NEW YORK
STATE OF
OPPORTUNITY.

Department of
Environmental
Conservation

CANANDAIGUA HIGHLANDS UNIT MANAGEMENT PLAN

DRAFT

Towns of Italy, Jerusalem, Middlesex, Naples and South Bristol

Counties of Yates and Ontario

April 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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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 (the Department) to manage state lands for multiple benefits to serve the people of New York State. This plan has been developed to address management activities on this unit for the next 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.

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.

Strategic Plan for State Forest Management

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

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

Contact Cooperation, and Consultation with Indian Nations

The Commissioner's Policy 42 (CP-42) (www.dec.ny.gov/public/36929.html) provides guidance to DEC staff concerning cooperation and consultation with Indian Nations on issues relating to protection of environmental and cultural resources within New York State. Specifically, this policy:

1) Formally recognizes that relations between the Department and Indian Nations will be conducted on a government-to-government basis;
2) Identifies the protocols to be followed by Department staff in working with Indian Nations; and
3) Endorses the development of cooperative agreements between the Department and Indian Nations to address environmental and cultural resource issues of mutual concern.

Nine Indian Nations reside within or have common geographic borders with New York State: the Mohawk, Oneida, Onondaga, Cayuga, Seneca, Tonawanda Seneca, Tuscarora, Unkechaug, and Shinnecock. Communication between DEC and the Indian Nations should be direct and involve two-way dialogue and feedback. Face-to-face meetings are generally desirable; however, phone calls, correspondence, and other methods of communication are also encouraged. Therefore, DEC staff should be reaching out to the respective Nations as early in the UMP planning process as possible. The Department wishes to ensure that its actions, with respect to the environment and cultural resources, are sensitive to the concerns of Indian Nations, and that the perspective of the recognized Indian Nations is sought and taken into account when the Department undertakes an action having implications for indigenous peoples, their territories, and their culture. The Department and Indian Nations share key roles in protecting and preserving natural and cultural resources important to all citizens, and early consultation and cooperation between the Department and Indian Nations will foster more comprehensive protection and preservation of those resources.

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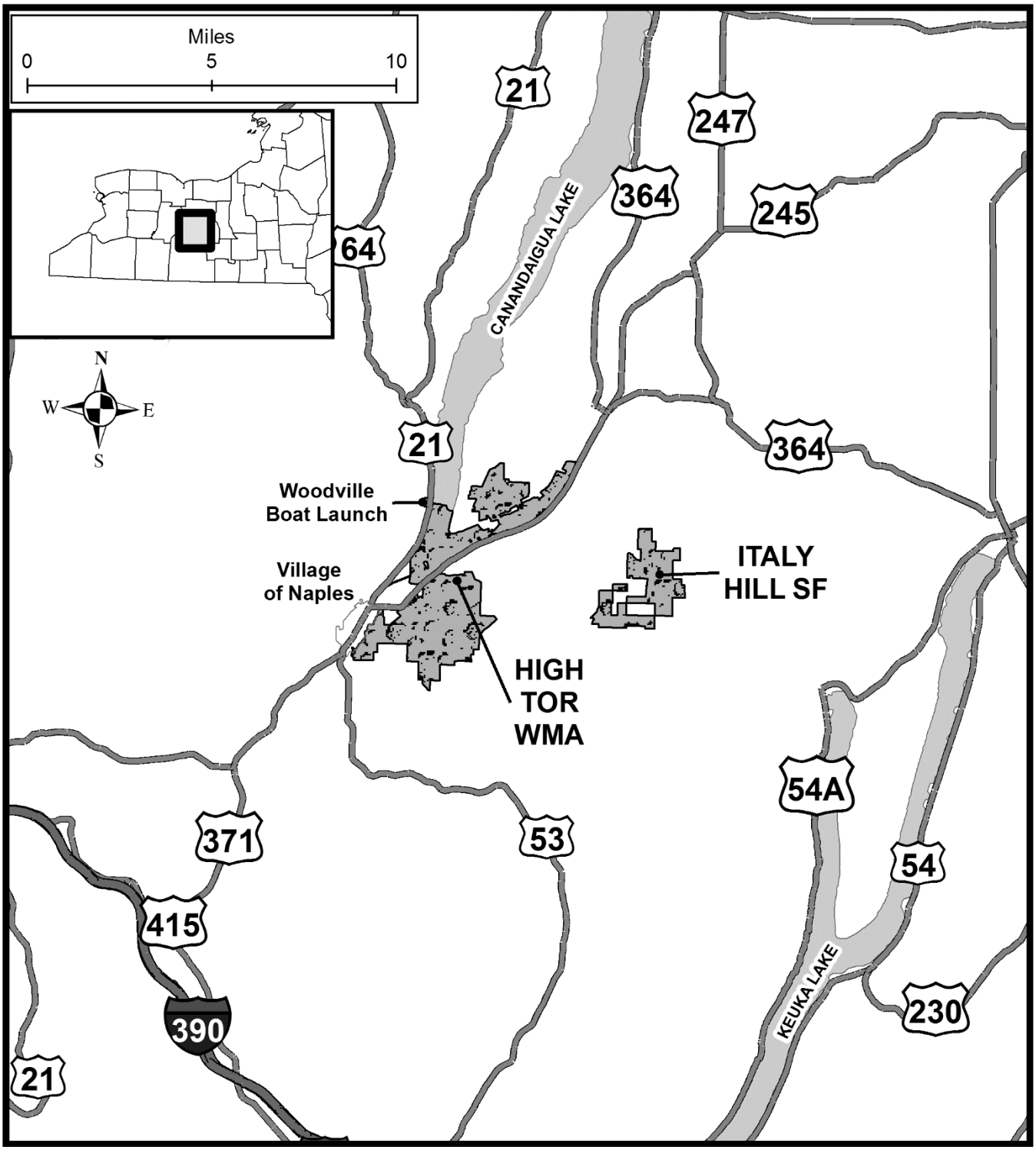
CANANDAIGUA HIGHLANDS UNIT LOCATION MAP

Additional maps are in Appendix M: Maps, starting on page 202.



INFORMATION ON THE UNIT

Identification

The approximately 8,737-acre Canandaigua Highlands Unit (Unit) includes one State Forest (SF) and one Wildlife Management Area (WMA). For management purposes, each state forest is consecutively numbered in the order in which they were acquired in each county, or two county combinations, and WMAs are commonly referred to by name.

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

The foresters and forest technicians within the Bureau of Forest Resource Management (Forestry) manage more than 780,000 acres of State Forests (SF), which include Reforestation Areas, Multiple Use Areas, Unique Areas, State Nature and Historical Preserves, and approximately 800,000 acres of Conservation Easements throughout the State. These lands are managed to provide watershed protection, wildlife habitat, ecosystem health, timber production, and recreation opportunities.

The staff of the Bureau of Wildlife (Wildlife) are responsible for managing all the wildlife species in the State of New York. In addition, wildlife biologists, wildlife technicians, foresters, and forest technicians are responsible for more than 200,000 acres of land which has been purchased by the State and designated as Wildlife Management Areas (WMA) or occasionally Unique Areas or Multiple Use Areas. These properties are managed to provide quality wildlife habitat and wildlife dependent recreational opportunities.

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

Department Facilities Not Included in This Plan

Naples Maintenance Shop

Located on High Tor WMA, along State Route 245, is the DEC Naples Maintenance Shop. At this location Department equipment is maintained and/or stored. This plan does not cover activities taking place within the grounds of the shop.

Woodville Boat Launch

Located adjacent to High Tor WMA, along State Route 21, is the 2-acre Woodville Boat Launch. It is managed by the Bureau of Fisheries, within the Division of Fish and Wildlife. This plan does not cover activities taking place within the grounds of the boat launch. Visit www.dec.ny.gov/outdoor/23880.html or contact the Avon office for additional information.

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*
Italy Hill State Forest	Yates Reforestation Area # 1	1,905	17.4 miles	1.0 miles
High Tor Wildlife Management Area		6,848	42.4 miles	18.0 miles
Total		**8,753**	**59.8 miles**	**19.0 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 the Department interior administered roads. In areas where the Department 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
Italy Hill State Forest	www.dec.ny.gov/lands/38825.html	Yates	Italy, Jerusalem	8R
High Tor Wildlife Management Area	www.dec.ny.gov/outdoor/24439.html	Ontario and Yates	Naples, South Bristol, Italy, Middlesex	8N

History of the Unit

Pre-European settlement, the geographic area that is today considered Ontario and Yates Counties was the homeland of the Seneca Native American Tribe. 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 on 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 commissioned to open western New York to people of European descent. This began a series of skirmishes that eventually led to the removal of the Senecas from the area. By 1794, the Iroquois population was estimated at only 4,000, less than half of what it had been.

After the war, many of Sullivan’s soldiers eventually settled in the area, and 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 were abandoned, and over time these areas have reverted to forest land.

In response to the decline of agriculture and the demand that the abandoned and eroding farmlands be returned into productive activity, the New York State legislature passed the “Reforestation Act of 1929" followed shortly by the 1931 Hewitt Amendment. This legislation authorized the Conservation Department to acquire land by gift or purchase for reforestation purposes. These State Forests consisting of not less than 500 contiguous land, were to be forever devoted to “reforestation and the establishment and maintenance thereon of forests for watershed protection, the production of timber, and for recreation and kindred purposes”. Shortly afterwards, the nation was plunged into the Great Depression, accelerating the abandonment of agricultural lands.

Wildlife Management Areas have a varied history of acquisition. Many were gifted to the 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 begun. 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 additions to state properties, 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.

The Haudenosaunee/Seneca Nation

-by G. Peter Jemison, Historic Site Manager for Ganondagan State Historic Site, Victor NY, provide for the 2005 Canandaigua Highlands UMP

The ONONDOWAHGAH (Seneca Nation) traces its birthplace to the east shore of Lake Canandaigua. The name we have for ourselves in Seneca literally translates “the people of a great hill.” The hill of our origin I am convinced is South Hill, lying at the southeast end of Canandaigua Lake. Stories concerning our birthplace speak of our people emerging from a cleft in the hill.

This description of emergence from the earth is not unlike that of the Hopi or Zuni people. They have remarkably similar descriptions of their beginnings. The Seneca people believe we originate as a people on Turtle Island or North America. We don't believe the Bering Strait land bridge provided our access to this continent from Asia. Our earliest stories after our emergence from the earth describe great beasts of the type that roamed North America after the last ice age.

We believe we came from this continent, our origins are here in North America. Not only did we originate in North America, we are from the western Finger Lakes, specifically Canandaigua Lake.

The possibility exists that we come from an earlier group of people who moved from a southerly direction north into what is present day New York State. Here we dispersed and eventually became the nations today known as the Haudenosaunee (Iroquois Confederacy). The Seneca Nation is the Keeper of the Western Door and one of the Elder Brothers of the confederacy. The other members include the Cayuga Nation, Onondaga Nation, Oneida Nation, Mohawk Nation and the last to join, the Tuscarora Nation. This confederacy of Indian Nations was founded on the message of Peace, Power and Righteousness about a thousand years ago.

When the people emerged from South Hill they were then known as the Onondowahgah. Archaeologists have tried to fix the date of our origin as 950 AD. We however, hold to a much earlier date. Based on artifacts discovered in the Genesee River Valley there has been continuous occupation of this region dating back more than 7000 years.

The earliest written account describing the origin of the Seneca people appears in a history written by David Cusick, Tuscarora, titled "Ancient History of the Six Nations". Additional research was done by Dr. Arthur C. Parker, who was part Seneca, he directed the institution that became the Rochester Museum and Science Center and earlier the New York State Museum. His careful analysis of the artifacts from Bare Hill and South Hill both located on Lake Canandaigua led him to conclude that South Hill was more closely linked to the Seneca Nation. Bare Hill known in Seneca as Genundewah produced artifacts from a cultural group Parker describes as Algonkin. South Hill which the Seneca call Nundawao is located at the head of Lake Canandaigua and has produced Seneca artifacts.

Dr. Parker was further persuaded that Nundawao the earliest Seneca town existed just south of South Hill in a bowl of land not far from Naples, New York. By his account the descriptions of the Seneca Nation's hill of origin all pointed to South Hill. In the Seneca language, we call ourselves Onundowahgah or people of the great hill. Therefore, the great hill associated with the Seneca Nation Dr. Parker concluded must be South Hill.

The Seneca Nation of Indians and the Tonawanda Band of Seneca lived in the areas of Canandaigua Lake from Bare Hill south, and include Vine Valley, South Hill, West River Naples, High-Tor, and Italy Hill State Forest. Some of this

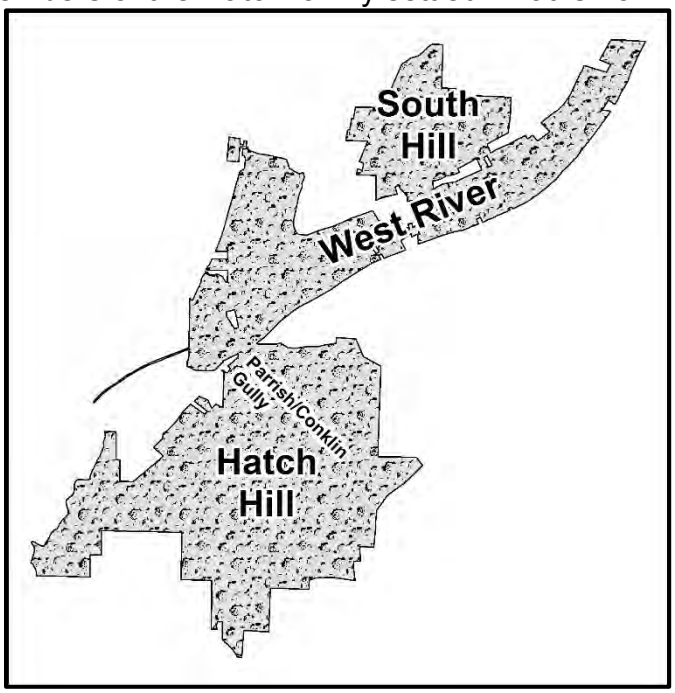
area is now managed by the NYS DEC. There remain to this date archaeologically sensitive areas along Canandaigua Lake on both the west and east shore. At the time of the construction of New York State Route 245, NYS DOT produced maps relating to the construction that identified specific sites known to archaeologists working on the project.

South of South Hill is possibly the oldest Seneca town site in New York State. That area continues to be of importance to the Seneca Nation today. Clark Gully, is in our view, a sacred site because it relates directly to our place of origin. A geographic feature resembling a bowl shape located south of South Hill and Clark Gully is also significant culturally.

Jare Cardinal is contracted by the Seneca Nation of Indians' Tribal Historic Preservation Office and is currently researching the Seneca occupation of the area, and is the basis for some of the information presented above. These notes were compiled from maps provided the by New York State Historic Preservation Office at Peebles Island, Waterford, New York. These descriptions absent the proper maps or more legible maps, and maps such as those Harrison Follett drew tell only part of the story.

High Tor Wildlife Management Area History

The upland portion of High Tor WMA was almost completely forested when the Parrish family, first European settlers of the area, arrived in 1789 (Parrish Gully, also known as Conklin Gully, was named after this family). Members of the Hatch family settled what is now referred to as Hatch Hill and maps show a homestead was built there by 1830. At this time, much of what is now High Tor WMA was still considered unowned, but settlement and extensive land clearing accelerated soon after.



By the Civil War, the top of South Hill was cleared for agriculture and there was a thriving settlement called West River near the present cemetery along Route 245 (all traces of this village are no longer visible). Hatch Hill clearing was similar to South Hill but dating of present vegetation and hummock and hollow soil relief suggests some of the area was cleared and pastured, but never plowed. Forested areas not cleared for agriculture were heavily exploited for lumber, charcoal, and wood alcohol (as late as 1950, a log flume to send wood down off Hatch Hill to Naples was still visible).

By 1850, some fields and pastures were beginning to revert back to trees, and agricultural abandonment in the High Tor WMA area significantly increased after the turn of the century. In the early 1930s, the federal government purchased land from several owners, through the Federal Resettlement Act, which included approximately 2,828 acres located on Hatch Hill and in the Naples Creek/West River wetlands.

Administration of these federal lands were shuttled from one branch of the government to another until they were leased to the State of New York in 1941. The State administered the land as a game management area, and in 1962 accepted it as a gift from the federal government.

Since that time, additional acreage has been acquired by the State to improve access, consolidate ownership, and protect wetlands. These acquisitions often came in spurts as funding became available. Notable purchases in the mid to late 1960s include approximately 530 acres on Hatch Hill, 785 acres on South Hill, and 518 acres of wetlands. The Lehigh Valley Rail Trail (also known as Middlesex Valley Rail Trail) was purchased in 1979. In the late 1970s to early 1980s, approximately 857 acres of wetlands and 518 acres of uplands were purchased.

More recent acquisitions include approximately 207 acres along Parrish Flats Rd in 2008 and 146 acres added onto the Hatch Hill parcel in 2016. The Parrish Flats parcel was previously farmed and now provides expansive grass and shrub habitat to the WMA. The Hatch Hill addition was sold to the Department by the Finger Lakes Land Trust and included a portion of Conklin Gully and forested hillside adjacent to Route 245. This acquisition fully connected the WMA from Hatch Hill across the valley-bottom wetlands to South Hill.

State Nature and Historical Preserve

There are two areas on High Tor WMA that are dedicated to the State Nature and Historical Preserve (SNHP). These two parcels were approved by the NYS Legislature in 1977. The SNHP consists of select state lands to be preserved and administered for the use and enjoyment of the people because of their natural beauty, wilderness character, or geological, ecological or historical significance.

SNHP on High Tor WMA includes:

- Clark Gully, approximately 150 acres, is located on the South Hill section, and was included in the SNHP because of its scenic gorge and “hanging falls”.
- Parrish/Conklin Gully, approximately 290 acres, is located on the Hatch Hill section, and was included in the SNHP due to its unique rock outcroppings and its interest to geologists.

Currently, there are no habitat management actions planned within these areas, and the only public recreation and use management action planned is to maintain trails. Any future management actions would be to promote stewardship of the dedicated area. Additional information about the SNHP is available in Article XIV of the New York State Constitution and in Article 45 of the New York State Environmental Conservation Law.

Woodville Boat Launch

Located adjacent to High Tor WMA is the 2-acre Woodville Boat Launch, which is not included in this plan. A total of 18 acres were purchased in by the Department in 1966, as a Fishing Access Site (pg. 29), not a WMA, and managed by the Bureau of Fisheries. In 2018, the 16 acres of wooded hillside on the west side of SR 21 was transferred to High Tor WMA to be managed by the Bureau of Wildlife. The boat launch east of State Route 21 will remain under the management of Fisheries and is not included in this plan. For additional information on the Woodville Boat Launch visit www.dec.ny.gov/outdoor/23880.html or contact the Avon office.

Italy Hill State Forest History

In the middle of the 1800's, the Kennedy family was the first family to settle much of the area now known as Italy Hill State Forest. Farmers on Italy Hill and the Town of Jerusalem, prospered. They grew hay for horses in New York City and beans which was a staple food for maritime ship crews. They used a trolley line “down the hill” to Branchport, and the main rail line to ship their products. By the late 1800's only the steepest slopes of Italy Hill were forested, the remainder having been cleared for agriculture.

The New York State Conservation Dept. began acquisition of Italy Hill SF in 1936. Although many of the properties were mostly abandoned farm land, very little of this state forest was planted with conifer seedlings. The property was far from the nearest Civilian Conservation Corps camp (Allegany County or Schuyler County). It was not practical in the 1930's to drive to this property, when there were many other closer state forests in need of tree planting. These old fields are still in the process of natural succession, going from brush to pioneer hardwoods. Poor soils account for the slow progression back to forest.

On October 5, 1943, Italy Hill SF was in the news as the crash site of a B-25 bomber. The plane was returning to Macon, Ga. from Rochester, NY but failed to clear the top of the hill. The ground was not visible due to a dense fog. Six soldiers were killed. “Less than 20 minutes before his [Lieut. Willard E. Wilder] death, this young Rochester man had circled the summer home of his parents [Bristol Hills], Mr. & Mrs. Willard Wilder, Sr., in the hill dropped a note to them as they watched from their dooryard, dip his wings on the salute, and turned southward into the heavy low-hanging clouds. Dropping down beneath the clouds as he crossed Italy Valley, according to eye witnesses he tipped the nose of the plane up into a climb as he neared the cloud covered hills on the eastern side but blinded by thickness of the fog, appearances indicate he did not climb enough and crashed into the side of the hill.” (Rochester Democrat and Chronicle, Oct. 5, 1943)

Tragically, Italy Hill SF was the site of another air crash on the evening of December 12, 1996. A Mercy Flight helicopter carrying an injured hunter from nearby private land failed to clear the treetops at the height of ground. The pilot, paramedic, and hunter did not survive.

Terrain

The Canandaigua Highlands Unit is situated in the Towns of Italy, Jerusalem, and Middlesex in Yates County, and the Towns of Naples and South Bristol in Ontario County.

Canandaigua Lake, (approximately 10,560 acres and 15.8 miles in length) lies immediately north and west of the West River and South Hill segments of the High Tor Wildlife Management Area. The Village of Naples lies immediately adjacent to the western boundary of the Hatch Hill section of High Tor Wildlife Management Area.

The Unit lies near the northern edge of the Allegany Plateau. Elevations range from approximately 2,082 feet on the Italy Hill State Forest, to approximately 686 feet on the High Tor Wildlife Management Area, at the point West River empties into Canandaigua Lake.

The hilltop topography of the Canandaigua Highlands Unit is characterized by north-south ridges with deep valleys in between. Two large gullies transect portions of the High Tor parcel, Parrish/Conklin Gully located on the Hatch Hill segment of High Tor, and Clark Gully, on South Hill.

Climate

The average summer temperature is 69° F, while the average winter temperature is 26° F. Precipitation averages 30 inches per year, with approximately 64 inches of snow fall each year. Precipitation is often well distributed throughout the year and is usually adequate for the growing season which is about 135 days. In some years there are periods of no rain, interspersed with sudden heavy rainstorms resulting in heavy run off. These averages are modified locally by variations in elevation and proximity to Canandaigua Lake. Prevailing winds are from the northwest between December and July and from the southwest from August to November.

Climatic data is supplied from the United States Department of Agriculture (USDA) Soil Conservation Service at www.wc.nrcs.usda.gov.

Taxes

State Forest lands acquired for reforestation purposes pursuant to Section 9-0501 of the Environmental Conservation Law (ECL) are subject to taxation for all purposes except county tax. These lands are listed on the respective Town Tax Rolls in Roll Section 3, as Taxable Lands of the State.

However, some individual proposals were not acquired under ECL 9-0501, but under a bond act or other unique authority, and are Wholly Exempt from real property taxes. These parcels are listed on the respective Town Tax Rolls in Roll Section 8 as Wholly Exempt properties.

Further confusing the situation, these two different types of individual proposals are often combined into a single state forest.

In general, unless specifically authorized and required by law, WMAs are exempt from real property tax. Per New York State Real Property Tax Law, the parcels of High Tor located in the town of Italy, Yates county are subject to school and town tax.

Individual town tax rolls

Taxes on taxable State Land are handled in a very similar manner to a private owner's taxes:

1) The tax bills for the individual parcels are forwarded to the County Treasurer
2) The County Treasurer consolidates them and sends them to the State Comptroller for payment
3) The State Comptroller pays the County Treasurer
4) The County Treasurer then passes the funds paid by the Comptroller to the local municipalities, in some way, shape, or form.

See also the History of the Unit section (pg. 11), and Appendix C: Taxes paid on the Department Lands (pg. 156), lists the estimated taxes paid in 2017 on the lands of the Unit.

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 Department ownership. This plan only applies to the Canandaigua Highlands 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 land adjacent to the properties of the Unit is largely owned by private landowners. There are a few parcels owned by the counties and local municipalities. Agriculture, forestry, and recreation are major land uses. Although agriculture is traditionally the most common land use, it appears to be declining on the uplands. Agriculture of all types, in the valley bottoms, and grape growing on the valley sides remains strong.

Forest land now occupies approximately 56% of the land area of the five towns covered by this management plan, while agriculture accounts for 22% of the total. The remaining is split between wetlands, open water, residential, and commercial and industrial uses.

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 five towns are well forested, with agriculture also making up a large percentage of the towns.

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. 11) and Appendix M: Maps (pg.202) for which properties in which town.

	Italy	Jerusalem	Middlesex	Naples	South Bristol	Average of all
11 - Open Water	0.6%	10.4%	9.7%	0.1%	7.2%	5.6%
21 - Developed Open Space	2.7%	4.2%	3.9%	3.8%	4.8%	3.9%
22 - Developed, Low Intensity	0.0%	0.4%	0.1%	0.5%	0.3%	0.3%
23 – Developed, Medium Intensity	0.0%	0.1%	0.0%	0.2%	0.1%	0.1%
41 - Deciduous Forest	51.1%	26.3%	30.2%	49.9%	55.1%	42.5%
42 - Evergreen Forest	5.7%	2.6%	3.3%	4.0%	3.3%	3.8%
43 - Mixed Forest	11.1%	13.0%	10.2%	8.6%	7.5%	10.1%
52 - Shrub Scrub	7.3%	7.0%	8.8%	8.2%	10.2%	8.3%
71 - Grassland / Herbaceous	0.5%	0.5%	0.2%	0.5%	0.4%	0.4%
81 - Pasture / Hay	12.2%	26.4%	24.5%	15.0%	8.8%	17.4%
82 - Cultivated Crops	2.9%	6.7%	7.4%	7.4%	1.0%	5.1%
90 - Woody Wetlands	2.9%	1.9%	1.4%	1.5%	1.1%	1.9%
95 - Emergent Wetlands	3.1%	0.6%	0.3%	0.3%	0.2%	0.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Roads

The Departments transportation system provides for both public and administrative access to the unit. The 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). The Division of Fish and Wildlife does not have a formal class system for roads and trails administered on their lands. For tracking and clarity purposes, in the context of this plan, the categories used by Forestry will be utilized by Wildlife, unless otherwise noted. Some portions of the town roads are seasonal and are not maintained for winter travel, Department roads are not maintained for winter travel.

Information on the Unit

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. The Department 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 Forestry. Again, for clarity and simplicity, in the context of this plan, Wildlife will use these road types unless otherwise noted.

Public Forest Access Roads (PFAR) - 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 (8/08)

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 Department access to state properties while crossing private land, or, corridors across state properties allowing access to private in-holdings.

The PFARs, haul roads, and the access trails that are accessible by mower are all maintained by the Department. The PFARs 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 the Department for administrative access. See Appendix M: Maps (pg.202) for names and types of roads and trails. There are also many other unmarked trails connecting some of the access trails.

High Tor WMA contains 1.1 miles of public forest access roads and 17 miles of gated haul roads (which includes the Lehigh Valley Rail Trail, see Trails on page 30). The remainder of the travel corridors are used for recreation, administrative access and habitat management. Many recreation trails, and portions of the Finger Lakes Trail, connect to the administrative roads and provide additional routes of travel. Of the 17 miles of Haul Rd, 7.4 miles are designated routes, open by permit only, for motor vehicle access by persons with qualifying disabilities. See Trail Access for Persons with Disabilities on page 32.

Italy Hill SF currently has 0.6 miles of designated haul road, proceeding southerly from the gate at the rear of the West Lightening Rd parking area, to the vicinity of the reclaimed gas well pad. The current location has suffered a considerable amount of damage in recent storms.

In addition, Italy Hill SF has approximately 3.9 miles of access trail right – of – way (ROW). A portion of this ROW is currently occupied by the Bristol Hills Trail, a segment of the Finger Lakes Trail. See Appendix M: Maps (pg. 202)

The Unit contains 33 maintained parking areas, 4 on Italy Hill SF and 29 on High Tor WMA. (See Appendix D: Facilities page 157). These lots are mostly gravel or grass except for the paved Naples Maintenance Shop parking area, on High Tor WMA.

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 because 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 the Department generally excepts these areas. The boundaries depicted in this plan for the state highways 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 M: Maps, page 202.

Property	Road Name	Jurisdiction
High Tor WMA	State Route 21	Yates and Ontario County
	State Route 245	Yates and Ontario County
	County Highway 21 (Italy Valley Rd.)	Ontario County
	County Highway 18 (Italy Valley Rd.)	Yates County
	Brink Hill Rd.	Town of Italy
	Donley Rd.	Town of Italy
	Shay Rd.	Town of Italy
	Parrish Hill Rd.	Town of Italy
	Basset Rd.	Town of Italy
	Parrish Cross Rd.	Town of Naples
	Sunnyside Rd.	Town of Italy
	Caward Crossing Rd.	Town of Middlesex
	South Hill Rd.	Towns of Italy / Middlesex
	West Avenue	Towns of Italy / Middlesex
	Ontario Street	Village of Naples
	Mark Circle	Village of Naples
	Interior Rds. and Parking	NYS DEC
Italy Hill SF	Pulver Rd.	Town of Italy
	Dunn Rd.	Town of Italy
	West Lightening Rd.	Town of Jerusalem
	Exterior Access and Recreation Trail ROWs	NYS DEC
	Interior Rds. and Parking	NYS DEC

Concurrent Use & Occupancy, Deeded Exceptions, Easements, Rights of Way, and Other Rights Outstanding in Third Parties

Italy Hill SF

Concurrent occupancy and use agreements, or boundary line agreements, are not known to exist for this state forest. A search of the file for this state forest did not disclose any known trespass or encroachments occurring on this state forest.

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 proposals in this state forest. As part of our inventory efforts, a reasonably accurate GIS coverage has been created of the utilities in place as of the dates the state forest was last inventoried. See Appendix M: Maps (pg. 202) for locations of roadside utilities. Utility companies include:

- Electricity: New York State Electric & Gas (NYSEG)
- Telephone: Empire Telephone; Verizon Telephone; Verizon Fiber Optic

All of this state forest has been under the terms of an oil and gas lease, at one time or another. For additional information on this situation see the Mineral Resources section starting on page 36.

As most of the land contained within this state forest was abandoned farm lands, there were numerous short-term reservations in the deeds to the State for timber harvesting, removal of buildings and fences, short term tenancy, right to harvest crops standing at the time of acquisition, etc. These reservations were for a period of 12 months or less. All have long since expired.

Exterior ROW that exist in favor of the state

This state forest has 3.4 miles of transportation corridor easements associated with it. See the map in Appendix M: Maps on (pg. 202). This leads from Italy Valley Rd., through the state forest, to both the “Old” (closed portion of) Pulver Rd. and to the parking area located at the end of Dunn Rd. A portion of this ROW is currently occupied by the Bristol Hills Branch of the Finger Lakes Trail. Note that the documents related to these easements make no restriction on the use of the property. Currently there are no known trespass or encroachments along it, however, historically trespass and minor conflict has occurred on and adjacent to the transportation corridor easement.

High Tor WMA

Presently, no concurrent occupancy and use agreements, boundary line agreements, encroachments or trespasses are known to exist.

Information on the 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 proposals in the WMA. An inventory update of the utilities in place was completed in 2018 for High Tor WMA. See Appendix M: Maps (pg. 202) for locations of roadside utilities. Utility companies include:

- NYSEG
- Seneca Gorham Telephone Company
- Rochester Telephone Company

Two separate leases for the exploration of oil and gas - one dated 1976, the other 1977 – existed on land prior to DEC ownership. The status of these leases is unknown, but it is likely that they have expired. For information on deeded exceptions for minerals see the Mineral Resource section (pg. 36).

The community park located on the NW side of State Route 21 in Woodville is currently in the process of establishing a Memorandum of Understanding (MOU) between the town of South Bristol and DEC.

Easements

The following easements for High Tor WMA exist:

- A conservation easement exists on a small parcel (1.7 acres) of private property off State Route 245, “prohibiting the erections, construction or placement of residential/commercial structures”. As of the writing of this plan a private garage has been constructed on the easement, which is a violation of the terms.
- A flowage easement for flooding purposes exist south of Sunnyside Rd.

See the Appendix K: Easements on page 190 for scanned copies of the above easements.

Right-of-Way (ROW)

State land subject to a ROW:

- 30ft wide ROW on the north-east side of the bridge on Sunnyside Rd. exists for landowner access to a private parcel
- 8ft wide ROW off the east side of State Route 21 in downtown Naples exists for landowner access to a private parcel

Exterior ROW that exist in favor of the state:

- 23.5ft wide ROW from the parking area for Parrish/Conklin Gully on State Route 245 uphill to Department property boundary line – for public and administrative access
- 20ft wide ROW on the NW side of the bridge on Sunnyside Rd. – for administrative purposes
- 33ft wide ROW for DEC administrative ingress/egress exists behind the gate south of Sunnyside Rd. (Adjacent to the flowage easement noted above.)

Recreation

Recreational use is concentrated to certain areas and has seasonal variation. Wildlife-related recreation, including wildlife viewing, hunting, fishing and trapping, is the dominant and important use of the Unit. Consult the NYS DEC Hunting and Trapping, and the Fishing Regulations Guides for seasons, hours, and bag limits. Users are encouraged to adhere to ethical standards and consider other recreationalists.

Many of the recreation facilities used to access the properties 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 management, or other safety concerns, sections of trails, roads, parking areas, 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 without written permission.

Additional information on the planned actions related to recreation can be found in the Public Recreation and Use Management section on page 108. Appendix D: Facilities (pg. 157) is a table of recreation and other facilities located on this unit.

State Forest vs. Wildlife Management Areas

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 are not allowed.

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 Department. 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 which have prevented the Department from developing ORV or ATV trails in the past. However, people with qualifying mobility impairments who possess a valid permit from the Department may operate ATVs on specifically designated and signed accessible trails. See Access for Persons with Disabilities (pg. 32), or visit www.dec.ny.gov/outdoor/2574.html. For more information regarding ATV access to State Forest please refer to the SPSFM, 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 ft. 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.

Generally camping is prohibited on WMA's, however, permitted camping is allowed at two locations on High Tor WMA, but only for organized groups and outside of big game and turkey hunting seasons. Camping permits for the two High Tor WMA lean-to sites are available from the NYS DEC wildlife office in Avon.

As stated earlier, camping is not allowed within 150 ft. of any road, trail, spring, stream, pond, or other water source unless it is a designated campsite. Table 5 is a list of designated sites, for the Unit. See also the Recreation and Other Facilities Maps in Appendix M: Maps (pg. 202) and Public Recreation and Use Management (pg. 108).

Located on Ontario County Forest, adjacent to Italy Hill SF, is the Out-Back Inn Lean-to. It is accessed by the Bristol Hills Trail, a hiking trail that is part of the Finger Lakes Trail system.

Table 5: Designated Camp Sites:

Property	Designated Campsite	Description
Italy Hill SF	West Lightning Rd Parking Lot	These are primitive camping sites, a semi-flat spot to set up on, but no other amenities.
	Dunn Rd Parking Lot	
	Pulver Rd Parking Lot, North	
High Tor WMA	North Lean-to	Lean-to, pit privy and fire pit. By permit only, organized groups only.
	South Lean-to	

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. 23), Fish, Wildlife and Habitat (pg. 51) and Timber and Vegetation (pg. 39) sections). For hunting, both big and small game opportunities exist, with white-tailed deer being the most popular species hunted.

The Canandaigua Highlands Unit is contained in Wildlife Management Unit (WMU), 8N and 8R. There are 92 Wildlife Management Units in the state, ranging in size from approximately 100 to 3,000 square miles each. In this case WMU 8N is 314 square miles and

8R is 270 square miles. 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.

Small game hunting prospects are numerous and varied on lands of the Unit. Ruffed grouse, woodcock, cottontail rabbit, grey squirrel, turkey and coyote are some favorite species pursued. The West River section of High Tor WMA provides marsh and flooded timber habitat that is highly desired for waterfowl hunting.

Although no specific harvest estimates exist for Canandaigua Highlands Unit lands in particular, the Department does compile and maintain estimates for most of the species listed above on a regional, or WMU basis.

Season dates for hunting and trapping seasons on the Unit follow those for WMUs 8N, and range from early September through late March, with the bulk of activity occurring October through December. As far as other laws or regulations are concerned, all existing federal and state rules apply.

Deer and Black Bear Harvest

Because of the extent of forest cover on the areas, deer hunting on lands of the Unit is primarily a forest-based activity. Deer hunters perform a valuable service to the State and local communities by being the tool the Department uses to regulate deer numbers. 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. Temporary stands may be used, on WMAs they must be removed at the end of each day, on SF they may be left for the season, if they are marked with the owners contact information.

Whitetail deer populations are monitored by using the buck take in the legal harvest as an index to the overall population. The Buck Take Objective (BTO) is the desired harvest for a WMU set by a Citizens Task Force (see www.dec.ny.gov/animals/7207.html for more information on Citizen Task forces). The BTO for WMU 8N is 4.6, and for WMU 8R is 4.2, both of which is at the higher end of deer population levels as compared to other WMU's across the state. These higher allowable deer populations require careful monitoring of negative impacts to the environment such as excessive browsing of tree seedlings.

The deer population of WMU's 8N and 8R has been above objective for some time now. It is desired to see a gradual decrease in the deer population more in line with the BTO over the life of this plan barring either a change in BTO or harsh winter conditions.

Current and historical harvest information on deer and black bear can be located at: www.dec.ny.gov/outdoor/42232.html

The legal harvest of black bears by hunting in WMU 8N and WMU 8R is expected to remain consistent or slightly increase over the life of the plan as maturing forest continues to provide quality habitat for black bears. Bear harvest can fluctuate significantly from year to year due to food availability and weather conditions.

Chart 1 Buck Take in WMU 8N and 8R

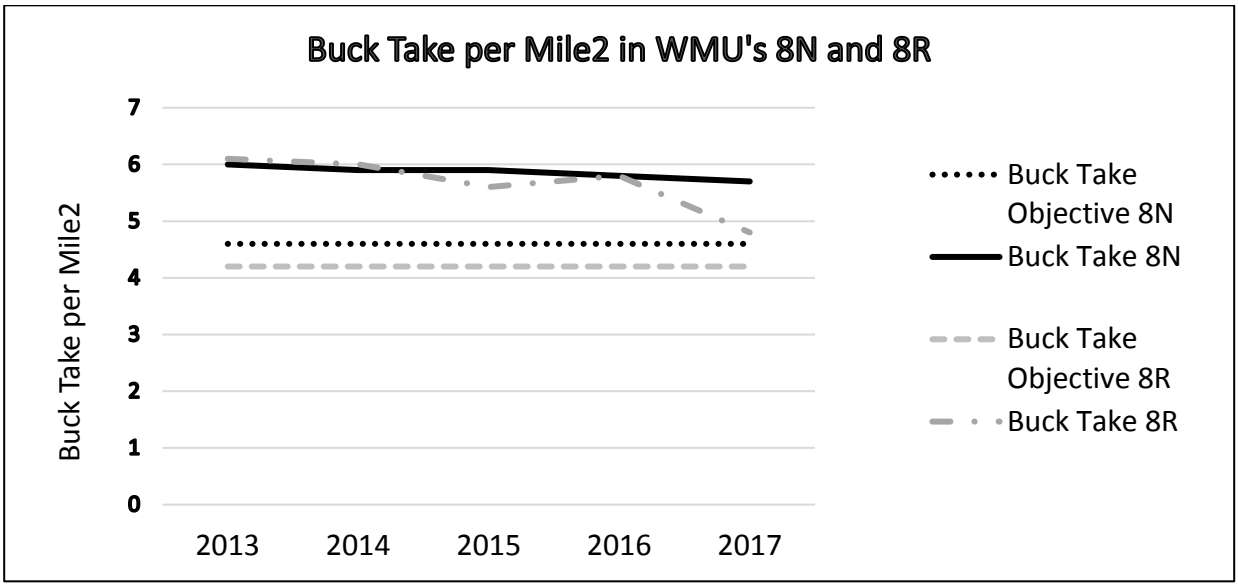
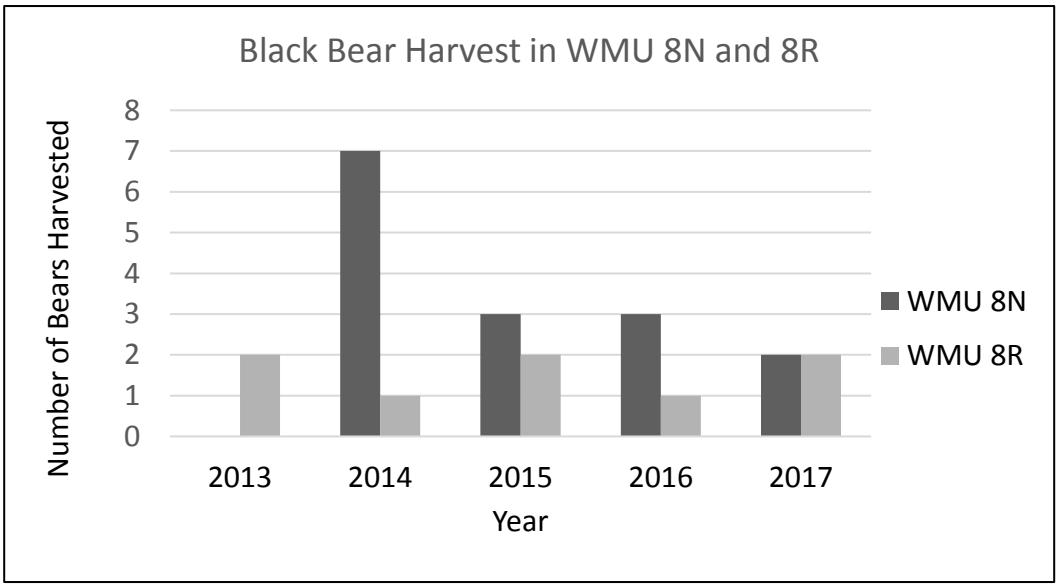


Chart 2: Black Bear Take in WMU 8N and 8R



Wild Turkey Harvest

Wild turkey harvest estimates, for both spring and fall seasons, are compiled and reported at the county level. Ontario County has averaged over the past 5 years a harvest of 468 turkeys in the spring (2013-2017) and 51 in the fall (2012-2016). Yates County has averaged over the past 5 years a harvest of 357 turkeys in the spring and 55 in the fall. Detailed spring Wild Turkey Harvest can be found at: www.dec.ny.gov/outdoor/30420.html and detailed fall Wild Turkey Harvest can be found at: www.dec.ny.gov/outdoor/30412.html.

Furbearers Harvest

For trapping, all major furbearers of Western New York are present on the Unit, including mink, muskrat, red fox, grey fox, raccoon, coyote, beaver, skunk and opossum. River otter, bobcat, and fisher are three relatively recently returned species to Western NY, and their numbers are growing. A bobcat season and fisher season was instituted beginning in 2013 and 2016 respectively for parts of the southern tier, but not WMU 8N and 8R. There is currently no open season for trapping river otter in western NY. Harvest numbers for bobcat and fisher by county and town are available at: www.dec.ny.gov/outdoor/93855.html.

Fishing

Naples Creek has a premier rainbow trout run in the spring and smaller runs of brown trout occur in the fall. The large wetland complex, creeks and ponds on High Tor WMA provide many fishing opportunities for warm water species. Fishing opportunities are limited at Italy Hill SF. See Appendix B: Animals of the Canandaigua Highlands Unit Management Plan Area (pg. 144) for a list of fish that have been found in Naples Creek.

Public Fishing Rights (PFR)

This Unit Management Plan does not cover or include actions on any PFR's. However, since 1935, the Department 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 the DEC from private landowners, giving sportsman and women 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: the Department has only purchased rights for the public to fish along a stream corridor. The land where PFR exists remains in private ownership.

Fishing Access Sites (FAS)

Fishing Access Sites (FAS) consist of the Department owned land with the primary purpose of providing public fishing access and are managed by the Bureau of Fisheries. This includes boat launches on public waters and parking areas along streams and rivers to provide shoreline fishing.

Fishing Access Sites Vs. Wildlife Management Areas

Wildlife Management Areas are managed by the Bureau of Wildlife (Wildlife) within the Division of Fish and Wildlife (DFW). Also, within the DFW is the Bureau of Fisheries (Fisheries) which manages Fishing Access Sites (FAS). To complicate things, there are several FAS within High Tor WMA. It is important to know which bureau manages a property to know which regulations apply to that property. Below is a list of FAS on or near High Tor WMA and which Bureau within the DFW will be responsible for management.

- Sunnyside Rd Fishing Access Site – Wildlife
- West River Marina – Wildlife

- Woodville Boat Launch – Fisheries
- State Route 21 (south of Parrish Rd) - Fisheries
- Mark Circle Fishing Access Site - Fisheries

The sites which fall under the management of the Bureau of Wildlife are included in the scope of this plan and are considered part of High Tor WMA. See Appendix M: Maps (pg. 202).

Trails

There are some designated recreation trails on the Unit, in addition to old roads, railroads, 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 High Tor WMA bikes are only allowed on roads or designated trails, and there are currently no designated bike trails on High Tor WMA. On State Forests biking is permitted, unless posted as prohibited. Motorized vehicle use, including ATVs and UTVs, is prohibited, except where specifically permitted by signs, posted notice, or Department permit. See the tables in Appendix D: Facilities (pg. 157) and maps in Appendix M: Maps (pg. 202).

The Bristol Hills Hiking Trail, a branch trail of the Finger Lakes Trail, crosses both properties, and is maintained by the Finger Lakes Trail Conference (FLTC) under a Volunteer Stewardship Agreement (VSA). This hiking trail has approximately 5.5 miles on High Tor WMA, and about 4.5 miles on Italy Hill SF, but total length of the trail is about 585 miles, with Allegany State Park at one end and the Catskill Forest Preserve at the other.

The Lehigh Valley Rail Trail (aka Middlesex Rail Trail) is a 6.5-miles of abandoned railroad that parallels the West River and can be accessed from State Route 21, State Route 245, Parrish Rd, Sunnyside Drive, Cayward Cross Rd. or the West River Boat Launch. This is maintained to Haul Rd. Standards (see pg. 19) but is a popular walking and biking location.

No snowmobiling is allowed on High Tor WMA. Italy Hill SF had a snowmobile trail crossing from one end to the other. It was maintained as part of the “Adopt a Natural Resource” by the YOASTA Club (Yates Ontario Area Snowmobile Trail Association). As of the writing of this plan the AANR for maintenance of it has expired, but it is still there if new volunteers want to take over.

High Tor WMA has roads that are part of the state wide Motorized Access Program for People with Disabilities (MAPPWD) route system, see Trail Access for Persons with Disabilities on page 32 for additional information.

Parrish/Conklin and Clark Gullies

Located on High Tor WMA are two major gullies – Parrish/Conklin Gully and Clark Gully. Both gullies are a part of the New York State Nature and Historic Preserve. These areas are popular for their natural beauty with scenic views, waterfalls and sheer cliff faces and their geological and historical significance. Both areas have gained in popularity over the last decade and are listed in numerous outdoor books and online blogs. Both these areas are

popular ice climbing destinations in the winter, as well. Typically, in a year, several incidents occur involving the forest ranger and other emergency personnel helping those who get injured or trapped in these areas. A number of the trails in and near the gullies have developed over time from users and have never been formally identified and signed by the Department. Most are used year-round and on nice days, a dozen or more cars can be found in the parking areas.

Universal Access

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

Application of the Americans with Disabilities Act (ADA)

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

Title II also requires that new facilities, and parts of facilities that are newly constructed for public use, are to be accessible to people with disabilities. In rare circumstances where accessibility is determined to be structurally impracticable due to terrain, the facility, or part of facility is to be accessible to the greatest extent possible and to people with various types of disabilities.

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

Any new facilities, assets and accessibility improvements to existing facilities or assets proposed in this UMP are identified in the section containing proposed management actions.

Information on the Unit

The Department is not required to make each of its existing facilities and assets accessible as long as the Department's programs, taken as a whole, are accessible.

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

See the Access Management (pg. 77), Public Recreation and Use Management (pg. 108), Appendix D: Facilities (pg. 157), and Appendix M: Maps (pg. 202) sections.

Trail 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, on this Unit only one short trail meets the federal standards for wheelchair accessibility. Located on Marks Circle, it is about 170 feet long, connecting a parking area and a fishing platform for fishing in Naples Creek on High Tor WMA.

In most other trail 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 trails currently exist on this Unit, specific routes allow ATV use by permitted persons with disabilities, pursuant to 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 the Department. Individuals with qualifying disabilities may apply for a permit to operate an ATV or other vehicle on routes designated by the Department.

High Tor WMA has 7.4 miles of MAPPWD routes located on Haul Rds. See Appendix M: Maps (pg. 202) for the exact location. Italy Hill SF has no designated MAPPWD routes.

For further information, contact the Department at 7291 Coon Rd, Bath, New York 14810. Planned changes to the MAPPWD trails on the Unit are in the Public Recreation and Use Management (pg. 108) section of the Goals and Objectives chapter. See also Public Recreation and Use Management (pg. 108), Appendix D: Facilities (pg. 157) and Appendix M: Maps (pg. 202) of this plan, or the SPSFM, 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 glaciation episode (Wisconsinan glaciation episode) retreated from the area approximately ten thousand (10,000) 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; specifically, shale, sandstone and minor 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 surface geology of the State lands included in this unit management plan are similar due to their close proximity.

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 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, when the actual difference in soil characteristics are not that great. Very specific descriptions of the various soil types may be found at: https://soilseries.sc.egov.usda.gov/osdname.aspx

In addition, the Digital General Soil Map of the United States or STATSGO2 is a very broad-based landscape inventory of the United States soils. According to this dataset the upland portions of the Unit are primarily covered with Volusia-Mardin-Lordstown soils, and the lowlands portions with Wayland-Teel-Herkimer. Additional information is available online at http://websoilsurvey.nrcs.usda.gov/.

Information on the Unit

There are several areas on Italy Hill SF where the soils appear to be susceptible to “slip” activity. This generally occurs where glacial till overlays a layer of tight blue clay. The precise mechanics of this activity are unknown, but it is postulated that:

- This activity occurs when the soils are water saturated to the clay layer. The excess water serves as an excellent lubricant for the bottom of the till layer. This type of activity can also be precipitated by a “perched” high water table.
- Water levels in the adjacent intermittent streams are very high, consequently the intermittent stream undercuts the toe of the slope
- The entire till level slides downhill and into the intermittent stream, taking trees, large rocks, etc. along with it
- Water from the intermittent stream then pools behind the slip area until it overtops the obstruction, whereupon the cycle begins again.

Surface Geology

Surficial deposits or the parent material of soils that overlay the bedrock in the Unit are predominantly glacial till except in topographically low areas and escarpments subjected to erosion. Bedrock outcrops of Devonian shales, siltstones, sandstones, and limestone are located intermittently on the flanks and crests of ridges and hills in the area when erosion of overlying glacial till causes the exposure of the bedrock. Kame and kame moraine deposits of sand and gravel are located intermittently in topographically low areas and are associated with glacial meltwater fluvial systems and deposition adjacent to the ice. Lacustrine sediments associated with deposition in proglacial lakes have filled the low areas of Italy Valley and the valley south of Canandaigua Lake, and recent alluvium deposits have accumulated along the West River channel. Swamp deposits exist overlying lacustrine deposits in wetland areas at the south end of Canandaigua Lake. 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. 35).

