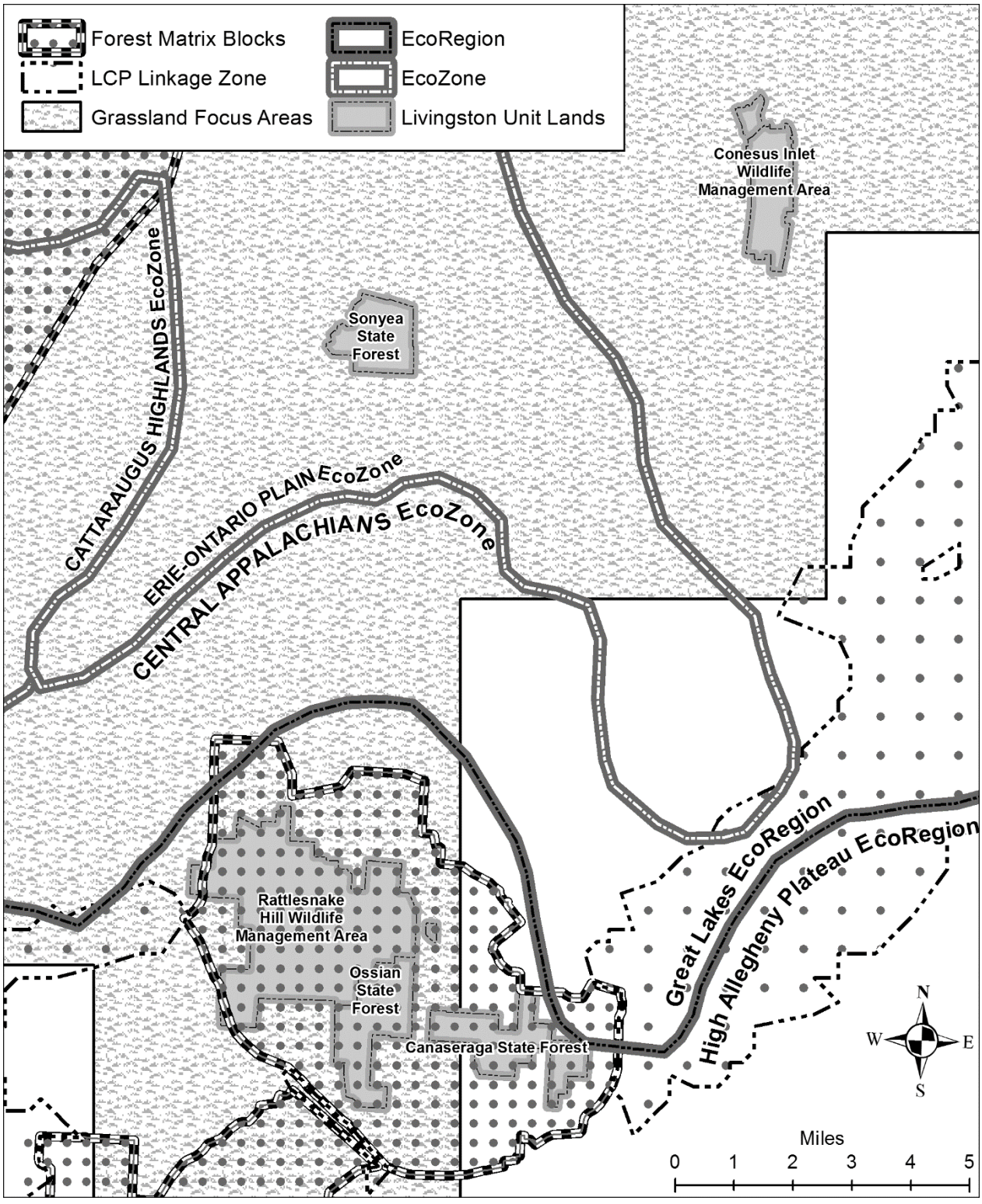
Legend for all Vegetative Types and Stages maps is located on page 222.

Rattlesnake Hill WMA East - Vegetative Types & Stages



EcoRegions, Forest Matrix Block and Least Cost Path Corridors, and Grassland Focus Areas

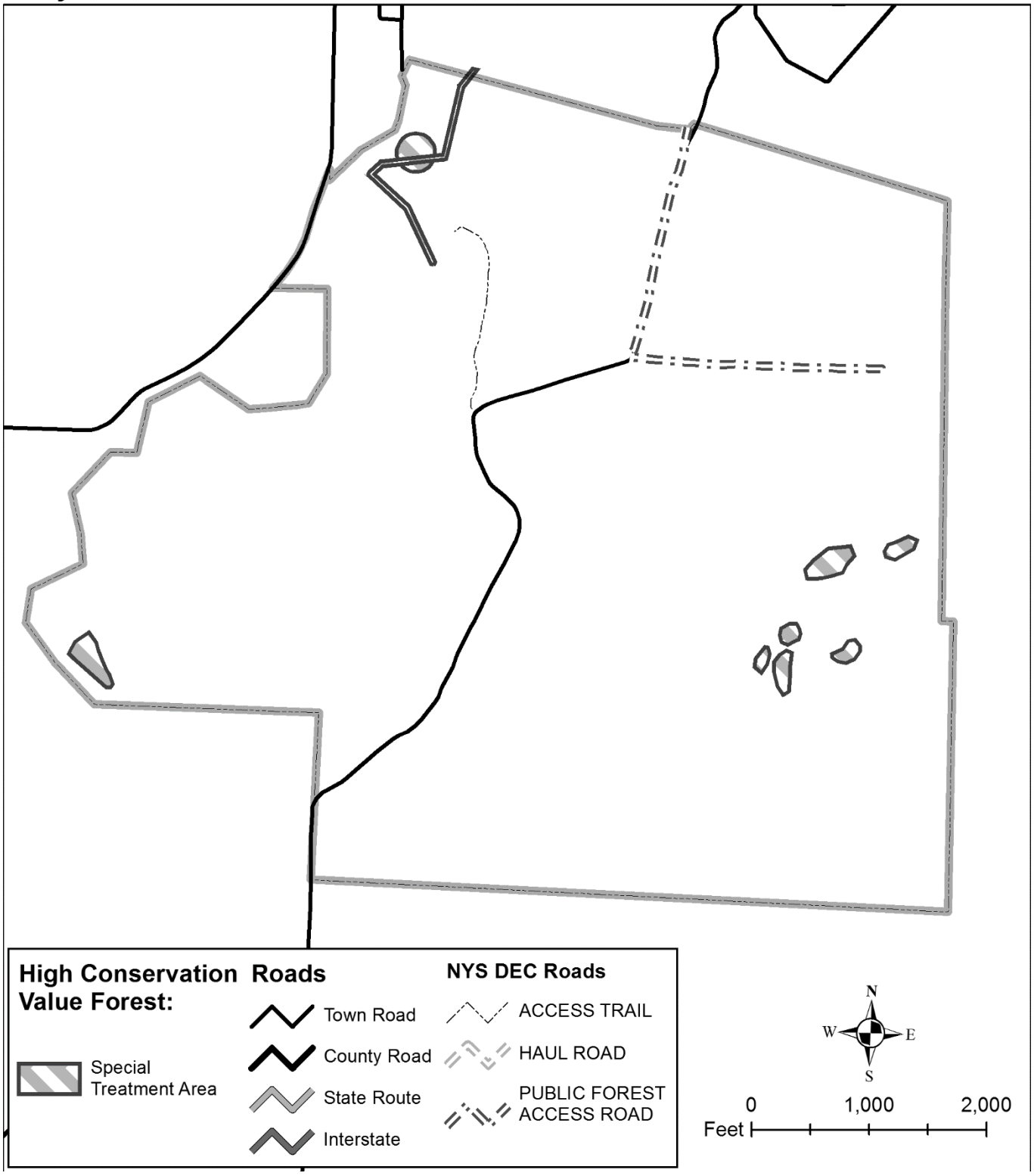
For additional information see the Timber and Vegetation (pg. 38), Forest Matrix Blocks and Least Cost Path Corridors (pg. 46), Ecological Zones and EcoRegions (pg. 48), and Timber and Vegetation Management (pg. 74) sections.



High Conservation Value Forests

For additional information see the High Conservation Value Forest (HCVF) section on page 43. As of the writing of this plan there are no HCVF identified in Canaseraga SF or Ossian SF.

Sonyea SF - HCVF

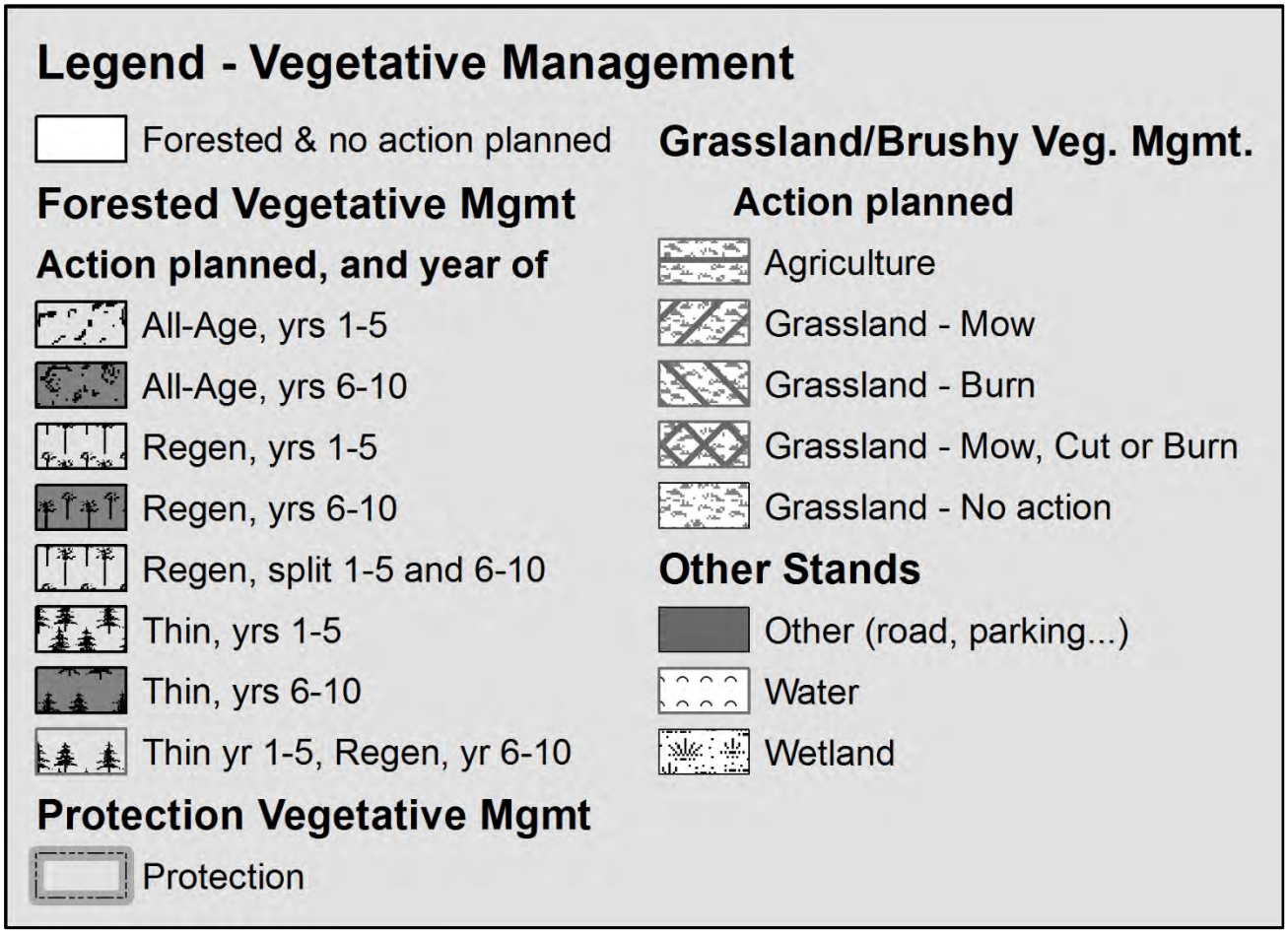


Vegetative Management

See Also: Timber and Vegetation (pg. 38), Timber and Vegetation Management (pg. 74), and Appendix F: Vegetation Management (pg. 163).

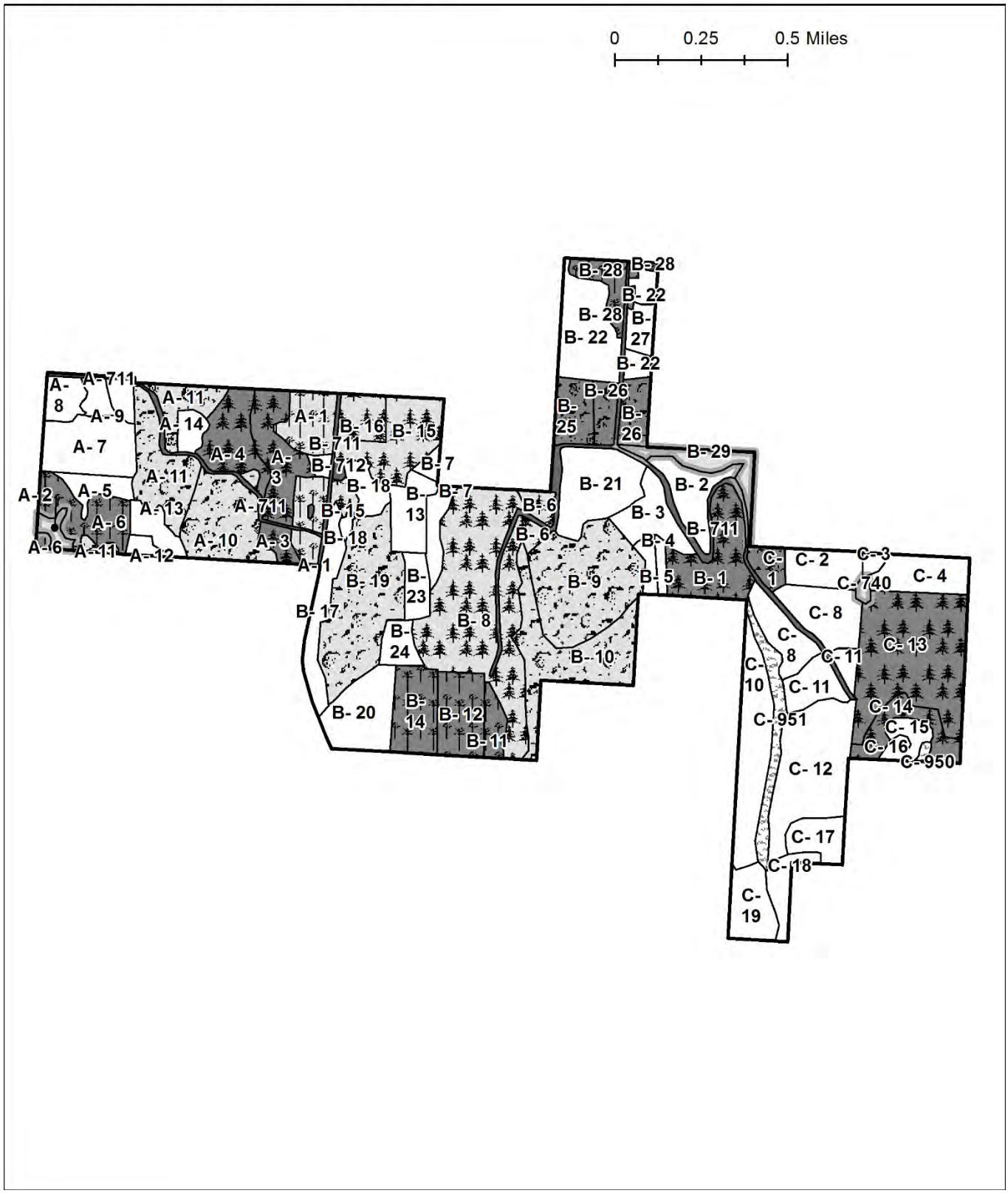
A stand is a group of plants with similar characteristics that are analyzed and treated as a single unit. Each property is divided into one or more compartments, and each compartment divided into stands. Compartments are given a letter designation, and stands a number. This letter-number combination is used for tracking, mapping and planning the actions and activities that happen in and on NYS DEC owned land.

Legend for the following 8 maps:



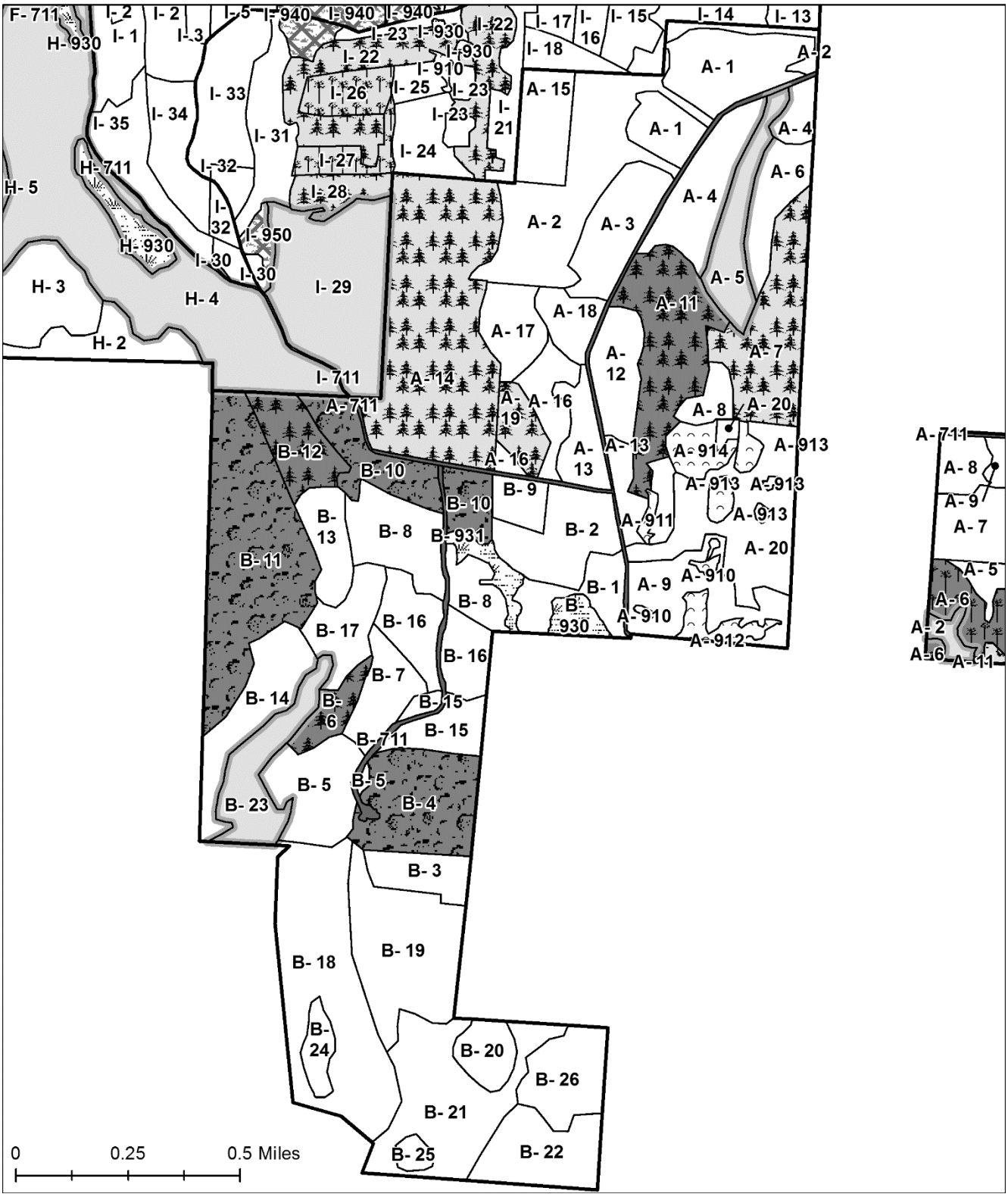
Legend for all Vegetative Management maps is located on page 233.

