New York State
Department of Environmental Conservation

Division of Lands & Forests

KEUKA LOWLANDS
UNIT MANAGEMENT PLAN

FINAL

Towns of Bath, Bradford, Urbana, and Wayne in Steuben County
Town of Tyrone in Schuyler County

April, 2012

Lead Agency:
NYS Department of Environmental Conservation
Region 8 Sub-Office
7291 Coon Rd.
Bath, New York 14810

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STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ALBANY, NEW YORK 12233-1010

MEMORANDUM

TO: The Record

FROM: Joseph J. Martens JM

DATE: MAR 2 6 2012

SUBJECT: Final Keuka Lowlands UMP

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

PREFACE

It is the policy of the New York State Department of Environmental Conservation to manage state lands for multiple benefits to serve the people of New York State. This Unit Management Plan (Unit) is the first step in carrying out that policy. The plan has been developed to address management activities on this unit for the next 10 year period, with a review due in 5 years. Some management recommendations may extend beyond the 10 year period.

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

Green Certification

New York State DEC-Bureau of State Land Management contracted with NSF-International and Scientific Certification Systems to conduct auditing for the purpose of obtaining dual certification under Forest Stewardship Council (FSC) and the Sustainable Forestry Initiative (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.

With the dual certification the wood harvested off State Forests from this point forward could now be labeled as "green certified" through chain-of-custody certificates. Green Certified labeling on wood products may assure consumers that the raw material was harvested from well-managed forests.

The Department has joined only an elite few states representing less than 10% of working forests certified as well-managed throughout the Northeastern Region of the United States. The Department's State Forests can be counted as well-managed to protect habitat, cultural resources, water, recreation and economic values, now, and for future generations.

#SCS-FM/COC-00104N
©1996 Forest Stewardship Council
FSC certification means that NY DEC State Forests are managed according to strict environmental, social and economic standards.

#NSF-SFIS-6l741
NY DEC use of the Sustainable Forestry Initiative® program logo mark indicates that State Forests have been certified by a qualified independent auditor to be in conformance with the SFI Standard.

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.

NYS Department of Environmental Conservation Committee Members:

Gretchen Cicora	Senior Forester
Mark Keister	Senior Forester
Linda Vera	Citizen Participation Specialist
Joel Fiske	Senior Forester
Jim Bagley	Senior Forester
Andrew Drake	For. Tech. I
Bill Glynn	Mineral Resources Specialist
Scott Smith	Senior Wildlife Biologist
John Gibbs	Regional Forester
Brad Hammers	Senior Aquatic Biologist
Ernest Lucantonio	Env. Eng. Tech. III

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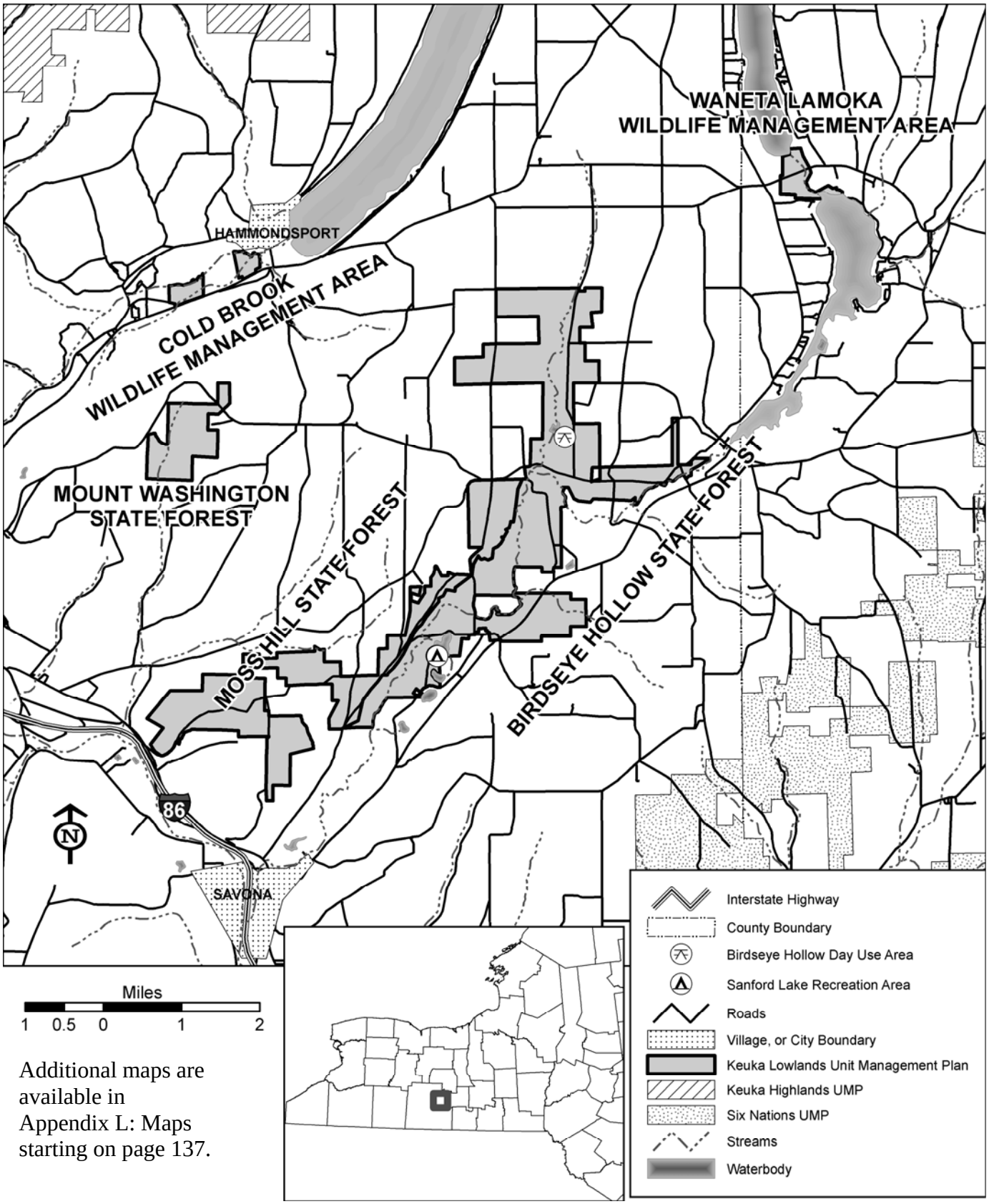
KEUKA LOWLANDS UNIT LOCATION MAP



Additional maps are available in Appendix L: Maps starting on page 137.

INTRODUCTION

History of State Forests and Wildlife Management Areas

Forest lands outside the Adirondack and Catskill regions owe their present character, in large part, to the impact of pioneer settlement. Following the close of the Revolutionary War, increased pressure for land encouraged westward expansion. Up to 91% of New York woodlands were cleared for cultivation and forage.

As the less fertile soils proved unproductive, they were abandoned, and settlement was attempted elsewhere. The stage of succession was set and new forests of young saplings re-occupied the ground once cleared.

The State Reforestation Law of 1929 and the Hewitt Amendment of 1931 set forth the legislation which authorized the Conservation Department to acquire land by gift or purchase for reforestation purposes. These state forests consisting of not less than 500 acres of 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”. This broad program is presently authorized under Article 9, Title 5, of the NYS Environmental Conservation Law.

In 1930, Forest Districts were established, and the tasks of land acquisition and reforestation were started. 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 Forests. 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 reforestation areas. Plans for further planting, construction, facility maintenance, and similar tasks had to be curtailed. However, through postwar funding, conservation projects once again received needed attention.

The Park and Recreation Land Acquisition Act of 1960 and the Environmental Quality Bond Acts of 1972 and 1986 contained provisions for the acquisition of State Forest lands, 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.

Wildlife Management Areas in New York, like State Forests, 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 hunting licenses, firearms and ammunition.

Today there are over 770,000 acres of State Forest land, approximately 751,000 acres of Conservation Easements, and over 223,000 acres of Wildlife Management Areas throughout the state. The use of these lands is important to the economy and to the health and well-being of the people of the state.

History of Keuka Lowlands Unit Management Area

Generally, when we research the history of State Forests in Region 8 we do not find much of significance. That is not the case when talking about Birdseye Hollow and Moss Hill State Forests. There has been so much that has happened here that it is difficult to know where to begin!

The Aulls of Aulls Road on Birdseye Hollow State Forest

Frank Aulls was a lumber dealer, sawmill operator, manufacturer and farmer. His homestead and base of operations was located on Aulls Road in the Town of Bradford.

The business directory of the same era notes that Mr. Aulls operates a sawmill, both on a custom basis and on his own account, sells sawn lumber, manufactures grape baskets, operates an apple orchard, a dairy farm, and 220 acres of crop land (!) Mr. Aulls evidently subscribed to the maxim that "idle hands are the Devil's playground"!

Mr. Aulls son, also named Frank, was the subject of a short biographical sketch in the 1927 version of "Biographies of People of Importance in New York State".

> "To wit: Frank R. Aulls was born in Bradford, August 7, 1878, son of Frank and Elizabeth (Rowlett) Aulls, both born in Wayne, New York, in 1840.
>
> His ancestry was of excellent American stock, and his great-grandfather, William Aulls, made his way to Pleasant Valley with William Baker in 1793, seventeen years before the arrival of the Hammond family, whose name was given to the town of Hammondsport.
>
> His son, Ephraim Aulls, came from Connecticut and settled in Pleasant Valley; he was one of the early white settlers of that region. His son, Frank Aulls, father of the subject of this record, lived in Bradford until his death in 1893, and prospered as a lumberman and farmer. He was a member of Company E of the 104th New York Volunteer Infantry (the Wadsworth Guards), during the Civil War.
>
> Frank R. Aulls attended the Bradford Public School and the Haverling School at Bath. He put aside his books at the age of fifteen and engaged in farming. In 1898, he built a feed mill in Bradford, Steuben County, and two years later purchased the waterpower mills at Campbell, where in 1921 he also erected the Aulls Hydro-Electric Plant, in which he owned ninety eight percent of the stock. His mill, under his presidency, was in operation for some twenty-five years, and in 1925 he sold out. He thus provided his section with many of the lighting and milling facilities enjoyed by cities, and his plants and equipment were matters of local pride.
>
> From 1914 to 1921, he was chairman of the committee named to locate and build the Pleasant Valley Tuberculosis Sanatorium, which was completed and opened in the fall of 1918. His fraternal affiliations are with the Savona Lodge, Free and Accepted Masons, and the Corning Consistory, and he holds the thirty-second degree.

Frank R. Aulls married (first), February 22, 1900, Mae Charlton, of Peekskill, New York, who died in 1906. He married (second), in 1909. Margaret E. Cox, of Cleveland, Ohio, by whom he has three children: Anna E., born February 9, 1911; Frank W., born August 30, 1914; and Virginia M., born April 20, 1919."

The story of the Corning & Sodus Railroad, Circa 1870

Birdseye Hollow was a part of a failed business venture of the Corning and Sodus Railroad. The railroad bed is still visible running through part of the State Forest. What is special about this event was that the resulting litigation that ensued was appealed all the way to the U.S. Supreme Court, Town of Lyons v. Munson, 99 U.S. 684 (1878). This case and numerous others involving Edgar Munson have set case history for Validation under the Doctrine of Constructive Fraud.

In the 1870's railroads were in their heyday. New railroads were desired by every town and village to help them get a competitive edge to get their communities' products to market cheaper and faster. It was common practice for local governments to buy bonds to help finance the endeavor of the new railroad company. The one drawback was the rail companies were in fierce competition with each other. They would employ any means possible to thwart the success of new companies. Although construction of the Corning and Sodus Railroad was begun, it quickly ran out of financial resources. By 1875 the company "was insolvent, in default on the interest payments on its bonds, and its operations were in suspension." Edgar Munson, president, director, and representative of the bondholders attempted to reorganize under new ownership. One of the interesting points of litigation was that Munson signed a new contract both as a seller of the old company and as a buyer, in his capacity as president of the new company. The resulting court cases lasted for 25 years ending in 1900.

The Lamoka Electric Power Corp., Circa 1915

The Lamoka Electric Power Corp. was incorporated Oct 23, 1915. This company's business plan was likely started a few years earlier by a vision of a professional engineer named Robert O. Hayt. Electricity was still in its infancy and demand for power was skyrocketing. Mr. Hayt's vision was to create 5 (stages) major hydro electric projects in the area around Bath, Kanona, Bradford, Penn Yan area. Stage 1 was to divert the watershed of Lamoka and Little (Waneta) Lakes to the north by canal and pipes, to a power plant on the shore of Keuka Lake, instead of the natural drainage of Mud Creek. The second stage was to purchase lands and construct a 45 foot high dam on Mud Creek and flood a large area of Sonora, Bradford and Birdseye hollow to increase the available water for the power plant. In 1919, the company obtained state approval to begin the project. In 1923 the first major land purchases began for the whole area at or below the 1105 foot contour (94 tracts, 5416 acres). In October of 1929, the power plant and infrastructure were completed between Little Lake and Keuka Lake. The second stage plans however, were likely abandoned in 1930 when natural gas was discovered in the Town of Wayne. Gas fired steam turbines were installed to increase output. The Lamoka Power Company was now "stuck" with a lot of land it no longer had any need of and the depression had all but eliminated the real estate market. The company must have decided to lobby the state of New York to acquire these lands for the new State Forests acquisition program funded by the Hewitt Amendment. It is interesting to note that the natural gas wells in the Town of Wayne went dry by 1935 and a large flood in the same year damaged the power plant. The gas fired steam turbines were removed along with the building. The expanded hydro project involving Mud Creek and the other plans on the Cohocton River are now just a memory.

Moss Hill and Birdseye Hollow State Forests was the site of some of the earliest drilling for natural gas in the 1920's. Most of these wells were not productive and were abandoned. One of these sites on Moss Hill State Forest became an attraction for local youth. The abandoned well was a “bubbler”. The top of the well was covered by a spring seep and gas bubbled to the surface of the water. Kids would get a big kick, “lighting” the gas. This well was properly plugged and abandoned in 2003.

The first 870 acres of Birdseye Hollow State Forest was purchased in 1939 for $4 per acre from Keuka Power and Light Corp. Additional land was acquired in 1942, ‘46, ‘63 and 1967 with prices ranging from $1 to about $90 per acre. Most of Moss Hill State Forest was purchased between 1939 and 1941 for $4 per acre. Keuka Power and Light Corp was the previous owner of 669 acres, the remaining was purchased from individuals. In 1964, 57 additional acres were added for $1,000.

Birdseye Hollow Park and Sanford Lake

Sanford Lake Day Use Area was used as a recreation spot even before NYS DEC acquired the land. In 1966 the original plan was “...to barricade the area and prohibit camping.... no plans for any development whatsoever on Sanford Lake.” In 1978 the area was officially designated a Day Use Area.

The development of Birdseye Hollow Park began around 1970, when NYS DEC, Steuben County Highway Department and the Steuben County Federation of Sportsmen engaged in a joint venture to develop the pond/marsh area. In 1971, the County offered to lease the park area from NYS DEC. Since NYS DEC does not have the authority to enter into such leases, it was decided that the issuance of a renewable permit would be appropriate. Operating under the authority of ECL §9-0105, NYS DEC has issued numerous permits to Steuben County over the years to operate, maintain, and in some cases develop the park. At present, a Draft Cooperative Agreement between the County and NYS DEC has been prepared and is being reviewed in Albany.

Cold Brook and Waneta-Lamoka Wildlife Management Areas

Cold Brook Wildlife Management Area is from two separate gifts to NYS DEC, the first in 1986 and more recently 1994. Waneta-Lamoka Wildlife Management Area exists as an easement acquired in 1982 on lands owned by NYSEG.

INFORMATION ON THE UNIT

Identification

The approximately 6,048 acre Keuka Lowlands Unit is comprised of three State Forests and two Wildlife Management Areas. For management purposes, each State Forest is consecutively numbered in the order in which they were purchased in each county. Waneta-Lamoka Wildlife Management Area is owned by NYSEG, NYS DEC has a permanent easement to manage the area as a Wildlife Management Area and Fishing Access Site.

Keuka Lowlands Unit Management Plan includes the following:

Table 1: Acreage of State Land

NAME	STATE FOREST NUMBER	ACREAGE
Birdseye Hollow State Forest	Steuben Reforestation Area # 8	3,475
Moss Hill State Forest	Steuben Reforestation Area # 10	1,851
Mt. Washington State Forest	Steuben Reforestation Area # 22	440
Cold Brook Wildlife Management Area		125
Waneta-Lamoka Wildlife Management Area		157

Geography

The individual properties are either within the Susquehanna River Basin or the Lake Ontario Watershed. Local watersheds for this unit are the Keuka Lake watershed, and the Waneta or Lamoka Lake watershed. Cold Brook, running from south to north into Keuka Lake is a well known classified trout stream.

The bulk of the Unit is located in Steuben County in the towns of Bath, Urbana, Wayne, and Bradford. The Waneta-Lamoka Wildlife Management Area is located in the town of Tyrone in Schuyler County. Table 2 lists the towns/ counties where the individual units fall.

The Keuka Lowlands Unit is generally located 5-15 miles north east of the town of Bath. Bath sits off exits 39 and 38 of US Interstate 86/State route 17. This region is generally rural. The city of Corning is approximately 20 miles to the east. Birdseye Hollow Park, Sanford Lake Recreation area and Waneta-Lamoka boat launch are developed recreational facilities located on the Unit.

The Keuka Lowlands Unit lies on the northern edge of the Allegheny Plateau. Elevations on the Unit range from 720 feet (above mean sea level) on the Cold Brook Wildlife Management Area to 1897 feet on Moss Hill State Forest.

Table 2: Towns of the Keuka Lowlands Unit

Name	Town(s)
Birdseye Hollow State Forest	Bath, Bradford, Wayne, Urbana
Moss Hill State Forest	Bath
Mt. Washington State Forest	Urbana
Cold Brook Wildlife Management Area	Urbana
Waneta-Lamoka Wildlife Management Area	Tyrone

Climate

The average winter high temperature is 36° Fahrenheit and the average daily minimum temperature is 18°F. In summer, the average daily high temperature is 80°F. Plateau summits are markedly cooler than the lowland farming areas.

Annual precipitation averages 31-36 inches. Precipitation is well distributed throughout the year and is usually adequate for all crops.

Average seasonal snowfall is 70-75 inches. In winter, snow occurs frequently and covers the ground much of the time. Snow depths vary greatly with elevation, but on the average, snow depths are measurable for 3 months. The number of such days varies greatly from year to year. Sunshine occurs for 65% of daylight hours in the summer and 30% in the winter. The prevailing wind is from the west to southwest. Average wind speed is at its highest, 12 m.p.h., in February.

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

According to Cornell Cooperative Extension, the number of frost free days in Steuben County varies from less than 163 on the hill tops to between 163 and 169 in the valleys.

Adjacent Land - Existing Uses

The lands adjacent to the Keuka Lowlands Unit are nearly all in private ownership. Agriculture, forestry, and residential properties 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 occurs in the valley bottoms. The average number of acres per private ownership appears to be declining. There is significant gravel mining in the valley bottom adjacent to Birdseye Hollow State Forest.

Taxes

State Forest lands acquired for reforestation purposes pursuant to section §9-0501 of the Environmental Conservation Law are subject to school and special district taxes but are exempt from county tax.

Town tax and school tax are paid annually to the county clerk for distribution to the appropriate towns and school districts. With some exceptions, State Forests are valued as if privately owned and assessed in accordance with subdivision 1, Section 542 of the Real Property Tax Law.

State Forest lands and multiple use areas less than 3000 acres acquired using monies from the park and recreation land acquisition bond act of 1960 are not subject to real property taxes. Mt. Washington State Forest and portions of Birdseye Hollow State Forest were acquired using 1960 bond act funds and are not subject to property taxes.

Wildlife Management Areas are not subject to real property taxes except where special arrangements have been made at the time of acquisition. Cold Brook and Waneta-Lamoka Wildlife Management Areas are exempt from all property taxes.

Appendix C lists the taxes paid in 2005 on the lands of the Keuka Lowlands Unit Management Area. Further details may be found in Section 534 of the Real Property Tax Law.

Geology

Surface Geology

Background

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 filled with water creating numerous lakes, small and large, some are now call 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.

Keuka Lowlands Unit

The resulting surface geology of the State lands included in Keuka Lowlands Unit is variable.

Mt. Washington State Forest and the Moss Hill State Forest include surface geology consisting of glacial till as the dominant deposit in the area. Glacial kame moraine deposits of sand to boulder size particles are found along valley walls in Birdseye Hollow State Forest. The valley floors in this State Forest are generally filled with outwash sands and gravels associated with proglacial fluvial deposition. Bedrock outcrops and subcrops of Devonian shales, siltstones, sandstones and minor limestones (Westfalls Group) are located intermittently on the sides and crests of ridges and hills in these three State Forests. This is most likely due to the erosion of overlying glacial sediments, causing the exposure of the bedrock.

Cold Brook Wildlife Management Area has surface geology consisting of lacustrine silts and clays associated with a proglacial lake that extended into the area located at the south end of Keuka Lake.

Waneta - Lamoka Wildlife Management Area has surface geology consisting of glacial till, and an area of lacustrine silts and clays associated with a proglacial lake that extended into the area located at the south end of Waneta Lake.

Further information on the surface geology of the region is provided by the: Surficial Geologic Map of New York, New York State Museum - Geologic Survey - Map and Chart series #40, 1986.

Table 3: Surficial Geologic Material

Name:	Surficial Geologic Material
Mt. Washington State Forest	Glacial Till - Deposition of clays, silts and boulders beneath glacial ice
Moss Hill State Forest	Glacial Till - Deposition of clays, silts and boulders beneath glacial ice Bedrock - Shales, silts and minor limestones of the Devonian Westfalls Group, intermittent outcrops/subcrops
Birdseye Hollow State Forest	Glacial Till - Deposition of clays, silts and boulders beneath glacial ice Kame Moraine Deposits - poorly sorted sediments from sand to boulders. Deposited at ice margins during deglaciation Outwash Sand & Gravel - Sands and gravels deposited in association with proglacial fluvial processes Bedrock - Shales, silts and minor limestones of the Devonian Westfalls Group, intermittent outcrops/subcrops
Cold Brook Wildlife Management Area	Lacustrine Silts & Clays - laminated clays and silts, deposited in association with proglacial lakes
Waneta-Lamoka Wildlife Management Area	Glacial Till - Deposition of clays, silts and boulders beneath glacial ice Lacustrine Silts & Clays - laminated clays and silts, deposited in association with proglacial lakes

Soils

Detailed soil information is contained in the Soil Survey of Steuben County and the Soil Survey of Schuyler County. Both surveys were published by the USDA, Soil Conservation Service. The Steuben County survey was published in 1978 and the Schuyler County survey was published in 1976. Digital soils data is now available for Schuyler and Steuben County.

Official soil descriptions are included in Appendix H and Appendix G contains maps of the soil types.

It should be noted that Birdseye Hollow State Forest contains far more soil types, and very different soil types, than might be expected on State Forest lands in this Region. The extent of organic soils for this unit is particularly striking. See also the section on Wetlands and Water Resources.

Bedrock Geology

Background

Bedrock underlying the Finger Lakes region and 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.

Keuka Lowlands Unit

Rock units (bedrock) outcropping or subcropping at the surface in the Mt. Washington State Forest, Moss Hill State Forest, Birdseye Hollow State Forest, and Cold Brook Wildlife Management Area of the Finger Lakes region and southern tier of New York are shales, siltstones, sandstones and intermittent limestones of the West Falls Group that were deposited during the Upper Devonian Period (approximately 350 - 400 million years ago).

The bedrock underlying Waneta - Lamoka Wildlife Management Area is shales and siltstones of the younger Sonyea Group that was also deposited during the Upper Devonian Period.

Further information on the bedrock geology of the region is provided by the: Geologic Map of New York - Finger Lake Sheet - New York State Museum and Science Service - Map and Chart #15, 1970.

Subsurface information pertaining to the bedrock (that does not outcrop) has been acquired through three specific wells. These wells were drilled between 1997 and 2004 while exploring for oil

and natural gas reserves in areas surrounding State Lands contained in Keuka Lowlands Unit Management Plan.

These three wells were drilled to vertical depths ranging from 2,926 feet to 9,405 feet into the subsurface. Testing the Oriskany Sandstone Formation in the area (offsetting Moss Hill State Forest) southeast of the Keuka Lowlands Unit and the deeper Trenton / Black River Formations in the areas north and southwest of the Keuka Lowlands Unit.

These formations were deposited during the Lower Devonian Period (Oriskany) approximately 400 million years ago and the Ordovician Period (Trenton/Black River), over 450 million years ago.

At a surface location approximately 0.8 miles south of Moss Hill State Forest , the Kelly Oil & Gas Inc. - Scudder #1 well (American Petroleum Institute (API) # 31-101-23,029) encountered the top of the Devonian Tully Limestone at 2,012 feet, Onondaga Limestone at 2,827 feet, Oriskany Sandstone at 2,843', and Helderberg Limestone at 2,875' this well was drilled and completed as a Marcellus Shale gas well. It was temporarily abandoned during 2003.

At a surface location approximately four miles south of Birdseye Hollow State Forest, the Fortuna Energy Inc. - Drumm #1 well (API# 31-101-23,154) encountered the top of the Devonian Tully Limestone at 2,574 feet, Onondaga Limestone at 3,512 feet, Oriskany Sandstone at 3,541, intermittent Silurian Syracuse salt beds between 3,935 feet and 4,734 feet, top of the Silurian Medina Sandstone at 6,227 feet, top of the Ordovician Queenston Shale at 6,312 feet, top of the Trenton Limestone at 8,614 feet and the top of the Black River Limestone/Dolomite at 9,316 feet into the earth. This well was drilled and completed as a Trenton-Black River gas well during 2004.

At a surface location approximately 0.5 miles northwest of Waneta - Lamoka Wildlife Managemant Area the Chesapeake Appalachia, LLC. - Finlaid #1 well (API# 31-101-21,704) encountered the top of the Devonian Tully Limestone at 1,073 feet, Onondaga Limestone at 1,936 feet, Oriskany Sandstone at 2,014, intermittent Silurian Syracuse salt beds between 2,317 feet and 3,104 feet, top of the Silurian Medina Sandstone at 4,536 feet, top of the Ordovician Queenston Shale at 4,590 feet, Oswego Sandstone at 5,872, Trenton Limestone at 6,696 feet and the top of the Black River Limestone/Dolomite at 7,553 feet into the earth. This well was drilled and completed as an Oswego Sandstone gas well during 1997 and 1998. It was granted shut- in status in 1998. (See Appendix J: Bedrock Cross Section)

Structure

Regional structure of the area is a homocline that dips (is becoming deeper) to the south-southwest at an average dip angle of approximately 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.

Linements, faulting and anticlinal/synclinal structures in the region generally trend in a northeast to southwest direction. North-south trending faults have also been identified in the region. These structures are thought to be due to compressional stress and resulting strain associated with plate tectonics and the opening of the Atlantic Ocean Basin that began at the end of the Paleozoic Era. Structural reference is available at 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 Environmental Conservation Law and State Finance Law authorizes the Department of Environmental Conservation to make leases on behalf of the State for exploration, production and development of oil and gas on State lands. Proposals to lease lands administered by NYS DEC will be considered following public notice in the Environmental Notice Bulletin (ENB), and in local newspapers.

Oil and natural gas are valuable resources which can provide energy and revenue, as well as the opportunity for improvements to the existing infrastructure of the Keuka Lowlands Unit (such as improving safe and restricted access through upgrading existing roads, culverts and gates) and creation of open space to enhance habitat diversity. As with any other human activity on State lands, oil and natural gas exploration and development can impact the environment. Most of the readily visible impacts are short term and occur during the siting and drilling phases of a well.

In all areas covered by this Unit Management Plan; New York State manages the surface estate through the NYS DEC Division of Lands and Forests and the Division of Fish, Wildlife and Marine Resources. The mineral estate, where owned by New York State, is managed through the NYS DEC Division of Mineral Resources.

For more information on the procedures of gas leasing, see the Mineral Resources section on page 65.

Historical Drilling & Production

The drilling of the first commercial oil and natural gas well in the United States occurred in northwestern Pennsylvania during the middle 1800's. The results of this drilling activity carried over into neighboring New York State. Eventually this activity extended into western New York and areas' surrounding what is now the Keuka Lowlands Unit.

Natural gas was discovered in the northwestern corner of Schuyler County at the Wayne Dundee Field and Gingerbread Field during the 1930's, and 1979 respectively. Eastern Steuben County had gas discoveries at the Bath Field and South Bradford Field during the 1940's and 1960's respectively (see Appendix L: Maps). Production was from the Oriskany Sandstone Formation that was deposited during the Late Devonian Period. Gas was produced from depths ranging from 2,000 feet to 3,500 feet.

Numerous attempts were made from the 1940's through the 1960's to establish gas production in the areas of this unit. Most wells were drilled to test the same Oriskany Sandstone that has produced at fields discussed in the preceding paragraph. No commercial gas production was ever established within the unit area.

During 2003, NYS DEC undertook a well plugging program to plug wells that were abandoned and considered orphaned in New York State. This program resulted in the plugging of a leaking gas well located on Moss Hill State Forest. The well was originally drilled by Appalachian Development Company in 1946. It was plugged and abandoned by the State during August of 2003.

Fields drilled prior to 1986 are shown on the New York State Gas Field Map - Department of Environmental Conservation - Division of Mineral Resources, 1986

Recent Activity

Drilling & Production

Natural gas has been discovered recently (1990's to present) from older and deeper Lower Ordovician age rocks of the Trenton / Black River Formations and the Upper Ordovician Oswego Sandstone Formation in Steuben County. Gas has also been discovered in the younger and shallower Middle Devonian rocks of the Hamilton Group.

A number of gas wells have been recently completed in the areas surrounding the Keuka Lowlands Unit . Natural gas has been produced from the Trenton / Black River Formations at a measured depth of approximately 9,500 feet to 9,700 feet into the subsurface from the Fortuna Energy Inc. - Drumm #1 well (API#: 31-101-23154). This well is located approximately four miles southwest of the Birdseye Hollow State Forest and is located in the Zimmer Hill Field.

Approximately three miles southeast of the Birdseye Hollow State Forest the Fortuna Energy Inc. - Mayes #1 well (API#; 31-101- 23,189) was drilled in 2005. This well tested natural gas at a rate of 1,033 mcfgpd (1,000 cubic feet of gas per day) from the Trenton / Black River Formations at a measured depth of 9,770 feet to 12,978 feet into the subsurface

Two additional gas wells have recently been drilled and completed in areas surrounding the Keuka Lowlands Unit. The Kelly Oil and Gas, Inc - Scudder #1 well was drilled to a total depth of 2,930 feet into the subsurface in 2004. The deepest formation penetrated was the Helderberg Limestone. The well was completed as a gas well in the Marcellus Shale of the Middle Devonian Hamilton Group at a depth of approximately 2,800 feet. This well is located approximately 0.8 miles south of the Moss Hill State Forest.

The Chesapeake Appalachia, LLC - Finlaid #1 well was drilled to a total depth of 8,028 feet into the subsurface in 1997. The deepest formation penetrated was the Trenton /Black River Limestones and Dolomites. The well was completed as a gas well in the Upper Ordovician Oswego Sandstone at a depth of approximately 7,000 feet. The operator of this well reported an initial gas flow rate of 325 mcfgpd. This well is located approximately 0.5 miles northwest of Waneta-Lamoka Wildlife Management Area. (see map in Appendix L: Maps).

Exploration & Drilling

Exploration for gas in the Trenton / Black River Formations of the southern tier of New York State has diminished during the past two years, but may be replaced with exploration for gas in the shallower Marcellus Shale formation. To date no Trenton / Black River drilling or permitting activity has occurred closer than the Fortuna Energy Inc. - Mayes #1 well that is approximately three (3) miles southeast of Birdseye Hollow State Forest.

New shallow drilling and production activity has taken place approximately five miles southeast of the Keuka Lowlands Unit during 2006. This activity has targeted the shallower Marcellus

Formation at depths of approximately 3,000 feet. (See Appendix L: Maps)

Leasing Activity

Initial title review indicates the State owns the mineral estate under all State Forest Areas covered by this unit and Cold Brook Wildlife Management Area. The State does not own the mineral estate under Waneta-Lamoka Wildlife Management Area. This title review is qualified in that mineral reservations may exist and no expressed or implied warranty of title is being offered in this document.

The areas within the Keuka Lowlands Unit are not subject to oil and gas lease contracts. Leases on the mineral estate under Birdseye Hollow State Forest (Bath, Bradford, Wayne and Urbana Townships), Moss Hill State Forest (Bath Township), and Mt. Washington State Forest (Urbana Township) were executed in June 2003 between the NYS DEC as "lessor" and Fortuna Energy Incorporated, as "Lessee". These leases granted Fortuna Energy Incorporated oil and gas rights under these State lands. These leases are for a period of five years or as long as oil or gas is produced from the property in commercially paying quantities. No gas was produced, and in June of 2008 the leases were terminated. The bonus revenue paid to the State for the lease contracts on the State Forests mentioned above totaled $283,664.02 dollars, plus an additional $68,612.52 in rental payments. No development took place during the terms of these lease agreements. The leases terminated in 2008.

Future Leasing Activity

Due to recent drilling and production activity in western New York, the State may again receive requests to nominate lands for leasing. In the event of this occurrence, the procedures outlined in the Minerals section on pg. 49 will be used.

For further information refer to the Strategic Plan for State Forest Management or contact the NYSDEC Mineral Resource staff, Region 8, 6274 East Avon-Lima Road, Avon, New York 14414-9591

Mining

Sand, Gravel & Hard Rock

The lands associated with the Keuka Lowlands Unit Management Plan contain permitted mine sites. There are no mining contracts, permits, or operations located in the Cold Brook Wildlife Management Area, Mount Washington State Forest, Moss Hill State Forest, and the Waneta-Lamoka Wildlife Management Area. The NYS DEC's Division of Operations has a 2.25 acre gravel mine under permit in the Birdseye Hollow State Forest. 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 Forest lands, as the impacts from these activities are not compatible with the purposes for which Reforestation Areas were purchased. For further discussion of this topic, refer to pages 239 through 241 of the Strategic Plan for State Forest Management.

As stated above, other than the Operations mine site, there are no other mines within State Lands. However, there are a number of permitted sand and gravel operations surrounding the Keuka Lowland's Plan area. Hard rock quarries are not found in this area. The following information provides

a description of the Unit's surficial geology and the area's mines in relation to the remainder of the State Lands.

1. Waneta-Lamoka Wildlife Management Area - The surficial geology is a mix of glacial till, kame, eskers and terraces. There are no active mines within a mile radius of this site. The closest site is a two acre reclaimed sand and gravel mine located more than two miles away from the management area.

2. Birdseye Hollow State Forest - The site is located within the limits of a former un-permitted (pre-1975) gravel pit. The area is dominated by a glacial till, till moraine and kame moraine deposits. The permitted 2.25 acre operation within the forest limits mines this gravelly till material. The material is used for road maintenance within the State Lands and other State properties.

3. Cold Brook Wildlife Management Area - This area's surficial geology consists of a mix of lacustrine silt and clay as well as kame moraine deposits. The closet mine site is an active 5 acre sand and gravel mine that is located approximately 1-2 miles from the management area limit. The material is mined from the kame moraine deposit.

4. Mt. Washington State Forest - Till, kame terrace and outwash sand and gravel dominate the surficial geology of this management area. There are no active mine sites within a 1 mile radius. There is an active 182 acre sand and gravel mine located approximately 2-3 miles from the mine. The operation mines a glacial till/kame terrace deposit.

5. Moss Hill State Forest - The surficial geology of this forest area is similar to Mt. Washington's. No active mine sites exist within a 1 mile radius of this area. The closest mine is approx. 3-4 miles away and is the same 182 acre sand and gravel mine previously described.

Solution Salt Mining

Solution salt mining in New York State pre-dates oil and gas activity. In the 1640's, salt springs were discovered along the shore of Onondaga Lake in the Syracuse area. An area where salt beds of the Silurian age Salina Group are close to the earth's surface. It was discovered that waters from these springs could be evaporated to produce salt. These discoveries were the beginning of a salt production industry in New York State. In time the industry grew in the Syracuse area, bringing growth and economic development to the area. It fostered the construction of the Erie Canal to improve transportation of salt to markets across the country. Eventually it becomes the primary commercial salt operation in the United States until 1878.

In 1878, a new technology for salt production was employed in wells that were drilled in Wyoming County. Silurian age salt deposits were produced by solution salt mining. A process where freshwater is pumped down wells into the salt beds. The freshwater dissolves the salt, putting the salt into a solution that is then pumped to the surface as a concentrated brine solution. The salt is then removed from the solution thru the process of evaporation. Since the advent of this technology, salt production in New York State continually rose, reaching peak production in the 1970's. Today there are five solution salt mining operations in New York State. Three are located in Wyoming County and two in Schuyler County.

The two active solution salt mining operations in Schuyler County are located proximal to areas within this unit management plan. Approximately ten miles east of Waneta Lamoka Wildlife Management Area, Cargill Salt Incorporated operates a solution salt mining operation along the south shore of Seneca Lake in the Village of Watkins Glen. Approximately two miles north of the Cargill Salt Incorporated facility, US Salt Inc. operates a solution salt mining operation along the southwest shore of Seneca Lake. At both operations wells have been drilled to depths of approximately 3,000 feet to produce salt from formations of the Silurian age Salina Group.

The closest salt drilling to the Keuka Lowlands Unit has occurred at the Bath Petroleum Storage Incorporated facility, located approximately one mile west of Moss Hill State Forest in the Township of Bath. This facility was constructed in the 1950's, and expanded in the early 1990's. Solution salt mining operations were conducted to make storage caverns for liquefied propane gas (LPG) in the bedded salt located approximately 3,000 feet below the surface. These operations have not impacted any lands contained in this unit management plan. There are no current plans to develop salt resources under these state lands.

Timber and Vegetation

Green Certification of State Forests

In 2000, New York State DEC-Bureau of State Land Management received Forest Stewardship Council (FSC) certification under an independent audit conducted by the National Wildlife Federation - SmartWood Program. This certification included 720,000 acres of State Forests in Regions 3 through 9 managed for water quality protection, recreation, wildlife habitat, timber and mineral resources (multiple-use). To become certified, NYS DEC had to meet more than 75 rigorous criteria established by FSC. Meeting these criteria established a benchmark for forests managed for long-term ecological, social and economic health. 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 NYS DECs ability to award a new agreement until early 2007.

Following the signed contract with NSF-International and Scientific Certification Systems, the NYS DEC was again audited for dual certification against FSC and additionally the SFI program standards on over 762,000 acres of State Forests in Regions 3 through 9. This independent audit of State Forests was conducted by these auditing firms from May until July 2007 with dual certification awarded in January 2008. Forest products derived from wood harvested off State Forests from this point forward could now be labeled as “green certified” through chain-of-custody certificates. Green Certified labeling on wood products may assure consumers that the raw material was harvested from well-managed forests.

The NYS DEC now joins only an elite few states representing less than 10% of working forests certified as well managed throughout the Northeastern Region of the United States. The NYS DECs State Forests can also be counted as part of over 2.3 million acres of public, private and industrial certified forests in New York. That's over 15% of the total working forest land in New York third-party

certified as well managed to protect habitat, cultural resources, water, recreation, and economic values now and for future generations.

Current Vegetative Types and Stages

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 forests. By applying different forest 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 the Keuka Lowlands Unit.

Keuka Lowlands Unit vegetation is dominated by Oak/Hickory, mostly pole sized natural hardwood forests. The dominant species is oak, other species present to a lesser extent include; red maple, hickories, ash, aspen, birches, beech, and apple. Seedling/sapling and sawtimber stands are rare on the unit.