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.

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.

Bedrock of the Canandaigua Highlands Unit

The majority of the state lands within this Unit contain bedrock that are shales, siltstones, sandstones and intermittent limestones of the Genesee Group, Sonyea Group, and West Falls Group 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).

Detailed descriptions of the bedrock beneath the state lands within this unit are provided in Table 6: Parent Material and Bedrock, page 35.

Further information on the bedrock geology of the region is provided by the: Geologic Map of New York - Finger Lakes Sheet - 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
High Tor WMA	Glacial Till - clay, silt, sand, gravel, cobbles, and boulders deposited beneath glacial ice. Located at higher elevations generally along the eastern portions of the WMA properties.
	Lacustrine Deposits – laminated clays and silts deposited in proglacial lakes that extend southward in the valley from the south end of Canandaigua Lake.
	Swamp Deposits – peat, muck organic silt and sand in poorly drained unoxidized areas that overlie lacustrine deposits at the south end of Canandaigua Lake.
	Recent Alluvium - fine sand to gravel generally confined to flood plains in a valley which may be overlain by silt in larger river valleys. Present on the WMA properties along West River.
	Kame – sand and gravel deposited adjacent to glacial ice located in the southern portion of the WMA.
	Kame Moraine – sand, gravel and boulders deposited at the ice margin as glaciers retreated located in the southwest corner of the WMA.
	Bedrock - shales, siltstones, and minor sandstones of the Upper Devonian West Falls Group West Hill formation occur on the hill top beneath the southern property. The Beers Hill Shale member of the West Falls Group and the Cashaqua and Middlesex Shale members of the Upper Devonian Sonyea Group outcrop or subcrop near surface along the western slopes. Shales of the Devonian Genesee Group including the West River Shale member are present at lower elevations and along West River in the northern portion of the WMA. Shale, siltstone and sandstones of the Sonyea Group and West Falls Group comprise the bedrock beneath the northern portion of the WMA at higher elevations.

State Land Name	Parent Material and Bedrock
Italy Hill SF	Glacial Till - clay, silt, sand, gravel, cobbles, and boulders deposited beneath glacial ice.
	Kame – sand and gravel deposited adjacent to glacial ice present in the northern portion of the SF.
	Lacustrine Deposits – laminated clays and silts in proglacial lakes. Present on the SF in the southwest corner along Flint Creek in the Italy Valley.
	Bedrock – Shales and siltstones of the Upper Devonian West Falls Group Beers Hill Shale member and West Hill formation comprise the bedrock beneath most of the SF. The Upper Devonian Sonyea Group Cashaqua and Middlesex Shale members occur on the SF at lower elevations in the valley and along the western slopes. Bedrock outcrops commonly on the SF along the western slopes.

Geologic Structure

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 Sheet #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.

Mineral Resources

Oil and Gas

Section 23-1101 of the ECL and State Finance Law authorizes the Department to make leases on behalf of the State for exploration, production and development of oil and gas on State lands. 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 finalized in 1992 (GEIS), this Unit Management Plan, 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 was issued in June

2015. These documents constitute the Department'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.

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 which eventually extended into western New York and areas surrounding what is now Italy Hill SF and High Tor WMA. See Appendix N: Maps.

Drilling began in the Unit area in the late 1800s to obtain gas production from shales of the Middle Devonian Hamilton Group (which includes the Marcellus Shale) in the Naples field at depths ranging from 1044 to 1663 feet. Eighteen wells were drilled in this field from 1880 through the mid-1940s with four drilled on High Tor WMA in the southwest corner, east of Naples Creek. An additional well was drilled later in the field in 1983 operated by Widmer's Wine Cellars, Inc. All wells in the Naples field have been plugged.

At the same time, drilling began in the Rushville Field in the Town of Gorham, Ontario County and the Towns of Potter and Middlesex, Yates County located approximately five miles northeast of High Tor WMA and six miles north of Italy Hill SF. Natural gas has been produced historically from the late 1800s through the early 1900s from the shales of the Hamilton Group in the Rushville field at depths typically less than 1,000 feet. There were 26 wells drilled in the field but only two wells are currently producing and gas produced is for home use.

Many wells were drilled during the mid-1960s through the late 1980s that produced gas from the Medina Sandstone and Queenston formation. Medina and Queenston gas production was from depths between 2,500 feet and 3,000 feet in the North Penn Yan Pool and from approximate depths of 3,500 and 4,000 feet in the South Penn Yan Pool. Both pools are located approximately nine miles east of Italy Hill SF. Many of the wells in these pools are currently producing but some are produced only for home use. One Medina/Queenston well was drilled in 1987 approximately four miles east of Italy Hill SF in the Sugar Creek field. This well has never produced gas.

Recent Drilling and Production

A major natural gas "play" occurred more recently (1996 – 2008) targeting gas production in the Trenton and Black River formations with the first fields being developed in northeastern Steuben County near state lands in the Unit. This created an interest in leasing state lands in the Unit for oil and gas exploration. Exploration for gas in the Trenton/Black River formations expanded into areas on and between Italy Hill SF and High Tor WMA.

Information on the Unit

Belden & Blake Corporation drilled the NYS Reforestation 1 well (API# 31-123-22757) in 1998 on Italy Hill SF. This well was later “sidetracked” which means it was drilled directionally from the same borehole at the same surface location (NYS Reforestation 1-A well) in 2003. Both wells targeted the Black River formation and have been plugged. There were two additional wells proposed on Italy Hill SF to target the Trenton/Black River formations (NYS Reforestation 2 and 3) but these wells were never drilled.

Located between High Tor WMA and Italy Hill SF are four vertical wells and four sidetrack wells on private land drilled by Belden & Blake Corporation between 2000 and 2002 targeting gas production in the Trenton/Black River formations. The Mulligan 1 and 1-A; Costanza 1, 1-A, and 1-B; Watson 1 and 1-A; and the Fehrenbacher 1 wells were drilled in 1998 through 2002 to approximate depths of 6,000 to 7,000 feet and never produced gas. These wells have been plugged and abandoned.

The closest commercial natural gas production to the Unit is from the Trenton and Black River formations in the Glodes Corners, Pine Hill, and Guyanoga fields. An initial well was drilled in 1986 in the Glodes Corners Roads field but all other wells in the field were drilled between 1995 and 1999. The Glodes Corners Road field is located approximately five and a half miles south of Italy Hill SF. The Pine Hill Field is located five miles south of High Tor WMA and wells were drilled in this field between 1999 and 2000. There are 19 wells combined that were drilled in the two fields. Most wells were drilled to a depth of approximately 7,500 feet from surface and are producing from the Trenton/Black River formations at approximate depths of 7,000 feet to 7,500 feet. The Guyanoga field is represented by one well – Walters 1-A – operated by Chesapeake Appalachia, LLC and located approximately four miles east of Italy Hill SF. The original vertical well and a sidetrack were drilled in 1999 to approximate depths of 6,000 to 7,000 feet. Although a few wells remain active, most the wells in these fields are currently not producing (shut-in).

Since 2002, there has been no drilling activity near the parcels within this Unit.

Mineral Leasing Activity

In Italy Hill SF, New York State manages the surface estate through the NYS DEC Division of Lands and Forests. The surface estate on High Tor WMA is managed through the NYS DEC Division of Fish and Wildlife. In both areas, the mineral estate is managed through the NYS DEC Division of Mineral Resources. The federal government owns a 75% interest in the mineral estate under a significant portion of the High Tor WMA acreage; this interest is managed by the US Department of Interior, Bureau of Land Management (BLM).

Properties within this unit have been subject to oil and gas leases in the past. The State owns 100% of the mineral estate of Italy Hill SF. Leases on this mineral estate were executed on February 3, 1998 between the NYSDEC as “lessor” and Belden & Blake Corporation as “Lessee”, that granted Belden & Blake Corporation all oil and gas rights under Parcel A (1,068.89 acres) and Parcel B (830.74 acres) of Italy Hill SF, Yates County, Towns of Italy and Jerusalem. These leases expired February 3, 2003.

High Tor WMA is approximately 6,832 acres, and the mineral estate is owned by the State and Federal government. The State owns 100% of the mineral estate under approximately 3,979 acres in the area. The State owns an undivided 25% mineral interest under the

remaining 2,853 acres (approximately) and the federal government (administered by the Bureau of Land Management) owns the other undivided 75% mineral interest. Leases on the State's 100% mineral estate were executed on January 13, 1998 between the NYSDEC as "Lessor" and Belden & Blake Corporation as "Lessee", that granted Belden & Blake Corporation oil and gas rights to the State's 100% mineral estate under the High Tor WMA, Ontario and Yates County, Towns of Naples and Italy. These leases expired on January 13, 2003.

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.

Future Leasing Activity

In the future, the Department may receive requests to nominate lands contained in this unit for oil and gas leasing. In the event of this occurrence, the procedures outlined in Appendix I: Procedures for Oil & Gas Procurement section on page 187 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 SPSFM at www.dec.ny.gov/lands/64567.html, and in the Mineral Resource Management section (pg. 121) of this plan.

Previous interest in exploration for natural gas has been in developing production from the Trenton/Black River and Medina/Queenston formations. Little interest has been shown in leasing, drilling, and exploration for natural gas in the Unit area since 2002. Gas prices and economic incentive will dictate if there will be any interests in developing production from the Medina/Queenston and Trenton/Black River formations or other conventional natural gas reservoirs in the area.

There has been considerable interest in the state with the prospect of horizontal drilling and high-volume hydraulic fracturing of the Marcellus Shale and other low-permeability natural gas reservoirs. No exploration or extraction of the Marcellus Shale using high volume hydraulic fracturing will be considered for permitting on state lands per the May 2015 FSGEIS and June 2015 Findings Statement that recommended that high-volume hydraulic fracturing should not move forward in New York State.

Mining

Sand, Gravel, Hard Rock and Other Mineable Materials

There are no mining contracts, permits or operations located on state lands included in this Unit. Under Article 7 of the New York Consolidated Laws/Public Lands, any citizen of the United States may apply for permission to explore and /or extract any mineral on state lands. However, current Department policy is to decline any commercial mining application(s) 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 Unit mostly consists of poorly sorted glacial till of variable texture along with exposed or near

surface (within one meter) bedrock outcrops. These glacial till deposits would not yield large amounts of sand and gravel. Sand and gravel mines are common in areas of glacial kame deposits, or more recent alluvium deposits that are generally found in stream valleys. Sand and gravel resources in kame and/or kame moraine deposits exist in the southern portion of High Tor WMA and the very northern portion of Italy Hill SF and in alluvium deposits along the West River that are present on state land.

Various hard rock deposits underlay this area, the most common being shale, sandstone, and siltstone. The depth to the deposit, its thickness, and its quality would determine the feasibility of developing these resources.

There are only a few active sand and gravel mining operations located close to properties comprising the Unit. Most of the mines in the area are small and are operated by the towns or local construction companies. Although there are no active mines within the state lands comprising this Unit, privately owned mining operations do exist within a few miles of the state lands in the Unit commonly where kame, kame moraine, and alluvium sand and gravel deposits are located (see Appendix M: Maps, pg.202). Several active sand and gravel mines are located within three miles of High Tor WMA to the southwest and to the north. There are also several active sand and gravel mines within four miles to the north and east of Italy Hill SF. The Town of Prattsburg had a two-acre sand and gravel mine on Italy Hill SF in the southwest corner that has been reclaimed.

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.

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 and 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 Canandaigua Highlands Unit Management Plan. Future management is covered in the Timber and Vegetation Management section starting on page 81 and in Appendix F: Vegetation Management (pg. 162) and in Appendix M: Maps (pg. 202). For more information regarding timber management on State Forest please refer to Chapters 2 and 6 of the SPSFM at www.dec.ny.gov/lands/64567.html. In addition to this Unit Management Plan, Wildlife Management Areas have an individual Habitat Management Plan (HMP) which also covers the timber and vegetation management on the property. The HMP for High Tor WMA was approved in 2016. For more information, please refer to the individual Habitat Management Plan at www.dec.ny.gov/outdoor/24439.html.

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. The properties in this Unit were last inventoried in 2014 and will continue to be updated as needed. 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 the Department 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.

Timber size class is broken down into three different classifications: seedling/sapling is up to 5 inches in Diameter at Breast Height (DBH), pole timber is 6 to 11 inches DBH and sawtimber is 12 inches DBH and up.

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.

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

Italy Hill SF and High Tor WMA were last inventoried in 2014. The data gathered was used to create Table 7: Vegetative Types and Stages (pg. 42), Appendix F: Vegetation Management (pg. 162), as well as several maps located in Appendix M: Maps (pg. 202). It was also used to help develop the management activities in the Timber and Vegetation Management section (pg. 81) of this Unit Management Plan.

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

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. The Canandaigua Highlands Unit vegetation is dominated by wetland vegetative types on

lowlands and natural hardwood forests on the uplands. Past man-made disturbances have created even more diversity. Many of the formerly agricultural fields, for example, have reverted back to pioneer forest types composed of aspen, white ash, 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 brushy cover. The exception to this is the West River area on High Tor WMA; it is a 5.5-mile-long wetland corridor south and east of Canandaigua Lake. Additionally, there is a significant area of blueberries and other heath type shrubs on Italy Hill State Forest in stand C-16, near Dunn Rd. This is a unique feature in this area. Management actions are proposed in this plan to assure the long-term survival of this community.

The conifer component on the Unit is largely plantation, mostly red pine, Norway spruce, white pine, Scotch 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 mostly white pine and/or hemlock.

Table 7: Vegetative Types and Stages for the Canandaigua Highland Unit

Summaries of each parcel, and information on each stand, is available in Appendix F: Vegetation Management (pg. 162), and maps are available in Appendix M: Maps (pg. 202).

Inventory completed in 2013-2016	Acres by Ave. Tree DBH Size Class					
Vegetative Type	**0-5 in (seedling-sapling)**	**6-11 in (pole)**	**12+ in (saw-timber)**	**Other**	**Total (Acres)**	**% of Total**
Natural Forest Hardwood	284	2,076	2,519		4,815	56%
Natural Forest Conifer/Conifer Hardwood*		253	396		649	7%
Plantation		198	298		496	6%
Wetland (Forest)		5	122		140	1%
Wetland (Open / emergent and/or Shrub)				1,399	1,399	16%
Ponds				173	173	2%
Grassland/Brushy				852	852	10%
Other (Rd, ROW, Parking, ownership conflict, etc.)				178	178	2%
Total (Acres)	284	2,532	3,335	2,602	8,737	
% of Total	3%	29%	38%	30%		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 2005 and 2018

Table 8, below, is the Vegetative Types and Stages Table from the 2005 Canandaigua Highlands Unit Management Plan. At the time, these records were estimated from the most recent inventories available. Depending on the area, inventory data was taken some time between 1987 and 2002.

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 parking areas 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 upland (dry) forested areas and from open/emergent/shrub wetlands as they are managed in different ways. Plus, High Tor WMA has had additional acres purchased and added to the total for the property.

The timber vegetation has grown. The number of acres with an average tree size of 12 inches or better (sawtimber size) has increased from 27% to 38% of the total acres, and the number of acres of seedling/sapling has dropped dramatically, from 16% to 3% of the total acres. How these impacts future timber management will be discussed in the Timber and Vegetation Management section starting on page 81.

Table 8: Vegetative Types and Stages as reported for in the 2005 Canandaigua Highlands UMP

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

Vegetative Types & Stages – 2005 Canandaigua Highlands UMP	Acres by DBH Size Class				
	0 - 5 in	6 - 11 in	12+ in	other	% of Total
Natural Forest Hardwood	835	1,686	1,924		54.1%
Natural Forest Conifer	449	558	115		13.7%
Plantation	21	127	198		4.2%
Wetland				1,420	17.3%
Ponds				143	1.7%
Open/Brush				582	7.1%
Other (Rds., Parking areas, etc.)				156	1.9%

Vegetative Types & Stages – 2005 Canandaigua Highlands UMP	Acres by DBH Size Class				
	0 - 5 in	6 - 11 in	12+ in	other	% of Total
Total (Acres)	1,305	2,371	2,237	2,301	8,214
% of total	15.9%	28.9%	27.2%	28.0%	

Green Certification of State Forests

Only Italy Hill State Forest in this Unit is 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 Department lands. In addition, timber sales on WMAs follow many of the same guidelines/policies used on State Forests, such as Special Management Zones, described in further detail below.

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 Department had to meet more than 75 rigorous criteria established by FSC. Meeting these criteria established a benchmark for forests managed for long-term ecological, social and economic health. The original certification and contract was for five years

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

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

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

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

High Conservation Value Forest (HCVF)

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

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

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

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

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

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

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

As of the writing of this plan there are no HCVF identified in this Unit. For more information on HCVFs please go to http://www.dec.ny.gov/lands/42947.html. See also the SPSFM (www.dec.ny.gov/lands/64567.html), Appendix M: Maps (pg. 202), Wetlands and Water Resources (pg. 56), Watershed and Wetlands Protection Management (pg. 98), and Timber and Vegetation Management (pg. 81), sections for further information on watershed protection.

Special Management Zones

Special management Zones (SMZs) provide guidance for buffers along riparian zones, wetlands, vernal pools, recreation trails, and other features. SMZs extend outward from wetland and adjacent area boundaries, the high-water mark of perennial and intermittent streams, vernal pool depressions, spring seeps, ponds and lakes, recreation trails, campsites, and other features requiring special consideration. The SMZ rules also provide guidance on crossing these features if and when this becomes necessary.

Buffers may consist of no treatment areas or may be areas where the proposed treatment is modified to assure the continued function of these areas. Providing continuous overstory shading, retaining sufficient tree cover to maintain acceptable aquatic habitat, and protecting riparian areas from soil compaction and other impacts, all help to assure that these areas function as required and desired. The Departments buffer guidelines also maintain corridors for movement and migration of many wildlife species, both terrestrial and aquatic.

The State Forest properties in this UMP are under the Division of Lands & Forests FSC and SFI certificates. The respective Green Certification bodies have encouraged the Department to codify what, in many cases, were existing good practices. For further information, please see: www.dec.ny.gov/docs/lands_forests_pdf/sfsmzbuffers.pdf.

The WMA properties in this Unit are not under green certification certificates. However, codifying existing good practices has also been done for them as it relates to SMZs. For further information, please see: www.dec.ny.gov/docs/wildlife_pdf/yfismzrules.pdf.

Please also see Appendix M: Maps (pg. 202); for computer generated maps showing locations of these zones. The actual configuration of these zones can only be accomplished by field reconnaissance, which is well beyond the scope of this plan. Any significant deviation from the mapped boundaries would need to be documented in the diagnosis and prescription guiding the actual on the ground project.

For further information, please see also the following sections: Fish, Wildlife and Habitat (pg. 51), Timber and Vegetation Management (pg. 81) Fish and Wildlife Habitat Management (pg. 100) and the Watershed and Wetlands Protection Management (pg. 98) sections.

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:

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

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 (NHP) inventory, a classification has been developed to help assess and protect the biological diversity of New York State. The NHP inventory is a regularly updated database of information on rare animals, rare plants, and significant natural communities of New York State.

Communities and rare species are the mapping units or "elements" of the NHP 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. The State Forests in this unit were formally surveyed in 2006 as required under the Green Certification program.

The Canandaigua Highland Unit contains several significant plants and plant communities according to the Natural Heritage Program data base. A natural ecological community may be considered "significant" by the Heritage Program if it is either rare in New York State, or an outstanding example of a more common natural community. Outstanding examples of flood plain forest and a rare perched swamp, White Oak Swamp, exist within the unit and are both classified as significant plant communities. There are also two rare plants in the unit. If additional rare plants or significant communities are found on the unit they will be reported to the Natural Heritage Program and appropriate management strategies will be formulated to protect, maintain, or expand them.

See Timber and Vegetation Management section starting on page 81 for additional information and future management plans for the grasslands/shrublands of this Unit. For information related to animals within this unit, refer to the Fish, Wildlife and Habitat section (pg. 51).

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 Department 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 Unit, however, these blocks are large, and the observations likely did not occur on the Unit, but rather within areas of agriculture and grassland nearby.

Only the eastern two thirds of Italy Hill SF are within the Finger Lake Region Grassland Focus Area. It is important to note that the properties within the Unit are mostly forested, and where grassland fields are present, they are generally small and surrounded by forest. Grassland dependent bird species typically require large patches of grassland in an open landscape, therefore grasslands on the Unit do not provide significant habitat for them. However, grasslands on the Unit provide important habitat for wildlife that typically inhabit forest, such as deer fawning and turkey brood rearing habitat. See Appendix M: Maps (pg. 202), Appendix B: Animals of the Canandaigua Highlands Unit Management Plan Area (pg. 144), Timber and Vegetation Management (pg. 81) and Fish and Wildlife Habitat Management (pg. 100) 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 Forest Matrix 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 continuous closed forests to maintain 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 for four of the terrestrial EcoRegions within New York.

Securing connections between major forested landscapes and their imbedded forest matrix 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 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.

Information on the Unit

None of the properties in this unit are located within a forest matrix block; however, a majority of both Italy Hill State Forest and High Tor WMA are located within the LCP corridor linking two forest matrix blocks. See Appendix M: Maps (pg. 202) and Chapter 2 of the SPSFM at www.dec.ny.gov/lands/64567.html. The forested acres of the Unit 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 Bureau of DEC Private Land Services for help. Visit www.dec.ny.gov/lands/4972.html or call the Bath or Avon offices.

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.*

Department 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 Unit was previously used for farming, and ample evidence of this still exists in the form of old stone walls, foundations and wire fence along old hedge rows.

The Department 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. Department 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, it is possible to gradually revert to a state similar to old-growth. This is a centuries long process; however, there are portions of this Unit where this may eventually occur.

Fish, Wildlife and Habitat

The fish, wildlife and their habitats found on the Unit 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 sediment, wetlands were drained, and wildfires were suppressed; very little of the landscape was left untouched.

During the 1920s and 1930s, unproductive farmland, drought, and the Great Depression set the stage for the landscape pendulum to swing in a different direction. As farms failed and were abandoned, a large portion of the region began to revert back to forest. The resulting young forests lacked sufficient size 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 grassland wildlife that once were in great supply diminished, and species dependent on young forests took advantage of the returning woodlands, such as ruffed grouse, woodcock, and white-tailed deer.

Today, these second-growth forests have matured (most stands are 70 to 80 years old) and wooded habitats are one of the predominate environments on the Canandaigua Highlands Unit (70%). Forest habitat here is primarily an oak-hickory type, with other hardwoods (e.g., maple and ash) and conifers (e.g., hemlock and white pine) also occurring. Many of the wildlife species frequenting the Unit are those commonly associated with these mature forest habitats, including several that were absent entirely in the early 20th century, including black bear, bobcat, fisher and wild turkey. However, several wildlife species that had been abundant while these forests were young have declined in recent decades (some down to concerning levels), due to the loss of suitable habitat. Active management is necessary on the Unit to establish a dynamic forest of diverse habitats where there is a mosaic of different tree ages and size classes.

Grasslands, old fields, and shrubby fields make up a smaller percentage of the Unit's land (10%) but provide valuable habitat diversity interspersed among the abundant forested habitat. These fields provide important habitat for dependent species, such as bobolink, field sparrow, meadow vole and northern harrier, as well as several species more often associated with forest, such as deer and turkey, which visit fields to take advantage of the abundant food and cover. These fields also provide valuable habitat for the ring-necked pheasant, a popular game bird stocked on High Tor WMA during the hunting season.

Wetlands and ponds are another important component of habitat on the Unit (18%) and are primarily located on High Tor WMA. This consists of numerous small ponds and dug-outs

created in upland areas, and an expansive marsh located on the valley bottom along Naples Creek and West River. The ponds and dug-outs provide valuable habitat for amphibians, reptiles, and waterfowl, as well as a reliable water source for upland wildlife. The lowland marsh provides exceptional habitat for associated wildlife species, including beaver, muskrat, otter, marshbirds and waterfowl. The streams and side channels flowing through these marshes also provide valuable habitat for fish, especially for spawning.

Ecological Zones and EcoRegions

The Canandaigua Highlands Unit lies on the divide between the Central Appalachians Ecological Subzone and the Finger Lakes Highlands Ecological Subzone. Italy Hill SF is within the Central Appalachian EcoZone, which 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. Most of High Tor WMA is within the Finger Lakes Highlands SubZone, which is a relatively small Subzone, at about 1,100 square miles, and is characterized by broad hilly terrain interspersed by wide valleys.

The Unit is mostly located in the Great Lakes EcoRegion (GL), with only about half of Italy Hill located in 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.

EcoZones and EcoRegions are mapped with well-defined boundaries, but rarely in nature do such abrupt changes occur. See Appendix M: Maps (pg. 202).

The Great Lakes 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 1,200 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 Canandaigua Highlands Unit.

Mammals, Amphibians, Reptiles, and Birds

The Unit has a long history of deer hunting and has been well known to hunters for many decades. This part of the state has relatively high deer populations which are slightly above objective levels, causing some negative impacts to vegetative diversity and forest regeneration. The potential impacts of deer browse need to be considered when planning timber management, and deer hunting should continue to be encouraged on the Unit.

Black bear is firmly established in the region and on the Unit. The large forested acreage intermixed with agriculture provide a quality habitat for bear. Black bear prefer to avoid humans; however, visitors on the Unit should use safety precautions to avoid encounters with bears, especially while camping. Information regarding black bear encounters can be found at https://www.dec.ny.gov/animals/94710.html.

The habitats of the 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, skunk and weasel. River otter were reintroduced to the West River wetlands of High Tor WMA in 2000 as part of an otter restoration program and have been increasing since. Fisher and bobcat are both expanding their range in western New York with growing populations and currently inhabit the Unit.

Common small mammals include chipmunk, red and gray squirrels, flying squirrel, cottontail rabbit, woodchuck, white-footed mouse, meadow vole, and several species of bats, although numbers of the latter have declined in recent years due to the effects of white-nose syndrome.

Upland game birds of the Unit include wild turkey, ruffed grouse, woodcock, and crow. Currently, populations of grouse and woodcock are low on the Unit and management to increase young forest habitat should improve their numbers. Pheasant are currently stocked annually in some fields on High Tor WMA.

Resident waterfowl known to breed on the Unit include Canada goose, hooded merganser, mallard, and wood duck, with mallard and wood duck breeding in abundance. Other waterfowl species likely to occur during migration and over winter include American wigeon, green-winged teal, northern pintail, ruddy duck, bufflehead, greater and lesser scaup, canvasback, and redhead. Waterfowl habitat is primarily located on High Tor WMA, within the expansive lowland marsh and numerous ponds.

Songbird assemblages inhabiting the Unit are dictated by the habitat types present. Forests are the predominate cover type here and related species such as red-eyed vireo, eastern wood-pewee, and American robin are quite common. Most of these stands provide quality mature forest habitat and support breeding wood thrush, scarlet tanager, and ovenbird. Less common are songbirds dependent upon young forest, such as blue-winged warbler and brown thrasher. The grasslands and fields of the Unit support breeding song and

field sparrows, and, to a lesser extent, bobolink and savannah sparrow. The large marsh south of Canandaigua Lake supports high numbers of red-winged blackbird, marsh wren, and common yellowthroat.

Common reptiles found on the Unit include milk, water and garter snakes, and snapping and painted turtles. Milk snake and garter snake can be found in most areas of the Unit, while water snakes are primarily found in and near ponds and wetlands. Painted and snapping turtles are almost entirely aquatic, found in ponds and wetlands, except when they come on land to find appropriate soils for egg laying.

Amphibians are quite common on the Unit and include several species of frog, toad, and salamander. Spring peeper, green frog, and bull frog are the most common frog species and can readily be found in and near ponds and emergent wetlands. American toad is the only toad species on the Unit. Common salamander species include red-backed, dusky, and spotted salamanders, and there is just one newt species here, the red-spotted newt.

See Appendix B: Animals of the Canandaigua Highlands Unit Management Plan Area (pg. 144) for lists of occurrences from the most recent Breeding Bird Atlas (BBA) and Herp Atlas projects. Nearly 120 bird species may breed on the Unit (according to New York's second BBA), and due to this high diversity of species and their habitats, High Tor WMA was designated a New York State Bird Conservation Area in 2002.

Invertebrates

Invertebrates are the largest component of animal diversity within the Canandaigua Highlands 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 Special Concern Species (pg. 54) or Species of Greatest Conservation Need (pg. 54).

Survey efforts to document rare species on the Canandaigua Highlands Unit were completed by the New York Natural Heritage Program in 1996 and 2005; no rare invertebrate species were observed during these surveys. The New York Dragonfly and Damselfly Survey (2005-2009) documented several species on High Tor WMA. Freshwater mussel surveys conducted in 2008 within West River on and near High Tor WMA found a single species (giant floater).

Endangered, Threatened, or Special Concern Species

The Environmental Conservation Law of New York (Section 11-0535) and the New York Codes, Rules and Regulations (6 NYCRR, Part 182) provide the Department authority to list

fish and wildlife species as endangered, threatened, or species of special concern. 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. Taking of species listed as endangered or threatened is prohibited, except under license or permit from the Department, and taking is defined to include such acts as killing and disturbing. Efforts to identify listed species possibly occurring on the Unit has been ongoing, and consideration of potential impacts to these species related to Unit management must be considered prior to implementation.

There are no fish and wildlife species listed as endangered known to occur on the Unit; however, there are several species listed as threatened or special concern that may occur. Appendix B: Animals of the Canandaigua Highlands Unit (pg. 144) includes tables that outline fish and wildlife species that may occur on the Unit, including a summary of listed species. Below are descriptions of listed species known to occur on the Unit that should receive special consideration.

A pair of bald eagles (threatened) has nested near High Tor WMA since 2008, and commonly forage and perch in trees on the Unit. Planned management on the Unit is not expected to negatively impact these eagles and if nesting does occur on the Unit, actions will be taken to protect nest sites.

Acoustical surveys for threatened and endangered bat species occurred on High Tor WMA in July 2016 and documented probable presence of northern long-eared bat (threatened). This species hibernates underground in caves and abandoned mines, and in the summer forages, roosts, and reproduces in forests. There are no known hibernacula near the Unit, so this occurrence indicates bats using the WMA as part of their summer range.

Northern harrier (threatened) are known to forage in the fields along Parrish Rd. and in the emergent marshes of Naples Creek and West River. This species is most often observed here in winter; therefore, it is not likely that they are using these marshes for nesting.

Least bittern and pied-billed grebe (both threatened) have also been documented using the valley-bottom emergent marshes on High Tor WMA. The least bittern observations occurred during the summer and indicates possible breeding; the pied-billed grebe observations are mostly in winter, but breeding may also occur. American bittern (special concern) may also be present in these marshes. Level-ditching and potholing excavated throughout these marshes in the late 1990's likely enhanced habitat conditions for these species.

There are four species of forest raptors that likely occur on the Unit (Cooper's hawk, northern goshawk, red-shouldered hawk, and sharp-shinned hawk) and each are listed as species of special concern. Several records show these species using forests on or near the Unit, including confirmed nesting of northern goshawk (1990s) and red-shouldered hawk (2017) on High Tor WMA.

A singing male cerulean warbler (special concern) was documented on High Tor WMA in June 2017. This individual was observed in a large oak tree within a forest stand that was harvested in 2015, having approximately 40% of the trees removed. Planned forest

management over the next ten years, specifically harvests that partially reduce forest stocking levels and retain some large trees, may improve habitat conditions for this species.

Blue-spotted and Jefferson salamanders, both species of special concern, are known to inhabit the forests and breed in vernal pools of the Unit. These salamanders spend most of their time in upland forests under logs and rocks, and each spring migrate to breeding pools.

A portion of the Unit (eastern half of Italy Hill SF) is within the Finger Lakes Region Grassland Focus Area, which is an area that supports grassland birds (several are listed species) and habitat work to benefit these species is encouraged. There is currently no suitable habitat for grassland birds on Italy Hill SF. Some grassland habitat exists on High Tor WMA; however, these fields are not large enough to attract most grassland breeding birds and observations of their presence is not common. For information on grassland management see Grass and Brush Management in the Timber and Vegetation Management section (pg. 81).

In some cases, management on the Unit is carried out to favor the preferred habitat types of rare or listed species known to occur. In other cases, these species exist where they do in part because their habitat on state lands is protected from disturbance and development. Information regarding management actions that benefit or avoid harming these species can be found in the Fish and Wildlife Habitat Management section on page 100.

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 threatened or endangered. In order to access these grant funds, New York State was required to develop a State Wildlife Action Plan (SWAP) that focused on the Species of Greatest Conservation Need (SGCN). The New York SWAP was approved in 2015 and assessed 597 species, identifying important habitats, population trends, and the scope and severity of threats for each.

The species assessment resulted in designating 366 species as SGCN, 166 of which are designated High Priority SGCN. There was insufficient data to establish population trends for 113 species which are thus designated as Species of Potential Conservation Need. In evaluating SGCN, the Department considered all mammals, fish, birds, amphibians, and reptiles present in New York, but considered only selected mollusks, crustaceans, and arthropods. The list of SGCN is certainly not exhaustive but includes those species for which systematic assessments had been made by Department staff and the New York Natural Heritage Program.

An objective of the SWAP is for management of SGCN habitat to be incorporated into Department unit management plans and WMA habitat management plans. For further information on how the list of SGCN was compiled, and to view the complete listing, visit the web site www.dec.ny.gov/animals/7179.html. A table identifying SGCN that may occur on lands of the Canandaigua Highlands Unit can be found in Appendix B: Animals of the Canandaigua Highlands Unit Management Plan Area on page 144, definitions related to SGCN can be found in Appendix G: Glossary (pg. 175).

Invasive species, pests and pathogens

Forest health is pursued with the goal of maintaining biodiversity. Any agent that decreases biodiversity can have a deleterious effect on the forest as a whole and its ability to withstand stress. Forest health in general should favor the retention of native species and natural communities or species that can thrive in site conditions without interrupting biodiversity. For more information on forest health, please see SPSFM page 277 at www.dec.ny.gov/lands/64567.html or the Forest Health Threats on page 93.

Invasive Species

As global trade and travel have increased, so have the introduction of non-native species. While many of these non-native species do not have adverse effects on the areas in which they are introduced, some become invasive in their new ranges, disrupting ecosystem function, reducing biodiversity and degrading natural areas. Invasive species have been identified as one of the greatest threats to biodiversity, second only to habitat loss. Invasive species can damage native habitats by altering hydrology, fire frequency, soil fertility and other ecosystem processes. See also the Forest Health Threats section of the Timber and Vegetation Management section on page 93.

Table 9: Invasive Species, Pests and Pathogens

The following table includes some of the known invasive species, pests, and pathogens of New York, and status on the Unit as of the writing of this plan in the summer of 2018.

	Status on Italy Hill SF	**Status on High Tor WMA**
Plants		
Giant Hogweed	Not yet present	Present in isolated areas
Knotweed, a.k.a. “bamboo”	Not yet present	Present
Phragmites, a.k.a. common reed	Not yet present	Present
Honeysuckles	Present	Present, in widespread quantities
Buckthorn (common, Carolina, glossy and/or alder)	Present	Present
Multiflora rose, or wild rose	Present	Present
Purple Loosestrife	Not yet present	Present
Black & Pale Swallow-wort	Not yet present	Present
Tree of Heaven (Ailanthus)		Present, widespread along SR 245
Autumn & Russian Olive	Present	Present
Water Chestnut	Not present	Present

	Status on Italy Hill SF	**Status on High Tor WMA**
Garlic Mustard	Present	Present
Stiltgrass	Not yet present	Not yet present
Oriental bittersweet	Likely present	Likely present
Reed canary grass	Note yet present	Present
Barberry	Present	Present
Insects		
Hemlock Woolly Adelgid (HWA)	Present, but no widespread damage	Present
Sirex Wood Wasp	Present, but no widespread damage	Present, but no widespread damage
Emerald Ash Borer (EAB)	Present, causing widespread Ash tree death	Present, causing widespread Ash tree death
Asian Longhorned Beetle	Not yet present	Not yet present
Southern Pine Beetle	Not yet present	Not yet present
Spotted Lanternfly	Not yet present	Not yet present
Gypsy Moth	Present	Present
Diseases		
Oak wilt	Not yet present	Not yet present
Dutch Elm Disease	Present	Present
Chestnut Blight	Present	Present
Beech Bark Disease	Present	Present
Animals		
White Tail Deer	Present in large numbers, causing moderate damage to understory plants	Present in large numbers, causing moderate damage to understory plants
Eurasian Boar (feral swine)	Not yet present	Not yet present
Canada geese	Not present	Present
Jumping Worm	Not yet present	Not yet present

Invasive Plants

Invasive plants are also crowding out native species. Current exotic invaders include Purple Loosestrife, Buckthorn, Honeysuckle, Garlic Mustard, Giant Hogweed, Multiflora Rose, and 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 may be taken. Depending on the species and location, actions could include prescribed burns, pesticide application, or mechanical removal.

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. As of the writing of this plan, the primary control for large patches has been herbicide spraying. In the future physical removal may be attempted on smaller patches.

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, Department staff are attempting to minimize its impact with herbicide treatments.

Phragmites, or common reed, is found in North America as both a native subspecies and an introduced subspecies. The European version arrived in the late 18th or early 19th centuries, most likely as part of packing or ballast material, and over the centuries it has spread across the continent. It can grow to over 15 feet tall and can quickly take over a marsh community by crowding out native plants with its extremely dense growth pattern, both above and below ground. At this time, there is no biological control available, mechanical control would require removing all of the roots, herbicide spraying is currently the primary method the Department uses for control.

Honeysuckles are another plant that has both a native and several exotic invasive versions found on the landscape. They were introduced and widely planted as an ornamental, wildlife habitat or for erosion control. Primarily spread by birds eating the berries, they are usually found in open disturbed locations, and they will grow in dense stands that crowd out native species. Primary control method is herbicide, although mechanical and prescribed fire will work on smaller plants.

Buckthorn (European/common, Carolina, glossy European, and alder) are all invasive tall shrub/small trees. Originally from Eurasia it was planted as a hedge or for wildlife food and cover. It is one of the earliest to leaf out in the spring, shading out many of the early spring plants, and some are allelopathic in that they produce a biochemical that inhibits the growth of other plants. The primary control method is herbicide, although mechanical removal will work on smaller plants.

Multiflora rose, or wild rose, was introduced from Japan in 1866 as rootstock for ornamental roses, in addition it has been widely planted for erosion control, living fences and wildlife food and cover. Unfortunately, it can survive in a wide range of soils and light conditions, and as a result has spread widely. The painful, dense stands shade out native plants and discourage animal (including human) movement through the landscape. The rose is the New York State flower, and ornamentals are still a popular garden plant. Rose rosette disease, caused by a virus, has been slowly spreading and killing both Multiflora rose and

some ornamentals. Repeated mechanical mowing will eventually kill it, but herbicide is much more efficient.

Invasive Insects

Exotic invasive species from other continents can cause serious forest health threats. 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, Spotted Lanternfly, Asian Longhorned Beetle and Southern Pine Beetle.

Emerald Ash Borer (EAB) (*Agrilus planipennis*) is 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 has been positively identified in both Ontario and Yates county, and on both properties within this Unit. Every year more EAB infestations are 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.

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.

Hemlock Woolly Adelgid (HWA) is an aggressive insect pest which preys on the Eastern Hemlock tree. 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 restricts tree growth, causing needles to discolor from deep green to grayish green, and drop early. The loss of new shoots and needles seriously impairs tree health, resulting in death of the hemlock after several years.

Since HWA has no effective natural predators in the eastern United States, HWA has spread quickly and caused extensive hemlock mortality. To help control HWA, entomologists from Cornell University, the US Forest Service and the US Department of Agriculture have released predatory insects into HWA infested stands. The predators showing the most promise are Laricobius beetles (*Laricobius nigrinus* and L. *osakensis*) and Silver Flies (*Leucopius piniperra* and *L. argenticollis*). These predators only feed on adelgids and have kept HWA at tolerable levels in the Pacific Northwest. Releasing both predators should provide more effective control as they prey during all susceptible HWA life stages. Predator rearing facilities are located at Cornell University to increase predator availability for release. The Finger Lakes Hemlock Initiative task force was established to coordinated management and research of release sites. Laricobius beetles were release on High Tor WMA in Parrish/Conklin Gully in 2016.

Although these efforts show promise, the fate of Eastern Hemlocks in still uncertain. The loss of this keystone species could have wide ranging negative effects on ecosystems containing hemlocks.

Pests

Native wildlife, insects, or pathogens can reach population levels that cause damage, and thus become a pest. Examples include white tail deer, beaver, Canada geese, and Fall Cankerworms.

Pathogens

Chestnut blight invaded in the early 1900's and has all but exterminated mature chestnut trees. Beech bark disease started its spread in the Northeast in the 1930's and continues to slowly work its way west and south. It kills of the top of the beech tree, which then re-sprouts from the roots resulting in a thick under growth of tree seedlings that will never reach maturity. Dutch elm disease was discovered in New York in the late 1920's but began its rapid expansion across the country in the 50's through 80's, killing the elm trees as it expanded across the country.

Oak wilt is the newest fungal pathogen to spread to New York. It was first discovered in Wisconsin in 1944, in Glenville, NY in 2008, and in the Canandaigua area in 2016. All oaks are susceptible to the fungus, but the red oak group (with pointed leaf tips) often die much faster than white oaks (rounded leaf tips). Red oaks can take from a few weeks to six months to die and they spread the disease quickly. White oaks can take years to die and have a lower risk of spreading the disease.

Wetlands and Water Resources

Water is an important determinant of what type and quality of habitat is found in any given place. Usually the Northeastern United States has plenty of water in the form of precipitation, surface, and ground water. See also the Climate section (pg. 16), Watershed and Wetlands Protection Management section (pg. 98), for an inventory of streams and ponded waters is in Appendix E: Water Resources (pg. 158), and maps in Appendix M: Maps (pg. 202).

Streams

This unit is mostly located within the southwestern portion of the Finger Lakes drainage basin, which is a part of the Lake Ontario basin. A very small portion drains from Italy Hill SF, south into the Susquehanna 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. Most of the streams are class "C" and have fishery resources consisting of sucker and minnow species. Annually, any of these drainages can flush enough rock, soil or other debris into road culverts and bridges to impair road structures as well as travel.

Naples Creek and West River flow through the West River section of High Tor WMA. Together these account for large volume of the runoff into Canandaigua Lake. Tannary Creek

originates in the southeast section of the Hatch Hill section of High Tor WMA, before emptying into Naples Creek. Most of the intermittent streams of Italy Hill SF feed into Flint Creek.

Waterfalls

Although fed by intermittent streams, at least five different notable waterfalls can be observed on High Tor WMA and several on Italy Hill SF. Three are in Clark Gully, one in Parrish/Conklin Gully, one in an unnamed ravine just west of the Woodville Boat Launch, and several in the northwest side of Italy Hill SF.

Ponded Waters

The line between wetland and pond is subjective, and based on the amount of wetland vegetation present. Generally, it's considered a pond if it has less than 25% cover of vegetation, and wetland if it has more than 25% vegetative cover.

Ponds and Lakes

High Tor WMA is located at the southern end of Canandaigua Lake. Canandaigua Lake is the fourth largest of the Finger Lakes, at about 10,560 acres and 15.8 miles long, 1.5 miles wide, and a maximum depth of 276 feet. Total shoreline is about 36 miles, 0.7 miles of which is High Tor WMA, and all of that is either wetland or the mouth of West River.

In addition, 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 pond 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.

Creation and maintenance of small ponds and dugouts in appropriate upland sites has been successful on parts of the Unit. These constructed water resources provide a valuable source of water for upland wildlife during dry months and important breeding habitat for various invertebrates and amphibians. In some cases, fish have been stocked in the larger ponds and provide recreational opportunities. There are 37 constructed ponds on High Tor WMA, ranging in size from one-tenth of an acre up to 9 acres. Four of these ponds have

control structures installed to allow water level adjustments. No ponds have been constructed on Italy Hill State Forest.

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, our 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% of global terrestrial carbon.

The West River portion of the Unit is dominated by two Class I New York State wetlands MS-1 (392 acres) and MS-2 (1,103 acres). These two wetlands, acquired with 1972 Bond Act Monies, are robust naturally occurring wetlands having diverse vegetative plant communities, ranging from expansive tracts of cattail, flooded red maple, button bush and ash. Both wetlands have been enhanced by the digging of over 5 miles of level ditching. This activity not only enhanced the wetlands, it assured water in various portions of the marsh after Canandaigua Lake is drawn down during winter months.

One state regulated wetland, PR-1 can be found on the Italy Hill State Forest. This is a Class III wetland. Maps showing NYS regulated wetlands are available from the Department.

Information about wetlands in this plan comes from two GIS data sets maintained by the Departments Data Selector. These sets are titled as New York Regulatory Freshwater Wetlands and National Wetlands Inventory. Considerable further information has also been developed from personal observation by cooperating partners and Department staff. Some of these wetlands are man-made, constructed under the CCC program or more recent habitat improvement programs.

Maps produced by the US Fish and Wildlife Service as part of the National Wetlands Inventory indicate the presence of many smaller wetlands which may be protected under Section 404 of the Federal Clean Water Act. These wetlands vary in character from scrub-shrub, forested, emergent, and are both seasonal and permanent saturation. A number of these wetlands are man-made, having constructed dikes and/or control structures.

Information on the Unit

Please see also the map in Appendix M: Maps (pg. 202) for spatial information and site specific data, Appendix E: Water Resources (pg. 158) and Appendix G: Glossary (pg. 175) for definitions.

Table 10: NYS Freshwater Wetlands on the Unit

Wetland	Location	Size on NYS DEC (acres)*	Total Size (acres)*	Class**
MS-1	High Tor WMA	364.1	391.6	I
MS-2	High Tor WMA	1,051.0	1,103.3	I
PR-1	Italy Hill SF	28.1	31.1	III

*This water acreage will change with water level and field delineation.
** See Appendix G: Glossary page 175 for definitions.

Table 11: National Wetlands Inventory of the Unit

Wetland Type	Number of Each Type	Size (acres)*
Palustrine, emergent	44	679.0
Palustrine forested/shrub	69	831.8
Pond/Lake	63	33.3
Riverine	53	130.3
Totals	229	1,674.4

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

Aquifers

The West River and valley edges of the High Tor WMA, as is the very western edge of Italy Hill SF overlay unconsolidated aquifers. Most of the private residence water wells in this area tap fractured bedrock as their main source of supply or draw straight from Canandaigua Lake.

Information about aquifers in this unit comes from one GIS data set maintained in the Departments Data Selector. This set is titled as Unconsolidated Aquifers @ 250K. This GIS coverage identifies many types of unconsolidated aquifers, on this Unit this includes:

- Confined, No overlaying surficial Aquifer
- Confined, Unknown Depth and thickness
- Unconfined, High Yield
- Unconfined, Mid Yield
- Moraine

Use of Best Management Practices (BMP) 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.*

Historic, Archaeological and Cultural Resources

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

On Department properties, the number of standing structures is generally limited due to the nature of land use. Often those that remain are structures that relate to the Department's land management activities such as fire towers, "ranger" cabins and related resources.

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 precontact Native American camps and villages to Euro-American 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.

Inventory of Resources

As a part of the inventory effort associated with the development of this plan the Department arranged for the archaeological site inventories maintained by the New York State Museum and the Office of Parks, Recreation and Historic Preservation (OPRHP) to be searched in order to identify known archaeological resources that might be located within or near the unit. The two inventories overlap to an extent but do not entirely duplicate one another. The purpose of this effort was to identify any known sites that might be affected by actions proposed on 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 SPSFM, found online at www.dec.ny.gov/lands/64567.html.)

Information on the Unit

A search of the OPRHP database resulted in finding a few known archeological sites on the properties of the Unit. There are several known (or suspected) pre-European settlement archaeological sites on this Unit or within close proximity. It is well documented that Native Americans, present during the Woodland period (about 1000 BC to 750 AD), had occupied the valleys encompassed by the unit. There is also evidence of occupation during the Archaic (10,000 BC to 1,000 BC) and Paleo- Indian periods (Pre-10,000 BC), although this evidence is somewhat more scattered. It is assumed the uplands were used for hunting grounds, during the Woodland period. However, it is unlikely settlements were located on these upland areas during this period.

In addition, there are signs of European settlements throughout the Unit. The Unit has numerous abandoned house/barn foundation sites as well as remnants of stone, stump and rail fences, all evidence of prior land occupation and uses. High Tor WMA also has building sites, such as that opposite the Woodville boat launch, which are likely linked to the grape industry. See the History of the Unit starting on page 11 for a few notable locations on the different properties that make up this unit.

See the Archaeological and Historic Resources Management section starting on page 124 for additional information.

Table 12: Recorded Archaeological Sites Within the Unit

Property	Site Number	Site Name	Age and type
High Tor WMA	NYSM 9293	unknown	unknown
	NYSM 9292	unknown	unknown
	NYSM 9291	unknown	unknown
	NYSM 2404	unknown	unknown
	NYSM 9288	unknown	unknown
	NYSM 5294	unknown	unknown
	NYSM 5295	unknown	unknown
	NYSM 937	Railroad Station	unknown
	NYSM 9287	unknown	unknown
	NYSM 4376	unknown	Unknown
Italy Hill SF	None Known		

Table 13: Recorded Archaeological Sites Within One Mile of the Unit

Property	Site Number	Site Name	Age and type
High Tor WMA	NYSM 6580	Graff	unknown
	NYSM 6581	Graff Farm	unknown
	NYSM 2404	unknown	unknown
	NYSM 4375	unknown	unknown

Property	Site Number	Site Name	Age and type
	OPRHP 06910.000012	Naples CP 1	Late Woodland 1000-1300 AD
	OPRHP 06910.000013	Naples CP 2	Historic Euro-American
	OPRHP 06910.000016	Widmer	Early Archaic through late Woodland
	OPRHP 12303.000057	Parish Estate 2	Early Archaic through late Woodland
Italy Hill SF	NYSM 5272	unknown	unknown

FUNDING, PUBLIC COMMENTS, POLICY CONSTRAINTS, and ILLEGAL USE

This plan strives to manage the diversity of the 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 Unit for multiple use, the Department must manage the ecosystem in a holistic manner while reconciling the many and sometimes conflicting demands on the Unit. This must be done within the framework of Environmental Conservation Law (ECL), the New York Codes Rules and Regulations (NYCRR), the SPSFM, and Departments 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 Department recognizes that planning must be done today to ensure effective management in the future.

On the Canandaigua Highlands Unit, many different issues and needs form the basis for the objectives and management actions set forth in this plan, starting on page 73. 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 Department recognizes that the welfare of this area requires a "focus" towards the future. Planning must be done now to ensure 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 SPSFM at www.dec.ny.gov/lands/64567.html.

Funding

Currently the NYS DECs Bureau of Forest Resource Management and Bureau of Wildlife have limited budgets to manage all of the Departments lands.

Funding, when available, is primarily derived from:

- Capital construction account (State General Fund monies)
- 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 Department lands within the region. There is no specific budget established to manage an individual site. Funding is distributed based on priorities for all of 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 Unit. These partnerships are a valuable supplemental source for providing needed services.