Canaseraga SF - Vegetative Management



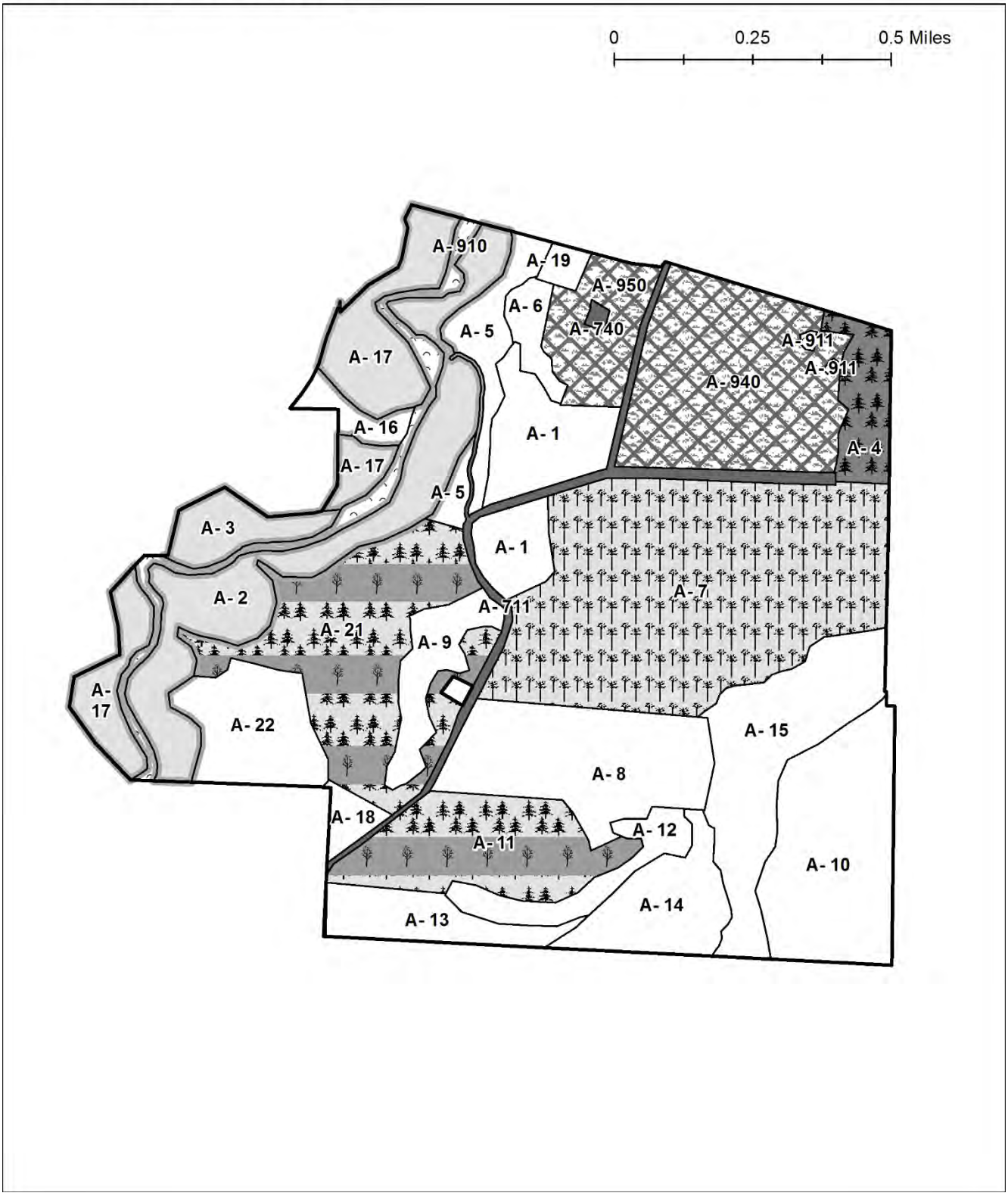
Legend for all Vegetative Management maps is located on page 233.

Ossian SF - Vegetative Management



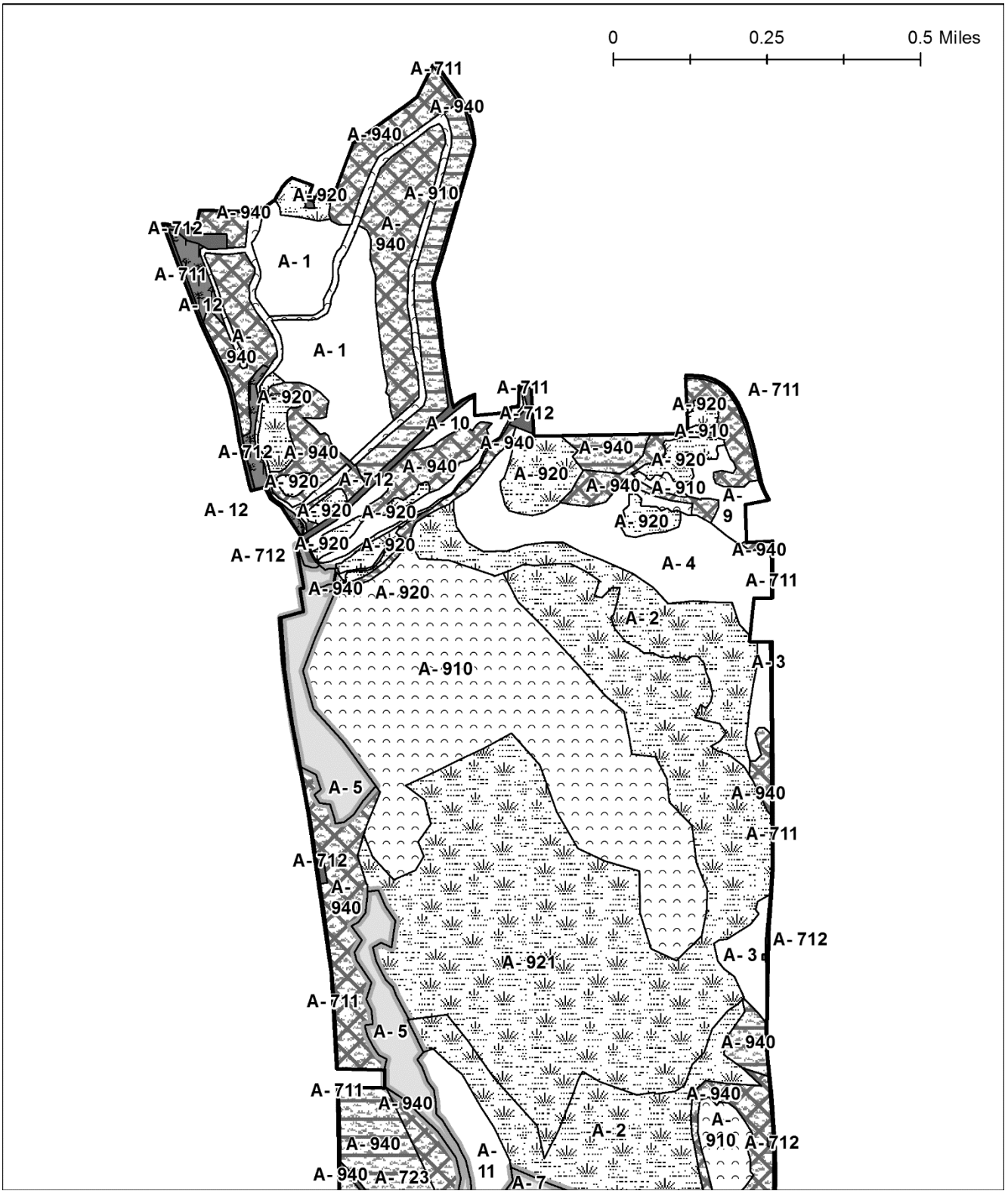
Legend for all Vegetative Management maps is located on page 233.

Sonyea SF - Vegetative Management



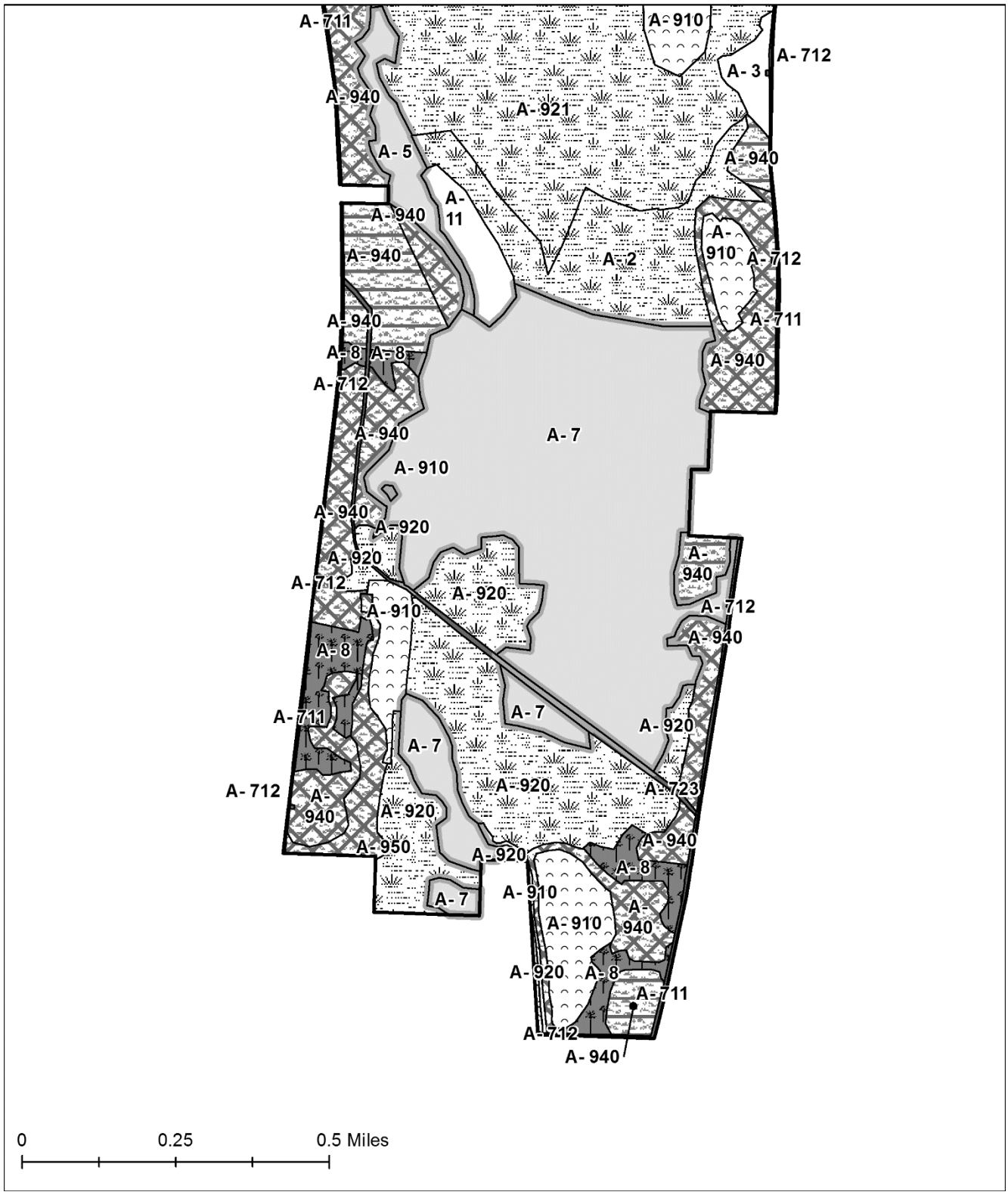
Legend for all Vegetative Management maps is located on page 233.

Conesus Inlet WMA North - Vegetative Management



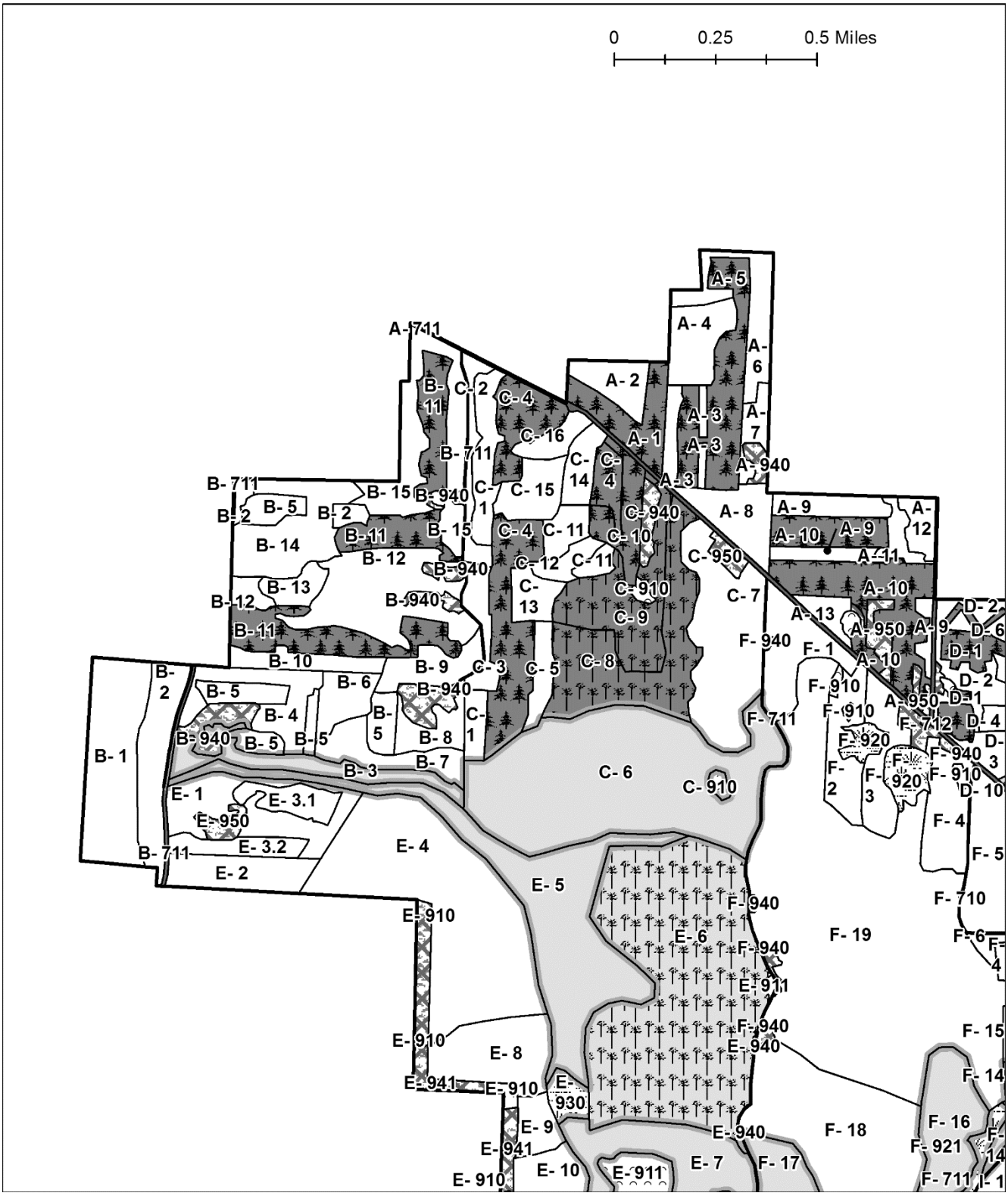
Legend for all Vegetative Management maps is located on page 233.