The softwood component is well balanced. Hemlock and white pine comprise most of the natural conifer stands. In addition, many of the hardwood forest stands have a softwood component made up of white pine and/or hemlock.

Secondary vegetative types include transition hardwood forests. Former agricultural fields have reverted back to "pioneer" forest types. There are no significant areas of grassy upland meadows, except for one field on Mt. Washington State Forest. A small additional acreage of grass is found under the power transmission lines.

The following tables (Tables 4 and 5) list vegetative types and stages for the Keuka Lowlands Unit. These records are estimated from the most recent inventories available. Birdseye Hollow State Forest in 2000, and Moss Hill State Forest in 2001, Mt. Washington State Forest in 2004, and Waneta-Lamoka Wildlife Management Area, and Cold Brook Wildlife Management Area were inventoried in 2006. Division policy requires that a forest inventory be conducted every 10 years and whenever stands are changed by any silviculture operation or by the forces of nature. Forest inventory is usually 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, species, forest type, tree density, forest health issues, topography, drainage, previous management, and site limiting factors. The required number of plots for each stand varies according to the variability of the stand, subject to a minimum number.

Table 4: Vegetative Types and Stages for Birdseye Hollow, Mt. Washington, and Moss Hill State Forests

Vegetative Type	**Acres by Size Class**					**% of Total**
	0 -5 in	6 - 11 in	12+ in	other	Total (Acres)	
Natural Forest Hardwood	413	2531	396		3340	57.8%
Natural Forest Conifer	22	297	42		361	6.3%
Plantation	7	1352	24		1383	24.0%
Wetland				478	478	8.3%
Ponds				113	113	2.0%
Open/Brush				5	5	0.1%
Other (Roads, Parking lots, etc.)				86	86	1.5%
Total (Acres)	434	4180	462	690	5766	100%

Table 5: Vegetative Types and Stages for Waneta-Lamoka and Cold Brook Wildlife Management Areas

Vegetative Type	Acres by Size Class					% of Total
	0 -5 in	6 - 11 in	12+ in	other	Total (Acres)	
Natural Forest Hardwood		18			18	6.4%
Natural Forest Conifer						
Plantation						
Wetland				197	197	69.9%
Ponds				21	21	7.4%
Open/Brush				42	42	14.9%
Other (Roads, Parking lots, etc.)				4	4	1.4%
Total (Acres)		18		264	282	100%

Fish, Wildlife and Habitat

The fish, wildlife and their habitats' found here are products of the landscape's history. Like many places in the southern tier of New York the coming of the Europeans in the 1700's and the decline of Native American cultures set the stage for widespread changes in the distribution and richness of wildlife resources. Timbering, farming along with unregulated exploitation of fish and wildlife resources, caused the disappearance of many wildlife species including most big game animals as well as native brook trout and other creatures of pristine and wild environments. Over the course of time emphasis of timber harvest and farming changed with the availability of resources and markets. Most of the forests were cut heavily, some burned and most of the land cleared for farming and pasturing. Streams filled with sediments. Wetlands were filled. Very little of the landscape was left untouched.

In the 1930's the depression set the stage for the landscape pendulum to swing in a different direction. A very large portion of the area started to revert back toward the mature hardwood forests as farms failed. Young forests lacked significant age to provide timber products. Wildlife species that could quickly colonize these habitats rapidly moved back onto the landscape. Cottontail rabbits and other farm wildlife species diminished as dwellers of young forests such as grouse and deer took advantage of the unoccupied niches.

Today forests have matured and wildlife species are those commonly associated with such habitats. Today bears, white-tailed deer, bobcat, bald eagles, beavers, otter and fisher roam where farm wildlife species ventured at the beginning of the 20th century.

State lands within the Keuka Lowlands Unit encompass 3 Wildlife Management Units (WMU's). The bulk of the area is in WMU 8W. On the western edge of the unit Cold Brook Wildlife Management Area is in WMU 8P. On the north side a portion of Wanetta-Lamoka Wildlife Management Area is in 8R.

Deer buck take objectives (BTO's) are set by citizen task forces for each WMU, based on Buck Take Density (an index to deer population size), among other considerations. The current BTO for 8W is 3.8 bucks per square mile. The BTO for both 8P and 8R is 4.2 bucks per square mile. Black bear continue to expand their range northward and are now firmly establish in WMU 8P and 8R, and in 2008 they were opened to bear hunting. WMU 8W continues to be open to bear hunting.

Birdseye Hollow State Forest was one of 16 release locations for the New York River Otter Project. Twenty nine river otter were released into Mud Creek in 1999. River otter have been observed in Birdseye Hollow State Forest and in Waneta-Lamoka Wildlife Management Area.

See the Fishing section, page 25 for a discussion on the current fish populations and locations on the Keuka Lowlands Unit. Appendix A lists animals that may be found on the Keuka Lowlands Unit.

Wetlands and Water Resources

Aquifers

There is a significant area of Birdseye Hollow State Forest which is underlain by the Lower Cohocton primary aquifer. Smaller areas of Moss Hill State Forest are also underlain by this aquifer. The existence of secondary aquifers or minor recharge areas is unknown.

Adequate protection of all aquifers is assured by using Best Management Practices for 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.

Wetlands

There are ten New York State protected wetlands located on the Keuka Lowlands unit. Wetland resources are summarized by unit:

Table 6: Birdseye Hollow State Forest Wetlands

Wetland ID	Wetland Class	Cover / Vegetation Type	NYS DEC Owned Acres	Acres
HP-5	2	Emergent Scattered Trees Forested	297.1	321.2
SV-1	3	Forested	17.5	21.5
BR-2	2	Forested Open Water Emergent	47.7	57.8
SV-5	3	Forested	97.2	116.4
SV-7	2	Emergent	146.5	161.3
SV-6	3	Emergent Shrub	74.7	83.5
SV-4	4	Emergent Open Water	19.8	23.6

Table 7: Waneta-Lamoka Wildlife Management Area Wetlands

Wetland ID	Wetland Class	Cover / Vegetation Type	NYS DEC Owned Acres	Acres
WA-5	1	Forested Shrub	58.8	66.8
WA-6	1	Emergent	99.4	106.6

Table 8: Cold Brook Wildlife Management Area Wetlands

Wetland ID	Wetland Class	Cover / Vegetation Type	NYS DEC Owned Acres	Acres
HP-3	1	Emergent, Shrub	74.5	212.2

Moss Hill State Forest and Mt. Washington State Forest have no regulated wetlands.

In general, all of these wetlands are critical habitat for various species of herps, water mammals, birds, etc. See also the wetlands maps in Appendix L: Maps.

Streams

This unit is primarily located in the western portion of the Chemung River basin, with tributaries flowing into the Conhocton River upstream of the Town of Savona. Cold Brook Wildlife Management Area, the lone exception, is located in the Oswego River Drainage which is connected to Lake Ontario. The streams within the unit management area range from intermittent, meaning that stream flow does not occur year round, to high quality trout streams with year round flow.

Ponded Waters

Several ponds are located within or immediately adjacent to Birdseye Hollow State Forest. These include Sanford Lake (approx 18 acres), Parker or Van Keuren Lake (approx 6.5 acres), and Round Lake (approx 12.8 acres). Little is known about these ponds. The latest survey on record occurred in 1964 on Round Lake. All of these ponds provide limited fishing opportunities for largemouth bass, sunfish, pickerel and bullheads. These ponds are all relatively shallow and heavily vegetated.

The Waneta-Lamoka Wildlife Management Area connects Waneta and Lamoka Lakes. Waneta Lake is approximately 813 acres in size and is relatively shallow with a maximum depth of 29 feet. Because it is relatively shallow and highly productive, aquatic vegetation has been abundant throughout the lake especially at the north and south ends. In 2003, the whole lake was treated by the Waneta-Lamoka Lake Association with the aquatic herbicide SONAR to eradicate Eurasion watermilfoil (EWM). However, the concentrations of SONAR remained above treatment level for much longer than anticipated and resulted in the elimination of most all submerged aquatic plant biomass in Waneta Lake. Recovery of submerged aquatic vegetation was slow and EWM quickly returned to nuisance levels. Based on these results a planned SONAR treatment in Lamoka Lake was eliminated. In 2008 and 2009, the aquatic herbicide REVOVATE 3 was applied to select locations in Waneta and Lamoka Lakes with much greater success. EWM was reduced and native vegetation returned into areas once dominated by EWM. The shoreline, except for the marsh portion at the south end of the lake, is ringed with permanent residences and seasonal cottages. Public access to the lake by boat is provided within Waneta-Lamoka Wildlife Management Area in the channel at the south of the lake.

Lamoka Lake (588 acres) is smaller than Waneta Lake, however it is also deeper with a maximum depth of 47 feet. It is immediately south of Waneta Lake and is connected by a small

channel that traverses the Wildlife Management Area. Eurasion watermilfoil is one of the predominant species present. The shoreline, except for the marsh portion at the north end of the lake, is ringed with permanent residences and seasonal cottages. Public access to the lake by boat is provided within the Wildlife Management Area in the channel at the north end of the lake.

There are numerous unnamed vernal pools, small dugouts, water holes, and other small seasonal ponds located throughout the Unit. They provide valuable habitat for reptiles and amphibians, such as salamanders and frogs, but do not support fish. The volume and depth of water varies seasonally, with some drying up during the summer, and others holding water year round.

Significant Plants and Communities

There are no rare plants listed in the Natural Heritage database on lands included in the Keuka Lowlands Unit Management Plan. The Natural Heritage program began a more intensive survey of Region 8 State Forest properties in May of 2005. The Biodiversity of Region 8 State Forests was published in May of 2006. Two invertebrates, both dragonflies, are listed by the Natural Heritage database, *Cordulegaster oblique* and the *Rhionaeschna mutata*, for Birdseye Hollow State Forest.

There are several unusual plant communities within the unit. Birdseye Hollow State Forest has two Swamp White Oak communities, numerous wetlands, Mud Creek (unique among State Forest properties in this Region for its year round flow), and Sanford Lake which hosts floating vegetation mats. Moss Hill State Forest hosts a small community of (what appears to be native) Pitch Pine/Chestnut Oak type. Waneta-Lamoka Wildlife Management Area has a relatively large area of shrub - scrub and emergent wetlands, as well as open water. This unit also provides primary access to both Lamoka and Waneta lakes. Cold Brook Wildlife Management Area has a fair amount of emergent wetland and a fair area of open water. It also provides access to Cold Brook, a protected trout stream.

Roads

The unit is accessed by state, county and town roads (see location map, page 1 and Appendix L: Maps, page 133). Town maintained asphalt and gravel roads comprise the majority of access routes. Some portions of the town roads are seasonal and are not maintained for winter travel.

The road system maintained by NYS DEC provides for both public and administrative access to the unit. The roads are constructed to standards that will provide reasonably safe travel and keep maintenance costs at a minimum. There are three types of NYS DEC maintained roads: public forest access roads, haul roads and access trails. Each type of road provides a different level of access, depending on the standards to which they are constructed.

Public Forest Access Roads are 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 (8/74). As a general guideline, sufficient access is typically achieved when 1 mile of PFAR is developed for each 500 acres of state land, and no position within the Unit lies more than 1 half mile from a PFAR or public highway.

Haul Roads are 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, providing limited access within the unit by 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 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.

The public forest access roads and haul roads are all maintained by the NYS DEC and the access trails that are accessible by mower are also maintained. The public access roads are open to the public use all year round but are not maintained during the winter months. The haul roads and access trails are used by the public for hiking, biking, cross country skiing, snowshoeing and horseback riding. The public access roads, haul roads and some of the access trails are used by the NYS DEC for administrative access. There are also many other unmarked trails in the unit connecting some of the access trails.

Mt. Washington State Forest contains 0.5 miles of haul road. The Mt. Washington Haul Road is open to the public during fall big game and spring turkey hunting seasons. NYS DEC reserves the right to limit access to state lands when public safety issues occur.

DEC Facilities

Sonora Maintenance Shop

Located on Birdseye Hollow State Forest, on the corner of SR 226 and Sonora-S. Bradford Rd is the NYS DEC Sonora Maintenance Shop. At this location NYS DEC equipment is maintained and/or stored, and the semi-annual auction of surplused equipment takes place. This plan does not cover activities taking place within the grounds of the shop.

Birdseye Hollow Park

Birdseye Hollow Park has a paved parking area, paved path to a picnic pavilion, several fixed charcoal grills and picnic tables, playground, benches, a small wood bridge, and a port-a-john during the summer months. In 2009 the existing fishing pier onto Birdseye Pond was removed as a safety hazard, and needs to be replaced. It was constructed in 1992 to provide accessible fishing, but age, frost heaving and storm damage had made it extremely uneven.

Sanford Lake Day Use Area

Sanford Lake Day Use Area currently has a picnic area, 7 designated campsites and a small

boat gravel launch. Due to high camping demand, signs have been posted requiring that anyone interested in camping there, between Memorial Day weekend through Labor Day weekend, are required to pre-register at the Bath NYS DEC office. The camp sites are designated and contain a fire ring and picnic table. The picnic tables are available on a first come, first use basis. The break wall between the picnic area and Sanford Lake was replaced in the fall of 2009. In 2011 an accessible path was constructed from the parking area down to a picnic table and the break wall. No potable water is provided, and the only restroom facilities are port-a-johns available from Memorial Day to Labor Day.

Towers

This part of New York State has the potential for generating electricity with windmills or the construction of towers for radio, cell etc. transmission, in the area of the Keuka Lowlands Unit. There are currently no windmills, or applications for windmills, for power generation on the Keuka Lowlands Unit. NYS DEC does not have the legal authority to lease State Forests for the construction of windmills, or commercial towers on the lands covered by this unit management plan.

Recreation

The unit provides an abundance of recreational opportunities within a two hour drive of metropolitan Rochester and Syracuse. The cities of Corning and Geneva are within an hours drive. Consequently, recreational use can be heavy in some locations on the Unit, with seasonal variation.

Recreation Opportunities Include:

- Hunting
- Fishing
- Trapping
- Hiking
- Wildlife observation
- Boating
- Camping
- Canoeing
- Mountain biking
- Snowmobiling (State Forests only)
- Cross country skiing
- Snowshoeing
- Picnicking
- Photography
- Nature study
- Orienteering
- Running

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. ATV and ORV riding is not a specific program offered on Public Lands owned in fee and managed by NYS DEC. Existing management actions, poor soils, possible 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 NYS DEC from developing ORV or ATV trails in the past. However, people with qualifying mobility impairments who possess a valid permit from NYS DEC may operate ATVs on specifically designated and signed accessible trails.

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

Gates are used to restrict motor vehicle access to the trails and roads of both State Forests and Wildlife Management Areas.

Camping

Different regulations apply to State Forests and Wildlife Management Areas. For example, overnight camping is permitted anywhere on state forests as long as it is not within 150 ft. of any road, trail, spring, stream, pond, or other water source. For groups of less than 10 people and for up to 3 days, no permit is required, longer stays and/or larger groups are allowed to camp with a permit obtained from the NYS DEC Forest Rangers, at the Bath suboffice. Overnight camping is not allowed on Wildlife Management Areas. Regardless of location, camping sites must be kept neat, clean, and in sanitary condition.

Camping is permitted at the Sanford Lake Day Use Area under the rules described in the previous paragraph except during the summer months (Memorial Day weekend through Labor Day weekend). During this time ALL campers must PREREGISTER at the Bath NYS DEC Office

Camping is not allowed in the Birdseye Hollow Park or on Waneta-Lamoka or Cold Brook Wildlife Management Areas.

Hunting and Trapping

Hunting and trapping are valuable wildlife management methods, see the Fish and Wildlife Habitat and Timber and Vegetation Management sections. High deer populations can have major impacts to forest regeneration and under story vegetation. This can negatively impact plant and animal species diversity and richness. Hunting is popular on all state lands in the Unit. Both small and big game hunting opportunities exist. White-tailed deer is the primary big game species. Archery, muzzleloading, and shotgun seasons open annually in the fall. Permanent tree stands are prohibited. Also prohibited are any equipment that damages the trees, this includes screw in steps, eye hooks etc. Small game include; wild turkey, ruffed grouse, pheasant, woodcock, squirrels, cottontail rabbit, and waterfowl. Trapping of furbearers also occurs and is especially important on Birdseye Hollow State Forest. Most effort from trappers is directed toward the watercourses, targeting mink, muskrat, raccoon, and beaver. Some effort is directed toward land trapping fox and coyote in this unit. Beaver and muskrat are the species whose harvest has other management concerns, in that both species can damage dikes and embankments by burrowing. Beaver dams can also cause flooding of roads and trails.

Fishing

Fishing opportunities within the Unit range from extremely limited, to seasonally important, to year round. Most of the streams are too small to be of any fishing significance. However, Mud Creek, within Birdseye Hollow State Forest, does offer moderate fishing opportunities for largemouth bass, sunfish, chain pickerel, and bullhead. In addition, the ponds located within Birdseye Hollow State

Forest also provide some limited fishing opportunities for warmwater species. Keuka Inlet, or Cold Brook, which flows through Cold Brook Wildlife Management Area, offers anglers opportunities for lake run rainbow trout in the Spring. Annual spawning runs of rainbow trout from Keuka Lake into Cold Brook occur during spring months with the fishing season opening on April 1. Rainbow trout are currently not stocked in either the lake or stream and are totally self-sustaining. Rainbow trout young remain in the stream for 1 to 2 years and then migrate into the lake until they reach maturity at age 3 to 4 and return to their natal stream to spawn, or reproduce. In addition to the rainbow trout, both fall migrations and resident populations of brown trout exist in Cold Brook.

Waneta Lake supports a warm water fishery composed of muskellunge, largemouth and smallmouth bass, yellow perch, brown bullhead, chain pickerel, bluegill, and black crappie. The lake provides a source of adult brood stock muskellunge for New York's hatchery system. The muskellunge population is maintained by annual stockings of 4,800 fall fingerling muskellunge.

Lamoka Lake supports a warm water fishery composed of largemouth and smallmouth bass, yellow perch, brown bullhead, chain pickerel, bluegill, and black crappie. The main difference between the fisheries of Lamoka and Waneta lakes is that muskellunge are extremely rare and are no longer stocked in Lamoka Lake.

The Waneta-Lamoka boat launch enables anglers as well as pleasure boaters access to both Waneta and Lamoka lakes.

Fishing opportunities also exist on Sanford lake as well as Birdseye Hollow pond. Primitive launching facilities exist on these two waterbodies. Sanford Lake and Birdseye Pond are not large enough for large boats/motors, and in May 2009, NYCRR part 190 was changed to restrict use to electric trolling motors only on both lakes. In addition, organized events of 20 or more people require a permit from NYS DEC. Interested parties should contact the Bath NYS DEC office.

Trails

There are several trails, many old roads, and deer trails on the unit to explore, some of these trails are currently marked and mapped, others are not. The Finger Lakes Trail/North Country Trail and the Kris' snowmobile trail, as well as a couple of nature hiking trails are located on Birdseye Hollow State Forest. The Finger Lakes Trail is maintained by the Finger Lakes Trail Conference and Kris' Trail is maintained by the Sno-Flakes Snowmobile Association under the Adopt-A-Natural Resource Stewardship Program. All trails on the unit can be used for walking, running, cross-country skiing, and snowshoeing. Motorized vehicle use is prohibited. There are no designated horse or bike trails.

Application of the Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA), along with the Architectural Barriers Act of 1968 (ABA) and the Rehabilitation Act of 1973; Title V, Section 504, have had a profound effect on the manner by which people with disabilities are afforded equality in their recreational pursuits. The ADA is a comprehensive law prohibiting discrimination against people with disabilities in employment practices, use of public transportation, use of telecommunication facilities and use of public accommodations. Title II of the ADA requires, in part, that reasonable modifications must be made to

the services and programs of public entities, so that when those services and programs are viewed in their entirety, they are readily accessible to and usable by people with disabilities. This must be done unless such modification would result in a fundamental alteration in the nature of the service, program or activity or an undue financial or administrative burden.

Consistent with ADA requirements, the NYS DEC incorporates accessibility for people with disabilities into the planning, construction and alteration of recreational facilities and assets supporting them. This Unit 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, NYS DEC employs guidelines which ensure that programs are accessible, including buildings, facilities, and vehicles, in terms of architecture and design, transportation and communication to individuals with disabilities. A federal agency known as the Access Board has issued the ADA Accessibility Guidelines (ADAAG) for this purpose.

An assessment was conducted, in the development of this UMP, to determine appropriate accessibility enhancements which may include developing new or upgrading of existing facilities or assets. NYS DEC is not required to make each of its existing facilities and assets accessible so long as the NYS DEC's programs, taken as a whole, are accessible. New facilities, assets and accessibility improvements to existing facilities or assets proposed in this Unit are identified in the **Error! Reference source not found.** section.

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

Access for Persons with Disabilities

While no ATV trails currently exist on this Unit, specific routes may be opened to 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 NYS DEC. Individuals with qualifying disabilities may apply for a permit to operate an ATV on trails designated by the NYS DEC. For further information contact the NYS DEC, 7291 Coon Road, Bath, New York 14810. (See Appendix D: Facilities and Appendix L: Maps of this plan or pages 177 and 178 of the Strategic Plan for State Forest Management)

Archaeological Resources

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. (See also pages 139 through 143 of the Strategic Plan for State Forest Management)

Archaeological Site Protection

The archaeological sites located within this land unit as well as additional unrecorded sites that may exist on the property are protected by the provisions of the New York State Historic Preservation Act (SHPA - Article 14 PRHPL), Article 9 of Environmental Conservation Law and Section 233 of Education Law. Should any actions be proposed which would impact these sites they will be reviewed in accordance with SHPA. Consultation will be given with the Seneca Nation of Indians Tribal Historic Preservation Office. Unauthorized excavation and removal of materials from any of these sites is prohibited by Article 9 of Environmental Conservation Law and Section 233 of Education Law.

Archaeological Research

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

Historic Sites

Moss Hill State Forest contains numerous cellar holes, barn foundations, stone lined water wells, and other features related to historic occupation during the agricultural period.

There are also several natural gas well sites from the 1930 - 1940 era. The wells have recently been plugged and abandoned. However, there are still artifacts (wire rope, steel scrap, etc.) left from the drilling period on these sites.

Birdseye Hollow State Forest contains numerous cellar holes, barn foundations, stone lined water wells, and other features from the agricultural period. Several commercial sites (mills and small manufacturing sites) also survive from this era. The southern portion of the forest is also traversed by embankments, cuts, fills, and culverts related to the Corning & Sodus Bay Railroad. This railroad has been bankrupt since the late 1800's. In addition, most of the southern 2/3 of the forest was the property of the Keuka Lake Power Company, and numerous small impoundments, power canals, etc. survive from this operation.

Mount Washington State Forest contains several cellar holes, barn foundations, stone lined water wells, and other features related to historic occupation during the agricultural period.

Waneta-Lamoka Wildlife Management Area contains several cellar holes, barn foundations, stone lined water wells, and other features related to historic occupation during the agricultural period. This area may also contain a small portion of the famous “Lamoka Village” site as described by William Ritchie.

Cold Brook Wildlife Management Area does not seem to contain much in the way of remnants from the agricultural period. This property was formerly owned by the Taylor Wine Company and there may be some small remnants of their operation on this site.

NEEDS, ISSUES AND POLICY CONSTRAINTS

This plan strives to manage the diversity of the Keuka Lowlands Unit biological and social resources for multiple use to serve the needs of the people of New York State. In order to manage the Keuka Lowlands Unit for multiple use, NYS DEC must manage the ecosystem in a holistic manner while reconciling the many and sometimes conflicting demands on the ecosystem. This must be done within the framework of the Environmental Conservation Law (ECL), rules and regulations, and NYS DEC policies and procedures.

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

Funding

Currently the NYS DECs Bureau of State Land Management and Bureau of Wildlife have limited budget to manage of all NYS DEC lands.

Funding, when available, is primarily derived from:

- Capital construction account (State General Fund monies)
- Rehabilitation & improvement account (State General Fund monies)
- Stewardship - Special Revenue Other (SRO) account. State forests only. Note: The primary source of revenue for the SRO account is from commercial sales of forest products on State Forests.
- Environmental Protection Fund (EPF). This account is primarily funded from real estate transfer tax and other appropriations by the legislature. Appropriations from this fund may be used for a wide variety of projects including habitat enhancement for plants and animals, recreational facilities and forestry improvements such as pre-commercial thinning, artificial regeneration, and control of invasive species.
- 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, Wildlife and Marine Resources, 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.

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

Cooperative partnerships using the "Adopt-A-Natural-Resource-Program" 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 Keuka Lowlands Unit. These partnerships are a valuable supplemental source for providing needed services. A successful example of one such partnership is NYS DEC's relationship with Steuben County for the cooperative management of Birdseye Hollow Park.

Projects may also be accomplished via services in lieu of payment during commercial sales of forest products. These services are limited to the specific location and certain activities where the sale occurs.

Summary of Identified Issues

As part of any unit management planning process, NYS DEC is committed to active citizen participation. To that end, adjacent property owners, elected officials, media and others potentially interested in the management unit were identified. While public comments are accepted at any time, a formal citizen participation process was begun on May 15, 2006, when an introductory letter was sent to those identified on the Keuka Lowlands Unit Management Plan mail 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 Keuka Lowlands Unit Management Plan.

Public comments were compiled along with staff-identified issues and are included in the section below.

Access

It is DEC policy to provide appropriate public and operational access to the Keuka Lowlands Unit. Access is a necessity for both public use and land management. Restrictions on access may however, positively contribute to the natural character of state lands.

Two people asked that a better map be included. It should show all public access, roads and boundaries of state lands. Another asked for the construction of a pedestrian bridge across the spillway at Birdseye Park for access to the dike and a new boardwalk (pier) into the lake from the dike for better fishing. It was suggested that a perimeter hiking trail be built around the lake and that SAFETEA-LU enhancement funding be sought. One person asked that DEC provide areas where mechanized vehicles are not allowed.

Staff identified the possible need to expand parking at Moss Hill and Birdseye Hollow State Forests, and improve the parking at Mt. Washington State Forest. Also canoe/kayak access to Mud Creek on Birdseye Hollow State Forest.

Vegetation Management

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 forests. By applying different forest 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 the Keuka Lowlands Unit. (See also pages 251 through 256 of the Strategic Plan for State Forest Management.)

One person asked that indiscriminate logging not be allowed, that selective logging only be allowed for regrowth and the health of the forest. Another mentioned the east side of Robie Rd. and other parts of state land where it is solid brush and asked that it be burned to create suitable habitat for wildlife. One person asked that the plan continue to protect plant life.

Staff identified needs such as maintaining open/early successional and unique plants and to be aware of exotic and invasive plant species, such as Giant Hogweed and purple loosestrife, etc.

Water Resources

The Environmental Conservation Law (ECL) dictates that the State Forests within the Keuka Lowlands be managed for watershed protection. This is also clearly consistent with Wildlife Management Area objectives and sound conservation practices and public desires. Best Management Practices for water quality are used for all silvicultural practices on state lands. These require specific conservation practices which protect soils and water quality during timber harvest. Well-managed water resources have multiple benefits, including quality fish and wildlife habitats, aesthetically pleasing sites, ground water protection, and flood water retention. (See also pages 107 through 114 of the Strategic Plan for State Forest Management.)

One person asked to clean out the debris from the channel between Waneta and Lamoka Lakes so people with boats larger than 15 feet could launch their boats without hitting the bottom.

Staff noted that the wetland maps for these areas are old, and in many cases, inaccurate.

Wildlife and Fish Management

The Division of Fish and Wildlife is charged by Environmental Conservation Law to protect and maintain New York's rich and diverse ecosystems.

One person asked for a better response to terminate beaver activities which are affecting timber trees. This person also stated that the secret release of predators is unacceptable. [Note–NYS DEC does not secretly stock predators] No public comments were received related to fisheries management.

Staff identified the need to continue monitoring wildlife population levels. Also hunting needs to be encouraged in order to control the population of deer. Birdseye Hollow State Forest and Waneta-Lamoka Wildlife Management Area, have a growing population of resident Canada geese, causing habitat degradation and a health and safety issue. Beaver and muskrat can damage water control structures such as levees etc. The application of "SONAR" to Waneta Lake and its impact on the adjacent Waneta-Lamoka Wildlife Management Area need to be monitored. There is also potential for level ditching and/or creation of potholes to improve waterfowl and furbearer habitat on Cold Brook Wildlife Management Area.

Public Recreation and Use

One goal of the NYS DEC management is to provide suitable opportunities for the public enjoyment of compatible recreational pursuits in a natural setting. NYS DEC is charged under Environmental Conservation Law with guaranteeing that the widest range of beneficial uses of the environment is attained without unnecessary degradation or other undesirable or unintended consequences. The public has an undeniable stake in identifying both "beneficial uses" and "undesirable consequences." The recreational use of State Forest land is a clearly stated goal in the Reforestation Law of 1929 and is consistent with the proposed management actions in the Keuka Lowlands Unit.

One person asked if the plan covered state lands only. [Note - yes] Another asked that primitive campsites be made in the forested areas especially where the Finger Lakes trail runs through. Another suggested that two campsites be built, one downstream a couple of miles with a trail between them and make people get permits to camp or kayak.

One comment was received to add some trails or fire roads for ATVs especially for the disabled. Another requested the snowmobile trail system that runs across Steuben County be expanded to prevent riding on the roads.

One person asked that mountain biking be included in the plan, specifically a 10-20 mile loop trail for mountain bikes.

One person asked that the roads be repaired/paved. Another asked that only activities with minimal impact be allowed, like hiking, birdwatching, hunting, but not camping or any mechanical equipments such as ATVs or bicycles.

Keuka Lowlands Unit has a relatively large number of developed recreation sites, especially when compared to other Units. The facilities of all these sites need maintenance, and occasional upgrading. For example the Forest Stewardship Demonstration Tour on Birdseye Hollow and Moss Hill State Forests is in need of repair. Mud Creek is a seasonally good canoe/kayak route, but there are no good parking areas adjacent to it. In 2005, a Draft Cooperative Agreement between the County and NYS DEC was prepared, and after legal review, was rejected by NYS DEC. Steuben County has continued to express interest in managing the area, and the area has been developed beyond what is standard State Forest lands. One way to solve this is through a transfer of jurisdiction via a land exchange. The state legislature would need to pass a bill to approve the exchange of state land for county land at some other location. The county land would need to meet one or more of the requirements listed in the Land Acquisition section. The break wall at Sanford Lake Day Use Area is in extremely poor repair, and needs replaced or removed.

Oil and Gas Leasing

It should be noted that all State Forests within this plan were leased under the terms and conditions of a lease from 2003 and any development would have been undertaken under those terms and conditions. No development took place during the terms of those leases. The leases expired in 2008. Any recommendations outside the terms and conditions of the old lease will be taken into

account during any future lease sales.

One person commented that natural gas drilling is OK in appropriate areas. There is a lot of gas potential in the Finger Lakes area. One person asked that adjacent landowners be notified in advance of any leases or drilling. Another person said there should be no drilling.

Cooperative Agreements

State funding to optimally maintain the Keuka Lowlands Unit often falls short of what is desired. There is also a need to identify additional funding and actively search out cooperative agreements and partnerships to maintain roads and trails and other facilities in the Keuka Lowlands Unit.

NYSDECs' formal cooperative program, called the Adopt-a-Natural-Resource Stewardship Program, encourages individuals and groups to undertake activities that meet management needs of state-owned natural resources. Multiple benefits of such partnerships have been identified; serving as a means to complete work that helps preserve, maintain and enhance natural resources at minimal cost to the New York State. It is also an opportunity for organizations, groups and individuals to show willing support for conservation efforts, large and small. Such efforts may involve the cleanup of vandalism, litter pick up, establishment or maintenance of nature trails, providing interpretive services for school groups and other citizens, management of fish and wildlife habitats and other positive benefits to the site and natural resources.

NYS DEC has issued numerous permits to Steuben County over the years to operate, maintain, and in some cases develop the park.

Open Space Conservation

New York State has been a leader in recognizing the value of open, undeveloped land. In November 2006 Governor Pataki issued a plan prepared by DEC and the Office of Parks Recreation and Historical Preservation, entitled, "New York State Open Space Conservation Plan".

The Open Space Plan of 2006 characterizes the need for perpetuation, in a grand sense, of open space and natural landscapes as, "The quality and character of the lives of the people of New York depend upon the quality and character of the land on which we live. Our mountains, lakes, rivers, forests and coastline, our natural landscapes, urban parks and historic resources shape the way we spend our leisure time, affect the long term strength of our economy, determine whether we have clean air and water, support the web of living things of which we are a part, and effect how we think about ourselves and relate to other New Yorkers." NYS DEC will consider the purchase of selected parcels from willing sellers when funding becomes available.

One public comment received asked the DEC to consider purchasing additional property; another asked that Birdseye Hollow Park be expanded.

NYSDEC will consider the purchase of selected parcels from willing sellers when funding becomes available.

Aesthetics

In addition to providing open space and a place to experience wildlife and wild land, public lands should also be pleasing to the eye and soul. Scenic vistas, the use of natural materials, and attention to quality design and maintenance are important components of effectively managing the Keuka Lowlands Unit. The challenge is to attract users to the site without destroying what has drawn them there in the first place.

Staff recommends that garbage pickup continues and encourages “Pack it in, Pack it out” and “Leave no trace.”

Cultural Resources and Historic Preservation

A walk in the woods will often reveal objects from past users of the area. These artifacts, such as stone walls, glass bottles or flint arrowheads should be left where they are. The illegal removal or destruction of historic or archaeological resources is a continual problem. One member of the public asked that the preservation of the Lamokan archaic Indian Village be an important consideration.

Current Known Illegal Use

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

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

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.

Policy Constraints

The laws, regulations, and policies listed below provide broad guidelines within which this plan is prepared. The Environmental Conservation Law of the State of New York is available to the public at local libraries, NYS DEC offices, from private vendors, and at http://public.leginfo.state.ny.us/menugetf.cgi?commonquery=laws on the internet.

State Laws

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)

Available online at: http://www.dec.ny.gov/regulations/regulations.html

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

Public Use
Temporary Revocable Permits
Motor Vehicle Use
Timber Management
Unit Management Planning
Pesticides
Prescribed Burns
State Forest Master Plan
Inventory
Acquisition
Road Construction
Motorized Access Program for People with Disabilities (MAPPWD) (a.k.a. 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
Adopt a Natural Resource
Memorandum of Understanding with BLM for FYO 2004/2005 (leasing of gas wells)
Draft ATV Policy for Public ATV Access to Recreation Programs
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.

GOALS AND OBJECTIVES

Vision

The vision of this plan is to ensure the biological integrity, improvement and protection of the Keuka Lowlands 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 legal mandate enabling the Department of Environmental Conservation to manage state forests for multiple use is located in Article 9, Title 5, of the Environmental Conservation Law. Under this law, state forest lands shall 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".

As stated earlier, it is the policy of NYS DEC to manage state forests for multiple use to serve the needs of the people of New York State. This management will be carried out not only to ensure the ecological enhancement and protection of the forest ecosystem, but also to optimize the many benefits to the public that forest land provides. Management of state forests 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's capability for these uses and strives to optimize the benefits of state forests to the public.

NYS DEC lands within Keuka Lowlands Unit are unique compared with most private properties in the surrounding landscape. Private landowners have differing management objectives and property size is generally much 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.

Access

The existing access to the unit is adequate in most cases. However, the need for additional parking in some areas has been determined. Staff suggested creating/ improving two additional parking areas on Irish Hill Rd (Moss Hill State Forest), one on O'Brien Rd (Moss Hill State Forest), one on N. Urbana /Woods Rd by the Finger Lakes Trail (Birdseye Hollow State Forest), and one on Steuben Co. Rt. 113 (Mt. Washington State Forest). These parking areas would accommodate 4 vehicles each. In addition, staff has proposed developing canoe/kayak access sites on Mud Creek on Birdseye Hollow

State Forest. See the Public Recreation and Use section.

Gates and signs will continue to be used to restrict motorized access to haul roads. The costs to upgrade Haul Roads to Public Forest Access Roads are prohibitive; in addition many public comments indicate no interest in such actions. Access restrictions are needed to maintain the "backwoods character" of the land as well as protecting sensitive areas. NYS DEC reserves the right to limit access to state lands when public safety issues occur.

Moss Hill State Forest has about 22.2 miles worth of boundary line, Birdseye Hollow State Forest has about 31.1 miles, Mt. Washington State Forest has about 4.9 miles, Waneta-Lamoka Wildlife Management Area has about 2.8 miles, and Cold Brook Wildlife Management Area has about 2.9 miles. In addition, Mt Washington State Forest has about 0.7 miles of internal road frontage, Birdseye Hollow State Forest has about 10.7 miles, and Moss Hill State Forest has about 6.3 miles of internal road frontage, where NYS DEC owns both sides of the road. At the time of acquisition, or when a boundary dispute arises, licensed surveyors put pins in the ground at the corners, and blaze the trees in between along the line. The blazes in the trees are painted yellow and posted with DEC State Forest or Wildlife Management Area signs. The goal is to re-paint and post every 5 years, but currently it is on a 7 to 8 year cycle. Birdseye Hollow and Moss Hill State Forests share a mutual boundary line of about 4.4 miles, which is not marked.

As of the writing of this plan, Birdseye Hollow State Forest has two known encroachment issues with neighbors along Route 226. Located on the north boundary of Proposal D, this section of line was surveyed in 2009 by NYS DEC staff surveyors. A shed, yard, fence, and propane tank were found to be located on Birdseye Hollow State Forest. The propane tank has been moved. One neighbor has an older survey that conflicts with NYS DECs survey. In addition, many other boundary lines have not been surveyed in decades, and the evidence, such as tree blazes or pins, have faded or disappeared. For example, near Rabbit Rd and near Myers Rd, pins and other evidence are missing.

Table 9: Management Objectives and Actions for Access

Management Objectives		Mgt. Action #	Management Actions	Frequency of Action
1	Identify need for additional access	1	Receive public comments	On-Going
		1.1	Solicit public comments	Every 10 yrs
		1.2	Survey suggested site(s)	As Needed
		1.3	Amend UMP to allow construction of needed access.	As Needed
2	Maintain roads	2	Inspect culverts	Annually
		2.1	Replace culverts on about a 25 year interval.	Replace 1culvert, year 10
		2.2	Public access roads - grade and maintain surface.	Every 2 years
		2.3	Haul access roads - grade and maintain surface.	Every 5 yrs
		2.4	Mow roads right of way	Annually

Management Objectives		Mgt. Action #	Management Actions	Frequency of Action
3	Construct additional parking lots	3	Locate and construct parking lots on Irish Hill Rd, CR 113, O'Brien Rd, and N. Urbana Rd.	Years 1, 3, 6, and 10.
		3.1	Construct 2 canoe/kayak access parking lots - See Public Recreation and Use	See Public Recreation and Use 4.3
4	Maintain parking areas	4.0	Litter removal	At least Annually
		4.1	Maintain all parking areas	Years 4 & 9
		4.2	Maintain curbing	Years 4 & 9
		4.3	Maintain informational signs	Annually
		4.4	Mow all parking areas	Annually
5	Control access	5.0	Construct gates that can be locked open at the entrance to Sanford Lake DUA and Birdseye Hollow Pond DUA.	Year 9
		5.1	Maintain gates and signs	Annually
		5.2	Enforce NYS DEC policies	On-Going
6	Identify state property boundary lines.	6.0	Paint and post boundaries.	Every 5 yrs – Moss Hill SF 2009 & 2014 Birdseye HLW SF 2013 & 2018 Mt. Washington SF 2009 & 2014 Cold Brook WMA 2010 & 2020 Waneta-Lamoka WMA 2010 & 2020
		6.1	Identify and resolve boundary encroachment issues. (see Access section.)	ASAP

Management Objectives		Mgt. Action #	Management Actions	Frequency of Action
		6.2	Survey and blaze boundaries.	When encroachment issues are discovered, or line evidence disappears.
		6.3	Repair and replace area signs as they fade.	Year 5

Timber and Vegetation Management

Staff has identified the following management objectives: strive to maintain a balance of vegetative types and stages, enhance biodiversity, produce healthy and sustainable forest resources, and enhance wildlife habitat diversity. (See also Chapters 2 and 6 of the Strategic Plan for State Forest Management.)