Occasionally 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, the Department is committed to active citizen participation. To achieve that involvement, adjacent property owners, local government officials, media and others potentially interested in the management 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 2018, when an introductory letter was sent to those identified on the mailing list. This letter briefly described the lands identified in the Unit Management Plan and potential topics to be covered by the plan. It also asked for verbal or written comments related to the Canandaigua Highlands Unit Management Plan. Public comments and issues have been summarized below. See Appendix A: Public Comment (pg. 127) for the letters and emails received.

The following is an overall summary of public comment received:

Not a lot of comments regarding this plan were received in the initial comment request. The comments received were pretty much evenly divided between High Tor WMA and Italy Hill SF.

In both cases the comments tend to be very general in nature. Several of the comments relating to Italy Hill SF speak directly to wildlife management, in general, and deer hunting, in particular.

Based on our very limited sample of public sentiment, there seems to be a pretty clear opinion that more could be done with dispersed recreation development (trails of all kinds, dispersed camping, etc.). The people who commented seem to prefer “low impact” uses such as cross-country skiing, snow shoeing, hiking, and biking.

Many of the other comments are well outside the scope of the plan. This UMP does not have anything to do with the way the Wildlife Management Unit boundaries are drawn, nor with the number of DMPs given out, nor with game seasons.

As noted above, the sample at this point is very small. The comments may shift significantly once a public draft plan is available for review. The comments are available in Appendix A: Public Comment section starting on page 127.

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, the Department 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 Department 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
- Trespass on neighboring private property

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

Known encroachments and/or trespasses are minimal. On High Tor WMA it includes; fill illegally deposited in a wetland (which resulted in a fine), building and other improvements constructed on top of a conservation easement, and a neighbor continues to encroach on the boundary line on Basset Rd. In the past Italy Hill SF has had some minor trespass and occasional conflict on, and adjacent to, the transportation corridor easements and the north Pulver Rd parking area.

GOALS AND OBJECTIVES

Vision

The vision of this plan is to ensure the biological integrity, improvement and protection of the Canandaigua Highlands 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 the policy of the Department 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 which will enhance the resources of the land. They will be carried out in a manner which reflects the land designation and the land's capability for these uses and strives to optimize the benefits of state lands to the public.

Department lands within Canandaigua Highlands 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. The Department 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 Assets of State Forest and Wildlife Management Area

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 the Department'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, the Department will endeavor to provide recreational opportunities to all those who wish to experience the outdoors in a relatively undeveloped setting.

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

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

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. The Department 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.

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 purchase 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 68 for further discussion on budgeting for this and other State lands under Department management.

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 31.

Goals and Objectives

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

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 M: Maps (pg. 202) for their location and names, and Appendix D: Facilities (pg. 157) for number and size.

Signs

Most of the existing 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, Italy Hill SF has no identification signs, new ones will be placed near three of the parking areas. On High Tor WMA one will be added near the corner of Rte. 245 and Caward Cross 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 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. 19), Appendix J: Known Official Road Abandonments (pg. 189) and information on encroachments and/or trespasses are listed in Appendix K: Known Encroachments and/or Trespass (pg. 190).

On Italy Hill SF parts of Pulver Rd are beyond repair, or in extremely poor condition. This reduces administrative access to large portions of the property. Gated haul roads will be constructed, one heading generally east for the north Pulver parking lot, another heading north from the new haul road, and/or another heading southeast from the W. Lightning Parking Lot. These will be expensive to build, and the exact location will be finalized after funding has been secured.

The Lehigh Valley Rail Trail (aka Middlesex Rail Trail) is in the West River section of High Tor WMA and consists of 6.5-miles of abandoned railroad that parallels West River. It is maintained to Haul Road Standards (see pg. 19) and is a popular hiking and biking location. In 2017, as part of the NYS Works Initiative, $975,000 was allocated for improvements to this haul road. Improvements will mostly include replacing several bridges and culverts along the trail. On the ground work is expected to begin in 2019.

All of the Department roads will need maintenance, in the form of annual mowing of the road edge and periodic grading of the surface; the more heavily used roads open to the public more often than the infrequently used gated ones.

Parking

There are 34 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.

Up to four additional small parking areas will be created in the interior of High Tor WMA, most of these will be upgrades to existing log landings. Currently Italy Hill SF does not need any additional parking. However, if additional property is added to the Unit per the Land Acquisition Management (pg. 119) section, it will be evaluated for possible parking area 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 to protect sensitive areas. Generally new or replacement gates will be replaced with a double swing gate (saloon style) instead of a single swinging gate. This allows for a gap between them for easier public access, including accessibility for people with disabilities, and the design is less sensitive to settling.

The Department 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 potential additional gates are being considered for construction.

High Tor WMA is currently gated on the exterior, but the addition of up to 7 gates on internal roads will allow the option of providing motorized access to portions of the property during hunting season, but still restrict vehicle use on other parts.

Italy Hill SF is also currently gated on the exterior, but any new haul roads will be gated or barricaded to prevent public motor vehicle use.

Boundary Line

There is approximately 59.8 miles of boundary line for this unit, which is maintained with signs and painted blazes. In addition, there is approximately 19 miles of road frontage on public roads, which is generally signed but not painted.

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.

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 Encroachments (pg. 72).

Table 12: Management Objectives and Actions for Access Management

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 75)	Estimated 10 yr. Cost (Pg. 75)
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 and bridges	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	Repair and/or replace bridges	As needed	C	2-20 work days and $50-50,000 per each
		2.6	Continue improvements to the Lehigh Valley Rail Trail/ Middlesex Rail Trail.	Currently	H	$975,000

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 75)	Estimated 10 yr. Cost (Pg. 75)
3	Construct roads or parking areas	3.0	Construct proposed Haul roads on Italy Hill SF.	By year 10	L	$30-$70 per linear foot
		3.1	Construct proposed parking areas on High Tor WMA.	By year 10	L	$8-10,000 per area
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	5-10 work days and $10-10,000 per area.
		4.2	Maintain informational signs	Annually	C	5-20 Work days
		4.3	Mow all parking areas	Annually	H	200 Work Days
		4.4	Evaluate for, and remove, hazard trees adjacent to parking areas.	On-Going	C	30-100 Work Days
5	Control access	5.0	Locate, construct and install gates per above.	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

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 75)	Estimated 10 yr. Cost (Pg. 75)
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 Canandaigua Highlands Unit strives to maintain a balance of vegetative types and vegetative stages, the purpose of which is to enhance species diversity and abundance.

Department staff will utilize silviculture; the art and science of controlling the establishment, growth, composition, health, and quality of forests and woodlands, to promote biodiversity and produce sustainable forest products. There are two fundamental silvicultural systems which can mimic the tree canopy openings and disturbances that occur naturally in 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 cohorts, 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 the Department administered lands is provided by the ECL.

To perpetuate the growth, health, and quality of the forest resources, the Department has implemented a sustained yield timber management program for State Forests. The Division of Lands and Forests (Forestry) timber harvesting program on State Forests is governed in part by a Timber Management Handbook which includes both policies and guidelines to ensure that management is carried out in a deliberate and professional manner. The Timber

Management Handbook directs and regulates the practice of timber management on Department lands administered by Forestry on Italy Hill State Forest. 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 SPSFM.

Other sources of direction for Department timber and vegetation management activities include 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 ECL. Direction is also given in the Departments publication: Best Management Practices for Water Quality, and the management rules for special management zones (see pg. 85), plantation management on State Forests, rutting guidelines, and retention on State Forests. Furthermore, requirements for Green Certification on State Forests, as described previously in the Timber and Vegetation section, are adhered to.

The Division of Fish and Wildlife (Wildlife) has utilized timber harvests on WMAs for many decades. Traditionally, timber sales on WMAs have followed many of the same guidelines and policies created and used by Forestry, as described above. Recently Wildlife has adopted many of those same policies or created similar policies and guidelines for harvests conducted on their lands. Habitat management on High Tor WMA is governed in part by the Programmatic Environmental Impact Statement on Habitat Management Activities of the DEC Division of Fish and Wildlife (1979) and the Supplemental Final EIS (2017) to the PEIS. These documents provide current types of habitat management permitted on Wildlife administered lands, including timber harvests. Further direction is given in the Departments publication: Best Management Practices for Water Quality, and the management rules for special management zones, agricultural use, rutting guidelines, and retention standards on WMAs. Lands managed by the Wildlife are not certified under a third-party Green Certification program.

Timber and Vegetative Management Objectives

Staff members have identified management objectives which 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 are managed to protect the resources which make the area unique, and Multiple Use Areas are managed for a combination of timber management, wildlife and recreation. The proposed timber and vegetative management are intended to enhance biodiversity, produce healthy and sustainable forest resources and enhance wildlife habitat diversity.

A decline in young forest habitat has been observed throughout northeastern United States. Young forest refers to an early stage of forest with tree seedlings, saplings, woody vines, shrubs, grasses and flowering plants growing densely together. The decline is due to multiple factors: 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; lasting anywhere from 10-20 years following a disturbance. Because this successional stage is disturbance dependent and short lived, it will all but disappear from the landscape if not managed for.

To address this issue, and the accompanying decline in associated wildlife species, the Division of Fish and Wildlife, Bureau of Wildlife, developed the Young Forest Initiative (YFI) in 2015. The YFI aims to restore young forest habitat on Wildlife Management Areas across the state by creating and maintaining 10% of each WMA's forested area as young forest. This program is one of the primary considerations dictating timber and vegetation management decisions on properties administered by Wildlife within this plan, as well as the High Tor WMA Habitat Management Plan, completed in 2016. Interestingly, the previous version of this UMP listed a need for a more equitably distribution of forest age classes on High Tor WMA. The YFI and actions proposed in this plan will help to address this issue.

The identification of Forest Matrix Blocks, Grassland Focus Areas, and wetlands, are important components of biodiversity conservation and forest ecosystem protection. These features need to be considered when developing management actions. See previous section on Timber and Vegetation (pg. 39) for addition 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 silvicultural 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, Wildlife intends to follow the same inventory schedule on the properties they manage.

The properties within this Unit have been inventoried within the past 10 years and will be re-inventoried when necessary to maintain current data.

Current and Future Vegetation Types and Stages

As noted previously, the management objective is to strive to maintain a balance of vegetative types and stages for each property. The ideal balance may be different for each property. See also the Vegetative Types and Stages table on page 42, Appendix F: Vegetation Management (pg. 162) and Appendix M: Maps (pg. 202).

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

- Site capability
- Seed source
- Past management
- Deer density
- Invasive species

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) Most tree species do not lend themselves to complete management within a 10-year period. It may require 40 - 50 years before the results of any given silvicultural management action can be adequately assessed.

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. 42) and the Timber and Vegetation (pg. 39) 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 and international trade policies.

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 logs, larch logs or 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 stands being considered for timber harvesting are prioritized based on the following criteria:

- Adequate access;
- Wildlife considerations;
- Present and future forest health concerns (including invasive plants and pests);
- Current distribution of vegetative stages within the Unit and surrounding landscape, including the ecoregion habitat gaps as per the SPSFM and the desired 10% young forest on WMAs as per the Strategic Plan for Implementing the Young Forest Initiative;
- Ability to regenerate stands (if a regeneration harvest);

- Existing timber and vegetation management priorities from other unit management plans in the state;
- Market conditions;
- 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 Department 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 UMP. Prioritization is done by Department foresters.

The ECL 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 publicly advertised and competitively bid. The 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. 162), or the High Tor's HMP, for additional information regarding scheduled timber harvests in the Unit.

Resource Protection, 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 (SPSFM), 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 (SMZ) (pg. 46) establish continuous over-story shading of riparian areas and other land features requiring special consideration. The final

configuration of the SMZ can only be done following field reconnaissance, which is beyond the scope of this plan. See also the Fish, Wildlife and Habitat (pg. 51) and the Watershed and Wetlands Protection Management (pg. 98) sections for further details.

The Retention on State Forests and Retention Guidance on Wildlife Management Areas are strategies for conserving biodiversity in stands managed through silviculture. Retention and recruitment of snags, cavity trees, coarse woody debris, fine woody material 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 Department staff when administrating a timber harvest or Temporary Revocable Permit (TRP) on State lands. A well planned and laid out access system, utilizing appropriate best management practices (BMPs), concentrates site disturbance, soil compaction, and rutting to limited corridors while protecting water quality and overall site productivity of the general harvest area.

Protection Areas

Per the Timber Management Handbook protection stands 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 stands are managed specifically to restrict or prohibit management activities. These practices may also be employed on other stands 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. 46).

In this Unit, the major communities of significance are associated with the riparian areas, mainly the steep gullies and floodplains. Protection areas receive special consideration whenever management activities are planned which may impact these areas. As part of the inventory process, the following stands have been given protection status:

Italy SF

- A-8 is a 16.8 acre, natural forested stand of hemlock and white pine with slopes greater than 40% with a primary drainage and an associated gorge.
- A-12 is a 49.2 acre, natural forested stand of hemlock and oak with slopes greater than 40% with a primary drainage and an associated gorge.
- C-13 is a 26.8 acre, natural forested stand of hemlock and oak with slopes greater than 40% with several primary drainages and associated gorges.

High Tor WMA

- Two wetlands (MS-1 and MS-2) regulated by Article 24 of the ECL and several additional wetlands shown on the National Wetlands Inventory. Each state-regulated wetland is protected by a buffer zone of 100 feet from the delineated wetland boundary, known as the adjacent area.
- Approximately 22 miles of streams including sections of West River, Naples creek, Tannery creek and their tributaries. Of these streams, 2.6 miles are classified as trout waters and are regulated by Article 15 of the ECL

Additionally, there are two areas on High Tor WMA that are dedicated to the State Nature and Historical Preserve (SNHP). The SNHP consists of select state land to be preserved and administered for the use and enjoyment of the people because of their natural beauty, wilderness character, or geological, ecological or historical significance. SNHP on High Tor WMA includes:

- Clark Gully, approximately 150 acres, is located on the South Hill section, and was included in the SNHP because of its scenic gorge and “hanging falls.”
- Parrish/Conklin Gully approximately 290 acres, is located on the Hatch Hill section, and was included into the SNHP due to its unique rock outcroppings and its interest to geologists.

Currently, there are no habitat management actions proposed within the SNHP areas. Future management actions would be to promote stewardship of the dedicated area. Additional information about the SNHP is available in Article XIV of the New York State Constitution and in Article 45 of the New York State ECL.

Current and Future Management

Due to the current vegetative types, stages, and species assemblages presented by these forests, 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 primary silvicultural objective is to maintain and enhance well-adapted, native species in the Unit by using the most current 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 oak stands it may be necessary to use techniques (such as prescribed fire, scarification, pesticide, fencing, etc.) which are not well known in this part of New York. 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, additional forms, plans, and/or SEQR may be required.

See Appendix F: Vegetation Management (pg. 162) for a stand by stand listing of commercial timber harvests planned for the next 10 years within this Unit. Appendix M: Maps (pg. 202) includes maps of the planned commercial treatments. Additional information on planned habitat management can also be viewed in the HMP for High Tor WMA. Furthermore, annual management and maintained needs for High Tor WMA will be administered via annual work plans developed by Wildlife.

Timber harvests are not feasible in all stands within this Unit. It is important to note the stands with inadequate access, intensive recreational use, steep hillsides, and/or wetland terrain may not accommodate timber harvesting.

Non-commercial treatment of stands may be utilized to improve stand conditions. Non-commercial means that the trees are not valuable enough to sell. As a result, the work must be done by trained staff, trained volunteers, or through a procurement contract paid for by the Department. As people and/or money to contract the work becomes available, stands will be evaluated for non-commercial treatment.

Plantation Management

Most State Forest and WMAs in this Unit have softwood plantations consisting of red pine, Norway spruce or Scotch pine. 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.

Most of the plantations within the Unit do not occur on soil types which 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.

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 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 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 which 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 to calculate the acreage which will be involved in salvage operations.

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 6% of the Unit is in conifer plantations, and about 7% 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 stands dominated by Eastern Hemlock, this will amount to a modified all–aged treatment. Stand regeneration efforts in these cases may stretch over many years.

Grassland and Brush 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 majority of the grassland management will take place on existing grassland/brushland openings

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.

The Grassland Focus Areas (see Appendix M: Maps, pg. 202) 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, the Department conducted point counts during the spring and summer of 2005. Interestingly, the eastern two-thirds of Italy Hill SF fall within the Finger Lakes Region Grassland Focus Area, although it does not currently have any grassland habitat. High Tor WMA is not within a Grassland Focus Area but the Department will continue to promote its existing grassland habitat.

Forest regeneration has been so complete on Italy Hill State Forest that a need exists to create at least a small portion of the Unit as grassland. Forest openings and grasslands are limited in availability but provide benefits to many of the wildlife species that are in decline in New York. Although these environs represent a very small acreage, use by wildlife is inversely proportionate to availability. Clearing and reseeding through timber harvest contracts and additional service work can accomplish the establishment of grasslands. These fields and openings are also areas people can readily observe wildlife. Once these sites are established they need care via mowing, liming, fertilization or seeding. Cool and warm season grasses established near high quality wetlands further multiplies the benefits to wildlife species. Clearing to create these openings will depend on funding, because of this, an exact year of action has not been identified.

High Tor WMA, specifically the West River portion, has a significant component of grassland habitat, over 400 acres. This corridor has several fields, most under 20 acres but one over 150 acres located on either side of Parish Rd. These areas are important to wildlife and vegetation diversity and will be maintained as such. Most of the existing grasslands will not be allowed to convert to seedling/sapling, which means they will need to be maintained on a regular basis.

High Tor WMA also has approximately 200 acres of brushy habitat. Most of these areas are abandoned fields left to succeed. Filled mostly with invasive species such as honeysuckle, olive and multiflora rose, these areas provide good structural habitat but often invade forested areas, because of their tolerance of shade. Management of brushy areas will target removal of invasive species to promote native shrubs. Management may include, but is not limited to, brush cutting, herbicide, and conversion to grassland for effective control of invasives.

Italy Hill SF does have areas of brush habitat that developed from abandoned farm fields.

- Stand B-950 is a 12-acre, non-forested brushy field.
- Stand B-951 is a 69-acre, non-forested brushy field.
- Stand C-950 is a 62-acre, non-forested, brushy field.
- Stand D-950 is a 46-acre, non-forested, brushy field.
- Stand C-16 is a 31-acre, mixed white pine and brushy field.

There are numerous abandoned fields throughout Italy Hill SF that have already reverted to forest and are no longer brushy fields.

Stand C-16 on Italy Hill SF is an area of reverting field which contain a component of blueberries and related shrubs. Maintenance of this area using a combination of prescribed fire and mowing is recommended on approximately 31 acres. This shrub community is uncommon in western New York and should be maintained. Fire lines and/or personnel to mow the area and cut down the trees that are over shadowing the shrubs will be needed to enhance these areas.

Existing, and future, grassy and brushy openings will need to be maintained, or they will revert to forest. Grass needs to be mowed at least every 3 years; if it isn't mowed or burned the grassland converts to brush and then the brush grows into trees. Brush growth response can vary greatly, but often needs hydro-axed or brush-hogged about every 5 to 15 years. 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. This could mean that the Department avoids 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. Another 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 an herbicide application plan and SEQR are required prior to applying herbicide.

Currently about 67 acres of High Tor WMA is under a 'Volunteer Stewardship Agreement' for use of state land for agriculture. These agreements provide for individuals to grow crops on the WMA and are an important tool to manage and restore quality grasslands. Over the course of this plan, it is expected that the total acreage managed as agricultural lands will fluctuate, but the maximum will be no more than 100 acres in one year to control succession of grasslands and restore grassland habitat quality.

Fire can also be used to maintain grassland habitat. 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.

Goals and Objectives

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. 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.

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

Prescribed fire is a great management tool but requires lots of time and resources. Where and when funding and staffing allows, prescribed fire may be utilized on both Italy Hill SF and High Tor WMA. Several fields which are currently maintained through mowing may be converted to native warm season grasses and switched to being maintained using prescribed fire. In addition, adjacent stands that are currently in brush or sparse tree cover could be included in the burn area. Stand C-16 on Italy Hill SF has a component of blueberries and related shrubs which are a fire dependent community. This area may be maintained using a combination of prescribed fire and mowing. Prescribed fire can be used to encourage oak tree regeneration, and there are suitable stands location on this unit.

Wetlands

Wetlands are ecologically important for a number of reasons. They provide habitat for various mammals, vertebrates and invertebrates throughout the year; they are used by various waterfowl during the breeding and migratory seasons; they provide sport and recreational opportunity to the public.

Approximately 16% of this Unit is classified as wetland. Management activities to maintain and enhance these areas are a priority and will occur as funding allows. See the Fish and Wildlife Habitat Management (pg. 100) and the Watershed and Wetlands Protection Management (pg. 98) sections for further details.

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 Department 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, diseases, 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 trees. 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.

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, but has the potential to completely re-arrange the cutting schedule in Appendix F: Vegetation Management (pg. 162) If this happens, there is the potential to be a lot more acres regenerated.

The Department will continue to be a member of the Partnerships for Regional Invasive Species Management (PRISM) visit www.dec.ny.gov/animals/47433.html for additional information on the PRISMs. Additional information on invasives of all kinds to New York can be found at: http://nyis.info/ and the New York iMapInvasive at www.nyimapinvasives.org/ is where the known locations of invasive species is being gathered.

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 composed of shade-intolerant species such as oak or cherry. The Department uses Deer Management Permits (DMPs) as the primary means of deer population control, as they allow for the taking of antlerless deer only. The Department encourages hunters to harvest as many antlerless deer as is legally possible on this Unit.

For further information, see the Nuisance Wildlife portion of the Fish and Wildlife Habitat Management (pg. 105) section.

Invasive Insects

Exotic invasive species from other continents can cause serious forest health threats. 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, Spotted Lanternfly, Asian Longhorned Beetle and Southern Pine Beetle.

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, Department 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:

- Silvicultural Remedies - Changes in forest composition and structure may create conditions that are less favorable to some invasive species.
- Hunting - With the exception of Eurasian Boar (pg. 105) 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 SPSFM.
- Mechanical Control - Digging, pulling or cutting may be effective in altering site conditions to control invasives and directly controlling some plant species.
- 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.
- 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)

- Herbicide Treatment - All pesticide/herbicide use will conform to guidelines identified in the Active Forest Management section of the SPSFM.

Table 13: Management Objectives and Actions for Vegetation

See page 162 - Appendix F: Vegetation Management for a schedule of stands and management actions, and on page 202 - Appendix M: Maps and Table 7: Vegetative Types and Stages is on page 42.

Management Objectives		**Mgt. Act. No.**	**Management Actions**	**Frequency of Action***	**Priority Code** (Pg. 75)	**Estimated 10 yr. Cost** (Pg. 75)
1	Maintain knowledge of forest stands.	1.0	Perform forest stand inventories.	Every 10 years	C	100 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.
		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.

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 75)	Estimated 10 yr. Cost (Pg. 75)
		2.4	Mechanical or herbicide removal of Giant Hogweed.	Annually	L	
		2.5	Herbicide removal of knotweed, phragmites, swallowwort, etc.	Annually	L	10+ Work Days
		2.6	Biological control or insecticide application 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 the Department'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 98 and Fish and Wildlife Habitat Management on page 100.	On-Going	C	--
Strive to maintain a healthy balance of vegetative types and stages:						
4	Grassland / Brushy / Ag Openings (903 current acres)	4.0	Create about 30 acres. (increase of 0.3% of land area)	By year 10	L	$2,000 per acre
		4.1	Maintain current 867 acres of grassland or brushland. By mowing or burning on a minimum of a 3-year rotation or a 5-15yr rotation of hydro-axing or brush-hogging. (9.9% 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.

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 75)	Estimated 10 yr. Cost (Pg. 75)
		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	Agricultural VSA agreements on up to 100 acres. (1.1% of land area)	1 to 5 year agreements	L	10 to 100 Work Days
5	All Age silviculture – about a 20 yr. cutting rotation	5.0	None identified for this planning period.	See schedule, Appendix F: Vegetation Mgmt. (pg. 162)	L	0 Work Days
6	Even Age silviculture, Natural hardwood at about a 100 yr. rotation Plantation softwood at about a 75 yr. rotation	6.0	Regenerate 766 acres located on 19 stands over 10 years (8.8% of land area)		H	100 to 300 Work Days
		6.1	Thin 151 acres located on 6 stands over 10 years (1.7% of land area)		H	150 to 350 Work Days
		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 Access Management page 77, Maintenance and Facilities Management, page 116, Public Recreation and Use Management, page 108, and Fish and Wildlife Habitat Management, page 100.	On-Going	H	See referenced sections
		8.1	Evaluate for, and remove, hazard trees adjacent to high public use areas.	On-Going	C	

*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 protection of water and wetland resources is an important objective on the Unit, and there is a long history of active and comprehensive protection of its watershed. The Reforestation Law of 1929 mandates watershed protection as one of the most basic goals of the state forest system. On WMAs, the primary goal of providing and enhancing wildlife habitats includes aquatic and wetland habitats.

The majority of the Unit is within the Oswego River Basin which drains into Lake Ontario. A minor part of Italy Hill SF (57 acres) is within the Susquehanna River Basin which drains into Chesapeake Bay. On a smaller scale, most of High Tor WMA is within the Canandaigua Lake watershed, with just 2 acres in the Flint Creek watershed. Italy Hill SF is within three watersheds, including: Flint Creek (74%), Keuka Lake (23%), and Middle Cohocton River (3%).

Approximately 18% of the Unit is wetland, including emergent, scrub-shrub, and forested wetlands, and ponds. The majority of these wetlands are located on High Tor WMA surrounding West River and Naples Creek; however, several small wetlands/ponds occur on the hilltops of the WMA and Italy Hill SF. In total, the Unit has three State-protected freshwater wetlands, 229 Federally-protected wetlands, and approximately 24 miles of streams (2.5 miles of these are trout streams).

The Departments' 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 the Department 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.

Water resources are well distributed throughout the upland portions of High Tor WMA; however, opportunities to add additional water resources in the future should be considered. Water resources are a smaller percentage of Italy Hill SF; it would be beneficial to identify areas that have potential and need for additional water resources. Over time any new aquatic features will be integrated into the Unit's uplands. 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. It is important that the construction of new water resources not negatively impact existing water resources, especially spring seeps and vernal pools.

As of the writing of this plan, a floodplain restoration project is being planned by The Nature Conservancy and the Canandaigua Lake Watershed Council for Naples Creek and the Parrish Flats area. Much of the planned activity is proposed to occur on High Tor WMA. The purpose of this project is to disperse high flows in Naples Creek and one of its tributaries, restoring the historic floodplain function of the adjacent valley bottom. This should improve water quality conditions downstream and enhance aquatic and wetland habitats associated with the floodplain. The Department plans to cooperate with these groups concerning this project.

See also Wetlands and Water Resources (pg. 56), Timber and Vegetation Management (pg. 81) Fish and Wildlife Habitat Management (pg. 100), and Public Recreation and Use Management (pg. 108).

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. 75)	**Estimated 10 yr. Cost** (Pg. 75)
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	See Access Manage-ment (pg. 77) and Maintenan ce and Facilities Manage-ment (pg. 116)

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 75)	Estimated 10 yr. Cost (Pg. 75)
		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 95.	On-Going	C	
2	Enhance and restore wetland habitat	2.0	Manipulate water levels in ponds with control structures	As Needed	L	5 to 10 Work Days
		2.1	Maintain level-ditching and marsh potholes	As Needed	L	Unable to predict costs
		2.2	Coordinate with partner groups to implement floodplain restoration project on High Tor WMA	Once	H	
3	Provide additional open water resources	3.0	Identify locations with potential, and need, for additional or improved wetland/water resources.	On-Going	L	Part of other actions
		3.1	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 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.

Habitat management for forest-dwelling wildlife will largely be driven by the size class of the specific forest stand, its physical structure, and its species composition. Most of the Unit is dominated by oak-hickory or northern hardwoods forest types, which are largely in the pole and sawtimber size classes. There has been a significant decline in seedling/sapling size class stands over the past decade (16% to 3%) and efforts toward achieving a balance of size classes should continue, so wildlife species diversity and abundance are maintained. This includes establishing young forests by regeneration methods such as shelterwood, seed tree, or overstory removal, as well as maintaining and encouraging older size classes via thinning. Currently, the Unit provides abundant habitat for wildlife species associated with large tracts of mature forest and little habitat for those species dependent upon young forest.

Managing the forest to provide a better balance of age and structure will benefit these young forest wildlife species while retaining or enhancing most of the mature forest to provide continued habitat for associated species.

Approximately 6% of forests on the Unit are conifer plantations. These stands are primarily composed of just one to two tree species (often non-native species) and several have become overcrowded, with reduced live crown, and are declining in habitat value. Vegetative management is planned to convert some plantation stands to naturally stocked stands of greater diversity. Conifers provide valuable habitat diversity to the mostly hardwood forests of the Unit and a component should be retained. Approximately 7% of forests on the Unit are natural conifer or mixed conifer hardwood stands containing white pine and/or hemlock. A component of these native conifer species will be encouraged when practical in stands regenerating after timber harvest.

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 stands on WMAs as young forest in perpetuity. Several small grassland stands exist on the Unit and provide important habitat to numerous wildlife species. Grassland stands should be maintained whenever possible and establishment of additional grassland habitat could occur when opportunities arise through timber management or other permitted activities. For more information regarding vegetation management, see Timber and Vegetative Management on page 81.

Several small ponds and dug-outs have been created on High Tor WMA. These provide valuable habitat for aquatic and semi-aquatic wildlife species (e.g., frogs, turtles, waterfowl) and offer a reliable water resource for upland wildlife during dry months. Some of the smaller created wetlands function similar to vernal pools and are important breeding sites for woodland salamanders. Existing ponds and wetlands should be maintained over time and opportunities to create additional water resources should be considered. No ponds or wetlands have been created on Italy Hill SF; however, small vernal pool features would be beneficial, and construction should be considered if opportunities arise.

The extensive natural wetlands occurring along West River and Naples Creek on High Tor WMA provide exceptional habitat for related species (e.g., fish, marshbirds, muskrat, waterfowl). The excavation of ditches and potholes throughout this wetland system has had a beneficial effect on habitat values and should be maintained as needed. The open water channels and pools throughout dense cattail marsh provides valuable breeding, foraging, and movement habitat for several species, and has ensured persistent access to water for wildlife throughout the year, especially in winter when Canandaigua Lake levels are lowered. These ditches and potholes are also valuable sites for fish spawning, improving the fish resource of the Unit for recreation and wildlife food.

Several intermittent streams and gullies occur on both properties of the Unit and provide unique and valuable wildlife habitat, containing heavy shade, exposed rocks, and diverse

plants. These streams drain the uplands of the Unit and generally have high water quality; a valuable input to larger streams and lakes downstream. The trout occurring in Naples Creek and Tannery Creek are particularly benefited from this cold, clean water. Best management practices will be adhered to during timber harvesting and other habitat management activities to ensure the habitat values and water quality of these streams and gullies is not negatively impacted.

Adjacent to Parish Flats Rd in the West River area of High Tor WMA are several large fields and parts of Naples Creek and the unnamed stream that flows from Conklin/Parrish Gully. Prior to Department acquisition, these fields were used for agriculture and thus the site has ditches and berms that altered hydrology to minimize flooding. A project is currently planned in partnership with The Nature Conservancy and Canandaigua Lake Watershed Council to restore natural floodplain activity in the Parish Flats area on and near the WMA. This project should enhance the function of floodplain habitat as well as improve aquatic and wetland habitat downstream. For more information regarding wetland and stream management, see Watershed and Wetlands Protection Management on page 98 and Management Objectives and Actions for Maintenance and Facilities Management on Page 118.

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 Unit can and will occur in conjunction with other work being done. For example, timber and fuel wood sales, and Volunteer Stewardship Agreements, can be a source of manpower to accomplish habitat projects.

Endangered, Threatened Special Concern Species

Threatened and special concern species exist on portions of the Canandaigua Highlands Unit. Efforts to identify, improve and/or create critical habitats need to continue. See also the Endangered, Threatened, or Special Concern Species section on page 54.

Bald Eagle

Bald eagles (threatened) are known to nest near High Tor WMA, and the southern end of Canandaigua Lake is an important wintering location, including adjacent forest and marsh. Forest management on the Unit will avoid disturbing any nesting should it occur within or adjacent to a stand with proposed timber harvest actions. This may include delaying nearby harvest actions until after the breeding season and/or the establishment of a forested buffer around the nest.

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 Wildlife before timber harvests are allowed to occur in the spring and summer. If there is a high probability of bats in the area, properties managed by Forestry will be surveyed. If threatened or endangered bat species are found to be present, 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 presence of northern long-eared bat on High Tor WMA and seasonal restrictions for timber harvest will occur in the related area.

Cerulean Warbler

The cerulean warbler (special concern) is known to occur in some stands on the Unit. A point-count survey to detect presence may be utilized in suitable habitat prior to a timber harvest and if detected, the harvest may be conducted outside the breeding season to avoid impacts. Efforts to increase young forest habitat on the Unit may benefit this species, as studies have shown initial shelterwood harvests to increase cerulean warbler presence. The shelterwood system occurs in stages over several years, with the final stage removing the overstory, establishing young forest. As timber harvests rotate through the Unit over time to enhance forest habitat diversity, continued presence of quality cerulean warbler habitat is expected.

Grassland Birds

The only threatened or endangered grassland bird species known to occur on the Unit is the northern harrier (threatened). This hawk forages in fields along West River and Parrish Flats on High Tor WMA and may breed in the West River wetlands. Fields on the Unit are generally not large enough to be important breeding sites for most grassland-dependent songbird species (several of which are listed species), but these species should be considered prior to implementing management actions. Maintaining these fields as open habitat, while adhering to best management practices developed for grassland birds, will benefit the northern harrier and any other grassland birds that may occur.

Forest Raptors

Four species of forest raptors listed as special concern are known to occur on the Unit (Cooper’s hawk, northern goshawk, red-shouldered hawk, and sharp-shinned hawk). These species nest and forage in woodlands and have benefited from the increase in forestland in New York over the past century.

Disturbance to forest raptor nesting should be avoided. If nesting is observed before or during active forest management, such as a timber harvest, management may avoid the site until after nesting and fledging are completed, and the nest site may be buffered to protect

nesting habitat. Large areas of mature forest currently exist both on and adjacent to lands of the Unit and are expected to provide suitable habitat for forest raptors into the future.

Marsh Birds

Least bittern and pied-billed grebe (both threatened) have been documented using the extensive wetlands on High Tor WMA just south of Canandaigua Lake, and American bittern (special concern) may also be present. These species likely benefited from the habitat provided by the level-ditching throughout this marsh and maintaining this feature as needed should promote their persistence. Maintenance may be necessary if sediment and/or dense emergent vegetation (e.g., cattails and Phragmites) begin to fill in ditching or potholes.

Woodland Salamanders

Blue-spotted and Jefferson salamanders (both species of special concern) are known to occur on the Unit. These salamanders breed in vernal pools and then spend most of their adult lives in the surrounding upland forest. In stands planned for timber harvest, vernal pools should receive a 100-foot buffer where 75% of canopy cover is retained and soil/leaf litter disturbance is minimized.

Species of Greatest Conservation Need

Numerous species listed as Species of Greatest Conservation Need (SGCN) in the New York State Wildlife Action Plan (SWAP) are known to occur on the Unit (see Appendix B). Vegetation management planned for the Unit is expected to improve or maintain habitat that benefits several of these species.

Efforts to regenerate stands and increase the acreage of seedling/sapling size stands will benefit several SGCN species associated with young forests, including American woodcock, brown thrasher, ruffed grouse, and northern black racer. Stands that will be thinned or have no management in the near future will benefit SGCN species associated with mature forest, such as scarlet tanager, wood thrush, eastern red bat, and little brown bat. Prescribed burning and mowing to maintain grasslands will benefit bobolink and eastern meadowlark, which may occasionally occur in the larger fields of the Unit.

Although the coal skink is not known to occur on the Unit, suitable habitat is present. Efforts to survey for coal skink would be beneficial to ensure future protection and/or enhancement of its habitat.

Other Rare Animals

Although not listed as endangered, threatened, or SGCN, the sandhill crane is known to occur on High Tor WMA. In recent years, several have been documented in and near the wetlands and fields along West River. The continental population of this species was greatly reduced in the early 20th century from habitat loss, human disturbance, and overhunting; however, it has been steadily recovering as conservation efforts were implemented. Breeding in New York is rare but increasing; their presence here is indicative of the high-quality habitat

currently provided by the West River wetlands. Surveys to confirm breeding and better understand habitat use would be beneficial.

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 deer play in the success or failure of establishing young forests, particularly those composed of shade-intolerant species such as oak or cherry. In accordance with established procedures and goals used by the Department to determine deer management decisions, a reduction in the number of deer on the landscape by liberal harvest via hunting is encouraged. (See the Deer and Black Bear Harvest section on page 26 for a more detailed discussion of deer management on land in and surrounding the Unit).

The Unit has 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 Unit, posting of “No Feeding Waterfowl” signs near problem areas, and reproductive inhibition via the treatment of nests to prevent hatching.

The term feral swine, or Eurasian Boar, 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 in New York can have tremendous negative impacts on native plants, native wildlife, livestock, agriculture, and humans.

Prior to 2014, hunting feral swine in New York was allowed. As illogical as it sounds, recent experience, has shown that hunting 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, in 2014 the Department 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.

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 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 permits issued by the Bureau of Wildlife.

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. 75)	**Estimated 10 yr. Cost** (Pg. 75)
1	Manage habitats for wildlife species. See also: Timber and Vegetation Management (pg. 81)	1.0	Implement Habitat Management Plan for High Tor WMA.	On-Going	H	See Timber and Vegetation Management (pg. 81)
		1.1	Conduct all forms of woody vegetation management to achieve balanced forest structure.	On-Going	H	
		1.2	Implement the Young Forest Initiative (YFI) on WMAs 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	Establish additional grassland habitat	On-Going	L	
		1.6	Convert plantations to natural communities	On-Going	H	
		1.7	Develop and maintain small ponds and dugouts to act as amphibian activity centers.	On-Going	L	Up to $10,000 per each.

Management Objectives		**Mgt. Act. No.**	**Management Actions**	**Frequency of Action***	**Priority Code** (Pg. 75)	**Estimated 10 yr. Cost** (Pg. 75)
		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, Maintenance and Facilities Management and Access Management
		2.2	Maintain parking areas, trails, roads and other recreation facilities.	On-Going	H	
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
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.

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 75)	Estimated 10 yr. Cost (Pg. 75)
		5.2	Survey for, identify, protect, and improve habitat for SGCN	On-Going, or as funding is available	L	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

"Adventure New York" includes suitable opportunities for the public enjoyment of compatible recreational pursuits in the natural setting of a State Forest or Wildlife Management Area. Recreational use, especially fishing and hunting, is a dominant and important use of most of the state land comprising the Unit. Dispersed recreation will continue to be encouraged over almost all of the Unit. See also the Recreation section on page 23.

Activities on the Unit are subject to the Department's Rules and Regulations for the Use of State Lands (6 NYCRR, Part 190) and Wildlife Management Areas (6 NYCRR, Part 51), as well as any other applicable state statutes, rules and regulations. The primary purpose of WMAs is to provide and enhance wildlife habitat and wildlife dependent recreation, and non-wildlife dependent uses cannot be allowed to occur if they interfere with the primary purpose.

Under Environmental Conservation Law, the Department 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 Unit see Appendix D: Facilities (pg. 157) and Appendix M: Maps (pg. 202).

Development of new or additional facilities will only be undertaken after due consideration through this unit management planning process. Stewardship activities will be limited to maintenance and rehabilitation of facilities identified in this Unit Management Plan.

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 for recreation will be done with each timber sale. As part of the active timber management, sections of trail, roads, parking areas, 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

Generally camping is prohibited on WMA's, however, permitted camping is allowed at two locations on High Tor WMA, but only for organized groups and outside of big game and turkey hunting seasons. Camping permits for the two High Tor WMA lean-to sites are available from the Departments Wildlife office in Avon, NY.

Camping is allowed on State Forests, no permit is needed for groups of less than ten, 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. See the Camping section on page 26 for a list of designated campsites on the Unit.

Hunting, Fishing and Trapping

Hunting and trapping are allowed during open seasons, with the correct license and tags; consult the Departments Hunting and Trapping Guides for state wide regulations, seasons, hours, and bag limits. Available game varies depending on the habitat available; see the Timber and Vegetation Management (pg. 81), Watershed and Wetlands Protection Management (pg. 98) and the Fish and Wildlife Habitat Management (pg. 100) 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, and it must be removed at the end of each day.

Many streams on this Unit are small and do not provide much of a fishing resource, but Naples Creek, West River, and Canandaigua Lake all provide fishing opportunities. See the

Fishing section on page 29 for additional information. An accessible path to a fishing platform on Naples Creek is part of the Marks Circle Fishing Access Site.

Boating

High Tor WMA has two boat launches, on State Route 245 is a small gravel boat launch and accessible canoe/kayak launch providing boating access to West River, called the West River Marina. Located off of Sunnyside Rd is a small car top canoe launch onto West River. Portions of West River, as well as Canandaigua Lake, are navigable with smaller boats. Larger boats should be launched directly into Canandaigua Lake from the Woodville boat launch on State Route 21.

Trails

Public Forest Access Roads, Haul Roads, Access Trails 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. 30), Access Management (pg. 77), Maintenance and Facilities Management (pg. 116), Appendix D: Facilities (pg. 157), and Appendix M: Maps (pg. 202).

Many of the trails on the Unit can be used for hiking, snowshoeing, and skiing. As a multiple use road or 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).

The Bristol Hills Hiking Trail, a branch trail of the Finger Lakes Trail, crosses both properties of the Unit, and is maintained by the Finger Lakes Trail Conference (FLTC) under a Volunteer Stewardship Agreement (VSA). This hiking trail has approximately 5.5 miles on High Tor WMA, and about 4.5 miles on Italy Hill SF.

The Lehigh Valley Rail Trail/Middlesex Rail Trail on High Tor WMA is maintained to Haul Road Standards (see pg. 19) and is a popular hiking and biking location. Starting in 2019 several bridges and culverts will be replaced, using money from the 2017 NYS Works Initiative.

Mountain biking is growing in popularity in western New York and was considered during this management planning process. Biking is allowed on all roads and trails on Italy Hill SF, unless posted as prohibited. The off-road portions of the Bristol Hills Hiking Trail are a designated hiking trail where biking is prohibited.

Limiting the areas open for biking on High Tor WMA was determined the best option to prevent conflicts with the WMA's primary purpose. Biking is now only allowed on roads and designated trails on the WMA; however, there are currently no designated biking trails (see Appendix M: Maps to view roads on the WMA). Several miles of administrative roads are available for biking on the WMA, including a large loop accessible from Bassett Rd and Brink Hill Rd, as well as approximately 6.5 miles of the Lehigh Valley Rail Trail. Prohibiting biking

on trails of the WMA was primarily decided considering the potential impacts to wildlife, habitat, and wildlife related recreation. The availability of WMA roads and other nearby public lands that offer biking opportunities was also considered (i.e., Italy Hill SF, Stid Hill Multiple Use Area, and Ontario County Park at Gannett Hill).

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; there are no designated snowmobile trails on High Tor WMA. Italy Hill SF had a snowmobile trail, but it has been abandoned for several years, but it is still available if new volunteers want to take over. 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.

The Department is not planning to construct additional recreational trails on High Tor WMA or Italy Hill SF, but if an organized group wishes to volunteer to develop additional trails they need to apply to the Bath DEC office to do so. Exact location must be pre-approved by the Department prior to construction starting.

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. The Department 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.

Currently, unauthorized trail building, and marking, is an issue on the Unit. These unofficial trails need to be mapped and evaluated. In some cases, these trails could be maintained if individuals or groups volunteer to work under a VSA or TRP. In other cases, these trails are located in unsuitable locations (e.g., highly susceptible to erosion) and should be closed and brushed in to discourage use and allow natural revegetation.

The trails adjacent to Clark Gully are included in this issue, in that they were not carefully planned but grew from user created paths. Some of these trails experience intensive use and are subject to erosion because of the steepness, soil composition and proximity to the gully. Marking the trails and re-routing problematic sections is necessary to ensure proper management and protection of this resource. A VSA for trail maintenance is desirable and anyone interested in starting one can contact the Bath DEC office.

Trails 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, on this Unit only one short trail meets the federal standards for wheelchair accessibility. Located on Marks Circle, it is about 170 feet long, connecting a parking area and a fishing platform for fishing in Naples Creek on High Tor WMA.

Along the shoreline of the West River Marina canal an accessible trail and boardwalk will be built to enhance wildlife viewing and fishing opportunities.

In the many cases roads or trails don't meet the minimum ADA 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 Canandaigua Highlands 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 Department. 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 Department at 7291 Coon Rd, Bath, NY 14810. (See the Appendix D: Facilities (pg. 157) and Appendix M: Maps (pg. 202) sections)

High Tor WMA has 7.4 miles of MAPPWD routes located on some of the Haul Rds. in the Hatch Hill section of the property. The Lehigh Valley Rail Trail/Middlesex Rail Trail is not part of the MAPPWD system, but after repairs are completed it will be evaluated for inclusion in the list. Italy Hill SF currently has no designated MAPPWD routes. However, after the new haul roads are constructed on Italy Hill SF they will be evaluated for being added to the MAPPWD list.

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 the Departments SPSFM, 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. 75)	Estimated 10 yr. Cost (Pg. 75)
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 using Volunteer Stewardship Agreements (VSA), to construct and/or maintain existing and/or future recreational facilities	2.0	Identify resources and/or volunteer groups to form additional partnerships.	On-Going	L	10 Work Days
		2.1	Assist the various VSA 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	Encourage rehabilitation of trail sections that are unsuitable for existing use.	On-Going	H	5 Work Days
		2.3	Provide resources or utilize opportunities as needed to maintain and enhance existing trail(s)	On-Going	C	10 Work Days
		2.4	Minimize conflicts between user groups	On-Going	H	30 Work Days
		2.5	Discourage illegal use of motorized vehicles.	On-Going	H	30 Work Days
3	Determine feasibility and/or	3.0	In house review of proposed projects	As Needed	L	40 Work Days

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 75)	Estimated 10 yr. Cost (Pg. 75)
	compatibility of proposed additional recreational opportunities .	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.
		4.3	Build an accessible path and boardwalk along the shoreline of the West River Marina canal.	By year 10	L	$50,000
		4.4	Evaluate and improve some trails/roads to greater universal accessibility	On-Going	C	Highly variable
		4.5	After this plan is approved, and the new haul roads on Italy Hill SF constructed, they will be evaluated for inclusion in the MAPPWD system.	Once	L	2 Work Days
		4.6	Work with organized volunteer groups to improve the trail opportunities available on Italy Hill SF and High Tor WMA.	On-Going	L	Highly variable

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 75)	Estimated 10 yr. Cost (Pg. 75)
		4.7	Improvements to the trails adjacent to the Gully's on High Tor WMA.	On-Going	H	Highly variable
		4.8	After this plan is approved, and needed maintenance is finished, evaluate the Lehigh Valley Rail Trail/Middlesex Rail Trail for inclusion in the MAPPWD system.	Once	L	2 Work Days
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	20-100 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.
		6.5	Identify unauthorized trails and evaluate suitability for maintenance or closure.	As needed	H	10 Work Days
		6.6	Evaluate and provide sanitary facilities at designated camp sites, if appropriate.	Once each	H	Highly variable

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 75)	Estimated 10 yr. Cost (Pg. 75)
		6.7	Maintain viewing platforms, fishing 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, the Departments offices and web page.	Check at least monthly	H	30 Work Days
		7.1	Place and maintain kiosks or signs at high use parking 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	20 Work Days
		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 their integrity, character, and safety. This must be done with the limited money and staff resources that are available. See also the Access Management (pg. 77) and Public Recreation and Use Management (pg. 108) sections for additional facilities information.

Partnerships and Volunteer Agreements

It is the policy of the Department 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. Construction and maintenance of recreational facilities, enhancement or restoration of habitat, and providing first responder safety, are all services that have been provided by local volunteers.

Public Safety

The constructed dams, dikes and other water impoundment structures located on the Unit must be inspected and maintained both for public safety and to retain the desired habitat. This will be done in consultation with the Department's Division of Water, Dam Safety Unit. As of the writing of this plan, the dams of the Unit are in the process of being re-evaluated for their hazard assessment and rating. Visit www.dec.ny.gov/lands/4991.html for additional information on the rating and classification process. If necessary, a new Dam Inspection and Maintenance Plan will be written for any that are lacking one. The current version of these documents will be kept on file in the Bath and/or Avon Offices. Among other things, this document will include the frequency of inspections and maintenance such as mowing or repair/replacement of control structures. Should considerable rehabilitation/repair/reconstruction become necessary then the dam or other structures may be modified so the hazard rating category will be reduced to low, this may include reducing the water level, resulting in a smaller pond/wetland. For further information on wetland and pond management see the Fish and Wildlife Habitat Management section (pg. 100).

All trees eventually fall down. Those located in the forest rarely harm people or property, however trees adjacent to 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.

Although rarely used, the small field cleared to provide a helicopter landing zone near the top of Parrish/Conklin Gully on High Tor WMA will continue to be maintained for use by Mercy Flight, or other rescue organizations.

High Tor WMA has several hazardous buildings, all of which potentially have asbestos and need to be removed from the site.

Towers

This part of New York State has the potential for generating electricity with wind turbines or the construction of towers for radio or cell transmission. There are currently no wind turbines, or applications for wind turbines, for power generation on any of the properties of

the Unit. The Department does not have the legal authority to lease State Forests or Wildlife Management Areas for the construction of wind turbines, new power lines, or commercial towers. This plan does not cover any actions or construction on any adjacent privately-owned lands.

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

Management Objectives		**Mgt. Act. No.**	**Management Actions**	**Frequency of Action***	**Priority Code** (Pg. 75)	**Estimated 10 yr. Cost** (Pg. 75)
1	Maintain constructed ponds / potholes (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 blockages of culvert, bridge, or water control structure caused by storm or beaver activities	On-gong	C	See Fish and Wildlife Habitat Manage-ment
2	Solicit volunteer groups to help maintain facilities	2.0	Promote Volunteer Stewardship Agreements (VSA)	On-Going	L	See Public Recreation and Use Manage-ment
		2.1	Enter into agreements with volunteer groups.	On-Going	L	
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 adjacent to concentrated recreational use.	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.

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 75)	Estimated 10 yr. Cost (Pg. 75)
		3.4	Mow, and other as-needed, maintenance of the emergency helicopter landing zone.	On-Going	H	20-50 Work Days
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.
5	Removal of Facilities	5.0	Demolition and removal of un-used buildings on High Tor WMA	By year 10	H	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 Canandaigua Highlands 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 the Department in New York State is guided by the New York State Open Space Conservation Plan. This 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 the Department and the Office of Parks, Recreation and Historic Preservation (OPRHP), relies on the input of Regional Advisory Committees, local governments and the public. It is required to be updated every three years, as of the writing of this plan the most recently version was published in 2016, and is available for viewing on the internet at www.dec.ny.gov/lands/317.html, as newer versions are finished they will also be available at that location.

