New York State
Department of Environmental Conservation

Division of Lands & Forests

CHENANGO TRAIL
UNIT MANAGEMENT PLAN

FINAL

Towns of Coventry, Afton, Bainbridge, Colesville, Green and Oxford,
Chenango County

November, 2009

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THE CHENANGO TRAIL UNIT MANAGEMENT PLAN

ADDRESSING THE COVENTRY, BOBELL HILL, BEAVER FLOW, BUMPS CREEK, AND OAK RIDGE STATE FORESTS

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ALEXANDER B. GRANNIS
COMMISSIONER

MEMORANDUM

TO: The Record

FROM: Alexander B. Grannis

SUBJECT: Final Chenango Trail Unit Management Plan

DATE: DEC 0 8 2009

The unit management plan for Chenango Trail 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.

Alexander B. Grannis

DEC 0 8 2009

Date

PREFACE

The Division of Lands & Forests within the New York State Department of Environmental Conservation (the Department) is responsible for the management of certain public lands in New York State including all of the State forests. These forests are grouped into planning units. A planning unit considers the State lands that share close geographic proximity and common natural resource characteristics. The written plan for a unit is called a Unit Management Plan (UMP). The Chenango Trail Unit Management Plan addresses six State forests near the Town of Coventry, in Chenango County, New York.

It is the policy of the Department to manage State lands for **multiple-use*** to serve the People of New York State. This Unit Management Plan is the first step in implementing that policy. The plan has been developed to address management activities on this Unit for the next 10 years, with a review and update due in five years. Some management recommendations may extend beyond the 10 year period. Factors such as budget constraints, wood product markets and forest health issues may necessitate deviations from the scheduled management activities. This management will ensure the sustainability, biological improvement, and protection of the Unit's ecosystems, as well as optimize the many benefits to the public that these State forests provide.

Article 9, Titles 5 and 7 of the New York State Environmental Law (ECL) authorizes the Department to provide for the management of lands acquired outside of the Adirondack and Catskill Parks. Management, as defined by these laws, includes **watershed** protection, the production of forest products, recreational uses and kindred purposes. The Draft State Forest Land Master Plan provides the overall direction and framework for meeting these legal mandates. The Chenango Trail UMP must conform to the objectives, guidelines, and policies set forth in the Master Plan.

The forests addressed in this UMP are an integral part of the larger landscape. Therefore, the effects of each proposed action will be considered from this perspective. This UMP is also intended to serve as an educational resource.

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

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GREEN CERTIFICATION OF STATE FORESTS

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.

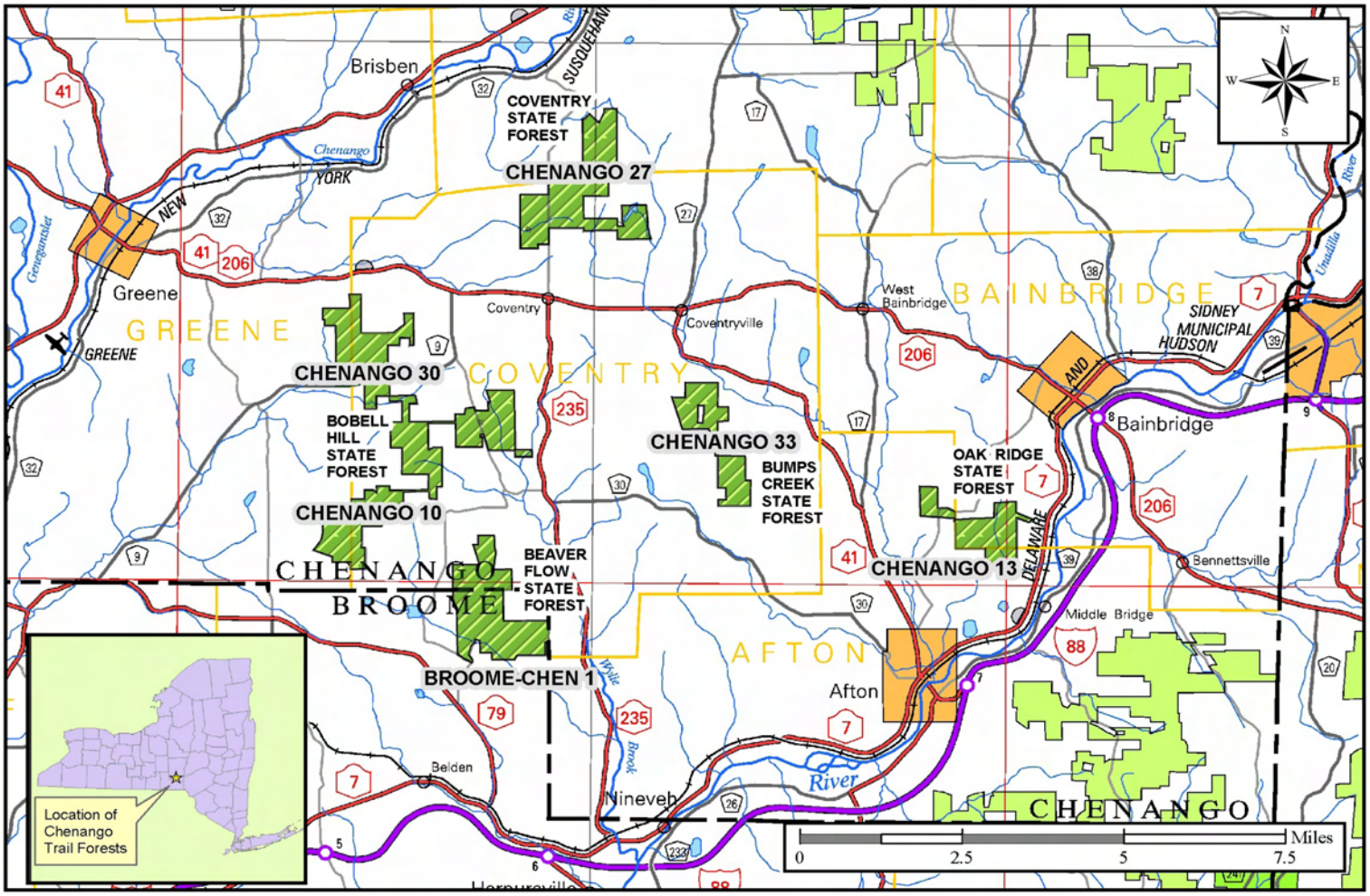
With the dual certification the wood harvested off State Forests from this point forward could now be labeled as "green certified" through chain-of-custody certificates. Green Certified labeling on wood products may assure consumers that the raw material was harvested from well-managed forests.

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.

CHENANGO TRAIL UMP LOCATION MAP



HISTORICAL BACKGROUND INFORMATION

A. STATE FOREST HISTORY

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

Early farming efforts met with limited success. As the less fertile soils proved to be unproductive, farms were abandoned and settlement was attempted elsewhere. This set the stage for vegetative succession and new forests of young **saplings** began to occupy the ground once cleared.

The State Reforestation Law of 1929 and the Hewitt Amendment (of the NYS Constitution) of 1931 set forth the legislation which authorized the Conservation Department to acquire land by gift or purchase for Reforestation areas. This legislation was used to purchase all of the lands associated with the six **State forests** addressed in this UMP, with the exception of some relatively small, recent acquisitions. 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 Environmental Conservation Law.