Conesus Inlet WMA South - Vegetative Management



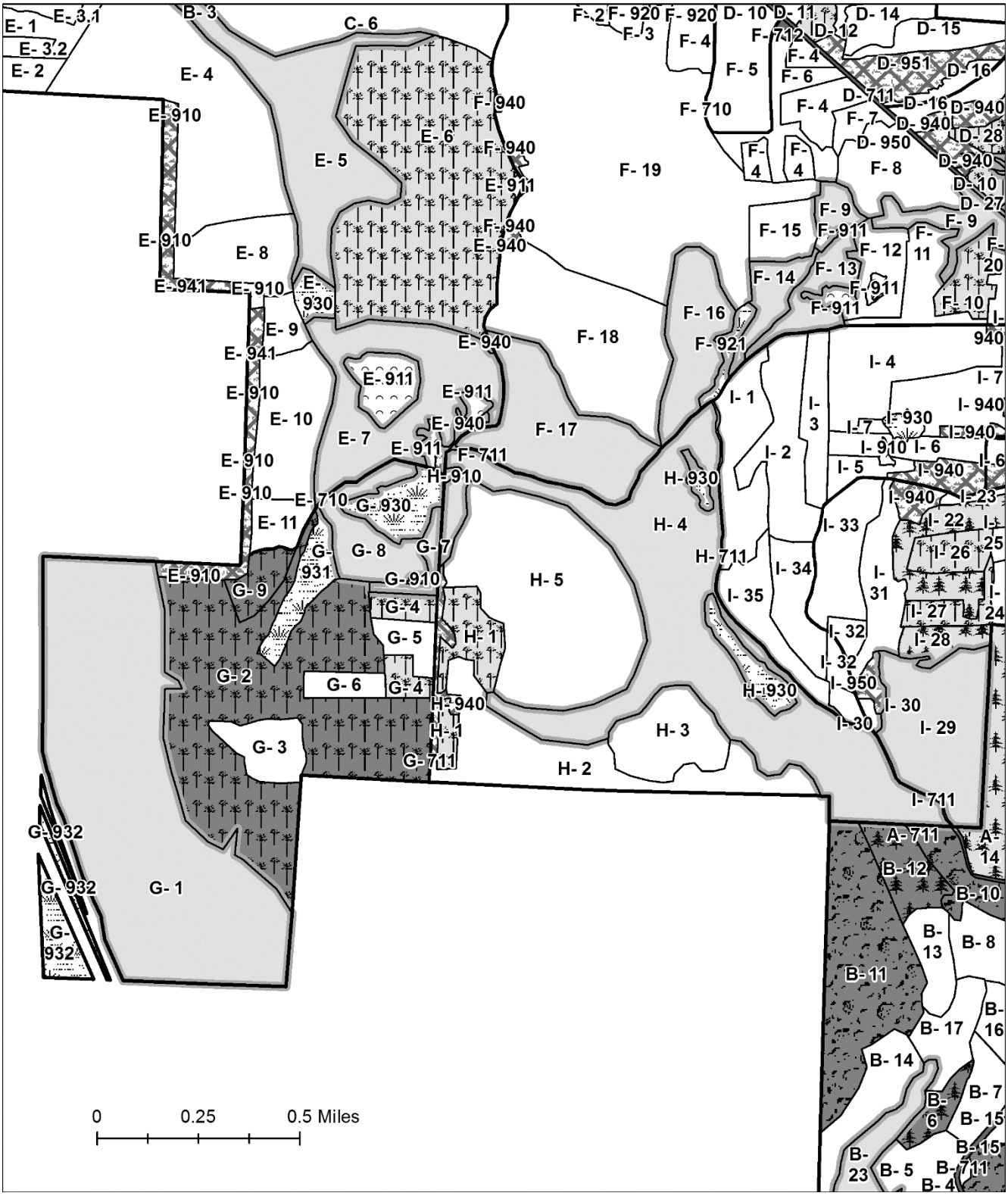
Legend for all Vegetative Management maps is located on page 233.

Rattlesnake Hill WMA Northwest - Vegetative Management



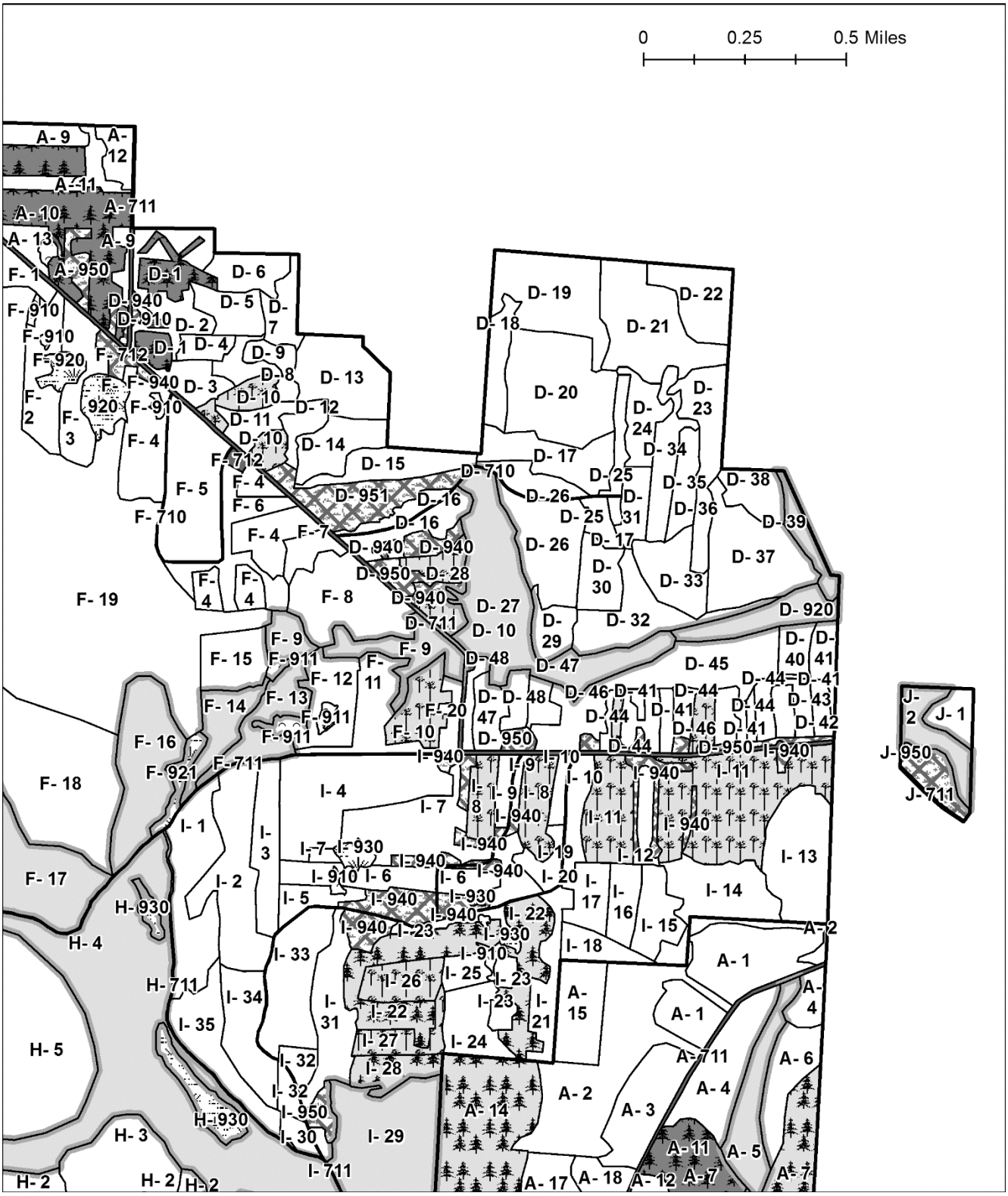
Legend for all Vegetative Management maps is located on page 233.

Rattlesnake Hill WMA Southwest - Vegetative Management



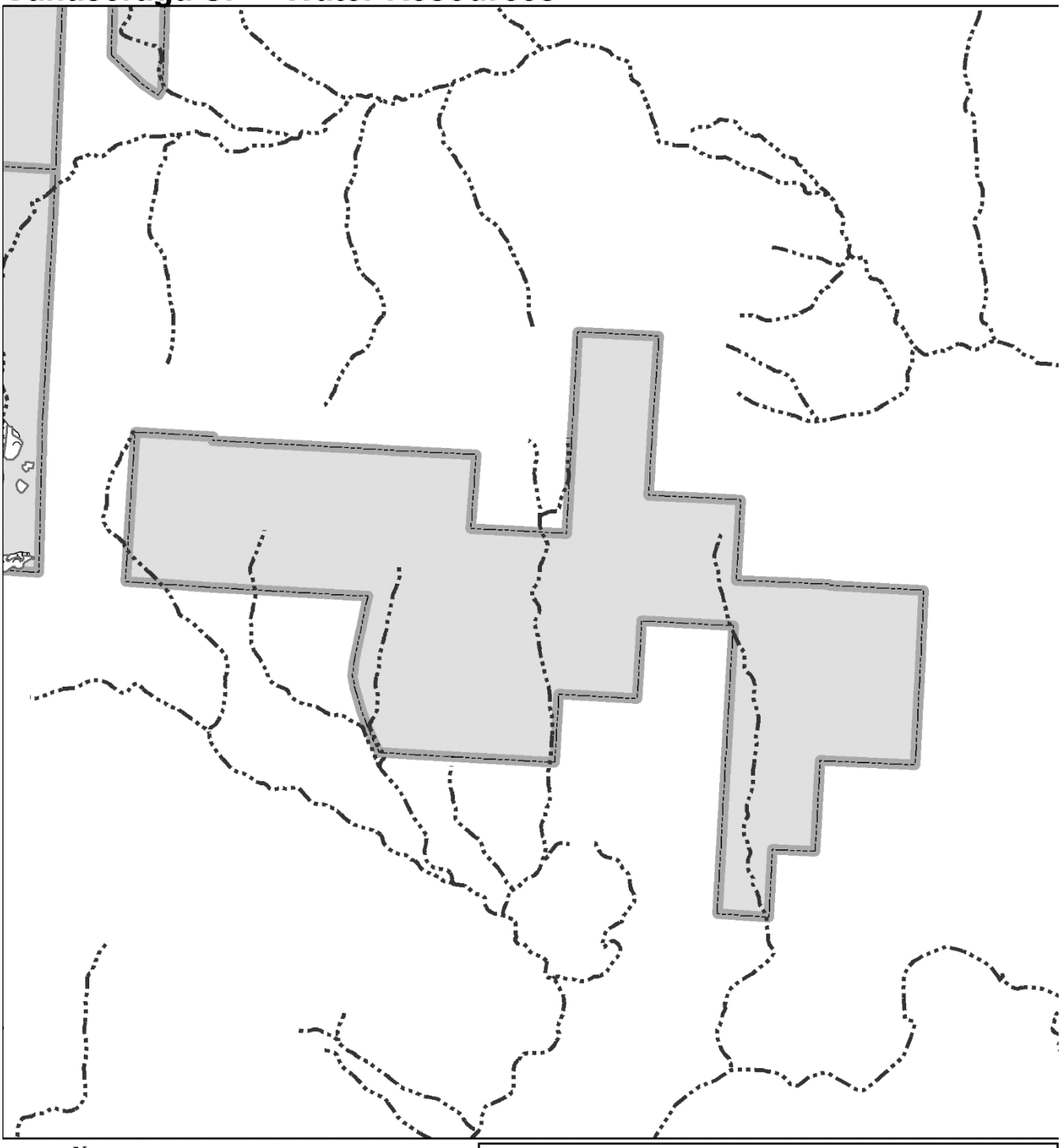
Legend for all Vegetative Management maps is located on page 233.