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.

Goals and Objectives

The Department 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. 75)	**Estimated 10 yr. Cost** (Pg. 75)
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	
2	Consolidate public ownership by eliminating in holdings	2.0	Identify land acquisition needs, which simplify the Department's boundaries.	On-Going	L	Unable to predict costs.
		2.1	Acquire desired properties from willing sellers as funding permits.	On-Going	L	
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	
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	
5	Protect scenically	5.0	Identify land acquisitions that are scenically important.	On-Going	L	

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 75)	Estimated 10 yr. Cost (Pg. 75)
	important areas.	5.1	Acquire desired properties from willing sellers as funding permits.	On-Going	L	Unable to predict costs.
6	Protect areas that 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	
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	
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	
9	Resolve other issues (split mineral estate, title problems, etc.).	9.0	Identify issues (See Appendix K: Known Encroachments and/or Trespass, pg. 190, for partial list)	On-Going	C	Unable to predict costs.
		9.1	Attempt to resolve such issues	On-Going	C	

*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 Department owned State Lands, gas well drilling, pipelines, and related road development must be in compliance with Tract Assessments, the SPSFM, the GEIS, and the applicable UMP and/or HMP. No exploration or extraction of the Marcellus Shale using high volume hydraulic fracturing will be considered for permitting on State Lands per the May 2015 FSGEIS and June 2015 Findings Statement that recommended that high-volume hydraulic

fracturing should not move forward in New York State. See Appendix I: Procedures for Oil & Gas Procurement (pg. 187) for a description of the process to lease oil and/or gas rights from Department lands. For history and information on oil, gas and mining in the area, see the Mineral Resources (pg. 36) and Appendix M: Maps (pg. 202) for maps of the mineral resource development on the adjacent landscape.

Management of Mineral Resources

Any activity involving the procurement of oil and gas resources and/or storage of gas and liquids in the subsurface on state lands is administered by the Departments 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 Division of Mineral Resources, including the issuance of mining permits and drilling permits.

The surface estate of these state lands is managed through the Departments 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

The Department 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 SPSFM, the GEIS, and any applicable HMPs for the WMAs.

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 TRP (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 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 department policy is to decline any commercial mining permit application(s) pertaining to any lands in 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 state lands after leasing they must first obtain a 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 Division of Lands and Forests or Division of Fish and Wildlife.

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

For further discussion of Mineral Resources, see Chapter 5 of the SPSFM.

Table 19: Management Objectives and Actions for Mineral Resource Management

Management Objectives		**Mgt. Act. No.**	**Management Actions**	**Frequency of Action***	**Priority Code** (Pg. 75)	**Estimated 10 yr. Cost** (Pg. 75)
1	Decide to approve or not approve extraction of mineral resources.	1.0	Per Appendix I: Procedures for Oil & Gas Procurement, pg. 187.	After nominations 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	
3	Pipeline access and construction	3.0	Granted and directed by terms of lease agreement administered by DMN.	Every Time	C	
		3.1	L&F and/or Wildlife reviews proposed operations and if approved, issues a TRP.	Every Time	C	
		3.2	L&F and/or Wildlife enforce TRP provisions.	Every Time	C	
4	Decide to approve or not approve storage of mineral resources	4.0	Per Appendix I: Procedures for Oil & Gas Procurement, pg. 187.	After nominations are received	C	

*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

Archaeological and historical sites are any location where materials or modifications to the landscape reveal evidence of past human activity. This includes everything from precontract Native American camps and villages to Euromerican 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. For additional information see the History of the Unit (pg. 11) and Historic, Archaeological and Cultural Resources (pg. 65) sections. (For more information on historic and cultural resources, see Chapter 3 of the SPSFM, found online at www.dec.ny.gov/lands/64567.html.)

Historic and Archaeological Site Protection

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

Archaeological Research

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

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

Management Objectives		Mgt. Act. No.	Management Actions	Frequency of Action*	Priority Code (Pg. 75)	Estimated 10 yr. Cost (Pg. 75)
1	Preservation of historical and archaeo-logical resources	1.0	Comply with state historic preservation act.	On-Going	C	Unable to predict costs.
		1.1	Avoid any activity which may disturb any historical and/or archaeological resources	As Needed	C	

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

PUBLIC INVOLVEMENT

Initial Mailing

Canandaigua Highlands Unit Management Plan's citizen participation activities commenced with an initial mailing in **February 2018,** 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. 127) with a summary in the Summary of Identified Issues section starting on page 69.

Second Mailing

Upon completion of the draft Canandaigua Highlands 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 Department 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 Canandaigua Highlands 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 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 in the Public Involvement chapter (pg. 126).

For the Canandaigua Highlands Unit Management Plan public comments were received as a result of a scoping letter mailed February 2018. 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 4 written comments were received.

A Summary of Identified Issues from all of the comments received from the scoping mailing is located on page 69 of this Unit Management Plan.

Comments Received on the scoping mailing:

From: Mathew Levine [mailto:XXXXXX@gmail.com]
Sent: Friday, February 09, 2018 3:54 PM

Hello,

Thank you for the opportunity to provide comments during the process to revise the Canandaigua Highlands Unit Management Plan.

I am a resident of Naples, NY and am grateful for the NYS DEC's multiple-use concept of management of the High Tor Wildlife Management Area and Italy Hill State Forest. I regularly hike, bike, ski, fish, and canoe the trails and waters in High Tor WMA. I support continuing to provide opportunities for hunting, fishing, hiking, mountain biking, wildlife watching, cross-country skiing/snowshoeing, boating, and other similar and compatible forms of outdoor recreation.

My family enjoys crossing paths with our neighbors and visitors when we recreate in High Tor WMA and have had nothing but positive experiences with the multiple users sharing the trails and waters.

Thank you again for the opportunity to participate in this process. I look forward to reviewing the draft UMP and attending the public meeting.

Sincerely, Mathew Levine

*****

From: XXXXX@juno.com [mailto:XXXXXX@juno.com]

Sent: Tuesday, February 13, 2018 9:10 AM

Subject: Total Mismanagement of Deer on Italy Hill State Lands

Hello, Let me introduce myself; I am John R. Cody; and have owned land right in the middle of the Italy Hill State Forest for 40 years. I own 20 acres that runs from Pulver Rd. on the east end, to the road/path called Dunn Rd. on the west end. In that 40 years, I have seen the deer herd/numbers greatly reduced. I believe the problem lies in the massive number of DMPs given out over the last 25+ years in Unit 8R. In the early years of my property ownership, the High Tor WMA was in the same GMU as Italy Hill. That allowed some of the Doe hunting pressure off of Italy Hill State forest. Since the time when the GMUs were redrawn, High Tor and Italy Hill were separated; for a couple of decades. In Unit 8R, the only public hunting grounds are Italy Hill State Forest; the rest of the unit is made up of private vineyards/ farm land. Anyone who puts in for a DMP in 8R, and does not have land to hunt on, comes to Italy Hill State Forest to fill their DMPs. I have personally seen hunters with 4 DMPs in 8R; and they have decimated the deer herd, by taking most of the what I call "Puppy Deer"; little "Button Bucks", and deer no bigger than a dog! I have not shot a deer in 9 years, as I refuse to shoot Does and "Little Deer". There has been days when I spend the entire day in my woods, without seeing a single deer! In the first 10 years of owning land there, I would see deer every day, and usually 5 or more at a time, but since the reshaping of the GMUs, and High Tor was separated from Italy Hill SF, it has grown worst, till now! There needs to be a reduction of DMPs in 8R, and High Tor should be put back in the same GMU as Italy Hill SF. I welcome any debate of this matter;

Yours Truly, John R. Cody.

*****

From: Jay Toth [mailto:XXXX@sni.org]
Sent: Thursday, February 15, 2018 10:35 AM
To: Witt, David E (DEC) david.witt@dec.ny.gov
Subject: UMP/SNI-THPO

Dave,

I quickly looked over the Plan.

Archeologically: I would recommend against allowing metal detecting being done by hobbyists on public lands. They tend to destroy historic sites.

Trees: 1. I would recommend the removal of Norway spruce, as they are non -native and become invasive.

2. there needs to be a plan for protecting the Hemlock trees as HWA is moving north through PA. You may want to consult with the Allegany National Forest regarding their management plans for this insect.

Blueberries: I would be interested to know if these are native to the area. There are very few native blueberries any more. I am pleased to see there is a management plan for this.

Note: Because of the Oaks and blueberries which are symbiotic species in the old Oak savannahs and are the highest biodiverse woodland settings, I would encourage more prescribe burns for the health of the forest and the encouragement of the old habitat. Fire has always been a Native environmental management tool for thousands of years in NY and throughout the eastern woodlands.

Thanks
JAY toth, MA, MS
Seneca Nation
Tribal Archeologist
90 OHI:YO WAY
Salamanca,NY 14779
(716)-945-1790, Ext. 3582
https://sni.org/

*****

From: XXXX@rochester.rr.com [mailto:XXXX@rochester.rr.com]
Sent: Wednesday, February 21, 2018 10:03 AM
Dear Sirs,

Attached in my attempt to let you know my opinion / concerns about the Italy Hill SF. I own property along with another man on the south side of this state forest land.

Keith Burfield

Dear Sirs,

In regards to the Italy Hill SF, I own property that borders the state land on the south side of that property. I have hunted this area since 1985 and it has become very over grown and could really use some clearing in many places. The ice storms we have had in the past years has taken down many trees and in some places it is nearly impossible to even walk through it.

I fear that we will have a lightning strike some time and wind up with a huge forest fire that could in fact jeopardize my hunting camp. The horse trail that ran along the east side of this property is totally over grown in spots and if it was needed in an emergency situation it could not be accessed by any type of ATV vehicle.

Due to the condition of this forest land many of the men that hunted it in the past have just given up trying to hunt in this location. If nothing else is done to this property the state should at least cut in new trails for hikers and hunters alike.

I am glad to read that your looking to make changes to this property and increase the potential use of it by more people.

Regards, Keith Burfield

*****

From: Sean Sullivan [mailto:XXXXX@hotmail.com]
Sent: Thursday, April 19, 2018 10:18 PM

Subject: High Tor!

Hello,

I really appreciate the opportunity to comment on the process to revise the Canandaigua Highlands Unit Management Plan.

My family and I live in Naples, NY. My wife and I are in our early 40s and our kids are still in elementary school. We love recreating in High Tor, from biking, trail running, hiking, cross country skiing, fishing and just enjoying nature. We are so grateful for the opportunity to enjoy so many types of recreation so close to home. We often head up into High Tor on a whim with our friends and family and will stay for hours. We're very lucky.

Thank you for the opportunity to comment and we look forward to the draft UMP and attending the public meeting(s).

Sincerely, -Sean Sullivan

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From: xxxxxx@hotmail.com
Sent: Tuesday, May 08, 2018 8:18 AM
Cc: naplesny@frontiernet.net
Subject: Canandaigua Highlands Management Plan.

Good morning.

I am writing to submit comments regarding the Canandaigua Highlands Management Plan Update.

As Mayor of the Village of Naples, My particular concern is with regard to the HighTor WMA. Naples is a highly active tourism destination drawing ever increasing numbers of people to the area annually. The High Tor WMA plays a very distinct role in the activities sought by our visitors as well as local outdoor enthusiasts and educators. It would greatly benefit the High Tor WMA, the Naples Community, our Visitors and the entire region if there were consideration for expanding access to this area through additional trails, parking and general promotion. Hunting, hiking, fishing and opportunities to experience what nature has to offer is precisely what draws people to the Naples area while affording a bounty of local educational opportunities. Please consider these concerns as you proceed with the Management Plan Update.

For further discussion, I can be reached at 106 S. Main st. Naples, NY 14512, 585-374-2435 Or 585-755-5615

Best Regards, Brian J. Schenk, Mayor Village of Naples

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From: Peter Shell [mailto:xxxxxxx@yahoo.com]
Sent: Wednesday, June 20, 2018 12:08 PM
Subject: Stone mounds in the High Tor preserve

To New York State DEC & all concerned,

Last summer I spent a considerable amount of time spanning about a dozen trips to the Ledges area of High Tor. I explored approximately 40 man made stone mounds arranged and placed throughout the area. Careful inspection showed the intricacy and deliberate placement of each and every stone. There was a great deal of thought and precision in each of the arrangements. I noticed many stones that had been shaped and cut by running water. Idicating that many of the stones were imported from distances at least as close as the gorge on the other side of the ridge or perhaps even farther. This contradicts any arguments that farmers arbitrarily collected stones nearby and threw them into piles to improve grazing for their cattle.

These stone mounds are a legacy of native people people from thousands of years ago. Because High Tor is remote and not overrun with tourist activity, these ancient artifacts are amazingly pristine! Having felt the special and unique energy of this sacred land, it is important that this area be preserved for future generations to study and understand.

Although I have not ventured beyond the Ledges, I understand that there are many more mounds throughout the preserve. The shear number of structures increases the significance of each and every mound! Why would so much effort and energy be expended to build so many structures in the entire region? Surely they were key elements of their ancient society.

It is of supreme importance that logging, mining, excavation, gas or power lines, off road endurance events, horse trails or jeep trails never be permitted to happen with in the High Tor area. This ancient legacy must be preserved and protected. The mounds are every bit as spectacular and precious as the pyramids in Giza. It is imperative that every effort on the DEC's part be aimed at keeping these stone mounds intact and protected!

Thank you for your attention on this vital issue pertaining to a significant historical remnant of human efforts!

Sincerely: Peter Shell

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From**:** Madis Senner [mailto:XXXXXXX@gmail.com]
Sent**:** Thursday, August 30, 2018 8:41 PM

Subject**:** Comment on HIgh Tor, Canandaigua Wildlife Management Plan

Dear NYS DEC,

I would like to add my input regarding the future of High Tor. I feel very strongly that additional protections be put in place for the many stone mounds, stone structures and certain single stones within HigH Tor. I know of no other place in the world that has such a large collection of stone structures. It truly unique and rare and would be a shame to lose.

Appendicies

I have been cataloguing the stone mounds at High Tor since 2007 on my Clarks Gully Bog http://clarksgully.blogspot.com In the summer of 2017 Peter Shell of Binghamton and I did a survey of 40 mounds and related structures in a section of South Hill we call the Ledges.

When Cyrus Thomas wrote his Catalogue of Prehistoric Works East of the Rockies in 1891 he gave mention to tens of thousands, possibly hundreds of thousands, of stone and earthen structures located in Eastern America. Sadly many of these structures have been lost forever. As I touch on briefly below with a few examples. Which makes preserving the stone mounds at High Tor even more imperative.

It is widely recognized that High Tor, South Hill in particular, is where the Seneca People believe they were born and regard it as being holy. My research indicates that its Native roots are much older and that High Tor's stone mounds were built by a much older ancient culture. They all held a strong bond with the High Tor and revered Mother Earth. Native Americans speak of "acting in a sacred manner", particularly in holy places; which they did while they were at HIgh Tor. To that affect I ask activities not in keeping with "acting in a sacred manner", such as hunting, fishing, trapping, logging, drilling, etc. not be allowed on High Tor.

Finally I feel that a trail system be put in place to meander through the woods close to the stone structures so that people could see and experience them first hand. This would get people to visit from far and wide to see the stone structures and experience the wonder of Nature and Mother Earth found at High Tor. Longer term if properly marketed it could be of economic benefit from tourism.

I will talk about the following;

- The Stone Structures
- The Feeling of Place, High Tor's Je Nais Sais Quois
- The threat of Damage
- Trails and Tourism

The Stone Structures

I study, write and lecture about sacred sites, stone structures and the like and have surveyed many sites in Eastern America. My book Sacred Sites in North Star Country: Places in Greater New York State (PA,OH,NJ,CT,MA,VT,ONT) That Changed the World has a whole section dedicated to High Tor. As I noted before I know of no other place in the world that has such a large collection of stone structures. It is simply amazing.

Stone Mounds, Stone Cairns—There are hundreds of stone mounds at High Tor; at least 300, probably 500 and there could be many, many more than that. These stone mounds come in a variety of shapes and sizes, from 2 feet to 40+ feet in diameter usually in an oblong/circular shape in a variety of conditions. More often than not they have a dimpled, or depressed area, what others may call 'hollow', on or near their center.

Here are some pictures.

I believe that pilgrims would sit in the center area to achieve a particular spiritual, or mystical experience. John Burke and Kaj Halberg in their book Seed of Knowledge, Stone of Plenty (2005 Council Oak Books) tell of their experience visiting the many stone structures from the stone chambers of New England, to pyramids of Egypt and South America, to the Henges and Standing stones of England. They took with them devices to measure the electromagnetic energy around the stone structures. They consistently found that there was significantly higher amounts close to the stones. Burke hypothesized that stone structures were created to increase the fertility, or germination rates of seeds by placing them on the stones.

Dr. Michael Persnger has extensively studied the effect of electromagnetic energy upon humans. He examined various sacred sites around the world and found high releases of electromagnetic energies created a variety of parapsychological experiences for people. He even created what he called the "God Helmet" a hockey helmet with solenoids attached that could create a mystical experience in the wearer by releasing electromagnetic energy into the helmet via the solenoid coils.

Persinger work gives credence to the notion that the stone structures were created for ceremonial purposes to achieve mystical experiences.

I have found similar dimpled stone mounds in Pennsylvania, New Hampshire, West Virgina and in several other places in NY. My belief is that they stretch from Ohio to Maine/Canada and the Carolinas to the south. But no place has anything close to the number, variety and condition like High Tor does.

Northwood State Park, NH Staffs outline the depressed areas in this large stone mound

Stone Wall Jackson State Park, WV

Ohiopyle State Park, PA during a blizzard earlier this year. Staff marks the depressed area of the stone mound.

Whangtown, Road, Kent NY. Again notice the depressed area.

Other Stone Structures

There are a several other types of stone structures found at High Tor. Below are two

Long mound (30'+) with 3 platforms/steps with different heights.

Side view of one the tiers of a 4 Tiered Mound on the side of a hill.

Single Stones

There are a variety of single stones that tap into Earth Energies and once had a ceremonial purpose. In fact many times you will find these single stones next to, or even within a stone mound. I and others believe that they were located to mark or tap into electromagnetic energy power spots. There are too many to estimate how many are found at HIgh Tor. Not to sound outrageous but several thousand would be a conservative estimate. Most likely many, many more times than that.

These single stones are often found close to a stone mound. As such we view them as accessories to a stone structure. Because of this we see their presence near a stone

structure as a further corroboration that a stone structure is sacred and was used for ceremonial purposes.

Manitou Stones—Are upright flat stones that have been perpendicularly embedded the earth. Ideally you would say they are shaped like a grave stone and look like a grave stone that has been buried. They come in a variety of sizes and over time have begun to tilt, or are barely noticeable because over the millenia earth has accumulated around them and has begun to de facto bury them.

I call them Manitou Stones because that is what James W. Mavor, Jr. & Byron E. Dix, referred to them in their book Manitou, The Sacred Landscape of New England's Native Civilization. In it they write "there are at least several hundred thousand laid-up stone heaps or piles, we call 'mounds' with some sixty feet in diameter and fifteen feet high."[1] They also noted that there are thousands of upright stones (stones, or slabs that are perpendicular to the ground, or upright in the air); and three to four hundred stone chambers in New England. I believe that there are many more than that.

While I quote Mavor and Dix in no way do I condone the archaeological digs that they did for their book. In my opinion archaeological digs are toxic to a sacred area, or stone mound or a single standing stone and can do grave damage. Imagine a holy place, something you hold dear, a book, a picture of a loved one your parents wedding ring and someone sets about to cut it up, poured chemicals on it and the like. How would you feel? My fear in writing this email was that archaeologists would descend upon High Tor and in the process destroy the wonder that elevates it to special status. Certainly have archaeologists look at the stone mounds—but please no digs.

Again the notion that stone structures, in this case Manitou Stones were constructed to tap into the earth's geomagnetic field is shown by an observation Sig Lonegren made during the survey of Calendar I Stone Chamber in Vermont. Sig is a well respected geomancer who has written several books and worked with Mavor and Dix on their surveys for their book. Sig described the jolt Byron Dix experienced examining a particular stone,

"Archaeoastronomer Byron Dix at a stone he found central to the astronomy at Calendar I. Here he is demonstrating how he was kneeling when something like an enormous shock had literally thrown him off the stone!"(2)

Here are some pictures of Manitou Stones.

Manitou Stone part of a larger structure

Standing stones

These are large stones and come in a variety of shapes and sizes.

Platform stones

These are large flat stones that mark geomagnetic formations. They are often found close to a stone mound, as a single platform stone or a series of platform stones. They are also found by themselves or in combination with other standing stones, and in certain locations by themsevels..

Other Locations with Platform Stones

Shaupeneak Ridge Cooperative, New Paltz, NY. This stone mound has a platform stone in its depressed center. The idea that a platform stone would be used in such a fashion indicates that whoever built these stone structures revered platform stones by themselves. I have never seen another example of a mound with a depressed area have a platform stone within it.

Calendar II Stone Chamber Southern Vermont. There are several platform stones located around this famous stone chamber. In the picture above a fireplace was built upon this platform stone 100-200 years ago.

The Feeling of Place at High Tor, Its JE Nais Sais Quoi, Its Atmosphere/Vibe

The writeup of High Tor for my book Sacred Sites in North Star Country: Places in Greater New York State (PA,OH,NJ,CT,MA,VT,ONT) That Changed the World begins,

"Imagine if you could go back in time 2,000, or even 3,000 years, or more, to when the mound builders inhabited much of the Eastern United States. Imagine if you could visit one of their sacred sites and feel the charged atmosphere of their spiritual practices as you sat next to one of their mounds. Can you feel the chills running up and down your spine as you cry for a vision and tap into the collective consciousness of the thousands that have been here centuries before you? Feel their thoughts, as they help elevate your consciousness, bring you closer to the Great Spirit, open up lines of communication to other worlds, and give you visions while healing you."(3)

I have had a variety of mystical experiences while at High Tor, too numerous to mention. They have included but not confined to; cathartic moments when I have welled up great tears of joy and felt as though a great burden had been lifted, at times I have gotten great insights, had visions, joyful moments when I have felt so close to God/Spirit/Source, at times I have felt as though I have journeyed to distant places, or felt as though I traveled back in time and connected with the sprit of those that once prayed, meditated or cried for a vision at HIgh Tor. IT IS THIS SPIRIT OF PLACE THE INDUCES SUCH WONDERFUL MYSTICAL EXPERIENCES AT HIGH TOR. THE STONE STRUCTURES PALE IN COMPARISON TO THIS SPIRIT. IT IS A WONDER AND JOY.

To understand how an area of land can help induce mystical experiences ask yourself why we are told to meditate in the same place. This is because we leave an imprint of memory of our thoughts and actions at a place and the more we perform the same action somewhere the stronger that imprint gets. So the next time we go to this place it facilitates that experience.

The work of Carl Jung better helps explain how the land can shape. He believed that we shared a collective unconscious, that contained archetypes that helped define our behavior. Jung believed that our collective unconscious was buried in the earth;

"For it is the body, the feeling, the instincts which connect us with the soil. If you give up your past you naturally detach from the past; you loose your roots in the soil, your connection with

the totem ancestors that dwell in the soil." (4)

In 'Mind and Earth' Jung told how the land assimilates us and because of this America had a Native American Soul. Jung said "the foreign land assimilates its conqueror ….Our contact with the unconscious chains us to the earth and makes it hard for us to move.(5) In the telling Jung points out how Australian Aborigines believe one cannot conquer a foreign soil, because the ancestor-spirits that dwell in the soil will reincarnate in the invader.

Jung believed that the collective unconscious was shaped over time by our ancestors describing the evolution of our psyche by comparing it to a multistory building. "Its upper story was constructed in the nineteenth century, its ground floor in the sixteenth century and its masonry reveals that it was reconstructed in the eleventh century. In the cellar we find Roman foundations and under the cellar is a cave with Neolithic tools in the upper layer and remnants of fauna from the same period in the lower level."(6) Jung felt we live in the upper story and are only aware of the lower story. We remain totally unaware of what lies below the earth's surface.

High Tor has been a sacred area for millenia where people have prayed, done ceremony and visionquested. They acted as Native Americans say, i"in a Sacred Manner" showing reverence and respect for all of creation. That spirit lies buried in the soil there.

Rich History

As noted earlier the Seneca believe that they were born on South Hill which is within High Tor. But I believe High Tor's Native American roots reach much farther back to the Adena Culture (1,000 Bc to 0 AD) or earlier. I say this because of a deceased Native American discovered in 1904 at the bottom of Bare Hill; inside the steep hairpin curve on the North Vine Valley Road in the town of Middlesex a few miles from High Tor. The fellow was found sitting half way up, with one hand holding a pipe. The pipe was determined to be of Adena(1,000 BC to 0AD, also known as Moundbuilders along with the Hopewell for their custom of building large earthen mounds to bury their dead) origin and because of this it was concluded he was Adena.

Because of this I assume that many of the stone structures on High Tor were built by the Adena.

The discovery of the fellow with a pipe led William A. Ritche to develop his concept called the Middlesex Focus, Middlesex Phase, or Middlesex Complex after the town where the Adena man holding a pipe was found. Ritchie hypothesized that many of the sites found throughout Eastern America and southern Canada exhibiting Adena like mortuary practices did so because of the interactions between various Native American cultures during the Early Woodland Period (1,000 BC to 0 AD.) In other words because of trade, travel and communication between culture there was an intermingling of practices, customs and artifacts.

William Augustus Ritchie (1903- 1995) was working at the Rochester Museum at the time.He served as NYS Archaeologist from 1949 to 1972. Ritchie did over a hundred excavations and was known as a "dirt archaeologist", preferring to view evidence first hand

and to see its relationship to features in the land. He coined the term “archaic” to describe the early development of cultures in the northeast that is widely recognized today. He has received numerous awards for his work and was loved by many for exposing many of the mysteries hidden in New York and Eastern America.

High Tor is steeped in history; for both Native Americans and New Yorkers.

The Stone Strutures and Stones are at Risk and Need to be protected.

You can never be too safe and additional measures need to be put in place to protect the stones and stone structures at High Tor.

Amateur archaelogist and NEARA (New England Antiquities Research Association) member was able to get NYS archaeologist to acknowledge that the stone mounds in the area Peter Shell and catalogued in the summer of 2017 were not the result of field clearing by farmers.

"The 17 stone piles on South Hill were viewed by an archeologist from the New York State Department of Archeology in Albany, who stated that the piles of stones had not been made as a part of a field clearance project, but the stones had been stacked up to form small platforms.”(7)

In that same article Robinson notes how the town of Middlesex’s Highway Dept took down an old fort on Bare HIll and used the stone for road work,

"The Old Fort cannot be seen today. Not only was the material that made up the fort dug up with a steam shovel in the early 1920s to provide road fill, but the Town of Middlesex highway crew dug down three feet deep around the spring at the site of the fort for still more road fill. All that is left of the site of the fort is a three-foot-deep hole in the ground about 45 feet wide and 75 feet long. It is assumed that the ground around the spring was softer than that farther away, and it was worth the effort to obtain road fill there.”(8)

This action by the Highway Dept of Middlesex to destroy a stone fort for road fill is a clarion call on why extra protections need to be put in place for the many the stone mounds and many sacred stones within High Tor. We cannot and must not risk such a tragedgy occurring again.

The unfortunate thing is there is a lack of knowledge about the stone mounds and sacred stones within the Canandaigua Highlands Managment Plan.

The Daily Messenger Reported 'Concerns voiced concerns a few years back about logging at Italy Hill,.

"Logging is ramping up in thousands of acres of forest in the state High Tor Wildlife Management Area, and that has a number of citizens and a watershed organization speaking out.
Concerns range from runoff polluting the lake to the use of pesticides, and the disturbance of what some believe are historic and culturally significant rock formations.” (9)

The loggers agreed to avoid areas with stone mounds. But was that enough?

No.

The pictures below were taken at Italy Hill in November of 2017. Notice that logging had occurred next to two platform stones and a Manitou Stone. You can see the tree stump of a sawed off tree and wood shavings covering the stones. I did not do an extensive study. To think that I could find this quickly speaks volume about logging at Italy Hill.

Italy Hill

While the loggers may now be avoiding logging near stone mounds at Italy Hill they have not been avoiding logging near Manitou Stone, Platform Stones and other sacred stones Almost a year after the article on Italy Hill appeared in the Daily Messenger I went to look for myself. The pictures above are of some of the damage done to single sacred stones.

Jason Jarrell and Sarah Farmer(https://www.ancient-origins.net/users/jason-and-sarah) are investigative historians and avocational archaeologists. I contacted Jason earlier this year about where to see some of the stone mounds in his home state of West Virginia. I was shocked what I learned from him. Jason said that Clearcut Moutain Top Coal Mining in recent years had destroyed many of the stone mounds that were once located on mountain tops in West Virginia.

What happed at Bare Hill and on the mountaintops in West Virigina and what is going on right now at Italy Hill shows the risks that the stone mounds and sacred stones at High Tor may be in for. I don't think that decades ago that the people in West Virginia ever imagined that coal mining companies would cut the top off of mountains to excavate coal. Similarly we cannot imagine what the future may hold for the stones and stone mounds at High Tor. Yes, High Tor is a protected Wildlife Management Area but what of the stones and stone mounds?

Put in Trail System for People to See and Experience the Stone Mounds

A trail system through the woods connecting the various areas with high concentrations of stone structures is needed. Such a trail system would give people a chance to see and experience the stone mounds and the charged feeling at certain locations at High Tor. It could also be of major aid to the stone mounds if people act in a sacred manner when visiting.

A trail system would;

- Give access for people to experience the stone structures first hand.
- Should these visitors, show honor

Stone Wall Jackson State Park has benefitted from its stone mounds and cairns trail Serpent Mound in Chillicothe, Ohio home of the world's largest effigy mound in the world and center of the Adena Culture has over 50,000 visitors a year. There is significant potential for tourism and putting in a trail system at High Tor.

Conclusion

Additional protections need to put in place for the stone structures and single sacred stones at High Tor. We do not totally know what the future holds and we cannot afford to risk what future generations might do. They must be protected.

Activities such as logging, mining, drilling and the like must be forbidden at High Tor. The damage that logging has done to the sacred stones at Italy Hill show us how risky logging and other similar activities are. We have no comprehension of the magnitude, scope and size of the stone structures and sacred stones at High Tor and at Italy Hill. Allowing logging/drilling/mining and other such activities is not prudent and is dangerous to the stone structures and sacred stones at High Tor. We cannot be like the Town of Middlesex's Highway Dept who destroyed an old Native American Fort for their stones—lost for eternity. We are operating blind when it comes to the treasure trove of stone structures and sacred stones at High Tor. Would you drive a car if you could not see?

The stone structures and sacred stones at High Tor need to be treated with reverence and respect. A trail system should be put in place for people to experience first hand their wonder.

I understand that you might not comprehend what I am talking about. But I do think you know that there is something special about High Tor and its many stone structures. Why put them at risk?

Already sacred stones at Italy Hill are being exploited and destroyed. My hope is that you take my advice to heart so that future generations do not look back as we do today at a fort destroyed at Bare Hill, or at barren mountaintops in West Virginia and ask how did they let this happen?

Thank you for your time and consideration.

Sincerely, Madis Senner Syracuse, NY

Photos by Madis Senner and Peter Shell

Footnotes

1. James W. Mavor, Jr. & Byron E. Dix, Manitou, The Sacred Landscape of New England's Native Civilization, Inner Traditions, Rochester, Vermont, 1989 Page 90
2. Sig Lonegren, Calendar I and II, Mid-Atlantic Geomancy
3. Madis Senner, Sacred Sites in North Star Country: Places in Greater New York State (PA,OH,NJ,CT,MA,VT,ONT) That Changed the World (pages 292-293)

4. Carl Jung, ‘Mind and Earth’, Collected Works Volume 10
5. Ibid.
6. Ibid.
7. David D. Robinson ‘Who Built the "Old Fort" on Bare Hill and other Pre-Seneca Structures in Yates County, N. Y.? ’, Crooked Lake Review, Spring 1997 http://www.crookedlakereview.com/articles/101_135/103spring1997/103robinson.html
8. Ibid.
9. Julie Sherwood, ‘Concerns Run Deep Over High Tor Plan, Nov. 14, 2016 http://www.mpnnow.com/news/20161114/concerns-run-deep-over-high-tor-plan
    1. John Burke and Kaj Halberg in their book Seed of Knowledge, Stone of Plenty (2005 Council Oak Books)

Draft Public Meeting Responses

Written and verbal comments on the draft plan were received during the _____ public meeting held at the _____, NY. Electronic written comments were included until a timestamp of midnight _____, or with a US Post Office date stamp of _____, or earlier.

Comments Received on the Draft Canandaigua Highlands Unit Management Plan:

(Blank spaces will be filled in after the meeting.)

Appendix B: Animals of the Canandaigua Highlands Unit Management Plan Area

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

Birds

Species in Table 1B are based upon multiple sources, including the 2000-2005 NYS Breeding Bird Atlas (BBA), eBird, and DEC staff surveys. The Breeding Status column is summarized from the BBA, and in some cases, has been updated based upon DEC staff observation. Nine BBA blocks overlap with the Canandaigua Highlands Unit (2971B, 2972D, 3071A, 3072A, 3072B, 3072C, 3072D, 3172A, and 3172C). For information about the BBA or eBird, and to view data, visit the websites www.dec.ny.gov/animals/7312.html and www.ebird.org.

These species have been documented on or within the vicinity of the Unit during the breeding season and may occur in suitable habitat on the Unit. Of these species, there was confirmed breeding of 88 species, probable breeding of 19 species, and possible breeding of 23 species. Other species may also be present.

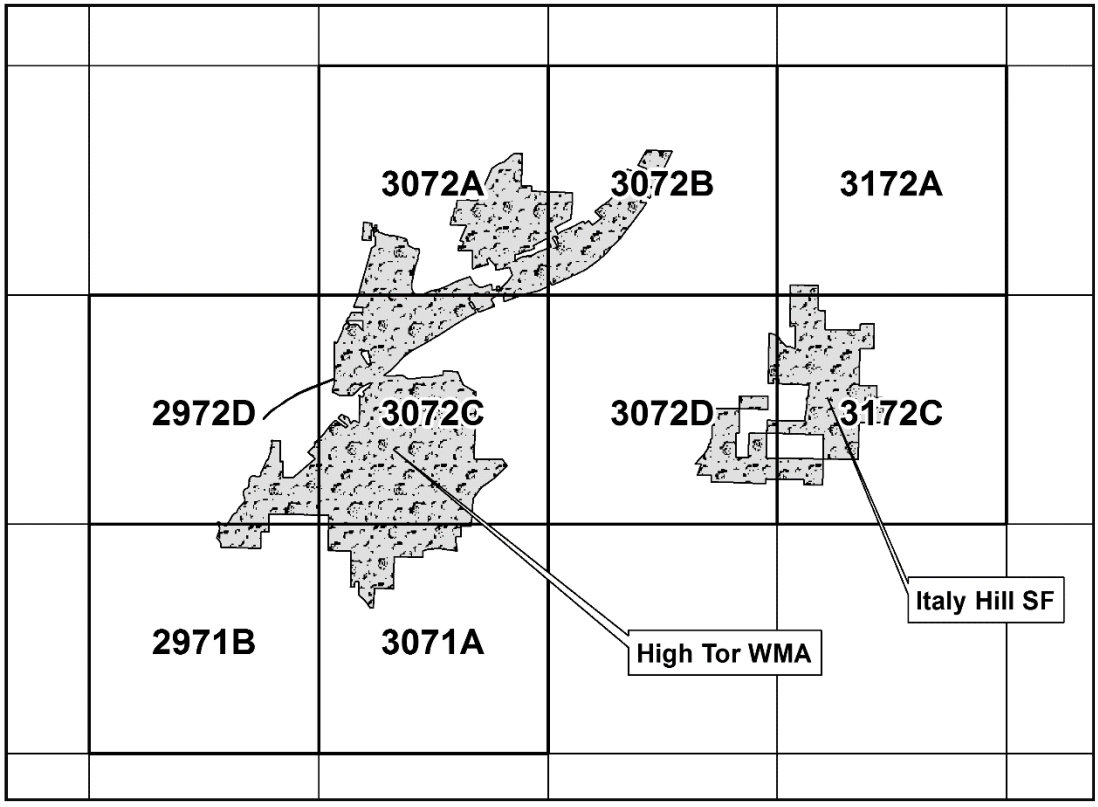


Table 1B: Birds

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

Common Name	Scientific Name	Breeding Status	NY Status	SGCN Status
Acadian Flycatcher	Empidonax virescens	Possible		
Alder Flycatcher	*Empidonax alnorum*	Probable		
American Crow	*Corvus brachyrhynchos*	Confirmed		
American Goldfinch	*Spinus tristis*	Confirmed		
American Kestrel	*Falco sparverius*	Confirmed		SGCN
American Redstart	*Setophaga ruticilla*	Confirmed		
American Robin	*Turdus migratorius*	Confirmed		
American Woodcock	*Scolopax minor*	Confirmed		SGCN
Bald Eagle	*Haliaeetus leucocephalus*	Confirmed	Threatened	SGCN
Baltimore Oriole	*Icterus galbula*	Confirmed		
Bank Swallow	*Riparia riparia*	Confirmed		
Barn Swallow	*Hirundo rustica*	Confirmed		
Barred Owl	*Strix varia*	Possible		
Belted Kingfisher	*Megaceryle alcyon*	Probable		
Black-and-white Warbler	*Mniotilta varia*	Possible		
Black-billed Cuckoo	*Coccyzus erythropthalmus*	Confirmed		SGCN
Blackburnian Warbler	*Setophaga fusca*	Probable		
Black-capped Chickadee	*Poecile atricapillus*	Confirmed		
Black-throated Blue Warbler	*Setophaga caerulescens*	Probable		SGCN
Black-throated Green Warbler	*Setophaga virens*	Probable		
Blue Jay	*Cyanocitta cristata*	Confirmed		
Blue-gray Gnatcatcher	*Polioptila caerulea*	Possible		
Blue-headed Vireo	*Vireo solitarius*	Probable		
Blue-winged Warbler	*Vermivora cyanoptera*	Confirmed		SGCN
Bobolink	*Dolichonyx oryzivorus*	Confirmed		High Priority SGCN
Broad-winged Hawk	*Buteo platypterus*	Possible		
Brown Creeper	*Certhia americana*	Confirmed		
Brown Thrasher	*Toxostoma rufum*	Confirmed		High Priority SGCN

Common Name	Scientific Name	Breeding Status	NY Status	SGCN Status
Brown-headed Cowbird	*Molothrus ater*	Confirmed		
Canada Goose	*Branta canadensis*	Confirmed		
Canada Warbler	*Cardellina canadensis*	Probable		High Priority SGCN
Carolina Wren	*Thryothorus ludovicianus*	Confirmed		
Cedar Waxwing	*Bombycilla cedrorum*	Confirmed		
Cerulean Warbler	*Setophaga cerulea*	Confirmed	Special Concern	SGCN
Chestnut-sided Warbler	*Setophaga pensylvanica*	Confirmed		
Chimney Swift	*Chaetura pelagica*	Confirmed		
Chipping Sparrow	*Spizella passerina*	Confirmed		
Cliff Swallow	*Petrochelidon pyrrhonota*	Confirmed		
Common Grackle	*Quiscalus quiscula*	Confirmed		
Common Merganser	*Mergus merganser*	Confirmed		
Common Raven	*Corvus corax*	Confirmed		
Common Yellowthroat	*Geothlypis trichas*	Confirmed		
Cooper's Hawk	*Accipiter cooperii*	Probable	Special Concern	
Dark-eyed Junco	*Junco hyemalis*	Confirmed		
Downy Woodpecker	*Picoides pubescens*	Confirmed		
Eastern Bluebird	*Sialia sialis*	Confirmed		
Eastern Kingbird	*Tyrannus tyrannus*	Confirmed		
Eastern Meadowlark	*Sturnella magna*	Confirmed		High Priority SGCN
Eastern Phoebe	*Sayornis phoebe*	Confirmed		
Eastern Towhee	*Pipilo erythrophthalmus*	Confirmed		
Eastern Wood-Pewee	*Contopus virens*	Confirmed		
European Starling	*Sturnus vulgaris*	Confirmed		
Field Sparrow	*Spizella pusilla*	Confirmed		
Golden-crowned Kinglet	*Regulus satrapa*	Possible		
Golden-winged Warbler	*Vermivora chrysoptera*	Possible	Special Concern	High Priority SGCN
Grasshopper Sparrow	*Ammodramus savannarum*	Possible	Special Concern	High Priority SGCN

Common Name	Scientific Name	Breeding Status	NY Status	SGCN Status
Gray Catbird	*Dumetella carolinensis*	Confirmed		
Great Blue Heron	*Ardea herodias*	Confirmed		
Great Crested Flycatcher	*Myiarchus crinitus*	Confirmed		
Great Horned Owl	*Bubo virginianus*	Probable		
Green Heron	*Butorides virescens*	Possible		
Green-winged teal	*Anas crecca*	Possible		
Hairy Woodpecker	*Picoides villosus*	Confirmed		
Hermit Thrush	*Catharus guttatus*	Probable		
Hooded Merganser	*Lophodytes cucullatus*	Probable		
Hooded Warbler	*Setophaga citrina*	Confirmed		
Horned Lark	*Eremophila alpestris*	Confirmed	Special Concern	High Priority SGCN
House Finch	*Carpodacus mexicanus*	Confirmed		
House Sparrow	*Passer domesticus*	Confirmed		
House Wren	*Troglodytes aedon*	Confirmed		
Indigo Bunting	*Passerina cyanea*	Confirmed		
Killdeer	*Charadrius vociferus*	Confirmed		
Least Bittern	*Ixobrynchus exilis*	Probable	Threatened	SGCN
Least Flycatcher	*Empidonax minimus*	Confirmed		
Louisiana Waterthrush	*Parkesia motacilla*	Probable		SGCN
Magnolia Warbler	*Setophaga magnolia*	Confirmed		
Mallard	*Anas platyrhynchos*	Confirmed		
Mourning Dove	*Zenaida macroura*	Confirmed		
Mourning Warbler	*Geothlypis philadelphia*	Possible		
Nashville Warbler	*Oreothlypis ruficapilla*	Confirmed		
Northern Cardinal	*Cardinalis cardinalis*	Confirmed		
Northern Flicker	*Colaptes auratus*	Confirmed		
Northern Goshawk	*Accipiter gentilis*	Confirmed	Special Concern	SGCN
Northern Harrier	*Circus hudsonius*	Possible	Threatened	SGCN
Northern Mockingbird	*Mimus polyglottos*	Confirmed		
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Possible		
Osprey	*Pandion haliaetus*	Possible	Special Concern	
Ovenbird	*Seiurus aurocapilla*	Confirmed		

Common Name	Scientific Name	Breeding Status	NY Status	SGCN Status
Pied-billed Grebe	*Podilymbus podiceps*	Possible	Threatened	SGCN
Pileated Woodpecker	*Dryocopus pileatus*	Probable		
Pine Siskin	*Spinus pinus*	Possible		
Pine Warbler	*Setophaga pinus*	Possible		
Prairie Warbler	*Setophaga discolor*	Probable		SGCN
Purple Finch	*Haemorphous purpureus*	Confirmed		
Red-bellied Woodpecker	*Melanerpes carolinus*	Confirmed		
Red-breasted Nuthatch	*Sitta canadensis*	Possible		
Red-eyed Vireo	*Vireo olivaceus*	Confirmed		
Red-headed Woodpecker	*Melanerpes erythrocephalus*	Possible	Special Concern	High Priority SGCN
Red-shouldered Hawk	*Buteo lineatus*	Confirmed	Special Concern	SGCN
Red-tailed Hawk	*Buteo jamaicensis*	Confirmed		
Red-winged Blackbird	*Agelaius phoeniceus*	Confirmed		
Ring-necked Pheasant	*Phasianus colchicus*	Possible		
Rock Pigeon	*Columba livia*	Confirmed		
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	Confirmed		
Ruby-throated Hummingbird	*Archilochus colubris*	Confirmed		
Ruffed Grouse	*Bonasa umbellus*	Confirmed		SGCN
Savannah Sparrow	*Passerculus sandwichensis*	Confirmed		
Scarlet Tanager	*Piranga olivacea*	Confirmed		SGCN
Sharp-shinned Hawk	*Accipiter striatus*	Possible	Special Concern	
Song Sparrow	*Melospiza melodia*	Confirmed		
Sora	*Porzana carolina*	Possible		
Spotted Sandpiper	*Actitis macularius*	Confirmed		
Swamp Sparrow	*Melospiza georgiana*	Confirmed		
Tree Swallow	*Tachycineta bicolor*	Confirmed		
Tufted Titmouse	*Baeolophus bicolor*	Confirmed		
Turkey Vulture	*Cathartes aura*	Probable		
Veery	*Catharus fuscescens*	Confirmed		
Warbling Vireo	*Vireo gilvus*	Probable		

Common Name	Scientific Name	Breeding Status	NY Status	SGCN Status
White-breasted Nuthatch	*Sitta carolinensis*	Confirmed		
White-throated Sparrow	*Zonotrichia albicollis*	Possible		
Wild Turkey	*Meleagris gallopavo*	Confirmed		
Willow Flycatcher	*Empidonax traillii*	Confirmed		
Winter Wren	*Troglodytes hiemalis*	Confirmed		
Wood Duck	*Aix sponsa*	Confirmed		
Wood Thrush	*Hylocichla mustelina*	Confirmed		SGCN
Yellow Warbler	*Setophaga petechia*	Confirmed		
Yellow-bellied Sapsucker	*Sphyrapicus varius*	Confirmed		
Yellow-billed Cuckoo	*Coccyzus americanus*	Probable		
Yellow-rumped Warbler	*Setophaga coronata*	Probable		
Yellow-throated Vireo	*Vireo flavifrons*	Confirmed		

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

Reptiles and Amphibians

Species in Table 2B are based on information presented in the 1990-2007 NYS Amphibian and Reptile Atlas Project (www.dec.ny.gov/animals/7140.html), 34 different species were found on or near the Canandaigua Highlands Unit.

It should be noted that because the Herp Atlas blocks do not follow the exact outline of the parcels in the Canandaigua Highlands Unit, some of the reptiles and amphibians identified during this effort will have been found adjacent to, but not within, the state land. Other species may also be present.

Map of Herp Atlas Project blocks

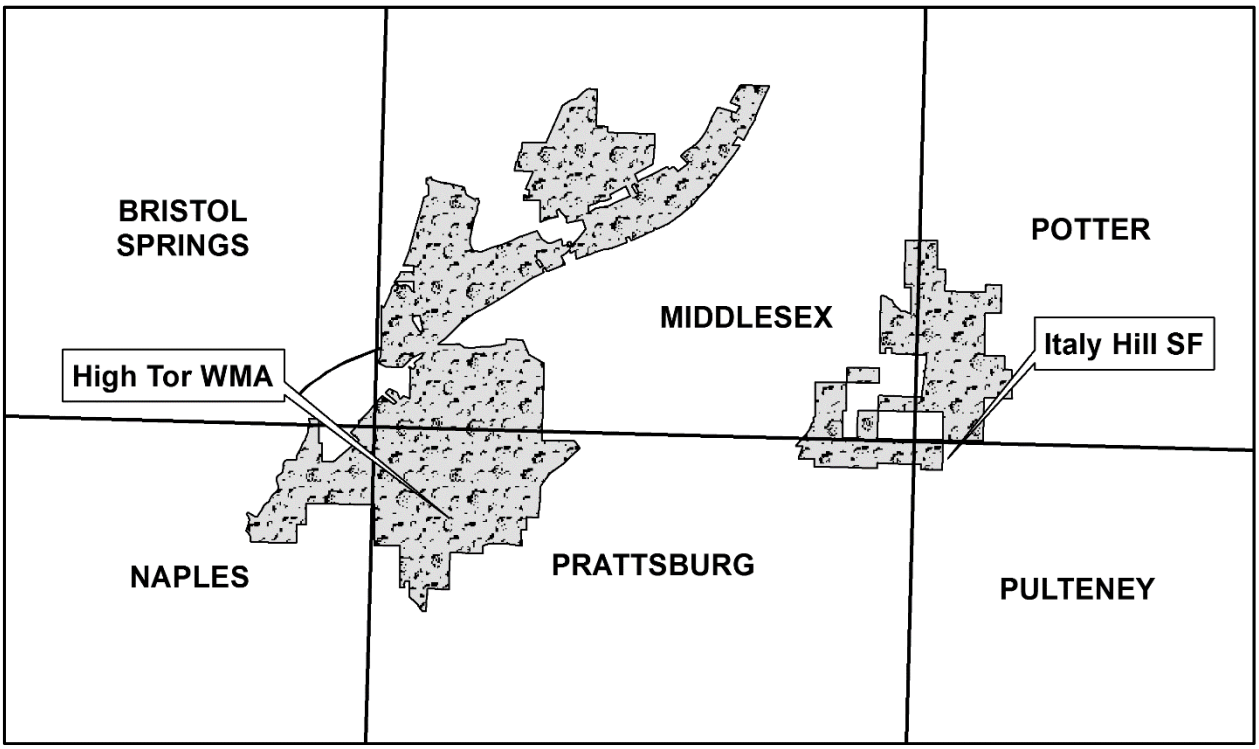


Table 2B: Reptiles and Amphibians

This list is summarized from the NYS Amphibian and Reptile Atlas, 1990-2007.

Common Name	Scientific Name	NY Status	SGCN Status
Allegheny dusky salamander	*Desmognathus ochrophaeus*		
Black ratsnake	*Patherophis alleghaniensis*		SGCN
Blue-spotted salamander	*Ambystoma laterale*	Special Concern	High Priority SGCN
Bullfrog	*Rana catesbiana*		
Common gartersnake	*Thamnophis sirtalis*		
Eastern American toad	*Bufo americanus*		

Common Name	Scientific Name	NY Status	SGCN Status
Eastern milksnake	*Lampropeltis triagulum*		
Eastern ribbonsnake	*Thamnophis sauritus*		SGCN
Gray treefrog	*Hyla versicolor*		
Green frog	*Rana clamitans*		
Jefferson salamander	*Ambystoma jeffersonianum*	Special Concern	
Northern black racer	*Coluber constrictor*		SGCN
Northern brownsnake	*Storeria dekayi*		
Northern coal skink	*Eumeces anthracinus*		SGCN
Northern dusky salamander	*Desmognathus fuscus*		
Northern leopard frog	*Rana pipiens*		
Northern redback salamander	*Plethodon cinereus*		
Northern red-bellied snake	*Storeria occiptomaculata*		
Northern slimy salamander	*Plethodon glutinosus*		
Northern spring salamander	*Gyrinophilus porphyriticus*		
Northern two-lined salamander	*Eurycea bislineata*		
Northern watersnake	*Nerodia sipedon*		
Painted turtle	*Chrysemys picta*		
Pickerel frog	*Rana palustris*		
Red-spotted newt	*Notophthalmus viridescens*		
Ring-necked snake	*Diadophis punctatus*		
Smooth greensnake	*Opheodrys vernalis*		SGCN
Snapping turtle	*Chelydra serpentia*		SGCN
Spiny Softshell	*Apalone spinifera*		SGCN
Spotted salamander	*Ambystoma maculatum*		
Spring peeper	*Pseudacris crucifer*		
Timber rattlesnake*	*Crotalus horridus*	Threatened	High Priority SGCN
Wehrle's salamander	*Plethodon wehrlei*		
Western chorus frog	*Pseudacris triseriata*		SGCN
Wood frog	*Rana sylvatica*		

* This record is a historic den located in the Town of Naples/Bristol Springs area that is considered extirpated.