Commercial Timber Sales

The primary method used to meet these objectives is the commercial sale of timber. Tables 4 and 5, listing vegetative types and stages, are located on page 18.

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

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

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

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

The program is governed in part by a Timber Management Handbook which includes both policies and guidelines to insure that management is carried out in a deliberate and professional manner. The Timber Management Handbook directs and regulates the practice of timber management on NYS DEC lands. This handbook contains technical references, as well as direction on regulation, allowable cutting, silvicultural systems and procedures.

Other sources of direction for NYS DEC timber and vegetation management activities include Commissioner's policy, 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 on this Unit will comply with these guidelines and directives, as authorized under the Environmental Conservation Law. Direction is also given in the NYSDEC publication Best Management Practices for Water Quality, and in the recently issued Management Rules for Special Management Zones.

Forest areas that are considered for timber harvesting are prioritized based on the following criteria, in order of importance:

1. Adequate access
2. Present and future forest health concerns;
3. Current distribution of vegetative stages within the unit management plan area and surrounding landscape;
4. Wildlife considerations;
5. Ability to regenerate stands (if a regeneration harvest);
6. Priority needs of management proposals that must be implemented from other unit management plans;
7. Market conditions;
8. Potential growth response of stands to treatment.

By law, any trees to be removed in a harvest must be designated, and paid for, prior to removal. Designation is made by NYS DEC forestry staff. After designation is completed, a fair market appraisal is conducted. No products may be sold at less than the fair market value. Forest stands are prioritized for treatment based on the criteria outlined above, and the desired future conditions identified by this Unit Management Plan. Prioritization is done by NYS DEC forestry staff, with input by wildlife staff. Any one sale may be composed of a partial stand to many stands combined. The preferred method is to include only entire stand(s), but sometimes natural events or natural features dictate otherwise.

The Environmental Conservation Law requires that different procedures are employed based on the appraised value of a timber sale. Sales that are appraised greater than $10,000 are called "revenue sales" and sales that are appraised at less than $10,000 are known as "local sales." The New York State Comptroller must approve revenue sale contracts. 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. 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.

Depending upon the sale, there may be an opportunity to use up to 50% of the appraised value for in kind services that enhance state facilities improve habitat, or otherwise serve the goals of the harvest, such as establishing regeneration within the sale area. An assessment of the potential will be done with each and every sale of forest products for the impact and possible enhancement. Potential enhancements include; a layer of gravel on a haul road, trail, or public access road, relocation of a trail or road for better placement, conversion of a skid trail to a recreation trail through grading and water control measures, creation of informal or formal parking areas by placement of the log landings, construction of small dug out ponds, installation of vehicle control barriers and other possible work as opportunity presents itself.

Green Certification

In January 2008 NYS DEC was awarded dual certification by NSF-International and Scientific Certification Systems. Forest products derived from wood harvested off State Forests from this point forward could now be labeled as “green certified” through chain-of-custody certificates. Green Certified labeling on wood products may assure consumers that the raw material was harvested from well-managed forests.

FSC #SCS-FM/COC-00104N ©1996 Forest Stewardship Council
FSC certification means that NY DEC State Forests are managed according to strict environmental, social and economic standards.

SUSTAINABLE FORESTRY INITIATIVE #NSF-SFIS-6l741 NY DEC use of the Sustainable Forestry Initiative® program logo mark indicates that State Forests have been certified by a qualified independent auditor to be in conformance with the SFI Standard.

Current and Future Vegetation Types and Stages

As noted above, one management objective is to maintain a balance of vegetative types and stages. Presently, the State Forests within this Unit do not have a balanced mix of vegetative stages, but do have an adequate mix of vegetative types. The Wildlife Management Areas are mostly wetland 70%; about 15% is open/brushy; only about 6% was inventoried as timber; with 9% falling in other and open water categories. We will have limited opportunity to influence forest species composition or structure in these areas, mainly due to access restrictions. Any actions will be evaluated to meet the habitat needs of wildlife, and appropriate silvicultural action taken accordingly.

Stand composition and vegetative type are influenced by many things. Both past and current management activities will result in changes of available seeds, both those found in the soil and what is

produced from mature trees. How much sunlight reaches the ground and/or smaller trees and shrubs under the taller trees is a result of how many trees are removed. The time of year when management is implemented may also influence the stand. Treatments implemented in the winter may result in rapid sprouting in the spring from some tree species stumps; and, summer treatments may result in more seeds sprouting in exposed mineral soil. Previous land use dictates to a large degree the present conditions. Perhaps the area was a pasture, crop field, barn yard or woodlot before re-growing to trees, either naturally or planted. Animals can have a tremendous impact on area vegetation, particularly high densities of deer, or other browsing animals. For example, deer and rabbits eat young seedlings and bucks will scrape the bark off of saplings with their antlers. Some of these factors are controllable, others are not. An important aspect of land management involves balancing what can and cannot be controlled.

For these forests the most important factors would be:

1. Site capability
2. Seed source
3. Past management
4. Deer Density

The most recent State Forest inventory data shows there is an over abundance of pole size timber (6-11 inches in diameter) making up almost 73% of the acreage: the rest is split between the sawtimber size (12+ inches in diameter) 8%, and the seedling/sapling size (1-5 inches in diameter) 7%. Less than 1% is classed as grass or brushy openings; and, about 11% was in the pond/wetland/other categories.

For a better distribution of stages, seedling/sapling acres should be created, and sawtimber encouraged, primarily out of the stands currently of pole size. Most pole sized stands will eventually move to the sawtimber size class on their own as a natural result of growth. Thinning a stand encourages faster growth on the remaining trees, allowing them to reach sawtimber size faster.

There are opportunities to create some seedling/sapling acres by treating mature sawtimber areas, but this must be done with discretion to avoid impacting the total number of sawtimber acres. Most of the acreage listed as “plantation sawtimber” will be converted to “hardwood seedling - sapling” during this planning period, either through management actions or natural processes. Smoothing out the “bump” of pole size class acreage will be a many decade process, much longer than this 10 year plan covers.

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

1. The significant role played by natural forces in the type and stage exhibited by any stand.

2. The fact that most tree species do not lend themselves to management over a 10 year period. In some cases it may require 40 - 50 years before the results of any given management action can be adequately assessed.

Success in this objective will be measured simply by a decrease in pole timber acreage, with a corresponding increase in seedling / sapling acres or sawtimber acres.

There is a low percent of grassy/brushy openings, about 0.1%. Over the 10 years of this plan that amount should be increased to 1%, or an additional 53 acres. This will be created out of stands, or portions of stands, in the pole size class which contain only sparse tree cover.

Silviculture

When managing forests, foresters employ two silvicultural systems to mimic natural disturbance patterns and promote biodiversity, even-aged and all-aged management.

Even-aged Management

Trees in an even-aged stand originated at approximately the same time, either naturally or by planting. They grow, are cared for, may undergo various intermediate cuttings during their development, and they are ultimately removed in one or more major harvest cuts after which a new stand is released or established. Consequently, such a stand has a beginning and an ending time.

Even-aged management systems are important because they create young forests that are necessary for the survival of many plant and animal species. They favor the establishment of shade intolerant and mid - tolerant tree species such as cherry, oak, and ash. These species have some of the highest timber and wildlife values.

Even-aged management favors the establishment of many of the hard mast species that are critically important to wildlife. Over the years, the availability of hard mast producing trees has declined in the landscape, as a result of diseases which have severely impacted American beech, butternut, and American chestnut trees.

Actions taken under even - aged management systems might include

1. pre-commercial thinnings of young stands
2. intermediate thinning cuts of middle aged stands
3. actions aimed at regenerating stands
    a. shelterwood (either two cut or three cut)
    b. seed tree
    c. final harvest (clear cut)

All-aged Management

The all-aged management systems differ from the even-aged systems in several ways. Instead of maintaining one dominant age condition in the stand, these systems establish and maintain many age groups ranging from seedlings and saplings to very large, mature trees.

All-aged management uses two different harvesting methods: single tree selection and group selection.

Single tree selection is used to maintain an unbroken forest canopy as desired in the all-aged forest areas. The single tree selection system removes individual trees throughout a forest stand, thereby

minimizing disturbance to the forest canopy. The small openings created by single tree selection limits the amount of sunlight that can penetrate to the forest floor. As such, the single tree selection system encourages long-lived shade tolerant tree species such as Sugar Maple, and Eastern Hemlock.

Group selection removes small groups of trees, in an attempt to mimic natural disturbance regimes. Group sizes will vary depending on the species group being managed. As group size increases, the differences between this system and an even - age system begin to blur.

Current and Future Silviculture Management

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

A variety of silvicultural techniques will be used to manage the forests within this Unit, including:

- 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.

It takes time for trees to grow into the sawtimber size, thinning cuts speed up this process. Over the 10 years of this plan approximately 1,546 acres of thinnings have been scheduled. It is anticipated that some of that acreage will still be in the pole size class in 10 years, especially those cut near the end of the cycle. However, at least some of the early cuts will be closer to, if not in, the sawtimber size class. A regeneration cut results in a seedling/sapling stand. There is about 263 acres of regeneration cuts scheduled for the 10 years of this plan. This is less than the ideal number of acres to create an even flow of age classes, however, biologically, and economically, it is best not to attempt to regenerate stands before the stand reaches maturity.

On Birdseye Hollow State Forest, stand M-5 is scheduled to have 10 acres regenerated in year 1, and the remainder thinned in year 4. The end result is two new stands each at a different stage of growth, and thus providing two different kinds of habitat for wildlife to use. It will also be inventoried as two different stands during the next inventory of Birdseye Hollow State Forest.

No pre-commercial thinnings have been scheduled to specific years. By definition, pre-commercial cuts require funding to pay someone to cut trees, and funding has not been consistently provided for this purpose in the past. If funding becomes available the seedling/sapling and smaller pole size stands will be evaluated for such activities. In addition several stands cannot be accessed with modern logging equipment, even though some of them could be treated. If access improves through additional acres being purchased, or new types of logging equipment being developed, these stands will also be evaluated for silvicultural activities.

Most of the stands scheduled for all-aged cuts are not currently all-aged stands, and it will take several cycles of cuts to reach that status. This is well beyond the 10 years of this plan, in addition, natural events, such as ice storms or insect infestations may cause changes in the end goal.

Protection areas receive special consideration whenever management activities, of any kind, are planned which may impact these areas. Examples include:

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

Some protection areas are managed specifically to restrict or prohibit management activities. These practices may also be employed on other areas not designated as protection forest whenever site or vegetation protection is needed. Examples include: poorly drained soils, slopes over 15%, presence of historical or archeological features, recreational use, wildlife considerations, and preparation for forest regeneration. As might be expected from the landscape position, wetlands are not a large proportion of these forests. Wetlands do represent unique habitat types, and require special management zones. See the Fish and Wildlife Habitat and the Watershed and Wetlands Protection sections for further details.

In 2006 a new forest inventory system was implemented, which allows identification of areas receiving special management considerations.

Oaks and American chestnut are native tree species on the Keuka Lowlands Unit. However, historical management and disease have discriminated against these species. The objective is to maintain and enhance well-adapted, native species in the Unit by using the most current silvicultural knowledge.

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.

The establishment of oak stands on these forests came about due to an unusual set of circumstances, which will be rather difficult to reproduce. When the time comes to regenerate these oak stands it may be necessary to use techniques (such as prescribed fire, scarification, pesticide, etc.) which are not well known in this area. Outreach to user groups, and the general public, will be critical in explaining the science behind these techniques, why they are required, and why it is critical to reproduce the existing oak stands. In some cases additional forms, plans, and/or SEQR may be required.

See also the discussion under Even Aged Management, above.

Plantation Management

Most of the conifer plantations on this Unit were planted between 1940 and 1965. Many of the existing red pine plantations on the Unit are reaching their biological maturity. On most sites tree crowns are thinning and many stands are experiencing mortality. Natural succession within these maturing 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 species in the understory.

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

In both scenarios there is also the possibility that, if site factors are favorable, some of the softwood species from the original plantation may participate in the “new” stand. Anecdotal evidence suggests that we should expect this, at least through the seedling - sapling stage. Long term persistence of these species on these sites may be somewhat less likely. We have not been following this type of situation 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 these plantations should be to try to mimic the first scenario. Enough trees will be removed during thinning to reduce the density of trees and allow the establishment of desirable tree species in the understory. This will be followed by removal of the softwood overstory once the number of new, young, trees in the understory is sufficient to assure a “new” stand.

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

Conifer Component

Forest ecologists have identified conifers as an important component of the ecosystem. The establishment of conifers through planting has created a significant conifer component on these forests. The area in conifer plantations amounts to about 24% of the total acres of the State Forests. Natural conifer stands have been established on about 6.3% of the area. Natural regeneration should continue to supply the necessary conifer component on a state wide basis; if it does not, planting may need to be done. The Wildlife Management Areas do not have any acres in plantation nor any that meet the criteria to be considered a natural conifer stand.

Staff has not identified softwood plantations on this Unit which serve as a habitat niche for native wildlife species. Most of the plantations do not occur on soil types which are conducive to success by plantation conifer species. Therefore, we are not proposing 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.

For the purposes of this plan a conifer natural stand is any stand (that was not planted by

humans) where the most prevalent species is eastern hemlock, eastern white pine, other conifer species, or where these species in combination compose 33% or more of the stand. Care must be taken to assure that the conifer natural stands “reproduce to type”; no conversion of conifer natural stands to other types should occur as a result of management actions.

Grass and Brush Management

There is a low percent of grassy/brushy openings on the State Forests, only about 0.1%. Over the 10 years of this plan that amount should be increased to 1%, or an additional 53 acres. This will be created out of stands, or portions of stands, in the pole size class which contain only sparse tree. Any one grassy opening will be 5 acres, or more, in size. The timing on clearing to create these openings will depend on funding, because of this; an exact year of action has not been picked.

The Wildlife Management Areas have a larger percentage of grass/brush acreage, about 15%. This acreage will be maintained to grass and or brush, but no additional acres will be deliberately converted to it.

Existing, and future, grassy and brushy opening will need to be maintained, or they will revert to forest. Grass needs to be mowed at least every 3 years, and Brush hydro-axed about every 5 years. If it isn’t mowed the grass converts to brush and then the brush grows into trees. The clock can be set back even more by converting brush to grass, which if the funding becomes available, may be done. Applying lime, or even more rarely fertilizer, can enhance the health of grasses over invasive plants such as goldenrod. Fire can also be used to maintain an area in grasses. Most warm-season type grasses grow the best following a fire. Additional paperwork, such as a burn plan and SEQR are required prior to doing a controlled burn.

Grassland acres are created out of timber acres by removing the trees, including stumps and roots, and planting grass seed. The soil pH will be tested, and if money is available, lime may be applied prior to seeding. Best Management Practices will be used to control erosion.

Wetland and Ponds

There is relatively large acreage of wetland and pond habitats on the State Forests, especially when compared to other state forests within the county. Birdseye Hollow State Forest, and to a lesser extent, Moss Hill State Forest, have an abundance of valley bottom land, including areas of wetland and ponds. The two Wildlife Management Areas are almost entirely wetlands. See the Fish and Wildlife Habitat section for further details about the construction of small dugouts/ponds.

Forest Health Threats

Often, stands that are stressed by overcrowding become susceptible to forest health threats. One such threat currently causing concern is the Sirex wood wasp (Sirex Noctilio). The Sirex wood wasp is a devastating pest of pine plantations. It is native to Europe and Asia and has destroyed millions of pines in Australia, South America and South Africa. In September of 2004, a Sirex wood wasp was discovered in a research trap in Fulton, New York. An expanded trapping effort in 2006 confirmed the presence of Sirex in most counties in western New York. Utilizing literature from around the world, NYS DEC has developed management direction in regard to dealing with the Sirex wood wasp. The literature suggests

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

There are many biotic factors that influence the health of a forest. A few prominent factors for the forests in the Unit are animals and insects or disease. White tailed deer eat young tree seedlings, and by doing so, play a major role in the success or failure of establishing young forests, particularly those comprised of shade-intolerant species. In accordance with established procedures used by NYS DEC to determine deer management decisions, a reduction in the number of deer on the landscape by liberal harvest via hunting is encouraged.

Some level 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 the Keuka Lowlands Management Unit. Infestations of introduced insects such as Gypsy Moth and Hemlock Woolly Adelgid and the previously mentioned Sirex wood wasp are of present concern and require regular monitoring. Native insect species such as Pear Thrips and 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. The professional foresters of NYS DEC will continue to observe the effects of these factors which influence the vegetation on the Unit. By closely monitoring these outbreaks management actions may be able to lesson undesirable impacts.

Invasive exotic insects, fungi, animals, or plants can cause problems. Some exotics, such as chestnut blight, and beech bark disease, invaded years ago, and have all but exterminated the chestnut and beech tree. The hope is to avoid this again, by closely monitoring for new arrivals, and if possible eliminating them from North America before they can spread. At the time of this writing, some known insect/fungi invaders posing threats to New York's forests include the Sirex wood wasp, Emerald Ash Borer and the Asian Longhorned Beetle. Emerald Ash Borer was discovered in Steuben County in the summer of 2010. Current efforts are pointed toward delineating the infestation area and slowing the insect's spread to other parts of the state.

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

Invasive plants are also crowding out native species. Current exotic invaders include purple loosestrife, buckthorn, honeysuckle, garlic mustard, hogweed, multiflora rose, and Japanese knotweed. Unfortunately, there are many more that are not listed here. As money and time allow, they will be monitored, removed when found, or other management actions taken to lessen the effects.

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

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

1. Silvicultural Remedies
   Changes in forest composition and structure may create conditions that are less favorable to some invasive species.
2. Hunting
   Invasive and nuisance species can be kept in balance within the ecosystem by applying hunting as addressed within the Deer Management section of the Strategic Plan for State Forest Management.
3. Mechanical Control
   Digging, pulling or cutting may be effective in altering site conditions to control invasives and directly controlling some plant species.
4. Grazing
   Although many invasive plants may be resistant to applied scientific grazing, this method may be appropriate for some species. Grazing on State Forest lands would require the availability of an agricultural partner along with staff and funding resources.
5. Biological Control
   Biological control is the science of reconnecting invasive plants 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 of plants, 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, Lyon, Blossey, Hoddle, & Reardon, 2002)
6. Herbicide Treatment
   All pesticide/herbicide use will conform to guidelines identified in the Active Forest Management section of the Strategic Plan for State Forest Management.

Inventory

Division policy requires that a forest inventory be conducted every 10 years and whenever stands are changed by any silviculture operation or by the forces of nature. Forest inventory is the critical task in the vegetation management planning process, as it forms the basis for all science based vegetative management decisions in this plan.

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

See Appendix F: Timber Management for a schedule of stands and management actions, and Appendix L: Maps.

Table 10: Management Objectives and Actions for Timber and Vegetation Management

Management Objectives		Mgt. Action #	Management Actions	Frequency of Action
1	Maintain knowledge of forest stands.	1.0	Perform State Forest and Wildlife Management Area inventories.	Every 10 yrs
2	Maintain healthy vegetation	2.0	Practice Integrated Pest Management	On-Going
		2.1	Reduce deer population, to reduce damage to the low growing vegetation.	Annually
3	Roads, ponds, wetlands etc.	3.0	Maintain per “Unit Maintenance and Facilities Management” and/or “Fish and Wildlife Habitat” and/or “Public Recreation and Use”	On-Going
3	Birdseye Hollow, Moss Hill and Mt. Washington State Forests - Develop the Following Vegetative Balance:			
	Grassy/Brushy Openings (5 current acres, plus 53 additional acres)	4.0	Create about 53 acres.	By year 10
		4.1	Maintain grassy openings with a 3 year rotation of mowing. Or annual burn.	Every 3 yrs. (Or annually)
		4.2	Maintain brushy openings with a 5yr rotation of hydro-axeing.	Every 5th year
	Protection forest (355 acres total)	4.3	Manage 355 acres.	On-Going

Management Objectives		Mgt. Action #	Management Actions	Frequency of Action
	All Age silviculture - 20 yr cutting rotation	4.4	Stand entry on 116 acres / 6 stands	See schedule, Appendix F: Timber Management
	Even Age silviculture, Natural hardwood at about a 100 year rotation Plantation softwood at about a 75 year rotation	4.5	Regenerate 263 acres / 14 stands	See schedule, Appendix F: Timber Management
		4.6	Thin 1,546 acres / 54 stands	See schedule, Appendix F: Timber Management
	For one or more reasons, some stands cannot be accessed with modern logging equipment, even though some of them could be treated.	4.7	If access improves through additional acres being purchased, or new types of logging equipment is developed, these stands will also be evaluated for silvicultural activities. 317 Acres / 13 stands	When access improves.
	Pre-commercial thinning	4.8	If funding becomes available the seedling/sapling and smaller pole size stands will be evaluated for pre-commercial thinning.	When funding become available.
	Implement “pre-commercial thinning” or silvilcultural activities in “no access” stands	4.9	After evaluation per 4.7 and 4.7, add to schedule, Appendix F.	After 4.7 or 4.8
5	Waneta-Lamoka and Cold Brook Wildlife Management Areas - Develop the Following Vegetative Balance:			
	Grass/Brushy openings (42 acres total)	5.0	Maintain grassy openings with a 3 year rotation of mowing. Or annual burn.	Every 3 yrs. (Or annually)
		5.1	Maintain brushy openings with a 5yr rotation of hydro-axeing.	Every 5th yr.
	Forested (18 acres total)	5.2	No Action	See schedule, Appendix F: Timber Management

Watershed and Wetlands Protection

The Reforestation Law of 1929 mandates watershed protection as one of the most basic goals of the state forest system. Watershed protection was a primary objective of the original acquisition of State Forest lands and will be a primary objective on the Keuka Lowlands Unit.

Compliance with the New York State Freshwater Wetlands Act (ECL Article 24) and the Water Resources Law (ECL Article 15, Title 5) is required by NYS DEC when conducting management activities or construction projects that involve regulated activities within protected wetlands, water bodies, or streams. Timber Harvesting Guidelines which are mandatory for all silvicultural practices on state lands, require specific conservation practices which protect soils and water quality. The ECL dictates that, among other purposes, State Forests within this Unit be managed for watershed protection, and sound conservation practices and public desires.

Regulated activities within protected wetlands, streams and waterbodies 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, ground water protection, and flood water retention.

The need for small dug-outs was elicited in the objectives for Fish and Wildlife Habitat.

Table 11: Management Objectives and Actions for Watershed and Wetlands

Management Objectives		Mgt. Action #	Management Actions	Frequency of Action
1	Protect water and wetland resources	1	Utilize Best Management Practices (BMP's) for water quality on timber sales, gas well site construction, recreation facilities, and any other construction.	On-Going
		1.1	Control erosion through proper road and trail maintenance.	On-Going
		1.2	Comply with the Water Resources Law and Freshwater Wetlands Acts.	On-Going

Fish and Wildlife Habitat

The 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.

A good warm water fishery is accessible from the Waneta-Lamoka Wildlife Management Area. Largemouth bass, smallmouth bass, yellow perch, bluegill, pumpkinseed and bullhead provide the bulk of the fishing opportunity on these lakes. Muskellunge are found only in Waneta and their numbers are maintained by annual stocking of 4800 hatchery reared fingerlings. Chain pickerel is found in Lamoka Lake and ice fishing is also popular on both lakes. Mud Creek, Birdseye Pond, and Sanford Lake on Birdseye Hollow State Forest also host common warm water species including largemouth bass, bluegill, pumpkinseed, bullhead and carp.

A cold water fishery is available on Cold Brook WMA and on adjacent Public Fishing Rights easements. Keuka Lake's adult rainbow trout population is maintained by wild yearling fish produced in Cold Brook. Large adult rainbow trout migrate up Cold Brook to spawn in late winter or early spring. After fry hatch, the young fish live and grow in the stream until they're one or two years old before migrating to Keuka Lake to live their adult life. Trout habitat was heavily impacted by flood events that occurred in January and November of 1996. This in-stream habitat is presently being restored under the Cold Brook Aquatic Habitat Restoration Project which is funded by the 1996 Clean Water/Clean Air Bond Act.

Waneta Lake was treated by the Lamoka/Waneta Lakes Association with the aquatic herbicide fluridone “Sonar” in 2003 to reduce the amount of submergent vegetation in the lake. The treatment reduced the amount of submergent vegetation greater than expected. The lake will continue to be monitored for fish populations and reestablishment of submergent vegetation. Lake levels of Waneta and Lamoka Lake are regulated via NYSEG's dam at Bradford. Lake levels are maintained for fish and wildlife benefits under a guide curve required by NYSEG's non-hydropower license.

There is a robust diversity of amphibian and reptile species to be found on the Unit. Management efforts should include creation of dugouts for breeding and activity centers as well as protection of sensitive shallow shaded pools in swamp and bog sites. There exists great potential for level ditching and/or creation of potholes to improve waterfowl and furbearer habitat on Cold Brook Wildlife Management Area. Protection of all wetland environs should enhance these species as well as several aquatic birds.

Management for birds and mammals will largely be driven by the age of the specific forest stand and its species composition. Most of the area is dominated by oak/hickory forest which is largely in middle age classes. Efforts need to continue to achieve a balance of age classes, so wildlife species diversity and abundance are maintained. This includes establishing new forests by clear cutting as well as maintaining older age classes via selective harvest or establishment of protection areas. All can be accomplished by continued attention to harvest of forest products. Conifer stands are an important component of the predominantly hardwood stands in the unit and should receive special consideration to ensure that they remain as a component in future stands. Management of natural conifer stands should be designed to include multiple age classes if possible. Special attention to conifer management is warranted given the ability of high deer populations to thwart the reestablishment of these species.

Grassland and open areas are indeed rare and should be maintained whenever possible. Opportunities to establish such vegetative structure should be taken advantage of with gas exploration, pipeline development and associated new roads.

Small ponds and dugouts act as amphibian activity centers, providing habitat for frogs, salamanders and other amphibians. On hill tops and other dry areas they also provide water for the local animals. A dogout is an approximately 500 square foot by 3 feet deep pot hole constructed of earth and containing water, a pond is larger. They are often constructed by both digging into the existing ground level and piling the dirt in a small dam on the downhill side. Exact construction type and size depends on the existing terrain. They will be developed at a rate of one per 320 acres. For convenience in construction, and to take advantage of a favorable site, these features may be clustered together.

Birdseye Hollow Pond and Sanford Lake on Birdseye Hollow State Forest both have a growing population of resident Canada geese. Both of those locations are also high human use areas. Waneta and Lamoka Lakes also have growing populations of resident Canada geese. Resident geese are a valuable natural resource that provides recreation and enjoyment to many. However, resident Canada geese can cause problems including overgrazing grass areas, accumulations of dropping and feathers in human use areas, nutrient loading to water bodies, public health concerns at beaches and drinking water supplies, aggressive behavior by nesting birds and birds with young, and safety hazards near roads. Geese may not be causing a problem on state land by nesting or roosting but may be causing problems for nearby landowners when the geese move to their properties. To minimize the potential impact of geese on state and nearby private lands efforts should be made to stabilize/reduce the population of geese on state land. To accomplish this, a mult-faceted approach will be necessary. Including, but not limited to: “No feeding of waterfowl” signs posted in areas where geese congregate, encouragement of hunting of geese during legal seasons, treatment of nests to prevent hatching, etc.

For further discussion of Fish and Wildlife issues, see Chapters 2 and 3 of the Strategic Plan for State Forest Management

Table 12: Management Objectives and Actions for Fish and Wildlife Habitat

Management Objectives		Mgt. Action #	Management Actions	Frequency of Action
1	Manage habitats for endemic wildlife species and public use	1	Conduct all forms of woody vegetation management to achieve balance forest structure. (See Timber and Vegetation Management)	As needed
		1.1	Develop and maintain up to 20 small ponds and dugouts to act as amphibian activity centers.	2 per Year
		1.2	Manage conifers in natural forests	On-Going
		1.3	Maintain and enhance grassland habitats by mowing and/or burning	At least every three years.

Management Objectives		Mgt. Action #	Management Actions	Frequency of Action
		1.4	Protect and enhance rare plant and animal communities	Annually
		1.5	Level ditch channels and open water.	Year 8
2	Encourage public use to enjoy wildlife resources	2	Assist local groups in utilizing and protecting wildlife resources	Annually
		2.1	Work with local and governmental groups to enjoy wildlife habitat under the Adopt-a-Natural-Resource Program	See Public Recreation and Use.
3	Manage Canada goose populations	3	Post “do not feed” signs	Year 1
		3.1	Conduct goose population control.	Annually

Public Recreation and Use

One goal of the NYS DEC is to “Connect New Yorkers to Nature” by providing suitable opportunities for the public enjoyment of compatible recreational pursuits in a natural setting. NYS DEC is charged under Environmental Conservation Law with guaranteeing that the widest range of beneficial uses of the environment is attained without unnecessary degradation or other undesirable or unintended consequences. The public has an undeniable stake in identifying both “beneficial uses” and “undesirable consequences.” Recreational program opportunities for people with disabilities will be planned in perspective with those available in the region on NYS DEC lands. For a list of facilities available on The Keuka Lowlands Unit see Appendix D: Facilities.

Wildlife-related recreation, including wildlife viewing, hunting, and trapping, is a dominant and important use of the NYS DEC lands in the Unit. Users are encouraged to adhere to standards of equitable distribution, fair chase, ethics and the maintenance of the variety and quality of use. Additional recreational pursuits will continue to be allowed to the extent that they are compatible with habitat integrity, wildlife use and financial resources.

Haul and public access roads combined with existing logging roads and utility lines form an excellent network to access recreational opportunities. Parking areas and informational signs and maps are needed on most areas to help identify and promote public enjoyment and compatible use. Good locations for informational kiosks include high use parking lots, such as on Waneta-Lamoka Wildlife Management Area and one of the proposed canoe/kayak access lots.

New 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. Some of these include: Wildlife Management Area regulation 6NYCRR Part 51.4 prohibit ATV riding on all Wildlife Management Areas. As stated in NYS DEC's Strategic Plan for State Forest Management, ATV riding is not a program offered on State Forests. 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. On the Keuka Lowlands Unit, the existing transportation infrastructure of public roads provides sufficient access to all recreational activities. Soil and topography limitations on this Unit make many areas unsuitable for ATV use, for example, about 10% of Birdseye Hollow and Moss Hill State Forests are wetland or open water and, about 18% has a slope of 15% or more. Mt. Washington State Forest, Waneta-Lamoka and Cold Brook Wildlife Management Areas are much too small to support an ATV trail system. Currently, illegal ATV activity has created management and maintenance challenges on this Unit.

In the event another entity is establishing a legitimate public ATV trail system on lands adjacent to a State Forest, and a State Forest is needed to serve as a connecting link, or in the event that a State Forest road or trail could serve to connect already designated ATV trails open to the public, DEC will evaluate and consider the proposal. Any such trail proposal must comply with state law, department policy and regulations. If it is determined to be environmentally compatible, a connecting trail could be established on the State Forest. This would be dependent on the availability of sufficient funds to establish and maintain a sustainable trail. The State Forest based connector trail, if approved, must follow the shortest environmentally acceptable route available.

The inclusion of a connector trail in a UMP and the subsequent establishment of any such trail could only occur if it does not compromise the protection of the natural resources of the Unit, significantly conflict with neighbors of State Forests, nor interfere with other established recreational areas. Such designation shall only occur through the amendment or adoption of a UMP or another process which provides similar opportunities for public review and comments and full SEQRA review of the proposed designation.

Connector trails will be monitored to ensure that legal use does not lead to illegal off-trail use within State Forest lands or on neighboring private property. Should illegal use increase significantly adjacent to any connector trail, that trail will be subject to closure.

While no ATV trails currently exist on this Unit, specific routes could be opened to 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 to use these routes must first be obtained from the DEC. Individuals with qualifying disabilities may apply for a permit to operate an ATV on trails designated by the NYS DEC. For further information contact the NYSDEC, 7291 Coon Road, Bath, New York 14810. (See Appendix D: Facilities and Appendix L: Maps) Currently there are no MAPPWD trails on the Unit. Unfortunately there are no suitable locations for designation as a MAPPWD trail, and none are proposed.

Camping, and day use picnicking are acceptable recreational uses of Moss Hill, Mt. Washington and Birdseye Hollow State Forests. Camping is not allowed in the Birdseye Hollow Park or on Waneta-Lamoka or Cold Brook Wildlife Management Areas. Dispersed recreation will continue to be encouraged over the entire Keuka Lowlands Unit.

The development of Birdseye Hollow Park began around 1965, when NYS DEC, Steuben County Highway Department and the Steuben County Federation of Sportsmen engaged in a joint venture to develop the pond/marsh area. In 1971, the County offered to lease the park area from NYS DEC. Since NYS DEC does not have the authority to enter into such leases, it was decided that the issuance of a renewable permit would be appropriate. Operating under the authority of ECL §3-0111, NYS DEC has issued numerous permits to Steuben County over the years to operate, maintain, and in some cases, develop the park. In 2005, a Draft Cooperative Agreement between Steuben County and NYS DEC was prepared, and after legal review, was rejected by NYS DEC. Steuben County has continued to express interest in managing the park area, and it has been developed beyond what is appropriate for State Forest. One way to solve this is through a transfer of jurisdiction via a land exchange. The state legislature would need to pass an issue bill to approve the exchange of state land for county land at some other location. The county land would need to meet one or more of the requirements listed in the Land Acquisition section, page 64.

In 2009 the existing fishing pier onto Birdseye Pond was removed as a safety hazard, and needs to be replaced. It was constructed in 1992 to provide accessible fishing, but age, frost heaving and storm damage made it extremely uneven. In 2002 Steuben County proposed both the replacement of this fishing pier and the construction of a new loop hiking trail around Birdseye Pond. Rather than replace the fishing pier in the same location, a better choice is to relocate the fishing pier over deeper water next to the dam. This relocation would require the development of an access bridge over the spillway to the earth dam. This proposed project needs to comply with ADAAG guidelines and other engineering safety standards. Engineering and designing has not been completed for this project, the final design may be slightly different than proposed here do to unforeseen issues. Additional paperwork will be required prior to construction.

In addition to the fishing pier, Birdseye Hollow Park has a paved parking area, paved path to a picnic pavilion, several fixed charcoal grills and picnic tables, playground, benches, a small wood bridge, and port-a-johns during the summer months.

Steuben County has proposed construction of a new hiking trail which would connect the proposed fishing access platform on the south end, around the western and northern sides of the pond to the Finger Lakes Trail which already exists on the east side. The area around Birdseye Pond is getting developed beyond the standards for a state forest. In addition the construction of this trail would be difficult since Birdseye Pond is surrounded by a Class 2 regulated freshwater wetland. The distance between the shores of the pond to the western boundary of Birdseye Hollow State Forest varies from less than 100 feet to only about 600 feet, and almost all of that area is wetland. In order to provide a suitable trail, and stay on Birdseye Hollow State Forest, over a mile of boardwalk and bridges would need to be constructed. Construction and maintenance of such a trail is too expensive at this time. It is much better to construct trail on dry land, which in this case is currently in private ownership. If a transfer of jurisdiction via a land exchange does occur, and does not include the entire proposed trail, an Adapt-a-Natural Resource Agreement and/or TRP could be issued, for Steuben County to fund the construction and maintenance of the proposed trail.

Mud Creek provides seasonally available canoeing/kayaking opportunities. At present there are no designated canoe/kayak access sites along it, the construction of two, 2 to 3 car parking lots/access points where Mud Creek and town roads intersect would provide additional recreational access to

Birdseye Hollow State Forest. As is mentioned later in this section, where possible, these will be constructed to ADAAG standards.

A “class A” snowmobile trail, Kris’ Trail, crosses Birdseye Hollow and Moss Hill State Forests. It was constructed, and is maintained, by the Sno-flakes Snowmobile Club under the Adopt-a-Natural Resource Stewardship Program. The Finger Lakes Trail/North Country Trail crosses over Birdseye Hollow State Forest and near Mt. Washington State Forest. It was constructed, and maintained, by the Finger Lakes Trail Conference (FLTC) under the Adopt-a-Natural Resource Stewardship Program. An initial public comment from the FLTC included construction of a lean-to on the north end of Birdseye Hollow State Forest, and puncheons (raised wooden trail) or other trail improvements. Comments from the Sno-flakes Snowmobile Club included construction of a boardwalk/low bridge over a section of wet trail, and re-routing other sections to avoid wetness or other problems. These are all reasonable requests, exact locations and construction details would require approval by the Regional Forester or designee. For both trails, any major maintenance, re-routes or additions will be reviewed on an individual basis by NYS DEC and require approval of a Temporary Revocable Permit (TRP), or an amendment to the Adopt-a-Natural Resource Agreement (AANR).

Sanford Lake Day Use Area currently has a picnic area, 7 designated campsites and a small boat gravel launch. Due to high demand, signs have been posted requiring that anyone interested in camping there, between Memorial Day weekend through Labor Day weekend, are required to pre-register at the Bath NYS DEC office. In the future consideration should be given to modifying NYCRR part 190 to include this requirement. The camp sites are designated and contain a fire ring and picnic table. The picnic area has 6 picnic tables, which are available on a first come, first use basis. The break wall between the picnic area and Sanford Lake was replaced in 2009. No potable water is provided, and the only restroom facilities are summer months only port-a-johns. An accessible path from the parking lot to the break wall will be constructed, connecting the parking, at least one picnic table and the paved section of the break wall.

Sanford Lake and Birdseye Pond are not large enough for large boats/motors, and in May 2009, NYCRR part 190 was changed to restrict use to electric trolling motors only. In addition, organized events of 20 or more people require authorization from NYS DEC, contact the Bath NYS DEC office to obtain one.

Due to the movement of gravel into the lake, the boat launch on Sanford Lake has become very shallow, making boat launching difficult. Dredging and otherwise re-working the ramp into the lake would solve this problem. Construction of a small boarding pier at either the launch, or the picnic area, would provide universal access to boating opportunities on Sanford Lake. Currently the picnic area is accessed from the parking area by a grassy slope that exceeds ADA standards. The construction of a switch-back ramp walkway between them will provide universal access.

On Birdseye Hollow and Moss Hill State Forests is a Forest Stewardship Demonstration Tour. It has 6 road side stops in front of examples of different types of forests, and forest management techniques. Time marches on, and the signs have weathered, and taken some vandalism, and some of the forest stands behind the signs have outgrown what they are supposed to demonstrate. So the signs need repaired, replaced, and/or moved, and the brochure updated. As is mentioned later in this section, where possible, these will be constructed to ADAAG standards. Currently the brochures are attached to a post on each of the signs, and cannot be reached from inside a vehicle, but are available at the NYS DEC

Bath Office, which is accessible.

Occasionally, forest product sales may affect certain recreational facilities. Depending upon the sale, there may be an opportunity to enhance the recreational facility. An assessment of the potential will be done with each and every sale of forest products for the impact and possible enhancement. Potential enhancements: relocation of a trail for better placement, conversion of a skid trail to a recreation trail through grading and water control measures, creation of informal, or formal, parking areas by placement of the log landings, installation of vehicle control barriers and other possible work as opportunity presents itself.

Application of the Americans with Disabilities Act (ADA)

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

Consistent with ADA requirements, the NYS DEC incorporates accessibility for people with disabilities into the planning, construction and alteration of recreational facilities and assets supporting them. This Unit 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, NYS DEC employs guidelines which ensure that programs are accessible, including buildings, facilities, and vehicles, in terms of architecture and design, transportation and communication to individuals with disabilities. A federal agency known as the Access Board has issued the ADA Accessibility Guidelines (ADAAG) for this purpose.