Rattlesnake Hill WMA East - Vegetative Management

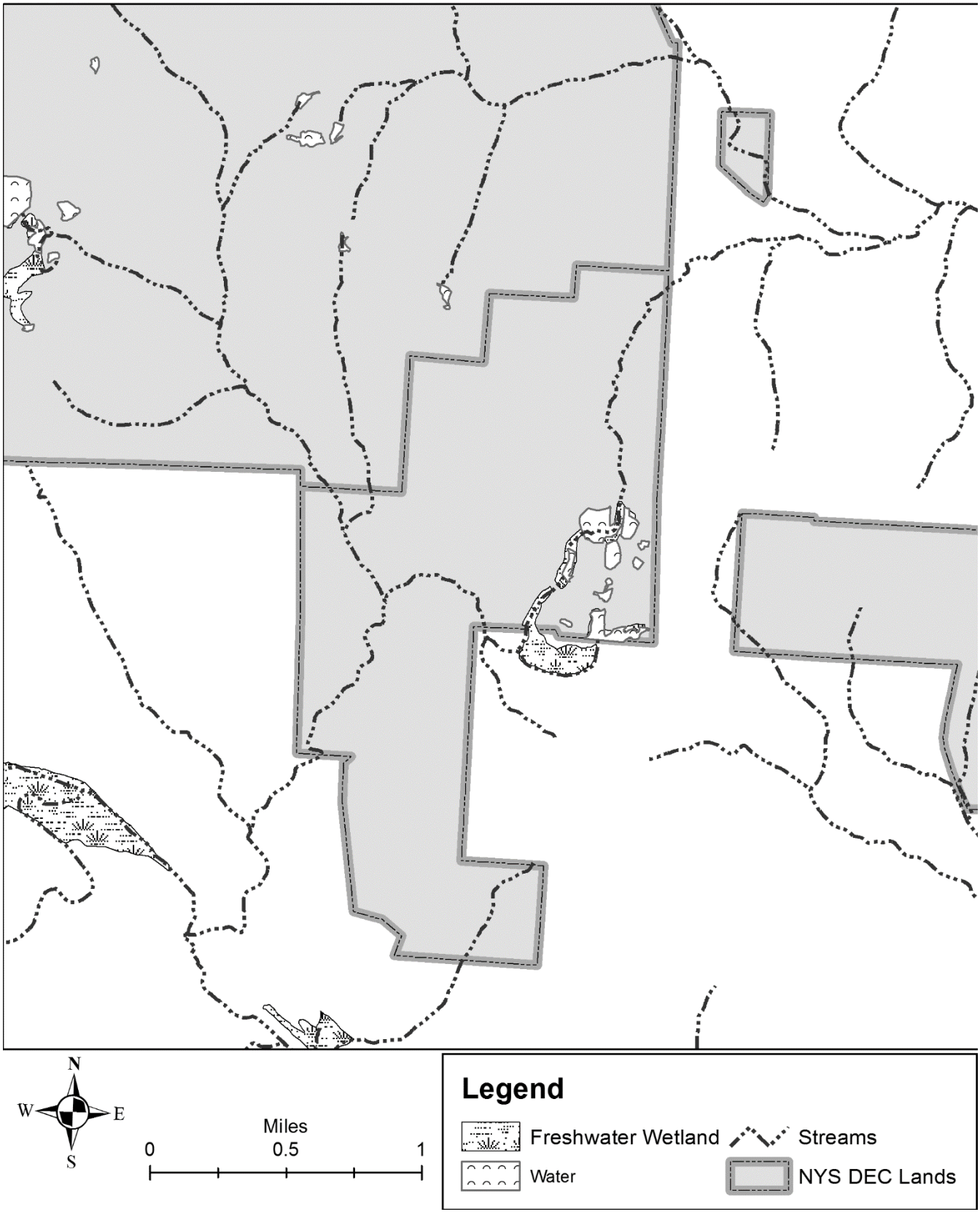


Streams, Ponds and Wetlands

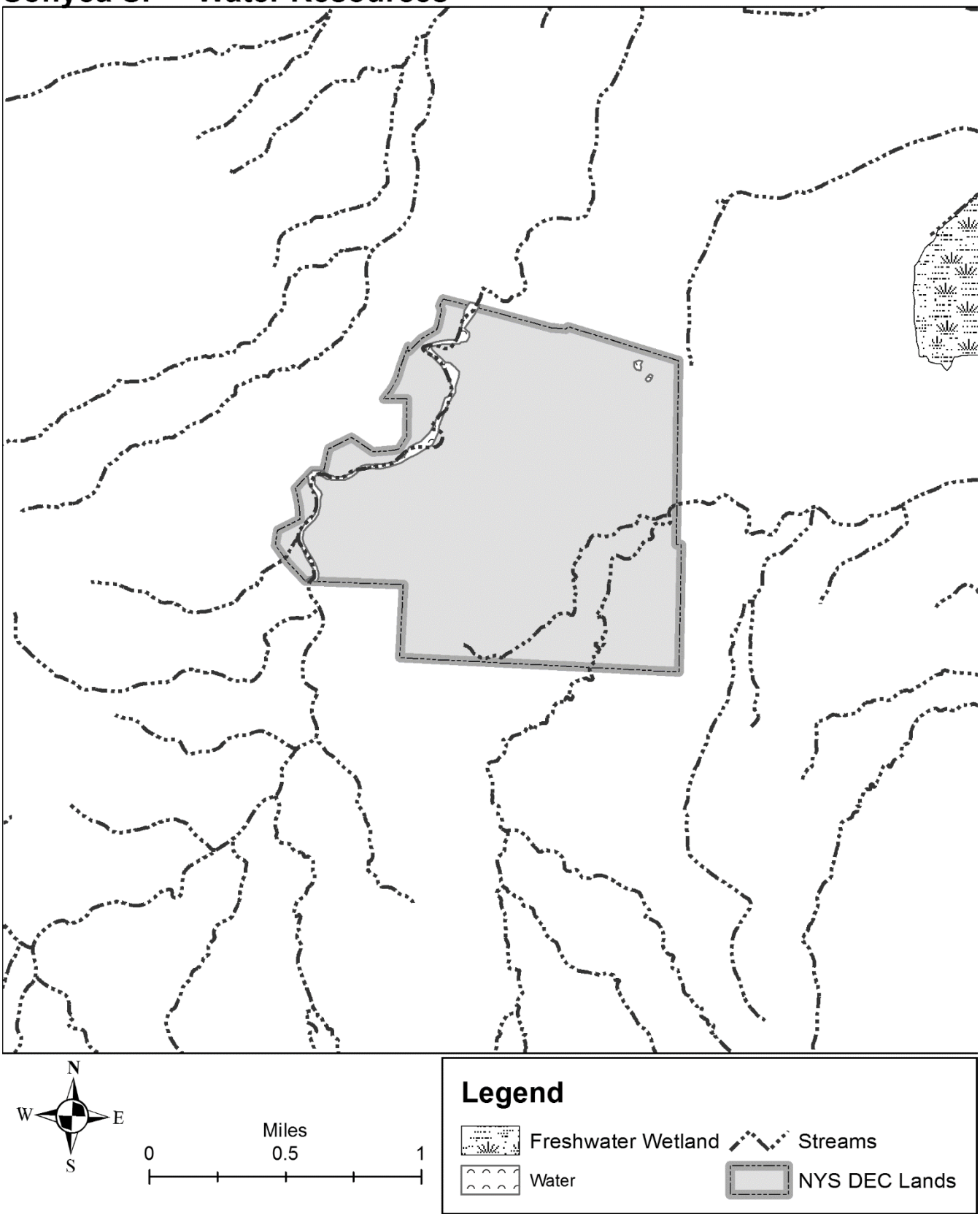
Canaseraga SF - Water Resources



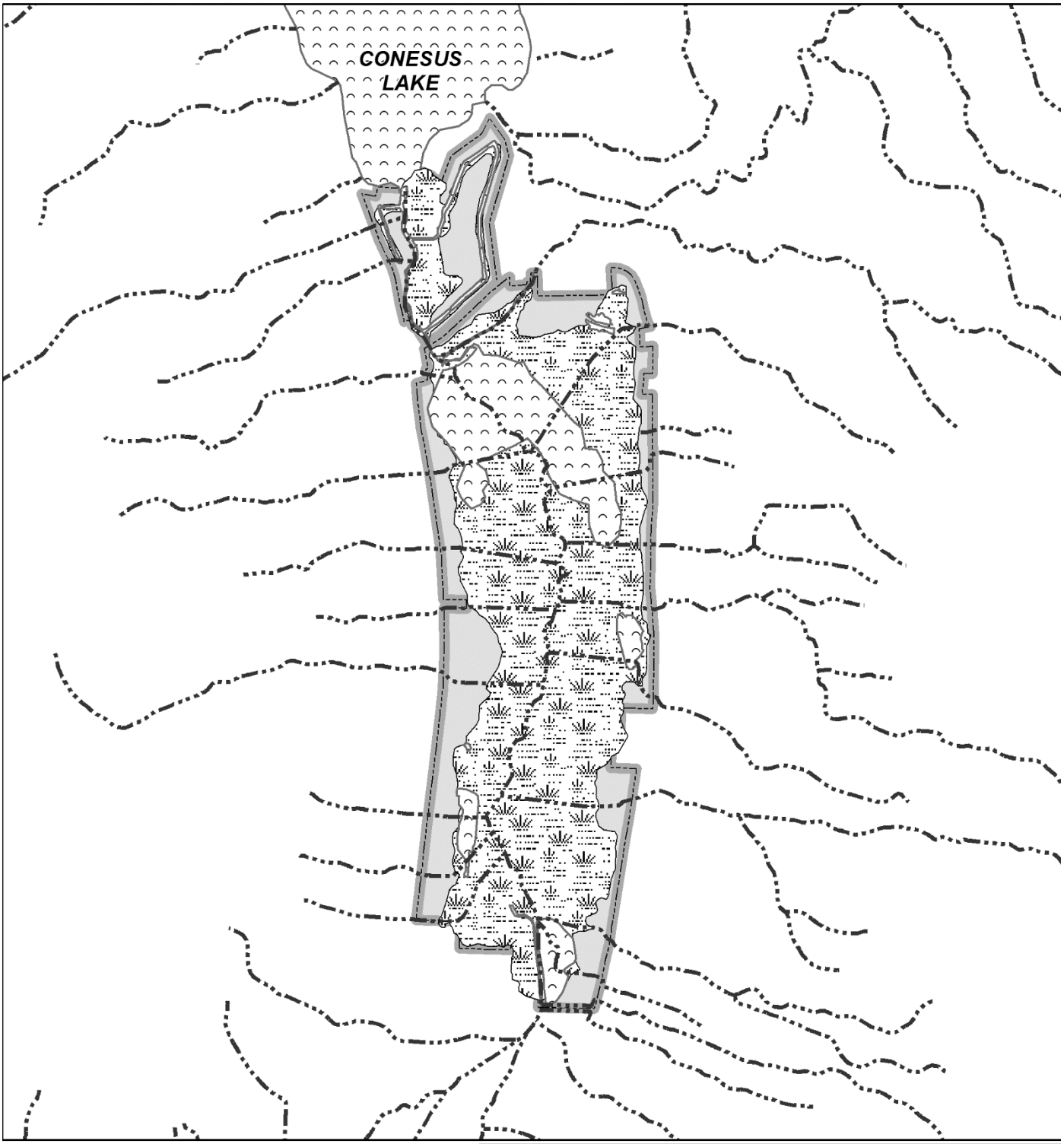
Ossian SF - Water Resources



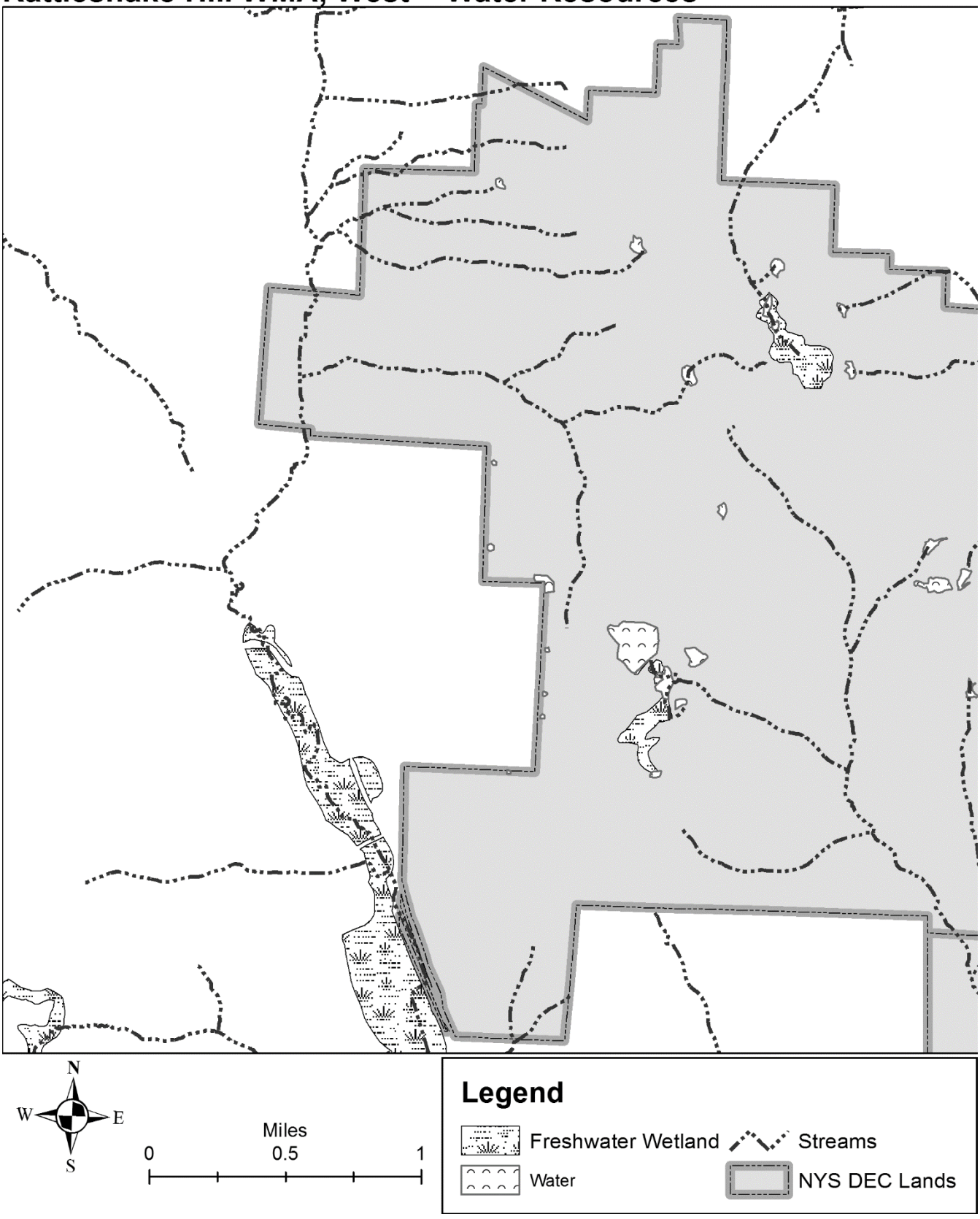
Sonyea SF - Water Resources



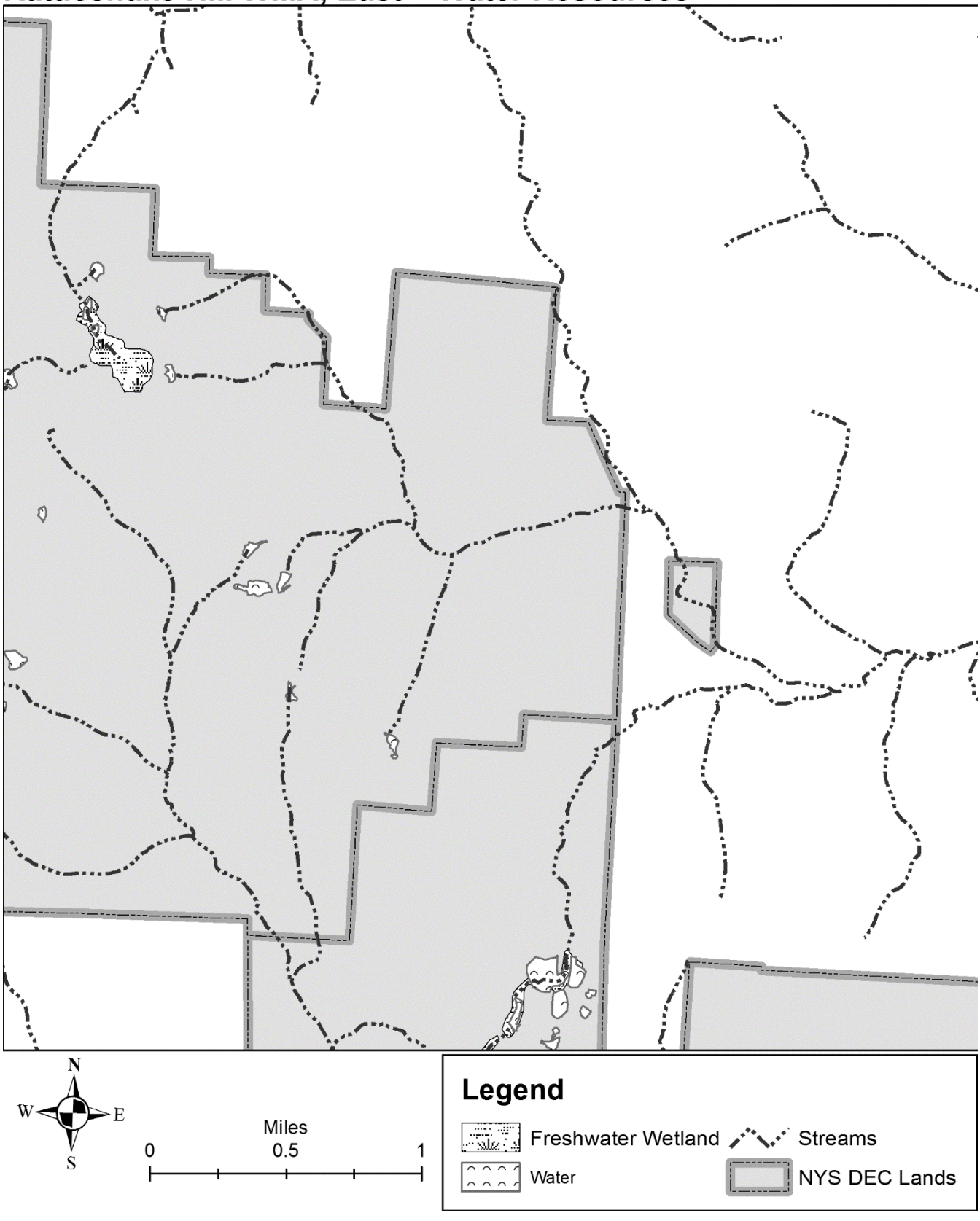
Conesus Inlet WMA - Water Resources



Rattlesnake Hill WMA, West - Water Resources

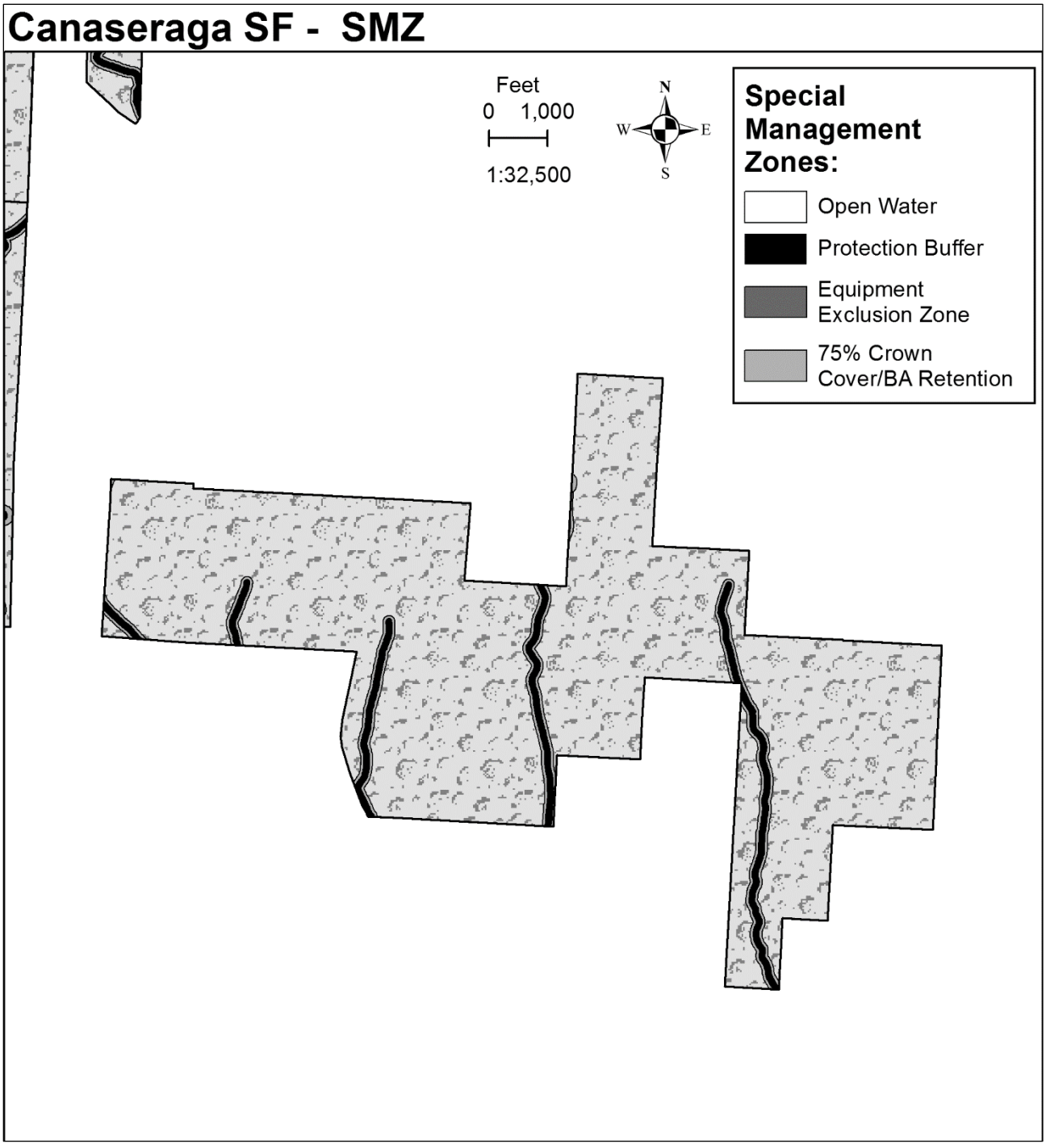


Rattlesnake Hill WMA, East - Water Resources

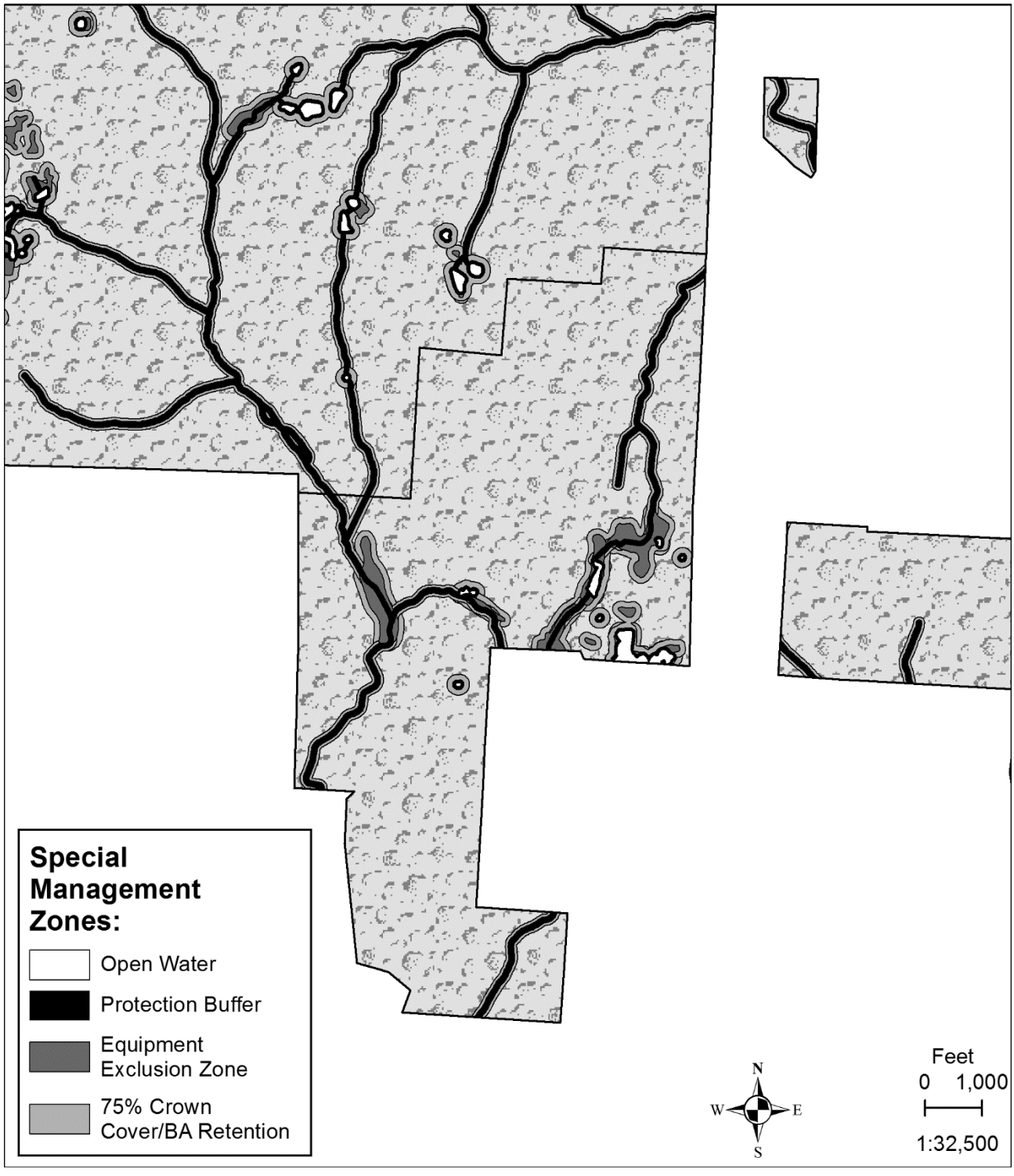


Special Management Zones

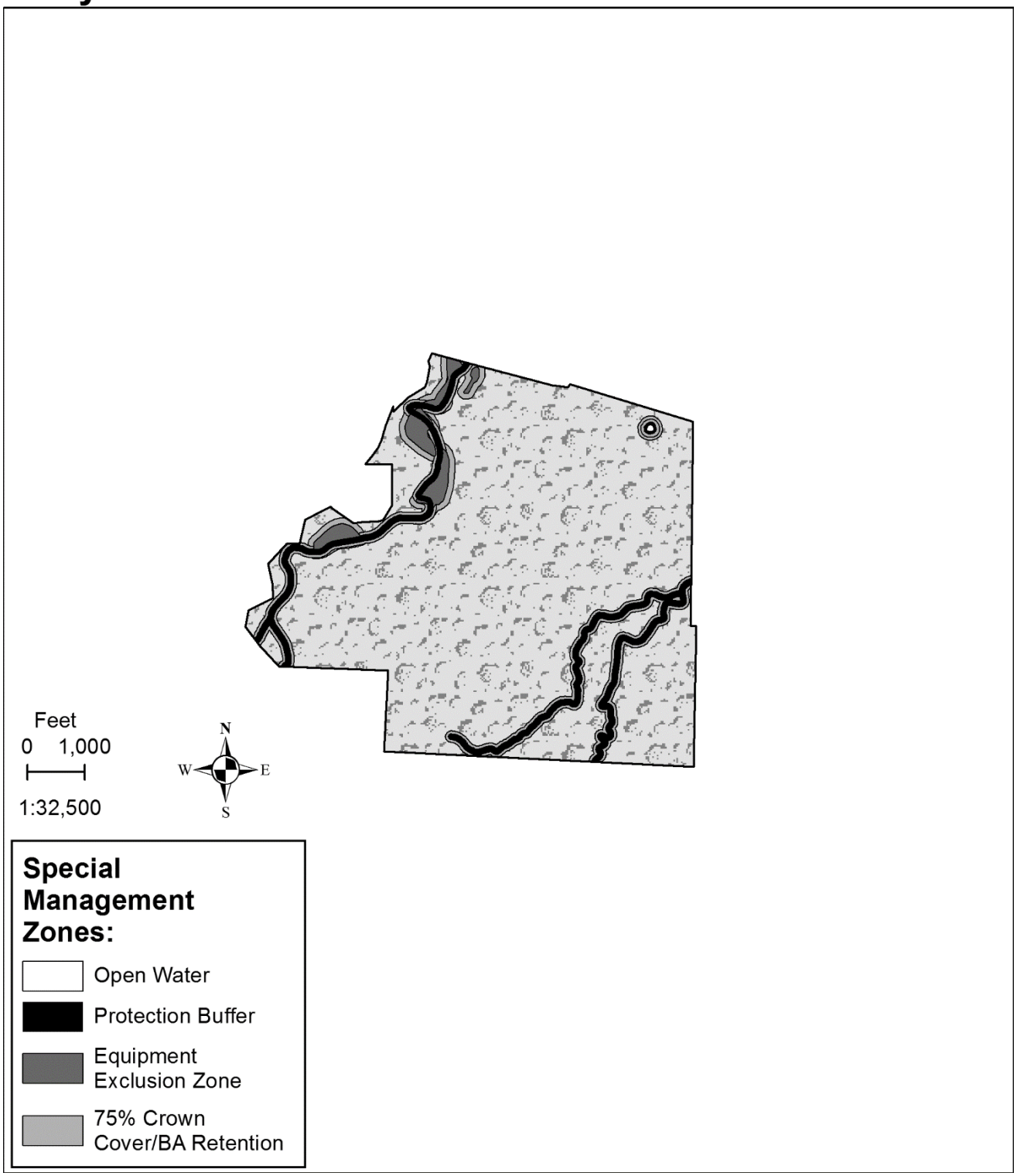
Computer generated location of the Special Management Zones (SMZ's), for more information see pages 43 and 82. SMZ's are areas around specific features (intermittent streams, vernal pools, wetlands, etc.) where management must be modified as compared to what is permissible in the general forest zone. The final configuration of the zones can only be done during sale layout, following field reconnaissance, which is beyond the scope of this plan.