Invertebrates

Species in Table 3B are based on information obtained from the Departments freshwater mollusk surveys conducted in 2008, and the New York Dragonfly and Damselfly Survey (2005-2009).

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 and near the Unit.

Table 3B: Invertebrates

Common Name	Scientific Name	NY Status	SGCN Status	Type
Luna moth	*Actias luna*			Butterflies and Moths
Lilypad clubtail	*Arigomphus furcifer*			Dragonflies and Damselfies
Ebony jewelwing	*Calopteryx maculata*			Dragonflies and Damselfies
Skimming bluet	*Enallagma geminatum*			Dragonflies and Damselfies
Hagen's bluet	*Enallagma hageni*			Dragonflies and Damselfies
Orange bluet	*Enallagma signatum*			Dragonflies and Damselfies
Common baskettail	*Epitheca cynosura*			Dragonflies and Damselfies
Eastern pondhawk	*Erythemis simplicicollis*			Dragonflies and Damselfies
Harlequin darner	*Gomphaeschna furcillata*			Dragonflies and Damselfies
Fragile forktail	*Ischnura posita*			Dragonflies and Damselfies
Eastern forktail	*Ischnura verticalis*			Dragonflies and Damselfies
Widow skimmer	*Libellula luctuosa*			Dragonflies and Damselfies
Twelve-spotted skimmer	*Libellula pulchella*			Dragonflies and Damselfies
Blue dasher	*Pachydiplax longipennis*			Dragonflies and Damselfies
Giant floater	*Pyganodon grandis*			Freshwater Mussels

Fish

Recent surveys include electrofishing on many small streams within the unit and gill netting on Canandaigua Lake. The following is a list of fish species within this unit management plan area. It should be noted that this list may exclude some species that are present and omit species that are rare.

Table 4B: Fish Species:

Common Name	Scientific Name	NY Status	SGCN Status
Alewife	*Alosa pseudoharengus*		
Banded Killifish	*Fundulus diaphanus*		
Black Crappie	*Pomoxis nigromaculatus*		
Bluegill	*Lepomis macrochirus*		
Bluntnose Minnow	*Pimephales notatus*		
Brook Stickleback	*Culaea inconstans*		
Brook Trout	*Salvelinus fontinalis*		SGCN
Brown Trout	*Salmo trutta*		
Brown Bullhead	*Ameiurus nebulosus*		
Central Mudminnow	*Umbra limi*		
Central Stoneroller	*Campostoma anomalum*		
Chain pickerel	*Esox niger*		
Common Carp	*Cyprinus carpio*		
Common Shiner	*Notropis cornutus*		
Creek Chub	*Semotilus atromaculatus*		
Cutlips Minnow	*Exoglossum maxillingua*		
Eastern Blacknose Dace	*Rhinichthys atratulus*		
Eastern Silvery Minnow	*Hybognathus regis*		
Emerald Shiner	*Notropis atherinoides*		
Fallfish	*Semotilus corporalis*		
Fantail Darter	*Etheostoma fabellare*		
Fathead Minnow	*Pimephales promelas*		
Greenside Darter	*Etheostoma blennioides*		
Green Sunfish	*Lepomis cyanellus*		
Golden Shiner	*Notemigonus cysoleucas*		
Hornyhead Chub	*Nocomis biguttatus*		
Lake Trout	*Salvelinus namaycush*		
Largemouth Bass	*Micropterus salmoides*		
Logperch	*Percina caprodes*		
Longnose Dace	*Rhinichthys cataractae*		

Mottled Sculpin	*Cottus bairdii*		
Northern Hogsucker	*Hypentelium nigricans*		
Northern Pike	*Esox lucius*		
Pumpkinseed	*Lepomis gibbosus*		
Rainbow Smelt	*Osmerus mordax*		
Rainbow Trout	*Oncorhyncus mykiss*		
Rock Bass	*Ambloplites rupestris*		
Rudd	*Scardinius erythropthalmus*		
Satinfin shiner	*Cyprinella analostana*		
Slimy Sculpin	*Cottus cognatus*		
Smallmouth Bass	*Micropterus dolomieui*		
Spotfin shiner	*Cyprinella spiloptera*		
Spottail Shiner	*Notropis hudsonius*		
Stonecat	*Noturus flavus*		
Tadpole Madtom	*Noturus gyrinus*		
Tessellated Darter	*Etheostoma olmstedi*		
White Sucker	*Catostomus commersoni*		
Yellow Perch	*Perca flavescens*		

Endangered, Threatened, or Special Concern and/or Species of Greatest Conservation Need (SGCN)

This is a summary of the species that may occur on the Unit that are listed as endangered(E), threatened(T), or species of special concern(SC) under New York State regulation, as well as those species designated as SGCN in the New York State Wildlife Action Plan. Sources for species listed in this table include the NYS Natural Heritage Program (HP), NYS Breeding Bird Atlas, eBird, NYS Amphibian and Reptile Atlas Project, and Department staff survey and observations.

Table 5B: Summary by Type

Species Group	Species	Federal Status	NY Status	NY SGCN Status
Birds	American kestrel			x
	American woodcock			x
	Bald eagle		T	x
	Black-billed cuckoo			x
	Black-throated blue warbler			x
	Blue-winged warbler			x
	Bobolink			HP
	Brown thrasher			HP

Species Group	Species	Federal Status	NY Status	NY SGCN Status
	Cerulean warbler		SC	x
	Cooper's hawk		SC	
	Eastern meadowlark			HP
	Golden-winged warbler		SC	HP
	Grasshopper sparrow		SC	HP
	Horned lark		SC	HP
	Least bittern		T	x
	Louisiana waterthrush			x
	Northern goshawk		SC	x
	Northern harrier		T	x
	Osprey		SC	
	Pied-billed grebe		T	x
	Prairie warbler			x
	Red-headed woodpecker		SC	HP
	Red-shouldered hawk		SC	x
	Ruffed grouse			x
	Scarlet tanager			x
	Sharp-shinned hawk		SC	
	Wood thrush			x
Mammals	Eastern red bat			x
	Hoary bat			x
	Little brown bat			HP
	Northern long-eared bat	T	T	HP
Amphibians and Reptiles	Black ratsnake			x
	Blue-spotted salamander		SC	HP
	Eastern ribbonsnake			x
	Jefferson salamander		SC	
	Northern black racer			x
	Northern coal skink			x
	Smooth greensnake			x
	Snapping turtle			x
	Spiny Softshell			x
	Timber rattlesnake*		T	HP
	Western chorus frog			x
Fish	Brook trout			x
Invertebrates	None known to occur			

* This record is a historic den located in the Town of Naples/Bristol Springs area that is considered extirpated.

Appendix C: Taxes paid on Department Lands

Additional information is included in the Taxes section (pg.17) and History of the 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 visit www.state.ny.us, click on 'state laws' in the bottom right corner of the web page, 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 17 for further information.

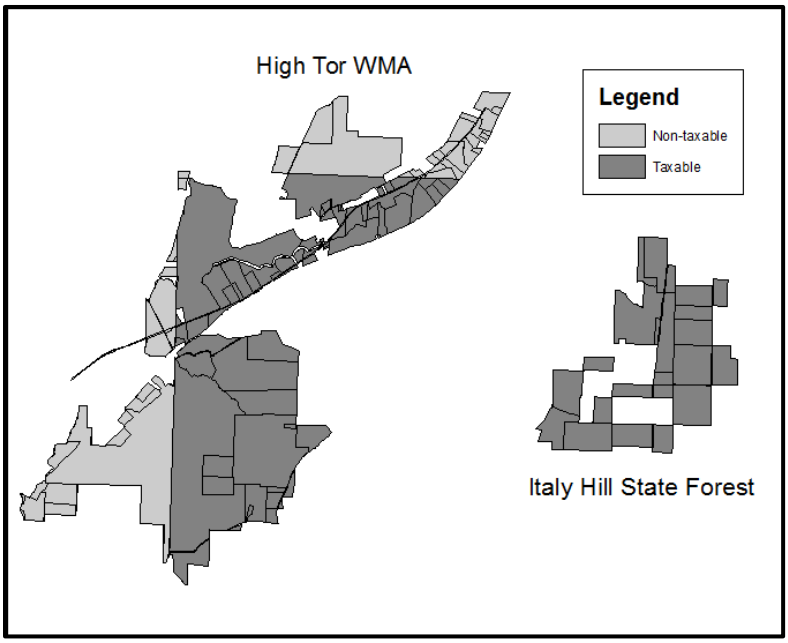


Table 1C: Italy Hill SF Taxes

All proposals appear to be taxable. No Bond Act proposals.

Type of Tax	2017 Est. Amount Paid	Totals
Town of Italy	$8,274	$9,854
Town of Jerusalem	$1,580	
Gorham School District	$2,080	$26,281
Naples School District	$3,927	
Prattsburgh School District	$17,100	
Penn Yan School District	$3,174	
	Grand Total	**$36,135**

Table 2C: High Tor WMA Taxes

Type of Tax	2017 Est. Amount Paid	Totals
Town of Italy	$32,445.49	$32,445.49
Naples School District	$67,529.26	$70,025.86
Gorham-Middlesex School District	$2,496.60	
	Grand Total	**$102,471.35**

Appendix D: Facilities

Table 1D: Facilities

	High Tor WMA	Italy Hill SF	Unit Total
Public Forest Access Rd	1.0 miles	0	1.0 miles
Haul Road	16.1 miles	0.6 miles	16.7 miles
Access Trails/Rds.	10.8 miles	0.9 mile	11.7 miles
Right-of-Way	0.3 miles	3.9 miles	4.2 miles
Gates	15	2	17
Parking areas	30	4	34
Facility ID Signs	8	0	8
Bristol Hills Branch of the Finger Lakes Trail Hiking Trail	5.5 miles	4.5 miles	10 miles
MAPPWD Routes (pg. 32 & 111)	7.4 miles	0	7.4 miles
Boundary Line	41.6 miles	17.4 miles	59.0 miles
Constructed Pond	37	0	37
Water Control Structure	3	0	3
Other	-1 fishing platform & picnic area (2 tables) -Naples Maintenance Shop -clearing for helicopter landing pad	-1 deer exclosure	
Bridge	7	0	7
Boat Launch	2	0	2
Buildings sites (not including the Naples Maint. Shop)	3	0	3
Lean-To	2	0	2
Kiosk	5	0	5

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	Class	Name
High Tor WMA	ONT-66-12-52-P286-18	C	West River
	ONT-66-12-52-P286-18-1	C	Unnamed
	ONT-66-12-52-P286-18-1A	C	Unnamed
	ONT-66-12-52-P286-18-1B	C	Unnamed
	ONT-66-12-52-P286-18-2	C(TS)	Naples Creek
	ONT-66-12-52-P286-18-2-1	C	Unnamed
	ONT-66-12-52-P286-18-2-1A	C	Unnamed
	ONT-66-12-52-P286-18-2-2	C	Unnamed
	ONT-66-12-52-P286-18-2-2A	C	Unnamed
	ONT-66-12-52-P286-18-2-3	C(TS)	Unnamed
	ONT-66-12-52-P286-18-2-3-1	C(TS)	Unnamed
	ONT-66-12-52-P286-18-2-3-1-1	C	Unnamed
	ONT-66-12-52-P286-18-2-3-1-2	C	Unnamed
	ONT-66-12-52-P286-18-2-3-1-2-1	C	Unnamed
	ONT-66-12-52-P286-18-2-3-1-3	C	Unnamed
	ONT-66-12-52-P286-18-2-3-1A	C(TS)	Unnamed
	ONT-66-12-52-P286-18-2-9	C(TS)	Tannery Creek
	ONT-66-12-52-P286-18-2-9-2	C	Unnamed

Name	WIN	Class	Name
High Tor WMA	ONT-66-12-52-P286-18-2-9-2A	C	Unnamed
	ONT-66-12-52-P286-18-2-9-3	C(T)	Unnamed
	ONT-66-12-52-P286-18-4	C	Unnamed
	ONT-66-12-52-P286-18-5	C	Unnamed
	ONT-66-12-52-P286-18-6	C	Unnamed
	ONT-66-12-52-P286-18-6A	C	Unnamed
	ONT-66-12-52-P286-18-6B	C	Unnamed
	ONT-66-12-52-P286-18-6C	C	Unnamed
	ONT-66-12-52-P286-18-7	C	Unnamed
	ONT-66-12-52-P286-18-8	C	Unnamed
	ONT-66-12-52-P286-18-8A	C	Unnamed
	ONT-66-12-52-P286-18-8B	C	Unnamed
	ONT-66-12-52-P286-18-8C	C	Unnamed
	ONT-66-12-52-P286-18-9	C	Unnamed
	ONT-66-12-52-P286-18-9A	C	Unnamed
	ONT-66-12-52-P286-18-19	C	Unnamed
Italy Hill SF	ONT-66-12-52-40-34A	C	Unnamed
	ONT-66-12-52-40-32	C	Unnamed
	ONT-66-12-52-40-32-1	C	Unnamed
	ONT-66-12-52-40-32-2	C	Unnamed

Table 2E: National Wetlands Inventory by Department 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
High Tor WMA	Lake	L1UBH	3.6
	Freshwater Emergent Wetland	PEM1/FO1C	3.2
		PEM1/SS1C	5.2
		PEM1/SS1E	31.5
		PEM1/SS1Eh	1.2
		PEM1C	41.6
		PEM1E	563.5
		PEM1Eb	2.5
		PEM1Eh	0.1
		PEM1F	21.8
		PEM1Fb	1.4
	Freshwater Forested/Shrub Wetland	PFO1/EM1E	4.2
		PFO1/SS1E	342.8
		PFO1A	1.4
		PFO1C	87.4
		PFO1E	223.0
		PFO1Eb	75.4
		PFO1Eh	1.7
		PFO1F	2.9
		PFO4/1E	1.3
		PFO4E	0.3
		PFO5Fh	4.8
		PSS1/EM1A	22.2
		PSS1/EM1E	6.3
		PSS1/FO1E	19.5
		PSS1E	7.5
	Freshwater Pond	PUB/EM1Fx	2.4
		PUBF	0.1
		PUBFb	0.7
		PUBFh	0.8
		PUBFx	0.6
		PUBH	0.0
		PUBHh	16.1
		PUBHx	7.3

High Tor WMA	Riverine	R2UBH	61.0
		R2UBHx	12.0
		R3UBH	1.9
		R4SBC	19.8
		R5UBH	10.4
Italy Hill SF	Riverine	R4SBC	3.9
		R5UBH	0.4
	Freshwater Forested/Shrub Wetland	PFO1E	26.7
	Freshwater Emergent Wetland	PEM1E	0.3

Appendix F: Vegetation Management

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 is 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 Department owned land.

The following tables 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 not valuable enough to sell. As a result, the work must be done by trained staff, trained volunteers, or through a procurement contract paid for by the Department. 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.

See also maps on Appendix M: Maps, page 202 and Timber and Vegetation and Timber and Vegetation Management starting on pages 39 and 81. The Habitat Management Plans for High Tor WMA has additional details on habitat management for that property.

Key to Tables in Appendix F

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). Later cuts will be timed based on the growth response of the vegetation. **S1** – first cut of a shelterwood **S2** – second cut of a shelterwood 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 86.
No Access	Inadequate access to treat, if access improves treatment may (or may not) be scheduled.
No Action	This area will not be actively managed to retain as grassland/brushy habitat, allow to revert to forest.
Agriculture	This area will be used to grow crops on the WMA under a VSA in exchange for services and are an important tool to manage and restore quality grasslands.
Mow	By mowing on a minimum of a 3-year rotation of grass or a 5-15yr rotation of hydro-axing or brush-hogging of brush.
Burn	By burning on a minimum of a 3-year rotation.
Mow or burn	By mowing or burning on a minimum of a 3-year rotation or a 5-15yr rotation of hydro-axing or brush-hogging.
Woods Burn	Area adjacent to grass burns and included in the burn

Tables 1F: High Tor WMA - Stand Management

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
A	1	9	Hardwood	PT		
A	2	7	Hardwood	ST		
A	4	9	Hardwood	PT		
A	5	45	Hardwood	ST		
A	6	24	Hardwood	ST		
A	8	5	Hardwood	PT		
A	9	14	Plantation	PT		
A	10	3	Hardwood	ST		
A	11	3	Hardwood	ST		
A	12	2	Hardwood	ST		
A	13	32	Hardwood	ST		
A	15	11	Hardwood	ST		
A	16	176	Hardwood	ST		
A	17	106	Hardwood	ST		
A	18	15	Conifer Natural	ST	Protection	
A	19.1	48	Hardwood	ST	Regen	
A	19.2	25	Hardwood	SS		
A	712	2				
A	713	4				
A	722	5				
A	910	8				
A	920	1				
A	950	1			Mow or Burn	
B	1	18	Hardwood	PT		
B	2	6	Hardwood	ST		
B	3	10	Hardwood	ST		
B	4	13	Hardwood	PT		
B	710	19				
B	711	3				
B	712	1				
B	713	18				
B	760	7				
B	910	80				
B	920	476				
B	921	16				
B	923	15				
B	924	493				
B	940	3			Mow or Burn	
B	941	3			Mow or Burn	
B	942	5			Mow or Burn	
B	943	172			Mow or Burn	

Com-partment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
B	950	9			Mow or Burn	
B	951	10			Mow or Burn	
C	1	156	Hardwood	PT	Protection	
C	2	36	Hardwood	ST		
C	3	21	Hardwood	ST		
C	4	42	Hardwood	PT		
C	5	26	Hardwood	ST	Protection	
C	6	20	Plantation	PT		Regen
C	7	43	Hardwood	PT		
C	8	19	Hardwood	ST		Regen
C	9	13	Hardwood	PT		
C	10	53	Conifer Natural	ST	Protection	
C	11	20	Hardwood	ST		
C	12	14	Hardwood	ST		
C	13	2	Hardwood	ST		
C	14	4	Hardwood	PT		
C	16	5	Conifer Natural	ST		
C	17	12	Hardwood	ST		
C	18	6	Hardwood	ST		
C	19	27	Hardwood	SS		
C	22	19	Hardwood	PT		
C	24	17	Hardwood	SS		
C	25	114	Hardwood	PT		
C	27	21	Hardwood	PT		
C	29	3	Plantation	PT		
C	30	41	Hardwood	SS		
C	31	7	Conifer Natural	PT		
C	711	2				
C	910	1				
C	912	1				
C	941	6			Agriculture & Mow or Burn	
C	950	9			Mow or Burn	
C	951	92			Mow or Burn	
C	952	2			Mow or Burn	
D	2	27	Hardwood	ST		
D	9	4	Hardwood	PT		
D	12	2	Hardwood	SS		
D	20	7	Hardwood	PT		Regen
D	32	12	Hardwood	PT		
D	36	6	Hardwood	SS		
D	39	1	Hardwood	SS		
D	40	2	Plantation	PT		
D	42	32	Hardwood	PT		

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
D	43	2	Hardwood	PT		
D	47	4	Hardwood	ST		
D	49	2	Hardwood	SS		
D	50	46	Hardwood	PT	Regen	
D	52	2	Hardwood	PT		
D	53	5	Hardwood	SS		
D	54	122	For. Wetlands	ST	Regen 50 Ac	
D	710	15			Thin	
D	711	1				
D	722	21				
D	910	36				
D	911	1				
D	912	1				
D	913	1				
D	914	1				
D	915	1				
D	916	1				
D	920	85				
D	921	235				
D	930	43				
D	940	35			Agriculture & Mow or Burn	
D	941	17			Mow or Burn	
D	942	20			Agriculture & Mow or Burn	
D	943	34			Mow or Burn	
D	944	13			Agriculture & Mow or Burn	
D	945	18			Agriculture & Mow or Burn	
D	946	47			Mow or Burn	
D	950	4			Mow or Burn	
D	951	18			Mow or Burn	
D	952	2			Mow or Burn	
D	954	4			Mow or Burn	
D	955	12			Mow or Burn	
D	956	4			Mow or Burn	
D	957	3			Mow or Burn	
D	958	1			Mow or Burn	
E	1	67	Hardwood	ST		
E	2	71	Hardwood	PT		
E	3	12	Plantation	ST		
E	4	15	Plantation	PT		
E	5	6	Plantation	PT		
E	6	24	Plantation	ST		
E	7	41	Hardwood	PT		
E	8	15	Hardwood	ST		

Com-partment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
E	9	137	Hardwood	ST		Regen
E	10	8	Hardwood	PT		
E	11	10	Plantation	PT		
E	12	36	Conifer Natural	ST	Protection	
E	13	10	Hardwood	PT		
E	14	3	Hardwood	SS		
E	15	27	Hardwood	ST		
E	16	51	Hardwood	ST		Regen
E	17	13	Plantation	PT		
E	18	1	Hardwood	SS		
E	19	8	Hardwood	SS		
E	20	40	Hardwood	ST		
E	21	3	Hardwood	SS		
E	22	25	Conifer Natural	ST		
E	23	26	Hardwood	ST		
E	24	38	Conifer Natural	ST		
E	25	28	Hardwood	ST	Regen	
E	26	29	Hardwood	PT		
E	27	18	Hardwood	ST		
E	28	63	Hardwood	ST	Regen	
E	29	5	Conifer Natural	ST		
E	30	5	Hardwood	SS		
E	31	11	Plantation	ST		
E	32	33	Hardwood	ST		
E	711	3				
E	712	2				
E	713	1				
E	910	8				
E	911	1				
E	912	1				
E	940	10			Mow or Burn	
E	941	3			Mow or Burn	
E	950	1			Mow or Burn	
E	951	1			Mow or Burn	
F	1	15	Hardwood	ST		
F	2	3	Hardwood	SS		
F	3	2	Plantation	ST		
F	4	11	Conifer Natural	PT		
F	5	3	Hardwood	ST		
F	6	10	Hardwood	ST		
F	7	3	Hardwood	SS		
F	8	4	Hardwood	SS		
F	9	4	Plantation	ST		

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
F	10	4	Hardwood	SS		
F	11	12	Hardwood	ST		
F	12	7	Plantation	ST		Regen
F	13	10	Hardwood	PT		
F	14	10	Plantation	ST		Regen
F	15	14	Hardwood	SS	Thin	
F	16	26	Hardwood	ST		
F	17	41	Hardwood	PT		
F	18	80	Hardwood	ST	Regen	
F	19	34	Hardwood	ST	Regen	
F	20	65	Hardwood	ST		
F	712	6				
F	910	1				
F	911	1				
F	912	1				
F	913	1				
F	914	1				
F	915	2				
F	940	1			Mow or Burn	
F	941	4			Mow or Burn	
F	942	1			Mow or Burn	
F	943	8			Mow or Burn	
F	950	4			Mow or Burn	
G	1	19	Hardwood	ST	Regen	
G	2	88	Hardwood	ST		
G	3	81	Hardwood	ST		
G	4	41	Hardwood	ST		
G	5	18	Conifer Natural	ST		
G	6	21	Hardwood	ST		
G	7	5	For. Wetlands	PT		
G	8	14	Conifer Natural	ST		
G	9	7	Hardwood	ST		
G	10	5	Plantation	ST		Regen
G	12	6	Hardwood	SS		
G	13	2	Plantation	ST		
G	14	37	Plantation	ST		Regen
G	15	2	Plantation	ST		
G	711	37				
G	910	1				
G	911	1				
G	912	1				
G	940	11			Mow or Burn	
G	941	2			Mow or Burn	

Com-partment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
G	950	2			No Action	
H	1	42	Hardwood	PT		
H	2	10	Plantation	ST		
H	3	42	Hardwood	ST		
H	4	23	Hardwood	PT		
H	5	23	Plantation	ST		
H	6	35	Hardwood	ST		
H	7	21	Conifer Natural	ST		
H	8	17	Hardwood	ST		
H	9	14	Hardwood	PT		
H	10	26	Plantation	ST		
H	11	20	Hardwood	ST		
H	12	4	Conifer Natural	PT		
H	13	7	Conifer Natural	ST		
H	14	6	Hardwood	ST		
H	15	7	Hardwood	PT		
H	16	6	Plantation	ST		
H	17	4	Hardwood	SS		
H	18	6	Hardwood	ST		
H	711	1				
H	910	1				
H	911	1				
H	912	5				
H	913	1				
H	940	19			Agriculture	
H	941	4			Mow or Burn	
H	942	1			Mow or Burn	
H	950	51	Hardwood	PT		
H	951	3			Mow or Burn	
I	1	29	Plantation	ST		Regen
I	2	6	Conifer Natural	ST		
I	3	3	Hardwood	ST		
I	5	3	Conifer Natural	ST		
I	6	4	Plantation	ST		
I	7	2	Plantation	ST		
I	8	15	Conifer Natural	ST		
I	711	4				
I	910	2				
I	911	2				
I	920	15				
I	921	2				
I	940	2			Mow or Burn	
I	950	2			Mow or Burn	

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
J	1	23	Hardwood	PT		
J	2	50	Hardwood	ST		
J	3	7	Hardwood	ST		
J	4	9	Hardwood	SS		
J	5	29	Hardwood	ST		
J	6	22	Plantation	PT		
J	7	11	Hardwood	SS		
J	8	53	Hardwood	PT		
J	9	20	Plantation	PT		
J	10	9	Plantation	PT		
J	11	12	Hardwood	ST		
J	12	29	Hardwood	SS		
J	13	10	Plantation	PT		
J	14	5	Conifer Natural	PT		
J	17	23	Hardwood	ST		
J	18	19	Hardwood	PT		
J	19	15	Hardwood	ST		
J	20	9	Conifer Natural	PT		
J	21	5	Hardwood	PT		
J	22	6	Plantation	PT		
J	23	14	Plantation	ST		
J	24	7	Plantation	ST		
J	27	7	Plantation	ST		
J	28	4	Plantation	PT		
J	29	2	Plantation	PT		
J	30	13	Plantation	ST		
J	33	2	Plantation	PT		
J	34	11	Hardwood	SS		
J	35	2	Hardwood	ST		
J	36	7	Plantation	PT		
J	39	4	Hardwood	PT		
J	40	10	Hardwood	PT		
J	41	1	Hardwood	SS		
J	50	9	Hardwood	ST		
J	51	3	Hardwood	ST		
J	52	21	Plantation	ST		
J	53	18	Hardwood	PT		
J	54	25	Hardwood	PT		
J	55	8	Hardwood	PT		
J	56	20	Plantation	ST		
J	60	16	Hardwood	ST		
J	70	179	Hardwood	ST	Protection	
J	71	105	Hardwood	ST		

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
J	72	5	Plantation	PT		
J	73	6	Hardwood	PT		
J	711	7				
J	910	1				
J	911	1				
J	912	1				
J	913	2				
J	914	1				
J	915	1				
J	916	1				
J	917	1				
J	940	2			Mow or Burn	
J	941	5			Mow or Burn	
J	942	6			Mow or Burn	
J	943	3			Mow or Burn	
J	950	15			Mow or Burn	
J	951	1			Mow or Burn	
J	952	3			Mow or Burn	
J	953	5			Mow or Burn	

Table 2F: High Tor WMA – Types and Stages

High Tor 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	245	1,089	2,246		3,580	52%
Natural Forest Conifer / Conifer Hardwood	0	36	261		297	4%
Plantation	0	170	298		468	7%
Wetland (Forest)	0	5	122		127	2%
Wetland (Open/Emergent and/or Shrub)				1,381	1,381	20%
Ponds				173	173	3%
Open/Brush				663	663	10%
Other (Road, ROW, Parking, etc.)				159	159	2%
Total (Acres)	245	1,300	2,927	2,376	6,848	
% of Total	3%	19%	43%	35%		100%

Tables 3F: Italy Hill SF - Stand Management

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
A	1	33	Hardwood	ST		
A	2	19	Hardwood	PT		
A	3	8	Hardwood	ST		
A	5	18	Hardwood	SS		
A	6	42	Natural Conifer	ST		
A	7	15	Hardwood	ST		
A	8	17	Natural Conifer	ST	Protection	
A	9	10	Hardwood	ST		
A	10	7	Hardwood	SS		
A	11	93	Hardwood	PT		
A	12	49	Natural Conifer	ST	Protection	
A	13	8	Hardwood	PT		
A	14	7	Hardwood	PT		
A	15	20	Hardwood	PT		
A	16	29	Hardwood	PT		
A	17	2	Hardwood	PT		
A	18	3	Hardwood	PT		
A	740	1	Other			
B	1	23	Hardwood	PT		
B	2	8	Hardwood	ST		
B	3	18	Natural Conifer	PT		
B	4	10	Plantation	PT		
B	5	21	Natural Conifer	PT		
B	6	9	Plantation	PT		
B	7	34	Hardwood	ST		Thin
B	8	8	Hardwood	PT		
B	9	62	Natural Conifer	PT		
B	10	25	Hardwood	ST		Thin
B	11	20	Hardwood	PT		
B	12	11	Hardwood	PT		
B	13	7	Plantation	PT		
B	14	77	Hardwood	ST		Regen
B	15	83	Hardwood	PT		
B	16	22	Natural Conifer	PT		
B	17	5	Hardwood	ST		
B	18	124	Hardwood	PT		
B	19	25	Hardwood	PT		
B	711	11	Other			
B	740	2	Other			
B	810	2	Other			
B	920	1	Wetland			

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Management Action	
					Years 1-5	Years 6-10
B	921	3	Wetland			
B	950	12	Grassland/Brushland		Mow or Burn	
B	951	69	Grassland/Brushland		Mow or Burn	
C	1	34	Hardwood	PT		Thin
C	2	14	Hardwood	SS		
C	3	28	Hardwood	PT		
C	4	10	Hardwood	PT		
C	5	29	Hardwood	ST		
C	6	15	Hardwood	PT		
C	7	45	Natural Conifer	PT		
C	8	6	Hardwood	PT		
C	9	8	Hardwood	PT		
C	10	10	Hardwood	PT		
C	11	29	Hardwood	ST		Thin
C	12	18	Natural Conifer	PT		
C	13	27	Natural Conifer	ST	Protection	
C	14	209	Hardwood	PT		
C	15	2	Hardwood	PT		
C	16	31	Natural Conifer	PT	Mow or Burn	
C	711	2	Other			
C	712	1	Other			
C	930	14	Wetland			
C	950	62	Grassland/Brushland		Mow or Burn	
D	1	6	Hardwood	PT		
D	2	40	Hardwood	PT		
D	3	10	Hardwood	PT		
D	4	2	Plantation	PT		
D	5	44	Hardwood	PT		
D	6	64	Hardwood	PT		
D	7	26	Hardwood	PT		
D	950	46	Grassland/Brushland		Mow or Burn	

Tables 4F: Italy Hill SF – Types and Stages

Italy Hill 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	987	273		1,299	68%
Natural Forest Conifer / Conifer Hardwood		217	135		352	19%
Plantation		28			28	1%
Wetland (Forest)					0	0%

Italy Hill SF	Acres by Ave. Tree Diameter Size Class				Total (Acres)	% of Total
Vegetative Type	**0-5 in**	**6-11 in**	**12+ in**	**Other**		
Wetland (Open/Emergent and/or Shrub)				18	18	1%
Ponds					0	0%
Open/Brush				189	189	10%
Other (Road, ROW, Parking, etc.)				19	19	1%
Total (Acres)	39	1,232	408	226	1,905	
% of Total	2%	65%	21%	12%		100%

Table 5F: Summary of Timber and Vegetation Management for this Planning Period

See also maps on Appendix M: Maps, page 222 and Timber and Vegetation, and Timber and Vegetation Management, starting on pages 39 and 81.

Management Action		Total Number of Stands	Total Acres	Percent of Land Area
Even Aged Silviculture	Regen	19	766	8.8%
	Thin	6	151	1.7%
All Aged Silviculture	Stand Entry	0	0	0%
Grassland/Brushy Openings	Mow or Burn	57	867	9.9%
	Agriculture VSA		Up to 100	1.1%
	Create		about 30	0.3%

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's) - 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) - the Department is using 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 are 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)

Endemism - is the ecological state of a species being unique to a defined geographic location, such as an island, nation, country or other defined zone, or habitat type; organisms that are indigenous to a place are not endemic to it if they are also found elsewhere.

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 / Glacial - 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.

High-Priority Species of Greatest Conservation Need – The status of these species is known, and conservation action is needed in the next ten years. These species are experiencing a population decline or have identified threats that may put them in jeopardy, and are in need of timely management intervention, or they are likely to reach critical population levels in New York.

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, the Department 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.

Species of Greatest Conservation Need – The status of these species is known, and conservation action is needed. These species are experiencing some level of population decline, have identified threats that may put them in jeopardy, and need conservation actions to maintain stable population levels or sustain recovery.

Species of Potential Conservation Need – A species whose status is poorly known, but there is an identified threat to the species or features of its life history that make it particularly vulnerable to threats. The species may be declining or begin to experience decline within the next ten years, and studies are needed to determine their actual status.

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 mappable 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 road.

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 - A parcel of 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 the Department 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 the Department 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: Acronym & Initialism Glossary

Definitions are found in Appendix G: Glossary on page 175, 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

ARPA = Archaeological Resources Protection Act

ATV = All-Terrain Vehicle

BBA = Breeding Bird Atlas

BMP = Best Management Practice

BTO = Buck Take Objective

CCC = Civilian Conservation Corps

CTFs = Citizen Task Forces

DBH = Diameter at Breast Height

DMP = Deer Management Permits

EAB = Emerald Ash Borer

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

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 Management Plan

HWA = Hemlock Wooly Adelgid

L&F = (Division of) Lands and Forests

LCP = Least Cost Path

LEAF = Long Environmental Assessment Form

MAPPWD = Motorized Access Program for People with Disabilities

MBTA = Migratory Bird Treaty Act

MOU = Memorandum of Understanding

MYA = million years ago

NHP = (New York) Natural Heritage Program

NRCS - Natural Resource Conservation Service

NYCRR = New York Code 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

PFR = Public Fishing Rights

ROS = Recreation Opportunity Spectrum

ROW = Rights-Of-Way

SEQRA = State Environmental Quality Review Act

SF = State Forest

SFI® = Sustainable Forestry Initiative®

SGCN = Species of Greatest Conservation Need

SHPA = (New York) State Historic Preservation Act

SMZ = Special Management Zones

SNHP = State Nature and Historical Preserve

SWAP = State Wildlife Acton 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 Initiative

Appendix I: Procedures for Oil & Gas Procurement

Additional information can be found in the Mineral Resource (pg. 36) and Mineral Resource Management (Pg. 121) sections.

In the event a party has an interest in exploring and developing oil and gas reserves under lands administered by the Department, the NYS DEC 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 of the unit. These resources include certain management strategies, 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 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. The Department will consider all comments prior to making a decision on what areas, if any, will be leased.

If the Department decides to pursue leasing, the site-specific conditions for limiting impacts on natural resources will be drafted by the Division of Mineral Resources in coordination with the Division of Lands & Forests and/or Division of Fish and Wildlife and incorporated into contract documents. These conditions will include but not be limited to criteria for site selection, mitigation of impacts and land reclamation upon completion of drilling. A number of factors are considered: riparian areas, steep slopes, significant recreation areas, presence of rare, threatened or endangered species or unique ecological communities, are all areas which may be excluded from surface disturbance. Certain land management strategies, such as reserves, where timber harvesting is precluded, 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 minerals, a lease sale is conducted. The DEC Division of Mineral Resources is the oil and gas leasing agent for these state 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 Department 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 and Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program is used to guide the Department 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 Fish and Wildlife. These permits are administered by their respective programs and are designed to prevent and/or mitigate environmental impacts. Site inspections are conducted by the Division of Mineral Resources to ensure compliance with Article 23 of the Environmental Conservation Law and 6NYCRR Part 550 - 559. The Division of Lands and Forests or Fish and Wildlife will also inspect the site to ensure compliance with the TRP.

Appendix J: Known Official Road Abandonments

The following is scanned copies of official road abandonments that impact the properties of the Unit. These were pulled from Department files; additional ones may be available at other locations.

DONALD A. SCHNEIDER
ATTORNEY AT LAW
307 LIBERTY STREET
PENN YAN, NEW YORK 14527
TELEPHONE: 315/536-2100

DOUGLAS G. REYNOLDS

December 15, 1976

Mr. David O. Kingsland
8 Meetinghouse Road
Fairport, New York 14450

Re: Abandonment of a portion of the Little Church Road,
Town of Jerusalem, Yates County, New York

Dear Mr. Kingsland:

With reference to your letter of August 23, 1976 to Peter J. Bush of the New York State Department of Environmental Conservation, please be advised that the road in question, i.e., the Little Church Road, extending from Keech Road westerly to the west line of the Town of Jerusalem, has been officially abandoned by the Town of Jerusalem.

Very truly yours,

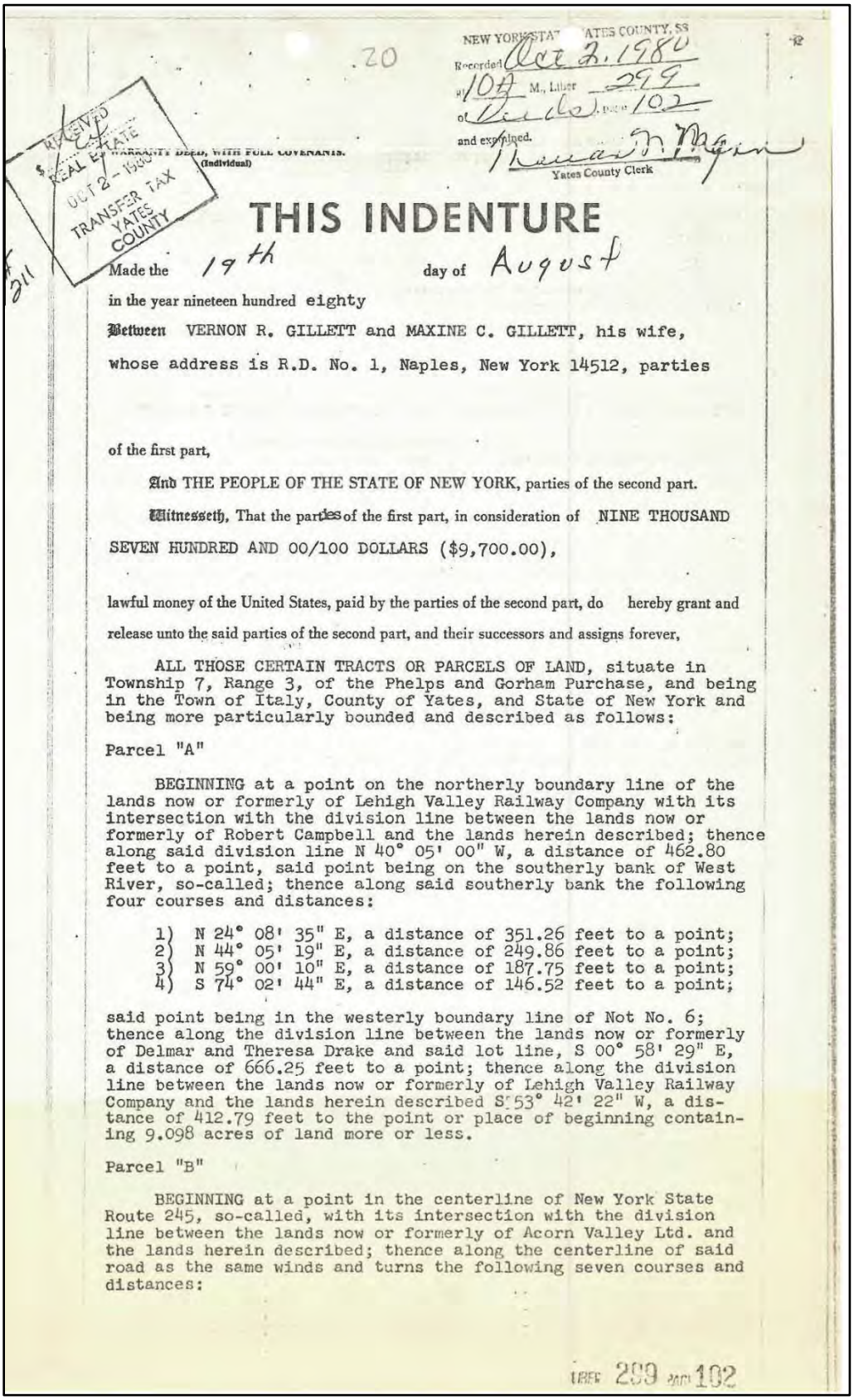
Douglas G. Reynolds

DOUGLAS G. REYNOLDS for
DONALD A. SCHNEIDER
Town of Jerusalem Attorney

DGR:amg
XC: Peter J. Bush, Esq.
C. L. Arnold

Appendix K: Easement Deeds and Maps

The following is scanned copies of the deeds and relavant maps of the easments adjacent to High Tor WMA. See also Concurrent Use & Occupancy, Deeded Exceptions, Easements, Rights of Way, and Other Rights Outstanding in Third Parties section on page 23.



NEW YORK STATE ATES COUNTY, SS
Recorded Oct 2, 1980
at 10A M., Liber 299
of Deeds, page 102
and examined.
Thomas D. Magee
Yates County Clerk

RECEIVED
REAL ESTATE
$ EX
OCT 2 - 1980
TRANSFER TAX
YATES
COUNTY

(Individual)

THIS INDENTURE

Made the 19th day of August

in the year nineteen hundred eighty

Between VERNON R. GILLETT and MAXINE C. GILLETT, his wife,

whose address is R.D. No. 1, Naples, New York 14512, parties

of the first part,

And THE PEOPLE OF THE STATE OF NEW YORK, parties of the second part.

Witnesseth, That the parties of the first part, in consideration of NINE THOUSAND SEVEN HUNDRED AND 00/100 DOLLARS ($9,700.00),

lawful money of the United States, paid by the parties of the second part, do hereby grant and release unto the said parties of the second part, and their successors and assigns forever,

ALL THOSE CERTAIN TRACTS OR PARCELS OF LAND, situate in Township 7, Range 3, of the Phelps and Gorham Purchase, and being in the Town of Italy, County of Yates, and State of New York and being more particularly bounded and described as follows:

Parcel "A"

BEGINNING at a point on the northerly boundary line of the lands now or formerly of Lehigh Valley Railway Company with its intersection with the division line between the lands now or formerly of Robert Campbell and the lands herein described; thence along said division line N 40° 05' 00" W, a distance of 462.80 feet to a point, said point being on the southerly bank of West River, so-called; thence along said southerly bank the following four courses and distances:

1) N 24° 08' 35" E, a distance of 351.26 feet to a point;
2) N 44° 05' 19" E, a distance of 249.86 feet to a point;
3) N 59° 00' 10" E, a distance of 187.75 feet to a point;
4) S 74° 02' 44" E, a distance of 146.52 feet to a point;

said point being in the westerly boundary line of Not No. 6; thence along the division line between the lands now or formerly of Delmar and Theresa Drake and said lot line, S 00° 58' 29" E, a distance of 666.25 feet to a point; thence along the division line between the lands now or formerly of Lehigh Valley Railway Company and the lands herein described S 53° 42' 22" W, a distance of 412.79 feet to the point or place of beginning containing 9.098 acres of land more or less.

Parcel "B"

BEGINNING at a point in the centerline of New York State Route 245, so-called, with its intersection with the division line between the lands now or formerly of Acorn Valley Ltd. and the lands herein described; thence along the centerline of said road as the same winds and turns the following seven courses and distances:

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1) S 65° 30' 12" W, a distance of 149.37 feet to a point;
2) S 65° 14' 44" W, a distance of 127.06 feet to a point;
3) S 64° 57' 34" W, a distance of 91.02 feet to a point;
4) S 66° 11' 24" W, a distance of 201.09 feet to a point;
5) S 67° 06' 08" W, a distance of 196.04 feet to a point;
6) S 67° 14' 27" W, a distance of 146.03 feet to a point;
7) S 67° 23' 48" W, a distance of 196.19 feet to a point;

said point being in the westerly boundary line of Lot No. 6; thence through the lands of the grantor herein and along said lot line, N 00° 58' 29" W, a distance of 394.11 feet to a point; thence along the division line between the lands now or formerly of Lehigh Valley Railway Company and the lands herein described, N 53° 42' 22" E, a distance of 879.63 feet to a point; thence along the division line between the lands now or formerly of Acorn Valley Ltd. and the lands herein described the following three courses and distances:

1) S 33° 28' 19" E, a distance of 136.33 feet to a point;
2) S 30° 20' 24" E, a distance of 237.77 feet to a point;
3) S 37° 21' 09" E, a distance of 192.01 feet to the point or

place of beginning containing 10.374 acres of land more or less.

TOGETHER with a permanent easement, for the purpose of prohibiting the erection, construction or placement of residential and/or commercial structures and to prohibit land uses which can be demonstrated to be a contributing factor to the pollution or degredation of the adjoining marsh lands, to be exercised in, on and over the following described parcel:

Parcel "C"

BEGINNING at a point in the centerline of New York State Route 245, so-called, with its intersection with the division line between the lands now or formerly of Robert Campbell and the lands herein described; thence along said division line N 40° 05' 00" W, a distance of 294.44 feet to a point; thence along the division line between the lands now or formerly of Lehigh Valley Railway Company and the lands herein described, N 53° 42' 22" E, a distance of 361.66 feet to a point; thence through the lands of the grantor herein and along the westerly line of Lot No. 6, S 00° 58' 29" E, a distance of 394.11 feet to a point, said point being in the centerline of New York State Route 245, so-called; thence along the centerline of said road, S 67° 21' 28" W, a distance of 117.68 feet to the point or place of beginning containing 1.714 acres of land more or less.

Bearings are in reference to Astronomic North.

Together with all right, title and interest of the owners in and to all ponds, streams, roads, highways and the land lying within the beds of all ponds, streams, roads and highways abutting or adjoining the above described premises.

SUBJECT to the rights, if any, of others than the owners in and to all ponds, streams, roads, highways public utility easements, transmission or telephone lines affecting the above-described premises.

ALL shown on a map entitled "Map of lands to be acquired pursuant to Section 3-0305 of the Environmental Conservation Law, Project Q-FWL Yates 25, multiple ownership, Townships 7 and 8, Ranges 3 and 4, Phelps and Gorham Purchase, also being in the Towns of Middlesex and Italy-Yates County, Town of Naples-Ontario County, State of New York and designated as West River Wetlands, addition to High Tor Wildlife Management Area" and prepared for the Department of Environmental Conservation by Gowdy and Hunt, Surveyors, under the direction of C. Newton Gowdy, Land Surveyor, License No. 39303, and completed on and filed in the office of the Department of Environmental Conservation at Albany, New York as Map No. 9712-3.

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Together with the appurtenances and all the estate, rights and interest of the parties of the first part in and to said premises.

To have and to hold, the above granted premises unto the said parties of the second part, their successors and assigns forever.

And the said parties of the first part do covenant with said parties of the second part as follows:

First. That said parties of the first part are seized of said premises in fee simple, and have good right to convey the same;

Second. That the parties of the second part shall quietly enjoy the said premises;

Third. That said premises are free from incumbrances;

Fourth. That said parties of the first part will execute or procure any further necessary assurance of the title to said premises;

Fifth. That said parties of the first part will forever warrant the title to said premises.

Sixth. That, if any improvements, repairs or alterations have been commenced upon the foregoing premises and have not been completed at least four months before the making and recording of this deed, the grantors will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvements, and that the grantors will apply the same first to the payment of the cost of the improvements before using any part of the total of the same for any other purpose.

In Witness Whereof, the said parties of the first part have hereunto set hands and seals the day and year first above written.

IN PRESENCE OF

Vernon R. Gillett (L.S.)
Vernon R. Gillett

(L.S.)

Maxine C. Gillett (L.S.)
Maxine C. Gillett

(L.S.)

STATE OF NEW YORK
COUNTY OF Yates } ss.:

On this 19th day of August in the year one thousand nine hundred eighty before me, the subscriber, personally came VERNON R. GILLETT and MAXINE C. GILLETT, his wife,

to me known to be the persons described in and who executed the within instrument, and acknowledged that they executed the same

John E. Lawrence

JOHN E. LAWRENCE
Notary Public - State of New York
No. 7453800
Residing in Steuben County
Term Expires March 30, 19 82

LIBER 299 PAGE 101

Re: Proceeding 5865)
Department of Environmental
Conservation
High Tor, N.Y.A.
Q-NL-Yates 25.20A, B and C

Warranty Deed.

VERNON R. GILLETT and MAXINE C. GILLETT, his wife

TO

The People of the State of New York

Dated August 19, 1980

Recorded on the day of , 1980, at M., in Book No. of Deeds, at page and duly indexed and examined.

Clerk.