In 1930, Forest Districts were established and the tasks of land acquisition and reforestation were started. Shortly after his inauguration in 1933, President Franklin Roosevelt signed legislation authorizing the Civilian Conservation Corps (CCC) program. Under the supervision of Army personnel, men between the ages of 18 and 26 were employed to plant trees, construct ponds, bridges and roads, as well as other forest improvement activities. Thousands of young men were assigned to plant millions of trees on the newly acquired State forests. Most of the **plantations** of red pine and Norway Spruce on the forests of this Unit were planted in the 1930s by the CCC.

During the war years of 1941-1945, very little was accomplished on the Reforestation areas. Plans for further planting, construction, facility maintenance, and similar tasks had to be curtailed. However, through postwar funding, conservation projects once again received needed attention. The Park and Recreation Land Acquisition Act of 1960, as well as the Environmental Quality Bond Acts of 1972 and 1986, contained provisions for the acquisition of additional lands, including inholdings or parcels adjacent to existing State forests. A total of 76.29 acres were purchased with these funds for acquisitions to the State forests addressed in this plan. All of these lands were acquired for the conservation and development of natural resources, including the preservation of scenic areas, watershed protection, forestry, and recreation. In 1970, the New York State Department of Environmental Conservation (DEC) was established. This new agency joined the mission of the old Conservation Department with the missions of various State environmental quality bureaus. The DEC's Division of Lands & Forests is now responsible for the management and stewardship of the State forests.

New York State totals 30 million acres. The state-owned Forest Preserves in the Adirondack and Catskill Parks contain nearly 3 million acres, or 10 percent of the State's land area. These lands are to be forever kept by the State as wild forest lands. No timber may be cut from the Preserves.

State forests outside of the Adirondack and Catskill Preserves total nearly 700,000 acres. These lands are managed for a wide variety of purposes such as timber production, hiking, skiing, fishing, trapping and hunting. These State forests are of great economic importance to the People of New York State. These forests also contribute greatly, in many additional ways, to the health and well-being of our communities.

B. LOCAL HISTORY

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

On November 5, 1768, one of the greatest real estate transfers in history was signed at Fort Stanwix (present day Rome, NY). This treaty established a line of division between the English Territory and the Indian Territory. For the sum of $50,000, the land east and south of the treaty line was deeded from the Native Americans to King George III. One portion of the line was located near the present border between Broome and Delaware counties. The treaty line was drawn so that all of the State forests addressed in this UMP would have been located on Indian Territory (or "beyond civilization").

The first settlement in the area now known as the Town of Coventry was made in 1785 by Simon Jones. Only a handful of people settled in this area during the next few years. On November 11, 1778, the incident known as the Cherry Valley Massacre occurred. This Revolutionary War event involved an attack on the Village of Cherry Valley by hundreds of British soldiers and Seneca Indians. More than 70 American women and children villagers, as well as American soldiers, were killed in the attack. According to Oliver P. Judd, author of History of the Town of Coventry (1912), General Sullivan wished to respond to the massacre by leading his troops from Chenango Forks to Cherry Valley. The first leg of his journey would take him from Chenango Forks to Bainbridge, through the area now known as the Town of Coventry, which was described as a solid wilderness. He led his troops on a course which would later be followed by Simon Jones and the other few early settlers in Coventry. It is said that the troops cut a road along this path, going through North Fenton, lower Page Brook, following a line which is now the Wylie-Horton Road, and continuing through to Bainbridge.

This became the first road through the Town of Coventry, and it was referred to as the Chenango Trail. Much of the eastern portion of this trail no longer exists in the form of usable roads, but

the western portion is still in use as the Wylie- Horton Road. This road crosses through the Bobell Hill State Forest, and it is in close proximity to the other State Forests addressed in this management plan. Due to the Chenango Trail's importance to the early settlers and its significance in the eventual development of this area, the name was chosen as the title of this management plan. The Chenango Trail Unit Management Plan addresses six State Forests which lie wholly or partially within the Towns of Coventry, Greene, Oxford, Bainbridge, Afton, and Colesville. Since the majority of the acreage is situated within the Town of Coventry, the following information on local history will focus only on the Town of Coventry. Two books have been written which provide a thorough documentation of the people who have settled in the Town of Coventry between 1785 and 1975. The first book was written by Oliver Judd in 1912, and it covers the years 1785 - 1900. The second book was written by Catherine Bickford in 1975, and it covers the years 1900 - 1975. All of the following information has been obtained from these references.

As previously mentioned, the first settlement in the Town of Coventry was made in 1785 by Simon Jones who came from Coventry, Connecticut and located on 100 acres along the Chenango Trail. A few of the earliest settlers, dates of settlement, and their previous homelands are listed below:

Simon Jones,	1785,	Coventry, Ct.
William Goodsell,	1786,	Coventry, Ct.
Andrew Clark,	1786,	Coventry, Ct.
Benjamin Jones,	1788,	Coventry, Ct.
Burrige Mile,	1789,	New Haven, Ct.
Ozias Yale,	1792,	Cheshire, Ct.
Deacon Stork,	1792,	Cheshire, Ct.
Deacon Richards,	1792,	Cheshire, Ct.

The name of the town ultimately references Coventry, England. However, it is a more direct reference to Coventry, Connecticut, from which many of the earliest settlers had relocated. The emigration of Puritans from Connecticut extended from 1785 until about 1815.

The Town of Coventry was formed on February 7, 1806. Coventry is located on relatively high ground, occupying the ridge between the Susquehanna River Valley and the Chenango River Valley. At least some of the early settlers reportedly chose this high ground because of a fear of miasmatic disease and a reputed sickness of the lowlands and river courses.

There are many stories describing the wilderness of this area as it was first being settled. Excerpts from these descriptions include, "...the then new Coventry was covered with dense forests, inhabited by wild beasts, and the more dreaded savage foe, the red man..." and, "...the forest was dense, the trees of great size, wild game plentiful, panther, bear, wolf, deer, and small game in abundance."

The first product the farmers were able to sell was lumber. White pine was plentiful and the farmers harvested this tree for the production of dimensional lumber and pine shingles. Oliver Judd estimated that, at one time, there were 15 or more stream run sawmills operating in the town. He also stated there were four copper shops running in Coventry in the mid 1800s. The first tannery was built by John Foot in 1805 and was run until 1890.

Improvements to the transportation system in Chenango County were marked by the construction of the New York & Erie Railroad (1841 - 1851) and the operation of the Chenango Canal (1837 - 1879), among other developments.

In 1855, the Town of Coventry produced 250,270 lbs of butter, 6,510 lbs of cheese, 5,606 tons of hay, 15,795 bu of potatoes, 31,330 bu of apples, 936 bu of winter grain, 56,952 bu of spring grain, and 1,343 yards of domestic cloth. There were 534 horses, 1,771 oxen, 2,140 cows, 2,272 sheep, and 1,121 swine within the town.

In 1875 the population of the town was 1,345. Its acreage was 27,815, of which 21,326 was improved.

Many of the farms were abandoned and sold in the early 1900s. A survey of the landowners revealed that the majority of these farm lands were sold to New York State because the owners felt the State was the only available market. Reasons for selling the lands included poor locations, lack of crop productivity, and the perception that the land was no longer of any use since the timber had been removed. Several of these properties were purchased by the State in the 1930s, replanted with trees under the Civilian Conservation Corps program, and are now the local **State Reforestation Areas (RA)**.