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

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

Table 13: Management Objectives and Actions for Public Recreation and Use

Management Objectives		Mgt. Action #	Management Actions	Frequency of Action
1	Identify additional recreation needs.	1	Receive public input.	On-Going
		1.1	Monitor use patterns	On-Going
		1.2	Assess user satisfaction from comments received.	On-Going
2	Coordinate with volunteer groups, and other agencies/municipalities through the use Cooperative Agreements, to construct and/or maintain existing and/or future recreational facilities	2	Identify resources and/or volunteer groups to form additional partnerships.	On-Going
		2.1	Assist the Finger Lakes Trail Conference sponsors in maintenance and enhancement of the Finger Lakes Trail	On-Going
		2.2	Assist the Sno-flakes Snowmobile Club sponsors in maintenance and enhancement of Kris' Trail	On-Going
		2.3	Provide resources or utilize opportunities as needed to maintain and enhance existing trail(s)	On-Going
		2.4	Minimize conflicts between hikers, bikers, and other users	On-Going
		2.5	Birdseye Hollow Park – Support a transfer of jurisdiction via a land exchange	One-Time
		2.6	Birdseye Hollow Park – Assuming the transfer of jurisdiction does not occur first, assist Steuben County in constructing a spillway bridge and fishing platform.	Year 1

Management Objectives		Mgt. Action #	Management Actions	Frequency of Action
		2.7	Birdseye Hollow Park – (Only after the transfer of jurisdiction, and if it would need to cross lands still owned by NYS DEC.) Allow the construction and maintenance of a loop hiking trail around Birdseye Pond by Steuben County via a AANR and/or TRP once all applicable permits are obtained.	One Time – after the transfer of jurisdiction.
3	Determine feasibility and/or compatibility of proposed additional recreational opportunities.	3	In house review of proposed projects	As Needed
		3.1	Add proposed projects to the Keuka Lowlands UMP by amendment. (This includes a 30 day public comment period.)	On-Going
		3.2	Negotiate and enter into AANR agreements with sponsoring volunteer groups.	As Needed
4	Provide additional recreational opportunities. Including maintaining and improving access for persons with disabilities.	4	Provide technical support for volunteer groups.	As Needed
		4.1	Construct barriers to discourage motorized use of skid trails and abandoned roads after logging operations.	Each Time
		4.2	Construction of 2, 2 or 3 car parking lots/canoe/kayak access points to Mud Creek. Located on Telegraph Rd and Kettle Rd.	Year 6
		4.3	Repair Sanford Lake gravel boat launch and parking area.	Year 2
		4.4	Construct a small ADA boarding pier.	Year 1
5	Advocate wildlife-based recreation	5	Encourage bird watching, hunting, fishing, trapping etc. according to New York State regulations.	On-Going

Management Objectives		Mgt. Action #	Management Actions	Frequency of Action
6	Maintain existing and future recreational facilities.	6	See Unit Maintenance and Facilities Management	On-Going
		6.1	Evaluate and repair the Auto Tour stops.	Year 8
		6.2	Assess, maintain and improve Sanford Lake Day Use Area, Auto Tour, and Birdseye Hollow Park.	As funding is available.
7	Increase awareness of public recreation opportunities.	7	Provide brochures and maps for users.	Update Every 5 yrs
		7.1	Place kiosks at high use parking areas, such as on Waneta-Lamoka and Birdseye Hollow.	By year 10
		7.2	Update maps and brochures to reflect new facilities/trails/acquisitions	As Needed
8	Enhance visual appeal	8.1	Establish a litter-free environment by promoting carry in/carry out policy.	On-Going
		8.2	Remove litter from state land.	At least Annually

Unit Maintenance and Facilities Management

The goal is to maintain the facilities on the unit to ensure its integrity, character, and safety. This must be done with the limited money and staff resources that are available. Any new construction must meet ADA standards, if possible, as well as engineering, material and quality of work per NYS DEC's Division of Operations specifications. As needed, the Division of Water, Dam Safety Unit will be consulted on maintenance of the Birdseye Hollow Pond dam. See also the Access and Public Recreation and Use sections for additional facilities.

Located on Birdseye Hollow State Forest, on the corner of SR 226 and Sonora-S. Bradford Rd, is the NYS DEC Sonora Maintenance Shop. At this location NYS DEC equipment is maintained and/or stored, and the semi-annual auction of surplused equipment takes place. This plan does not cover activities taking place within the grounds of the shop.

There may be the potential for generating electricity with windmills or the construction of towers for radio, cell transmission, in the area of the Keuka Lowlands Unit. There are currently no windmills, or applications for windmills, for power generation on the Unit. NYS DEC does not have the legal authority to authorize the construction of windmills, or commercial towers on the lands

covered by this Unit management plan. Therefore, legislation would need to be passed authorizing such use before any tower construction could take place.

The Finger Lakes Trail (a foot trail) as well as the Kris' Snowmobile trail criss-crosses the unit. Foot trails also are found on Sanford Lake Day Use Area and Birdseye Hollow Park. These trails are partially maintained by volunteers. It is the policy of NYS DEC to encourage the use of volunteers to maintain facilities such as these.

Table 14: Management Objectives and Actions for Maintenance and Facilities

Management Objectives		Mgt. Action #	Management Actions	Frequency of Action
1	Maintain constructed ponds/potholes (In consultation with the Division of Water, Dam Safety Unit)	1	Inspect for problems.	Annually
		1.1	Repair dikes, control boxes, etc	When broken, almost broken, or regulations require it
2	Solicit volunteer groups to help maintain facilities (see also Public Recreation and Use)	2	Promote Adopt a Natural Resource Program.	On-Going
		2.1	Enter into agreements with volunteer groups.	On-Going
3	Maintain existing and future facilities.	3	Identify needed maintenance	On-Going
		3.1	See Access and Public Recreation and Use	On-Going
		3.2	Enhance law enforcement efforts.	On-Going
4	Maintain existing and future roads.	4.0	See Access section	On-Going

Land Acquisition

Certain parcels will be considered for purchase or conservation easement if they contain species designated as rare, endangered or threatened in New York State. Protection of wetlands; improved access; or consolidation of public ownership by eliminating inholdings is also criteria for acquisition. It should be clearly understood that NYS DEC intends to acquire these parcels from willing sellers as funding becomes available.

The acquisition of open space lands in New York State is guided by the New York State Open Space Conservation Plan. The Open Space Conservation Plan serves as a blueprint that identifies the priority projects, policies and programs that will enhance land acquisition efforts for the future. The plan, issued jointly by NYS DEC and the Office of Parks, Recreation and Historic Preservation, relies heavily upon the input of Regional Advisory Committees, local governments and the public. The Open Space Conservation Plan is updated every three years, as required by law. In November 2006 NYS DEC and the NYS Office of Parks Recreation and Historical Preservation issued a plan, entitled, "New

York State Open Space Conservation Plan". www.dec.state.ny.us/website/dlf/opensp/2006/index.html is the web site this document can be viewed at, and as new versions are written during the lifetime of this Unit Management Plan they will also be posted on NYS DEC's web site.

For further discussion of land acquisition issues, see Chapter 4 of the Strategic Plan for State Forest Management.

All acquisitions will be from willing sellers only.

Table 15: Management Objectives and Actions for Land Acquisition

Management Objectives		Mgt. Action #	Management Actions	Frequency of Action
1	Provide improved access to the Unit.	1	Identify land acquisition needs.	On-Going
		1.1	Acquire desired properties from willing sellers as funding permits.	On-Going
2	Consolidate public ownership by eliminating in holdings	2	Identify land acquisition needs.	On-Going
		2.1	Acquire desired properties from willing sellers as funding permits.	On-Going
3	Enhance recreational opportunity.	3	Identify land acquisition needs.	On-Going
		3.1	Acquire desired properties from willing sellers as funding permits.	On-Going
4	Protect significant ecological areas.	4	Identify land acquisition needs.	On-Going
		4.1	Acquire by fee simple or easement desired properties from willing sellers as funding permits.	On-Going
5	Resolve other issues, such as split mineral estate, Birdseye Park, etc.	5	Identify Land acquisition needs	On-Going
		5.1	Acquire desired properties from willing sellers as funding permits.	On-Going

Mineral Resources

Any party desiring to procure minerals, rocks or oil & gas resources (or the use of the mineral estate in the case of gas or liquid storage in geological formations) from the mineral estate under state lands included in this Unit management plan, must obtain contractual rights (such as a lease contract) to those minerals from the appropriate state entity administering those resources. The party must also obtain appropriate consent (Temporary Revocable Permit (TRP)) from the state to access the surface estate during operations. Prior to the commencement of operations the appropriate permits must be obtained. These procedures are further outlined below.

Any activity involving the procurement of oil and gas resources and/or storage of gas and liquids in the subsurface on state lands in this Unit management plan are administered by the NYS

DEC Division of Mineral Resources. 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 & gas drilling, including production, are regulated by the NYS DEC Division of Mineral Resources (including the issuance of mining permits and drilling permits).

The surface estate of these state lands is managed through the NYS DEC Division of Lands and Forests or Division of Fish, Wildlife and Marine Resources. In the event the surface estate is to be used in the evaluation and/or extraction of mineral resources from state lands, a Temporary Revocable Permit (TRP) must be obtained from the appropriate Division 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.

It is NYS DEC policy to recommend excluding operations in surface areas with sensitive habitats (stream banks, wetlands, steep slopes, rare communities etc.) or intensive recreational use. See Appendix L: Maps to view sites to be excluded from drilling, production and/or other surface occupancy for mining. Any proposal for mineral development other than oil and gas would require SEQR review.

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

Procedures for Oil & Gas Procurement

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

1.) Which areas can be leased with full rights granted (100% surface entry),
2.) Which may require special environmental and safety conditions, and
3.) Which may be leased with no surface-disturbance/entry conditions (non-drilling clause).

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

A public meeting will be held to provide information about natural gas development specific to the Unit and receive comments. A 30-day public comment period will follow. The Department will consider all comments prior to making a decision. If the Department decides to pursue leasing, the site specific conditions for limiting impacts on natural resources will be drafted by the Division of Mineral Resources in coordination with the Division of Lands & Forests and/or Division of Fish, Wildlife and Marine(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. Individual tract proposal reviews for each forest within this Unit have been completed, and determinations deciding which areas would be excluded from surface disturbance (should leasing be initiated) have been made. Included in the appendix are maps depicting these areas. 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 NYS DEC staff during review process and inspection of the proposed well site. The Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program (1992) 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.

In the event underground pipelines are planned to transport gas and/or oil across state lands; the Division of Mineral Resources in conjunction with the Division of Lands and Forests, and Division of Fish and Wildlife will coordinate with the mineral estate lessee to determine the best route for the pipeline(s). It should be noted that any pipelines greater than 1,000 feet in length and/or containing pressures greater than 125 pounds per square inch are regulated by the New York State Public Service Commission. NYS DEC has the authority to permit underground pipelines with the existence of an active mineral lease. As of the writing of this plan, NYSDEC has no authority to permit underground utilities in the absence of a mineral lease. In the absence of a valid mineral lease, special legislation by the state legislature is required.

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.

Procedures for Mineral and Rock Procurement

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

There are no private mining contracts, permits, or operations on any areas in this unit management plan. There is a 2.5 acre gravel mine site under permit to the NYS DEC Division of Operations in the Birdseye Hollow State Forest. Gravel from this mine is used to maintain NYS DEC roads, trails and parking lots. Under Article 7 of the New York State Consolidated Laws, any citizen of the United States may apply for permission to explore and/or extract any mineral on State lands. However, current department policy is to decline any commercial mining application(s) pertaining to any lands covered by the Keuka Lowlands Unit Management Plan.

Surface Use for Evaluation of Mineral Resources

In the event a party desires to use the surface estate to conduct geophysical (such as a seismic survey), geochemical and/or surface sampling procedures on NYS DEC lands after leasing they must first obtain a TRP for the access and use of state lands. Only the lessee, or parties authorized by the lessee, can be issued a TRP for these purposes. A TRP can be applied for through the NYS DEC Division of Lands and Forests, 7291 Coon Road, Bath, New York 14810.

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

Table 16: Management Objectives and Actions for Mineral Resources

Management Objectives		Mgt. Action #	Management Actions	Frequency of Action
1	Decide to approve or not approve extraction of mineral resources.	1.0	Nominated properties are reviewed by Division of Mineral Resources(DMN) and Division of Lands and Forests(L&F) and Division of Fish, Wildlife and Marine(Wildlife) per above process. Office of General Services(OGS) makes approvals for minerals	When Nominated
		1.1	A public meeting is held with a 30 day comment period after.	When Nominated
If extraction is permitted...				
2	Execute consent contracts.	2	DMN conducts lease sale through competitive bid process and executes contracts for oil and gas. OGS executes contracts for minerals.	After 1.0 and 1.1, above
3	Regulate operations; and access surface estate to extract mineral resources.	3	Division of Lands and Forests reviews proposed operations and if approved, issues a "Temporary Revocable Permit"	Every Time
		3.1	DMN reviews proposed operation and issues "Drilling Permit" or "Mining Permit".	Every Time
		3.2	DMN inspects & regulates operations, production and administers royalty payments to State.	Every Time
4	Monitor reclamation & well plugging	4	DMN enforces Rules and Regulations pertaining to plugging procedures.	Every Time
		4.1	DMN and L&F monitors and enforces surface reclamation	Every Time
5	Administer mineral estate	5	DMN monitors lease, production and royalty payments for oil and gas. OGS does same for minerals.	Every Time

Management Objectives		Mgt. Action #	Management Actions	Frequency of Action
6	Pipeline access and construction	6	Granted and directed by terms of lease agreement administered by DMN.	Every Time
		6.1	L&F and/or Wildlife reviews proposed operations and if approved, issues a "Temporary Revocable Permit" (TRP)	Every Time
		6.2	Division of Lands and Forests and/or Division of Fish, Wildlife and Marine enforce TRP provisions.	Every Time

Archaeological and Historic Resources

The archaeological sites located within this land unit as well as additional unrecorded sites that may exist on the property are protected by the provisions of the New York State Historic Preservation Act (SHPA - Article 14 PRHPL), Article 9 of Environmental Conservation Law and Section 233 of Education Law. Should any actions that would impact these resources be proposed they will be reviewed in accordance with SHPA. Unauthorized excavation and removal of materials from any of these sites is prohibited by Article 9 of Environmental Conservation Law and Section 233 of Education Law.

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

A portion of the famous Lamoka village site may occur on Waneta-Lamoka Wildlife Management Area. Further study is required.

Table 17: Management Objectives and Actions for Archaeological and Historical Sites

Management Objectives		Mgt. Action #	Management Actions	Frequency of Action
1	Preservation of historical and archaeological resources	1	Avoid any activity which may disturb any historical and/or archaeological resources.	On-Going
		1.1	Comply with state historic preservation act.	On-Going
		1.2	Consultation with the Seneca Nation of Indians Historical Preservation Office.	On-Going

MANAGEMENT ACTIONS SUMMARY TABLE

The following table is a summary and schedule for the implementation of all the *Management Objectives and Actions for X…* tables located in the preceding sections of the *Goals and Objectives* chapter, and their estimated costs. Accomplishments and listed years are targets, and are contingent upon sufficient staffing levels and funding. It is expected that most tasks will be done by NYS DEC staff. To conform with program budgeting practices, estimated project costs are based on current costs for materials and wages for seasonal staff labor, excluding fringe benefits and indirect costs. The construction or maintenance projects costs do not include permanent program staff salaries. Therefore costs are significantly lower than they would be for outside contractors.

Each action has been given a priority code of Critical, High or Low, and an estimated cost or income for over the 10 year plan period. Actual cost or income will be determined at the time of the action.

Priority codes:
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.
H=High, Necessary for public use, and/or to improve habitat or other natural resources. Often this will be for new projects.
L=Low, Important for the enhancement of public use, habitats or other natural resources.

Mgmt. Objectives	Mgmt. Action No.	Management Action	Frequency of Action	Priority Code	Est.10 yr Cost	Est. 10 yr Income	Comments
Access	1	Receive public comments	On-Going	L	10 Work Days		We will always listen or read any comments.
	1.1	Solicit public comments	Every 10 yrs	C	10 Work Days		This is part of the UMP process.
	1.2	Survey suggested site(s)	As Needed	C	15 Work Days		
	1.3	Amend UMP to allow construction of needed access.	As Needed				
	2.0	Inspect culverts	Annually	C	3 Work Days		

Mgmt. Objectives	Mgmt. Action No.	Management Action	Frequency of Action	Priority Code	Est.10 yr Cost	Est. 10 yr Income	Comments
Access	2.1	Replace culverts on about a 25 year interval.	Replace 1culvert, year 10	C	$2,000 per culvert		None are anticipated to fail during this 10 year period.
	2.2	Public access roads - grade and maintain surface.	Every 2 years	H	5 Work Days		
	2.3	Haul access roads - grade and maintain surface.	Every 5 yrs	H	25 Work Days		0.9 miles of haul road
	2.4	Mow roads right of way	Annually	H	30 Work Day		
	3	Locate and construct parking lots on Irish Hill Rd, CR 113, O'Brien Rd, and N. Urbana Rd.	Years 1, 3, 6, and 10.	L	$5,000 or more per parking lot		This can be done as a trade off in a timber sale.
	3.1	Construct 2 canoe/kayak access parking lots - See Public Recreation and Use	See Public Recreation and Use 4.3	--			See Public Recreation and Use 4.3
	4	Litter removal	At least Annually	H	100 Work Days		Cost does not include inmate labor.
	4.1	Maintain all parking areas	Years 4 & 9	C	$15,000		6 unpaved parking areas, 1 paved parking area
	4.2	Maintain curbing	Years 4 & 9	L	$3,000		
	4.3	Maintain informational signs	Annually	C	$2,500		
	4.4	Mow all parking areas	Annually	H	20 Work Days		
	5.0	Construct gates that can be locked open at the entrance to Sanford Lake DUA and Birdseye Hollow Pond DUA.	Year 9	C	$2,500 and 5 Work Days per Gate		
	5.1	Maintain gates and signs	Annually	H	$10,000		3 gates
	5.2	Enforce NYS DEC policies	On-Going	C	$250,000		

Mgmt. Objectives	Mgmt. Action No.	Management Action	Frequency of Action	Priority Code	Est.10 yr Cost	Est. 10 yr Income	Comments
Access	6.0	Paint and post boundaries.	Every 5 yrs – Moss Hill SF 2009 & 2014 Birdseye HLW SF 2013 & 2018 Mt. Washington SF 2009 & 2014 Cold Brook WMA 2010 & 2020 Waneta-Lamoka WMA 2010 & 2020	H	130 Work Days		63.9 miles, 4.4 miles shared by Moss Hill and Birdseye Hollow State Forests
	6.1	Identify and resolve boundary encroachment issues. (see Access section.)	ASAP	C			Unable to predict costs.
	6.2	Survey and blaze boundaries.	When encroachment issues are discovered, or line evidence disappears.	C	See comments		Contracted out - $4,000 to $5,000 per mile NYS DEC surveyors – 12 to 15 work days per mile
	6.3	Repair and replace area signs as they fade.	Year 5	H	$100,000		9 signs

Mgmt. Objectives	Mgmt. Action No.	Management Action	Frequency of Action	Priority Code	Est.10 yr Cost	Est. 10 yr Income	Comments
Timber and Vegetation Management	1	Perform State Forest and Wildlife Management Area inventories.	Every 10 yrs	C	60 Work Days		
	2	Practice Integrated Pest Management	On-Going	C	40+ Work Days		Unable to predict future pest problems. A new invasion could greatly increase the cost.
	2.1	Reduce deer population, to reduce damage to the low growing vegetation.	Annually	H	--	--	Accomplished by hunting license sales, producing brochures, etc.
	3.0	Maintain per "Unit Maintenance and Facilities Management" and/or "Fish and Wildlife Habitat" and/or "Public Recreation and Use"	On-Going	H	--	--	
Timber and Vegetation Management (Birdseye Hollow, Moss Hill, and Mt. Washington State Forests)	4	Create about 45 acres.	By year 10	L	$45,000		
	4.1	Maintain grassy with 3 year rotation of mowing.	Every 3rd year.	H	$30 per acre		
	4.2	Maintain brushy with a 5 year rotation of hydro-axeing.	Every 5th year.	H	$200 per acre		
	4.3	Manage 355 Acres.	On-Going	H	--	--	Cost is elsewhere. (Boundary line maintenance, timber sale administration, etc)
	4.4	Stand entry on 116 acres / 6 stands	See schedule, Appendix F	H		$29,000	Based on $250 per acre.
	4.5	Regenerate 263 acres / 14 stands	See schedule, Appendix F	H		$98,625	Based on $375 per acre.
	4.6	Thin 1,546 acres / 54 stands	See schedule, Appendix F	H		$193,250	Based on $125 per acre.

Mgmt. Objectives	Mgmt. Action No.	Management Action	Frequency of Action	Priority Code	Est.10 yr Cost	Est. 10 yr Income	Comments
Timber and Vegetation Management (Birdseye Hollow, Moss Hill, and Mt. Washington State Forests)	4.7	If access improves through additional acres being purchased, or new types of logging equipment is developed, these stands will also be evaluated for silvicultural activities. 317 Acres / 13 stands	When access improves.	L	--	--	
	4.8	If funding becomes available the seedling/sapling and smaller pole size stands will be evaluated for pre-commercial thinning.	When funding becomes available.	L			
	4.9	Implement "pre-commercial thinning" or silvilcultural activities in "no access" stands After evaluation per 4.7 and 4.8, add to schedule, Appendix F	After 4.7 or 4.8	L	$50-$100 per acre		Total cost will depend on how many acres, if any, are thinned./ This will produce income, see 3.4, 3.5 and 3.6 for an estimated starting point.
Timber and Vegetation Management (Waneta-Lamoka and Cold Brook Wildlife Management Areas)	5	Maintain grassy with a 3 year rotation of mowing.	Every 3rd year.	H	$30 per acre		
	5.1	Maintain brushy with a 5 year rotation of hydro-axeing.	Every 5th Yr.	H	$200 per acre		
	5.2	No Action.	On-Going	H	--	--	

Mgmt. Objectives	Mgmt. Action No.	Management Action	Frequency of Action	Priority Code	Est.10 yr Cost	Est. 10 yr Income	Comments
Watershed and Wetlands Protection	1	Utilize Best Management Practices (BMP's) for water quality on timber sales, gas well site construction, recreation facilities, and any other construction.	On-Going	C	--	--	
	1.1	Control erosion through proper road and trail maintenance.	On-Going	C	--	--	See Access
	1.2	Comply with the Water Resources Law and Freshwater Wetlands Acts.	On-Going	C	--	--	
Fish and Wildlife Habitat	1	Conduct all forms of woody vegetation management to achieve balance forest structure. (See Timber and Vegetation Management)	As needed	H	--	--	See Vegetation Management
	1.1	Develop and maintain up to 20 small ponds and dugouts to act as amphibian activity centers.	2 per Year	L	$5,000 to $10,000 per each	--	This will often be done as a trade off in a timber sale. There are also opportunities to have this work funded privately. See 2.1 below
	1.2	Manage conifers in natural forests	On-Going	L	--	--	Most of this will be part of a timber sale
	1.3	Maintain and enhance grassland habitats by mowing and/or burning	At least every three years.	H / L	--	--	See Timber and Vegetation Management.
	1.4	Protect and enhance rare plant and animal communities	Annually	C	15 Work Days		May also include other costs.

Mgmt. Objectives	Mgmt. Action No.	Management Action	Frequency of Action	Priority Code	Est.10 yr Cost	Est. 10 yr Income	Comments
Fish and Wildlife Habitat	1.5	Level ditch channels and open water.	Year 8	L	$100,000		
	2	Assist local groups in utilizing and protecting wildlife resources	Annually	L	--	--	Unable to predict costs.
	2.1	Work with local and governmental groups to enjoy wildlife habitat under the Adopt-a-Natural-Resource Program.	See Public Recreation and Use.	L	--	--	Unable to predict costs.
	3	Post “do not feed” signs	Year 1	H	5 Work Days		
	3.1	Conduct goose population control.	Annually	H	20 Work Days		
Public Recreation and Use	1	Receive public opinion.	On-Going	C	30 Work Days		
	1.1	Monitor use patterns	On-Going	C	20 Work Days		
	1.2	Assess user satisfaction from comments received.	On-Going	H	10 Work Days		
	2	Identify resources and/or volunteer groups to form additional partnerships.	On-Going	L	10 Work Days		
	2.1	Assist the Finger Lakes Trail Conference sponsors in maintenance and enhancement of the Finger Lakes Trail.	On-Going	H	30 Work Days		
	2.2	Assist the Sno-flakes Snowmobile Club sponsors in maintenance and enhancement of Kris’ Trail.	On-Going	H	30 Work Days		

Mgmt. Objectives	Mgmt. Action No.	Management Action	Frequency of Action	Priority Code	Est.10 yr Cost	Est. 10 yr Income	Comments
	2.3	Provide resources or utilize opportunities as needed to maintain and enhance existing trail(s)	On-Going	C	--	--	Unable to predict costs.
	2.4	Minimize conflicts between hikers, bikers, and other users	On-Going	H	20 Work Days		
Public Recreation and Use	2.5	Birdseye Hollow Park – Support a transfer of jurisdiction via a land exchange	One Time	C	--	--	
	2.6	Birdseye Hollow Park – Assuming the transfer of jurisdiction does not occur first, assist Steuben County in constructing a spillway bridge and fishing platform.	Year 1	H	$50,000		
	2.7	Birdseye Hollow Park – (Only after the transfer of jurisdiction, and if it would need to cross lands still owned by NYS DEC.) Allow the construction and maintenance of a loop hiking trail around Birdseye Pond by Steuben County via a AANR and/or TRP once all applicable permits are obtained.	One Time – after the transfer of jurisdiction.	L			Unable to predict costs. Only after the transfer of jurisdiction, and if it would need to cross lands still owned by NYS DEC.
	3	In house review of proposed projects	As Needed	L	10 Work Days		

Mgmt. Objectives	Mgmt. Action No.	Management Action	Frequency of Action	Priority Code	Est.10 yr Cost	Est. 10 yr Income	Comments
Public Recreation and Use	3.1	Add proposed projects to the Keuka Lowlands UMP by amendment. (This includes a 30 day public comment period.)	On-Going	L	10 Work Days		
	3.2	Negotiate and enter into AANR agreements with sponsoring volunteer groups..	As Needed	L	10 Work Days		
	4.0	Provide technical support for volunteer groups.	As Needed	C	--		
	4.1	Construct barriers to discourage motorized use of skid trails and abandoned roads after logging operations.	Each Time	L	$6,000 per each		This will often be done as a trade off in a timber sale.
	4.2	Construction of 2, 2 or 3 car parking lots/canoe/kayak access points to Mud Creek. Located on Telegraph Rd and Kettle Rd.	Year 6	C	$30,000		
	4.3	Repair Sanford Lake gravel boat launch and parking area.	Year 2	L	$15,000		
	4.4	Construct a small ADA boarding pier.	Year 4	H	$15,000		
	5	Encourage bird watching, hunting, fishing, trapping etc. according to New York State regulations.	On-Going	--	--	--	
	6	See Maintenance and Facilities	On-Going	H	$20,000		

Mgmt. Objectives	Mgmt. Action No.	Management Action	Frequency of Action	Priority Code	Est.10 yr Cost	Est. 10 yr Income	Comments
Public Recreation and Use	6.1	Assess and repair the Auto Tour stops.	Year 8	H	$5,000 to $250,000		
	6.2	Assess, maintain and improve Sanford Lake Day Use Area, Auto Tour, and Birdseye Hollow Park.	As funding is available.	H	25 Work Days		
	7	Provide brochures and maps for users.	Update Every 5 yrs	H	$1,000 to $5,000 per each		Currently 2 kiosks
	7.1	Place kiosks at high use parking areas, such as on Waneta-Lamoka and Birdseye Hollow.	By year 10	L	10 Work Days		
	7.2	Update maps and brochures to reflect new facilities/trails/acquisitions	As Needed	L	$5,000		
	8.1	Establish a litter-free environment by promoting carry in/carry out policy.	On-Going	H	--	--	See Access 5.0
	8.2	Remove litter from state land.	At least Annually	C	10 Work Days		
Unit Maintenance and Facilities Management	1.0	Repair dikes, control boxes, etc.	When broken, almost broken, or regulations require it	C	$20,000 to $100,000 per Each.		
	2.0	Promote Adopt a Natural Resource Program.	On-Going	L	--		
	2.1	Enter into agreements with volunteer groups.	On-Going	L	--		

Mgmt. Objectives	Mgmt. Action No.	Management Action	Frequency of Action	Priority Code	Est.10 yr Cost	Est. 10 yr Income	Comments
Unit Maintenance and Facilities Management	3.0	Identify needed maintenance	On-Going	L	20 Work Days		
	3.1	See Access and Public Recreation	On-Going				
	3.2	Enhance law enforcement efforts.	On-Going	C	--	--	
	4.0	See Access section	On-Going	L	--		Unable to predict costs.
Land Acquisition	1.1	Acquire desired properties from willing sellers as funding permits.	On-Going	L	--		Unable to predict costs.
	2	Identify land acquisition needs. (Eliminate in holdings)	On-Going	L	--		Unable to predict costs.
	2.1	Acquire desired properties from willing sellers as funding permits.	On-Going	L	--		Unable to predict costs.
	3	Identify land acquisition needs. (Recreation)	On-Going	L	--		Unable to predict costs.
	3.1	Acquire desired properties from willing sellers as funding permits.	On-Going	L	--		Unable to predict costs.
	4	Identify land acquisition needs. (Ecological)	On-Going	L	--		Unable to predict costs.
	4.1	Acquire desired properties from willing sellers as funding permits.	On-Going	L	--		Unable to predict costs.
	5	Identify land acquisition needs. (Other issues)	On-Going	L	--		Unable to predict costs.

Mgmt. Objectives	Mgmt. Action No.	Management Action	Frequency of Action	Priority Code	Est.10 yr Cost	Est. 10 yr Income	Comments
Land Acquisition	5.1	Acquire desired properties from willing sellers as funding permits.	On-Going	L	--		Unable to predict costs.
Mineral Resources	1	Nominated properties are reviewed by Division of Mineral Resources (DMN) and Division of Lands and Forests (L&F) and Division of Fish, Wildlife and Marine(Wildlife) per above process. Mining minerals are reviewed by Office of General Services (OGS) instead of the DMN.	When Nominated	C	--	--	Unable to predict costs.
Mineral Resources	1.1	A public meeting is held with a 30 day comment period after.	When Nominated	C	--		Unable to predict costs.

Mgmt. Objectives	Mgmt. Action No.	Management Action	Frequency of Action	Priority Code	Est.10 yr Cost	Est. 10 yr Income	Comments
Mineral Resources	2	DMN conducts lease sale through competitive bid process and executes contracts for oil and gas. OGS executes contracts for minerals.	After 1.0 and 1.1, above	C	--	State lease sales in 1999, 2003 and 2006 generated initial lease bonus payments ranging from $15.00/acre to $ 858.00/ acre leased and $5.00/acre leased in annual rental payments to the State. In 2003 Lease Bonus payments were made as follows for lands located in this unit: Birdeye Hollow SF: $180,896.62, Moss Hill SF: $96,161.10, MT. Washington SF: $6,606.30, Total Bonus Payments: $282,664.02. An additional $68,612.52 was paid to the State as Rental Payments attributable to these leases. To date, no wells have been drilled on lands covered by or pooled with these leases. The leases terminated in 2008.	
	3	Division of Lands and Forests reviews proposed operations and if approved, issues a “Temporary Revocable Permit”	Every Time	C	--	--	Unable to predict costs.
	3.1	Division of Mineral Resources reviews proposed operation and issues “Drilling Permit” or “Mining Permit”.	Every Time	C	--	--	Drilling permits generate between $290 - > $3800 per well permitted, dependent upon depth well is permitted
	3.2	DMN inspects & regulates operations, production and administers royalty payments to State.	Every Time	C	--	--	Unable to predict costs or income.

Mgmt. Objectives	Mgmt. Action No.	Management Action	Frequency of Action	Priority Code	Est.10 yr Cost	Est. 10 yr Income	Comments
Mineral Resources	4	Division of Mineral Resources enforces Rules and Regulations pertaining to plugging procedures.	Every Time	C	--	--	Unable to predict costs.
	4.1	DMN and L&F monitors and enforces surface reclamation	Every Time	C	--	--	Unable to predict costs.
	5	DMN monitors lease, production and royalty payments for oil and gas. OGS does same for minerals.	Every Time	C	--	--	Royalty payments in past leases have been based upon 1/8th or 12.5% royalty interest to the State. One bcfg produced from state minerals at a sales price of $5/mcfg, would generate more than $600,000.00
	6	Granted and directed by terms of lease agreement administered by Division of Minerals. (Pipeline access and construction)	Every Time	C	--	--	Unable to predict costs.
	6.1	Division of Lands and Forests and/or Division of Fish, Wildlife and Marine reviews proposed operations and if approved, issues a Temporary Revocable Permit (TRP)	Every Time	C	--	--	
	6.2	Division of Lands and Forests and/or Division of Fish, Wildlife and Marine enforce TRP provisions.	Every Time	C	--	--	

Mgmt. Objectives	Mgmt. Action No.	Management Action	Frequency of Action	Priority Code	Est.10 yr Cost	Est. 10 yr Income	Comments
Archaeological and Historic Resources	1	Avoid any activity which may disturb any historical and/or archaeological resources.	On-Going	C	--	--	
	1.1	Comply with state historic preservation act.	On-Going	C	--	--	
	1.2	Consultation with the Seneca Nation of Indians Historical Preservation Office.	On-Going	C	--	--	

PUBLIC INVOLVEMENT

Initial Mailing

Keuka Lowlands Unit Management Plan's citizen participation activities commenced with an initial mailing on May 19, 2006, outlining management plan objectives. An attached mailer requested address corrections and gave a due date for the preliminary round of public comments.

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, and;
- 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 B, with a summary in the Summary of Identified Issues section starting on page 30. They include: access, vegetation management, water resources, wildlife and wildlife habitat, fish management, public recreation and use, oil and gas leasing, cooperative agreements, open space conservation, aesthetics and cultural resources and historic preservation.

Second Mailing

Upon completion of the draft Keuka Lowlands Unit Management Plan, a second fact sheet was sent to those on the updated mail list, including the media, summarizing objectives of the draft plan, listing local document repositories and announcing a public meeting. Repositories included local libraries, the Bath and Avon NYS DEC offices. A notice was posted in the Environmental Notices Bulletin (ENB) two weeks prior to the meeting.

Public Meeting

One public meeting was held near the Keuka Lowlands Unit Management 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 was added as an appendix to the final plan (see Appendix B: Public Comment).

Final Notice

Commentators and those on the updated mail 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: Animals on Keuka Lowlands 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.