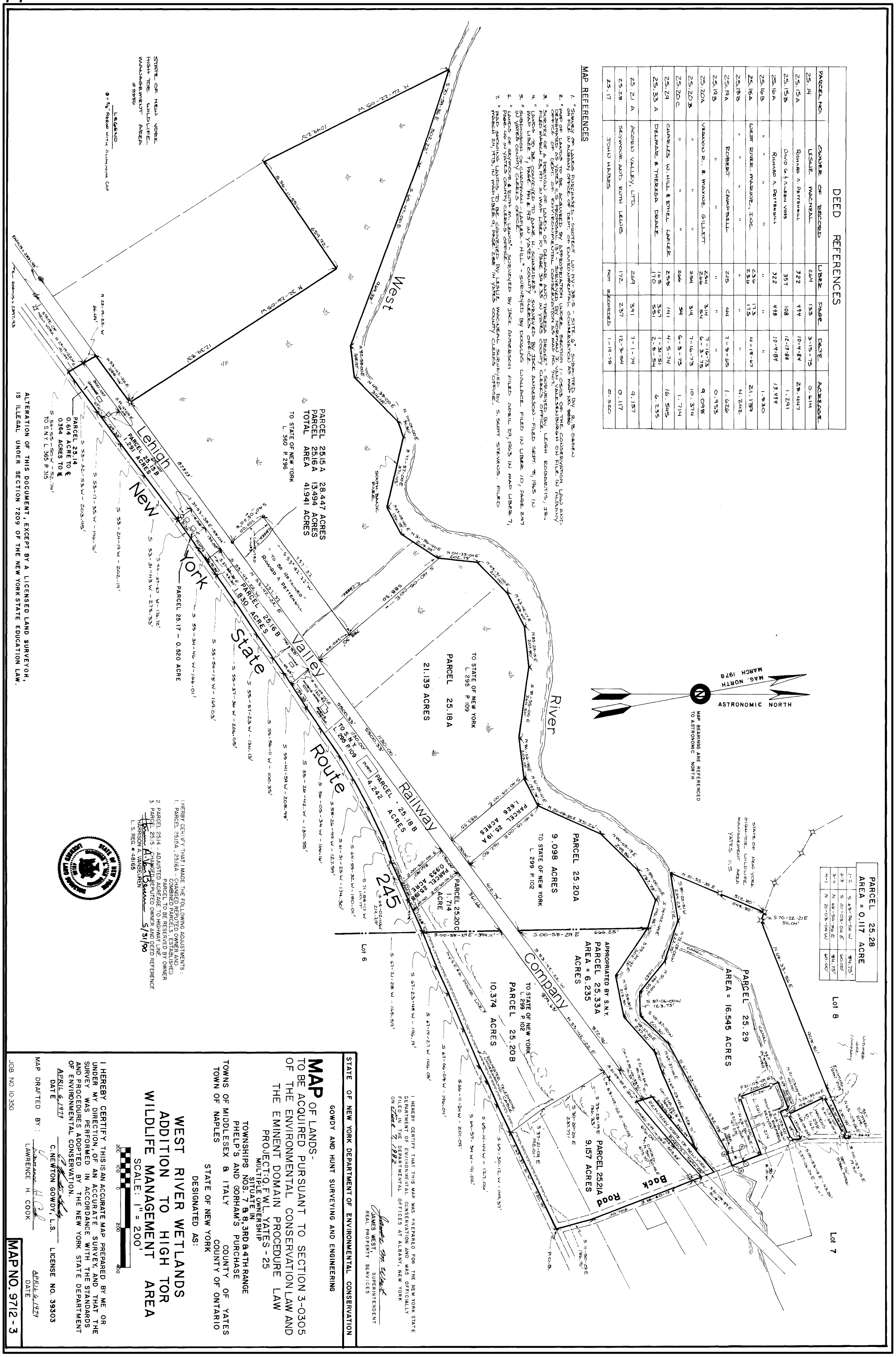
Approved as to form and manner of execution.

ROBERT ABRAMS
Attorney General.

By Assistant.

RECORD AND RETURN TO:
State of New York
Department of Law
Real Property Bureau
The Capitol
Albany, New York 12224

Attention Joseph L. Doherty, Esq.


DEED REFERENCES
MAP REFERENCES
West River
Lehigh Valley Railway Company
New York State Route 245
Back Road
ASTRONOMIC NORTH
PARCEL 25.18A
21.139 ACRES
PARCEL 25.29
AREA = 16.545 ACRES
PARCEL 25.20B
10.374 ACRES
PARCEL 25.20A
9.098 ACRES
STATE OF NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION
MAP OF LANDS
WEST RIVER WETLANDS
ADDITION TO HIGH TOR
WILDLIFE MANAGEMENT AREA
SCALE: 1" = 200'
MAP NO. 9712-3

Re: Proceeding 5289
Conservation Miscellaneous
High Tor Game Management Area
Yates 11.25

THIS INDENTURE

Made the 23rd day of October Nineteen Hundred and Seventy-Three between WIDMER'S WINE CELLARS INC., a domestic corporation duly organized under the laws of the State of New York, having its principal office at Naples, County of Yates and State of New York (no street address), party of the first part; and

THE PEOPLE OF THE STATE OF NEW YORK, parties of the second part,

WITNESSETH:

That the party of the first part desiring to assist in and contribute to those functions of the State of New York that seek to maintain Game and Wildlife Management as and for an absolute gift, without condition or reservation, does, hereby grant and release unto the parties of the second part, their successors and assigns forever,

An easement of right-of-way lying within the Town of Italy, County of Yates and State of New York as and for a means of ingress and egress to and from the southerly line of Sunnyside Road to the lands of the parties of the second part lying to the south, for vehicular traffic engaged in administrative purposes only, being at all times 33 feet in width, and being more particularly bounded and described as follows:

Beginning at a point in the northeasterly corner of the lands of the parties of the second part, formerly of Clifford C. Chapman; thence running S 67° 22' West along the northerly line of said lands, being also the southerly line of the lands of the party of the first part 515.5 feet to the point or place of beginning of the above easement; thence continuing along said line on the same course 662.5 feet to a point marked by an angle iron; thence running N 65° 59' West 118.8 feet to the centerline of Sunnyside Road; thence in a northeasterly direction along said centerline to a point running through which, the next succeeding

course would at all times be 33 feet from the previous course; thence S 65° 59' East 92.4 feet to a point; thence running easterly and at all times parallel to and 33 feet from the southerly line of this easement to a point where a line dropped at right angles would meet the point or place of beginning; thence running along said line 33 feet to the point or place of beginning; subject however to the rights of others in and to Sunnyside Road lawfully using the same.

ALSO, an easement to flood, whether temporary or permanent flooding being solely in the discretion of the party of the second part, to be exercised over a rectangular parcel of land 33 feet in width situate to the immediate east of the lands of the first easement said parcel being more particularly bounded and described as follows:

Beginning at a point in said northeasterly corner of the lands of the parties of the second part; thence running S 67° 22' West along the northerly line of said lands 515.5 feet to the easterly line of the first mentioned easement; thence northerly along said easterly line 33 feet to a point; thence easterly and at all times parallel to and distant 33 feet from the said southerly line of this easement to a point where if a line were dropped at right angles would meet the point or place of beginning; thence southerly along said line 33 feet to the point or place of beginning.

ALL as shown on a survey thereof designated as No. 8808, made by the Department of Environmental Conservation and entitled, "MAP OF SURVEY OF RIGHT OF WAY & FLOWAGE EASEMENT TO HIGH TOR GAME MANAGEMENT AREA" to be filed in the County Clerk's Office at the same time as this instrument.

Being a part of the same premises conveyed to the party of the first part by deed from Anne H. Schneider dated April 21, 1967 and recorded the same date in Liber 218 of Deeds at page 449.

TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises as conveyed.

TO HAVE AND TO HOLD the premises herein granted unto the parties of the second part, their successors and assigns forever.

AND the party of the first part covenants that it has not done or suffered anything whereby the said premises have been incumbered in any way whatever.

IN WITNESS WHEREOF, the said party of the first part has caused its corporate seal to be hereunto affixed, and these presents to be signed by its duly authorized officer, the day and year first above written.

WIDMER'S WINE CELLARS INC.

By: Peter L. Carp

Its: President

STATE OF NEW YORK)
COUNTY OF YATES) ss.:

On this 23rd day of October in the year one thousand nine hundred seventy-threebefore me, the subscriber, personally came Peter L. Carp to me known, who being by me duly sworn, did depose and say, that he resides at 37 Oak Manor Lane in the Town of Pittsford, County of Monroe and State of New York; that he is the President of WIDMER'S WINE CELLARS INC. the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal, and that it was so affixed by order of the board of Directors of said corporation and that he signed his name thereto by like order.

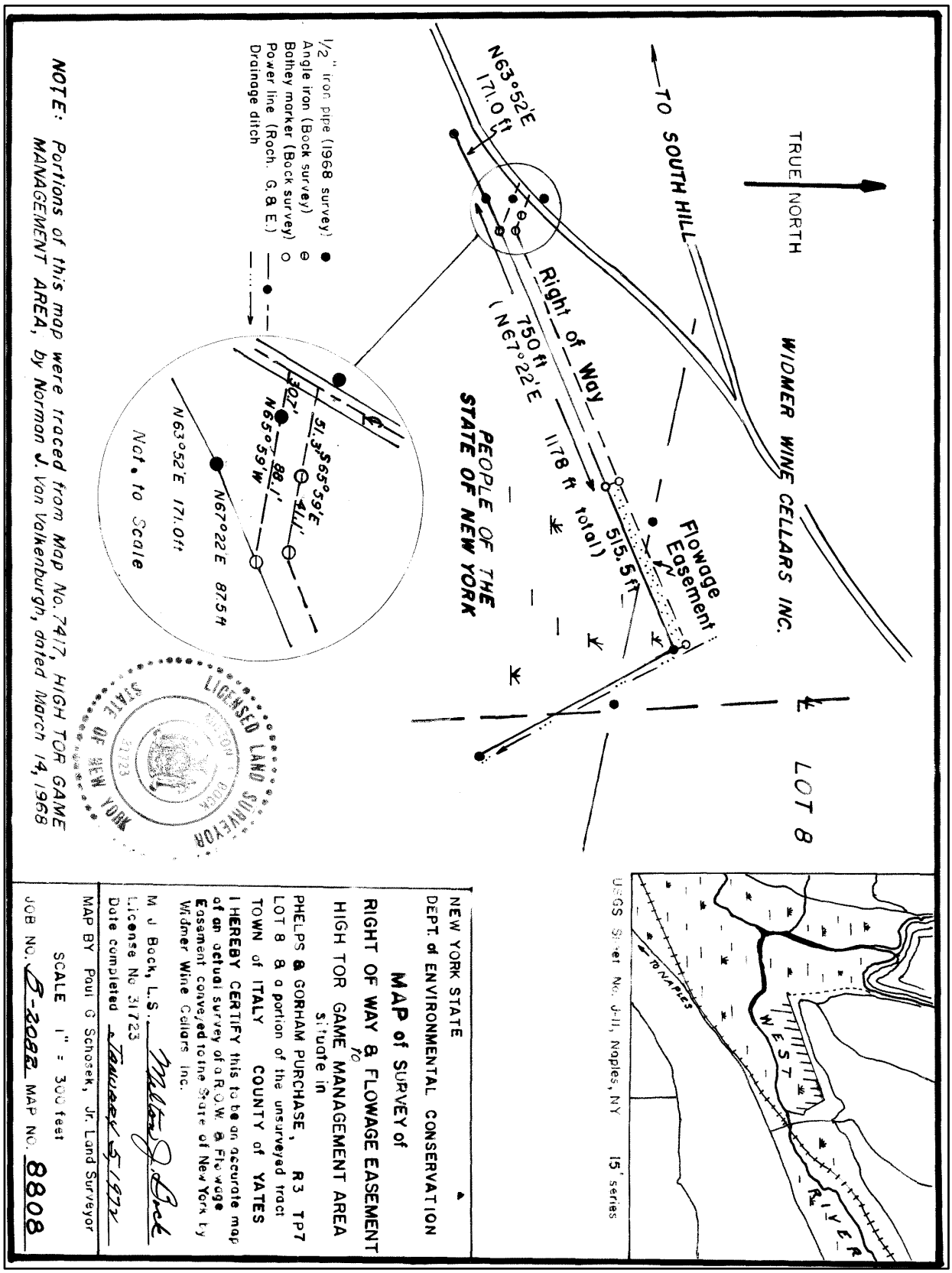
Arthur S. Landino

ARTHUR S. LANDINO
NOTARY PUBLIC IN THE STATE OF NEW YORK
ONTARIO COUNTY No. 841 N. Y.
COMMISSION EXPIRES MARCH 30 1974

- 3 -

YATES COUNTY
REAL ESTATE TRANSFER TAX
Dept. of Taxation & Finance
APR-3'74
STATE OF NEW YORK
00.00
P.B. 10911

LIBER 258 PAGE 71



NOTE: *Portions of this map were traced from Map No. 7417, HIGH TOR GAME MANAGEMENT AREA, by Norman J. Van Valkenburgh, dated March 14, 1968*

NEW YORK STATE
DEPT. of ENVIRONMENTAL CONSERVATION

MAP of SURVEY of

RIGHT OF WAY & FLOWAGE EASEMENT
to
HIGH TOR GAME MANAGEMENT AREA
situate in
PHELPS & GORHAM PURCHASE, R3 TP7
LOT 8 & a portion of the unsurveyed tract
TOWN of ITALY COUNTY of YATES

I **HEREBY CERTIFY** this to be an accurate map of an actual survey of a R.O.W. & Flowage Easement conveyed to the State of New York by Widmer Wine Cellars Inc.

M. J. Bock, L.S. *M. J. Bock*
License No. 31723
Date completed *January 5, 1972*

MAP BY Paul G. Schozek, Jr. Land Surveyor

SCALE 1" = 300 feet

JOB NO. *C-2082* MAP NO. **8808**

Appendix L: 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 Canandaigua Highlands Unit are managed by two different Department 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 the Department on this unit that is not addressed in this Unit Management Plan and is not addressed in the Strategic Plan/Generic Environmental Impact Statement may need a separate site-specific environmental review.

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 (PEISs) 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 the PEISs. Environmental assessment forms prepared as a result of site-specific environmental review will be posted on the Environmental Notice Bulletin.

A supplement that updated and amended the PEIS on habitat management activities was developed and approved in 2017 and can be viewed online at www.dec.ny.gov/regulations/28693.html. All management activities on the WMA proposed in this UMP will adhere to the criteria for site-specific environmental review established in the PEISs and the Supplemental Final Environmental Impact Statement (SFEIS).

The activities recommended in this plan:

- Will not adversely affect threatened or endangered plants or animals or their habitat.
  - Prior to implementation of any activity, staff review the NY Natural Heritage Program's "Natural Heritage Element Occurrence" database and perform field surveys when necessary. If a protected species is encountered in a project area, staff may establish buffer zones around the occurrence, move the project area, follow time-of-year restrictions, or cancel the project.
- Will not induce or accelerate significant change in land use.
  - All lands and waters within the WMA system are permanently protected as wildlife habitat.
- Will not induce significant change in ambient air, soil, or water quality.
  - Activities are designed to protect air, soil, and water quality through careful project planning, use of appropriate Best Management Practices, and establishment of Special Management Zones around sensitive land and water features requiring special consideration.
- Will not conflict with established plans or policies of other state or federal agencies.

  - Activities will follow established plans or policies of other state and federal agencies, including all relevant U.S. Fish and Wildlife Service rules and regulations.
- Will not induce significant change in public attraction or use.
  - The WMA system is part of a long-term effort to establish permanent access to lands in New York State for the protection and promotion of its fish and wildlife resources. Proposed activities will continue to protect, promote, and maintain public access to WMAs and their wildlife resources.
- Will not significantly deviate from effects of natural processes which formed or maintain an area or result in areas of significantly different character or ecological processes.
  - Activities will be conducted in a manner that maintains, enhances, or mitigates ecological processes and/or natural disturbances as appropriate for each WMA and habitat type. Some activities, such as even-aged forest management, intentionally result in areas of different character and ecological processes; however, they are not considered significant because they are ephemeral or transitional and will not permanently alter the landscape.
- Will not affect important known historical or archeological sites.
  - Activities that may result in ground disturbance are reviewed by DEC's State Historic Preservation Officer (SHPO) and/or the NYS Office of Parks, Recreation and Historic Preservation (OPRHP) to identify potential impacts to historical or archeological sites. Sensitive sites will be protected under the direction of DEC's SHPO and the OPRHP Archaeology Unit.
- Will not stimulate significant public controversy.
  - It is not anticipated that activities on WMAs will stimulate significant public controversy. A public comment period was held during development of both the PEIS and the SFEIS; no relevant comments in opposition of proposed management activities were received during the SFEIS public comment period. Kiosks, signs, webpages, articles, demonstration areas, and other outreach materials also raise awareness about habitat management activities.

Actions not covered by the GEIS or a PEIS

Any action taken by the Department on this Unit that is not addressed in this Unit Management Plan and is not addressed in the Strategic Plan 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 M: Maps

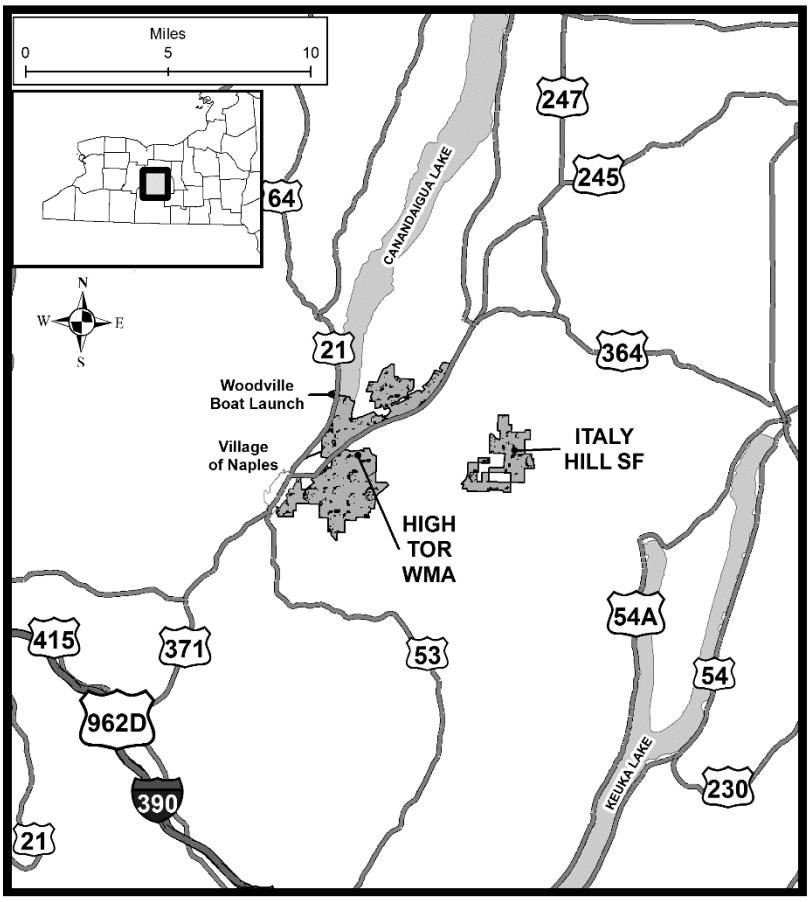
All the following maps are made with the best available data but are not intended to be survey quality. Additional information on the topics covered can be found in the rest of this document.

Map Index:

- Grid Index - page 203
- Roads, Utilities and Parking Areas - page 204
- Recreation and Other Facilities - page 209
- Vegetative Types and Stages - page 215
- Ecoregions, Forest Matrix Block and Least Cost Path Corridors, Grassland Focus Areas - page 221
- Vegetative Management - page 222
- Streams, Ponds and Wetlands - page 228
- Special Management Zones - page 229
- Contour Lines - page 234
- Geology – Oil, Gas, and Solution Mining Map - page 235
- Geology – Sand, Gravel and Other Mine Locations - page 236

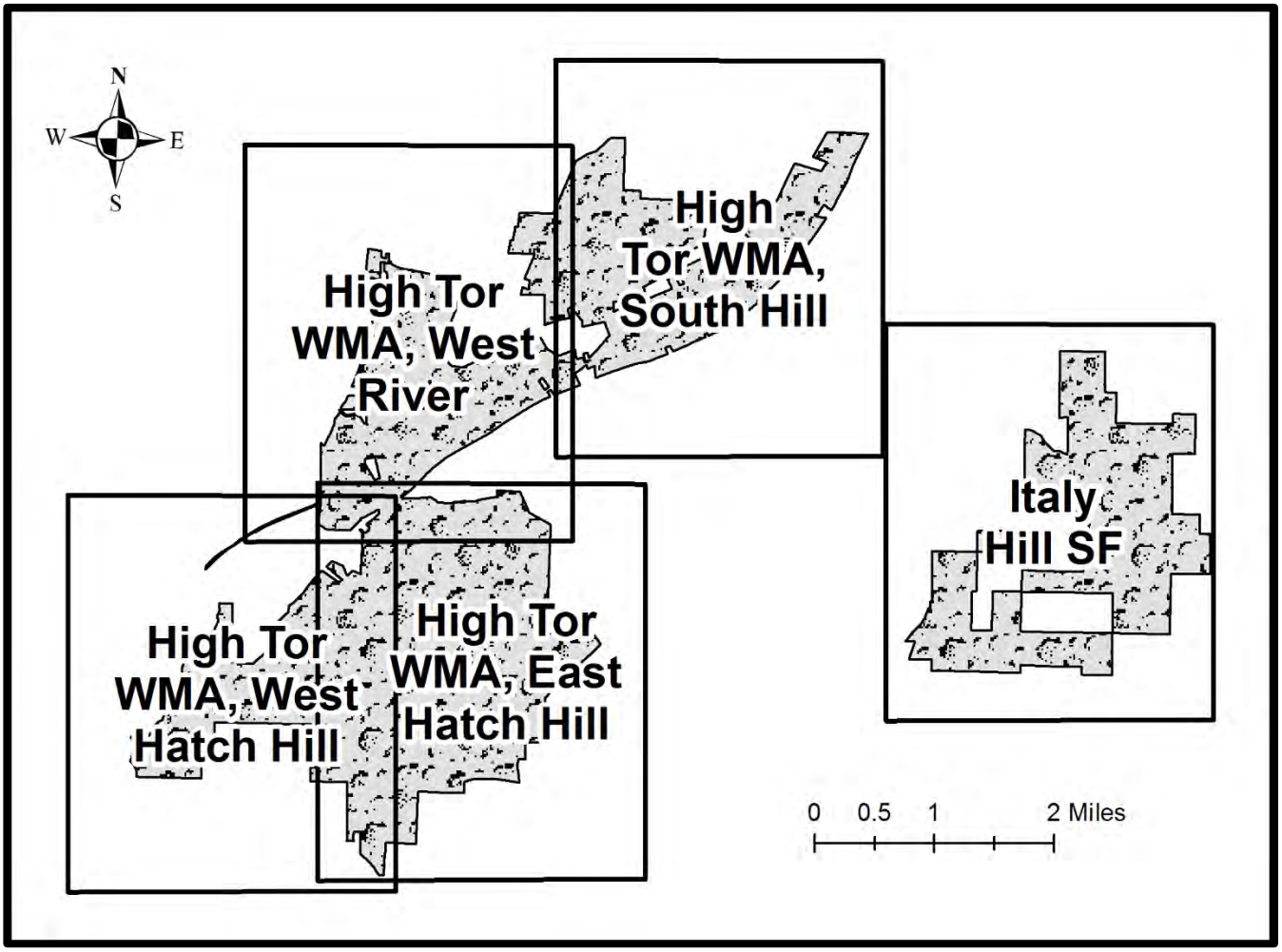
Maps are also located in the following sections:

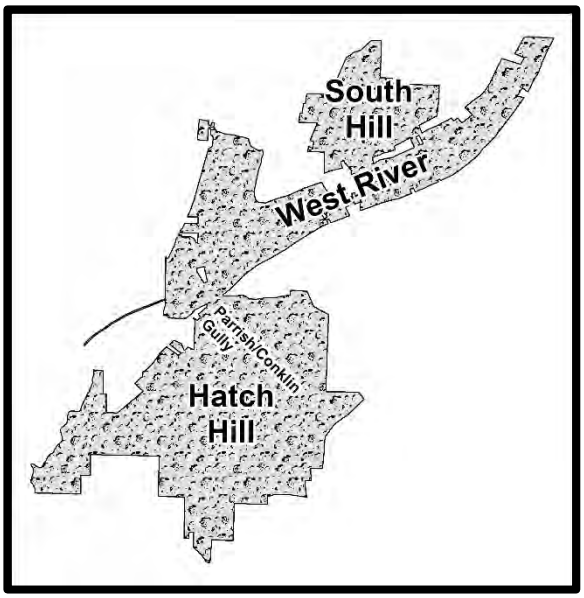
- Canandaigua Highlands Unit Location Map – page 9.
- High Tor Wildlife Management Area History– page 14
- Appendix B: Animals of the Canandaigua Highlands Unit Management Plan Area – page 144.
- Appendix C: Taxes paid on Department Lands – page 156.



Grid Index

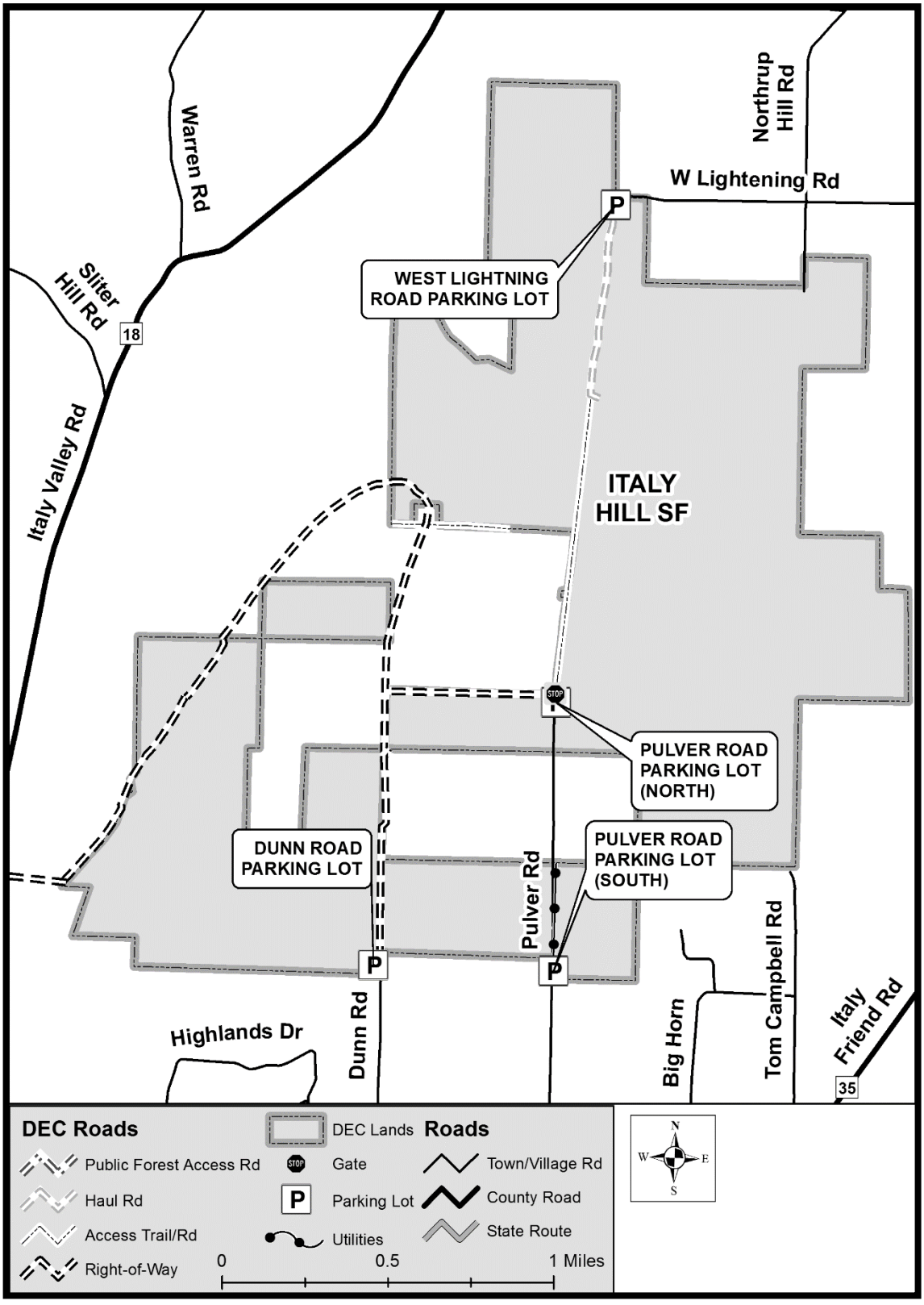
Many of the following maps use the following layout of maps to cover the extent of the Canandaigua Highlands Unit.

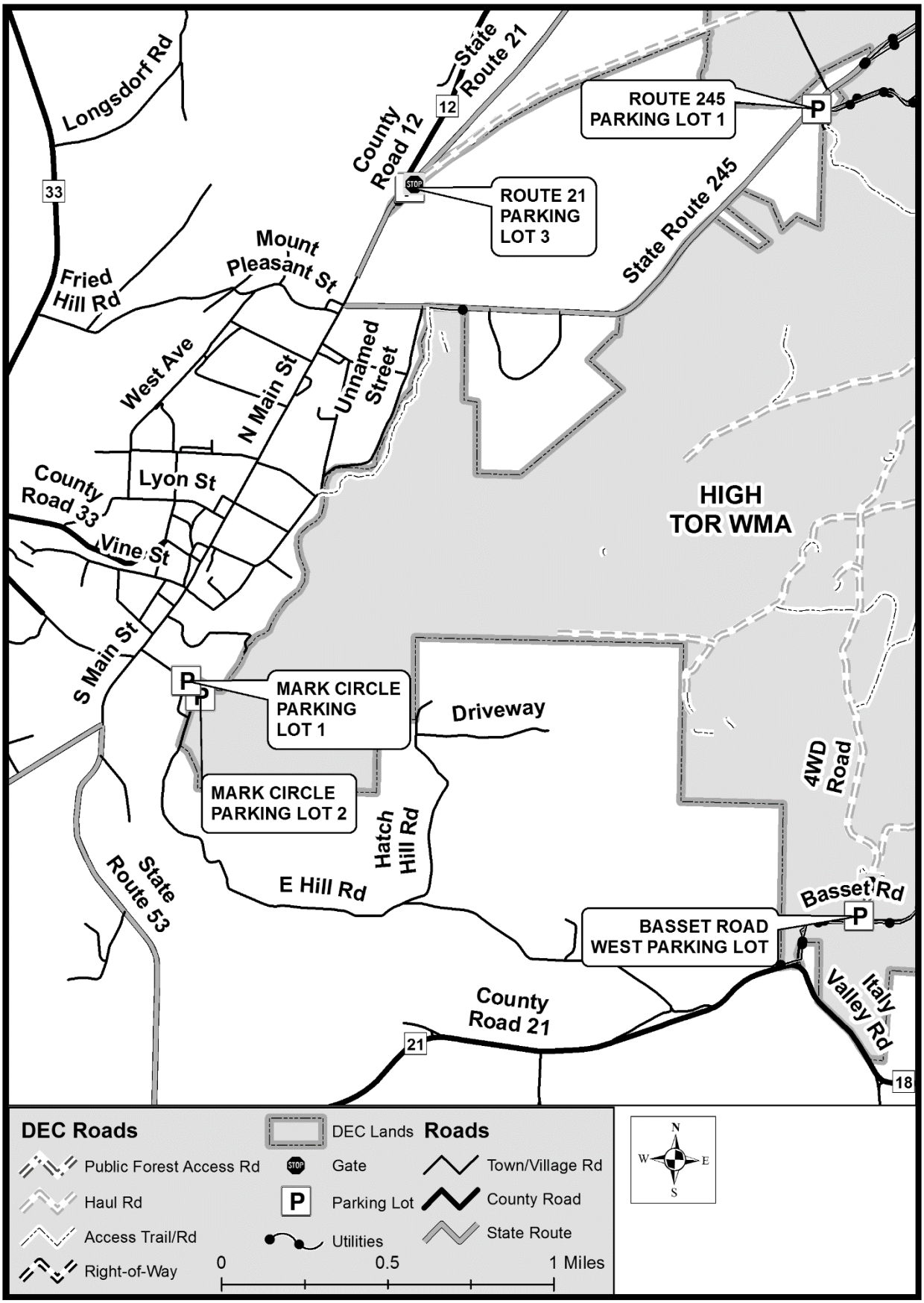




Roads, Utilities and Parking Areas

Additional information can be found in the Roads (pg. 19), Access Management (pg. 77), Maintenance and Facilities Management (pg. 116) and Appendix D: Facilities (pg. 157) sections.




Longsdorf Rd
33
Fried Hill Rd
Mount Pleasant St
County Road 12
State Route 21
12
ROUTE 245 PARKING LOT 1
P
ROUTE 21 PARKING LOT 3
State Route 245
West Ave
N Main St
Unnamed Street
Lyon St
County Road 33
Vine St
HIGH TOR WMA
S Main St
P
MARK CIRCLE PARKING LOT 1
Driveway
4WD Road
MARK CIRCLE PARKING LOT 2
Hatch Hill Rd
E Hill Rd
State Route 53
Basset Rd
P
BASSET ROAD WEST PARKING LOT
Italy Valley Rd
County Road 21
21
18
DEC Roads
Public Forest Access Rd
Haul Rd
Access Trail/Rd
Right-of-Way
DEC Lands
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Parking Lot
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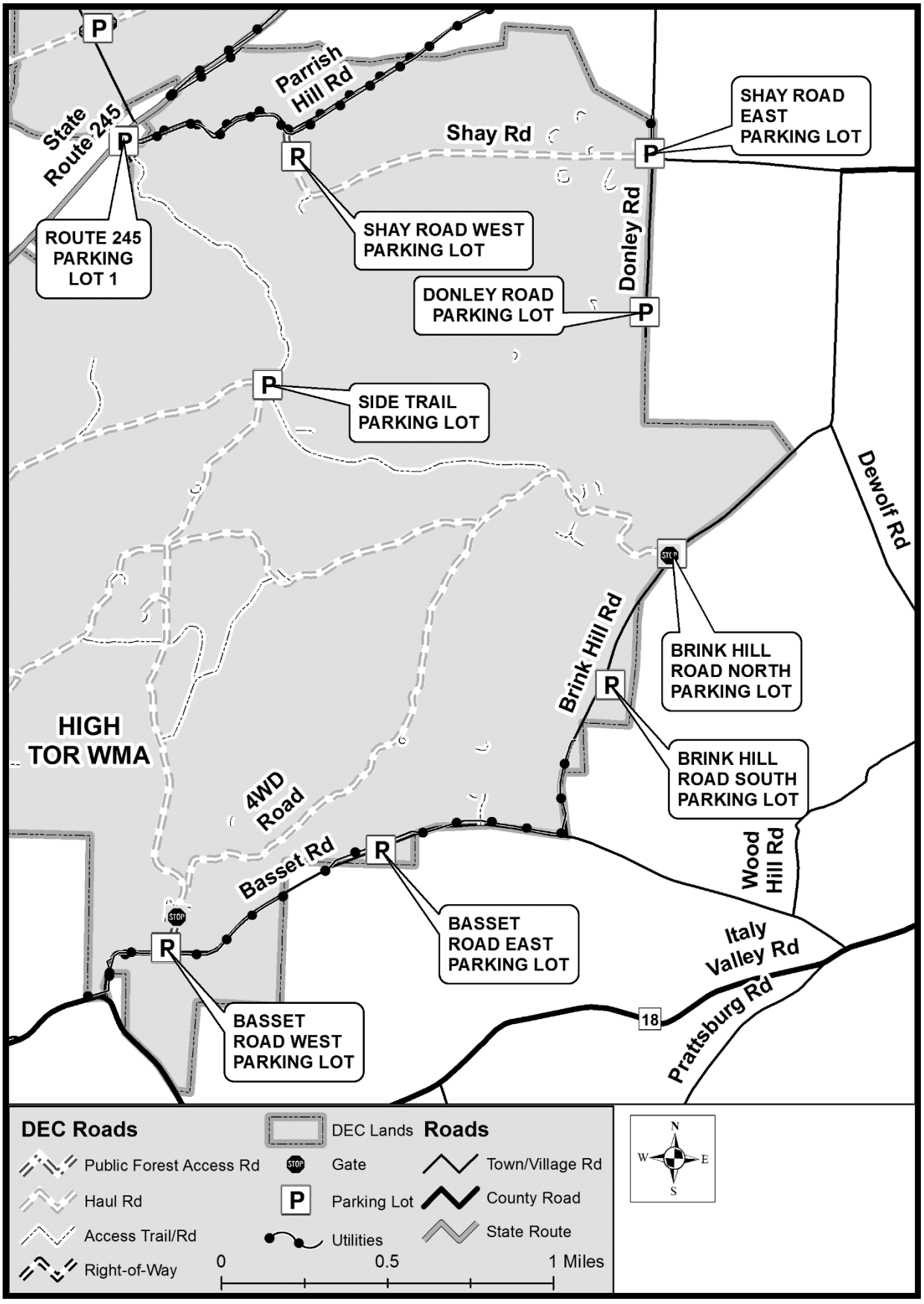
P
Parrish Hill Rd
State Route 245
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R
Shay Rd
P
SHAY ROAD EAST PARKING LOT
SHAY ROAD WEST PARKING LOT
ROUTE 245 PARKING LOT 1
Donley Rd
DONLEY ROAD PARKING LOT
P
P
SIDE TRAIL PARKING LOT
Dewolf Rd
STOP
Brink Hill Rd
BRINK HILL ROAD NORTH PARKING LOT
R
HIGH TOR WMA
BRINK HILL ROAD SOUTH PARKING LOT
4WD Road
Basset Rd
R
Wood Hill Rd
STOP
R
BASSET ROAD EAST PARKING LOT
Italy Valley Rd
BASSET ROAD WEST PARKING LOT
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Prattsburg Rd
DEC Roads
Public Forest Access Rd
Haul Rd
Access Trail/Rd
Right-of-Way
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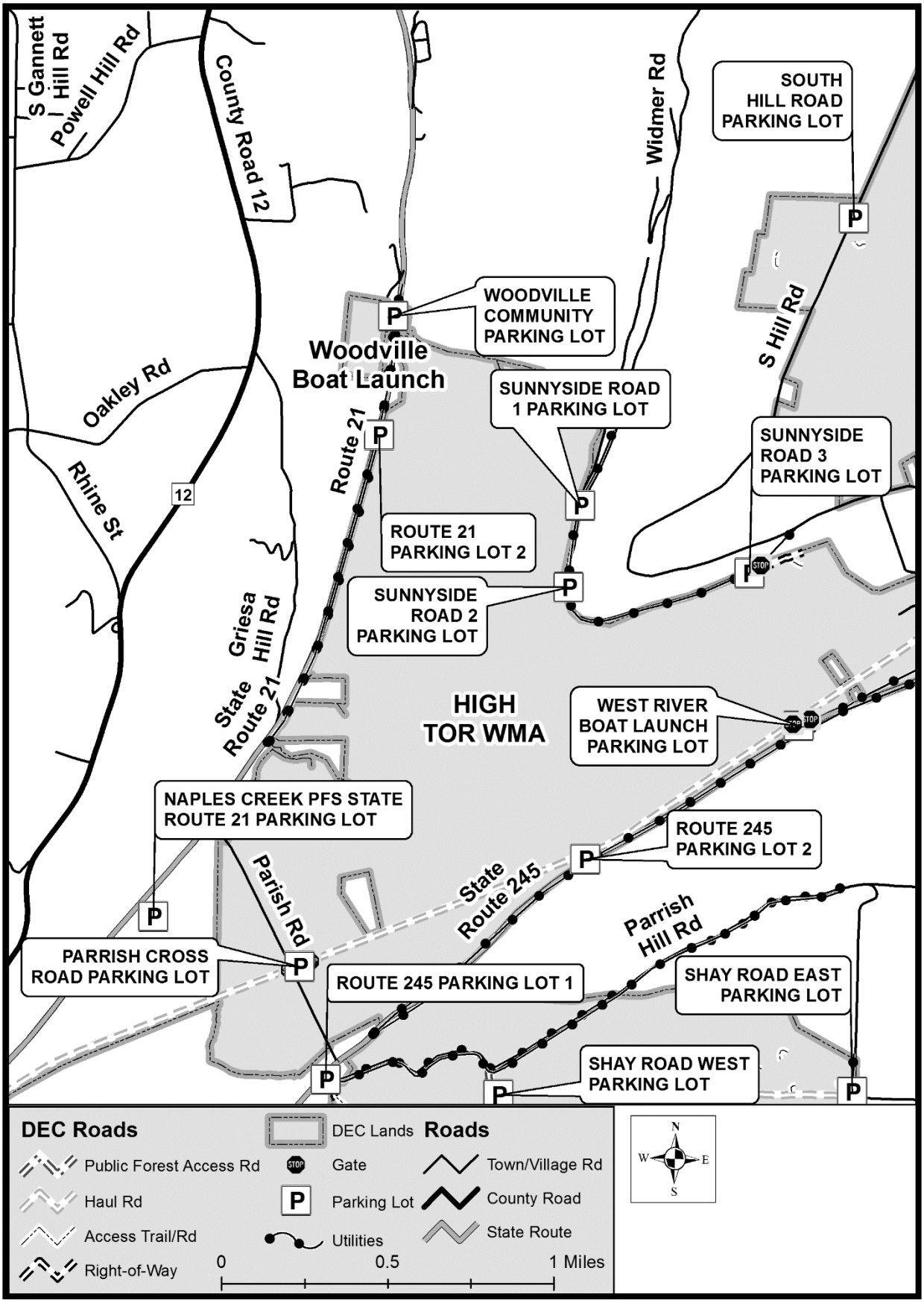
S Gannett Hill Rd
Powell Hill Rd
County Road 12
Widmer Rd
SOUTH HILL ROAD PARKING LOT
S Hill Rd
WOODVILLE COMMUNITY PARKING LOT
Woodville Boat Launch
Oakley Rd
SUNNYSIDE ROAD 1 PARKING LOT
Route 21
SUNNYSIDE ROAD 3 PARKING LOT
Rhine St
12
ROUTE 21 PARKING LOT 2
SUNNYSIDE ROAD 2 PARKING LOT
Griesa Hill Rd
State Route 21
HIGH TOR WMA
WEST RIVER BOAT LAUNCH PARKING LOT
NAPLES CREEK PFS STATE ROUTE 21 PARKING LOT
ROUTE 245 PARKING LOT 2
Parish Rd
State Route 245
Parrish Hill Rd
PARRISH CROSS ROAD PARKING LOT
ROUTE 245 PARKING LOT 1
SHAY ROAD EAST PARKING LOT
SHAY ROAD WEST PARKING LOT
DEC Roads
Public Forest Access Rd
Haul Rd
Access Trail/Rd
Right-of-Way
DEC Lands
Gate
Parking Lot
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Roads
Town/Village Rd
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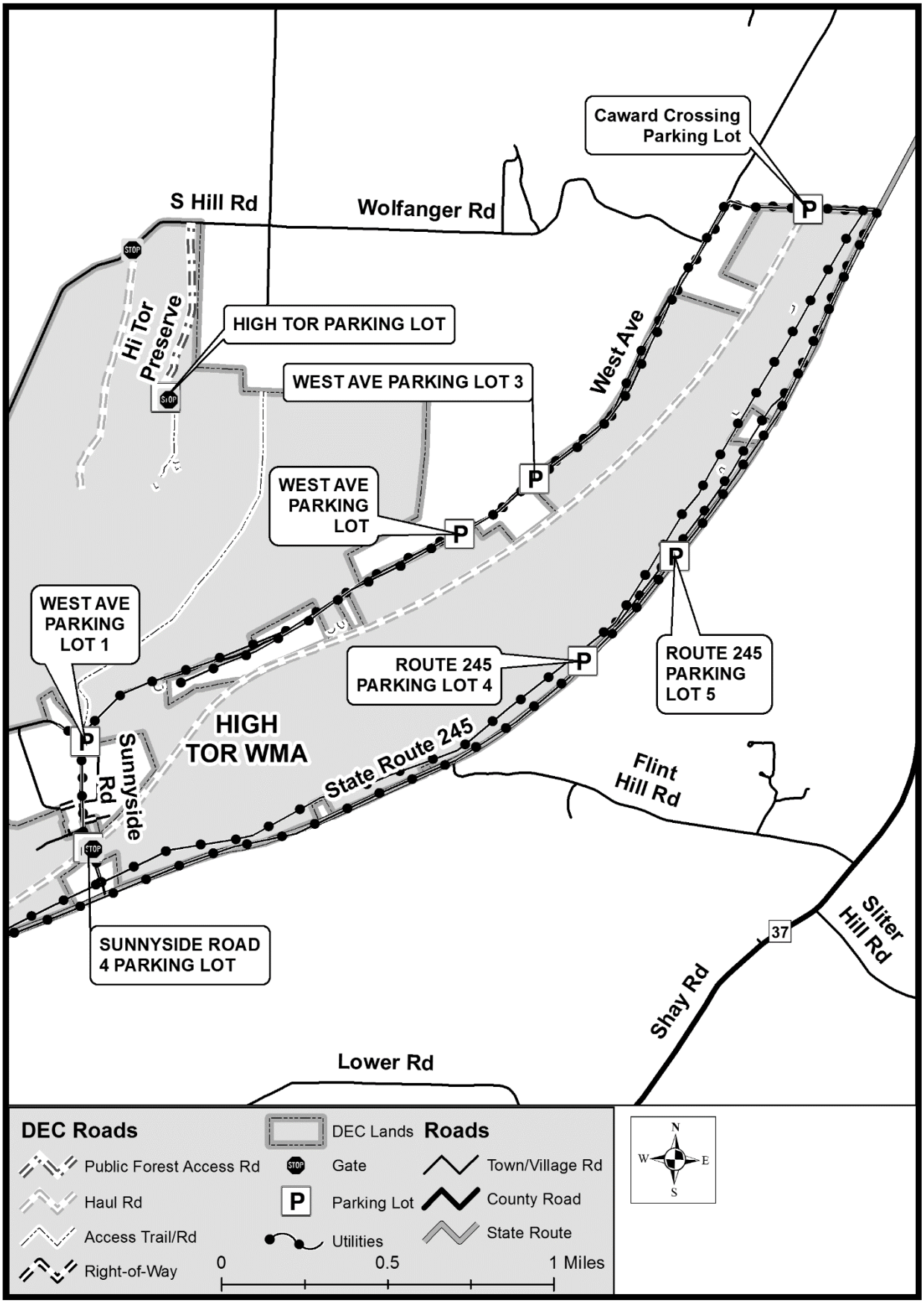
Caward Crossing Parking Lot
S Hill Rd
Wolfanger Rd
Hi Tor Preserve
HIGH TOR PARKING LOT
WEST AVE PARKING LOT 3
West Ave
WEST AVE PARKING LOT
WEST AVE PARKING LOT 1
ROUTE 245 PARKING LOT 4
ROUTE 245 PARKING LOT 5
HIGH TOR WMA
Sunnyside Rd
State Route 245
Flint Hill Rd
Sliter Hill Rd
37
Shay Rd
Lower Rd
SUNNYSIDE ROAD 4 PARKING LOT
DEC Roads
Public Forest Access Rd
Haul Rd
Access Trail/Rd
Right-of-Way
DEC Lands
Gate
Parking Lot
Utilities
Roads
Town/Village Rd
County Road
State Route
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1 Miles
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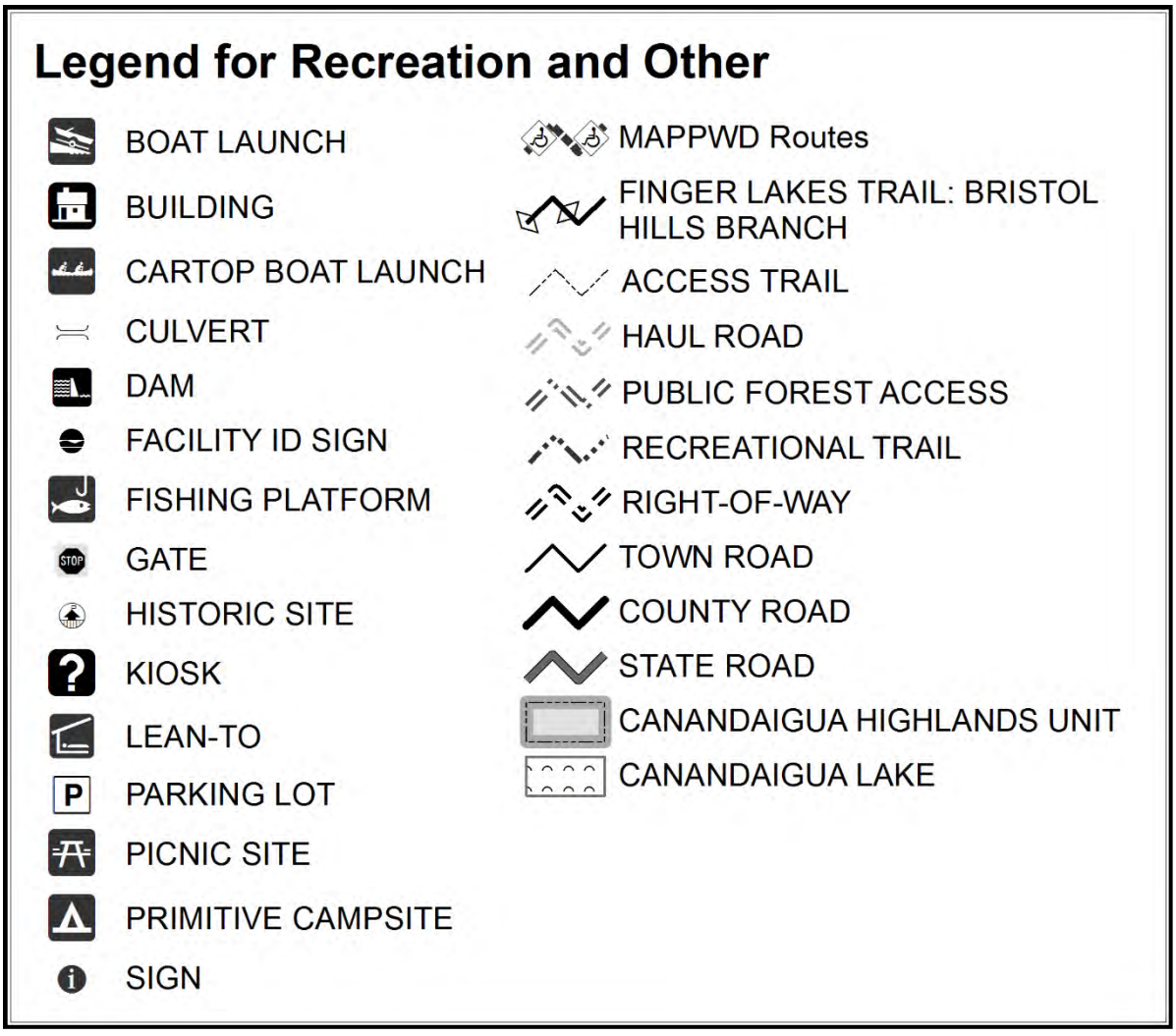
Recreation and Other Facilities

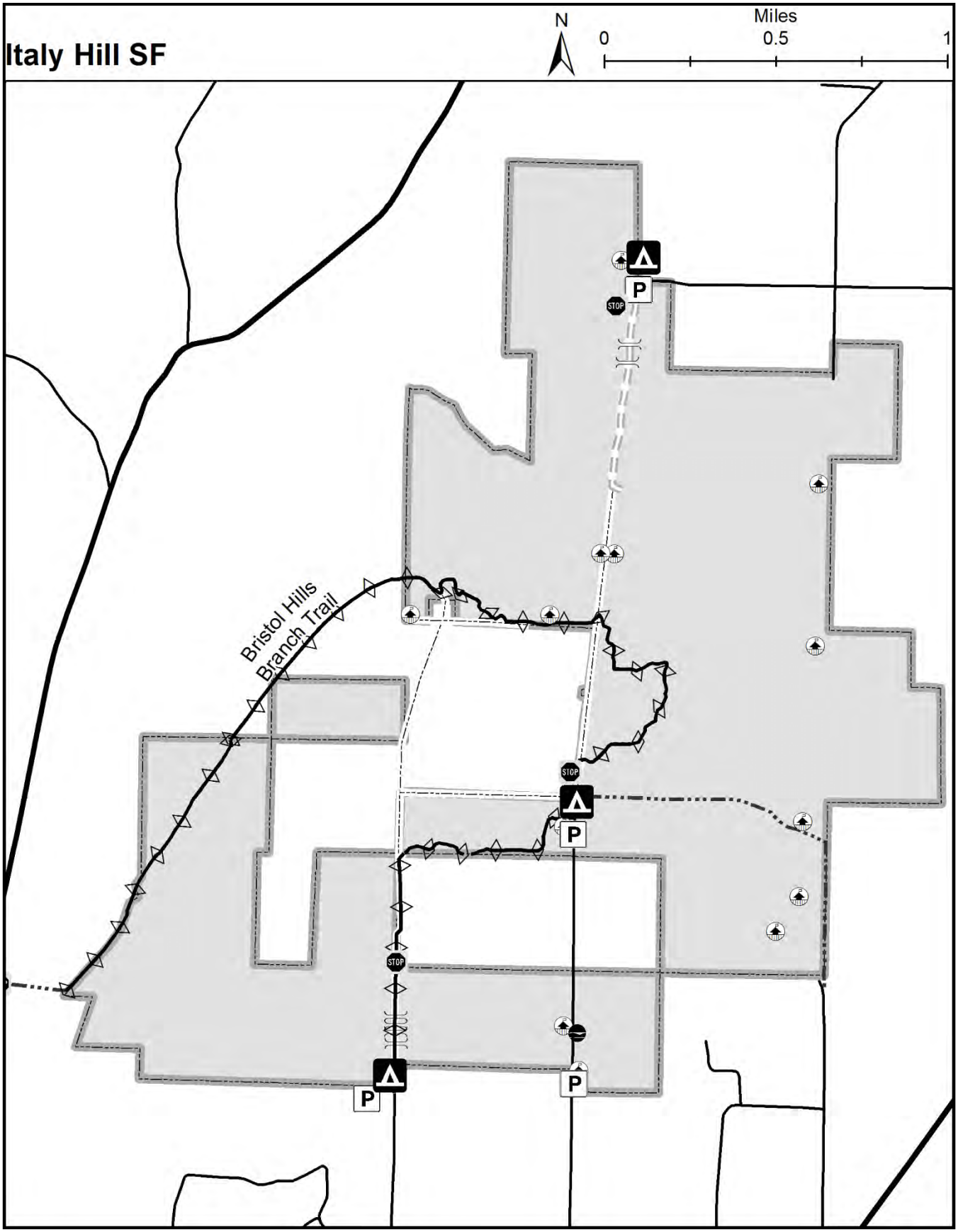
For Additional Information see: Access Management (pg. 77), Public Recreation and Use (pg. 23), Public Recreation and Use Management (pg. 108), Maintenance and Facilities Management (pg 116), and Appendix D: Facilities (pg. 157).