Several of the Town roads are named after the early settlers. Some interesting history and stories are associated with these names. In the area of Seymour Hill Road and Gray Road, there previously existed Hotchkiss Hill Road and Townline Road. These roads were abandoned in 1935. However, at the corner of Gray Road and Townline Road, still stands one of the last seven "little red school houses" in New York State. Cueball Road is said to be named for Colonel Whitten. Since the Colonel was bald, he carried the nickname of Cueball. Bowbell Hill Road was part of the main freight route from Norwich to Binghamton during the 1800s. The nearby State Forest is named Bobell Hill. The forest is named for the geographic feature "Bobell Hill" as identified on the 1949 USGS topographic map. The difference in the spelling of the road name is likely an error, as no reference could be found to a family name of Bowbell in the area. Buckley Hill Road is also spelled differently than shown in the historical records. Catherine Bickford states that the road was named for Brownell Bulkeley, who came to Coventry in 1808. Tracey Road is named for John Tracey, who settled in the mid 1800s and Beebee road is named for John A. Beebee.

Present-day Coventry is a rural township located in south-central Chenango county. It comprises an area of nearly 49 square miles and has a population of 1,589 (2000 Census data). In comparison, the surrounding townships of Afton, Bainbridge, Colesvile, Greene, and Oxford have populations ranging from 2,977 to 5,729. Additionally, these townships have population

densities ranging from 64.8 to 99.1 people per square mile, while the density of Coventry is only 32.6 people per square mile.

Coventry is encircled by the four developed villages of Afton, Bainbridge, Greene, and Oxford, all of which are located within six miles of the town boundary. There are also two cities located within 15 miles of Coventry, which are Norwich and Binghamton. The nearest interstate highway to the town is Route 88 which connects Binghamton and Albany. The NYS highways of Route 12 and Route 7 are located to the northwest and southeast of the township, respectively. NYS highway Routes 41, 206 and 235 all cross through the town of Coventry. There are no working railroads within the township. The nearest railroads are the ones paralleling NYS Route 12 and NYS Route 7. There are several small airports near the town, including Greene, Sidney Municipal, and Lt. Warren Eaton Airport. The nearest full service airport is located in Broome county, north of Binghamton.

Table 1, on the following page, provides information on the land acquisitions which were made to establish the six State forests in the Chenango Trail UMP.

TABLE I. Land Acquisition History - Chenango Trail Unit

Forest	Year of State Acquisition	Acres Acquired	Names of Previous Owners
Broome/Chenango R.A. #1	1934	658.25	Beardsley, Kirk, Robinson, Bailey
	1936	259.32	Fowler, Soest
	1937	110.87	Lapham
		1028.44	Total
Chenango R.A. #10	1931	670.43	Carroll, Kruger
	1933	408.26	Watrous, Morton, Gray, Carroll, Bair
	1935	96.51	Spencer
	1936	103.20	Russell
	1937	53.30	Acly
	1938	72.33	McIntosh
	1976	12.72	Williamson
		1416.75	Total
Chenango R.A. #13	1932	533.37	Lord, Carroll, Haynes
	1962	31.82	Demeree
	1984	10.55	Linjo Builders
		575.74	Total

Forest	Year of State Acquisition	Acres Acquired	Names of Previous Owners
Chenango R.A. #27	1936	862.89	Davy, Auwarter
	1937	35.76	Armstrong
	1938	50.13	Armstrong
	1941	40.29	White
	1959	145.71	Kolis
	1976	21.20	King
	2007	12.55	Ellis
		1168.53	Total
Chenango R.A. #30	1936	552.93	Federal Land Bank, Russell, Hollenbeck
	1937	188.16	Badger, Johnson
		741.09	Total
Chenango R.A. #33	1939	527.91	Phlley, Carroll, Tompkins
		527.91	Total
		5458.46	Sum Total

INFORMATION ON THE UNIT

A. GEOGRAPHICAL AND GEOLOGICAL INFORMATION ON THE UNIT

The Chenango Trail Unit is comprised of six State forests totaling 5,458.46 acres:

Broome/Chenango Reforestation Area # 1
"Beaver Flow State Forest".....1,028.44 acres.

Chenango Reforestation Area # 10
"Bobell Hill State Forest".....1416.75 acres.

Chenango Reforestation Area # 13
"Oak Ridge State Forest".....575.74 acres.

Chenango Reforestation Area # 27
"Coventry State Forest".....1168.53 acres.

Chenango Reforestation Area # 30
"Bobell Hill State Forest".....741.09 acres.

Chenango Reforestation Area # 33
"Bumps Creek State Forest".....527.91 acres.

Approximately 3,322.41 acres of these forests are located in the Town of Coventry. The remaining acreage is divided between Afton (73.35), Bainbridge (502.39), Colesville (723.32), Greene (520.58), and Oxford (316.41). The following geographic information pertains mostly to the Town of Coventry and those portions of the surrounding towns where the State forests are located.

Elevations within the Town of Coventry range from 1100 feet to 1750 feet above sea level. The average elevation in the Town of Coventry is higher than that in the surrounding towns of Afton, Bainbridge, Colesville, Greene, and Oxford. Although the mean maximum elevation in these towns is similar to that of Coventry (1742 feet), the average minimum elevation , at 942 feet, is nearly 200 feet below the lowest elevation in Coventry. So the Town of Coventry, and the State forest lands located within its borders, are largely situated upon a ridge, lying between the two river valleys of the Susquehanna and Chenango. The six State forests have elevation ranges as follows:

State forest	low*	high
Br/Chen-1	1250	1700
Chen-10	1280	1750
Chen-13	1100	1600
Chen-27	1310	1720
Chen-30	1300	1580
Chen-33	1280	1620

* elevation in feet

All of these State forests are located within the Chesapeake Bay Watershed. The surface waters on these properties all drain into a system of tributaries of either the Susquehanna River or the Chenango River. The Susquehanna River is the primary watercourse feeding into the Chesapeake Bay. The most significant streams within the Town of Coventry are Wylie Brook, Bumps Creek, Page Brook, Wheeler Brook, and Wilkins Brook. Of these, only small sections of Wylie Book and Page Brook cross through any of the State forests of the Unit. However, the Unit contains numerous tributaries to all of these streams.

The climate of Chenango County was sometimes described as debilitating by the early settlers; however, over the course of time, it has proven to be quite favorable. The National Climatic Data Center (NCDC) collects temperature & precipitation data from the Bainbridge station. Through the 30 year period from 1961 - 1990, this data shows an average annual rainfall of 39.9 inches which is evenly distributed throughout the year. The level ranges from a low of 2.4"/month (January & February) to a high of 4.1"/month in June. Temperatures fluctuate from an average of 20.1°F in January to an average of 68.5°F in July. The lowest average monthly temperature is approximately 10.0°F (January & February) while the highest average monthly temperature is 81.7°F in July. The average annual snowfall in Chenango County is 70 inches.

The winter of 2002-2003 was an exceptionally severe winter. Snow and ice storms caused a significant amount of damage to the trees of the Chenango Trail Unit. Scotch pine and red pine were the most impacted **species**, with many of the stems breaking under the weight of the snow & ice in their **crowns**. Since the damage from this winter will long be evident on these forests and it may likely facilitate secondary damage from insects or diseases, it is worth detailing the storms. The first

storm occurred on November 16th resulting in up to one inch of ice. December 5th brought 6-10" of snow and another snow/ice storm occurred on December 11th & 12th. The Bainbridge weather station recorded a wet/heavy snowfall of 21.5" on Christmas Day. Significant ice storms hit the area on the first two days of January and another 12"+ of snow fell on January 3rd & 4th. More heavy snow fell on President's Day and again in early March. The final storm of the season was another ice storm on April 5th which resulted in a state of emergency for Chenango and many of the surrounding counties. The total snowfall recorded at the Bainbridge weather station was 125 inches. Winters like this might be the reason for early settlers describing the climate as debilitating.