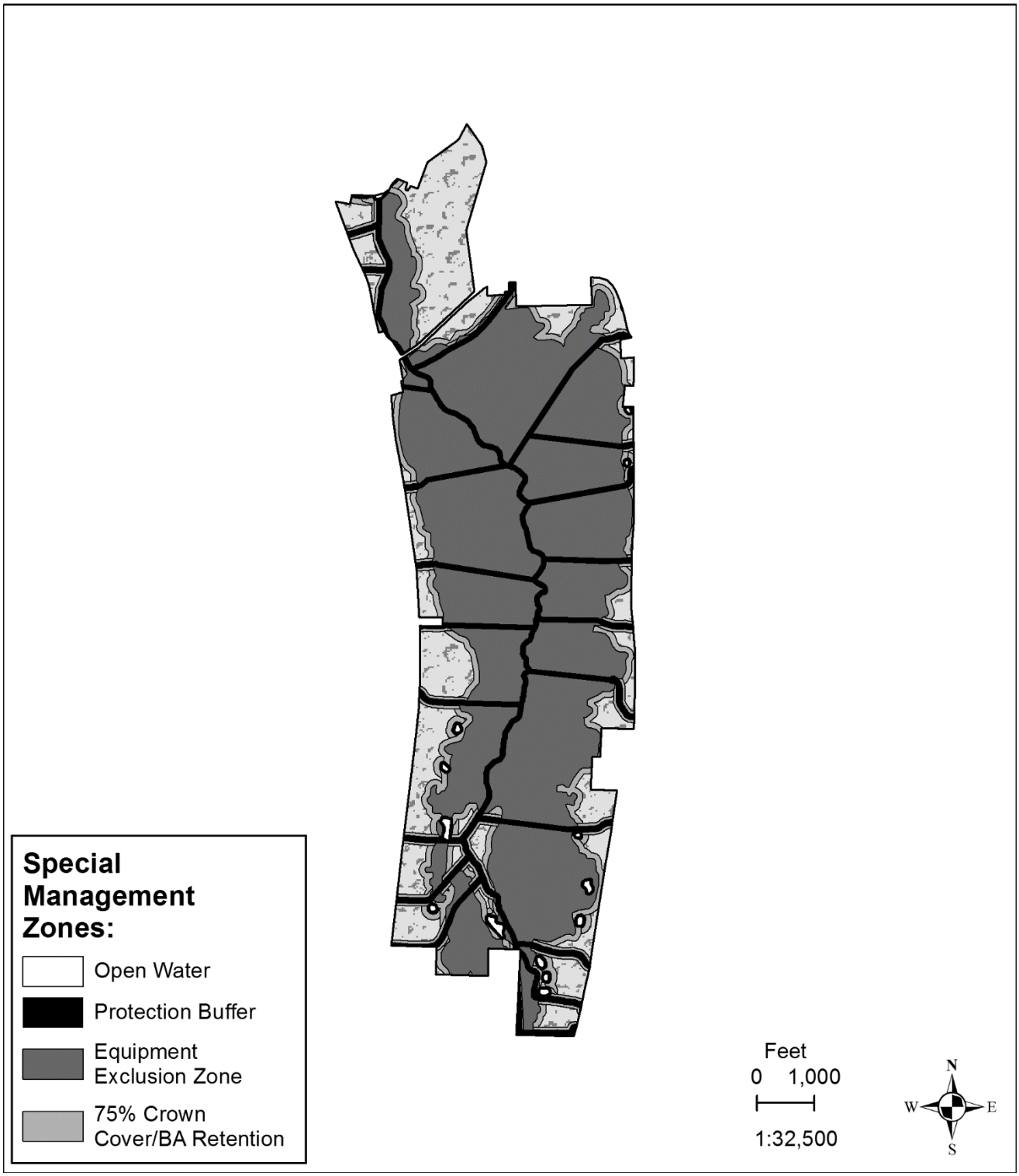
Ossian SF - SMZ



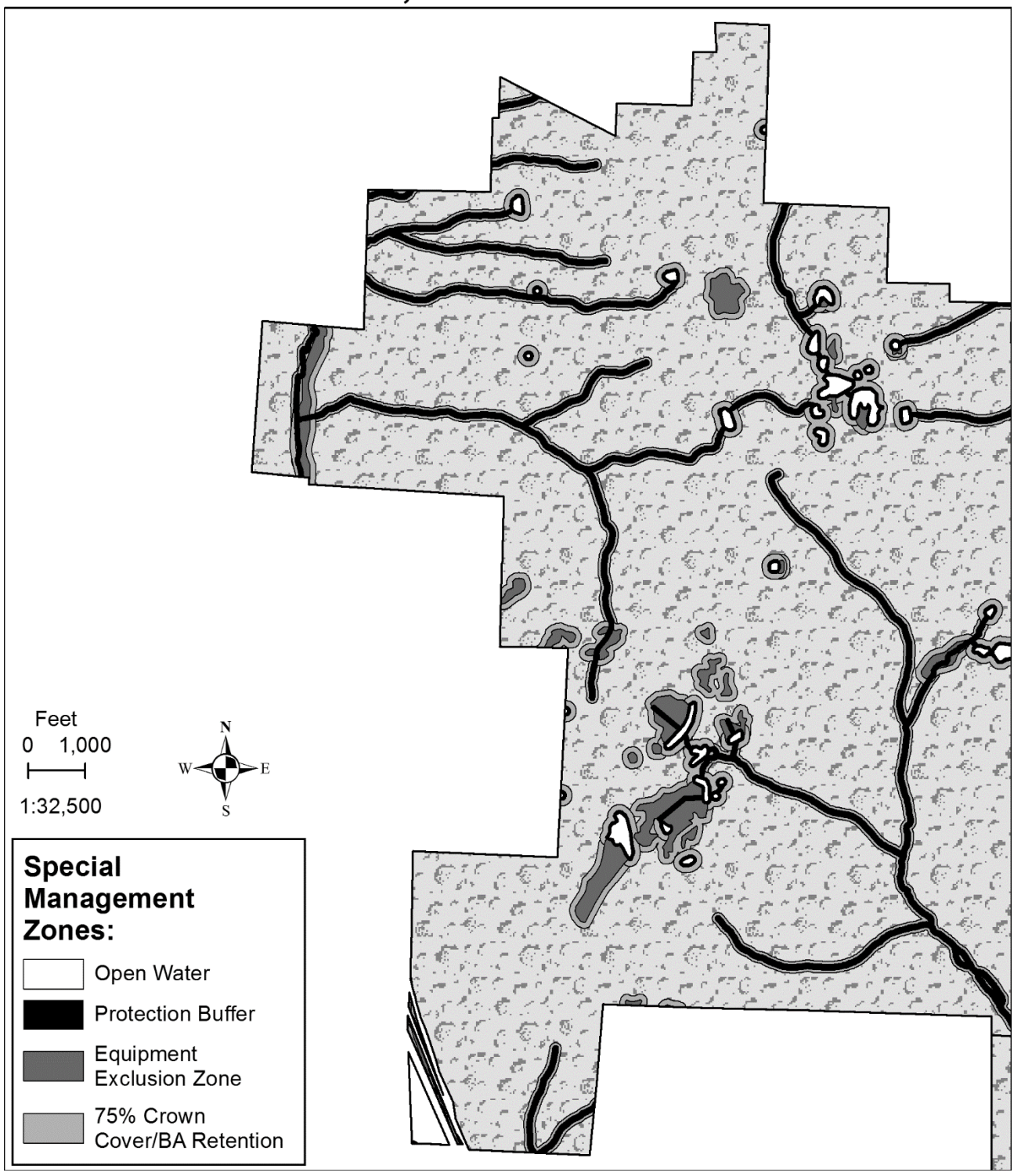
Sonyea SF - SMZ



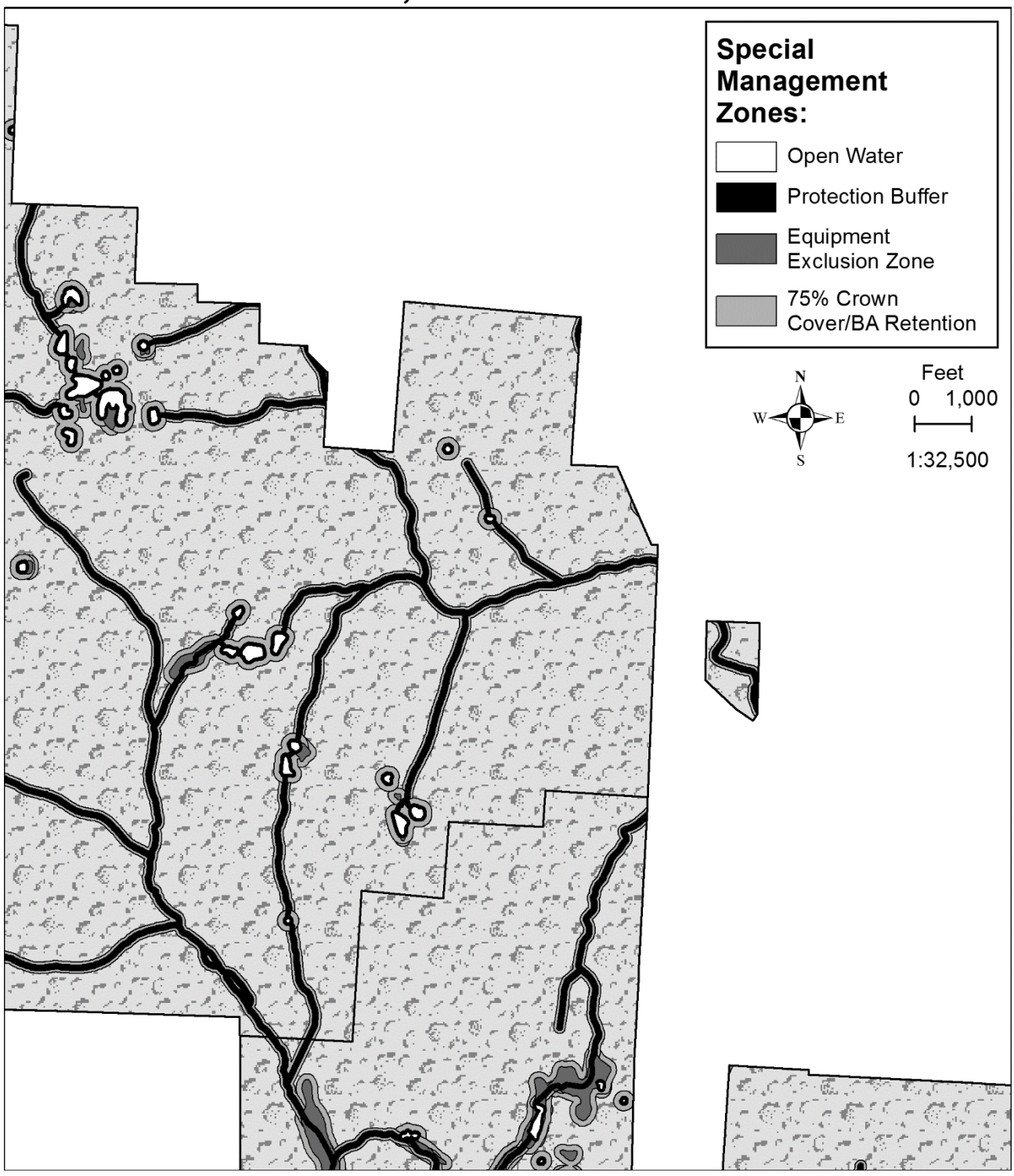
Conesus Inlet WMA - SMZ



Rattlesnake Hill WMA, West - SMZ

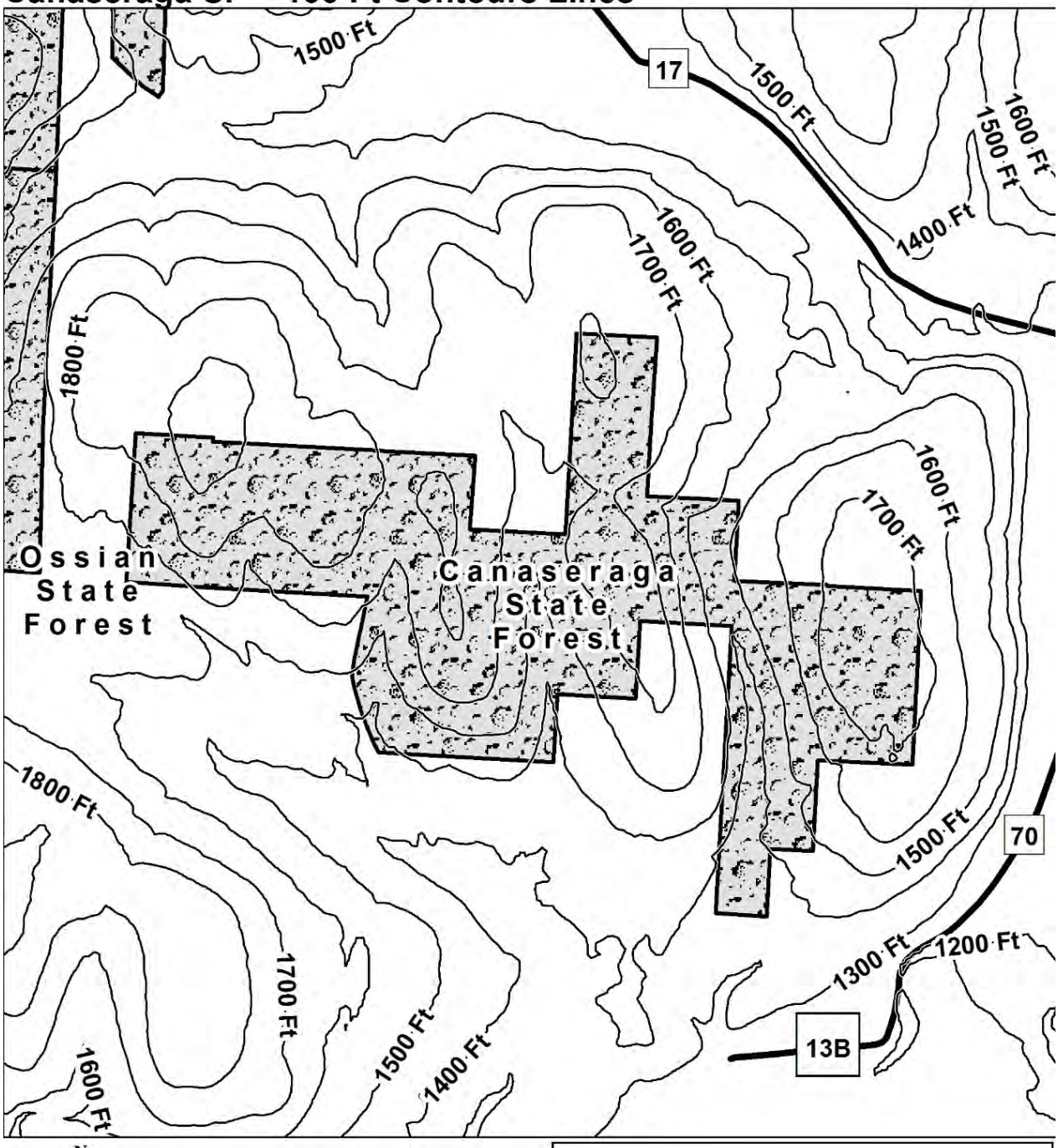


Rattlesnake Hill WMA, East - SMZ

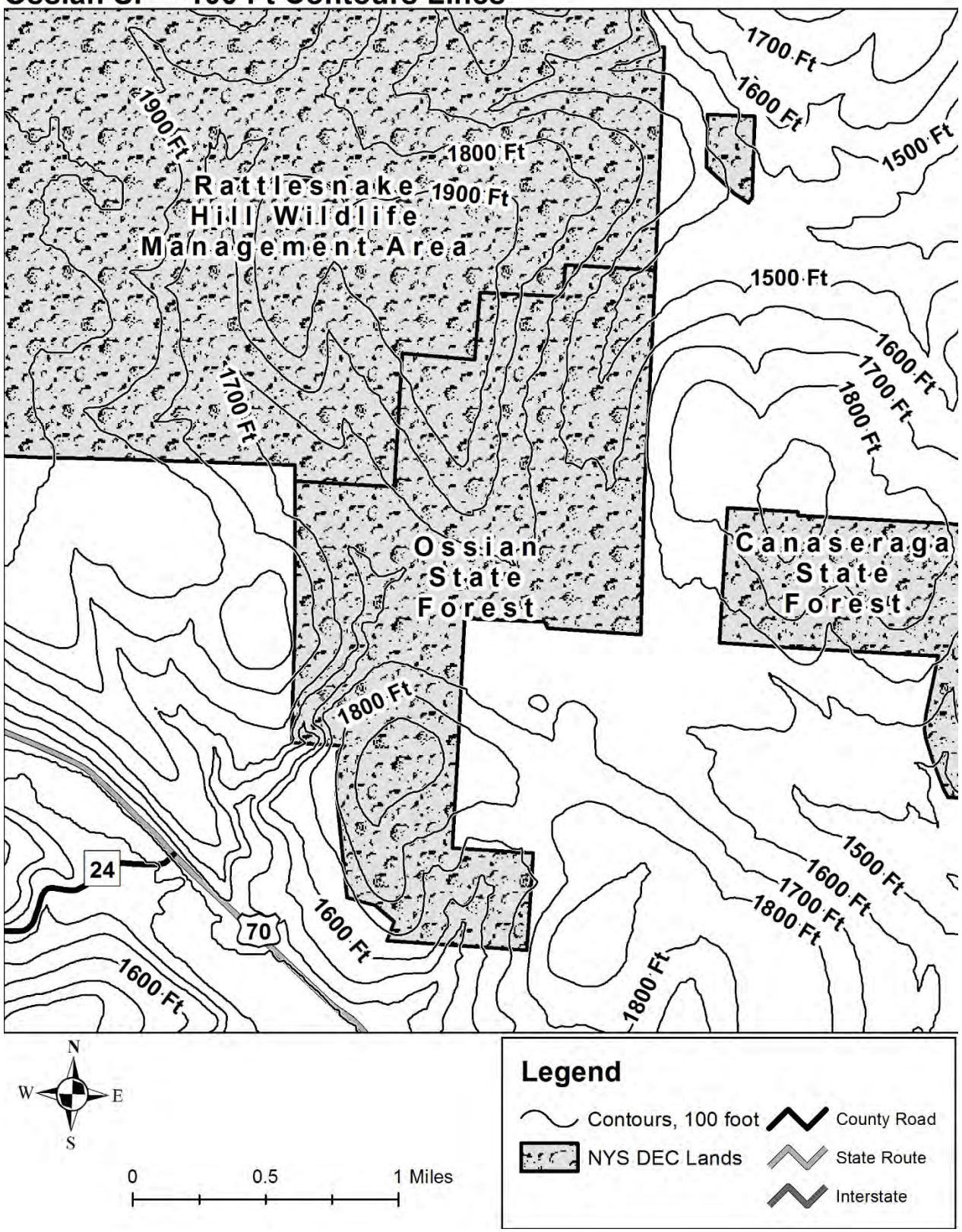


Contour Lines

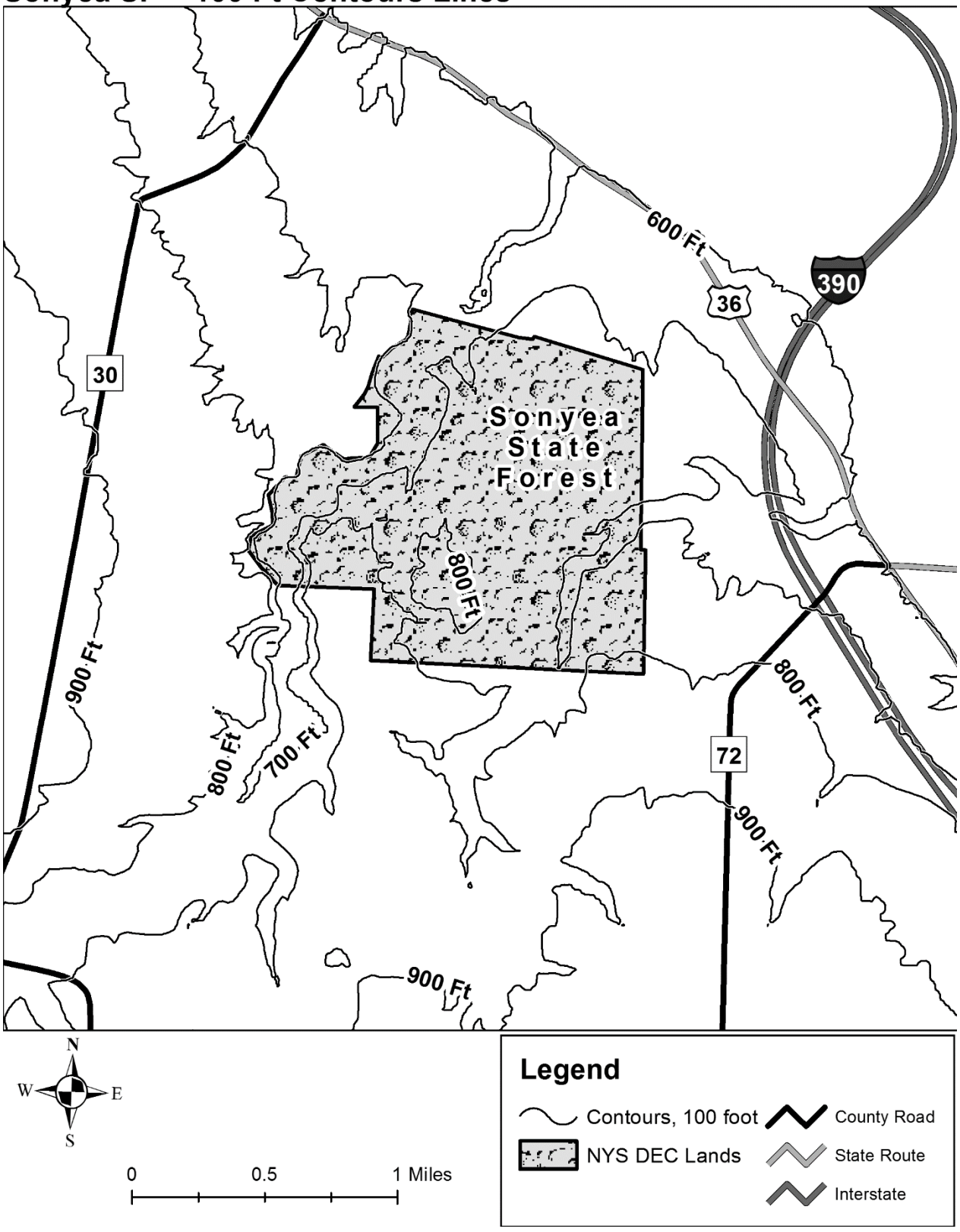
Canaseraga SF - 100 Ft Contours Lines

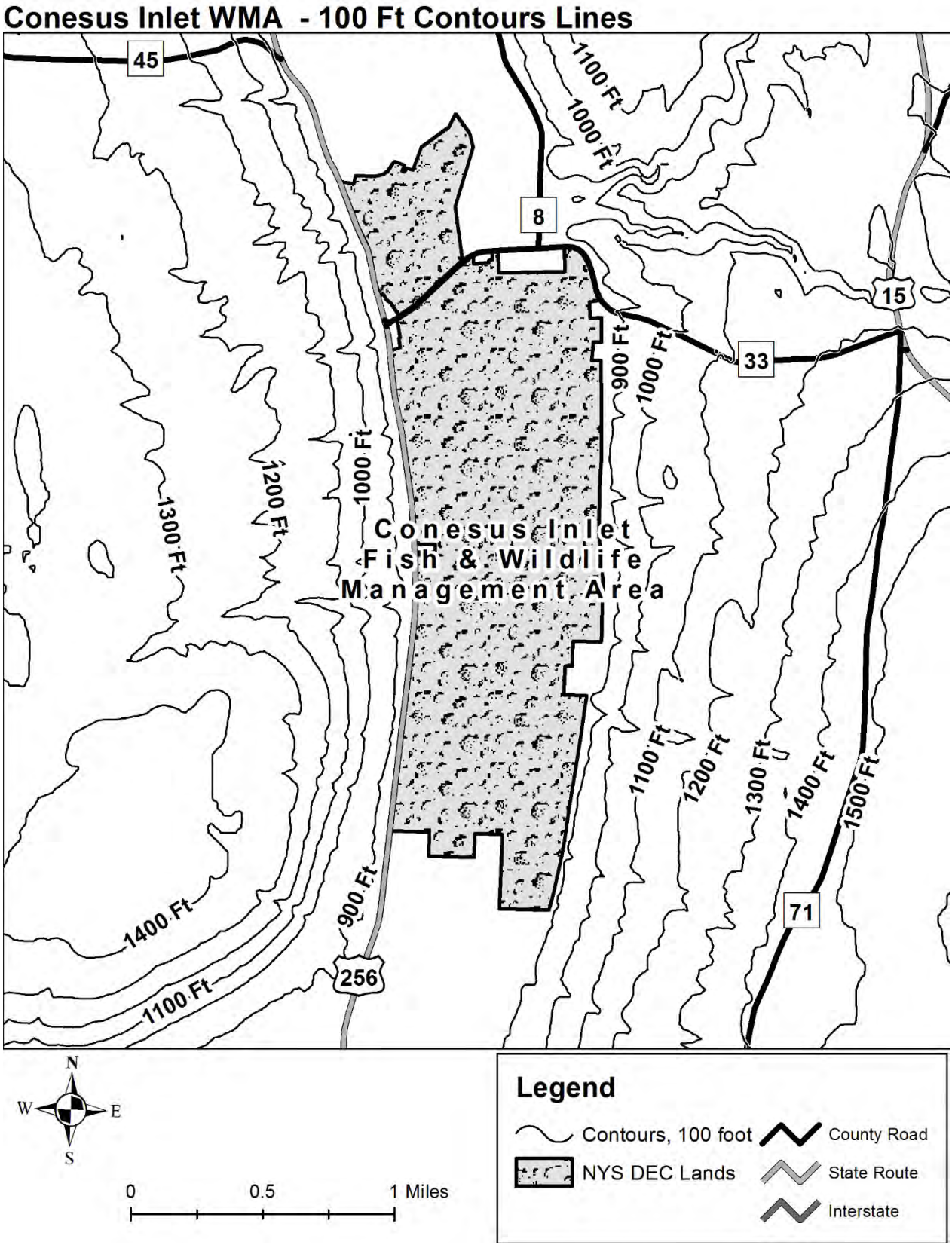


Ossian SF - 100 Ft Contours Lines

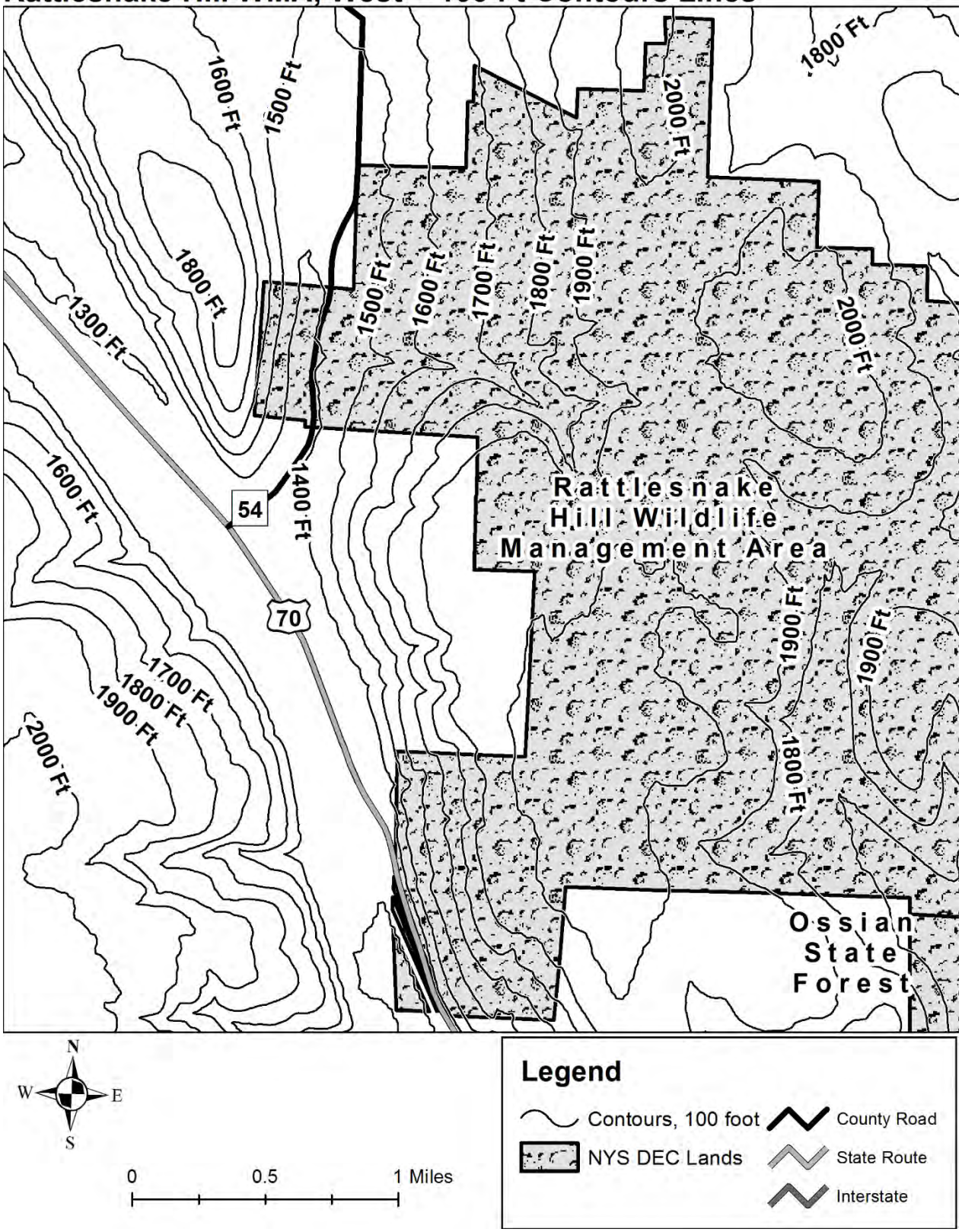


Sonyea SF - 100 Ft Contours Lines

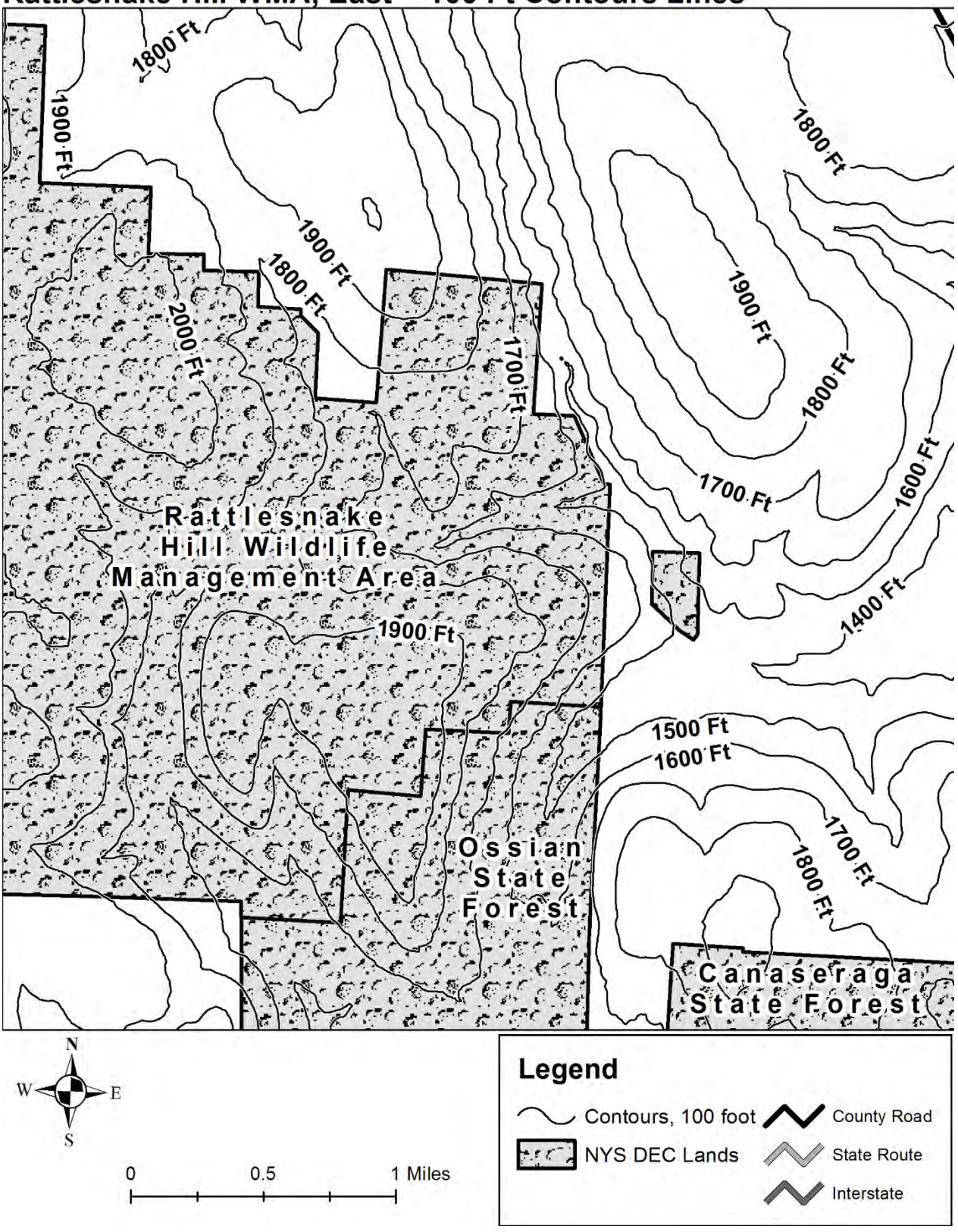



Conesus Inlet WMA - 100 Ft Contours Lines
45
8
15
33
71
256
1100 Ft
1000 Ft
900 Ft
1200 Ft
1300 Ft
1400 Ft
1500 Ft
Conesus Inlet
Fish & Wildlife
Management Area
N
W
E
S
0
0.5
1 Miles
Legend
Contours, 100 foot
NYS DEC Lands
County Road
State Route
Interstate

Rattlesnake Hill WMA, West - 100 Ft Contours Lines

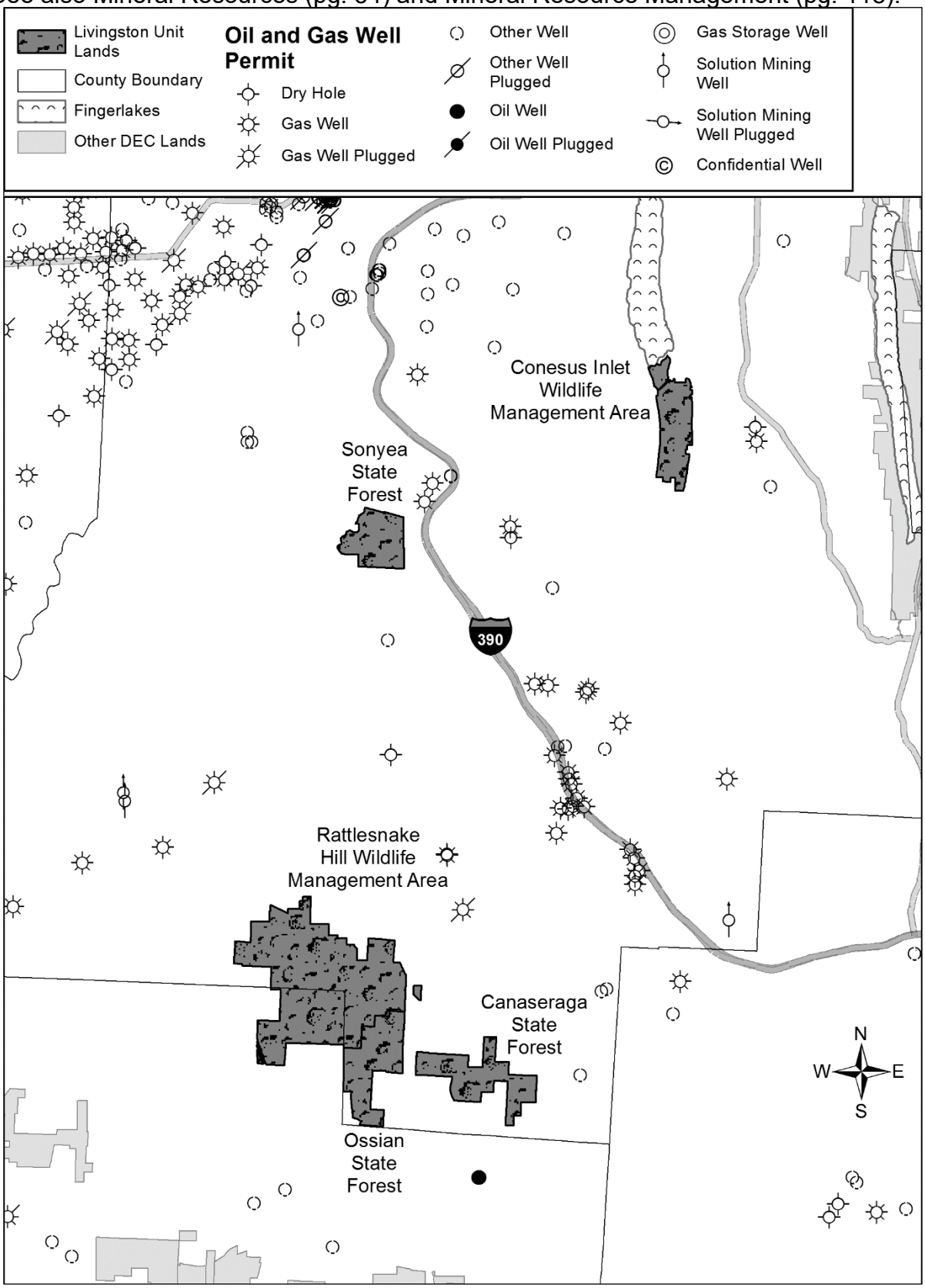


Rattlesnake Hill WMA, East - 100 Ft Contours Lines



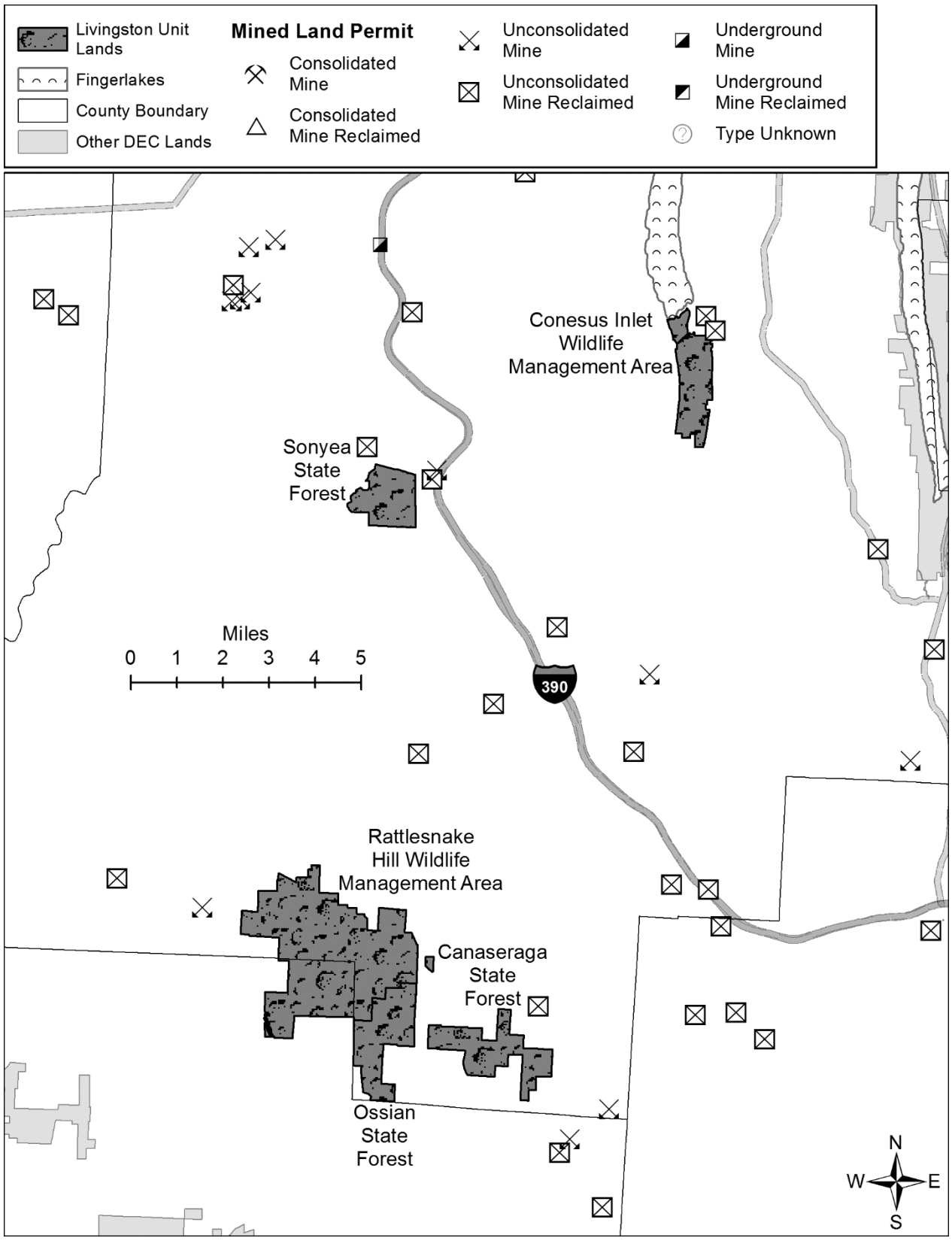
Geology – Oil, Gas, and Solution Mining Map

See also Mineral Resources (pg. 34) and Mineral Resource Management (pg. 118).



Geology - Sand, Gravel and Other Mine Locations

See also Mineral Resources (pg. 34) and Mineral Resource Management (pg. 118).



Soil Maps

To make these maps easier to read, the following soil type maps have been greatly simplified. For greater detail and information please look online at https://websoilsurvey.nrcs.usda.gov/app/ or contact the Livingston or Allegany NRCS offices. See also Soils (pg. 30) and Table 5: Soils (pg. 31).