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.

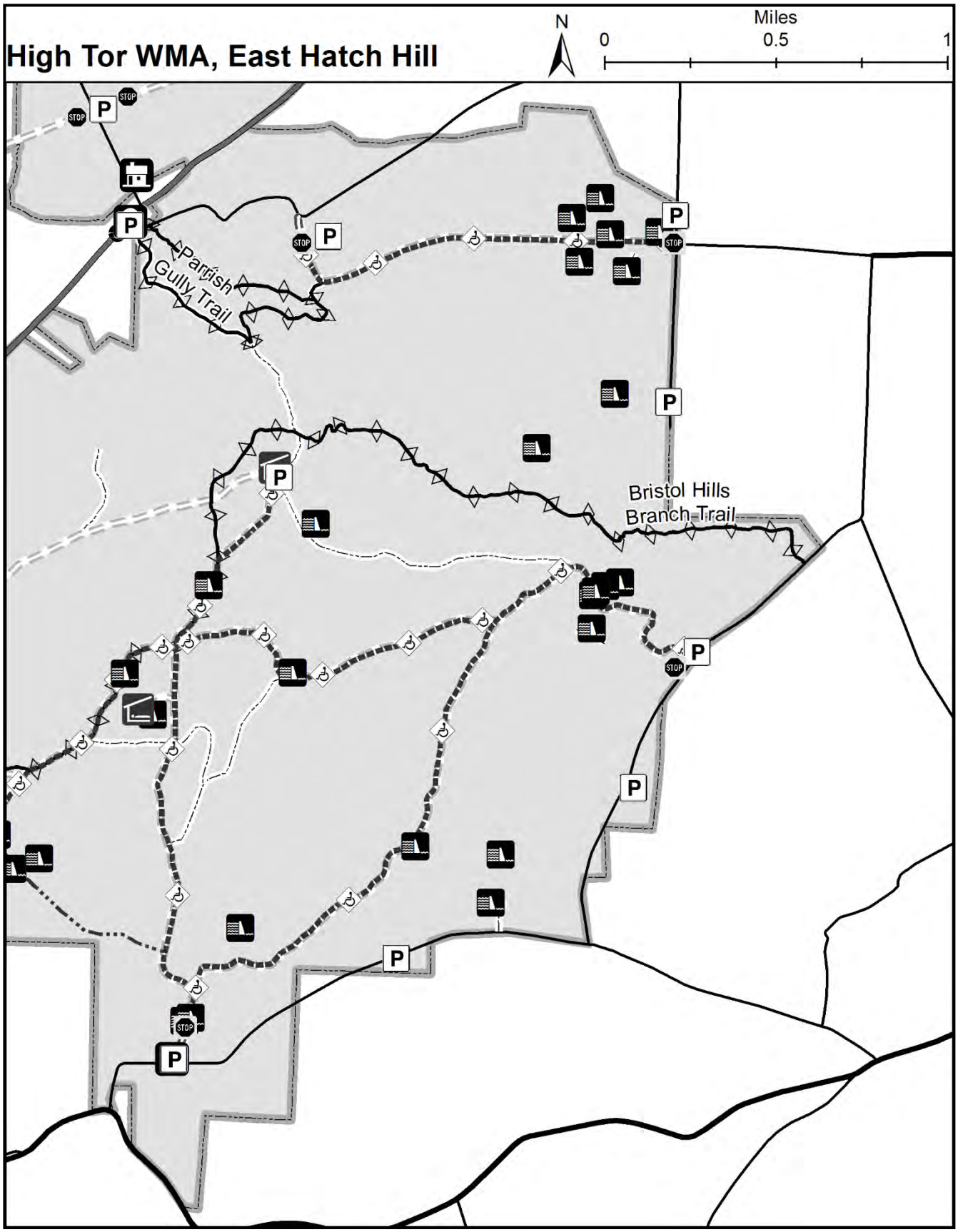
Legend for the following 5 maps:



Legend for all Facilities maps is located on page 209.

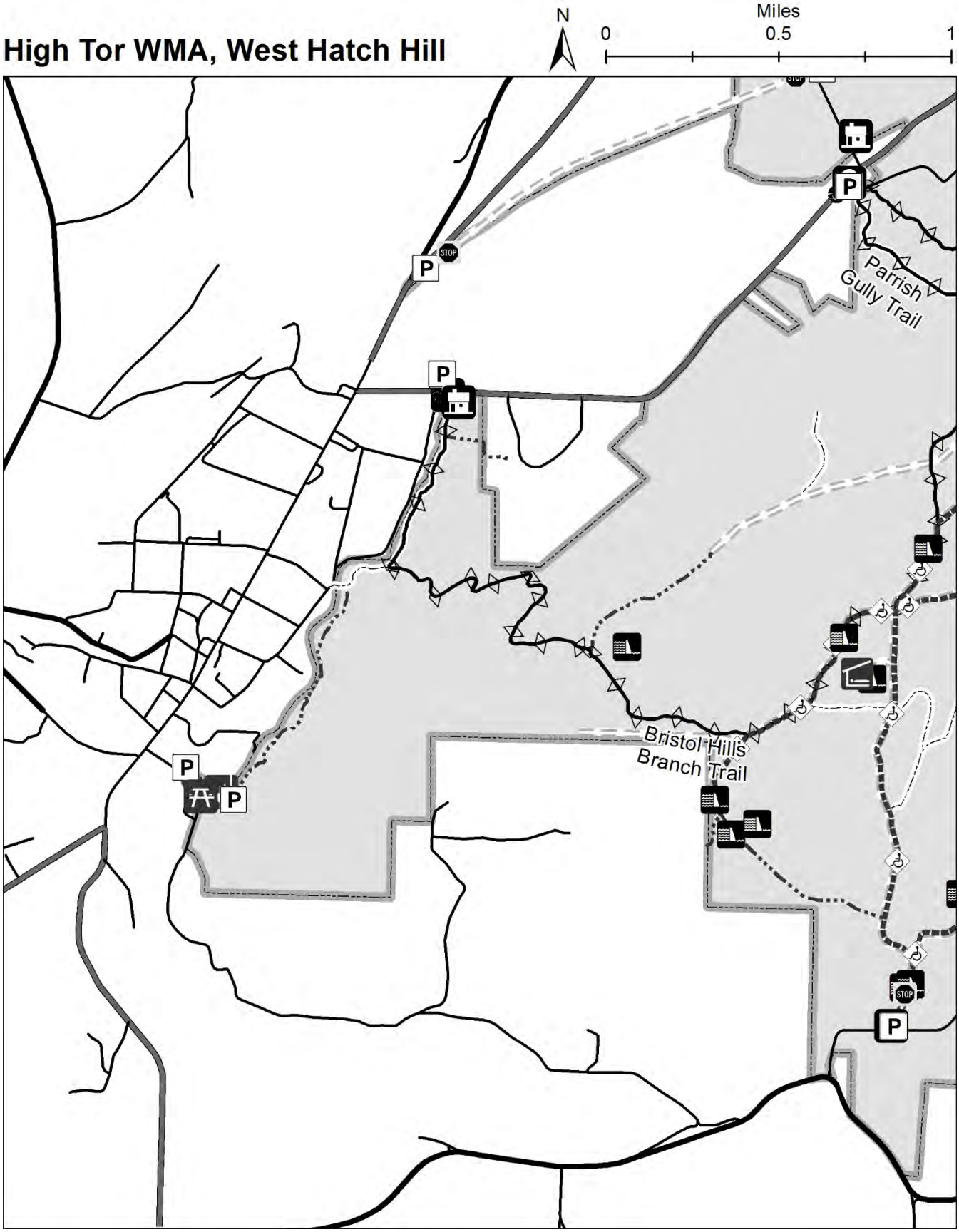


Legend for all Facilities maps is located on page 209.



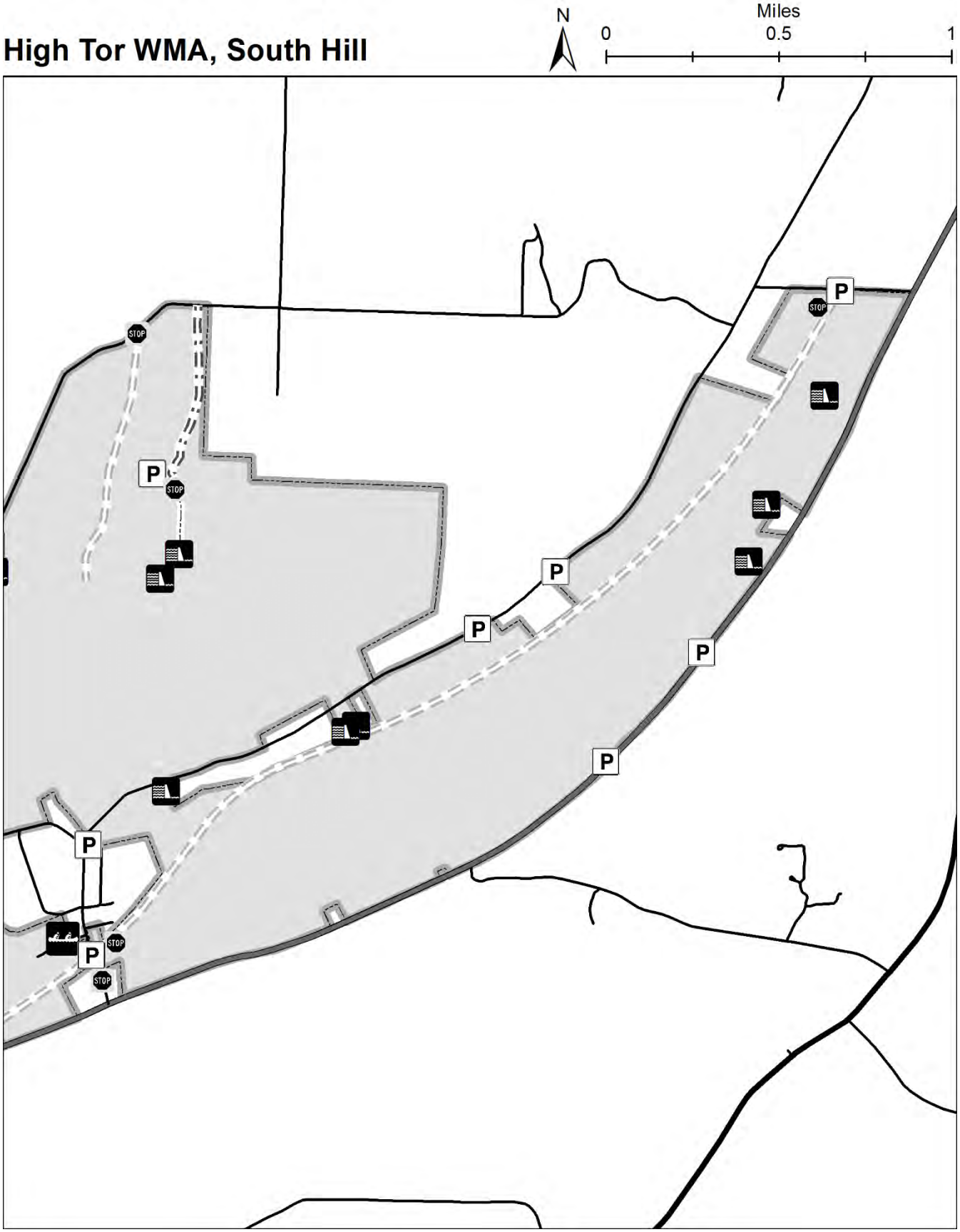
Legend for all Facilities maps is located on page 209.

High Tor WMA, West Hatch Hill



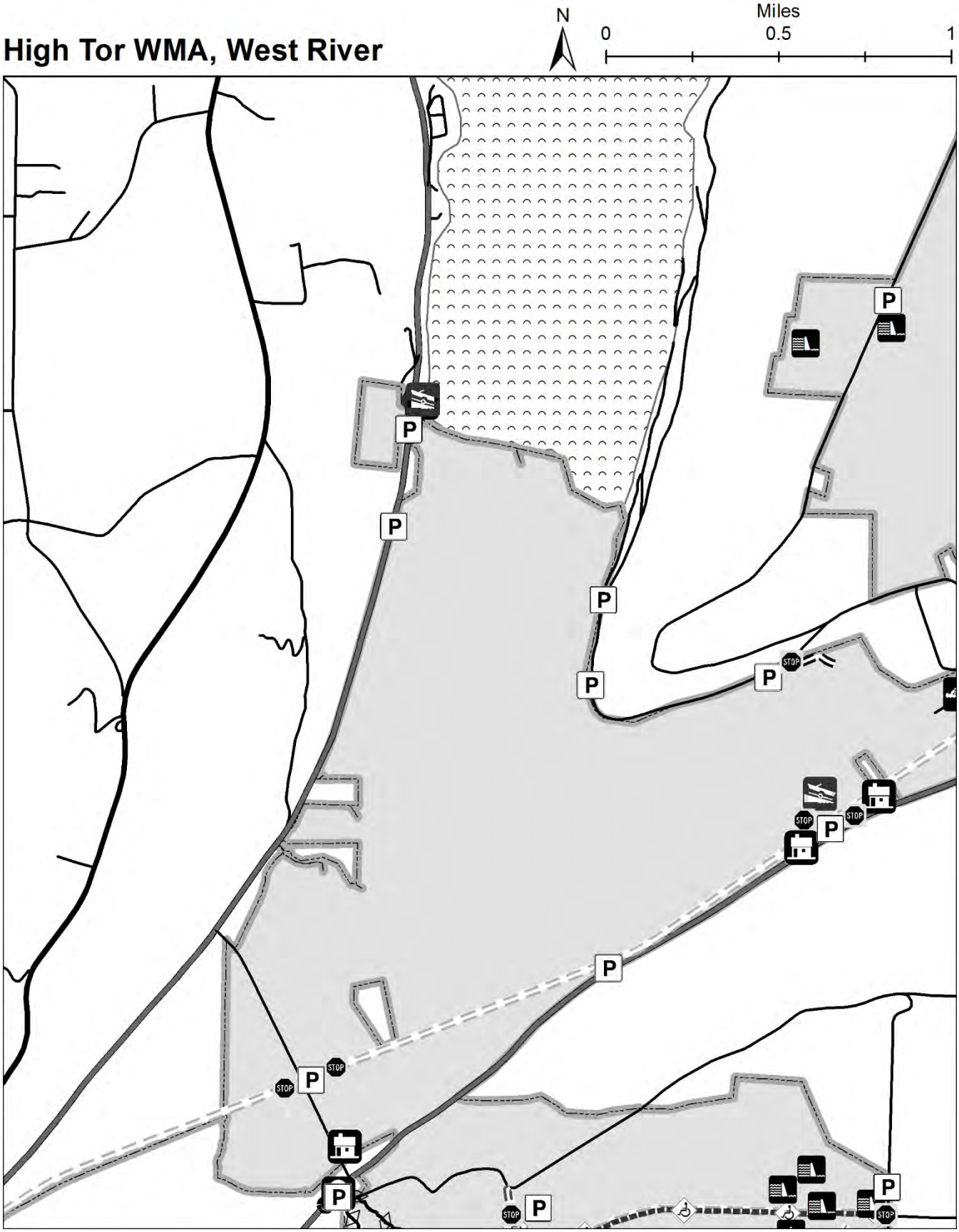
Legend for all Facilities maps is located on page 209.

High Tor WMA, South Hill



Legend for all Facilities maps is located on page 209.

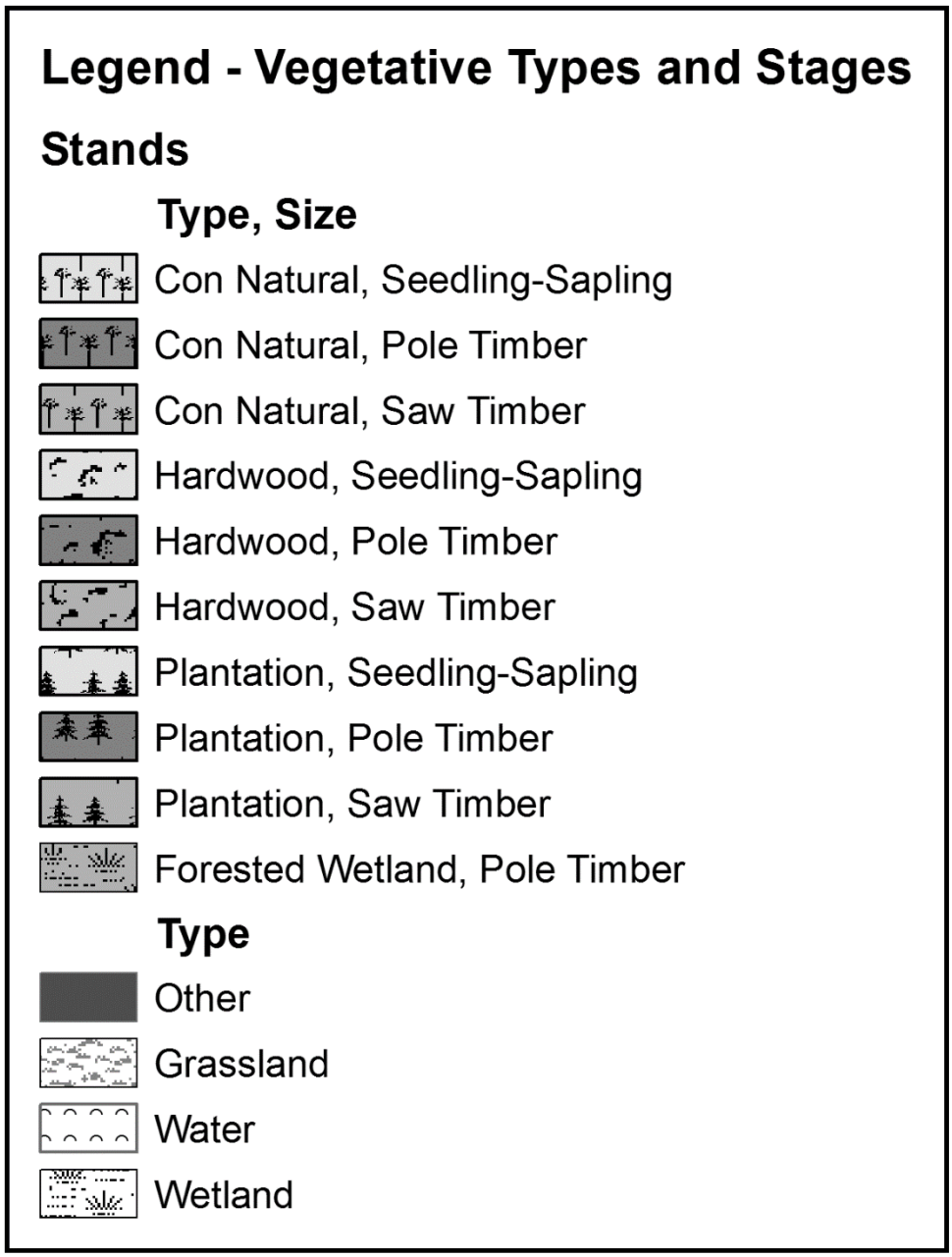
High Tor WMA, West River



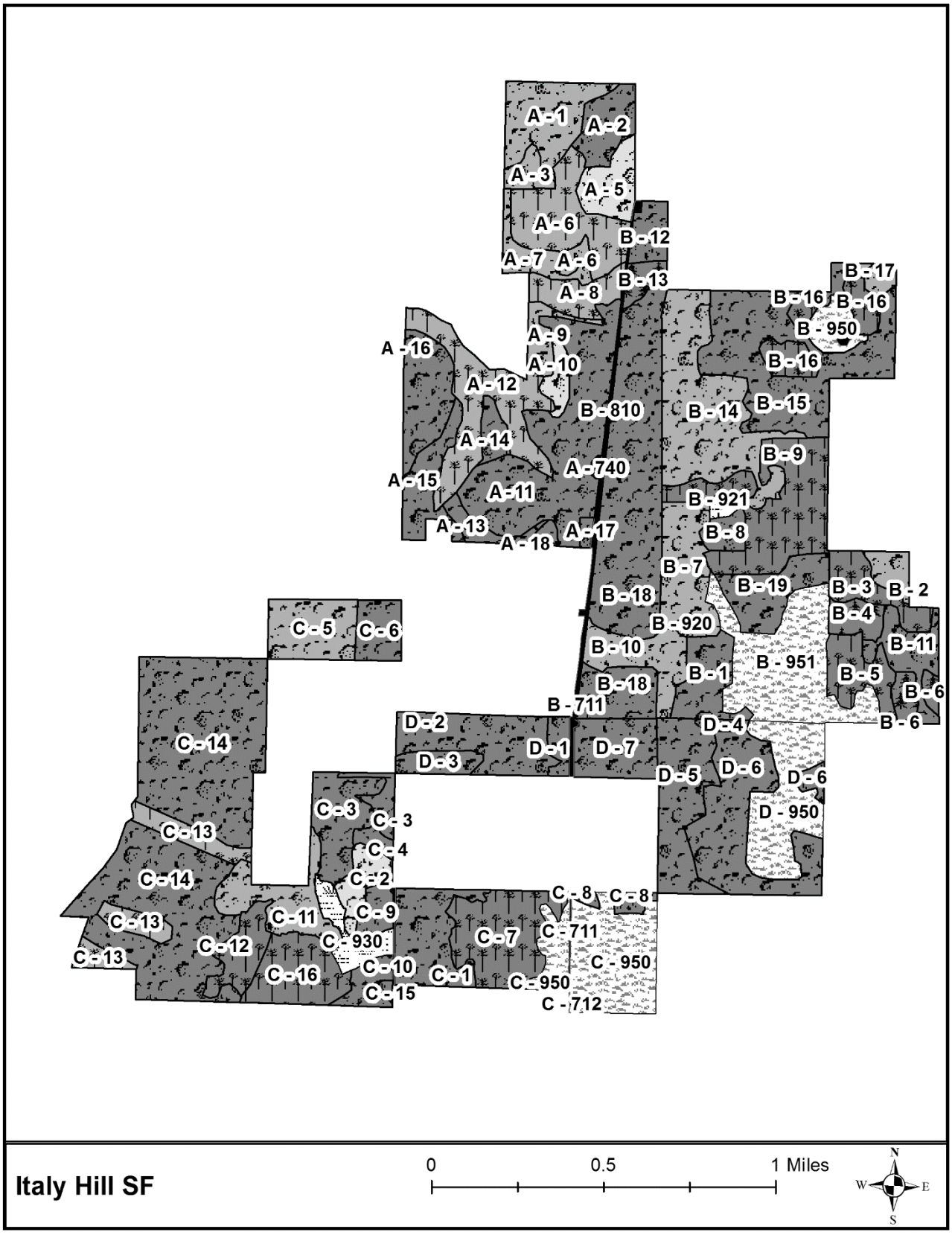
Vegetative Types and Stages

See Also: Timber and Vegetation (pg. 39), Timber and Vegetation Management (pg. 81), and Appendix F: Vegetation Management (pg. 162). A stand is a group of plants with similar characteristics that are analyzed and treated as a single unit. Each parcel 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 Department owned land.

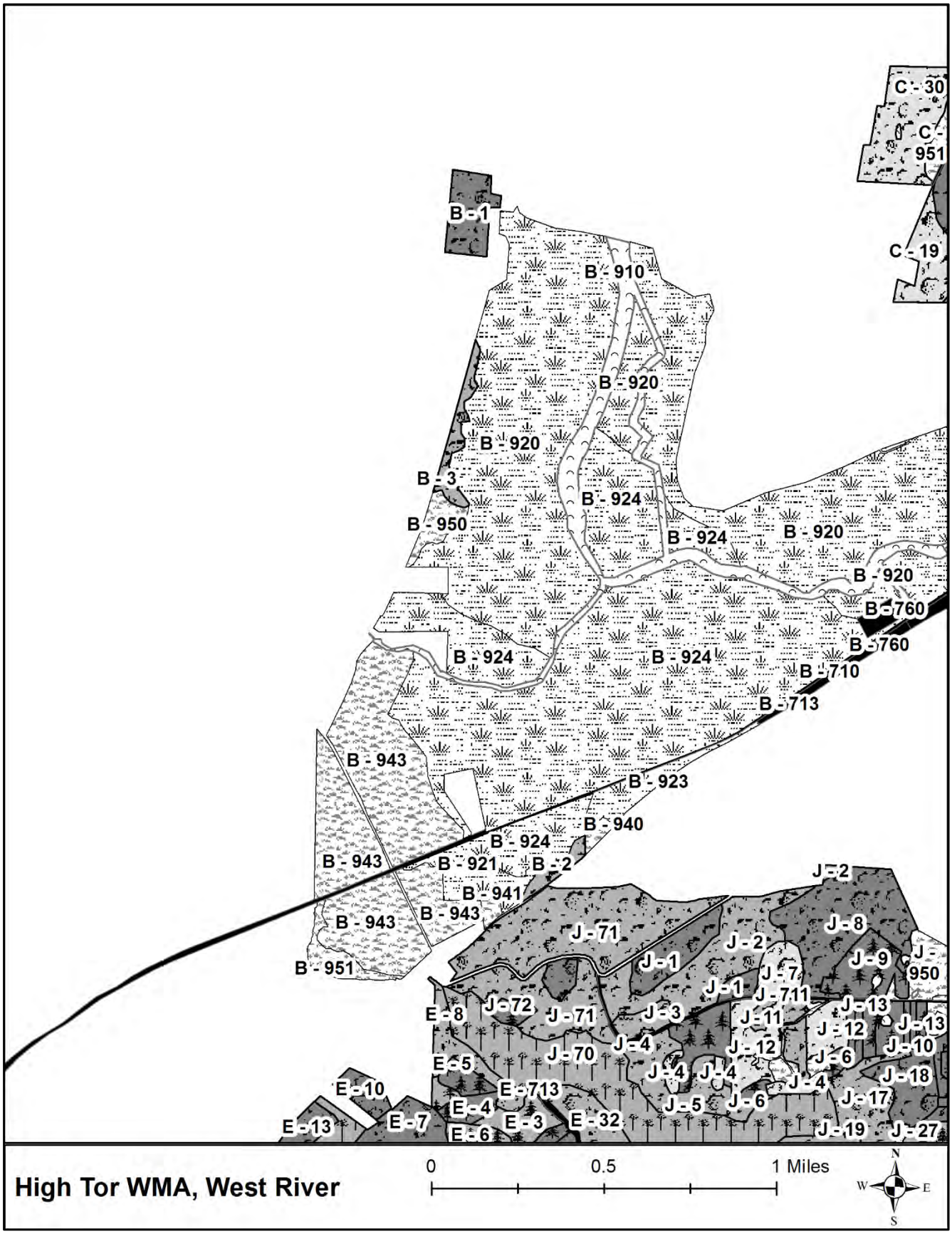
Legend for the following 5 maps:



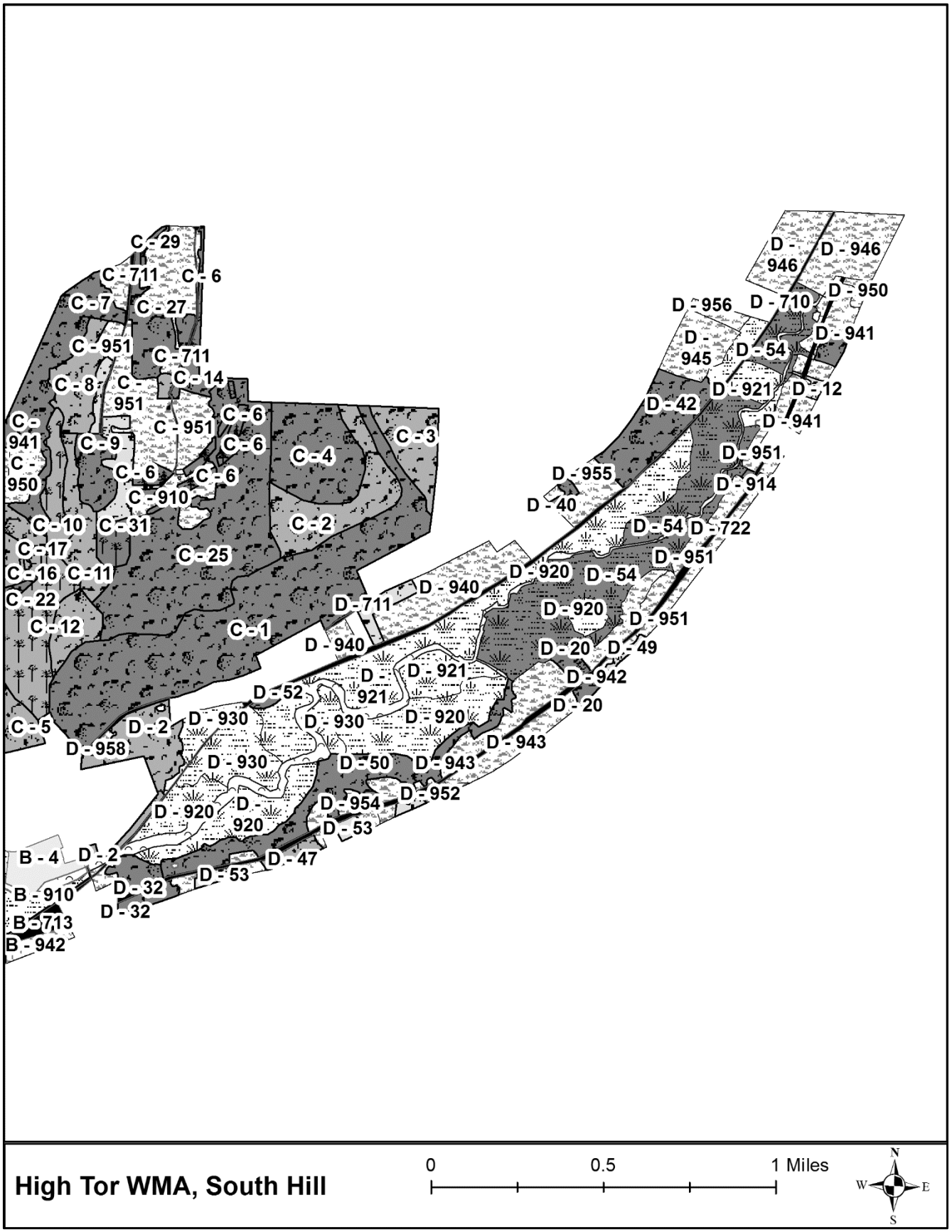
Legend for all Vegetative Types and Stages maps is located on page 215.



Legend for all Vegetative Types and Stages maps is located on page 215

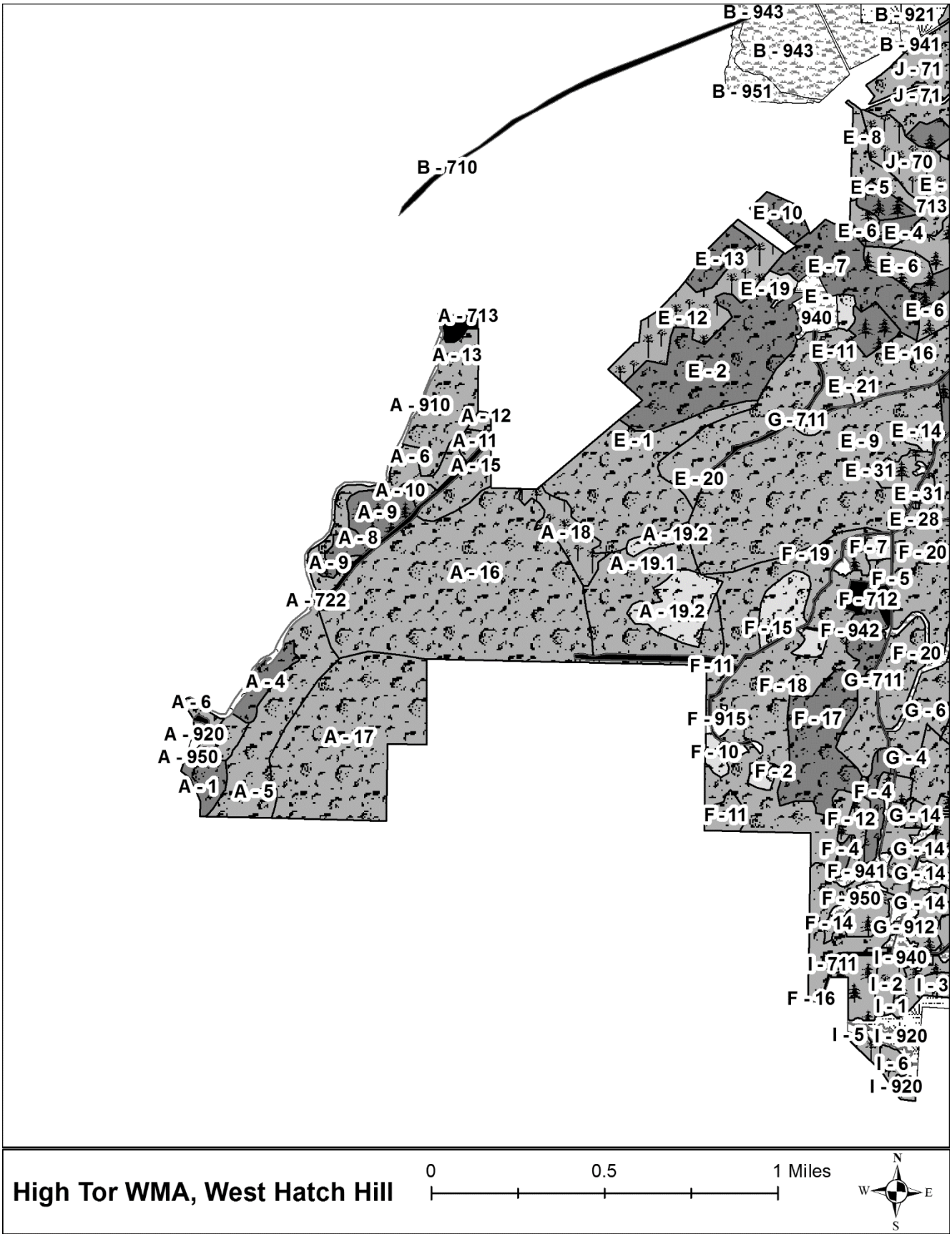


Legend for all Vegetative Types and Stages maps is located on page 215.

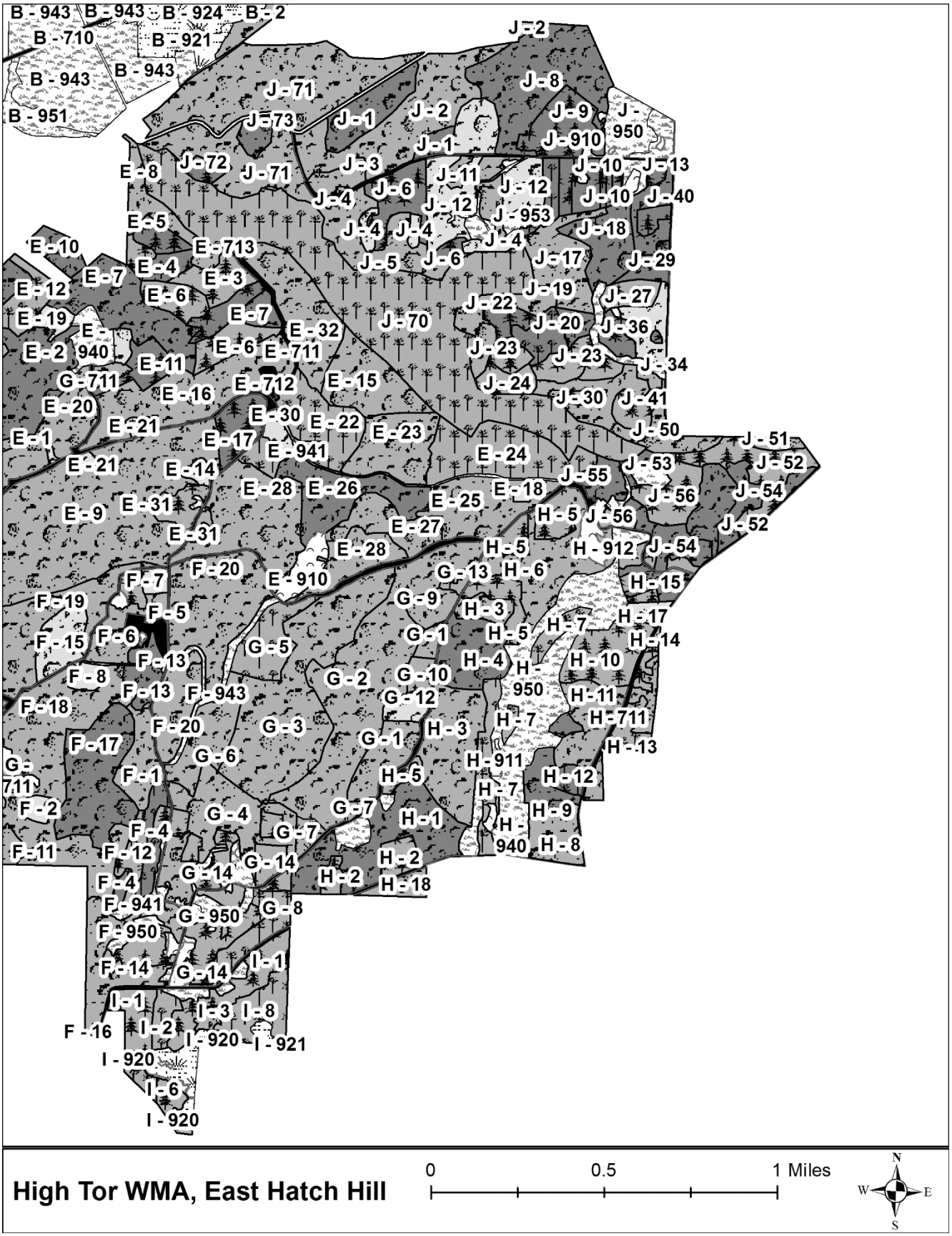


High Tor WMA, South Hill

Legend for all Vegetative Types and Stages maps is located on page 215.

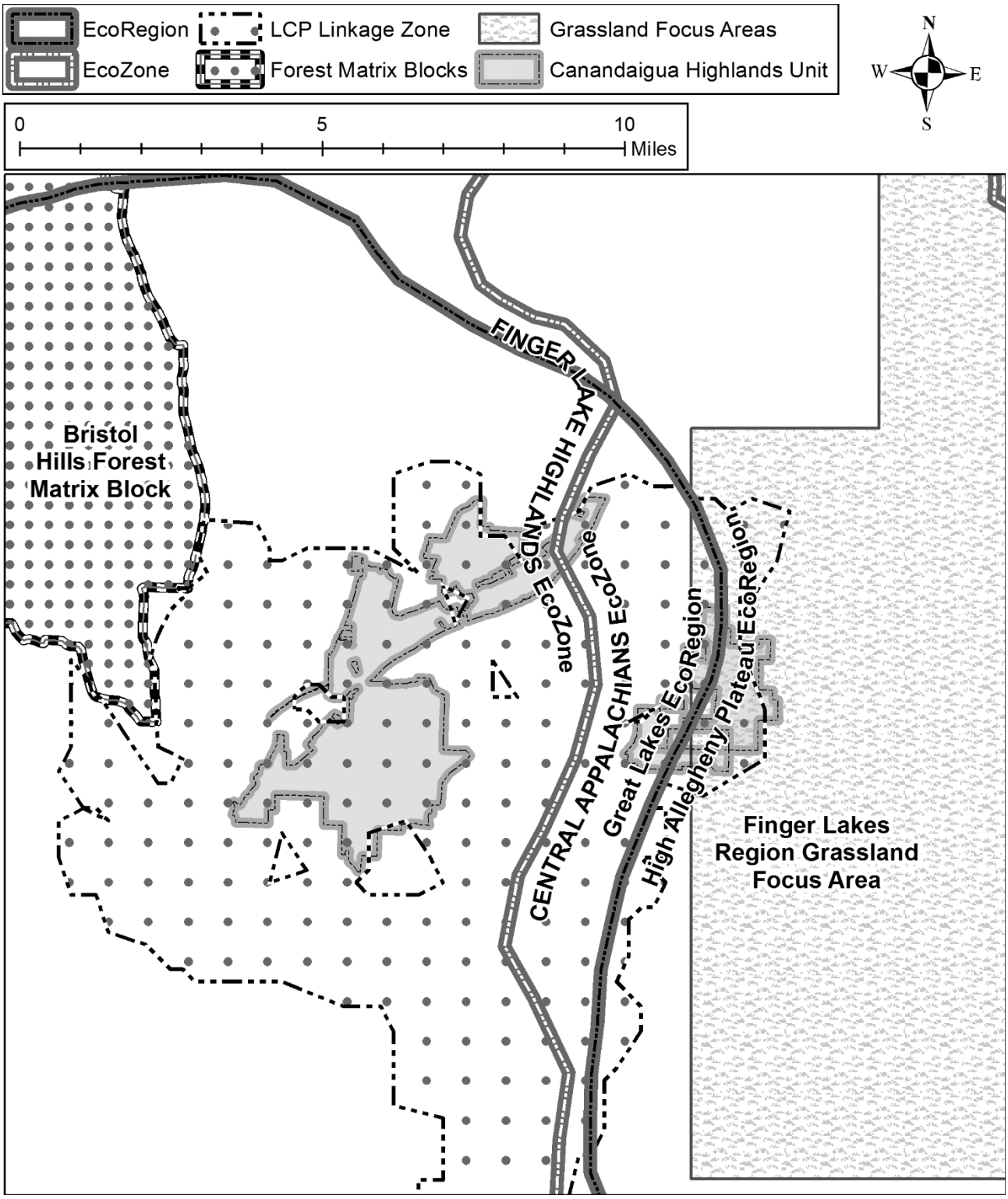


Legend for all Vegetative Types and Stages maps is located on page 215.



EcoRegions, Forest Matrix Block and Least Cost Path Corridors, and Grassland Focus Areas

For additional information see the Timber and Vegetation (pg. 39), Forest Matrix Blocks and Least Cost Path Corridors (pg. 49), Ecological Zones and EcoRegions (pg. 52), and Timber and Vegetation Management (pg. 81) sections.

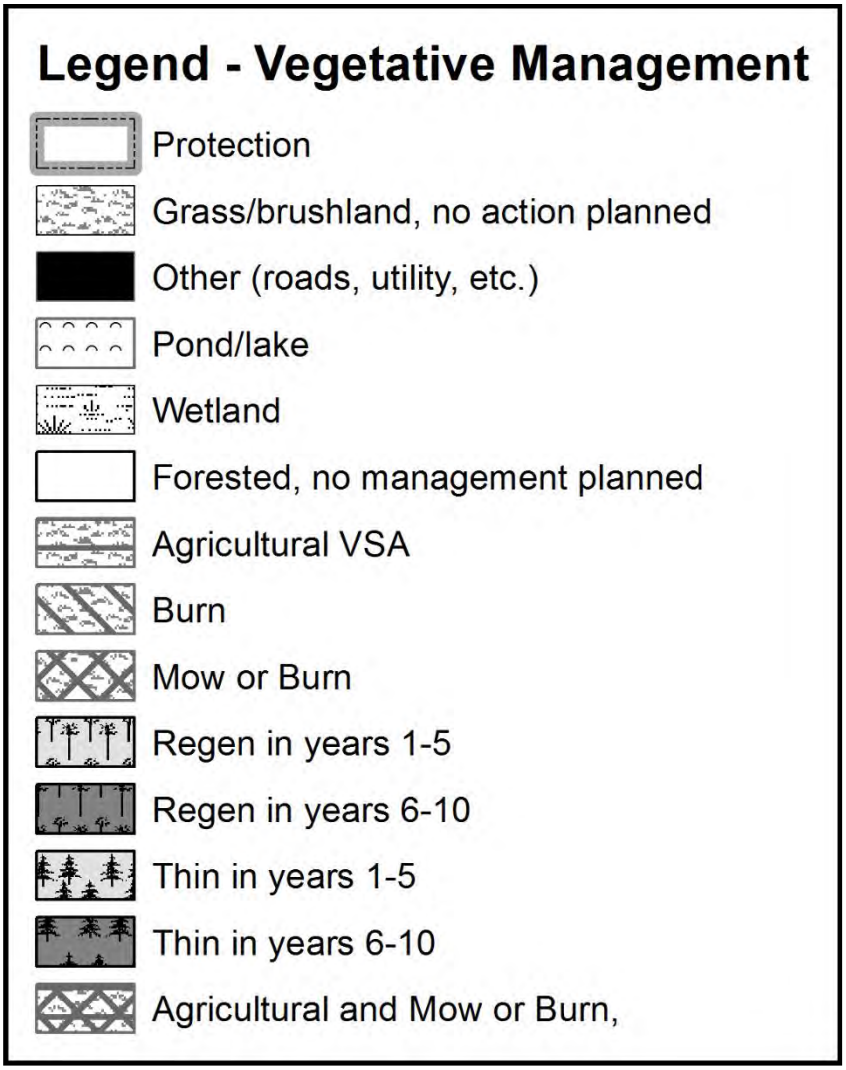


Vegetative Management

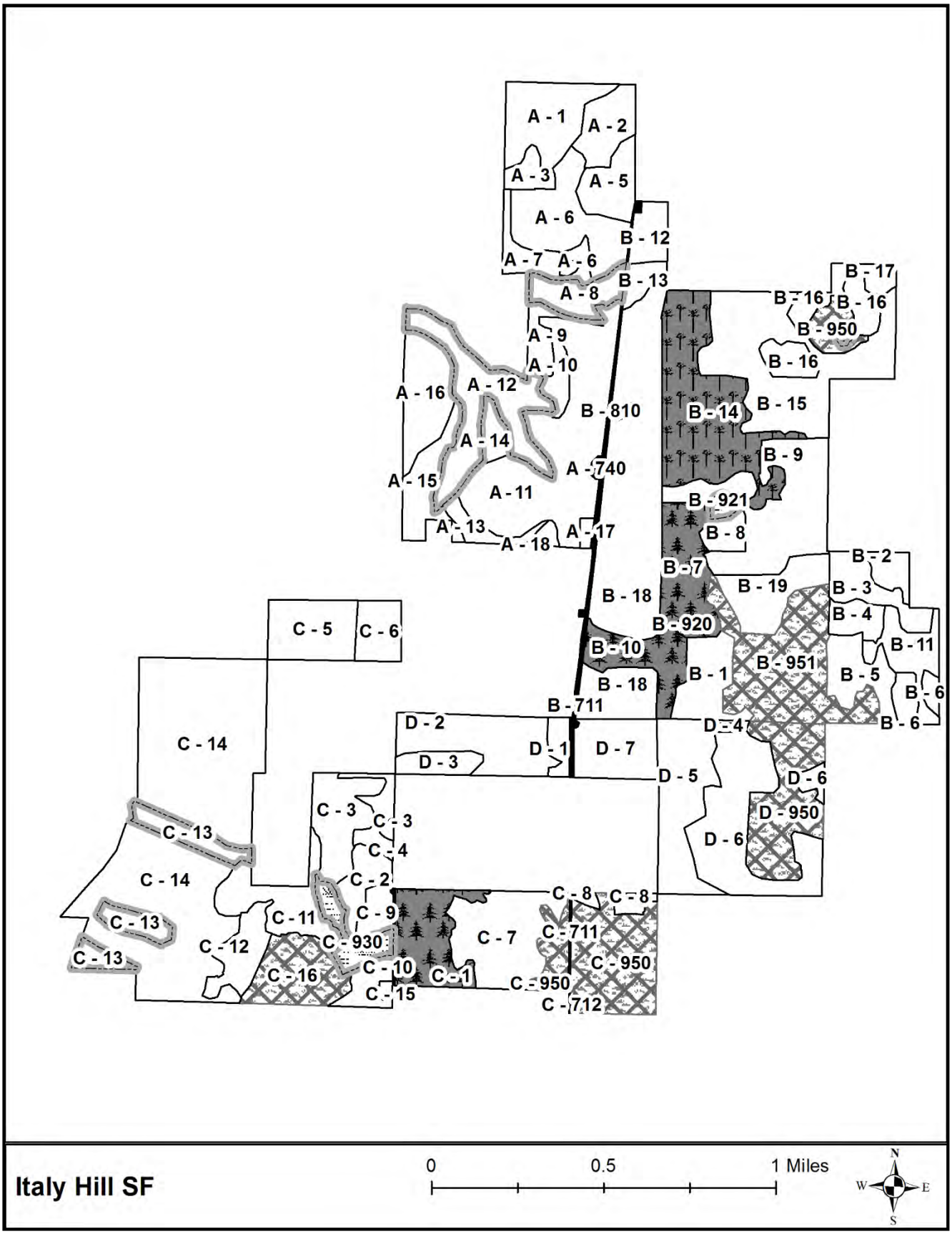
See Also: Timber and Vegetation (pg. 39), Timber and Vegetation Management (pg. 81), and Appendix F: Vegetation Management (pg. 162).