Chenango County receives 60% of available sunshine in the summer and 40% in the winter. The prevailing winds are out of the west-southwest.

The Chenango Trail Unit is located in the glaciated Appalachin Plateau. The underlying bedrock in Chenango County is of the Middle & Upper Devonian Periods. More specifically, the bedrock under these forests is shale and siltstone of the Upper Sonyea and West Falls Groups. The last retreat of the glacial ice in Chenango County was about 12,000 years ago. The Ice Age is responsible for the mixture of unconsolidated mineral deposits throughout the county. This variety of mineralogy in the parent material has yielded a variety of soil formations. Glacial till is the most common parent material found on the hilltops and ridges of the county. The soils which have formed in the glacial till within the Coventry area are primarily of the Volusia - Mardin - Lordstown Group. The most common soils on the Chenango Trail forests are channery silt loams of either the Lordstown, Mardin, Volusia, or Lordstown & Oquaga series. Lordstown and Mardin soils are moderately well drained while Volusia soils are poorly drained. Many of these soils have stony surfaces. The depth to bedrock may range from 20" to 60". These soils are considered to have a moderate to high potential for tree growth. The **site index** will vary according to tree species, soil type, aspect, and other factors, but these soils are capable of offering a site index of 70 or better. The site index is the average height (in feet) of the dominant and codominant trees of a given species at 50 years of age. **Northern hardwood forests** with a site index of 70 can be expected to produce more than 500 board feet per acre per year.

More detailed information on the soils in this area can be obtained from the SOIL SURVEY of CHENANGO COUNTY, NEW YORK (USDA, 1985).

B. HISTORY OF THE FOREST COVER

The forests of the Chenango Trail Unit today contain tree species of both native and non-native origin. The **native tree species** include black cherry, white ash, sugar maple, red maple, basswood, red oak, American beech, black birch, yellow birch, eastern hemlock eastern white pine, aspen, shagbark hickory, pignut hickory, bitternut hickory, and a few others. Most of the non-native species were introduced to the landscape in the 1930s, after New York State had purchased many unproductive farmlands and the Civilian Conservation Corps was directed to reforest these lands. Large plantations of red pine, Norway spruce, white spruce, Scotch pine, and Japanese larch were established in the open fields of these newly created State Reforestation Areas. This blend of natural forest **cover types** and plantation forest cover types is one of the defining characteristics of the

present-day Chenango Trail forests. The historic forests of this area had significantly different compositions of tree species. Prior to the 20th century, there were no **conifer** plantations. The entire forest was composed of native species which varied in types according to the specific site conditions. The density, expanse and structure of the forests was often described by early settlers as daunting, formidable, and overwhelming. Laura Ingalls Wilder once wrote of her impression with the lands of the early settlement period, "As far as a man could go to the north in a day, or a week, or a whole month, there was nothing but woods."

A major component of these forests was the American chestnut tree. In fact, in the 19th century, this species was believed to represent half of the value of the eastern hardwood forests. The American chestnut tree grew to a massive size, often more than 6 feet in diameter and 100 feet in height. It was the dominant species in the forest among oaks, hickories, maples and birches. However, the chestnut blight (Endothia parasitica) was introduced to the region in 1904 and it resulted in the mortality of nearly every mature chestnut tree by 1950. Today, a few American chestnut trees can be found in the Coventry area, but they are quite small, rarely achieving a size of more than 8 inches in diameter. The amount of forested land progressively declined throughout the 1800s. The demand for timber, wood by-products, and cleared agricultural land, all contributed to the reduction and **fragmentation** of the forests. By the late 1800s, only 25% of the land in New York State was forested and this figure was likely lower in Coventry and other agricultural sections of the state.

The forests presently found in the eastern United States are generally defined as eastern **deciduous** forests. This major **forest type** is comprised of numerous tree species, most of them **hardwoods**. In order to further define the forest cover types found in specific regions of the eastern United States, the eastern deciduous forest type can be divided into several subcategories. The three subcategories that are found in New York State are the oak-hickory type, the spruce-fir type and the maple-birch-beech type. The forests of the Chenango Trail Unit are located in a transition zone between the maple-birch-beech type and the oak-hickory type. This is evidenced by the differences in forest cover types between some of these six State forests. The Oak Ridge State Forest has an 80 % oak-hickory cover type while the majority of the hardwood cover type on the Coventry State Forest is the maple-birch-beech type. Although these two cover types are more refined than the parent category of eastern deciduous forest, they are still rather broad classifications of the forest cover types found on the Chenango Trail forests. Subcategories of the oak-hickory type and the maple-birch-beech type include the northern hardwood type, the oak-pine type, the northern hardwood-hemlock type and several types of plantation species, such as red pine and Norway spruce.

The term "forest cover type" refers to the type of tree or vegetation that dominates the site. However, many more species of plants and animals are found within the type. The interrelationship of these species is known as an ecological **community**. Three of the most prevalent ecological communities found on the forests of the Chenango Trail Unit are the Appalachian Oak-Hickory Forest, the Beech-Maple Mesic Forest and the Hemlock-Northern Hardwood Forest. The following descriptions (edited) of these communities were developed by the New York State Natural Heritage Program.

1. <u>Appalachian Oak-Hickory Forest</u>: a hardwood forest that occurs on well-drained sites, usually on ridge tops, upper slopes, or south and west facing slopes. The soils are usually loams or sandy loams. The dominant trees include one or more of the following oaks: red oak, white oak and black oak. Mixed with the oaks, usually at lower densities, are one or more of the following hickories: pignut, shagbark and sweet pignut. Common associates are white ash, red maple and Eastern hop hornbeam. There is typically a sub-canopy stratum of small trees and tall shrubs including flowering dogwood, witch hazel, shadbush and choke cherry. Common low shrubs include maple-leaf viburnum, blueberries, red raspberry, gray dogwood and beaked hazelnut. The shrub layer and ground layer may be diverse. Characteristic herbs include wild sarsaparilla, false Solomon's seal, Pennsylvania sedge, tick-trefoil, black cohosh, rattlesnake root, white goldenrod and hepatica. Characteristic animals include red-bellied woodpecker, whip-poor-will and wild turkey.

2. <u>Beech-Maple Mesic Forest</u>: a hardwood forest with sugar maple and beech co-dominant. These forests occur on moist, well-drained, usually acidic soils. The term "mesic" refers to the balanced moisture level of the habitat. The soils are not typically saturated or dry. Common associates are basswood, red maple, white ash, yellow birch, and Eastern hop hornbeam. There are relatively few shrubs and herbs. Characteristic small trees or tall shrubs are American hornbeam, striped maple, witch hazel, hobblebush and alternate-leaf dogwood. Characteristic ground layer species are blue cohosh, christmas fern, jack-in-the-pulpit, white banebery, wild leek, wild ginger, false Solomon's seal and bloodroot. There are many spring ephemerals which bloom before the canopy trees leaf out. Typically, there is also an abundance of tree **seedlings**, especially of sugar maple. Beech and sugar maple saplings are often the most abundant "shrubs" and small trees. Hemlock may be present at a low density. Characteristic birds include the American redstart, red-eyed vireo, ovenbird, black-throated blue warbler, least flycatcher, Acadian flycatcher and red-bellied woodpecker.