Table M1: Soil Type Key

Key No.	Soil Type	Acres	Percent
1	Alluvial soils, undifferentiated	170	1.7%
2	Almond silt loam	647	6.6%
3	Aurora silt loam	35	0.4%
4	Bath channery silt loam	4	0.0%
5	Braceville silt loam	8	0.1%
6	Canfield gravelly silt loam	175	1.8%
7	Carlisle muck	287	2.9%
8	Cayuga silt loam	31	0.3%
9	Chadakoin channery silt loam	5	0.0%
10	Chagrin shaly silt loam, alluvial fan phase	182	1.9%
11	Chagrin silt loam, high bottom phase	14	0.1%
12	Chenango channery silt loam	22	0.2%
13	Chenango gravelly loam	58	0.6%
14	Chippewa silt loam	74	0.8%
15	Eel silty clay loam	53	0.5%
16	Fremont channery silt loam	176	1.8%
17	Gretor channery silt loam	3	0.0%
18	Holderton silt loam	33	0.3%
19	Holly silty clay loam	91	0.9%
20	Hornell silty clay loam	86	0.9%
21	Howard fine sandy loam	4	0.0%
22	Howard gravelly loam	136	1.4%
23	Howard soils, undifferentiated	12	0.1%
24	Ischua channery silt loam	48	0.5%
25	Lakemont silty clay laom	9	0.1%
26	Lansing silt loam	6	0.1%
27	Lordstown and Towerville soils, extremely stony	60	0.6%
28	Lordstown channery silt loam	173	1.8%
29	Lordstown flaggy silt loam	352	3.6%
30	Lordstown stony loam	196	2.0%
31	Manlius shaly silt loam	1	0.0%
32	Mardin and Wellsboro channery silt loams	24	0.2%
33	Mardin channery silt loam	1,189	12.2%
34	Mardin channery silt loam, eroded	75	0.8%
35	Middlebrook channery silt loam	5	0.0%