Table 1A: Birds

This list is summarized from the quads of the 2000-2005 Atlas of Breeding Birds in New York State:

Common Name	Scientific Name	Behavior Code	Date*	NY Legal Status
Alder Flycatcher	*Empidonax alnorum*	FY	2004	Protected
American Crow	*Corvus brachyrhynchos*	FL	2004	Game Species
American Goldfinch	*Carduelis tristis*	X1	2004	Protected
American Kestrel	*Falco sparverius*	FL	2004	Protected
American Redstart	*Setophaga ruticilla*	DD	2004	Protected
American Robin	*Turdus migratorius*	FL	2004	Protected
American Woodcock	*Scolopax minor*	X1	2004	Game Species
Baltimore Oriole	*Icterus galbula*	FL	2004	Protected
Bank Swallow	*Riparia riparia*	X1	2004	Protected
Barn Swallow	*Hirundo rustica*	NY	2004	Protected
Barred Owl	*Strix varia*	X1	2004	Protected
Belted Kingfisher	*Ceryle alcyon*	FY	2004	Protected
Black-and-white Warbler	*Mniotilta varia*	X1	2001	Protected
Black-billed Cuckoo	*Coccyzus erythropthalmus*	S2	2004	Protected
Blackburnian Warbler	*Dendroica fusca*	T2	2004	Protected
Black-capped Chickadee	*Poecile atricapillus*	FL	2004	Protected
Black-throated Blue Warbler	*Dendroica caerulescens*	D2	2002	Protected
Black-throated Green Warbler	*Dendroica virens*	T2	2004	Protected
Blue Jay	*Cyanocitta cristata*	FL	2004	Protected
Blue-gray Gnatcatcher	*Polioptila caerulea*	FL	2004	Protected
Blue-headed Vireo	*Vireo solitarius*	FY	2004	Protected
Blue-winged Warbler	*Vermivora pinus*	X1	2004	Protected
Bobolink	*Dolichonyx oryzivorus*	FL	2004	Protected
Broad-winged Hawk	*Buteo platypterus*	X1	2004	Protected
Brown Creeper	*Certhia americana*	X1	2004	Protected
Brown Thrasher	*Toxostoma rufum*	B2	2004	Protected
Brown-headed Cowbird	*Molothrus ater*	FL	2004	Protected
Canada Goose	*Branta canadensis*	FL	2002	Game Species
Carolina Wren	*Thryothorus ludovicianus*	X1	2004	Protected
Cedar Waxwing	*Bombycilla cedrorum*	B2	2002	Protected

Common Name	Scientific Name	Behavior Code	Date*	NY Legal Status
Chestnut-sided Warbler	*Dendroica pensylvanica*	D2	2004	Protected
Chimney Swift	*Chaetura pelagica*	ON	2004	Protected
Chipping Sparrow	*Spizella passerina*	D2	2003	Protected
Cliff Swallow	*Petrochelidon pyrrhonota*	NE	2004	Protected
Common Grackle	*Quiscalus quiscula*	B2	2002	Protected
Common Raven	*Corvus corax*	X1	2002	Protected
Common Yellowthroat	*Geothlypis trichas*	D2	2004	Protected
Cooper's Hawk	*Accipiter cooperii*	X1	2004	Protected-Special Concern
Dark-eyed Junco	*Junco hyemalis*	FL	2004	Protected
Downy Woodpecker	*Picoides pubescens*	FL	2004	Protected
Eastern Bluebird	*Sialia sialis*	FL	2002	Protected
Eastern Kingbird	*Tyrannus tyrannus*	FL	2004	Protected
Eastern Meadowlark	*Sturnella magna*	FS	2004	Protected
Eastern Phoebe	*Sayornis phoebe*	FY	2002	Protected
Eastern Screech-Owl	*Megascops asio*	X1	2004	Protected
Eastern Towhee	*Pipilo erythrophthalmus*	P2	2001	Protected
Eastern Wood-Pewee	*Contopus virens*	S2	2002	Protected
European Starling	*Sturnus vulgaris*	FL	2004	Unprotected
Field Sparrow	*Spizella pusilla*	FL	2004	Protected
Grasshopper Sparrow	*Ammodramus savannarum*	T2	2004	Protected-Special Concern
Gray Catbird	*Dumetella carolinensis*	FY	2004	Protected
Great Blue Heron	*Ardea herodias*	X1	2002	Protected
Great Crested Flycatcher	*Myiarchus crinitus*	S2	2001	Protected
Great Horned Owl	*Bubo virginianus*	X1	2002	Protected
Green Heron	*Butorides virescens*	FL	2004	Protected
Hairy Woodpecker	*Picoides villosus*	FL	2004	Protected
Henslow's Sparrow	*Ammodramus henslowii*	S2	2002	Threatened
Hermit Thrush	*Catharus guttatus*	S2	2001	Protected
Hooded Merganser	*Lophodytes cucullatus*	ON	2002	Game Species
Hooded Warbler	*Wilsonia citrina*	D2	2002	Protected
Horned Lark	*Eremophila alpestris*	FY	2004	Protected-Special Concern
House Finch	*Carpodacus mexicanus*	NY	2004	Protected
House Sparrow	*Passer domesticus*	FY	2004	Unprotected
House Wren	*Troglodytes aedon*	FL	2004	Protected
Indigo Bunting	*Passerina cyanea*	D2	2001	Protected
Killdeer	*Charadrius vociferus*	DD	2002	Protected
Least Flycatcher	*Empidonax minimus*	S2	2002	Protected
Louisiana Waterthrush	*Seiurus motacilla*	X1	2004	Protected
Magnolia Warbler	*Dendroica magnolia*	T2	2004	Protected
Mallard	*Anas platyrhynchos*	FL	2002	Game Species
Marsh Wren	*Cistothorus palustris*	S2	2002	Protected

Common Name	Scientific Name	Behavior Code	Date*	NY Legal Status
Mourning Dove	*Zenaida macroura*	FL	2004	Protected
Mourning Warbler	*Oporornis philadelphia*	X1	2004	Protected
Nashville Warbler	*Vermivora ruficapilla*	X1	2001	Protected
Northern Cardinal	*Cardinalis cardinalis*	FY	2004	Protected
Northern Flicker	*Colaptes auratus*	FY	2004	Protected
Northern Goshawk	*Accipiter gentilis*	X1	2004	Protected-Special Concern
Northern Harrier	*Circus cyaneus*	P2	2002	Threatened
Northern Mockingbird	*Mimus polyglottos*	FY	2004	Protected
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	ON	2004	Protected
Orchard Oriole	*Icterus spurius*	B2	2001	Protected
Osprey	*Pandion haliaetus*	X1	2001	Protected-Special Concern
Ovenbird	*Seiurus aurocapilla*	DD	2004	Protected
Pileated Woodpecker	*Dryocopus pileatus*	S2	2001	Protected
Pine Warbler	*Dendroica pinus*	FY	2004	Protected
Prothonotary Warbler	*Protonotaria citrea*	D2	2000	Protected
Purple Finch	*Carpodacus purpureus*	P2	2004	Protected
Purple Martin	*Progne subis*	ON	2004	Protected
Red-bellied Woodpecker	*Melanerpes carolinus*	FY	2002	Protected
Red-breasted Nuthatch	*Sitta canadensis*	X1	2001	Protected
Red-eyed Vireo	*Vireo olivaceus*	FY	2004	Protected
Red-tailed Hawk	*Buteo jamaicensis*	FL	2004	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	FL	2004	Protected
Ring-necked Duck	*Aythya collaris*	P2	2004	Game Species
Ring-necked Pheasant	*Phasianus colchicus*	X1	2004	Game Species
Rock Pigeon	*Columba livia*	N2	2002	Unprotected
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	FY	2002	Protected
Ruby-throated Hummingbird	*Archilochus colubris*	X1	2001	Protected
Ruffed Grouse	*Bonasa umbellus*	FL	2004	Game Species
Savannah Sparrow	*Passerculus sandwichensis*	FL	2004	Protected
Scarlet Tanager	*Piranga olivacea*	S2	2001	Protected
Sharp-shinned Hawk	*Accipiter striatus*	X1	2002	Protected-Special Concern
Song Sparrow	*Melospiza melodia*	D2	2003	Protected
Spotted Sandpiper	*Actitis macularia*	P2	2002	Protected
Swamp Sparrow	*Melospiza georgiana*	S2	2002	Protected
Tree Swallow	*Tachycineta bicolor*	FL	2003	Protected
Tufted Titmouse	*Baeolophus bicolor*	S2	2001	Protected
Turkey Vulture	*Cathartes aura*	X1	2002	Protected
Veery	*Catharus fuscescens*	S2	2001	Protected
Vesper Sparrow	*Pooecetes gramineus*	S2	2002	Protected-Special Concern

Common Name	Scientific Name	Behavior Code	Date*	NY Legal Status
Warbling Vireo	*Vireo gilvus*	B2	2001	Protected
White-breasted Nuthatch	*Sitta carolinensis*	FL	2004	Protected
Wild Turkey	*Meleagris gallopavo*	FL	2002	Game Species
Willow Flycatcher	*Empidonax traillii*	FL	2004	Protected
Wood Duck	*Aix sponsa*	FL	2004	Game Species
Wood Thrush	*Hylocichla mustelina*	S2	2002	Protected
Yellow Warbler	*Dendroica petechia*	B2	2002	Protected
Yellow Warbler	*Dendroica petechia*	FL	2004	Protected
Yellow-bellied Sapsucker	*Sphyrapicus varius*	FL	2002	Protected
Yellow-billed Cuckoo	*Coccyzus americanus*	X1	2004	Protected
Yellow-rumped Warbler	*Dendroica coronata*	FY	2004	Protected
Yellow-throated Vireo	*Vireo flavifrons*	S2	2002	Protected
Total Species: 122				

This list is summarized from the quads of the 1980-85 Atlas of Breeding Birds in New York State.

Common Name	Scientific Name	Breeding Class	Year*	New York Legal Status	Heritage State Rank
Alder Flycatcher	*Empidonax alnorum*	T2	83	Protected	S5
American Bittern	*Botaurus lentiginosus*	X1	85	Protected-Special Concern	S4
American Black Duck	*Anas rubripes*	X1	85	Game Species	S4
American Coot	*Fulica americana*	X1	83	Game Species	S3
American Crow	*Corvus brachyrhynchos*	NY	83	Game Species	S5
American Goldfinch	*Carduelis tristis*	NY	83	Protected	S5
American Kestrel	*Falco sparverius*	FL	85	Protected	S5
American Redstart	*Setophaga ruticilla*	FY	83	Protected	S5
American Robin	*Turdus migratorius*	NY	83	Protected	S5
American Woodcock	*Scolopax minor*	FL	83	Game Species	S5
Baltimore Oriole	*Icterus galbula*	NY	85	Protected	S5
Bank Swallow	*Riparia riparia*	NY	85	Protected	S5
Barn Swallow	*Hirundo rustica*	NY	85	Protected	S5
Barred Owl	*Strix varia*	S2	83	Protected	S5
Belted Kingfisher	*Ceryle alcyon*	FY	81	Protected	S5
Black-and-white Warbler	*Mniotilta varia*	X1	83	Protected	S5
Black-billed Cuckoo	*Coccyzus erythropthalmus*	FY	81	Protected	S5
Blackburnian Warbler	*Dendroica fusca*	X1	82	Protected	S5

Common Name	Scientific Name	Breeding Class	Year*	New York Legal Status	Heritage State Rank
Black-capped Chickadee	*Poecile atricapillus*	FY	83	Protected	S5
Black-throated Blue Warbler	*Dendroica caerulescens*	X1	84	Protected	S5
Black-throated Green Warbler	*Dendroica virens*	T2	83	Protected	S5
Blue Jay	*Cyanocitta cristata*	NY	83	Protected	S5
Blue-gray Gnatcatcher	*Polioptila caerulea*	NE	85	Protected	S5
Blue-headed Vireo	*Vireo solitarius*	FY	83	Protected	S5
Blue-winged Warbler	*Vermivora pinus*	FY	84	Protected	S5
Bobolink	*Dolichonyx oryzivorus*	FY	81	Protected	S5
Brewster's Warbler	*Vermivora pinus x V. chrysoptera*	FL	83	Protected	NR
Broad-winged Hawk	*Buteo platypterus*	FL	83	Protected	S5
Brown Creeper	*Certhia americana*	T2	83	Protected	S5
Brown Thrasher	*Toxostoma rufum*	FL	81	Protected	S5
Brown-headed Cowbird	*Molothrus ater*	NE	85	Protected	S5
Canada Goose	*Branta canadensis*	FL	85	Game Species	S5
Canada Warbler	*Wilsonia canadensis*	T2	83	Protected	S5
Carolina Wren	*Thryothorus ludovicianus*	S2	83	Protected	S5
Cedar Waxwing	*Bombycilla cedrorum*	NE	85	Protected	S5
Chestnut-sided Warbler	*Dendroica pensylvanica*	FY	83	Protected	S5
Chimney Swift	*Chaetura pelagica*	ON	81	Protected	S5
Chipping Sparrow	*Spizella passerina*	NY	85	Protected	S5
Cliff Swallow	*Petrochelidon pyrrhonota*	NY	83	Protected	S5
Common Grackle	*Quiscalus quiscula*	NE	83	Protected	S5
Common Nighthawk	*Chordeiles minor*	X1	81	Protected-Special Concern	S4
Common Yellowthroat	*Geothlypis trichas*	FY	85	Protected	S5
Cooper's Hawk	*Accipiter cooperii*	S2	83	Protected-Special Concern	S4
Dark-eyed Junco	*Junco hyemalis*	FL	83	Protected	S5
Downy Woodpecker	*Picoides pubescens*	NY	85	Protected	S5
Eastern Bluebird	*Sialia sialis*	NY	83	Protected	S5
Eastern Kingbird	*Tyrannus tyrannus*	FY	84	Protected	S5
Eastern Meadowlark	*Sturnella magna*	FY	82	Protected	S5
Eastern Phoebe	*Sayornis phoebe*	NY	83	Protected	S5
Eastern Screech-Owl	*Otus asio*	S2	83	Protected	S5
Eastern Towhee	*Pipilo erythrophthalmus*	FY	84	Protected	S5
Eastern Wood-Pewee	*Contopus virens*	NE	84	Protected	S5
European Starling	*Sturnus vulgaris*	NY	83	Unprotected	SE

Common Name	Scientific Name	Breeding Class	Year*	New York Legal Status	Heritage State Rank
Field Sparrow	*Spizella pusilla*	FY	83	Protected	S5
Golden-crowned Kinglet	*Regulus satrapa*	X1	83	Protected	S5
Golden-winged Warbler	*Vermivora chrysoptera*	FY	81	Protected-Special Concern	S4
Grasshopper Sparrow	*Ammodramus savannarum*	FY	81	Protected-Special Concern	S4
Gray Catbird	*Dumetella carolinensis*	FY	85	Protected	S5
Great Blue Heron	*Ardea herodias*	FY	85	Protected	S5
Great Crested Flycatcher	*Myiarchus crinitus*	FY	84	Protected	S5
Great Horned Owl	*Bubo virginianus*	T2	83	Protected	S5
Green Heron	*Butorides virescens*	FL	82	Protected	S5
Hairy Woodpecker	*Picoides villosus*	FL	83	Protected	S5
Henslow's Sparrow	*Ammodramus henslowii*	S2	81	Threatened	S4
Hermit Thrush	*Catharus guttatus*	S2	83	Protected	S5
Hooded Merganser	*Lophodytes cucullatus*	X1	85	Game Species	S4
Horned Lark	*Eremophila alpestris*	T2	82	Protected-Special Concern	S5
House Finch	*Carpodacus mexicanus*	NY	85	Protected	SE
House Sparrow	*Passer domesticus*	NY	83	Unprotected	SE
House Wren	*Troglodytes aedon*	NY	83	Protected	S5
Indigo Bunting	*Passerina cyanea*	NE	83	Protected	S5
Killdeer	*Charadrius vociferus*	FL	85	Protected	S5
Lawrence's Warbler	*Vermivora chrysoptera x V. pinus*	FL	83	Protected	NR
Least Bittern	*Ixobrychus exilis*	X1	81	Threatened	S3
Least Flycatcher	*Empidonax minimus*	NE	83	Protected	S5
Long-eared Owl	*Asio otus*	X1	81	Protected	S3
Magnolia Warbler	*Dendroica magnolia*	T2	83	Protected	S5
Mallard	*Anas platyrhynchos*	NE	83	Game Species	S5
Marsh Wren	*Cistothorus palustris*	S2	85	Protected	S5
Mourning Dove	*Zenaida macroura*	NY	84	Protected	S5
Nashville Warbler	*Vermivora ruficapilla*	X1	84	Protected	S5
Northern Cardinal	*Cardinalis cardinalis*	NY	84	Protected	S5
Northern Flicker	*Colaptes auratus*	FY	81	Protected	S5
Northern Harrier	*Circus cyaneus*	P2	82	Threatened	S3
Northern Mockingbird	*Mimus polyglottos*	FL	84	Protected	S5
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	X1	85	Protected	S5

Common Name	Scientific Name	Breeding Class	Year*	New York Legal Status	Heritage State Rank
Northern Waterthrush	*Seiurus noveboracensis*	T2	83	Protected	S5
Osprey	*Pandion haliaetus*	X1	84	Protected-Special Concern	S4
Ovenbird	*Seiurus aurocapillus*	T2	85	Protected	S5
Pied-billed Grebe	*Podilymbus podiceps*	X1	80	Threatened	S3
Pileated Woodpecker	*Dryocopus pileatus*	FY	81	Protected	S5
Pine Warbler	*Dendroica pinus*	FY	85	Protected	S5
Prairie Warbler	*Dendroica discolor*	X1	81	Protected	S5
Purple Finch	*Carpodacus purpureus*	FL	85	Protected	S5
Purple Martin	*Progne subis*	NY	83	Protected	S5
Red-bellied Woodpecker	*Melanerpes carolinus*	NE	81	Protected	S5
Red-breasted Nuthatch	*Sitta canadensis*	FL	83	Protected	S5
Red-eyed Vireo	*Vireo olivaceus*	NE	85	Protected	S5
Red-shouldered Hawk	*Buteo lineatus*	NY	85	Protected-Special Concern	S4
Red-tailed Hawk	*Buteo jamaicensis*	FL	83	Protected	S5
Red-winged Blackbird	*Agelaius phoeniceus*	NE	80	Protected	S5
Ring-necked Pheasant	*Phasianus colchicus*	FL	81	Game Species	SE
Rock Dove	*Columba livia*	NY	85	Unprotected	SE
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	NY	85	Protected	S5
Ruby-throated Hummingbird	*Archilochus colubris*	NY	84	Protected	S5
Ruffed Grouse	*Bonasa umbellus*	FL	84	Game Species	S5
Savannah Sparrow	*Passerculus sandwichensis*	FY	81	Protected	S5
Scarlet Tanager	*Piranga olivacea*	FY	83	Protected	S5
Sharp-shinned Hawk	*Accipiter striatus*	X1	85	Protected-Special Concern	S4
Song Sparrow	*Melospiza melodia*	FY	85	Protected	S5
Swamp Sparrow	*Melospiza georgiana*	FY	82	Protected	S5
Tree Swallow	*Tachycineta bicolor*	NY	81	Protected	S5
Tufted Titmouse	*Baeolophus bicolor*	NY	85	Protected	S5
Turkey Vulture	*Cathartes aura*	X1	85	Protected	S4
Veery	*Catharus fuscescens*	FY	82	Protected	S5
Vesper Sparrow	*Pooecetes gramineus*	FY	83	Protected-Special Concern	S5
Virginia Rail	*Rallus limicola*	X1	81	Game	S5

Common Name	Scientific Name	Breeding Class	Year*	New York Legal Status	Heritage State Rank
				Species	
Warbling Vireo	*Vireo gilvus*	T2	85	Protected	S5
White-breasted Nuthatch	*Sitta carolinensis*	FY	83	Protected	S5
White-throated Sparrow	*Zonotrichia albicollis*	S2	83	Protected	S5
Wild Turkey	*Meleagris gallopavo*	NE	83	Game Species	S5
Willow Flycatcher	*Empidonax traillii*	NE	81	Protected	S5
Wood Duck	*Aix sponsa*	NE	85	Game Species	S5
Wood Thrush	*Hylocichla mustelina*	FY	84	Protected	S5
Yellow Warbler	*Dendroica petechia*	FY	84	Protected	S5
Yellow-bellied Sapsucker	*Sphyrapicus varius*	FY	82	Protected	S5
Yellow-billed Cuckoo	*Coccyzus americanus*	S2	85	Protected	S5
Yellow-rumped Warbler	*Dendroica coronata*	FY	83	Protected	S5
Yellow-throated Vireo	*Vireo flavifrons*	FY	83	Protected	S5
Total Species: 129					

*May, or may not, have been reported more than just the year listed.

Table 2A: Reptiles and Amphibians

This list is summarized from on the quads of the NYS Amphibian and Reptile Atlas, 1990-1999.

Species	Common Name	Order
Rana clamitans melanota	Green Frog	Frogs
Chrysemys picta	Painted Turtle	Turtles
Desmognathus ochrophaeus	Allegheny Dusky Salamander	Salamanders
Plethodon cinereus	Northern Redback Salamander	Salamanders
Rana sylvatica	Wood Frog	Frogs
Bufo a. americanus	Eastern American Toad	Frogs
Plethodon glutinosus	Northern Slimy Salamander	Salamanders
Thamnophis sirtalis	Common Garter Snake	Snakes
Chelydra s. serpentina	Common Snapping Turtle	Turtles
Pseudacris c. crucifer	Northern Spring Peeper	Frogs
Rana palustris	Pickerel Frog	Frogs
Rana pipiens	Northern Leopard Frog	Frogs
Nerodia s. sipedon	Northern Water Snake	Snakes
Rana catesbeiana	Bullfrog	Frogs
Lampropeltis t. triangulum	Eastern Milk Snake	Snakes
Desmognathus fuscus	Northern Dusky Salamander	Salamanders
Plethodon wehrlei	Wehrle's Salamander	Salamanders
Hyla versicolor	Gray Treefrog	Frogs
Ambystoma maculatum	Spotted Salamander	Salamanders
Notophthalmus v.	Red-spotted Newt	Salamanders

Species	Common Name	Order
viridescens		
Eurycea bislineata	Northern Two-lined Salamander	Salamanders
Storeria o. occiptomaculata	Northern Redbelly Snake	Snakes
Gyrinophilus p. porphyriticus	Northern Spring Salamander	Salamanders
Storeria d. dekayi	Northern Brown Snake	Snakes

Table 3A: Fish Species

Recent surveys have been limited to annual assessments of the rainbow trout spawning run in Cold Brook and electrofishing surveys in both Waneta and Lamoka Lakes. Other streams and ponds within the unit management plan have not been surveyed recently. The following is a list of species that are probable 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.

By common name and scientific name

Common Name	Scientific Name
Brown trout	*Salmo trutta*
Rainbow trout	*Oncorhynchus mykiss*
Chain pickerel	*Esox niger*
Muskellunge	*Esox masquinongy*
Central Stoneroller	*Campostoma anomalum*
Common Carp	*Cyprinus carpio*
Cutlips minnow	*Exoglossum maxillingua*
Common Shiner	*Notropis cornutus*
Spottail shiner	*Notropis hudsonius*
Spotfin shiner	*Notropis spilopterus*
Golden Shiner	*Notemiqonus crysoluecas*
Fathead Minnow	*Pimephales promelas*
Bluntnose minnow	*Pimephales notatus*
Longnose Dace	*Rhinichthys cataractae*
Blacknose Dace	*Rhinichthys atratulus*

Common Name	Scientific Name
Creek Chub	*Semotilus atromaculatus*
White Sucker	*Catostomus commersoni*
Northern Hogsucker	*Hypentelium nigricans*
Brown Bullhead	*Ameiarus nebulosus*
Margined madtom	*Noturus insignis*
Chain pickerel	*Esox niger*
Pumpkinseed	*Lepomis gibbosus*
Bluegill	*Lepomis macrochirus*
Rock Bass	*Ambloplites rupestris*
Smallmouth Bass	*Micropterus dolomieui*
Largemouth Bass	*Micropterus salmoides*
Black crappie	*Pomoxis nigromaculatus*
Tessellated darter	*Etheostoma olmstedi*
Yellow Perch	*Perca flavecens*

Appendix B: Public Comment

Initial Mailing Responses

The following Keuka Lowland Unit Management Plan public comments were received as a result of an initial May 19, 2006 mailing 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.

Donald R. Kole, Elma, NY

I'm very much in favor of your proposed plan.

Herman Benson, Long Island City, NY

It is impossible to make confident suggestions without knowing at least the outlines of your plan or its basic intent. However, the idea of a plan to preserve the beautiful quality of the area is surely great. Just one thing even at this point: Birdseye Hollow Park should be greatly expanded.

Theresa Osburn, Savona, NY

1. Indiscriminate logging should not be allowed; selective only for regrowth and health of forests;

2. Provide areas where mechanized vehicles are not allowed; there is little peaceful outdoors left for those of us who prefer serenity to speed and nature to noise;

3. Gas drilling ok in appropriate areas. Eventually need to wean ourselves from our insane war mongering and lusting for oil. Lots of gas potential in the Finger Lakes areas.

Lynda Rummel, Watkins Glen West Regional Coordinator, Finger Lakes Trail Conference

As I understand it, we would be most interested in the effects the plan might have on existing or potential trail and associated facilities in Birdseye Hollow State Forest, Moss Hill State Forest, and Mt. Washington State Forest. Our general and most important concerns include the following:

(1) Every main, branch, spur or loop trail that is part of the Finger Lakes Trail System should be identified and designated as a footpath, restricted to foot travel only, if not already so designated. While this is important to the Finger Lakes Trail System as a whole (because all trails in the system are connected), it is especially important for the main trail which is part of the North Country National Scenic Trail; and it is especially important for any new long-distance footpath that may be developed to link the Finger Lakes Trail System with other trails (e.g., in Pennsylvania). (This would not apply to any existing horse or snowmobile trail, handicapped ATV trail or other trail that already exists, should we need to route our trail onto such.)

(2) The trail corridor should be protected against the intrusion of new trails developed or intended for different users.

(3) Trail access points and trail crossings should be protected against intrusion by other users.

(4) Route continuation during timber harvests, gas well exploration and drilling, or other activities affecting state forest resources should be assured (by providing a bypass route, for example, or by simply not disturbing the trail corridor, as was done so well in the recent logging south of Rhinehart Rd.).

(5) Trail relocation to improve the quality of the trail should be assured.

(6) Adding structures and facilities that improve safe public access to the trail (e.g., parking

areas), improve the quality of the trail (e.g., foot bridges) or enhance the hiking and backpacking experience (e.g., shelters) should continue to be approved -- and supported (when possible).

We are considering several specific projects in the Birdseye Hollow State Forest and would ask that these be supported:

a.. A bridge over Birdseye Hollow Creek, in the northwest section of the state forest.

b.. Additional strings of puncheons or other trail surface improvements at numerous locations along the trail. Smaller evergreens harvested during a thinning or cutting contract can be used for these puncheons, if arrangements are made in advance and we are notified as soon as the trees are freshly cut. As you know, this is a way, albeit a small way, in which more state forest resources can be used for the public's benefit.

c.. A new lean-to, perhaps in the area of the state forest that is east of CR 96 (Birdseye Hollow Rd.), between Munson Hill Rd. and Rhinehart Rd. (other locations may be better). Again, some logged trees could be used for constructing the lean-to, if arrangements are made in advance and we are notified as soon as the trees are freshly cut.

d.. Improved parking at various places where the trail crosses roads. Parking on Rhinehart Rd. and CR 96 is difficult, and other locations are difficult, as well.

We have at least one project under consideration for Moss Hill State Forest (I cannot tell from the website map whether this is actually Moss Hill State Forest or Birdseye Hollow State Forest and I frankly don't remember):

a.. A footbridge over Mud Creek, if possible, so as to avoid the road walk along CR 16 and Aulls Rd. We would continue to use the parking area on the north side of CR 16 and would walk across the road to access the trail and then cross over Mud Creek. We would continue to have an access point on Aulls Rd.(near the road bridge over Mud Creek), too, for people who want to park and access the trail there.

For Moss Hill State Forest, we are also considering:

a.. Rerouting the trail to the west of the current trail (wet terrain may make this impossible, but we'd like to keep the option open).

b.. Developing a loop trail to the west of the current trail (again, wet terrain conditions may make this impossible but theoretically, it would be nice to have a loop swinging through the Sanford and Round Lake areas).

c.. Given its proximity to Birdseye Hollow State Forest, it is possible that we may wish to possibly route the NY-PA Connector Trail through Moss Hill State Forest (I consider this only a remote possibility, but we'd like to keep the option open).

Lastly, I am not aware of any current projects being considered for Mt. Washington State Forests; however, trail relocation and improvement (especially of sections that are wet or on steep slopes) should always be considered.

Thank you for the opportunity to comment. I hope this provides you with useful information and is the kind of commentary you wanted.

Clinton T. Robie, Savona, NY

First a better map showing correct roads and boundaries of state lands should be created. On the East side of Robie Road (with the exception of the Walnut area) has been growing up to solid brush for 60 years and should be burned to create suitable habitat for wildlife. Parts of other state lands have the same problem!

Zepha Acri, Webster, NY

I would like to see a quicker response to terminating beaver activity where it effects timber type trees. They, currently because of a slow response by the DEC, kill good lumber quality trees by either flooding the area or by gnawing all the way around the base of good hardwood trees eventually killing the tree.

I feel that the secret release of predators in the area is unacceptable since after the fact we notice a difference on our private land.

When the state leases land for gas or oil drilling, the surrounding land owners should be notified before this actually takes place.

I would like to be included in the future meetings with the Keuka Lowlands Unit Management.

Michael C. Ferringer, Union Hill, NY

How about a campground at Birdseye Park/pond and also a campground downstream a couple of miles with a canoe/kayak trail between them. Fix the roads (paved ones). Make people get permits to camp/canoe/kayak with all names to keep out the jerks, especially hunting season.

Stephen C. Catherman, Steuben County DPW, Bath, NY

Public access and recreation - construction of a pedestrian bridge across the spillway at Birdseye Park for access to the dike, in conjunction with a new boardwalk (pier) into the lake from the dike. The new pier would afford better fishing opportunities in deeper water and replace the existing pier, which is in need of much maintenance. Access to the dike would also allow for the continuation of a perimeter hiking trail around the lake. SAFETEA-LU Enhancement funding should be sought for these projects.

Bengt A. Sward, Himrod, NY

Clear focus should be on preservation: only activities with minimal impact allowed. Thus, hiking, birdwatching, hunting to be permitted, but not camping. Absolutely no mechanical equipment (ATVs, bicycles), no logging and no drilling.

William & Ramona Burlew, Savona, NY

We would like to see primitive campsites made in the forested areas. The Finger Lakes Trail runs through here and camping areas would be great. Also some trails or fine roads for ATVs since my husband is disabled and would love to be able to get into the woods.

Paul F. Giometti, Horseheads, NY

Visitors and residents of Lamoka Lake are impressed with the new boat launch. People with fiberglass boats over 15' in length find it difficult to make it from the launch to the lake without hitting bottom. I suggest cleaning out the debris from this channel.

Raymer Ottman, Rochester, NY

- Is the plan to cover state lands only?
- Will there be a map showing public access?
- Will there be a need to purchase additional property?
- Very interested in being involved in the project(s).

Charles VanBuskirk, Savona, NY

The preservation of the Lamoka archaic Indian village site should be regarded as an important consideration.

Robert Clark, Bath, NY

Expansion of our snowmobile trail system that goes across Steuben County. These areas aid us in getting across the county without using the roads. It makes for very nice trail riding.

Nate and Wendy Brinckerhoff, Savona, NY

NO wind turbines; send information about the activity on state land near our property (i.e. natural gas); develop bike trails for the public (like in the PA Grand Canyon) - possibly around lake at Birdseye Hollow Park or along Cohocton River; a state run campground - Birdseye Hollow area would be good.

Michael Vitti, NYS Trails Council Delegate

Thank you for allowing comments. We would like to be sure you include mountain bike trails in your plan. There is already established use in the Mossy Bank Section and if we could get about a 10-20 mile loop trail built specifically with mountain biking in mind, that would be greatly appreciated.

Frank Schonfelf, Bronx, NY

George W. Brooks Conservation Area

On August 20, 1999, my wife jean and I dedicated 23.8 acres of land included in the Birdseye Hollow State Forest which connect Birdseye Hollow with state lands on the other side of Myers Road in Bradford, N.Y.

Mr. David Dupont USDA Bath Office District Conservation Director was at the dedication of the George W. Brooks Conservation Area. At our Request, Mr. Dupont and his USDA staff drafted a conservation program to protect and encourage plant and animal life at the site.

We hired Mr. Frank Luta, a local experienced, reputable private Forest Management Contractor, to implement and execute these plans as per Mr. Dupont's instructions.

Finger Lakes Land Trust (FLLT)

The objective of the FLLT as well as the conservation movement to which George W. Brooks was dedicated is to save as much as possible of our planet's biosphere. FLLT director Betsy Darlington, some of its officers and local activists participated in the August 20, 1999 dedication.

We appreciate the opportunity to cooperate with your department and the Finger Lakes Land Trust to preserve and enhance this rare and precious environmental treasure.

Vincent Spagnoletti, Steuben County DPW, Bath, NY

The Steuben County Department of Public Works is very interested in creating and maintaining a perimeter trail around Birdseye Hollow Lake in this State Forest Land. Currently, the Finger Lakes Trail (FLT) crosses this land from west to east approximately 1 mile north of the lake. The FLT then runs south along the east side of County Route 96 and the lake to our Birdseye Hollow County Park. We would like to construct a spur trail from the existing FLT south along the west side of the lake to complete a loop trail of approximately 4 miles around the lake.

As support for this trail, we refer you to the 2002 Master Plan created for the park as requested by NYSDEC which states: "Another possible future design element could be the expansion of the park's trial system. Providing a trail around the pond (lake) would offer visitors access to the water's edge as well as take them through the many types of ecosystems." Furthermore, we understand that a current proposal in the draft UMP for the lands is to construct a new boardwalk from the park to the dike at the south end of the lake which would then provide access for hikers or cross-country skiers to the west shore of the lake.

We would construct the trail with County workfare crews and upon completion, approach the FLT Conference Trails Committee about adding the loop to its network of trails. Steuben County would be the sponsor of the new section of trail and use its workfare crews to maintain it. A sketch of the proposed new trail is enclosed for your consideration. We believe it would be a valuable and rewarding addition to the forest Land and County park at Birdseye Hollow. Thank you for the opportunity to comment on the future plans for this public land.

Public Meeting Responses

Written and verbal comments on the draft plan were received during the August 5, 2010 public meeting held at the NYS DEC Bath Office. Written comments were accepted until September 7, 2010. A summary of the comments and NYS DEC responses follows:

Phone comment:

Robert Taylor

As a person with disability, he would like additional accessible and general public fishing access to Round Lake, VanKeuren Lake and Peterson Lakes to be part of the plan.

Written comments:

Bret Eccleston, Ed Baker, Doug Little, National Wild Turkey Federation

The New York State Chapter of the National Wild Turkey Federation (Chapter) would like to offer the following comments for the Keuka Lowlands Draft Unit Management Plan.

First, our chapter would like to commend the NY State Department of Environmental Conservation (DEC) in Region 8 for managing of over 6,000 acres of forest resources in the Keuka Lowlands Unit. Our Chapter members in the area have enjoyed excellent turkey hunting opportunities over the years on DEC managed lands within the unit and many hunters travel from other parts of NY to take advantage of what the region's public lands have to offer. Local economies have benefitted from those trips to the region.

The Chapter supports active management of our forest resources on public and private lands. We encourage the DEC staff to continue actively managing the lands within the Keuka Lowlands Unit using a variety of silvicultural techniques used to achieve the long term goals of the Department. The Chapter encourages the use of even-aged forest management with an emphasis on regeneration of aspen stands using short rotations to address the habitat needs of ruffed grouse, American woodcock and numerous other species that utilize this forest cover type that is in very limited supply across the northeastern states. We do not believe that limiting the size of cutting units as a blanket restriction is beneficial and encourage the DEC Wildlife staff to develop cutting unit sizes for even-aged managed stands that will provide the greatest benefits to the wildlife resources.

Our chapter recommends the Draft plan be amended to include a map providing a better perspective of where in NY State the area is located. The map on page 1 does not provide a perspective of where in NY State the area is located and the interstate on the bottom left is not labeled. The maps between pages 112-126 do not allow a person unfamiliar with the Unit to know exactly where the Unit is without consulting a gazetteer or other map not associated with this draft plan.

The Chapter also recommends that DEC staff be able to efficiently manage the lands under their jurisdiction within this unit. We do not support including items in the Unit Management Plan that would add layers of public input process prior to administering a timber harvest within the unit. DEC Foresters are highly trained professionals and should not have to delay responsible management of our forests through multiple layers of public input processes prior to managing a timber stand. The efforts of DEC staff have resulted in all of New York's State Forests being independently certified by the Forest Stewardship Council (FSC) and the sustainable Forestry Initiative (SFI). There is no reason to add additional layers of public process before DEC staff are able to administer timber harvesting operations.

The Chapter does not support the designation of any area of the forests within the Unit as a Forest Preserve or similar designation that would prevent active forest management through a Forever Wild type of clause. Such a designation could have long term negative impacts on forest health, local economies, recreation, and wildlife habitat and should not be considered as an option. There are thousands of acres of forests classified as Forever Wild in NY State that provide mature, late seral stage habitats. Land cover trends over the last several decades have resulted in forest succession across the northeast favoring predominantly mature forests. Our Chapter supports efforts to increase the acres and percent of land managed for early/young seral stage cover types which have become a very limited habitat type throughout the northeast.

We encourage DEC staff to not overlook the need to have pre-green up quality nest site habitat available for wild turkey hens given the timing of their egg laying in early-mid April for first nest attempts. As forest stands mature, early nest site quality diminishes and we believe recruitment of wild turkeys has been impacted across the northeast by forest succession. Bowhunter sighting log data from 2006-08 indicate the western 1/3 of NY State has the lowest observation rate of wild turkeys in the state. Forest succession is likely impacting recruitment and an increase in quality nesting cover and brood habitat would benefit wild turkeys and a host of other species.

Our Chapter encourages DEC staff to use logging operations as a means to improve wild turkey brood habitat on logging decks and skidder trails after harvest operations have concluded. Providing quality grass and legume cover in these areas will enhance insect abundance and attract turkey broods during late spring and early summer. During this time, young turkey poults feed almost exclusively on insects. Enhancing logging decks and skidder trails adjacent to areas that will provide thick understory cover and logging slash that will be used as nesting cover by hens will increase turkey brood survival by providing those two cover types in close proximity. This will also enhance forage and cover areas for numerous other species.

In response to comments on page 30 where DEC staff were asked to create quality wildlife habitat where solid brush currently exists, our Chapter urges DEC staff to recognize the wildlife value of brush habitats. We recognize that without knowing the composition of the brush in question that this area may be dominated by invasive species which would require removal, but such a blanket statement about the need to remove brush to replace with wildlife habitat ignores that numerous wildlife species rely on thick cover for different aspects of their life-cycles. We ask DEC staff not to eliminate this scrub-shrub habitat type when not dominated by invasive plant species and encourage DEC to control invasive shrubs in order to provide a competitive edge for native shrubs to gain a foothold and take over the scrub-shrub habitats.

Our Chapter encourages DEC staff to inventory stands of apple trees when and where possible and enhance these areas via pruning and releasing. These areas provide excellent food sources for wild turkeys, ruffed grouse, and American woodcock.

The Chapter supports the use of State Forest lands within the unit for hunting and fishing. We will not support any proposal that will decrease the number or percent of acres where fall or spring hunting opportunities on state lands would be reduced.

Our Chapter encourages DEC staff to use as many management tools as possible to responsibly manage the forest resources under their jurisdiction. These tools can include, but are not limited to use of herbicides, prescribed fire, even and uneven aged timber harvest, and forest thinning/ timber stand improvements. Having these options available will allow the Division to respond quickly to issues such as invasive species, fuel load accumulation, wildlife habitat enhancements, forest disease and insect pests.

Our Chapter encourages the DEC staff to establish an easier way to find and navigate Recreation section of the NYS DEC website. This revised website section should simply include downloadable .PDF file type maps of each State Forest, MUA, Wildlife Management Area and other

DEC managed lands available for public hunting, fishing and other recreation. Currently, downloadable maps are difficult to find or in many cases do not exist. This makes it difficult for many people to find maps and public areas. In a way, we believe this is indirectly limiting access to DEC managed lands across the state. Many state natural resource agencies have website sections that provide much easier access to their lands and we believe a revision to the NYS DEC to promote these areas and provide updated, easy to read maps showing boundaries, roads, and regulation summaries is long overdue.

Our Chapter encourages DEC staff to allow enhanced/additional access to mobility impaired hunters and fishermen when taking part in a sanctioned NWTF Wheelin' Sportsmen event on DEC managed lands within the Unit. Wheelin' Sportsmen NWTF helps people with disabilities enjoy outdoor activities such as hunting, fishing and shooting through participating in Wheelin' Sportsmen events and by learning how to continue taking part in these activities independently. These events are managed by NWTF Chapter volunteers and one of the more difficult aspects of event planning is securing permission to easily accessible areas on private or public lands. Offering a permit application process where Chapters that are planning an event could apply for enhanced access to areas that might not typically be legal to access by ATV or other off-road vehicle could make these events larger and provide more people with limited mobility opportunities through our Wheelin' Sportsmen program.

Michael Crotty

With New York State in a severe financial crisis it is not a good time to be spending money on projects which are not necessary, ex: a locked open gate at the entrance to Sanford Lake. What other unnecessary expenses are proposed?

Scotty Bob

Parking problem Wanetta Lamoka. Fishing tournaments create overflow of parking area, folk park along road and cause traffic issues.

Gordon Shafer

Goose control-good program-expand?

-Pg 51- notes on seminar treatment (old) treated with renovate 2008-9-Dec, Brockport have done extensive fish studies & Cornell-plant studies

-What is the long & short term program for Bradford Dam?

Steve Catherman

Wearing my hat as the Steuben County DPW Engineer, we offer the following comments regarding this Draft UMP primarily as it concerns Birdseye Hollow SF and Park and the Finger Lakes Trail:

· Steuben County DPW (SCDPW) fully supports a transfer of jurisdiction of Birdseye Hollow Park to the County through a land exchange with DEC.

· SCDPW also fully supports the construction of a bridge from the park to the levee and is willing to help with its design and construction.

· SCDPW further supports the completion of a perimeter hiking trail around the west side of Birdseye Hollow Pond to connect with the FLT at the north end and east side and the levee at the south end of the pond regardless of when the land exchange may occur. The County would be willing to construct and maintain this trail under an AANR Agreement or TRP with DEC.

· SCDPW supports reducing the geese population in the park and erecting an informational kiosk there.

And wearing my hat as the VP of Trail Maintenance for the Finger Lakes Trail Conference (FLTC), we have the following comments:

· First, and foremost, the FLTC fully supports DEC's position recognizing the FLT as a foot trail only and concurs with its designated uses for walking, running, cross-country skiing and snowshoeing, while motorized vehicle use, horses and bikes are prohibited.
· The FLTC also fully supports DEC's position to minimize conflicts between hikers, bikers, and other users and to not develop ORV or ATV trails in this Unit.
· The FLTC further supports the construction of a lean-to at the north end of Birdseye Hollow SF near the FLT and the construction of a 30' bridge and puncheons across the inlet to Birdseye Hollow Pond in the same area. Either of these projects could be accomplished with an FLTC work party.
· The FLTC supports creating parking areas wherever possible at all FLT trailheads.
Finally, as an avid paddler, I fully support the development of canoe/kayak access sites along Mud Creek. However, from the sections of the creek I have seen while building 4 bridges over it, I believe many deadfall trees and much brush would first need to be removed from the channel to open it up to good paddling.
Thank you for the opportunity to comment on this plan.

At the meeting verbal comments:

1) Concerned about the habitat for small game being diminished by deforestation, timber is being removed only leaving behind grassland which is bad for deer.

Reply- Grasslands and brush lots provide critically important habitat for white-tailed deer along with many other species of wildlife. Early successional habitat provides important fawning habitat in the spring to minimize fawn loss to predation. It also provides important escape and browsing/grazing habitat throughout the year. The creation of early successional habitat is critical to many small game species like grouse and woodcock. NYS DEC manages lands for a wide variety of wildlife species not strictly for deer hunting.