3. <u>Hemlock-Northern Hardwood Forest</u>: a mixed forest that typically occurs on middle to lower slopes of ravines, on cool, mid-elevation slopes, and on moist, well-drained sites at the margins of swamps. In any one **stand**, hemlock is codominant with any one to three of the following: beech, sugar maple, red maple, black cherry, white pine, yellow birch, black birch, red oak and basswood. The relative cover of hemlock is quite variable, ranging from nearly pure stands in some steep ravines to as little as 20% of the canopy cover. The shrub layer may be sparse. Characteristic shrubs are hobblebush, maple-leaf viburnum and raspberries. Canopy cover can be quite dense, resulting in low light intensities on the forest floor and hence a relatively sparse ground layer. Characteristic ground layer plants are Indian cucumber-root, Canada mayflower, shining clubmoss, common wood fern, mountain wood fern, christmas fern, star flower, bellwort, common wood-sorrel, partridge berry, foamflower, round-leaf violet, twisted stalk and purple trillium. In forests that have beech as a codominant, beech-drops is a common herb. Characteristic birds include wild turkey, pileated woodpecker, golden-crowned kinglet, black-throated green warbler and Acadian flycatcher.

There are about 30 different tree species that are commonly found on the forests of the Chenango Trail Unit. Although additional species, such as American chestnut, American elm and butternut may be found on the Unit, their occurrence is quite rare. The most common tree species that occur on the forests are listed below.

Native Hardwood Species
black cherry
white ash
American beech
basswood
red maple
sugar maple
aspen (big tooth & quaking)
Northern red oak
black oak
white oak
chestnut oak
yellow birch
black birch
shagbark hickory
pignut hickory
bitternut hickory
black locust
American hornbeam (blue beech)
Eastern hop hornbeam (ironwood)
striped maple
shadbush (juneberry)
apple (various species)

Native Softwood Species
Eastern white pine
Eastern hemlock

Plantation Softwood Species
Norway spruce
Japanese larch
Scotch pine
red pine

C. MAJOR LAND CLASSIFICATIONS WITHIN THE UNIT

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

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

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

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

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

Ponds - these are bodies of water with an average depth greater than 12 inches.

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

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

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

TABLE II. Land Classifications Within the Unit

The following table identifies eight different categories of land found within the Chenango Trail Unit. Some of these categories are quite broad, but they are useful in developing forest management goals from a landscape perspective.

TABLE II				1"-5" Tree Diameter (DBH)		6"-11" DBH		12"-18" DBH		19" + DBH	
CATEGORY	STANDS	ACRES	% OF UNIT	STANDS	ACRES	STANDS	ACRES	STANDS	ACRES	STANDS	ACRES
NATIVE HARDWOODS	127	1372	25	23	175	3	16	76	746	25	435
NATIVE CONIFERS & HARDWOODS	120	1621	30	0	0	5	31	80	1017	35	573
CONIFER PLANTATIONS	128	1986	36	3	30	5	17	100	1637	20	302
MIXED NATIVE & NON-NATIVE	20	299	5	0	0	1	5	19	294	0	0
PONDS	5	32	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
BRUSH FIELDS	13	51	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
WETLANDS	11	46	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
ROADS	23	51	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
TOTAL	**447**	**5458**	**100**	**26**	**205**	**14**	**69**	**275**	**3694**	**80**	**1310**

D. WETLANDS AND WATER RESOURCES

Wetlands often contain various amounts of vegetation ranging from submergent aquatic plants to full forest tree cover. The saturated ground on these sites supports a unique array of vegetation and provides critical habitat for several species of wildlife. It is the public policy of New York State, as set forth in the Freshwater Wetlands Act, to preserve, protect and conserve freshwater wetlands and the benefits derived from them. This policy further serves to regulate the use and development of wetlands in a manner consistent with the general welfare and beneficial economic, social and agricultural development of the State. The preservation, protection and conservation of freshwater wetlands is of public concern because of the benefits they provide. These benefits include flood and storm water control, wildlife habitat, water quality, recreation, open space, as well as other benefits.

In New York State, all freshwater wetlands are protected pursuant to the Freshwater Wetlands Act, if they are at least 12.4 acres in size and meet the criteria specified in section 24-0107 of the Act. Certain wetlands that are less than 12.4 acres in size may also be protected by the act. Title 6, Part 664, of the New York State Environmental Conservation Rules & Regulations establishes standards and procedures for the classification system of freshwater wetlands. This system creates four separate classes for ranking wetlands according to their ability to perform wetland functions and provide wetland benefits. Class I wetlands have the highest rank, and the ranking descends through classes II, III and IV. The only forest in the Chenango Trail Unit which contains any wetlands classified under the NYS Freshwater Wetlands Act is the Coventry State Forest. This forest contains a 26.9 acre class II wetland in its entirety (WB-8), and it contains portions of two class III wetlands (WB-5 & WB-7). Wetland WB-8 is rated as Class II wetland because of the following characteristics: it is adjacent or contiguous to a stream classified C(t) or higher under article 15 of the ECL; and it is located within a publicly owned recreation area.

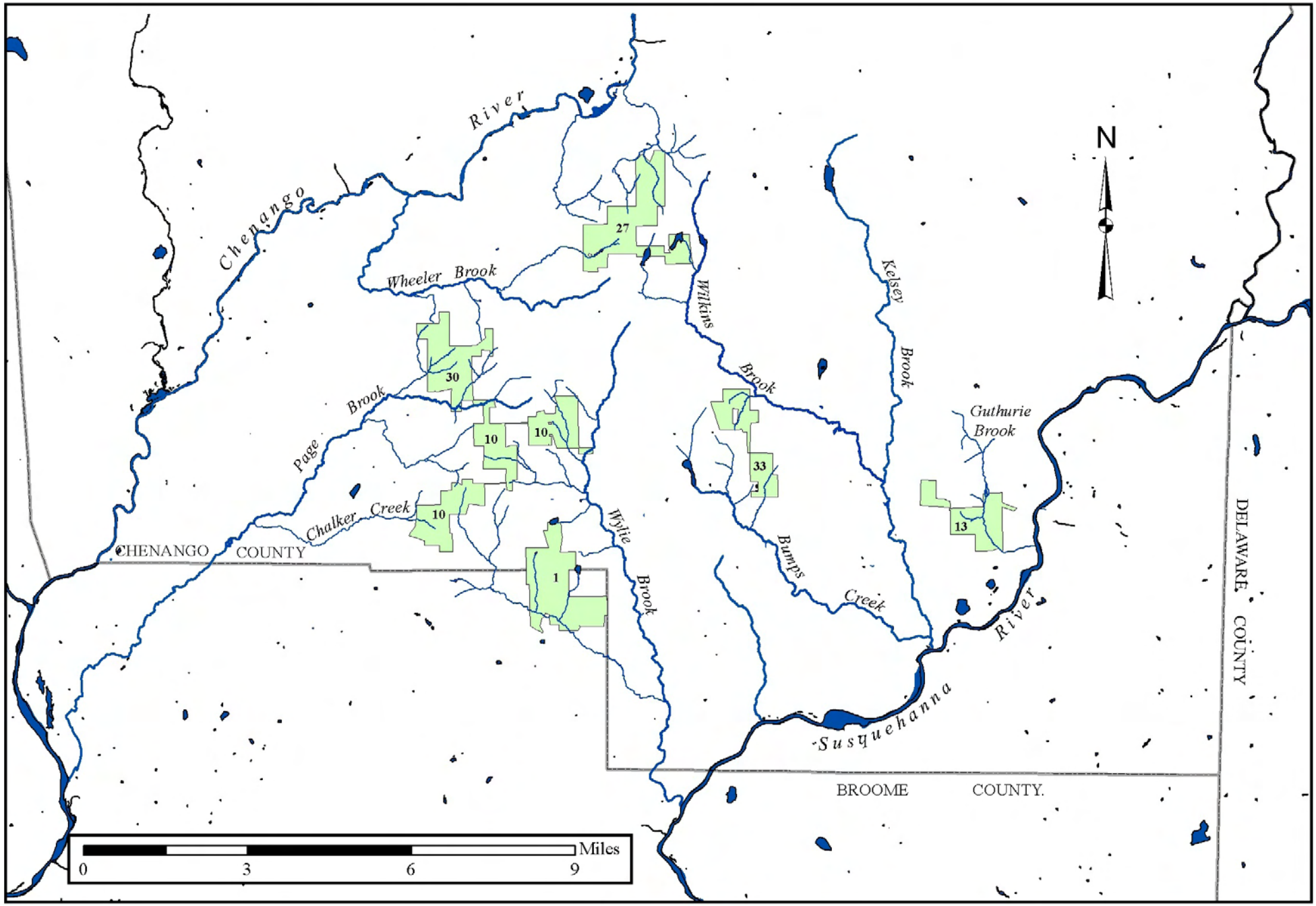
There are many other freshwater wetlands located on the forests of the Chenango Trail UMP that are not classified or regulated by the NYS Freshwater Wetlands Act. Most of these wetlands have been classified by the U.S. Fish & Wildlife Service, and they are listed in the National Wetlands Inventory. These wetlands are protected in relation to placement of material used for fill. An application for a permit is required to be submitted to the U.S. Army Corps of Engineers prior to placing fill within the footprint of any of these wetlands. Information on the classified wetlands is listed in **Appendix III.**