36	Middlebury silt loam	8	0.1%

Key No.	Soil Type	Acres	Percent
37	Mongaup and Ischua channery silt loams, extremely stony	8	0.1%
38	Norchip silt loam	47	0.5%
39	Odessa silt loam	459	4.7%
40	Ontusia channery silt loam	74	0.8%
41	Ottawa loamy fine sand	25	0.3%
42	Ovid silt loam	5	0.1%
43	Rough stony land, Lordstown soil material	172	1.8%
44	Salamanca silt loam	81	0.8%
45	Steep broken land, Caneadea soil material	11	0.1%
46	Steep Langford, Canfield, and Mardin soils, undifferentiated	55	0.6%
47	Steep Lansing, Ontario, and Honeoye soils, undifferentiated	9	0.1%
48	Steep ledgy land	156	1.6%
49	Steep Manlius, Allis, and Hornell soils, undifferentiated	13	0.1%
50	Steep Palmyra and Howard soils, undifferentated	1	0.0%
51	Steep Woostern, Valois, and Bath soils, undifferentiated	4	0.0%
52	Tioga silt loam	3	0.0%
53	Volusia channery silt loam	3,343	34.3%
54	Water	68	0.7%
55	Wayland silt loam	7	0.1%
56	Wayland silty clay loam	598	6.1%
57	Westland silt loam	6	0.1%
58	Willdin channery silt loam	82	0.8%
59	Woostern gravelly loam	67	0.7%

To make these maps easier to read, the following soil type maps have been greatly simplified. For greater detail and information please look online at http://soildatamart.nrcs.usda.gov or contact the Livingston or Allegany NRCS offices. See also Soils (pg. 30) and Table 5: Soils (pg. 31).

Table M1: Soil Type Key is on page 262.

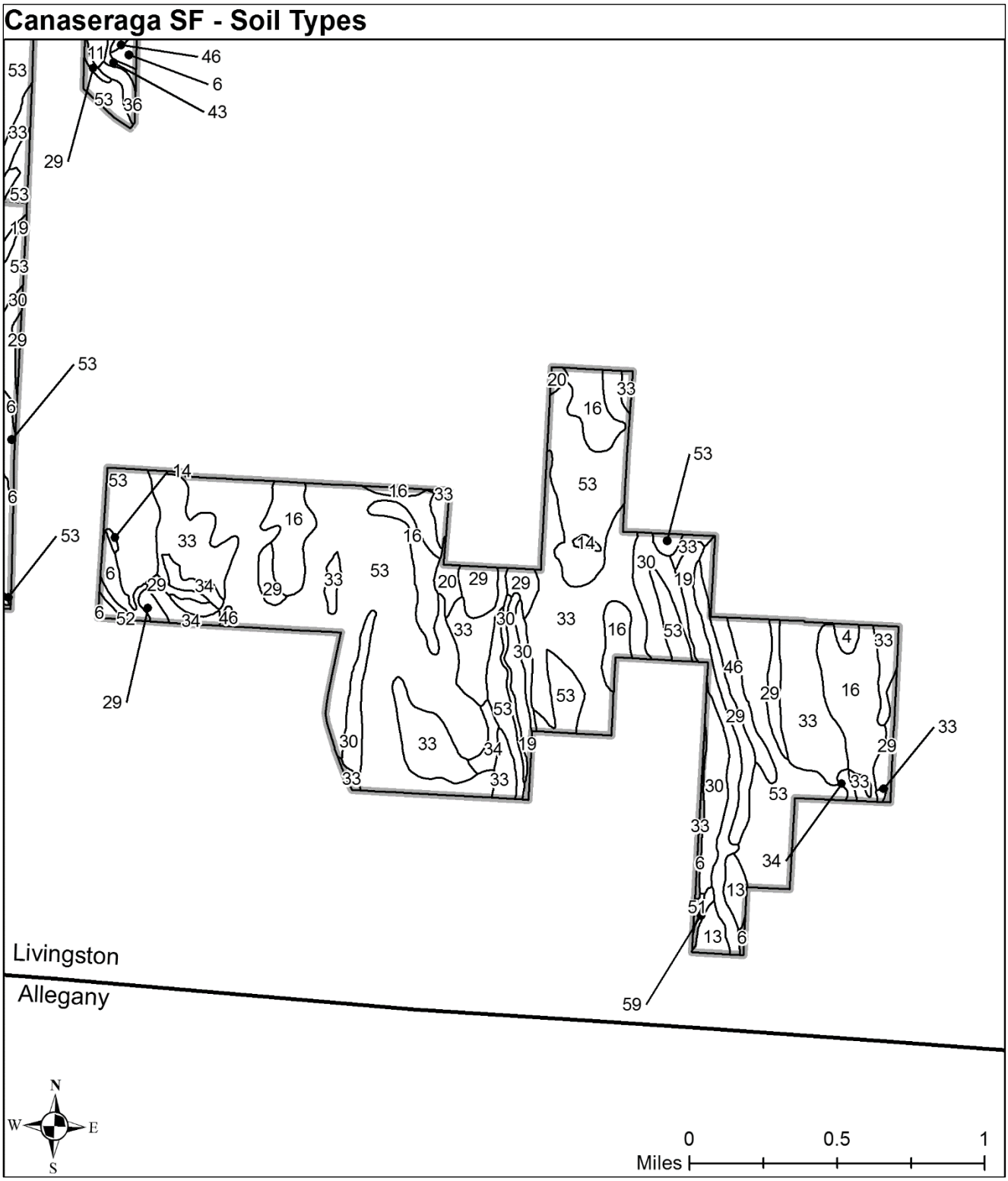


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Table M1: Soil Type Key is on page 262.