A stand is a group of plants with similar characteristics that are analyzed and treated as a single unit. Each parcel 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 Department owned land.

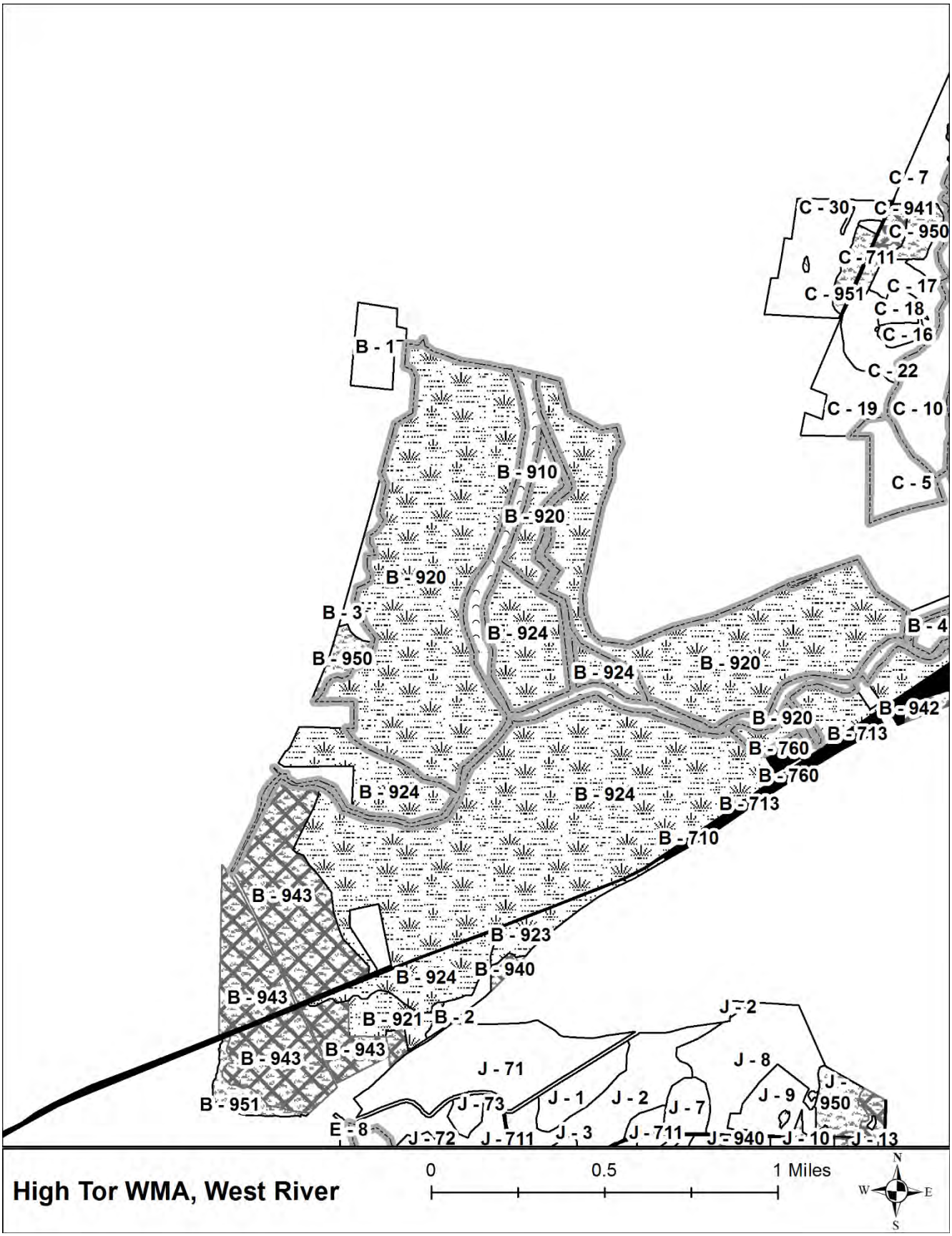
Legend for the following 5 maps:



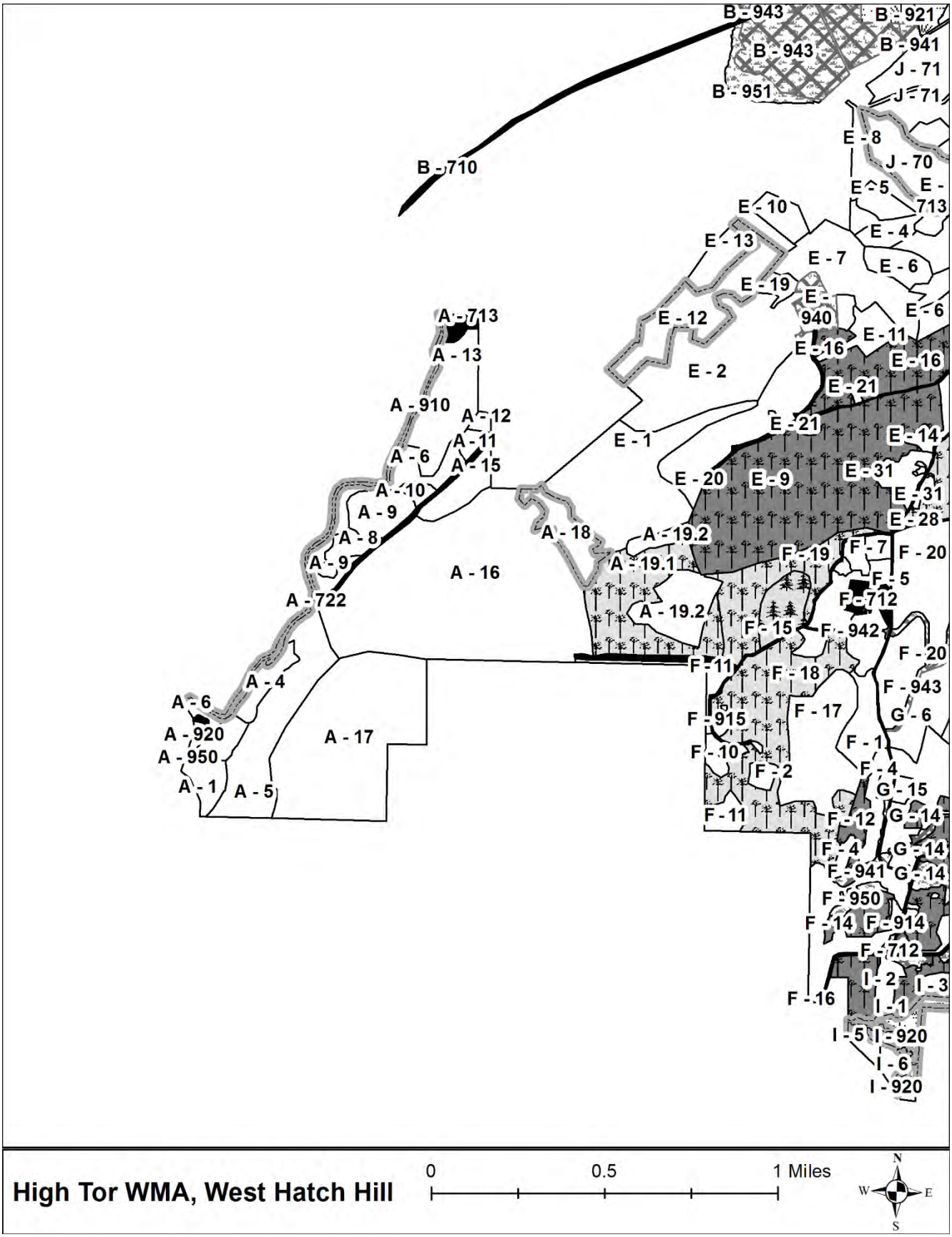
Legend for all Vegetative Management maps is located on page 222.



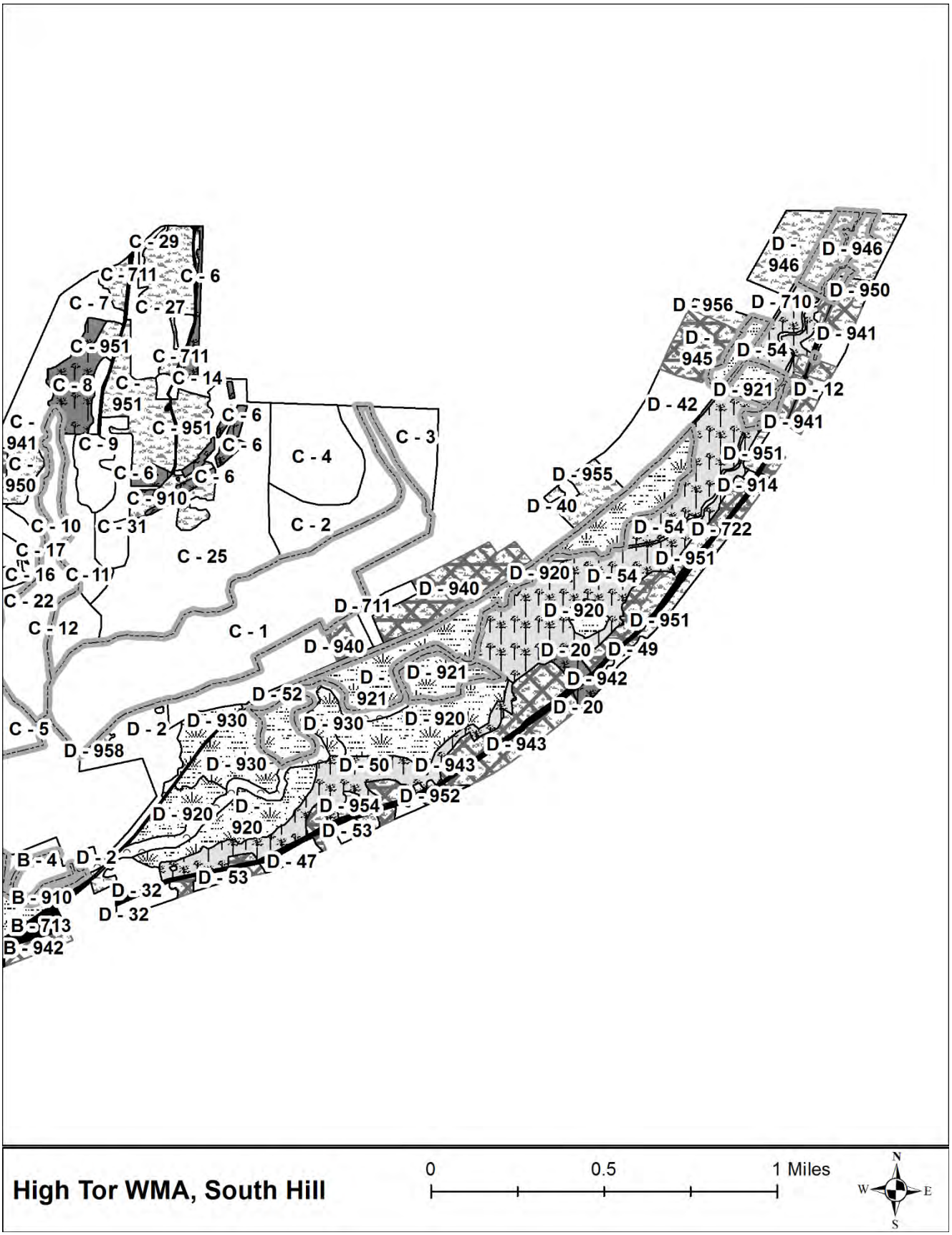
Legend for all Vegetative Management maps is located on page 222.



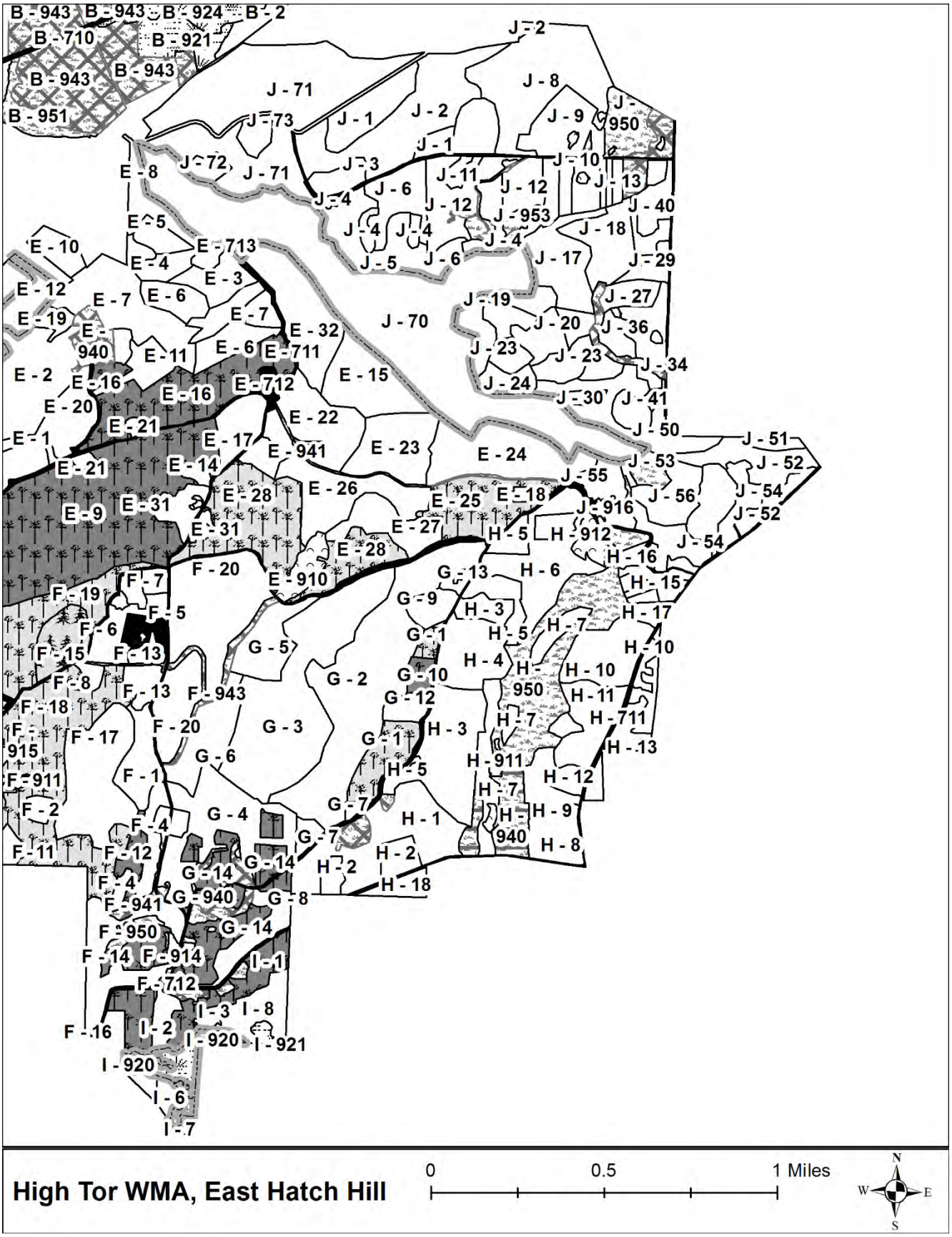
Legend for all Vegetative Management maps is located on page 222.



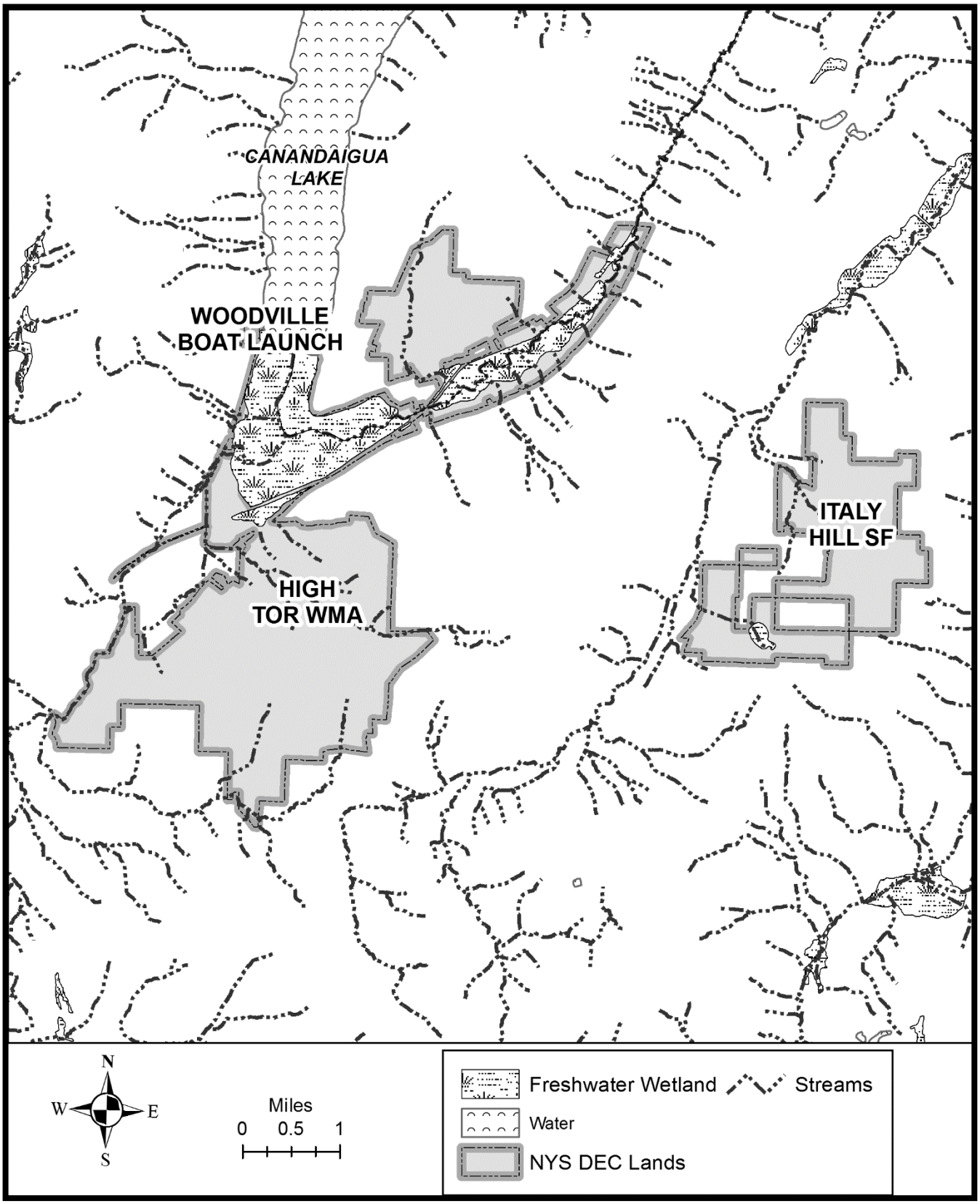
Legend for all Vegetative Management maps is located on page 222.



Legend for all Vegetative Management maps is located on page 222.

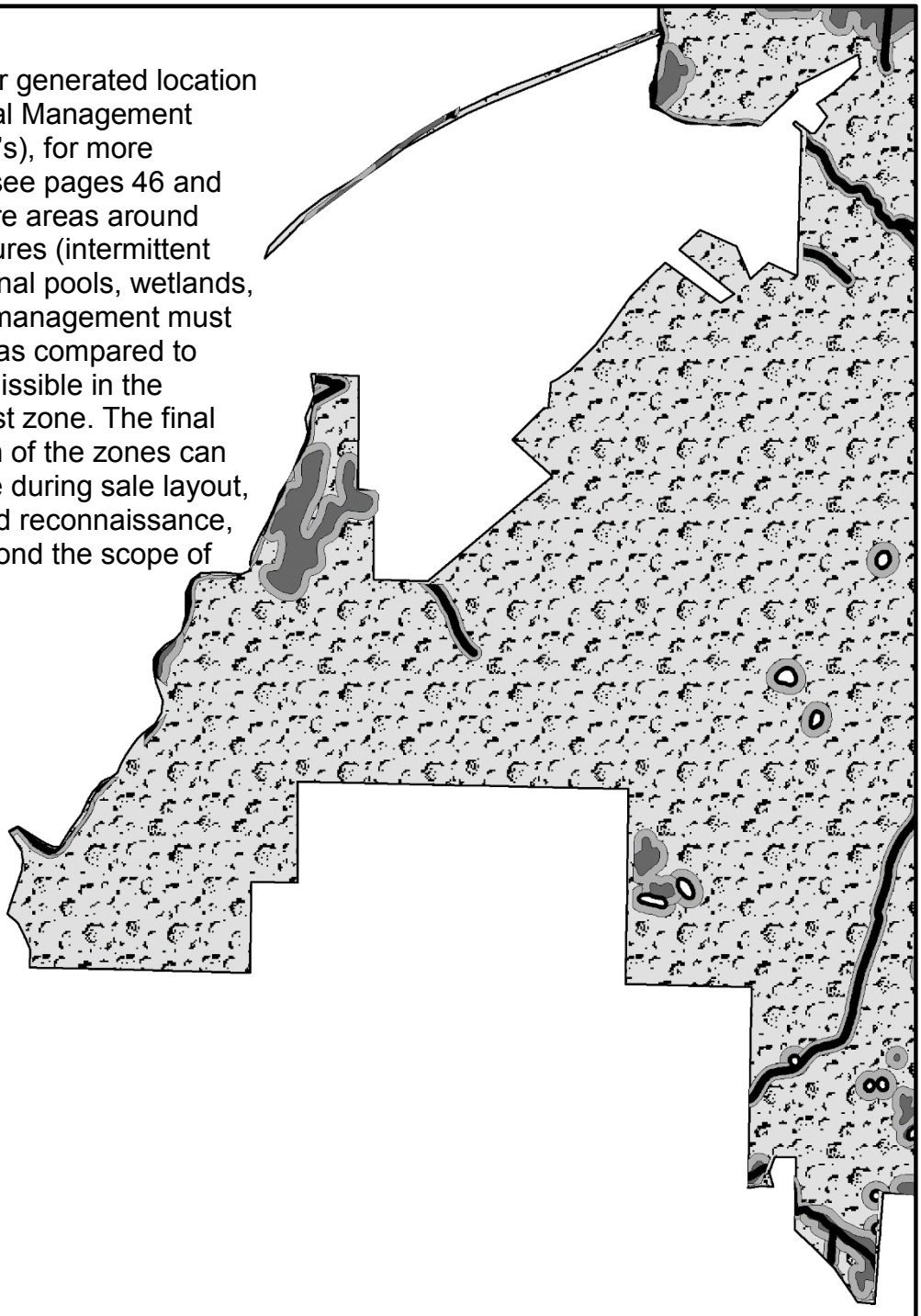


Streams, Ponds and Wetlands



Special Management Zones

Computer generated location of the Special Management Zones (SMZ's), for more information see pages 46 and 87. 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.



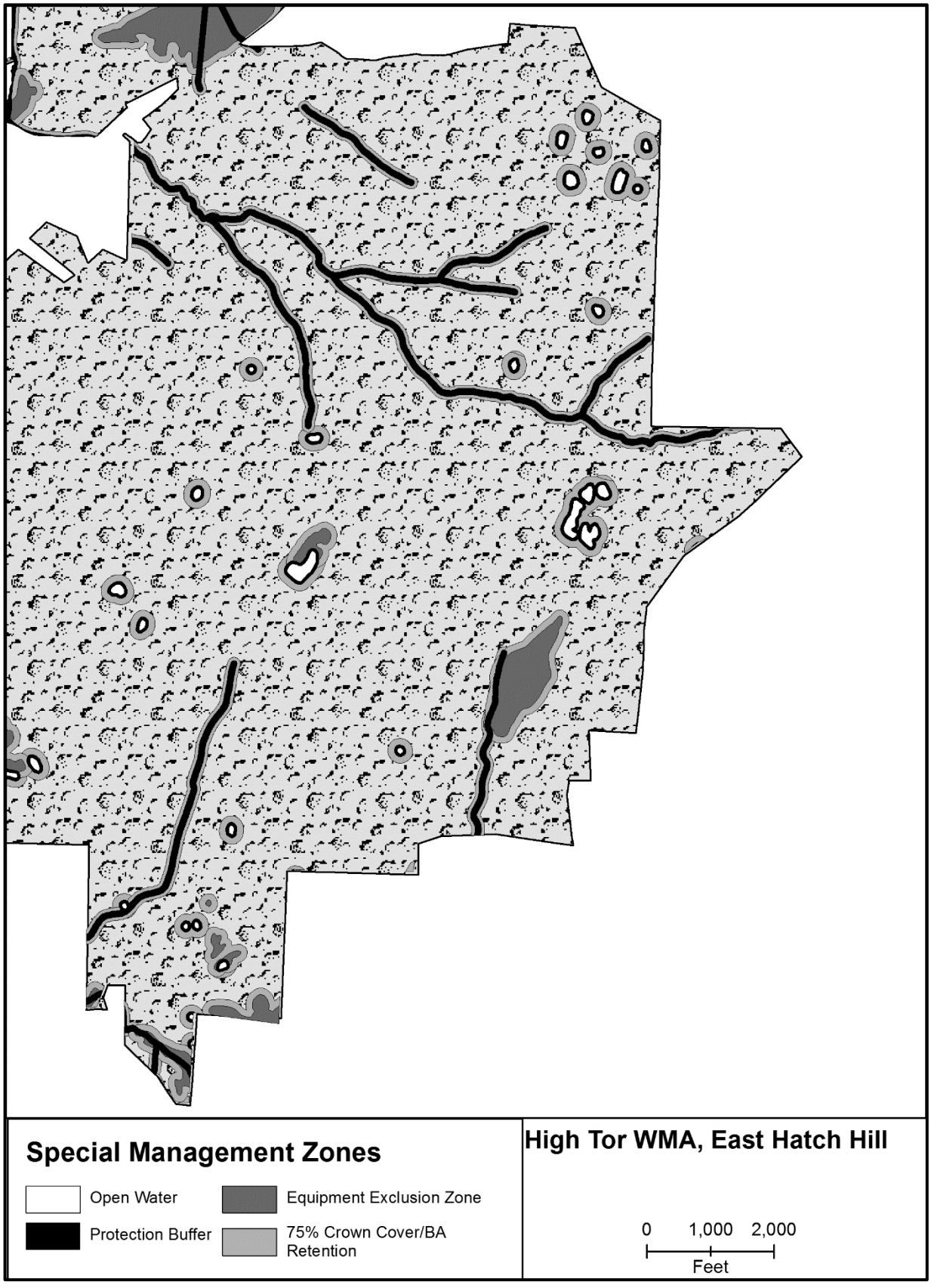
Special Management Zones

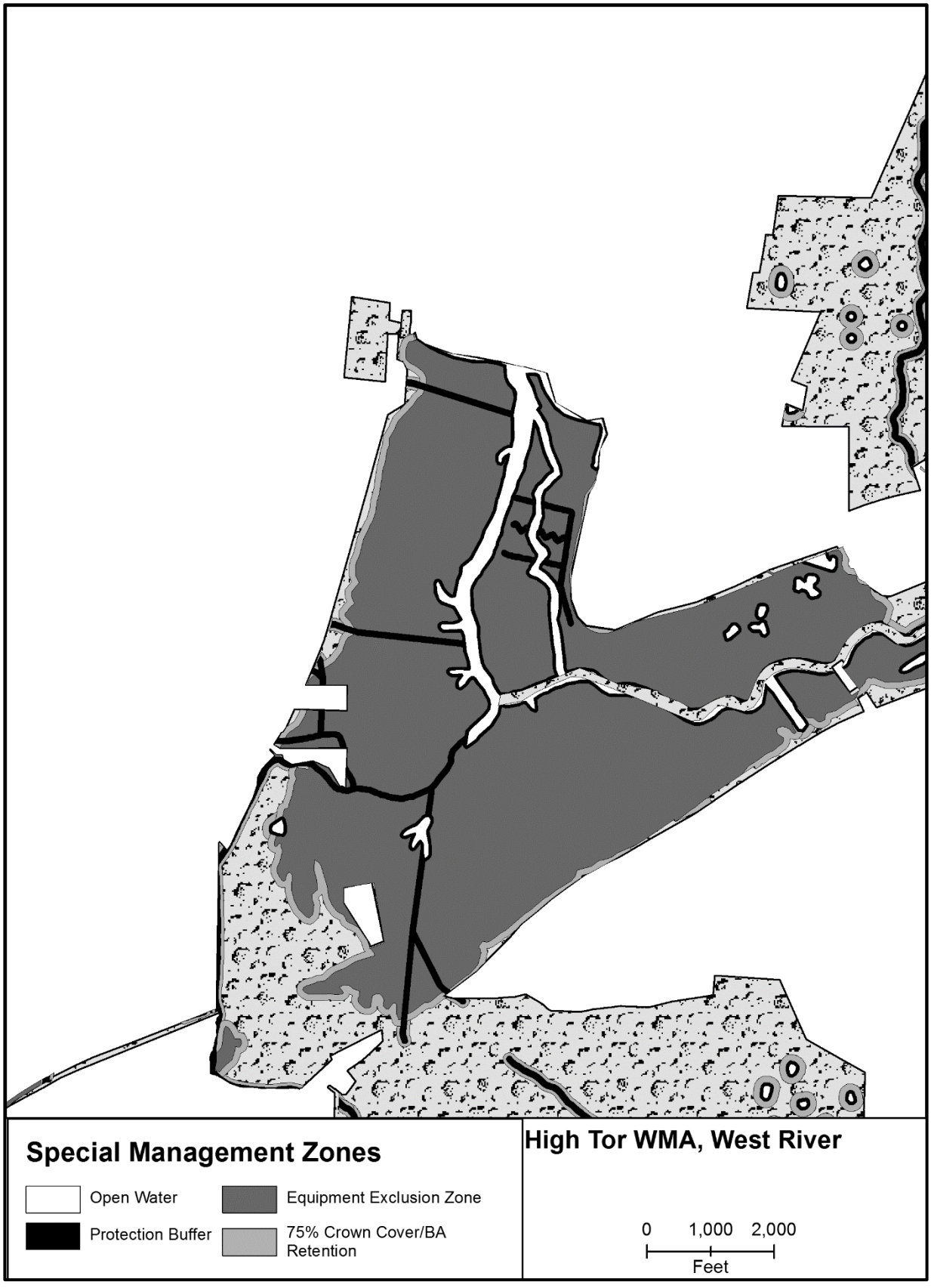
- Open Water
- Equipment Exclusion Zone
- Protection Buffer
- 75% Crown Cover/BA Retention

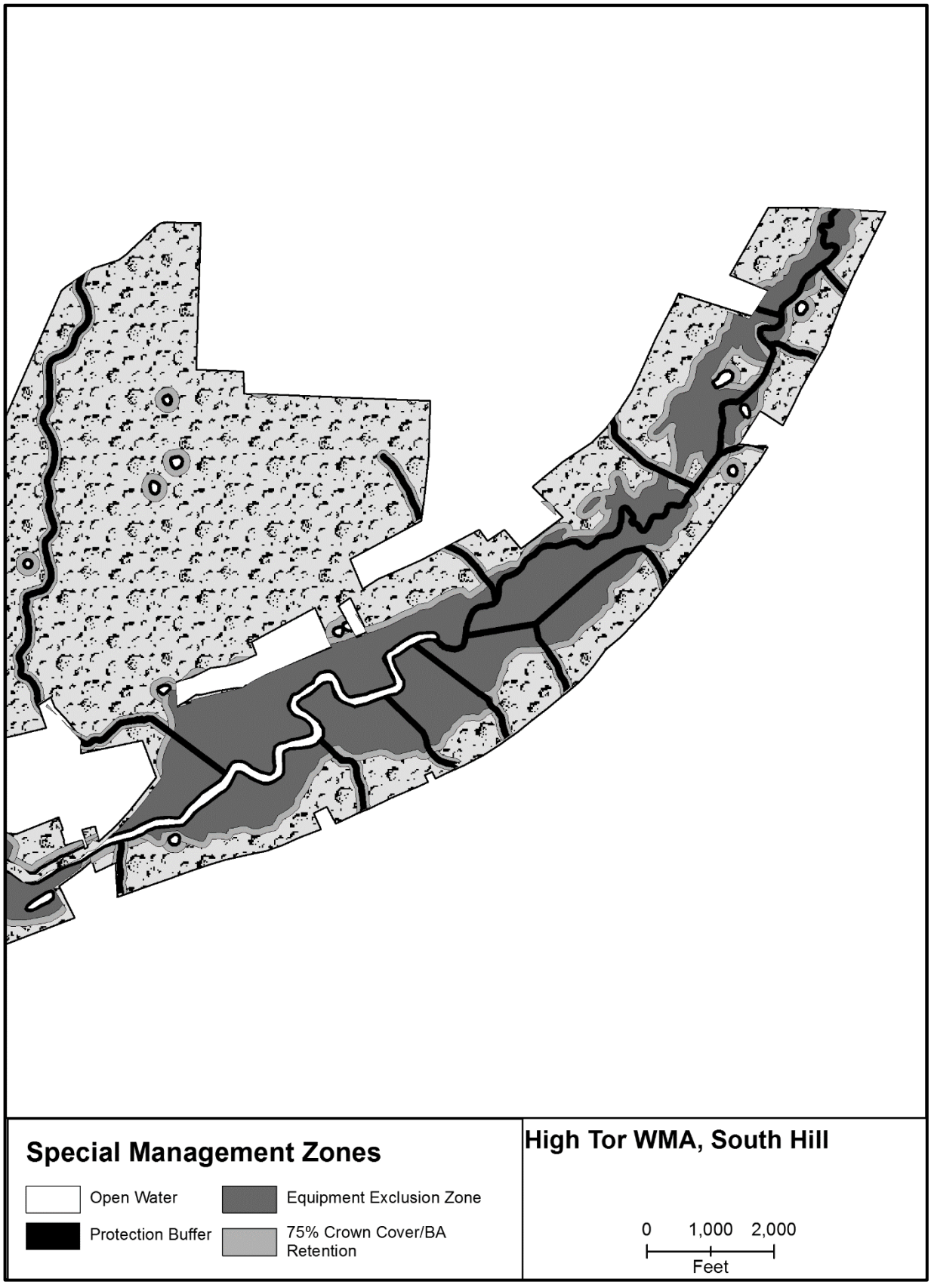
High Tor WMA, West Hatch Hill

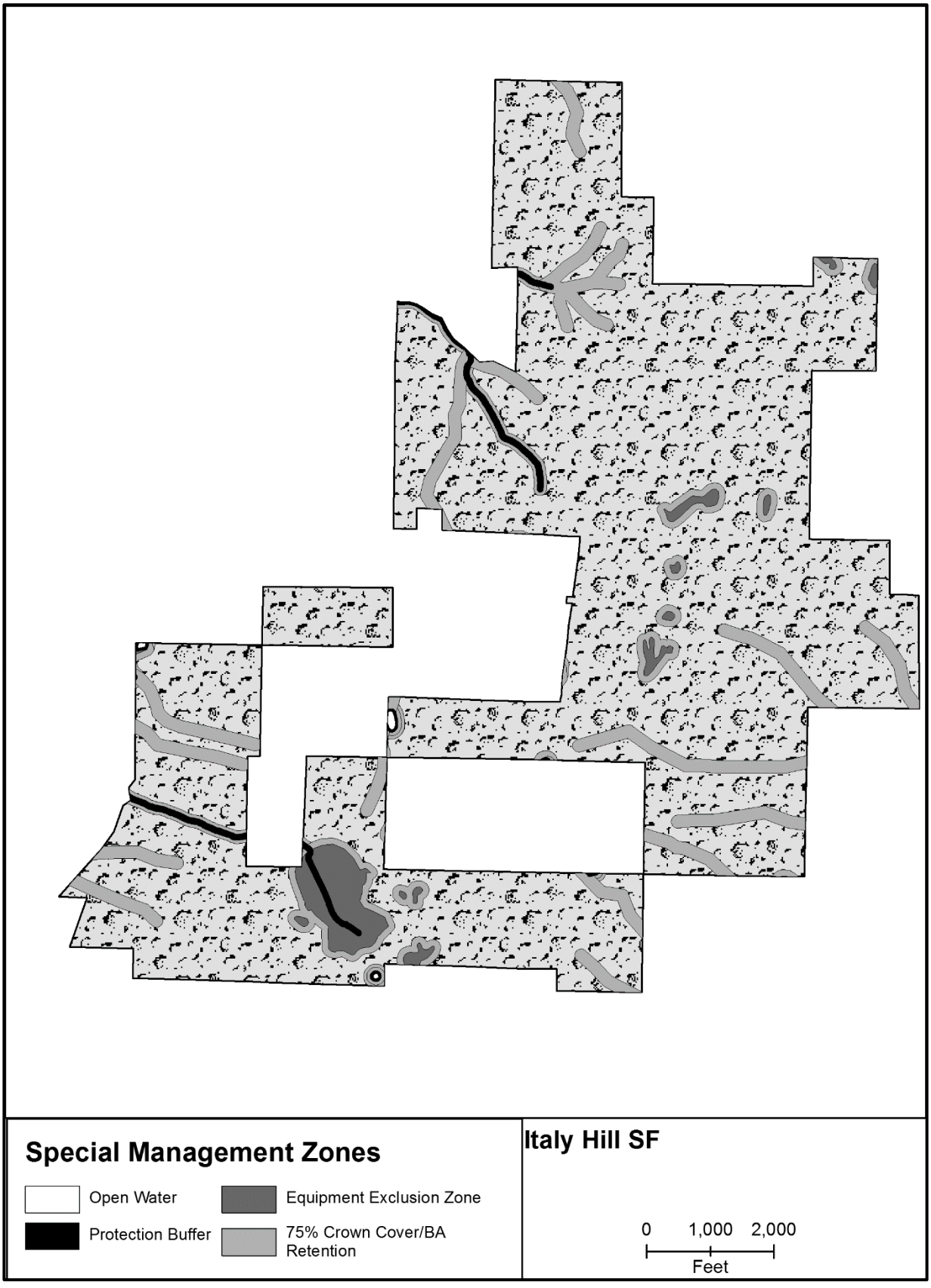
0 1,000 2,000

Feet

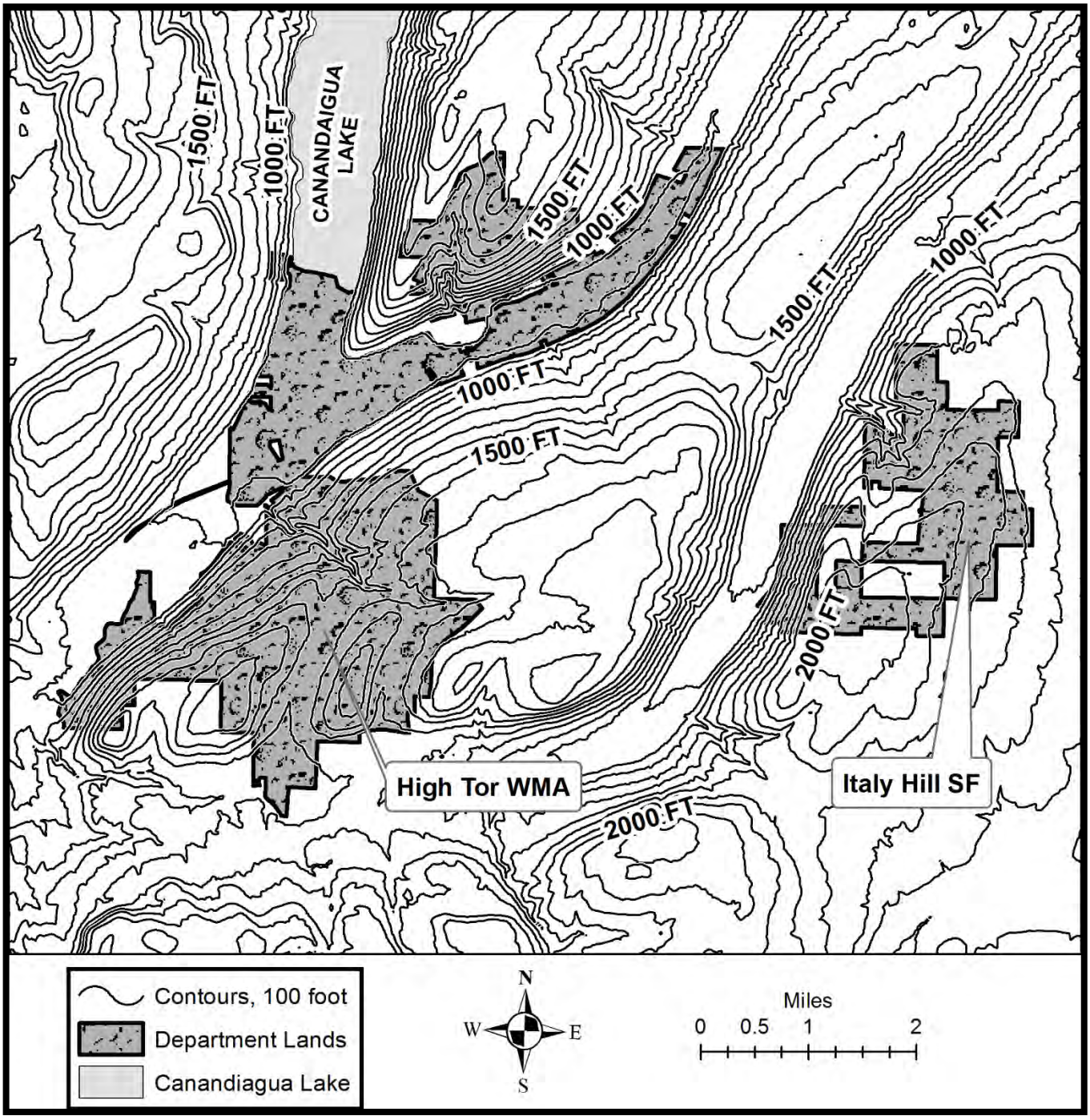

Special Management Zones
Open Water
Equipment Exclusion Zone
Protection Buffer
75% Crown Cover/BA Retention
High Tor WMA, East Hatch Hill
0
1,000
2,000
Feet


Special Management Zones
Open Water
Equipment Exclusion Zone
Protection Buffer
75% Crown Cover/BA Retention
High Tor WMA, West River
0
1,000
2,000
Feet


Special Management Zones
Open Water
Protection Buffer
Equipment Exclusion Zone
75% Crown Cover/BA Retention
High Tor WMA, South Hill
0
1,000
2,000
Feet

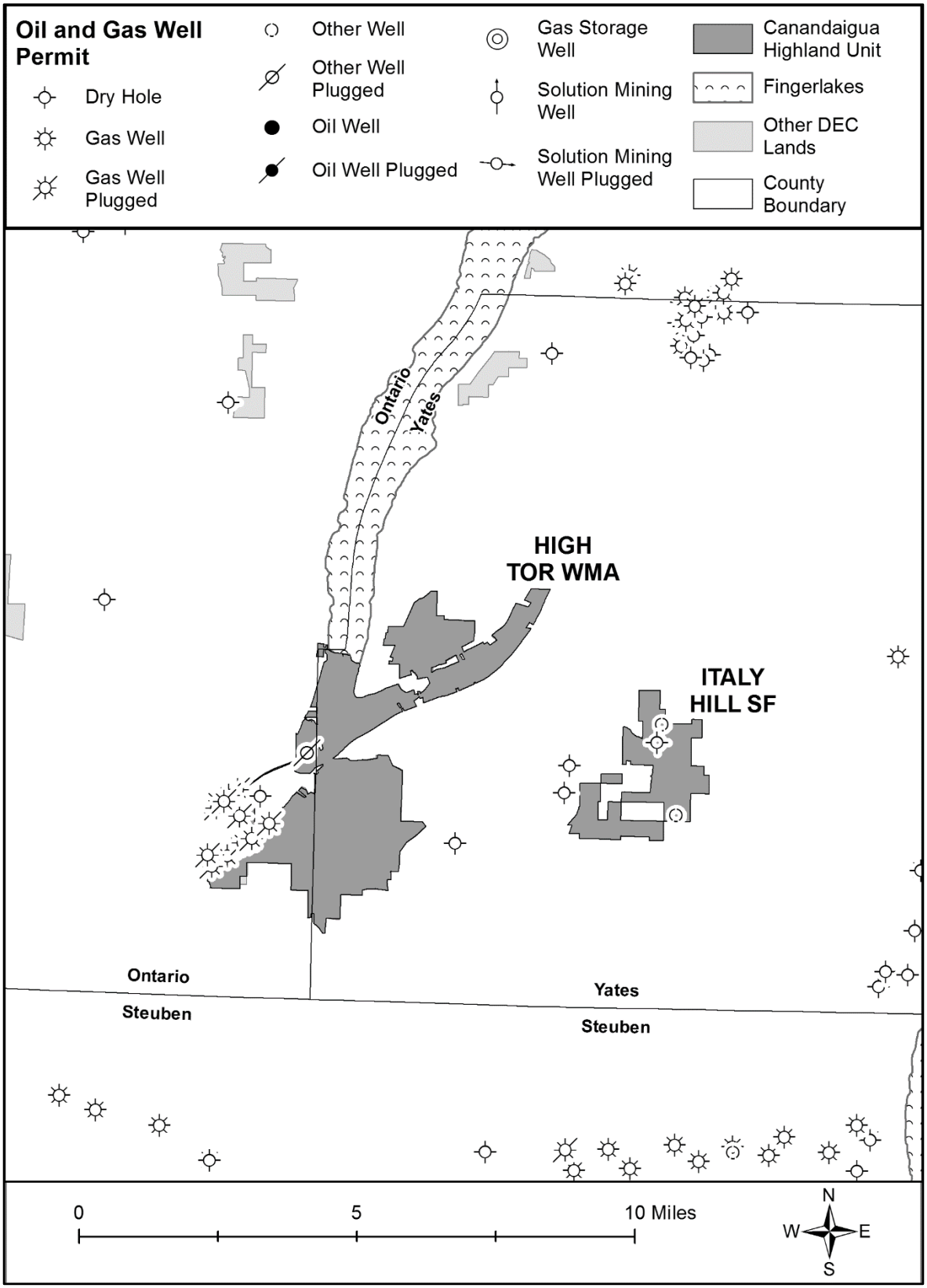

Special Management Zones
Open Water
Equipment Exclusion Zone
Protection Buffer
75% Crown Cover/BA Retention
Italy Hill SF
0
1,000
2,000
Feet

Contour Lines



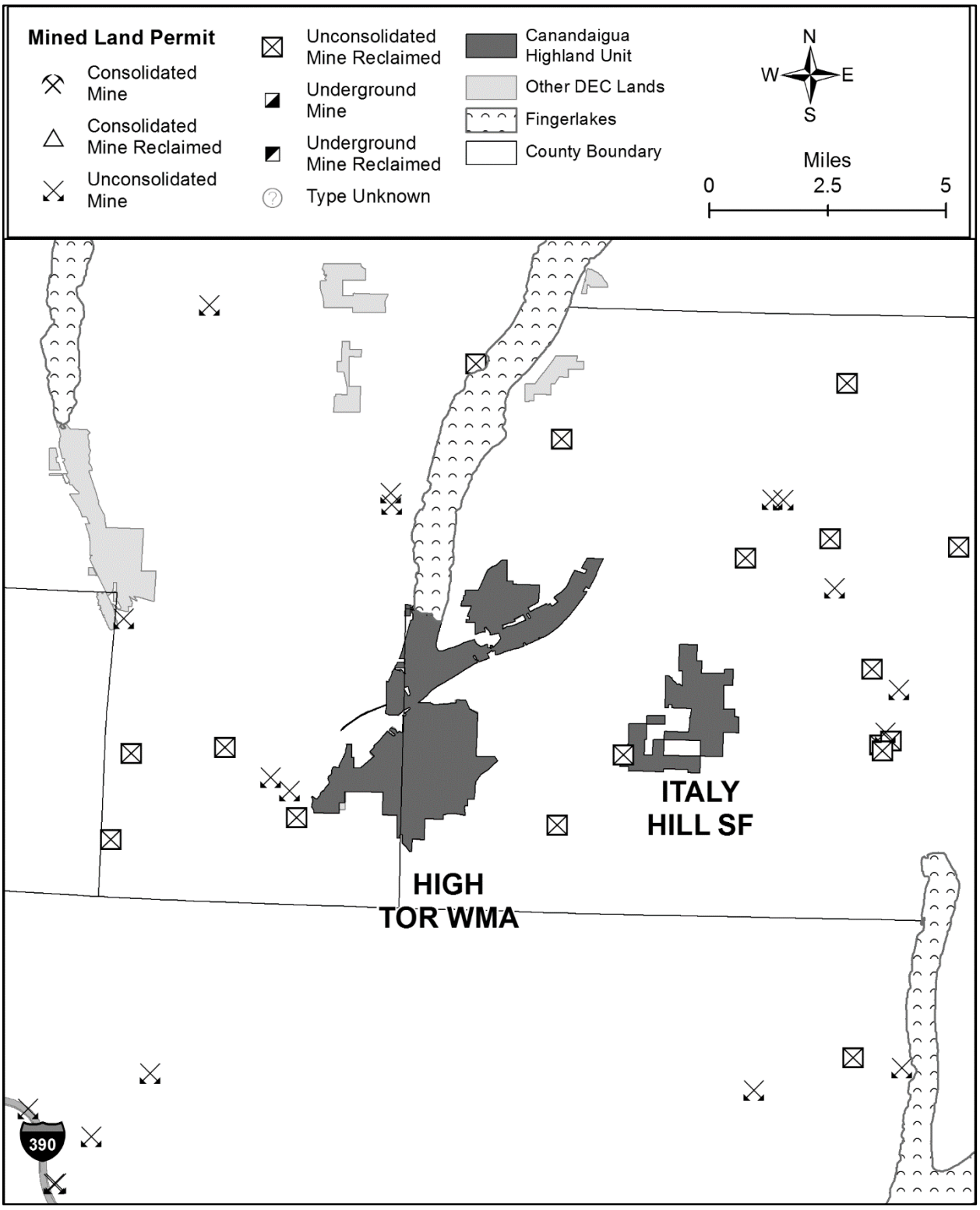
Geology – Oil, Gas, and Solution Mining Map

See also Mineral Resources (pg. 36) and Mineral Resource Management (pg. 121).



Geology - Sand, Gravel and Other Mine Locations

See also Mineral Resources (pg. 36) and Mineral Resource Management (pg. 121).



For additional information contact:

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Forest Resource Management
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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/42852.html