All of the perennial streams on the State forests within the Unit are classified as either C(t) or C. A stream is given a C(t) classification if it is suitable for the survival and propagation of trout, as well as other fish species. The C classification is given to streams that are suitable for fish (not including trout) survival and propagation. The D classification means that the stream is suitable for fish survival, but not propagation. The intermittent streams on the forests are not classified.

Only the 0.18 mile section of Wylie Brook, as it passes through the Eastern-most section of Chenango R.A. #10, contains a wild brook trout population.

Appendix VIII lists the more common fish species found in some of the Unit's waters.

Watershed of the Chenango Trail Management Unit



E. MINERAL RESOURCES

Oil and natural gas are valuable resources which may be located on State forests. The extraction of these resources generates revenue and provides raw material for energy products. Due to the infrastructure necessary to extract oil & natural gas resources, the process provides an opportunity to make improvements to the existing infrastructure of the Unit; such as upgrading existing roads, culverts and gates. Oil and natural gas development may also create a greater diversity of habitat by providing open space, such as grasslands. As with any other human activity on State lands, oil and natural gas exploration and its development can have negative impacts on the environment. Some of the impacts are short term such as those occurring during the siting and drilling phases of a well. Other impacts will have a more persistent effect, such as forest fragmentation.

One of the variables with the greatest influence on the design of the development plan, is the depth of the fossil fuel. Natural gas that is located relatively deep (e.g. 8,000 feet) will require a relatively low density of wells (e.g. 1 well/ 320 acres). The low well pad density will yield a limited amount of roadways and pipelines. At the same time, since these wells need to be drilled deep, large equipment is required and an area of 4 acres may be needed for each well pad. However, if the natural gas resource is located relatively shallow (e.g. 2,000 feet), smaller equipment can be used and the well pads may only need to be one acre in size. Shallow wells are often associated with relatively high densities (e.g. 1 well / 40 acres). Since a roadway and a pipeline must connect to each well, this development will also necessitate a greater amount of infrastructure.

The Department will only consider well pad densities of greater than 1 pad in 320 acres when the additional impact can be addressed with heightened mitigation measures and well location restrictions. These will address well site placement, along with routing considerations for supporting roads and pipelines. In any event well pad densities of 1 well pad in 40 acres can not be considered as this would result in unacceptable impacts to the resource and cause conflicts with the other uses and goals for the management of this property. (This level translates to over 135 well pads if 1 pad in 40 acres spacing was applied across all the State Forests in this Unit.) This spacing would definitely have a negative impact on those species requiring habitats with unbroken forest canopies, such as the red-shouldered hawk. Another issue to consider is the amount and location of pipelines needed for the transmission of oil and natural gas resources. Pipelines presently located on State forests have created restrictions of forest uses due to the precautions which must be taken to cross the pipeline.

In all areas covered by this Unit Management Plan, New York State manages the surface estate through the NYSDEC Division of Lands and Forests, and the mineral estate is managed through the NYSDEC Division of Mineral Resources.

F. WILDLIFE & ASSOCIATED HABITATS

The unique characteristics of a given habitat portray its ability to support specific wildlife. In this sense, habitat dictates the range of wildlife. On a broad scale, habitat can be defined by ecological zones, or ecozones. An ecozone is the classification of a geographic area in terms of its geology, topography, soil, climate, vegetation and land use patterns. The Chenango Trail

Unit is located within the Central Appalachins Ecological Zone, which is the largest ecozone in New York State, encompassing all or portions of 17 counties across the southern tier. The forests of the Chenango Trail Management Unit are characterized by mixed, natural hardwood and natural hardwood/conifer stands, as well as conifer plantations in various **age classes**. These forests are located on rolling hills interspersed with numerous stream channels and some wetlands. Many of the south-facing slopes are forested with oak species. The State forests of the Unit generally lie on the higher elevations of the local area. Most of the forest habitat on the Unit is characterized by mature trees and full canopy, although all stages of succession can be found in some quantity on these forests.

On a township level, the State forests cover slightly more than 10% of the landscape. An analysis of a 2003 aerial photograph of the township indicates that at least 25% of the Coventry landscape is open land of either agricultural, shrub or grassland type. The remainder of the landscape is residential land, wetlands and forest land in private ownership. This mixture of land use and cover types, on a landscape level, provides the opportunity for a fairly diverse wildlife population due to the variety of habitat. The wildlife habitat offered within the boundaries of the State forests of the Unit has a somewhat limited diversity since much of the State land has a mature forest cover. These forests would contribute little to habitat diversity across the landscape if the majority of the landscape also had a mature forest cover. However, with the agricultural lands, brush fields, wetlands, and immature forest cover within the township, the existence of these State forests enhance the diversity of wildlife habitat within Coventry. The Chenango Trail UMP will depend upon this landscape view for meeting its objectives of **biodiversity**. Although diversity within the forests will be pursued, it is acknowledged that there are limits to the amount of diversity that can be accommodated by these properties. Currently, animals such as deer, turkey, songbirds and squirrels are prevalent on the forests. Several wildlife surveys have been completed in this area: trap surveys have been conducted for small mammals; harvest surveys for game species are completed each year during hunting seasons; aerial surveys are periodically completed for beaver activity; extensive breeding bird surveys have been conducted; and field surveys have been compiled for amphibians & reptiles. A diverse and healthy **ecosystem** can be depicted from the results of these surveys.

White-tailed deer are important components of the Unit's fauna. Deer populations are managed in Wildlife Management Units (WMUs) by controlling the number of female deer taken by hunters in each Unit. Deer management permits are issued to accomplish this end, allowing for the harvest of female deer. Citizen Task Forces are formed in each WMU to represent the various community interests in deer management. Task forces consider hunting and agricultural interests, the number of deer/auto collisions, damage to residential shrubbery, and any other impacts deer have on society. They then make a recommendation to adjust the deer population within the wildlife management unit. The DEC's Bureau of Wildlife then sets the quota of deer management permits that will be issued to move the deer population in the direction recommended by the task force.