2) How is the logging of the forests controlled? Who says when someone can remove the trees?
3) Discussion on forest products like logging. Who manages it?

Reply- Logging on state forests and wildlife management areas is controlled by the professional forestry staff of NYS DEC under the terms and conditions of a timber sale contract. See the "Timber and Vegetation Management" sections pages 16 and 40.

4) What about power generation and wind energy generation?

Reply- The idea of flooding this valley for power generation was discarded in the 1930's, and the use of the power plant along Keuka Lake is outside the scope of this plan, which only covers Birdseye Hollow, Mount Washington and Moss Hill State Forests and Waneta-Lamoka and Cold Brook Wildlife Management Areas. Per the "Unit Maintenance and Facilities Management" section, NYS DEC does not have the legal authority to authorize the construction of windmills, or commercial towers on the lands covered by this Unit management plan. Therefore, legislation would need to be passed authorizing such use before any tower construction could take place. There is plenty of privately owned land adjacent that could potentially be leased for power generation.

5) Concerned about the effects on the wetland if drilling is done adjacent to it.

Reply- There should be no effect on the wetland.

Upon the department receiving an application to drill an oil, gas, stratigraphic, or geothermal well, in the State of New York, and prior to issuing a drilling permit, the Division of Mineral Resources reviews the proposed operation, including the surface location of the proposed drilling operation. This review includes an assessment of the impact on wetlands.

In addition, if the proposed surface location is on State Forest lands, the applicant must have a valid contract, such as an Oil and Gas Lease, with the State of New York, and a Temporary Revocable Permit (TRP) to access the State Forest lands, from the Division of Lands and Forests.

Prior to issuing the Drilling Permit, the proposed surface location of the well is inspected on the ground to ensure that the proposed drilling and production activity will not infringe on surface restrictions, including but not limited to appropriate setbacks from wetlands. In the event the boundary of a wetland is not clear, a wetland biologist is included in the site assessment. The department may impose additional requirements in the drilling permit to safeguard the wetland from the surface activities associated with drilling and production operations. Inspections are performed by the department during all phases of the drilling operation to ensure compliance with the drilling permit. Wells are inspected periodically during the production phase. The permit holder is required to notify the department of any abnormal activity at a well site, including, but not limited to spills.

Wells that are drilled proximal to wetlands may be required to employ barriers, such as silt fencing and diversion ditches where deemed appropriate.

In addition to the department's attention to the surface location of a well, the department is charged with ensuring the ground water is protected during drilling. The department reviews the drilling plans, which must be designed to protect the ground water, before approval to drill is granted. The department verifies that the approved plans are being followed through inspections of the operations.

6) Where does the revenue go and come from? Need ways of generating funds for the individual state forests and wildlife management areas.
7) Money from State Forests going into General Fund, vs money from Wildlife Management Areas going into Conservation Fund

Reply- Funding sources is covered in the Funding section on page 29, and is established by the New York State Legislature or the Federal Legislature.

8) Issues with minerals (oil and gas), lease situation, well pad on adjoining neighbors, "hydrofracking", etc

Reply- The State will not issue a drilling permit until all acreage within a well's spacing unit is under a voluntary agreement such as an oil and gas lease or is subject to the compulsory integration process under statute. In either case the State would normally receive a royalty payment attributable to the oil and/or gas produced from the State's land within the well's spacing unit. See the Mineral Resources section on page 65.

9) Questions about EAB (Emerald Ash Borrer) and its impact on the forests.

Reply- The initial detection of Emerald Ash Borer (EAB) in New York State occurred on June 16, 2009 in the Town of Randolph, Cattaraugus County. Additional detections have been confirmed in six separate counties (Monroe, Genesee, Livingston, Steuben, Ulster and Greene) during July and August, 2010.

Steuben Co. – A single adult EAB was discovered in a DEC purple prism trap on private property (campground) in the Town of Bath on July 12, 2010. Additional infested trees have been found to date in the area.

Moss Hill State Forest, and portions of Birdseye Hollow State Forest are located within the town of Bath, Mount Washington State Forest and Cold Brook Wildlife Management Area are located just outside, there is great potential for EAB having a large impact on this Unit.

10) Grouse need more seedlings than is currently available.

Reply- Per the "Timber and Vegetation Management" section, approximately 14 stands are selected for regeneration cuts, which will provide additional acres of seedling/sapling forest habitat for grouse and other animals to use.

11) Is the state planning to sell any land?

Reply- None of the land covered by this Unit Management Plan is for sale by the State of New York.

Appendix C: Taxes

School and Town general taxes, the following is an estimate of the real property taxes that were paid by New York State based on the Assessment Roll.

September 2005 School, and January 2006 General taxes:

Birdseye Hollow State Forest - $49,917 in the towns of Bath, Bradford, Urbana and Wayne.
Moss Hill State Forest - $29,272 in the towns of Bath, Bradford and Urbana.
Mt. Washington State Forest - No taxable land, it was bought with using monies from the park and recreation land acquisition bond act of 1960 are not subject to real property taxes.

Wildlife Management Areas are not subject to real property taxes except where special arrangements have been made at the time of acquisition.

Appendix D: Facilities

	Mt. Washington State Forest	Birdseye Hollow State Forest	Moss Hill State Forest	Cold Brook Wildlife Manage-ment Area	Waneta-Lamoka Wildlife Management Area	Total
Haul Road	0.4 miles	0.5 miles				0.9 miles
Public Forest Access Roads		0.1 miles				0.1 miles
Maintained Ponds		1				1 pond
Unpaved Parking Lots	1	3		2	2	6 lots
Paved Parking Lots		1				1 lots
Facility ID Signs	1	5	1		2	9 signs
Boundary Line	4.9 miles 0.7 miles of internal road frontage	31.1 miles 10.7 miles of internal road frontage	22.2 miles 6.3 miles of internal road frontage	2.9 miles	2.8 miles	63.9 miles, 4.4 miles shared by Moss Hill & Birdseye Hollow 17.7 miles of internal road frontage
Regulation / Map / Demo Tour Signs		5	2		13	20 signs
Kiosks		1				1 kiosk
Metal Gates	1		2			3 gates
Access for Persons with Disabilities - ATV trails						0 miles
Hiking Trails		0.7 miles- Sanford Lake 8.2 miles - FLT				8.9 miles
Snowmobiling Trails		4.5 miles	5 miles			9.5 miles
Gas Wells			2 (plugged and abandoned)			2 wells - abandoned

	Mt. Washington State Forest	Birdseye Hollow State Forest	Moss Hill State Forest	Cold Brook Wildlife Manage-ment Area	Waneta-Lamoka Wildlife Management Area	Total
Boat Launch		1			2	3 launches
Picnic Area (with tables etc.)		2 (1 is ADA)				2 picnic areas
Camping		7 sites				7 sites - 1 area
Fishing Pier		1 (ADA)				1 pier
DEC gravel pit		1				1 pit

The NYS DEC Sonora Maintenance Shop is located on Birdseye Hollow State Forest. At this location NYS DEC equipment is maintained and/or stored, and the semi-annual auction of surplused equipment takes place. This plan does not cover activities taking place within the grounds of the shop.

Appendix E: Water Resources

WIN - Watershed Index Number: Numbering system used by NYSDEC to identify individual streams/ponds/lakes.

Water Classifications:

Class C - Fishing and any other usages except for bathing or as a source of water supply for drinking, culinary, or food processing purposes.
Class C(T) - Same as Class C plus it is designated as trout waters
Class C(TS) - Same as Class C plus waters are suitable for trout spawning

Table 1E: Ponds

Name	WIN	Acres (Approx)	Class	Fisheries Resource
Birdseye Hollow State Forest				
Birdseye Hollow Pond	PA-3-58-15-9-P5140	68.4	C	Sunfish, bullhead catfish
Sanford Lake	PA3-58-15-5-P44	18	C	Bass, pickerel, panfish, bullhead
Parker or Van Keuren Lake	PA3-58-15-5-P44-P44a-P45	6.5	C	Bass, pickerel, panfish, bullhead
Round Lake	PA3-58-15-P46	12.8	C	Bass, pickerel, panfish, bullhead
Waneta-Lamoka Wildlife Management Area				
Waneta Lake	PA3-58-15-P47-4-P48	813	A	Muskellunge, bass, pickerel, sunfish, bullhead
Lamoka Lake	PA3-58-15-P47	588	A	Bass, pickerel, panfish,bullhead

Table 2E: Streams

Name	WIN	Miles (Approx)	Class	Fisheries Resource
Cold Brook Wildlife Management Area				
Keuka Inlet or Cold Brook	ONT-66-12-p369-115-p388-36	0.4	CT(S)	Rainbow, brown trout
Unnamed trib	ONT-66-12-p369-115-p388-36-2	0.4	CT	Rainbow, brown trout
Mount Washington State Forest				
Smith Run	PA3-58-18	1	C	Sucker, minnows
Unnamed trib	PA3-58-18-5b	0.8	C	Sucker, minnows
Unnamed trib	PA3-58-18-5c	0.2	C	Sucker, minnows
Unnamed trib	PA3-58-18-6	0.4	C	Sucker, minnows

Moss Hill State Forest				
Unnamed trib	PA3-58-15-8	0.7	C	Sucker, minnows
Unnamed trib	PA3-58-15-2	0.5	C	Sucker, minnows
Unnamed trib	PA3-58-15-4a	0.2	C	Sucker, minnows
Unnamed trib	PA3-58-15-5a	0.2	C	Sucker, minnows
Unnamed trib	PA3-58-17	0.8	C	Sucker, minnows
Birdseye Hollow State Forest				
Mud Creek	PA3-58-15	5.6	C	Pickerel, panfish, bullhead
Unnamed trib	PA3-58-15-9	2.7	C	Sucker, minnows
Unnamed trib	PA3-58-15-9-1	1	C	Sucker, minnows
Unnamed trib	PA3-58-15-9-1-1	0.5	C	Sucker, minnows
Unnamed trib	PA3-58-15-9-2	0.1	C	Sucker, minnows
Unnamed trib	PA3-58-15-9-3	0.1	C	Sucker, minnows
Unnamed trib	PA3-58-15-9-4	0.9	C	Sucker, minnows
Unnamed trib	PA3-58-15-9-5	0.3	C	Sucker, minnows
Unnamed trib	PA3-58-15-9-6	0.3	C	Sucker, minnows
Unnamed trib	PA3-58-15-9-7	0.5	C	Sucker, minnows
Unnamed trib	PA3-58-15-8	0.2	C	Sucker, minnows
Unnamed trib	PA3-58-15-7	0.7	C	Sucker, minnows
Unnamed trib	PA3-58-15-6	0.4	C	Sucker, minnows
Unnamed trib	PA3-58-15-5a	0.3	C	Sucker, minnows
Unnamed trib	PA3-58-15-5	0.1	C	Sucker, minnows
Unnamed trib	PA3-58-15-4a	0.2	C	Sucker, minnows
Waneta-Lamoka Wildlife Management Area				
Waneta-Lamoka Canal	PA3-58-15-P47-4	0.7	A	Muskellunge, bass, pickerel, sunfish, bullhead
Unnamed trib	PA3-58-15-P47-4-1	0.4	C	Sucker, minnows

Appendix F: Timber Management

See also maps on Appendix L: Maps, starting on page 142.

The following table lists the anticipated bid year for the start of the treatment of these stands. Many factors can influence the actual start date for these events, including, but not limited too; staff time and other resources, invasive bug or plant issues, weather, local/regional/worldwide markets, and deer or other animal populations. Most 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.

Key	
Abbreviation	Definition
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.
RE	Regeneration -To reestablish a forest stand with tree seedlings. Cut styles that do this include; clearcut or overstory removal cut (one cut removes all the overstory trees); or a Shelterwood or Seed tree Cut (one or more cuts to get sunlight on the ground before the final cut). This indicates the first entry; later cuts will be timed based on the growth response of the vegetation.
TH	Thinning - An intermediate cut to encourage faster growth.
S-S	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.

Table 1F: Birdseye Hollow State Forest

(Steuben Reforestation Area #8)

Com-part-ment	Stand No.	Acres	Stand Type	Stand Size	Year of Management Action (Birdseye Hollow SF)									
					1	2	3	4	5	6	7	8	9	10
A	1	74	Hardwood	S-S										
A	2	35	Hardwood	PT										
A	3	17	Hardwood	PT			TH							
B	1	26	Hardwood	PT										
B	2	14	Hardwood	PT										TH
B	3	55	Plantation	PT	Inadequate access to treat, if access improves treatment may be scheduled.									
B	4	92	Hardwood	PT										TH
B	5	10	Conifer Nat.	ST	Protection									
B	6	15	Plantation	PT					RE					
B	7	20	Plantation	PT					RE					
B	8	29	Plantation	PT					TH					
B	9	12	Hardwood	PT										

Com-part-ment	Stand No.	Acres	Stand Type	Stand Size	Year of Management Action (Birdseye Hollow SF)									
					1	2	3	4	5	6	7	8	9	10
C	1	33	Plantation	PT										
C	2	94	Hardwood	S-S										
C	3	7	Plantation	PT					TH					
C	4	17	Plantation	PT										
C	5	26	Hardwood	PT					AA					
C	6	5	Hardwood	ST										
C	7	52	Hardwood	PT					TH					
C	8	95			Wetland or Pond									
C	9	42	Hardwood	PT										
D	1	74			Wetland or Pond									
D	2	12			Wetland or Pond									
D	3	28			Wetland or Pond									
D	5	16			Other									
D	6	18	Hardwood	PT										
D	7	48			Wetland or Pond									
D	8	15	Hardwood	ST										
D	9	25	Hardwood	ST										
D	10	25	Hardwood	PT										
D	11	8	Plantation	PT										
E	1	21	Plantation	PT	TH						RE			
E	2	37	Hardwood	PT				TH						
E	4	25	Plantation	PT	RE									
E	5	24	Plantation	PT			TH							RE
E	6	6	Hardwood	PT										
F	1	29	Plantation	PT										
F	2	46	Plantation	PT										
F	3	6	Hardwood	PT										
F	4	19	Hardwood	PT						TH				
F	5	5	Plantation	PT										
F	6	15	Hardwood	PT										
F	7	4	Hardwood	PT										
F	8	4	Plantation	PT										
G	1	13	Plantation	PT							TH			
G	2	62	Hardwood	PT										
G	3	17	Hardwood	S-S										
G	4	21	Hardwood	PT										
G	5	8	Hardwood	PT										
G	6	3	Conifer Nat.	PT										
G	7	8	Hardwood	PT										
G	8	10	Hardwood	PT										
G	9	9	Hardwood	ST										
G	10	7	Hardwood	ST										
H	1	67	Hardwood	ST										
H	2	6	Plantation	PT										

Com-part-ment	Stand No.	Acres	Stand Type	Stand Size	Year of Management Action (Birdseye Hollow SF)									
					1	2	3	4	5	6	7	8	9	10
H	3	18	Hardwood	ST										
H	4	18			Wetland or Pond									
H	5	19	Plantation	PT			TH							RE
I	1	23			Wetland or Pond									
I	2	21	Hardwood	PT										
I	3	7	Plantation	PT	RE									
I	4	23	Hardwood	S-S										
I	5	17	Hardwood	PT										
I	6	5	Plantation	ST										
I	7	24	Hardwood	PT	Protection									
I	8	36	Plantation	PT	TH						RE			
I	9	10	Plantation	PT										
I	10	13	Hardwood	S-S										
I	11	11	Hardwood	PT										
I	12	38	Hardwood	PT							TH			
I	13	7	Plantation	PT										
I	14	22	Hardwood	PT							TH			
I	15	14			Wetland or Pond									
I	16	20	Hardwood	PT							TH			
I	17	6	Plantation	PT										
J	1	21	Plantation	PT				TH						
J	2	26	Plantation	PT				TH						
J	3	23	Hardwood	PT										
J	4	7			Wetland or Pond									
J	6	24	Hardwood	PT										
J	7	5			Wetland or Pond									
K	2	35	Hardwood	PT										
K	3	130			Wetland or Pond									
K	4	45	Plantation	PT		TH								
K	5	12	Hardwood	PT	Inadequate access to treat, if access improves treatment may be scheduled.									
K	6	14	Hardwood	PT	Inadequate access to treat, if access improves treatment may be scheduled.									
L	1	33			Wetland or Pond									
L	2	49	Conifer Nat.	PT										
L	3	6	Plantation	PT										
L	4	10	Hardwood	PT				TH						
L	5	23	Plantation	PT										
L	6	13	Hardwood	S-S										
L	7	11	Plantation	ST										
L	8	22	Plantation	PT										
L	9	16	Plantation	PT										
L	10	3			Other									
L	11	12	Hardwood	PT										

Com-part-ment	Stand No.	Acres	Stand Type	Stand Size	Year of Management Action (Birdseye Hollow SF)									
					1	2	3	4	5	6	7	8	9	10
L	12	6	Hardwood	PT	Inadequate access to treat, if access improves treatment may be scheduled.									
L	13	8	Plantation	PT	TH									
L	14	6	Plantation	PT										
L	15	29	Hardwood	S-S										
M	1	44	Hardwood	PT										
M	2	57	Hardwood	PT								TH		
M	3	18	Plantation	PT							RE			
M	4	25	Hardwood	ST	Protection									
M	5	75	Hardwood	PT	RE*			TH*						
M	6	11	Plantation	PT	RE									
N	1	23	Hardwood	PT										
N	2	8	Plantation	PT										
N	3	16	Plantation	PT								TH		
N	4	6	Plantation	PT										
N	5	4			Other									
N	6	56			Wetland or Pond									
N	7	9	Hardwood	PT		AA								
N	8	9	Hardwood	PT	Inadequate access to treat, if access improves treatment may be scheduled.									
O	1	17	Plantation	PT										
O	2	15	Hardwood	PT										
O	3	46	Hardwood	PT										
O	4	62	Plantation	PT										
O	5	17	Hardwood	PT									TH	
O	6	48	Plantation	PT	Inadequate access to treat, if access improves treatment may be scheduled.									
O	7	30	Hardwood	PT									TH	
O	8	28	Hardwood	PT	Protection									
O	9	5			Other									
P	1	70	Hardwood	PT										
P	2	7			Wetland or Pond									
P	3	12	Plantation	PT		TH								
P	4	18	Hardwood	ST										
P	5	10	Hardwood	S-S										
P	6	31	Plantation	PT										
P	7	47	Hardwood	PT										
P	8	39			Wetland or Pond									
P	9	12			Other									
P	10	13	Hardwood	PT			TH							
P	11	10	Hardwood	PT			TH							
Q	1	19	Hardwood	S-S										
Q	2	78	Plantation	PT									TH	
Q	3	4	Plantation	PT									TH	

Com-part-ment	Stand No.	Acres	Stand Type	Stand Size	Year of Management Action (Birdseye Hollow SF)									
					1	2	3	4	5	6	7	8	9	10
Q	4	3	Hardwood	PT										
Q	6	10	Hardwood	S-S	Protection									
Q	7	4	Hardwood	PT										
Q	8	7	Hardwood	PT										

* Stand M-5 is scheduled to have 10 acres regenerated in year 1, and the remainder thinned in year 4. This will result in it being 2 different stands for the next inventory.

Table 2F: Moss Hill State Forest

(Steuben Reforestation Area #10)

Com-part-ment	Stand No.	Acres	Stand Type	Stand Size	Year of Management Action (Moss Hill SF)									
					1	2	3	4	5	6	7	8	9	10
A	1	26	Hardwood	PT	Protection									
A	2	18	Conifer Nat.	PT						AA				
A	3	47	Hardwood	PT					TH					
A	4	11	Hardwood	PT										
A	5	53	Hardwood	PT			TH							
A	6	54	Hardwood	PT										
A	7	23	Hardwood	PT										
A	8	5	Plantation	PT								RE		
A	9	9	Hardwood	PT										TH
A	10	15	Hardwood	PT										
A	11	13	Hardwood	PT										
A	12	18	Hardwood	PT								RE		
A	13	17	Hardwood	PT								RE		
A	14	31	Hardwood	ST								TH		
A	15	16	Hardwood	PT			TH							
A	16	15	Hardwood	S-S										
A	17	14	Hardwood	S-S										
A	18	26	Hardwood	ST	Protection									
B	1	14	Hardwood	ST						TH				
B	2	48	Hardwood	PT	Protection									
B	3	41	Conifer Nat.	PT										AA
B	4	53	Hardwood	PT				TH						
B	5	21	Plantation	PT										
B	6	22	Plantation	PT					RE					
B	7	16	Hardwood	PT									TH	
C	1	9	Hardwood	PT	Protection									
C	2	29	Hardwood	PT										
C	3	8	Plantation	ST										
C	4	4	Hardwood	PT										

Com-part-ment	Stand No.	Acres	Stand Type	Stand Size	Year of Management Action (Moss Hill SF)									
					1	2	3	4	5	6	7	8	9	10
C	5	32	Hardwood	PT										
C	6	30	Plantation	PT			TH							
C	7	10	Plantation	PT			TH							
C	8	14	Conifer Nat.	PT	Protection									
C	9	45	Hardwood	PT				RE						
C	10	5	Hardwood	PT										
C	11	4	Hardwood	PT										
C	12	2			Wetland or Pond									
D	1	43	Hardwood	PT										
D	2	2	Hardwood	S-S										
D	3	6	Hardwood	PT										
D	4	57	Hardwood	PT						TH				
D	5	23	Hardwood	PT	Protection									
D	6	12	Hardwood	PT										TH
D	7	26	Hardwood	PT						TH				
D	8	20	Hardwood	PT										
D	9	12	Conifer Nat.	PT										
D	10	11	Hardwood	PT										
D	11	29	Hardwood	PT	Protection									
E	1	34	Plantation	PT		TH								
E	2	56	Hardwood	ST	Protection									
E	3	14	Hardwood	PT										
E	4	28	Conifer Nat.	PT										
E	5	4	Plantation	PT										
E	6	11	Hardwood	PT										
E	7	34	Hardwood	ST	TH									
E	8	57	Hardwood	PT	TH									
E	10	13	Hardwood	PT										
F	1	43	Hardwood	PT	Protection									
F	2	27	Hardwood	PT	Protection									
F	3	8	Conifer Nat.	PT										
F	4	5	Hardwood	PT	Inadequate access to treat, if access improves treatment may be scheduled.									
F	5	22	Hardwood	PT	TH									
F	6	3	Plantation	PT	Inadequate access to treat, if access improves treatment may be scheduled.									
F	7	6	Hardwood	PT										AA
G	1	10	Hardwood	PT										
G	2	12	Hardwood	PT										
G	3	16	Hardwood	PT										AA
G	4	6	Hardwood	PT										
G	5	3	Hardwood	S-S										
H	1	14	Plantation	PT					TH					
H	2	9	Hardwood	S-S										

Com-part-ment	Stand No.	Acres	Stand Type	Stand Size	Year of Management Action (Moss Hill SF)									
					1	2	3	4	5	6	7	8	9	10
H	3	31	Hardwood	PT										
H	4	16	Plantation	PT		TH								
H	5	35	Hardwood	PT										
H	6	45	Plantation	PT		TH								
H	7	29	Plantation	PT	TH				RE					
H	8	22	Hardwood	S-S										
I	1	46	Hardwood	ST										
I	2	22	Conifer Nat.	S-S										
I	3	22	Hardwood	S-S										
I	4	30	Plantation	PT										
I	5	10	Plantation	PT										
I	6	4	Hardwood	S-S										
I	7	3	Plantation	PT								RE		
Z	722	37			Other									
Z	723	5			Other									

Table 3F: Mt. Washington State Forest

(Steuben Reforestation Area# 22)

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Year of Management Action (Mt. Washington SF)									
					1	2	3	4	5	6	7	8	9	10
A	1	17	Plantation	PT			TH							
A	2	23	Plantation	PT										
A	3	5	Hardwood	PT										
A	4	3	Plantation	PT										
A	5	63	Plantation	PT	TH									
A	6	28	Hardwood	PT	Inadequate access to treat, if access improves treatment may be scheduled.									
A	7	25	Hardwood	PT										
A	8	19	Plantation	PT					TH					
A	9	71	Conifer Natural	PT	Inadequate access to treat, if access improves treatment may be scheduled.									
A	10	14	Hardwood	PT										
A	11	36	Conifer Nat.	PT	Inadequate access to treat, if access improves treatment may be scheduled.									
A	13	14	Conifer Nat.	PT										
A	14	16	Plantation	PT	Inadequate access to treat, if access improves treatment may be scheduled.									
A	15	14	Hardwood	PT	Inadequate access to treat, if access improves treatment may be scheduled.									

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Year of Management Action (Mt. Washington SF)									
					1	2	3	4	5	6	7	8	9	10
A	16	3	Plantation	PT										
A	17	9	Hardwood	PT										
A	18	13	Plantation	PT										
A	19	6	Hardwood	PT										TH
A	20	32	Conifer Nat.	ST										
A	21	12	Hardwood	S-S										
A	22	8	Hardwood	S-S										
A	711	4			Other (Roads)									
A	950	5			Open									

Table 4F: Waneta-Lamoka Wildlife Management Area

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Year of Management Action									
					1	2	3	4	5	6	7	8	9	10
A	1	11	Hardwood	PT										
A	2	7	Hardwood	PT										
A	711	3			Other									
A	712	1			Other									
A	910	21			Wetland or pond									
A	920	88			Wetland or Pond									
A	940	2			Open									
A	950	24			Open									

Table 5F: Cold Brook Wildlife Management Area

Com-part-ment	Stand No.	Acres	Stand type	Stand Size	Year of Management Action									
					1	2	3	4	5	6	7	8	9	10
A	920	36			Wetland or Pond									
A	921	19			Wetland or Pond									
A	930	13			Wetland or Pond									
A	931	7			Wetland or Pond									
A	932	34			Wetland or Pond									
A	950	14			Open									
A	951	2			Open									

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.

All-Aged - A forest containing trees of two or more age classes.

Allegheny Hardwoods - Composed of 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.

Conifer - Needle bearing trees.

Conifer/Conifer Hardwood Forest - A forest stand in which either of the two leading species is a conifer.

Conifer Stand - A forest stand containing 33% or more conifer species.

D.B.H. - (diameter at breast height) - The diameter of a tree at roughly breast height or 4½ 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 - An approximately 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.

Ecosystem - A complex of living organisms and their environment.

Endangered - Native plants (and animals) in danger of extinction throughout all or a significant portion of their ranges within the state and requiring remedial action to prevent such extinction (NYCRR Title 9 Part 193.3)

Erosion - To wear away by the action: water, wind, or ice.

Even Aged - A forest in which all of the trees are essentially the same age.

Faulting - a fracture or crack that has had movement parallel to the fracture's surface

Fluvial - pertaining to sediments deposited by stream or river actions

Fragipan - An impervious subsurface soil layer (sometimes known as "hardpan") which restricts rooting and internal soil drainage.

Glacier / 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 - Broadleafed 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 Haul roads are gated and warning signs are posted. The standards for these roads are those of Class C roads as provided for in the Forest Road Handbook.

Herbaceous Opening - A non-forest vegetative type consisting of grasses and forbs.

Homocline - geologic structure that is dipping or inclined in one direction and at the same angle of inclination

Kame - a short ridge, hill, or mound of stratified glacial deposits

Lacustrine - sediments deposited in association with the processes within a lake

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.

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.

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.

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 to 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 - An area which requires special management considerations. (Special cutting regimen, short rotation, long rotation, or no treatment.)

Public 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 - 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.

Rotation - The length of time between the establishment and the harvest of a forest stand.

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 - Site is defined as a group of features (such as slope, aspect, soil type, etc.) which characterize a given area of land.

Silviculture - The establishment, development, care, and reproduction of forest stands.

Softwoods - Needle bearing trees, conifers

Species Diversity - The occurrence of a variety of plants and animals.

Stand - A group of plants with similar characteristics that are treated as a single unit in a management plan.

Stand Analysis - A systematic method of evaluating stands to determine the need for treatment.

Stand Treatment - Work done in a stand which is directed towards the management of the stand.

State Forest - Lands owned by the state of New York and administered by NYS DEC of Environmental Conservation which are managed for the establishment and maintenance of forests for watershed protection, the production of timber, and for recreation and kindred purposes.

Stratigraphic - The layering and sequence of mapable rock units.

Succession - The gradual supplanting of one community of plants and animals by another.

Surficial - Of, or relating to, the surface

Sustained Yield - The maintenance of a continuous flow of a particular product.

Synclinal - Rock layers that are folded so that the layers are inclined towards each other (like the letter V)

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 do 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 built by C.C.C. volunteers and originally used for water for fire protection purposes.

Watershed - The land area from which a stream receives its water.

Wetland - Land or area saturated and sometimes partially or intermittently covered with water.
Class I, II, III or IV - The designation placed upon a mapped wetland by NYS DEC as required by 6NYCRR. The four classes rank wetlands according to their ability to perform wetland functions and provide wetland benefits. Class I is the most critical.

Yield - The production of a commodity such as; forest products, water, or wildlife.

Appendix H: Soils Information

Official Soil Descriptions, see also Appendix L: Maps.

Alton: This component is on deltas, outwash plains, terraces. The parent material consists of gravelly loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits, derived mainly from acidic rocks, with some limestone below 40 inches. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. This soil does not meet hydric criteria.

Aquepts: This component is on flood plains. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, September, October, November, December. Organic matter content in the surface horizon is about 8 percent. This soil meets hydric criteria.

Arnot: This component is on hills, ridges, benches. The parent material consists of loamy till derived mainly from acid sandstone, siltstone, and shale. Depth to a root restrictive layer, bedrock (lithic), is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. This soil does not meet hydric criteria.

Bath: This component is on drumlinoid ridges, hills, till plains. The parent material consists of loamy till derived mainly from gray and brown siltstone, sandstone, and shale. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, December. Organic matter content in the surface horizon is about 4 percent. This soil does not meet hydric criteria.

Bracevill: This component is on deltas, outwash plains, terraces. The parent material consists of loamy glaciofluvial deposits of stratified sand, silt, and gravel derived mainly from noncalcareous sandstone and shale. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, November, December. Organic matter content in the surface horizon is about 2 percent. This soil does not meet hydric criteria.

Canandaigua: This component is on depressions. The parent material consists of silty and clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural

drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 10 percent. This soil meets hydric criteria.

Carlisle muck: This component is on swamps, marshes. The parent material consists of deep organic material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, September, October, November, December. Organic matter content in the surface horizon is about 84 percent. This soil meets hydric criteria.

Castile: This component is on valley trains, terraces. The parent material consists of gravelly loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits, derived mainly from sandstone, shale, and siltstone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during March, April, May. Organic matter content in the surface horizon is about 7 percent. This soil does not meet hydric criteria.

Chenango: This component is on valley trains, terraces. The parent material consists of gravelly loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits, derived mainly from sandstone, shale, and siltstone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 54 inches during April, May. Organic matter content in the surface horizon is about 4 percent. This soil does not meet hydric criteria.

Chippewa: This component is on depressions. The parent material consists of loamy till dominated by siltstone, sandstone, and shale fragments. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is occasionally ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 6 percent. This soil meets hydric criteria.

Collamer: This component is on lake plains. The parent material consists of silty and clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during March, April, May. Organic matter content in the surface horizon is about 4 percent. This soil does not meet hydric criteria.

Dunkirk: This component is on lake plains. The parent material consists of silty and clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural

drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. This soil does not meet hydric criteria.

Halsey: This component is on depressions. The parent material consists of loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, September, October, November, December. Organic matter content in the surface horizon is about 18 percent. This soil meets hydric criteria.

Howard: This component is on valley trains, terraces. The parent material consists of gravelly loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits, containing significant amounts of limestone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. This soil does not meet hydric criteria.

Hudson: This component is on lake plains. The parent material consists of clayey and silty glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. This soil does not meet hydric criteria.

Lordstown: This component is on hills, ridges, benches. The parent material consists of loamy till derived from sandstone and siltstone. Depth to a root restrictive layer, bedrock (lithic), is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. This soil does not meet hydric criteria.

Madrid: This component is on drumlinoid ridges, hills, till plains. The parent material consists of loamy till derived mainly from sandstone and limestone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. This soil does not meet hydric criteria.

Mardin: This component is on drumlinoid ridges, hills, till plains. The parent material consists of loamy till derived mainly from acid sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is very low. Shrink-swell

potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 5 percent. This soil does not meet hydric criteria.

Middlebury: This component is on flood plains. The parent material consists of loamy alluvium predominantly from areas of shale and sandstone with some lime-bearing material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 15 inches during February, March, April. Organic matter content in the surface horizon is about 5 percent. This soil does not meet hydric criteria.

Niagara: This component is on lake plains. The parent material consists of silty and clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 4 percent. This soil does not meet hydric criteria.

Ochrepts: Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 60 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 3 percent. This soil does not meet hydric criteria.

Orthents: Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 54 inches during January, February, March, April, May, June, November, and December. Organic matter content in the surface horizon is about 3 percent. This soil does not meet hydric criteria.

Ovid: This component is on reworked lake plains, till plains. The parent material consists of loamy till with a significant component of reddish shale or reddish glaciolacustrine clays, mixed with limestone and some sandstone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 15 inches during January, February, March, April, and May. Organic matter content in the surface horizon is about 4 percent. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 3 percent.

Palms muck: This component is on swamps, marshes. The parent material consists of organic material over loamy glacial drift. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high. Shrink-swell potential is low. This soil is not

flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 87 percent. This soil meets hydric criteria.

Red Hook: This component is on valley trains, terraces. The parent material consists of loamy glaciofluvial deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 8 percent. This soil does not meet hydric criteria.

Rhinebeck: This component is on lake plains. The parent material consists of clayey and silty glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May. Organic matter content in the surface horizon is about 5 percent. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 10 percent.

Saprists: This component is on depressions. The parent material consists of organic material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, September, October, November, December. Organic matter content in the surface horizon is about 74 percent. This soil meets hydric criteria.

Tuller channery : This component is on hills, ridges, benches. The parent material consists of loamy till derived mainly from acid sandstone, siltstone, and shale. Depth to a root restrictive layer, bedrock (lithic), is 10 to 20 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, June, December. Organic matter content in the surface horizon is about 6 percent. This soil does not meet hydric criteria.

Valois: This component is on end moraines, valley sides, lateral moraines. The parent material consists of loamy till derived mainly from sandstone, siltstone, and shale. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. This soil does not meet hydric criteri

Volusia: This component is on drumlinoid ridges, hills, till plains. The parent material consists of loamy till derived mainly from siltstone, sandstone, and shale or slate. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is low. Shrink-

swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 4 percent. This soil does not meet hydric criteria.

Water: Generated brief soil descriptions are created for major soil components. The Water is a miscellaneous area.

Wayland: This component is on flood plains. The parent material consists of silty and clayey alluvium washed from uplands that contain some calcareous drift. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, November, December. Organic matter content in the surface horizon is about 4 percent. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 1 percent.

Appendix I: Wildlife Harvest

Table 1I: Calculated Legal Deer Take in the Towns within the Keuka Lowland Unit Management Plan Area (2001 - 2005)

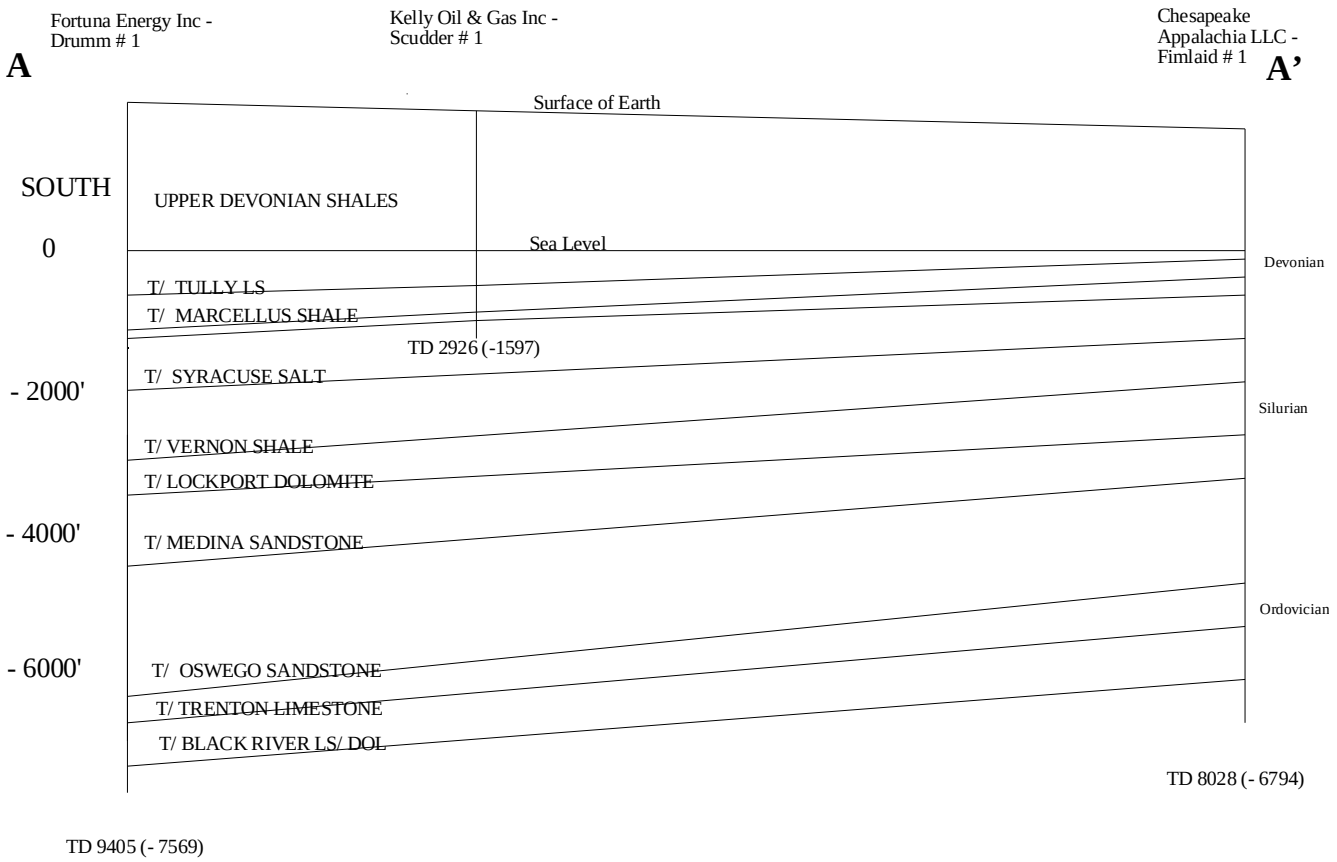
Town/Year		2000	2001	2002	2003	2004	2005	2006
Bath	bucks	529	526	473	356	238	257	311
	total deer	1316	1229	1280	980	623	449	568
Bradford	bucks	135	107	110	94	83	83	68
	total deer	310	304	346	259	172	119	127
Tyrone	bucks	201	209	216	195	141	151	130
	total deer	544	488	600	583	662	476	332
Wayne	bucks	124	94	106	92	72	77	74
	total deer	271	219	326	251	238	182	145
Urbana	bucks	224	224	213	211	173	142	153
	total deer	539	589	610	524	419	283	334

Table 2I: Furbearer Harvest of Pelt Sealed Species

Reported Beaver Harvest						
Town/Year	2000	2001	2002	2003	2004	2005
Bath	2	25	50	32	10	
Bradford	12	13	17	12	12	
Tyrone	19	21	26	0	0	
Wayne	11	11	0	0	8	
Urbana	0	1	12	0	4	

Reported Coyote Harvest						
Town/Year	2000	2001	2002	2003	2004	2005
Bath	0	10	12	8	5	
Bradford	1	0	0	4	0	
Tyrone	3	4	3	1	9	
Wayne	0	0	0	3	6	
Urbana	1	0	0	0	3	

Appendix J: Bedrock Cross Section



GEOLOGIC CROSS SECTION A - A'

See Geology / Oil and Gas map on page 147 for the location of A, and A'.