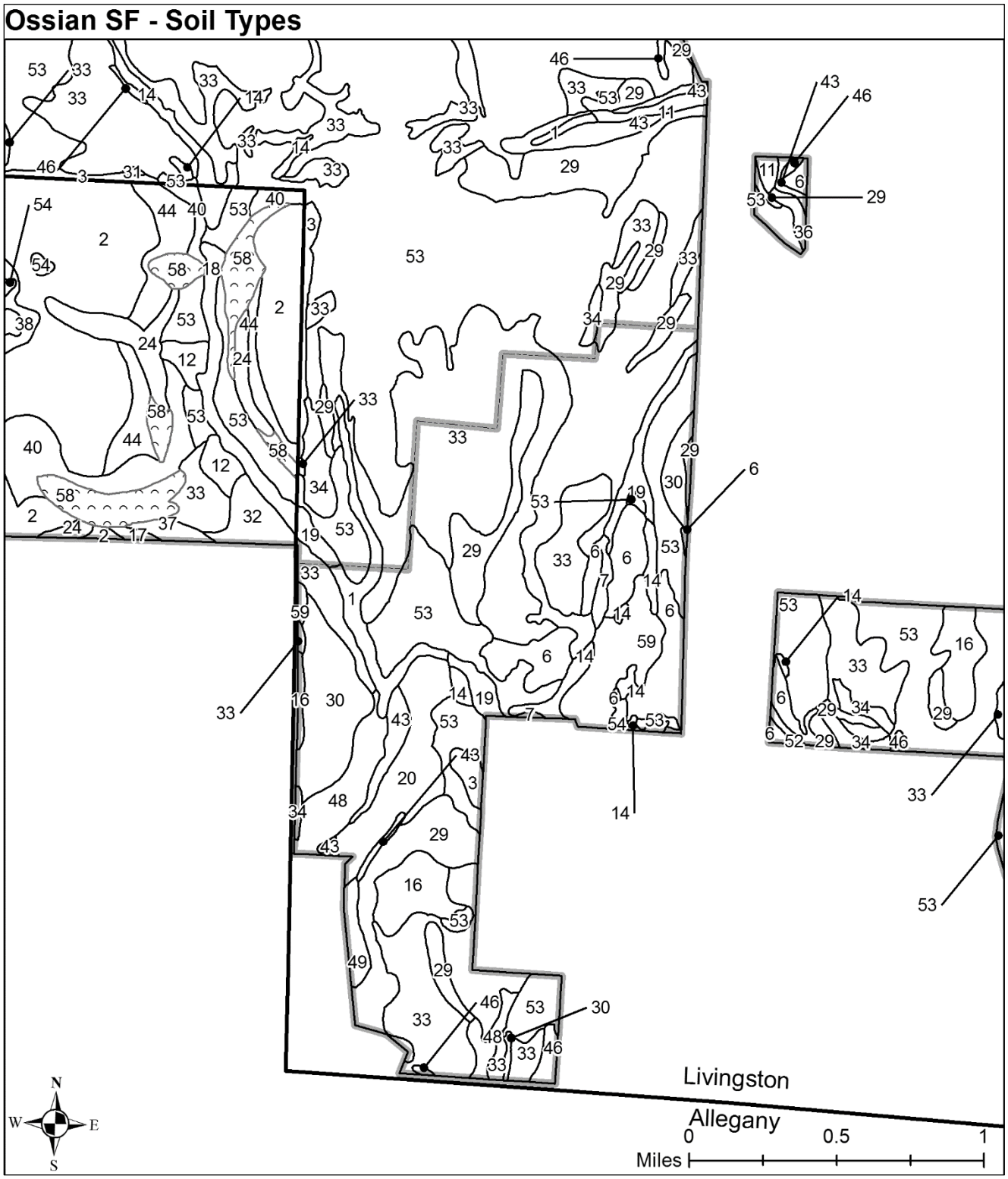

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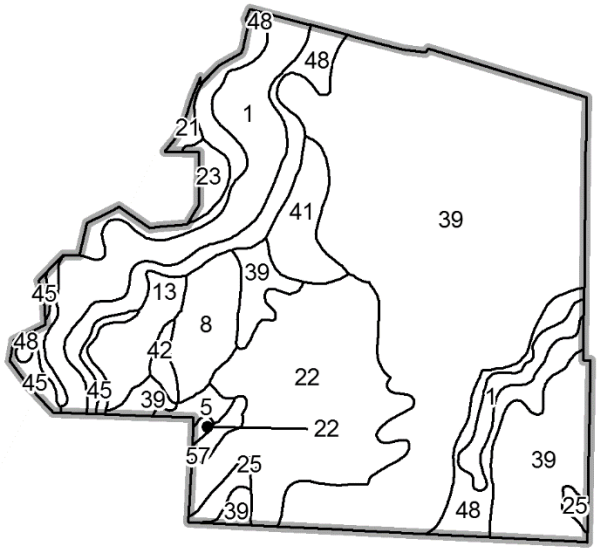
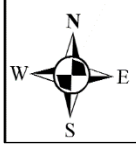
Table M1: Soil Type Key is on page 262.

Sonyea SF - Soil Types





0 0.5 1
Miles

To make these maps easier to read, the following soil type maps have been greatly simplified. For greater detail and information please look online at http://soildatamart.nrcs.usda.gov or contact the Livingston or Allegany NRCS offices. See also Soils (pg. 30) and Table 5: Soils (pg. 31).

Table M1: Soil Type Key is on page 262.

CONESUS INLET WMA - Soil Types

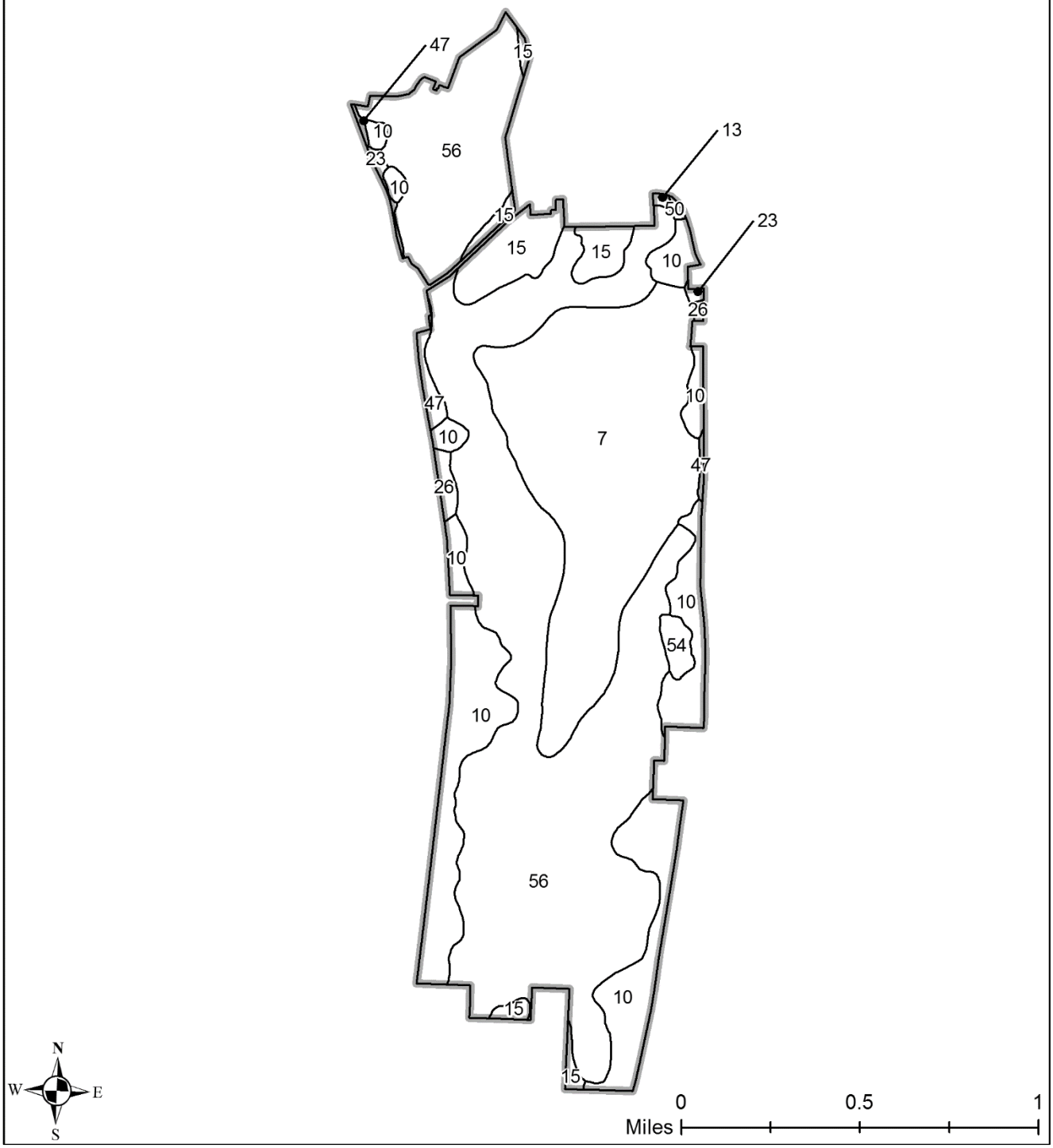


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Table M1: Soil Type Key is on page 262.

Rattlesnake Hill WMA, West - Soil Types

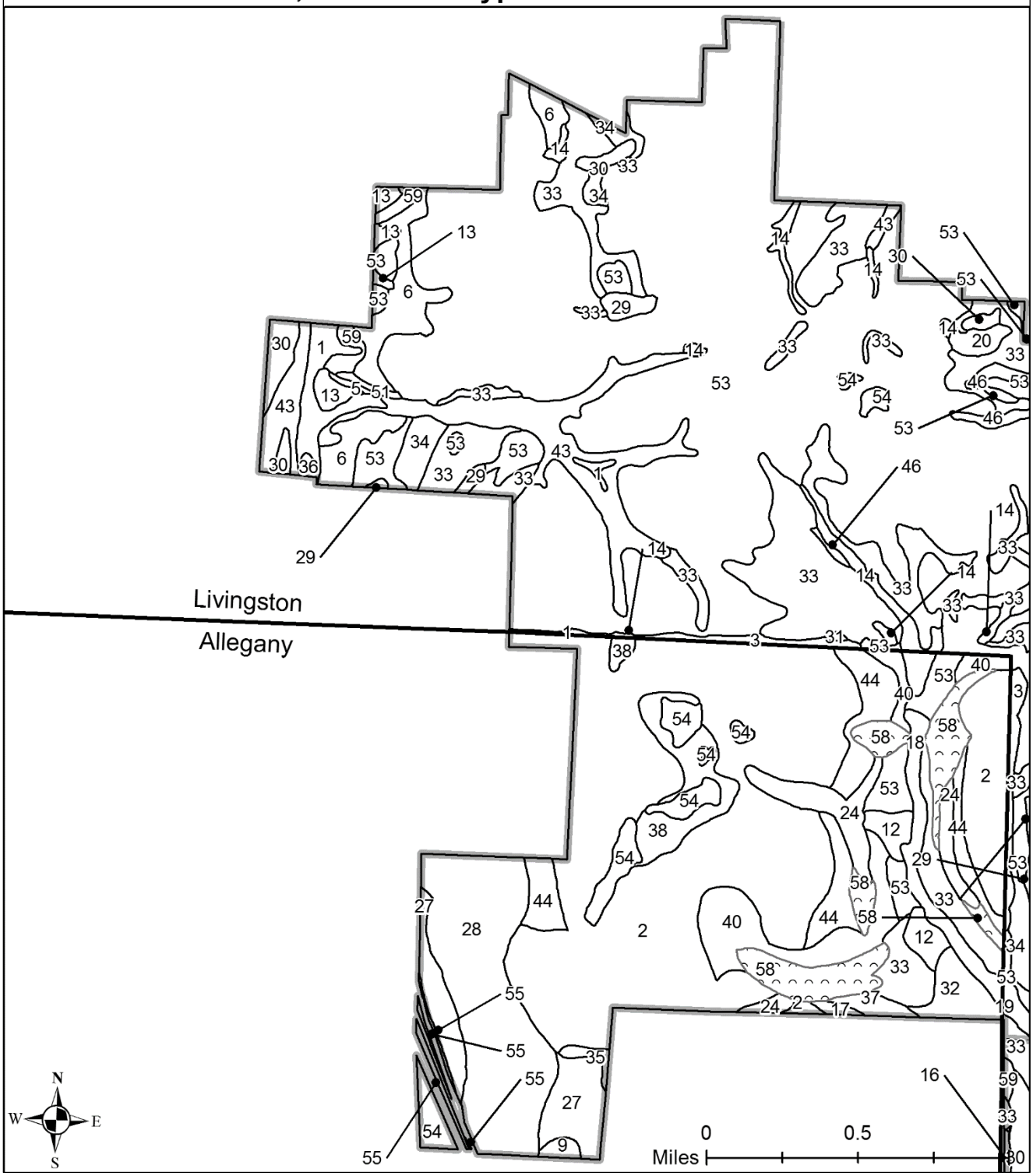

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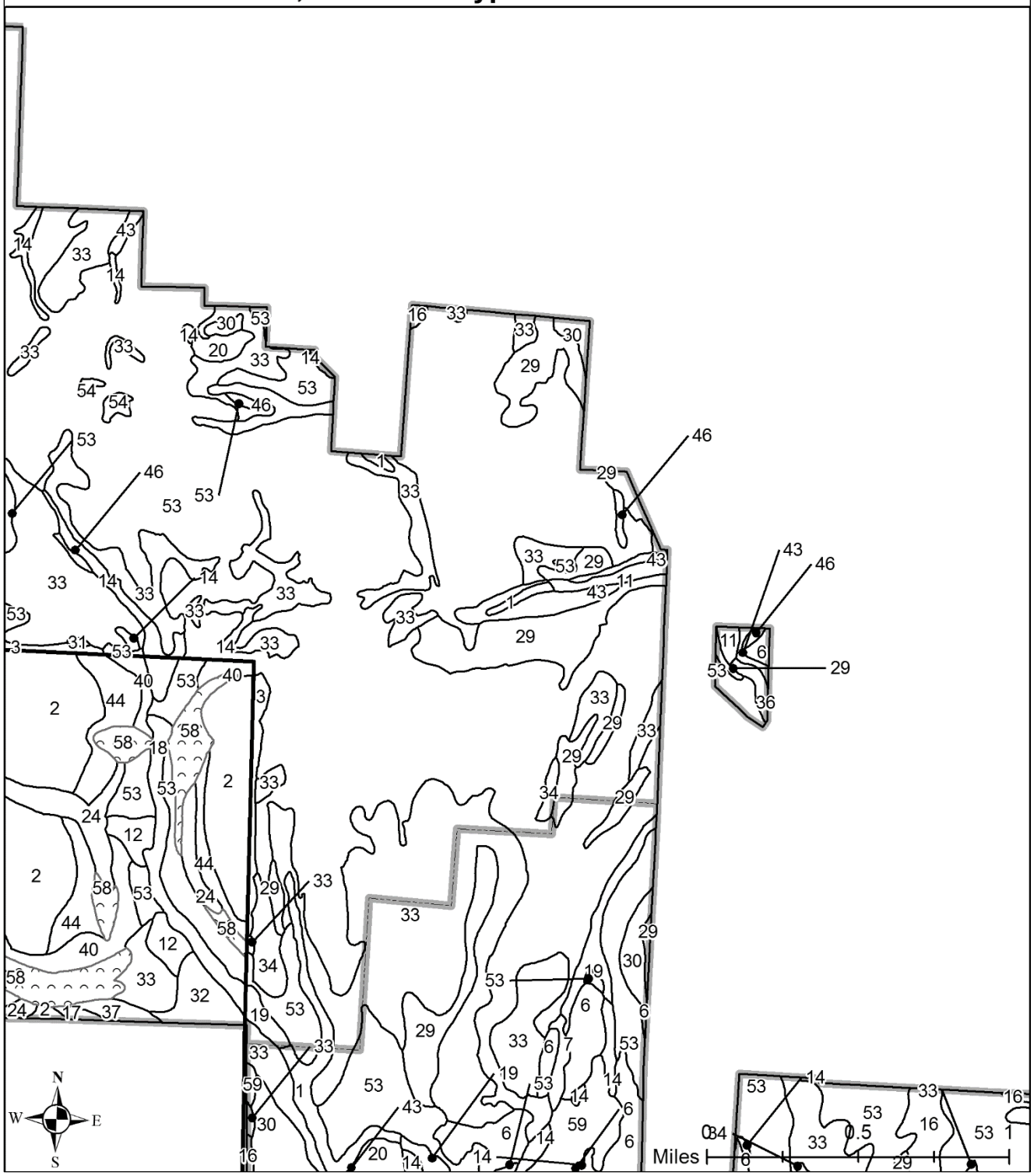
Table M1: Soil Type Key is on page 262.

Rattlesnake Hill WMA, East - Soil Types



For additional information contact:

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Bath, NY 14810

607-776-2165

www.dec.ny.gov
R8.UMP@dec.ny.gov
This plan will be located at: www.dec.ny.gov/lands/22561.html