The DEC collects data from tags returned by successful deer hunters to determine the number of deer which were taken during each hunting season. From this data, the number of bucks taken

per square mile is calculated and is then used to estimate the total deer harvests in counties, towns and WMUs. The deer herd is somewhat uniformly distributed throughout the Unit although more deer are probably found at the lower elevations in valley bottomlands where agricultural activities are concentrated.

Black bears are occasionally spotted on the forests of the Chenango Trail Unit. This area is outside the primary range for bears, but the habitat provided by these forests should sustain a small bear population. Black bears are commonly harvested in several nearby towns west of the Unit.

Information on deer harvests, as well as turkey, beaver, coyote, and small game harvests is available in **Appendices IX, X** and **XI.**

The New York Natural Heritage Program's Biological and Conservation Data System frequently depends on data from surveys such as The Atlas of Breeding Birds in New York State and the New York Amphibian and Reptile Atlas Project. Records compiled from the 2000-2004 Breeding Bird Atlas Survey list all bird species that are considered possible, probable or confirmed breeders in each of the Atlas blocks surveyed. For the blocks in which the Unit is located, 117 species were identified (see **Appendix V**). The amphibian and reptile records referenced in this UMP reflect survey data collected through 1998. These records are presented in **Appendix VI**.

1. Wildlife & Biodiversity

Chambers, in his book Integrating Timber and Wildlife Management (1983), presents several different approaches to wildlife management planning. These include the Popular Species method, Ecological Indicator method, Featured Species Management, Management for Diversity, and the **Management Indicator Species** Concept. The concepts of Coarse Filters & Fine Filters, Keystone Species, Flagship Species, Indicator Species, and Special Populations are presented in Wildlife, Forests, and Forestry, Malcolm L. Hunter, Jr., 1990. All of these principles show concern for wildlife in general, and most also show concern for biodiversity. Managing for biodiversity in an important objective in the Chenango Trail UMP. Each of the above mentioned principles has its advantages and disadvantages, and while some are clearly better suited for biodiversity than others, none have proven to be the perfect solution.

The Management Indicator Species Concept focuses on ecosystem diversity, and it has been utilized by the U.S. Forest Service in several forest management plans. In general, this approach identifies several species of wildlife to be used as "indicators" of the effects of land management activities on biodiversity. Management plan objectives, such as retaining **cavity trees**, are developed with regard to these Management Indicator Species (MIS). The populations of the MIS are periodically monitored in order to evaluate the effectiveness of these objectives, as well as the impact of any related management activities. In this sense, there is an increased focus on the relationship between management activities and the suitability of habitat.

Historically, UMPs within NYS DEC Region 7 have managed for biodiversity by providing a variety of forest covers and habitats on the management units. This approach recognizes that a full range of successional forest cover types will likely support the greatest variety of native wildlife species. The management of the vegetative cover allows for the establishment of objectives pertaining to habitat diversity. This method manages for wildlife diversity by providing a variety of forest habitats; however, there is no allocation for verifying the suitability of the habitats.

The Chenango Trail UMP will continue the practice of providing a variety of habitats through land management activities; however, it will take the additional step of incorporating the MIS concept and verifying the quality of those wildlife habitats. Take, for example, a management plan goal of providing habitat for cavity nesting birds. In this case, an objective might be developed to retain five cavity trees of various sizes per acre in areas where timber is harvested. Without utilizing MIS, the assumption is made that the management action will provide suitable habitat for cavity nesting birds. However, unless the habitat is subsequently monitored, the successful accomplishment of the original goal can never be verified.

The monitoring component of MIS will be a significant responsibility; however, it is anticipated that the majority of the monitoring will be accomplished through third party efforts. The Chenango Trail UMP will limit MIS to only avian species, with one exception. Birds are one of the most commonly observed wildlife species and many birds can be identified audibly as well as visually. There are some well established bird clubs within the area of the Unit and the clubs have active memberships. It is hoped that club members will take an interest in reporting their observations while visiting the State forests of the Unit. Also, the Breeding Bird Atlas is one of the most comprehensive wildlife surveys available. This survey is renewed every 20 years. Even casual observations of birds on the Unit can be helpful in fulfilling the monitoring responsibilities of this plan.

The Management Indicator Species approach often categorizes species into several indicator groups to assist with the development of specific objectives. These indicator groups may include: endangered or threatened plants and animals; species that require special habitats; game species; non-game species of special interest; or species that may provide an indication of the effects of management activities on certain ecological communities. The Chenango Trail UMP will incorporate MIS by establishing seven indicator groups. These indicator groups represent some of the desired qualities of the Unit's ecosystem. A management objective has been developed for each of the indicator groups. The indicator groups are not intended to represent a quantifiable community, but rather a verifiable component of the landscape and an indicator of habitat quality. The seven indicator groups, the specific species that are associated with the groups, and a reference to the applicable objectives are listed in **Table III**.

The MIS approach is being taken with the understanding that populations of specific species, especially migratory species, may be influenced by activities or habitat changes well outside the range of this Unit. Therefore, the periodic decline or even absence of a specific species within the Unit does not necessarily reflect the low suitability of habitat or a negative influence from management activities within the Chenango Trail Unit. However, the presence of any number of an indicator group's component species within the Unit does lend support to the quality of their

desired habitat and the compatibility of management activities. This is another reason for monitoring the indicator groups, rather than the individual species. The indicator groups represent a common interest of the component species found within those groups.

One of the indicator groups identified for the UMP is Species Requiring Continuous Forest Canopy. The red-shouldered hawk is included in this group. This bird has been identified on several occasions on or near the forests of the Chenango Trail UMP. In recent years, two active nest sites for this raptor species have also been located within the Unit. Currently the red shouldered hawk is listed as a species of special concern in New York State. This raptor depends upon a complex of habitats, but one of these required habitats is a large expanse of mature forest cover. Increasingly, State forests are becoming one of the best places to find this type of forest cover in the landscape of Chenango County. In many areas outside of the Adirondack or Catskill Forest Preserves, State Reforestation areas may provide the best opportunity for finding this type of forest condition. Where larger stands of hardwoods or mixed conifer/hardwood forest cover exist on the Unit, this UMP attempts to manage many of these stands toward an uneven- aged forest condition. By selecting uneven-aged management options, there will be opportunity to maintain or enhance areas of continuous forest canopy on the landscape. Uneven-aged management, by practice, avoids creating large scale **disturbances** or openings within the forest. Heavier cutting practices associated with large scale disturbances can be affiliated with even-aged management practices. **Protection areas**, in combination with adjacent acres of uneven-aged forest cover should provide suitable habitat for many of the woodland raptor species, including red shouldered hawks and Goshawks, within these State forests.

The one non-avian wildlife species that will be used as a MIS is the Indiana bat. The associated indicator group for this species will be Endangered or **Threatened Species**. This mammal is currently listed as an **endangered species** by both Federal and State Protective Status listings. There is no record of this species ever occupying habitat within the Unit. However, it is believed that suitable habitat for this species does exist within this Unit, and the Unit is located within the known range of this animal. The main concern for this bat species is a decline in the overall population numbers within its historic home range of the Midwest and Appalachian regions. In New York and other northeastern states, Indiana bat populations are considered on the northern fringe of their habitat range and geographically isolated from the main migrating bat populations of Missouri, Indiana and Kentucky.

The Indiana bat is considered a cave dwelling species in regards to its winter hibernating requirements. There are no known caves within the Unit but there are documented caves occupied by Indiana and other bat species in Onondaga County to the North. This proximity of an Indiana bat population would put the Chenango Trail UMP within the summer breeding range for this species.