Appendix K: SEQR

12-12-79 (3/99)-9c **SEQR**

State Environmental Quality Review
NEGATIVE DECLARATION
Notice of Determination of Non-Significance

Identifying # 2012-SLM-8- **Date** January 9, 2008

This notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review Act) of the Environmental Conservation Law.

The NYS Department of Environmental Conservation as lead agency, has determined that the proposed action described below will not have a significant environmental impact and a Draft Environmental Impact Statement will not be prepared.

Name of Action: Adoption of the Keuka Lowlands Unit Management Plan

SEQR Status:Type 1 X

Unlisted ___

Conditioned Negative Declaration: ___ **Yes**
X **No**

Description of Action: The Keuka Lowlands Unit Management Plan sets forth the proposed goals, objectives, management actions and associated costs for the management of approximately 6,048 acres on five parcels of State land in Steuben and Schuyler Counties. It includes Moss Hill, Birdseye and Mt. Washington State Forests and Waneta-Lamoka and Cold Brook Wildlife Management Areas. The plan details management activities for a 10-year period. A review and update will take place at the end of the tenth year. Public participation has been sought via mailings. Full consideration for public input has been sought prior to completion of the final plan.

Management activities planned for this unit include: general maintenance and improvement of facilities, public access to State land, managing the vegetation and wildlife, including the creation and maintenance of open fields and logging an average of 147 acres per year. Other activities include conversion of 45 acres of forest to grass and or brush, construction of parking lots on Moss Hill State Forest, Birdseye Hollow State Forest and Mt. Washington State Forest, improving parking as needed along the shoulders of existing roads, construction of access roads and a small boarding pier and oil and gas activities. The construction of two, two to three car parking lots canoe/kayak access points where Mud Creek and Town roads intersect would provide additional recreational access to Birdseye Hollow State Forest. Small water hole amphibian activity centers will be created and maintained and trails will be designated for recreational use. Birdseye Hollow Pond and Sanford Lake on Birdseye Hollow State Forest and Waneta and Lamoka Lakes Wildlife Management Area also have a growing population of resident Canada geese.

The existing fishing pier on Birdseye Pond that was removed for safety reasons will be relocated over deeper water next to the dam. This will require development of an access bridge over the spillway to the dam. Steuben county has proposed both the replacement pier and construction of a new loop hiking trail around the pond which would connect the proposed fishing platform on the south end, around the western and northern sides of the pond to the Finger Lakes Trail which already exists on the east side. Fishing access will be provided from the bridge.

Existing facilities will be maintained such as the Forest Stewardship Demonstration Tour, gates, signs, and Sanford Lake Day Use Area. Best Management Practices for the control of erosion, and integrated pest management for the control of insects, will be followed. Acquisition of adjoining land from willing sellers will be sought, when possible.

Location: (Include street address and the name of the municipality/county. A location map of appropriate scale is also recommended.)
Keuka Lowlands Unit: Birdseye Hollow State Forest, Towns of Bath, Bradford, Wayne and Urban in Steuben County; Moss Hill State Forest, Town of Bath in Steuben County; Mt. Washington State Forest, Town of Bath in Steuben County; Cold Brook Wildlife Management Area, Town of Urbana in Steuben County; Waneta-Lamoka Wildlife Management Area, Town of Tyrone, Schuyler County

Reasons Supporting This Determination:
(See 617.7(a)-(c) for requirements of this determination; see 617.7(d) for Conditioned Negative Declaration) Activities planned for the unit will be covered by the following Programmatic/Generic Environmental Impact Statements: Strategic Plan for State Forest Management, State Forest Commercial Products Sales Program, Habitat Management Activities, Wildlife Habitat Management on State Forest Land, Red Pine Plantation Clearcut Program, State Forest Recreation Management Program, New York State Open Space Plan and the Generic Environmental Impact Statement On the Oil, Gas and Solution Mining Regulatory Program.

Activities which would require a site specific environmental review under the State Environmental Quality Review Act (SEQRA) include: prescribed fire of 100 acres or more and site preparation with herbicide and clearcuts larger than 40 acres. In addition, if after the public review process, activities are added to the plan to provide better management of the unit and are not covered by this Negative Declaration or cited Programmatic/Generic Environmental Impact Statements, DEC will undertake a site specific environmental review for such activities. Activities relating to oil and gas exploration would also require a site specific environmental review and permit if activities are not covered by the Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program. Activities in the plan will be performed in accordance with the standards and policies and procedures set forth in the following DEC documents: Continuous Forest Inventory Handbook, State Forest Multiple Use Management Plan, Unpaved Forest Road Handbook, and the Timber Management Handbook. In addition, activities in the plan will be guided by the Environmental Conservation Law, Best Management Practices, the expertise of foresters and biologists, and the views expressed by the participating public.

Construction of new facilities shall include parking lots and improving parking as needed along the shoulders of existing roads. These facilities with be placed to minimize short and long term impacts by constructing the lots on level ground with reasonable slope. In addition, the construction and improvements will entail: clearing of brush and some trees, grading and applying gravel and the installation of culverts and ditches used to control drainage and erosion as necessary. This will improve public access and safety.

The aesthetic resources will be protected by screening of logging activities and by limiting disturbance in sensitive areas. Scenic views will be preserved by the removal of screening vegetation. There will be a favorable impact on energy resources, since timber management will produce fuelwood and gas well drilling may provide natural gas. The noise impact of construction and logging will occur so briefly as to be inconsequential.

Small water hole amphibian activity centers are constructed by scooping out soil in a suitable location, such as near a spring or on soil that will hold water. They are at least six foot deep, and vary in size and shape from 10 feet up to 40 feet. They are left to fill naturally with water and animals such as salamanders and frogs. Construction will take place during periods of dry weather. Best Management Practices will be followed to minimize any potential erosion or sedimentation problems to surrounding water bodies.

Relocating the fishing pier and developing an access bridge over the spillway to the dam will result in minor disturbance of the pond bottom and dam. Construction of a boarding pier will have minimal impacts, if any. These proposed projects will comply with the Americans with Disabilities Act guidelines and other engineering safety standards.

The proposed loop hiking trail around Birdseye Pond and any other construction, forestry or mineral activity will incorporate the use of Best Management Practices, including but not limited to such considerations as: locating improvements to minimize necessary cut and fill; locating improvements away from streams, wetlands, and unstable slopes; use of proper drainage devices such as water bars and broad-based dips; locating trails to minimize grade; laying out trails on existing old roads or cleared or partially cleared areas; using stream crossings with low, stable banks, firm stream bottom and gentle approach slopes; constructing stream crossings at right angles to the stream; limiting stream crossing construction to periods of low or normal flow; avoiding areas where habitats of threatened and endangered species are known to exist; and using natural materials to blend the structure into the natural surroundings. Parking lots or other structures will be located on flat, stable, well-drained sites in areas that require a minimum amount of tree cutting. Construction will be limited to periods of low or normal rainfall. The size of the parking lots will be the minimum necessary for the intended use. Wherever possible, wooded buffers will be used to screen parking lots from roads.

To minimize the potential impact of geese on State and nearby private lands, efforts should be made to stabilize and or reduce the population of geese. This will be accomplished through a multi-faceted approach. "No feeding of waterfowl" signs will be posted in areas where geese congregate, hunting of geese during legal seasons will be encouraged and eggs will be treated to prevent hatching. If problems are severe, capture and removal of geese during the summer molt will be considered.

When possible, gas pipelines and well pads will be constructed along existing roads or other corridors. All well pads, pipelines, and well pad access roads will require site approval by a DEC land manager, and other permits such as a Temporary Revocable Permit (TRP) and a Permit to Drill, Deepen, Plug Back or Convert a Well Subject to the Oil, Gas and Solution Mining Law (form 85-12-5) (Drilling Permit).

All silvicultural, gas or other mineral activity will be monitored and Best Management Practices followed. Endangered and threatened species will be protected. Archaeological and historical resources will also be protected by minimizing any disturbance to the ground. The actions as discussed in this Negative Declaration will not have significant adverse impacts on the environment, but will be protective of the environment.

If Conditioned Negative Declaration, provide on attachment the specific mitigation measures imposed, and identify comment period (not less than 30 days from date of publication in the ENB)

For Further Information:

Contact Person: Gretchen Cicora

Address: 7291 Coon Rd.
Bath, NY 14810

Telephone Number: 607-776-2165 ext. 29

For Type 1 Actions and Conditioned Negative Declarations, a Copy of this Notice is sent to:

Appropriate Regional Office of the Department of Environmental Conservation

Chief Executive Officer, Town/City/Village of

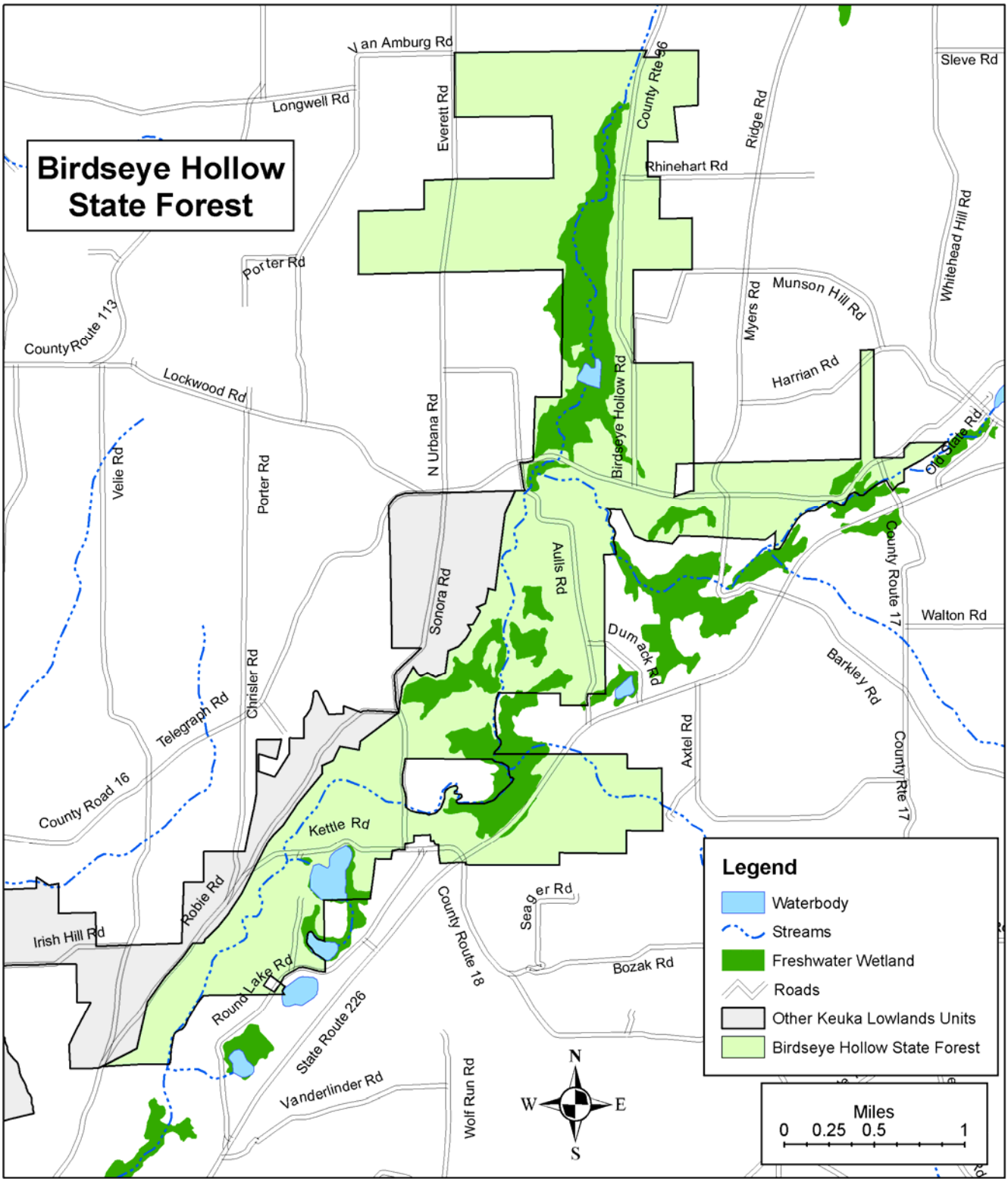
Other involved agencies (if any)

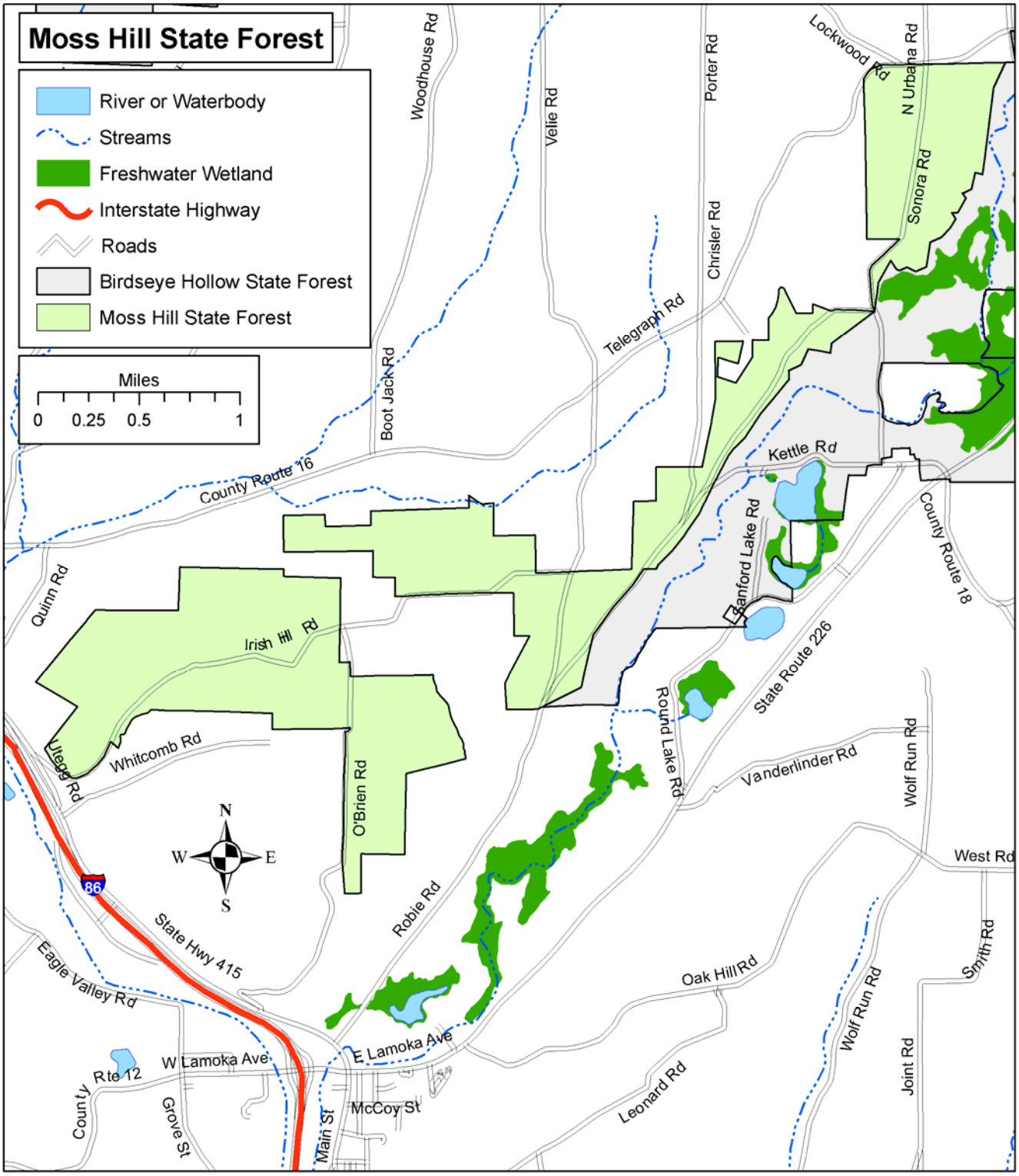
Applicant (if any)

Environmental Notice Bulletin - NYS DEC - 625 Broadway - Albany, NY 12233-1750 (Type One Actions Only)

Appendix L: Maps

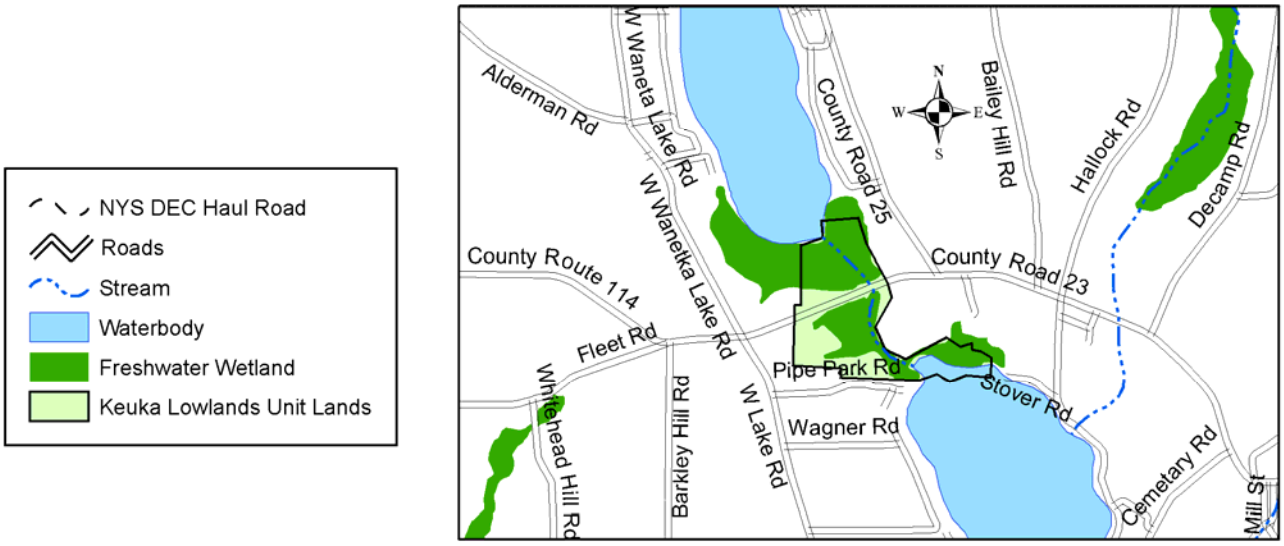
Access / Location and Streams, Ponds and Wetlands




Moss Hill State Forest
River or Waterbody
Streams
Freshwater Wetland
Interstate Highway
Roads
Birdseye Hollow State Forest
Moss Hill State Forest
Miles
0 0.25 0.5 1
N
W
E
S
Woodhouse Rd
Velie Rd
Porter Rd
Lockwood Rd
N Urbana Rd
Sonora Rd
Chrisler Rd
Telegraph Rd
Boot Jack Rd
Kettle Rd
County Route 16
Sanford Lake Rd
County Route 18
Quinn Rd
Irish Hill Rd
State Route 226
Round Lake Rd
Whitcomb Rd
Ulegg Rd
Vanderlinder Rd
Wolf Run Rd
O'Brien Rd
West Rd
86
Robie Rd
State Hwy 415
Smith Rd
Eagle Valley Rd
Oak Hill Rd
Wolf Run Rd
E Lamoka Ave
W Lamoka Ave
Joint Rd
County Rte 12
Leonard Rd
Grove St
McCoy St
Main St

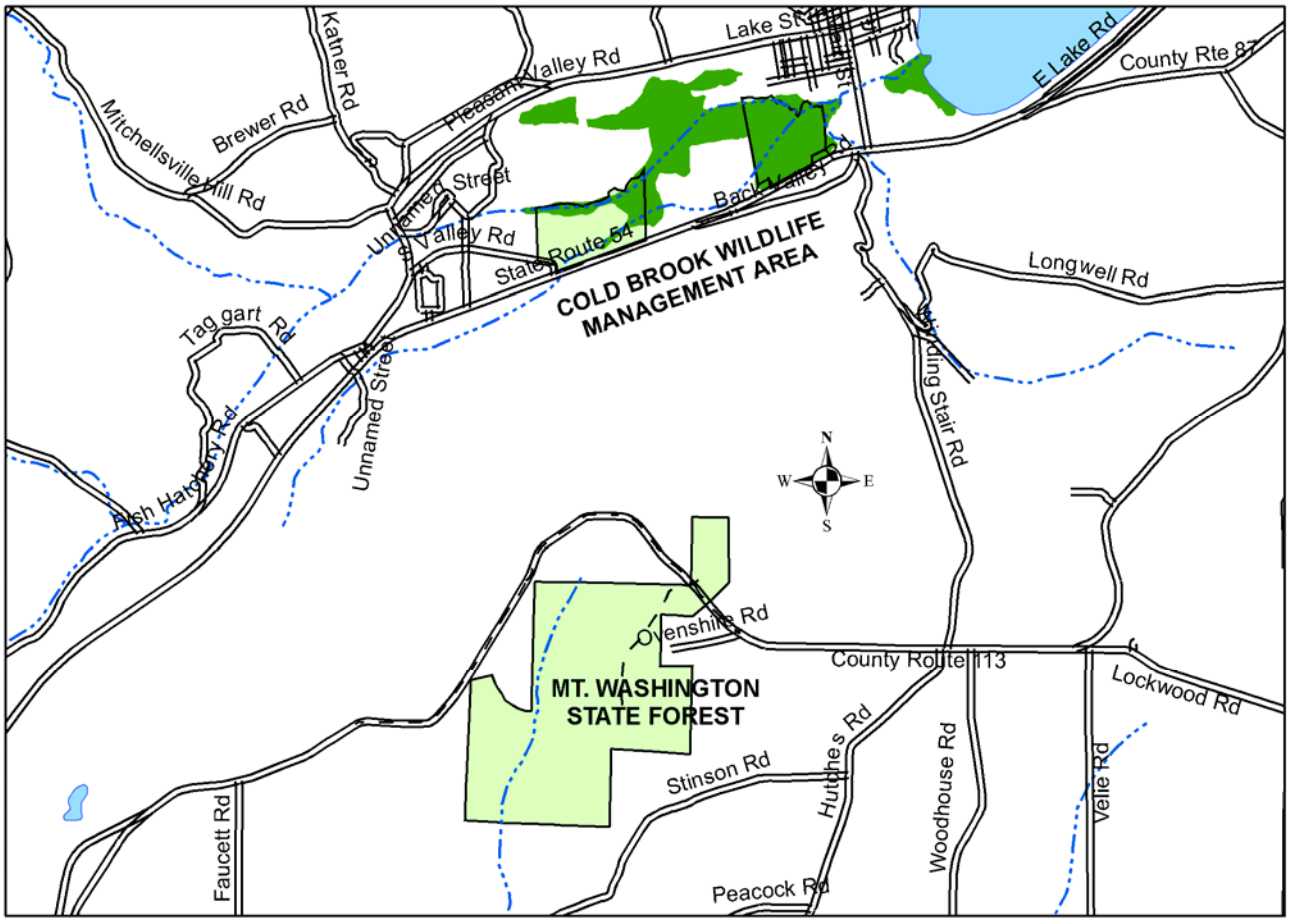
Waneta-Lamoka Wildlife Management Area

0 0.25 0.5 Miles



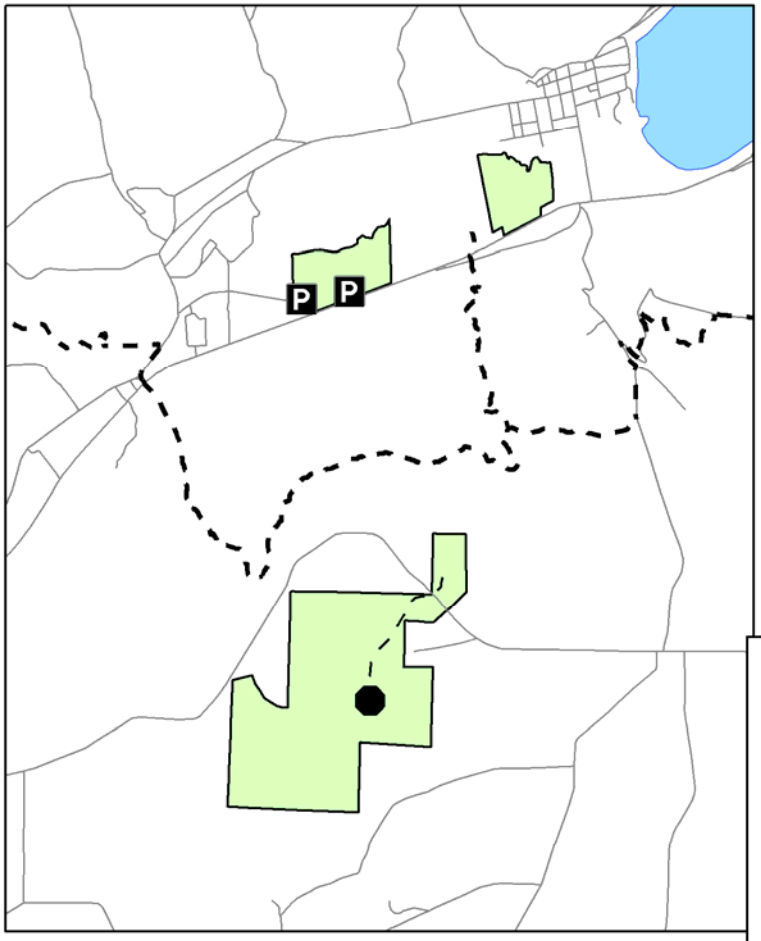
ColdBrook Wildlife Management Area and Mt. Washington State Forest

0 0.25 0.5 Miles



Recreation and Other Facilities

Cold Brook Wildlife Management Area and Mt. Washington State Forest

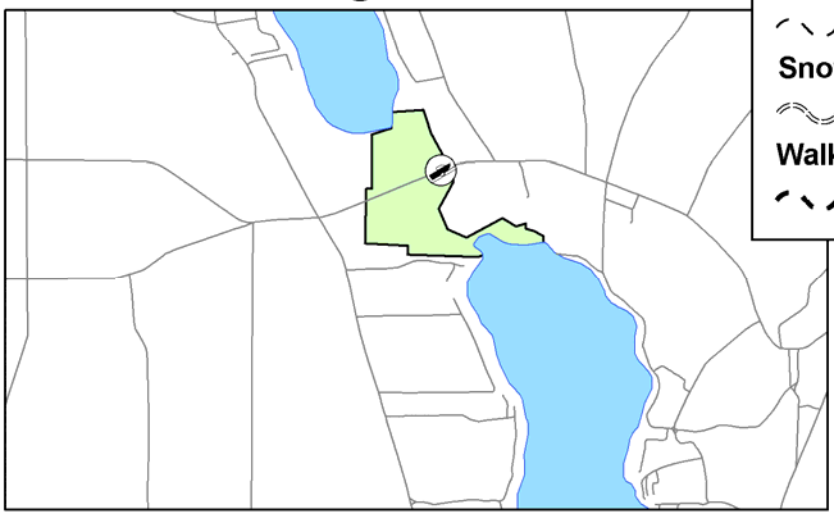


The Finger Lakes Trail is a system of foot trails across New York State. Bikes, horses and motorized vehicles are prohibited. On private land the FLT is closed in some locations for hunting in the fall and spring by private land-owners. Signs are posted at trailheads and are indicated on FLT maps. Please do not use the trail during these closed periods. Other information on trail conditions and recent closings can be found at fingerlakestrail.org or by calling 585-658-9320.

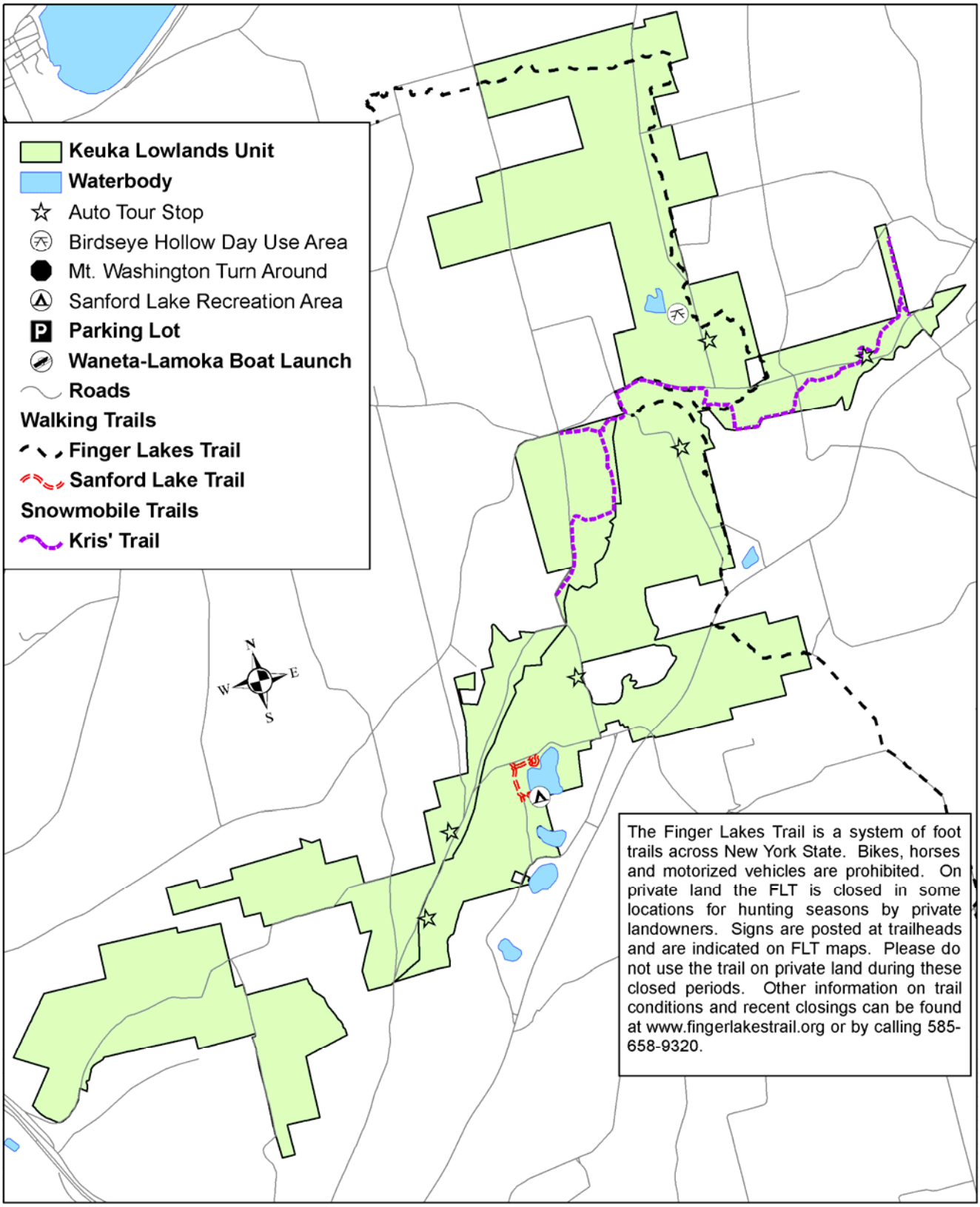
0 0.25 0.5 1 1.5 Miles

- Auto Tour Stop
- Birdsdeye Hollow Day Use Area
- Mt. Washington Turn Around
- Sanford Lake Recreation Area
- Parking Lot
- Waneta-Lamoka Boat Launch
- Keuka Lowlands Unit
- Waterbody
- Town Roads
- NYS DEC Haul Road
- Snowmobile Trail
- Kris' Trail
- Walking Trail
- Finger Lakes Trail

Waneta-Lamoka Wildlife Management Area

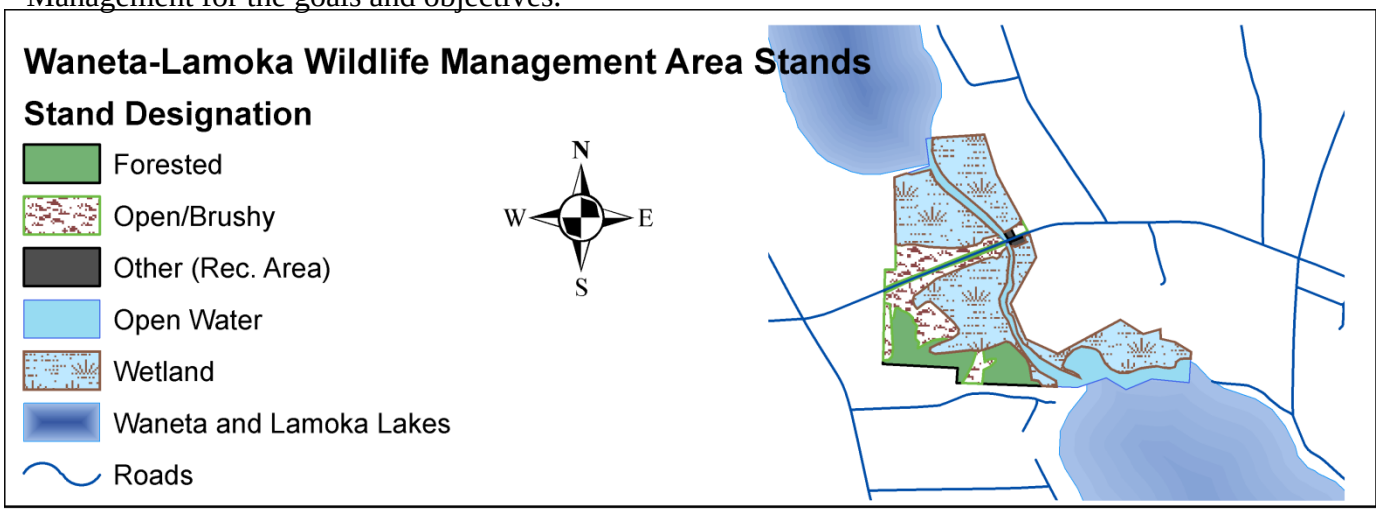


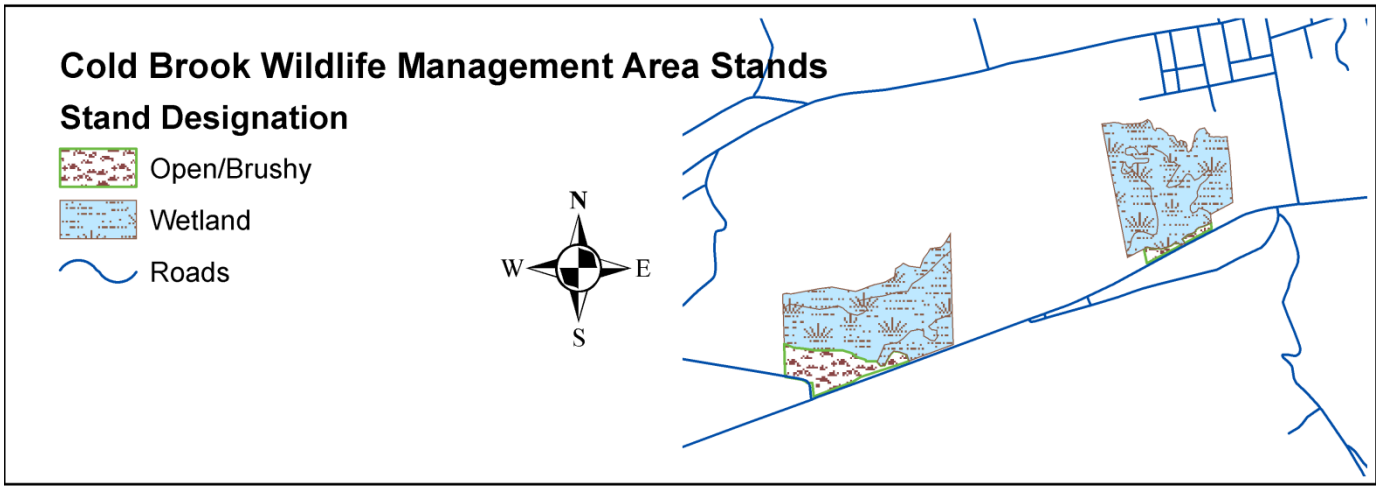
Birdseye Hollow and Moss Hill State Forests
Recreational Assets

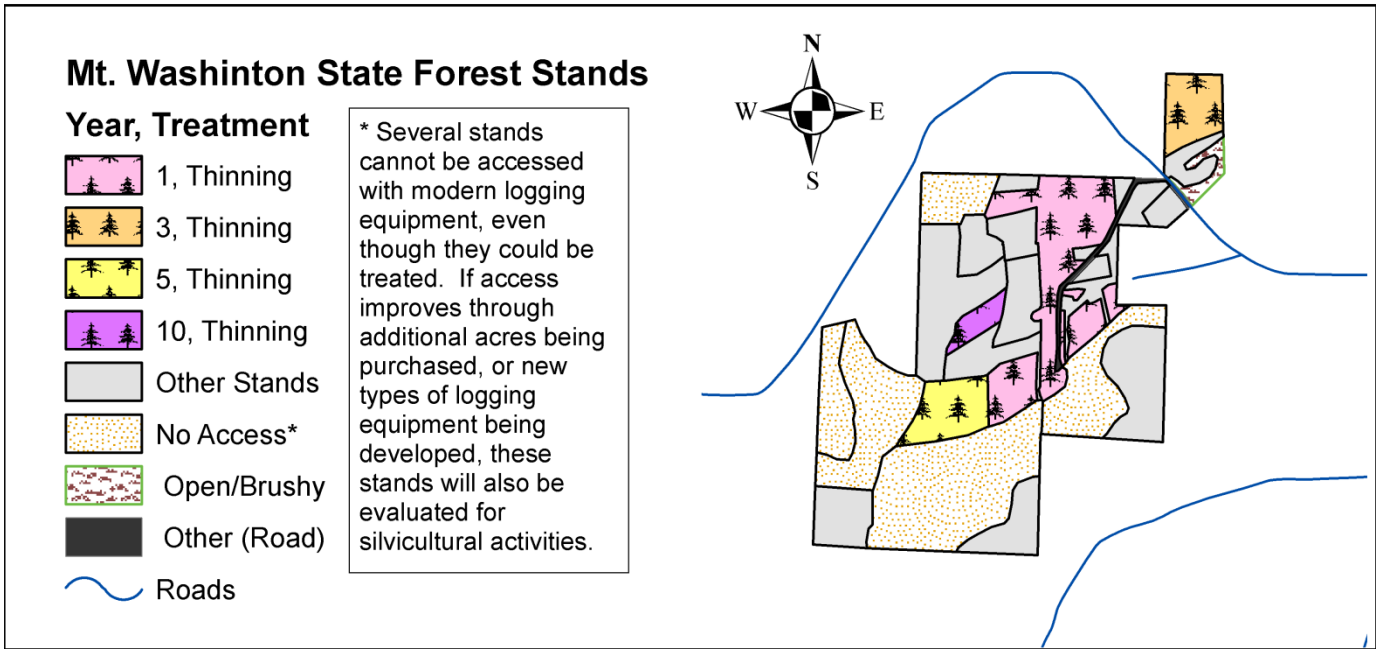


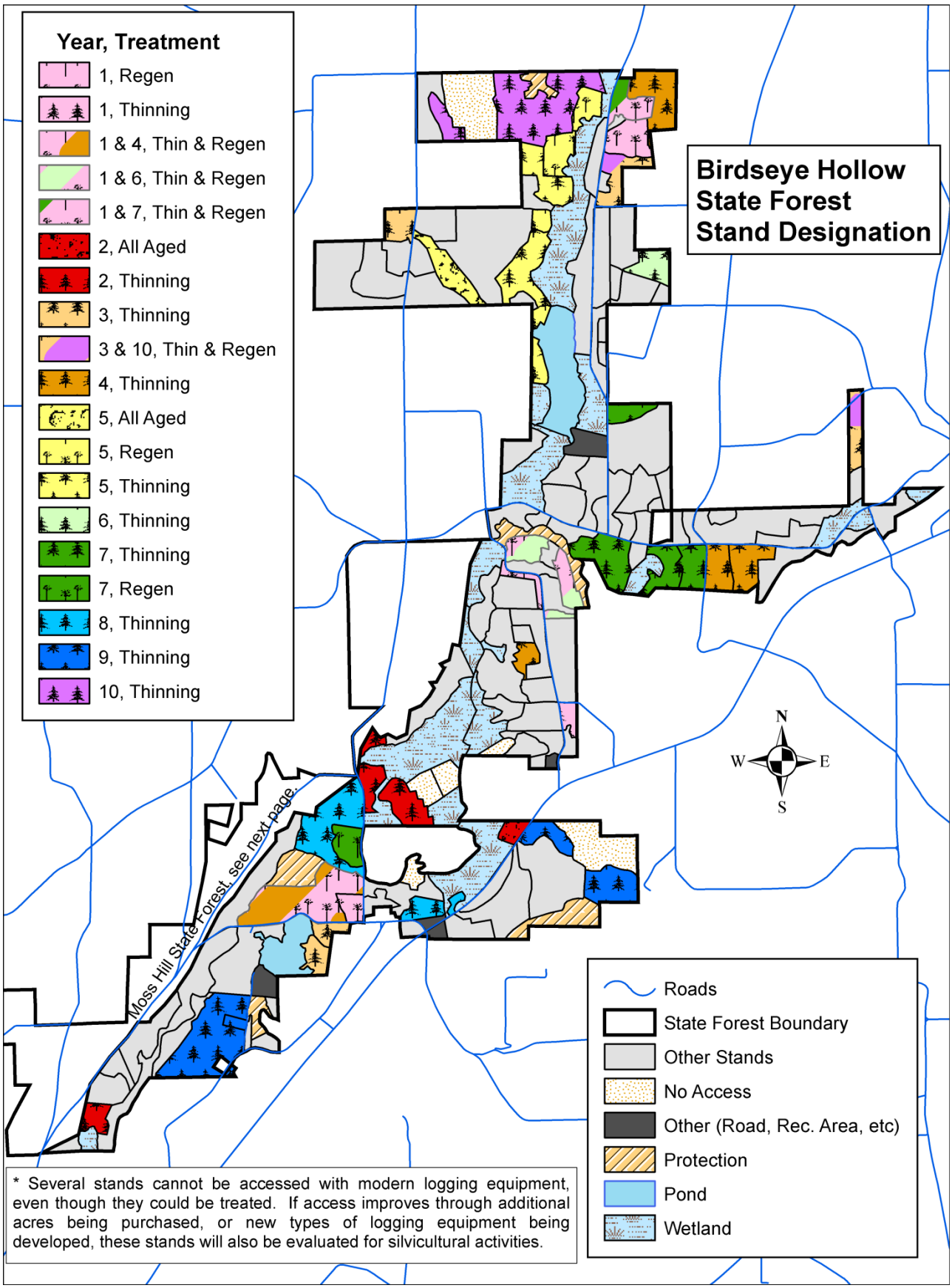
Stand Designations

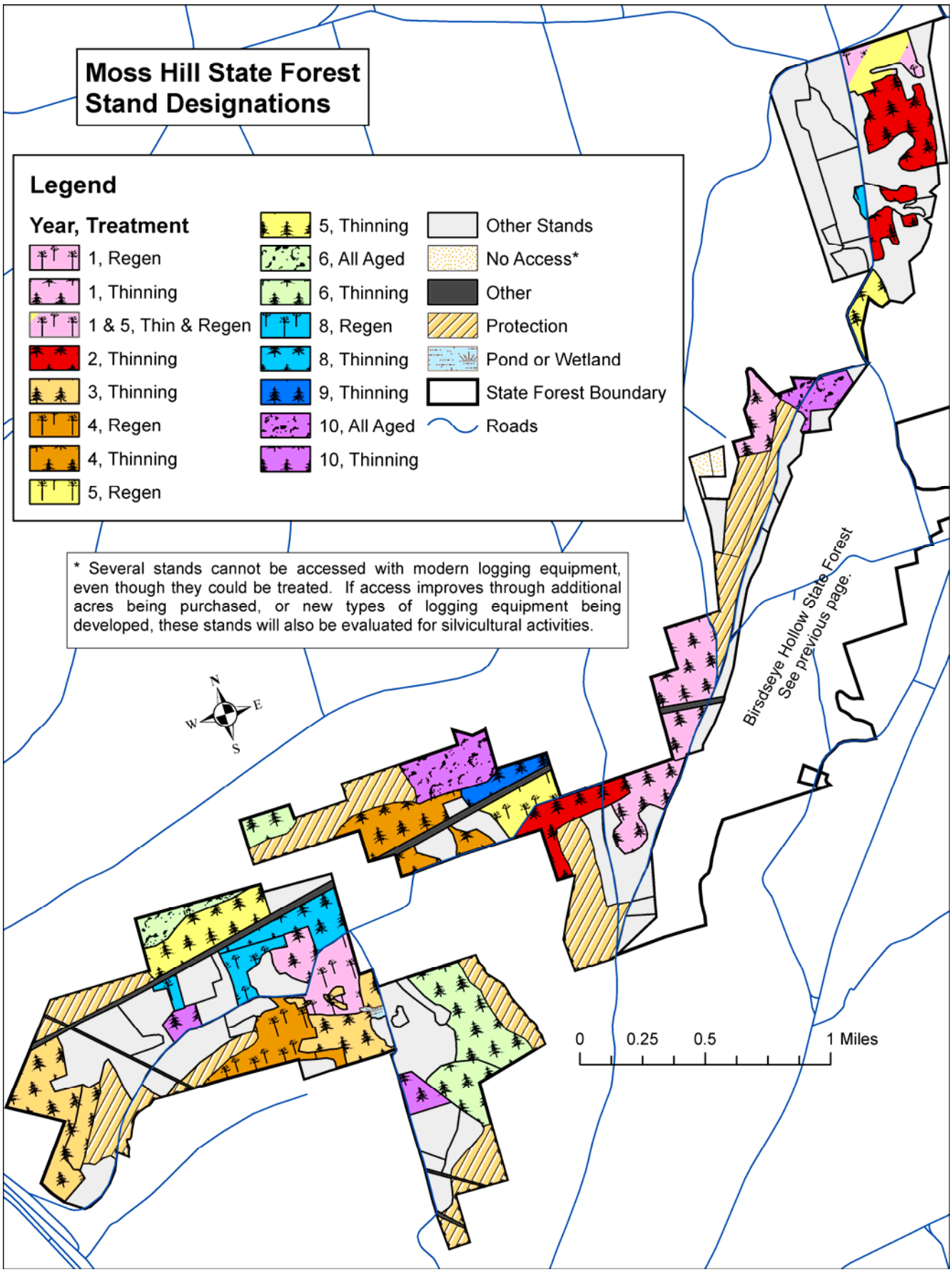
See Appendix F: Timber Management for a table of these stands, and Timber and Vegetation Management for the goals and objectives.







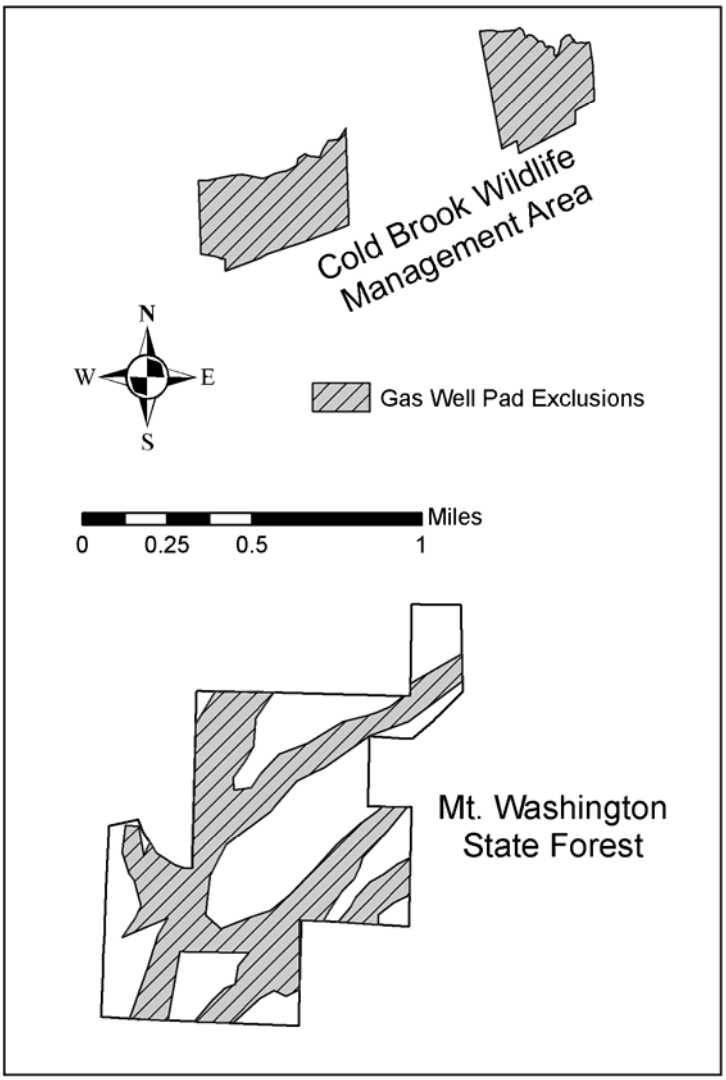

Birdseye Hollow
State Forest
Stand Designation
Year, Treatment
1, Regen
1, Thinning
1 & 4, Thin & Regen
1 & 6, Thin & Regen
1 & 7, Thin & Regen
2, All Aged
2, Thinning
3, Thinning
3 & 10, Thin & Regen
4, Thinning
5, All Aged
5, Regen
5, Thinning
6, Thinning
7, Thinning
7, Regen
8, Thinning
9, Thinning
10, Thinning
N
W
E
S
Moss Hill State Forest, see next page.
Roads
State Forest Boundary
Other Stands
No Access
Other (Road, Rec. Area, etc)
Protection
Pond
Wetland
* Several stands cannot be accessed with modern logging equipment, even though they could be treated. If access improves through additional acres being purchased, or new types of logging equipment being developed, these stands will also be evaluated for silvicultural activities.

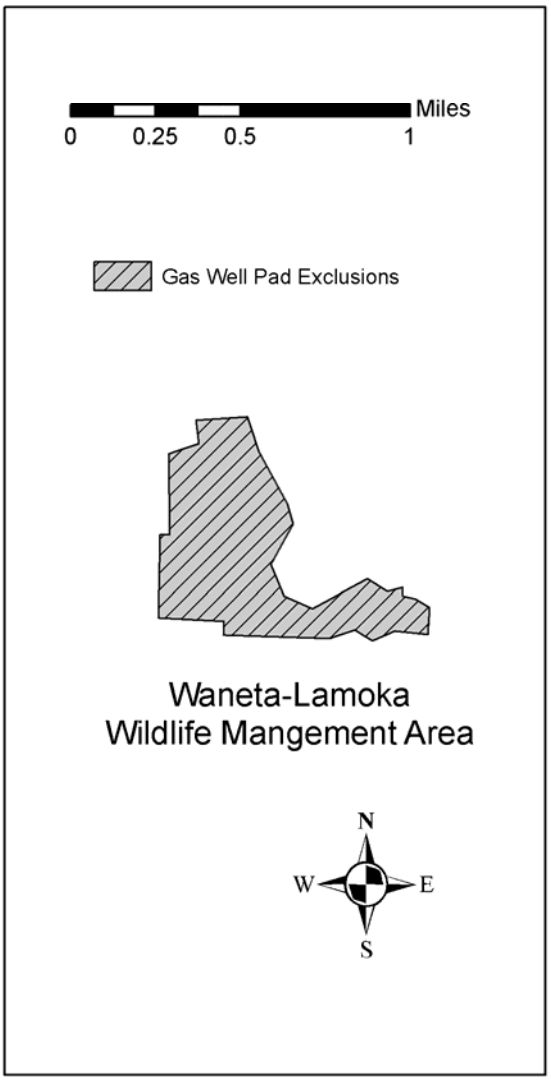

Moss Hill State Forest
Stand Designations
Legend
Year, Treatment
1, Regen
1, Thinning
1 & 5, Thin & Regen
2, Thinning
3, Thinning
4, Regen
4, Thinning
5, Regen
5, Thinning
6, All Aged
6, Thinning
8, Regen
8, Thinning
9, Thinning
10, All Aged
10, Thinning
Other Stands
No Access*
Other
Protection
Pond or Wetland
State Forest Boundary
Roads
* Several stands cannot be accessed with modern logging equipment, even though they could be treated. If access improves through additional acres being purchased, or new types of logging equipment being developed, these stands will also be evaluated for silvicultural activities.
N
E
S
W
Birdseye Hollow State Forest
See previous page.
0
0.25
0.5
1 Miles

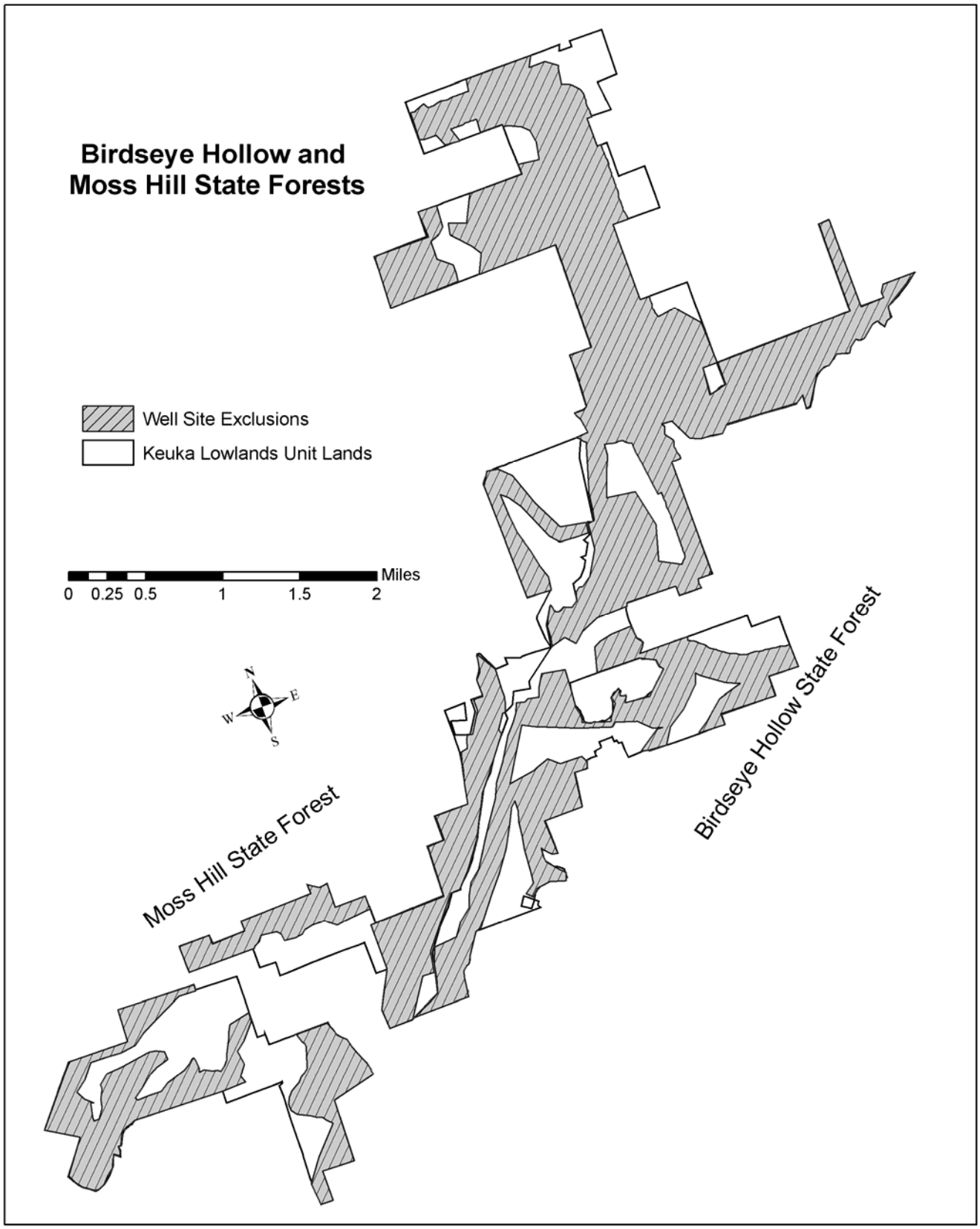
Recommended Exclusions from Surface Occupancy for Oil, Gas, and Mineral Extraction

The following maps show areas that are excluded from having well pads or mines constructed. It is NYS DEC policy to recommend excluding operations in surface areas with sensitive habitats (stream banks, wetlands, steep slopes, rare communities etc.) or intensive recreational use. All other activities are permitted on a case by case basis during the Temporary Revocable Permit (TRP) process. See Mineral Resources sections pages 12 and 65.

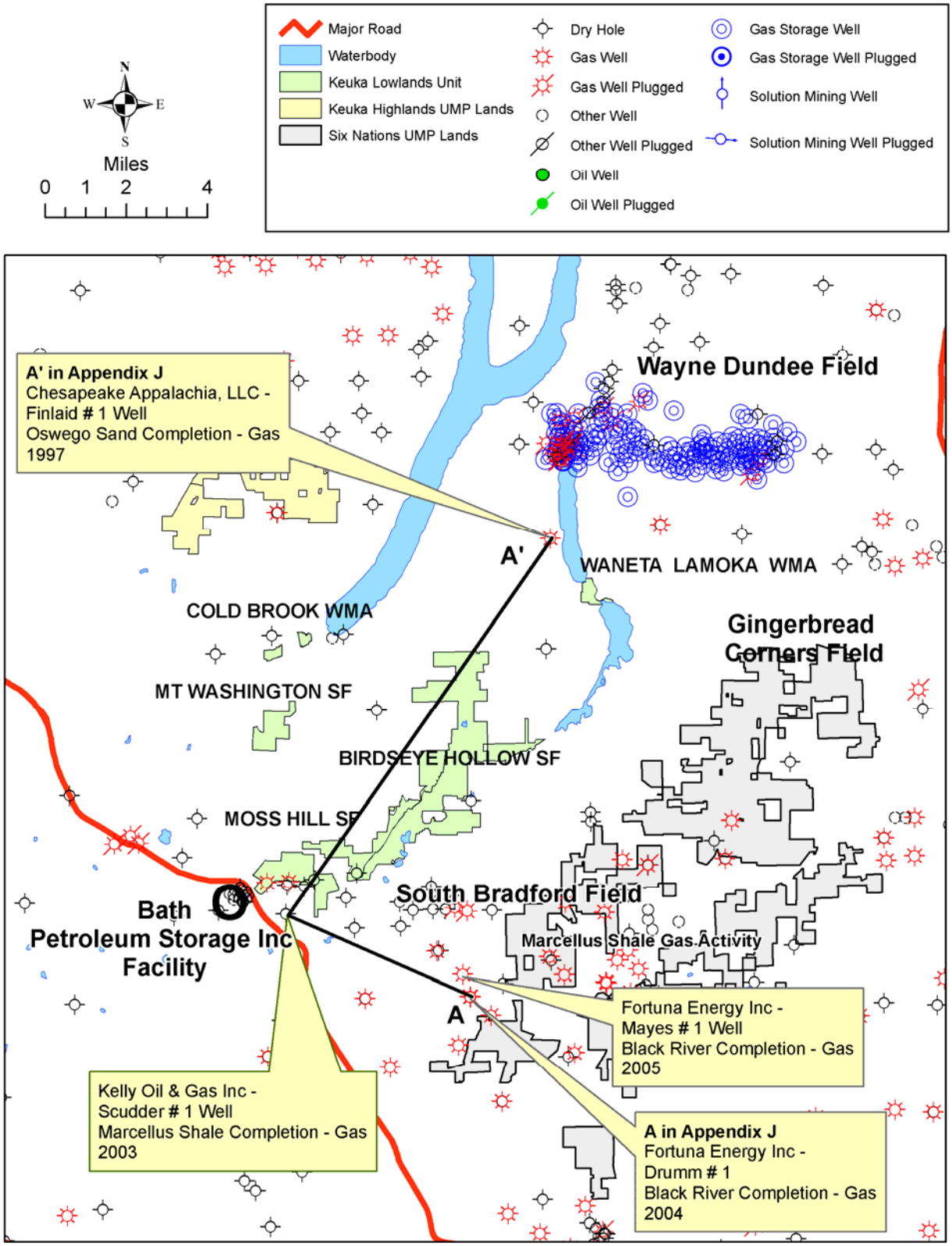
Waneta-Lamoka, Cold Brook Wildlife Management Areas and Mt. Washington State Forest



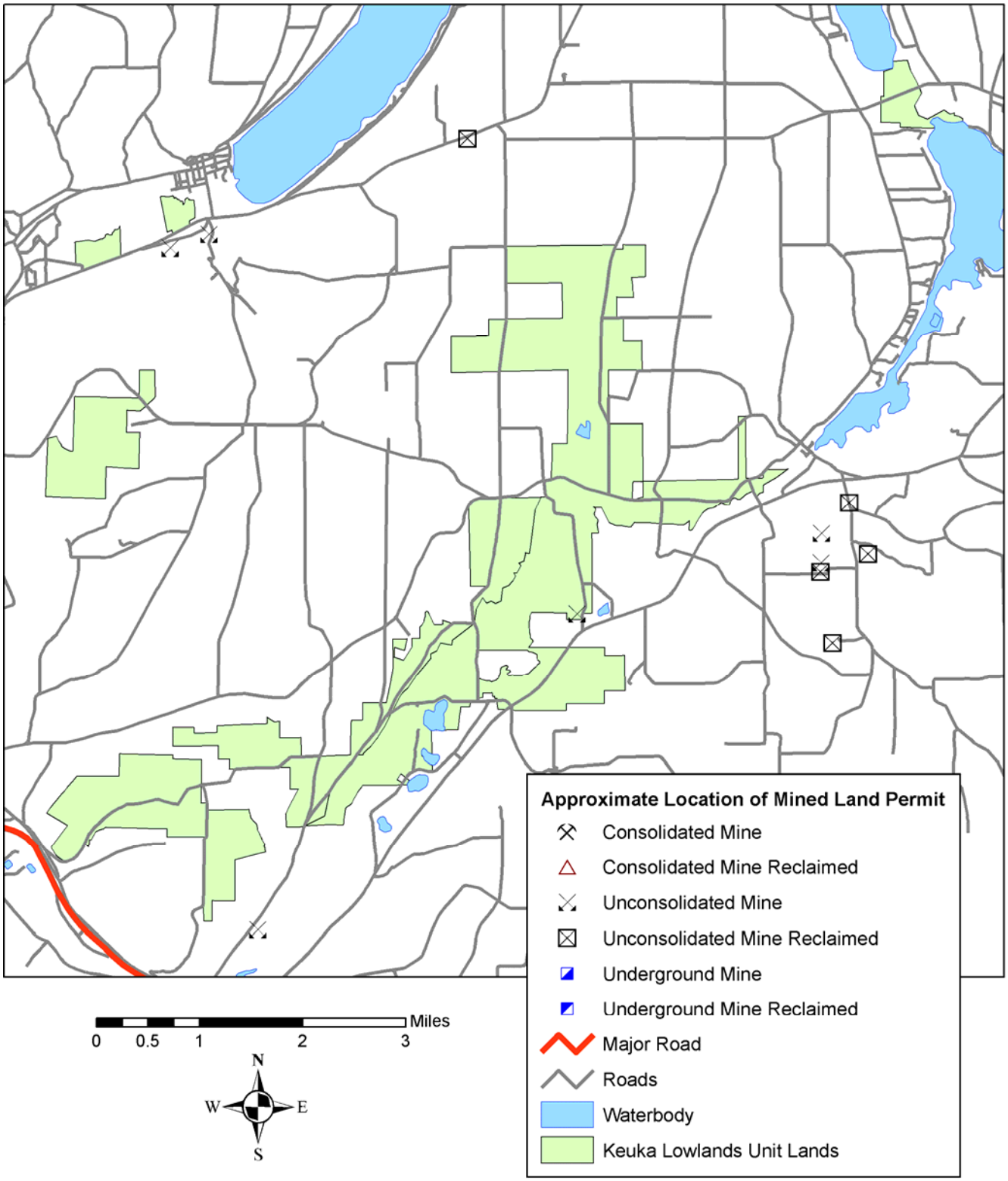



Birdseye Hollow and
Moss Hill State Forests
Well Site Exclusions
Keuka Lowlands Unit Lands
Miles
0 0.25 0.5 1 1.5 2
N
E
S
W
Moss Hill State Forest
Birdseye Hollow State Forest

Geology / Oil and Gas



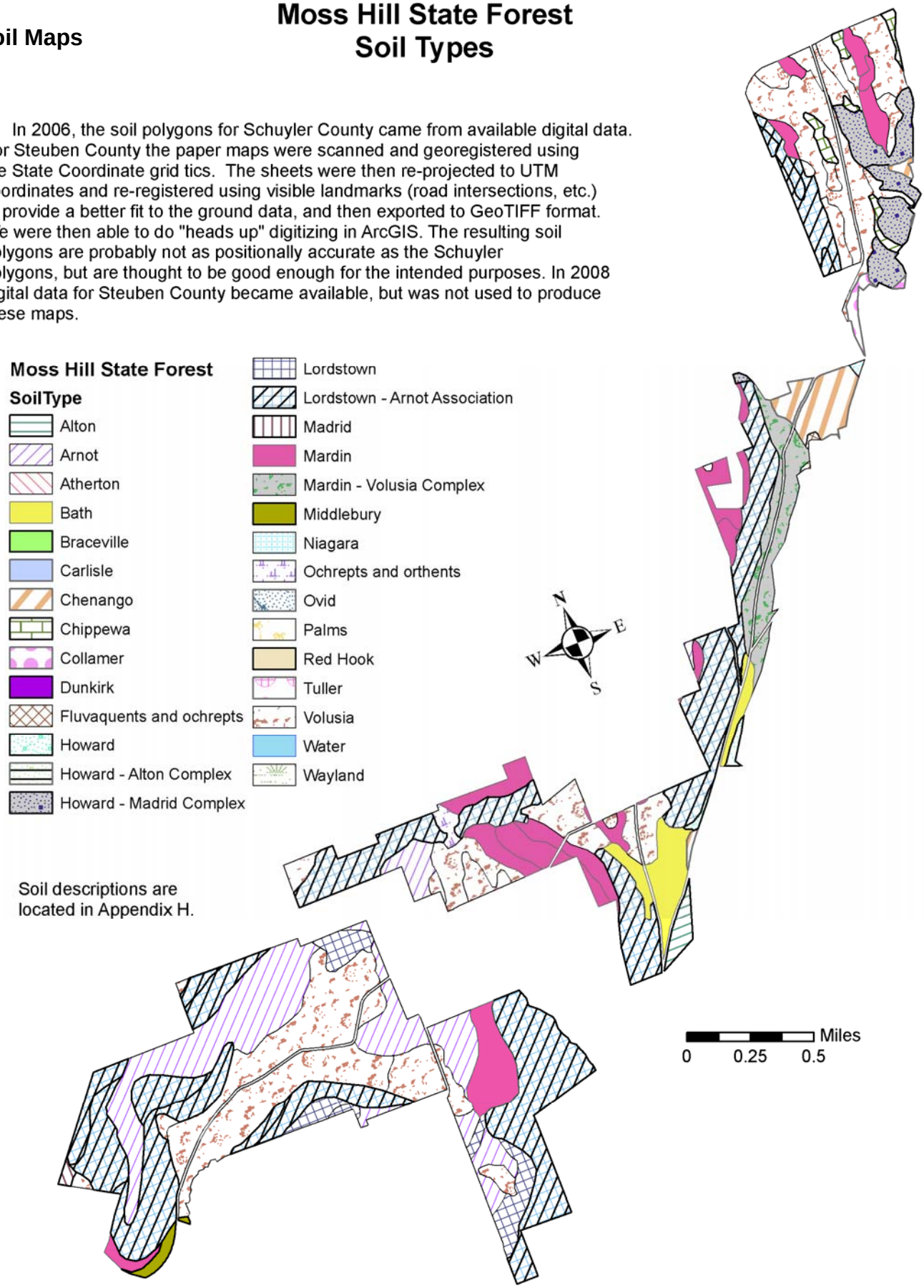
Sand, Gravel and Hard Rock Mine Locations



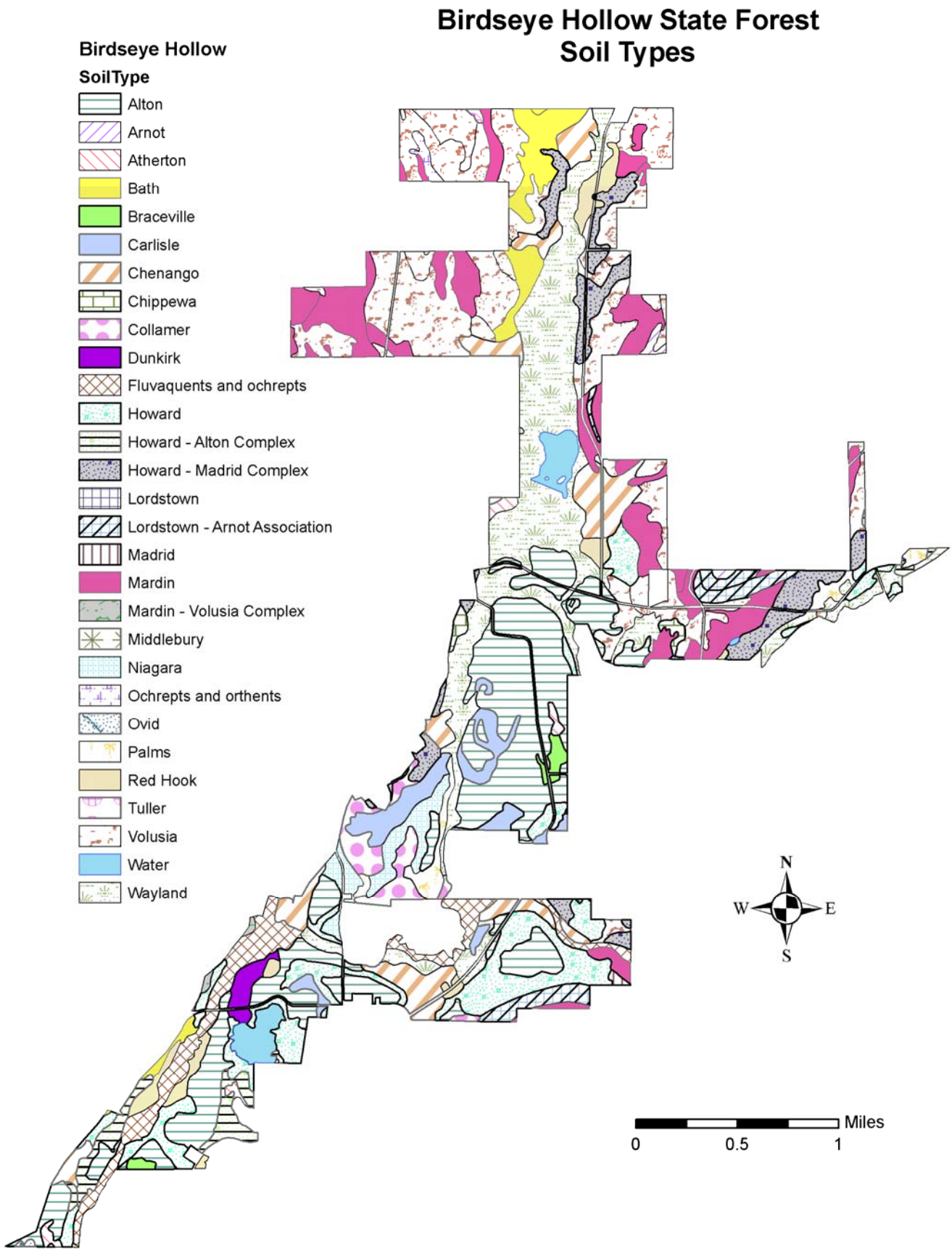
Soil Maps

Moss Hill State Forest
Soil Types

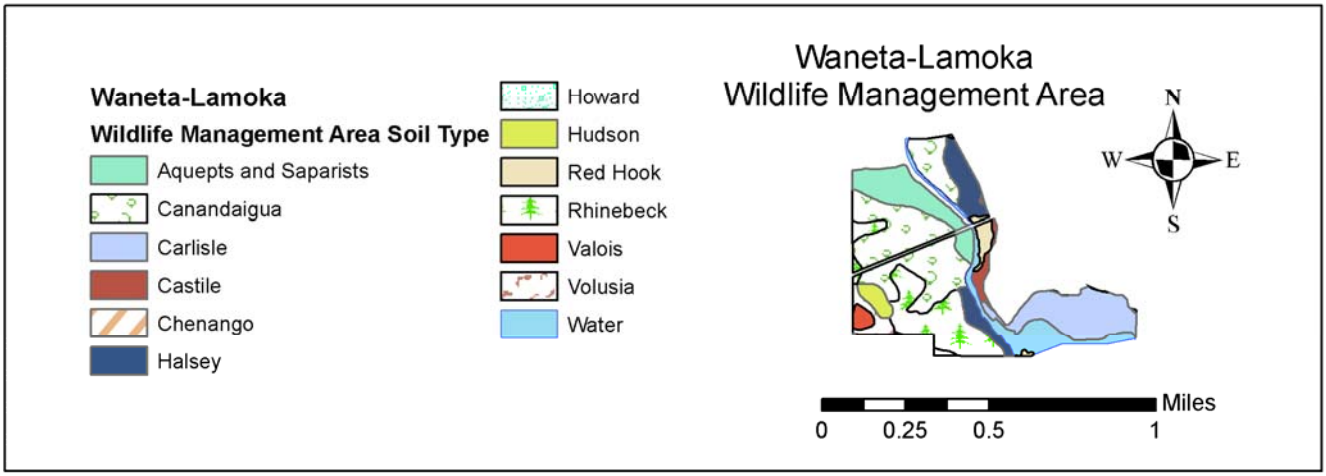
In 2006, the soil polygons for Schuyler County came from available digital data. For Steuben County the paper maps were scanned and georegistered using the State Coordinate grid tics. The sheets were then re-projected to UTM coordinates and re-registered using visible landmarks (road intersections, etc.) to provide a better fit to the ground data, and then exported to GeoTIFF format. We were then able to do "heads up" digitizing in ArcGIS. The resulting soil polygons are probably not as positionally accurate as the Schuyler polygons, but are thought to be good enough for the intended purposes. In 2008 digital data for Steuben County became available, but was not used to produce these maps.

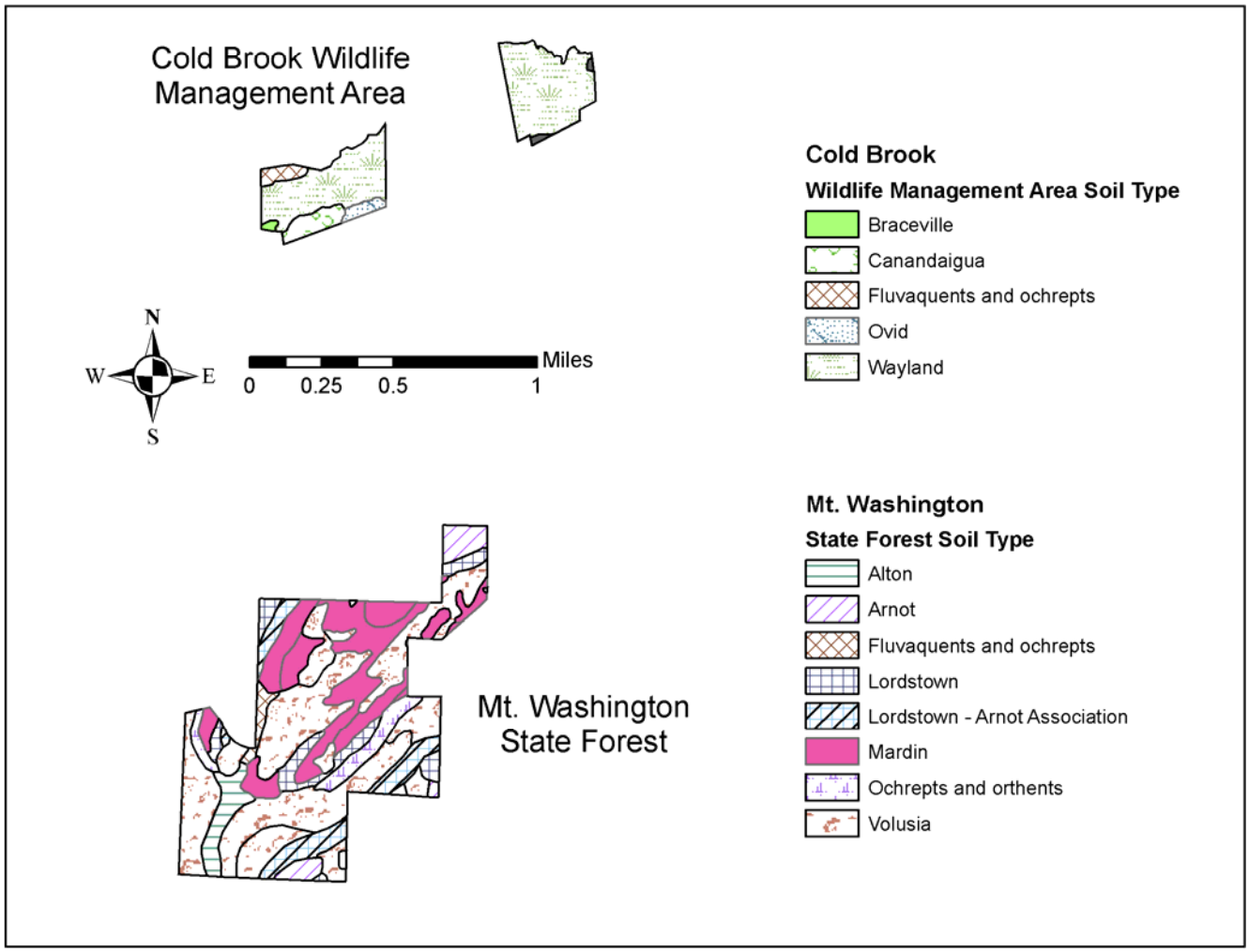


Soil descriptions are located in Appendix H.


Birdseye Hollow State Forest
Soil Types
Birdseye Hollow
SoilType
Alton
Arnot
Atherton
Bath
Braceville
Carlisle
Chenango
Chippewa
Collamer
Dunkirk
Fluvaquents and ochrepts
Howard
Howard - Alton Complex
Howard - Madrid Complex
Lordstown
Lordstown - Arnot Association
Madrid
Mardin
Mardin - Volusia Complex
Middlebury
Niagara
Ochrepts and orthents
Ovid
Palms
Red Hook
Tuller
Volusia
Water
Wayland
N
W
E
S
Miles
0
0.5
1

Waneta-Lamoka, Cold Brook Wildlife Management Areas and Mt. Washington State Forest Soil Types





For additional information contact:

NYS DEC
State Land Management
7291 Coon Rd
Bath, NY 14810

607-776-2165

www.dec.ny.gov