One habitat requirement needed for this and other bat species during the breeding season is adequate roosting trees within their seasonal home range. Wildlife Biologists have documented that many cave dwelling bat species, including the Indiana Bat, will use large diameter trees with a loose bark pattern for much of their roosting needs during the summer breeding season. Shagbark Hickory is considered one of the most ideal tree species to meet this requirement.

Large specimens of Shagbark hickory, Black locust or American elm, alive or dead, have been found to be favored by Indiana bat breeding colonies for their roosting needs, particularly trees with a good southern exposure that can absorb solar radiation during the day.

TABLE III. Management Indicator Species Groups

	Group	*Species*	*Objective*
1	**Species Nesting in Cavity Trees**	Eastern screech owl, barred owl, downy woodpecker, hairy woodpecker, pileated woodpecker, Northern flicker, tufted titmouse, red-breasted nuthatch, white-breasted nuthatch, house wren, winter wren, eastern bluebird, Common merganser, hooded merganser, wood duck, American kestrel, chimney swift, yellow bellied sapsucker, great crested flycatcher, tree swallow, black capped chickadee, brown creeper	**3. <u>Habitat</u>** **a. Objectives for habitat management.** **1.) Provide an average of four snag trees per acre. Provide an average of four cavity trees per acre.** See page 41.
2	**Species Utilizing Snags**	turkey vulture, osprey, sharp-shinned hawk, Cooper's hawk, broad-winged hawk, red-tailed hawk, American kestrel, Bald egle, brown creeper, great blue heron, green heron, great horned owl, pileated woodpecker, barred owl	**3. <u>Habitat</u>** **a. 1.) Same as above.** See page 41.
3	**Game Species**	ruffed grouse wild turkey American woodcock	**a. Objectives for open land cover types.** See page 36. **3.) Favor fruit and mast producing trees.** See page 42.
4	**Species Requiring Continuous Mature Forest Canopy**	Northern goshawk, red-shouldered hawk, pileated woodpecker, Common Raven, sharp-shinned hawk, Cooper's hawk, Broad-winged hawk' Bald eagle	**b. Objectives for uneven-aged management system.** See page 41. **7.) Protect the active nest sites of raptors on the forests of the Unit.** See page 41.

	Group	*Species*	*Objective*
5	**Species Requiring a Multi-Layered Forest Canopy Structure**	yellow-throated vireo, blue-headed vireo, warbling vireo, red-eyed vireo, nashville warbler, magnolia warbler, black-throated blue warbler, yellow-rumped warbler, black-throated green warbler, blackburnian warbler, black-and-white warbler, Canada warbler, scarlet tanager, American redstart, Ovenbird, veery, hermit thrush, wood thrush, least flycatcher, golden crowned kinglet, rose-breasted grosbeak	**b. Objectives for uneven-aged management system.** See page 41.
6	**Species Requiring Riparian Areas or Stream Corridors**	wood duck, Great blue heron, green heron, Canada goose, mallard common merganser, hooded merganser, Bald eagle, spotted sandpiper, belted kingfisher, yellow warbler, nashville warbler, alder flycatcher, willow flycatcher, northern waterthrush, Louisana waterthrush, black + white warbler, Canada warbler, swamp sparrow	**b. Objectives for riparian and wetland cover types. Actions 2-6.** See pages 36-37.
7	**Endangered or Threatened Species**	Indiana bat Bald eagle	**8) Provide beneficial habitat for the Indiana bat.** See page 43.

G. RARE PLANTS AND SIGNIFICANT ECOLOGICAL COMMUNITIES

The New York State Natural Heritage Program is an ongoing scientific inventory with a goal of compiling and maintaining systematic information on New York State's rare plants, rare animals, and significant ecological communities. The information that is collected from the inventory is stored in the Biological and Conservation Data System (BCD). This international collection of information is used to identify, track, protect, and manage **biological diversity**. All rare flowering plants, ferns and fern allies are actively surveyed and monitored. The animal species that are surveyed and monitored include rare species of all vertebrate groups and selected rare species from invertebrate groups including butterflies, beetles and freshwater bivalve molluscs. Significant ecological communities surveyed include all rare ecological communities as well as the best examples of common communities.

Title 6, Part 193.3 of the New York State Codes, Rules, and Regulations (NYCRR) identifies a list of protected plants in New York State pursuant to Section 9-1503 of the New York State Environmental Conservation Law. The list is divided into four categories: endangered, threatened, exploitably vulnerable and rare. The term "rare," as used in Part 193.3, does not correspond to the New York State Natural Heritage Program's use of this term. In general, the

New York State Natural Heritage Program's list of rare plants includes all of the endangered and threatened species listed in Part 193.3, and it may include some of the plants listed as exploitable or rare in Part 193.3. No rare plants or significant ecological communities have been identified on any of the forests in the Unit.

H. CULTURAL RESOURCES

Presently, there are no historic sites or cultural resources on the forests of the Chenango Trail Unit that are listed in the New York State Archaeological Inventory.

The New York State Archaeological Inventory establishes a list of places where evidence of past human activities, from all periods of the human past, have been found. These sites include settler homesteads, mills, villages, cemeteries, sites with prehistoric artifacts and other sites with historic significance. These sites may be legally protected if they meet the criteria for listing in the State and National Registers of Historic Places. In general, an archaeological site would be eligible for listing in the Registers if the site contains artifacts and information in a sufficiently undisturbed context to help us better understand some aspect of the human past. The protection of these sites ensures that the historic information from the site will be preserved. Sites listed in the Archaeological Inventory that are not eligible for listing in the Registers may also be protected depending upon where they are located. On public lands (state and federal), archaeological resources are considered to be a part of the values to be preserved within the landscape. On New York State forest lands, no materials can be removed from a site listed in the Archaeological Inventory without a permit issued jointly by the State Museum and the Department of Environmental Conservation. State and federal agencies are not obligated to release detailed information, including specific locations, about archaeological resources to the public. This data is exempt from both state and federal Freedom of Information Laws.

Stone walls are not listed in the Archaeological Inventory and they do not usually qualify, individually, as State or National Register resources. However, the stone walls from the early settlement period are still important cultural resources. There are numerous stone walls on the forests of the Chenango Trail UMP. Most of these walls were constructed by the early settlers who began farming the land. Some of the walls may date back to the late 1700s. When these lands were first cleared for farming, the land owners removed the stones from the fields and then used the stones to construct walls along their property boundaries or the borders of the fields. These stone walls are now part of the landscape and they provide us with information about past land uses and human history. Although these cultural resources are not specifically protected by regulations, the Department has implemented management practices to preserve the integrity of the walls. Since the value of field stone has increased significantly in the past 10 years, many stone walls on privately owned land are being dismantled for the purpose of selling the stones. The Department does not sell field stones from the State forests.

I. ROADS

Road access to the forests of the Chenango Trail Unit is provided through a system of Town, County, and State roadways. Most of these roadways are in good condition and can be traveled with any passenger car. The roads either traverse across the State forests or run adjacent to the forest boundaries. A few of the roads are not maintained (not plowed) during the winter months

and some others should not be traveled during wet seasons, especially early spring. There are no **Public Forest Access Roads** on any of the Chenango Trail forests. There are a few **Haul Roads**, **Access Trails**, and Abandoned Town Roads on the forests, but the entrances to these are typically gated or barricaded as they are not designed or intended for routine motor vehicle use.

Appendix I identifies the roads that either traverse or abut the State forests, their mileage, classification, and a description of their condition, use, or restrictions.

J. RECREATION

New York's State forests offer many outdoor recreational opportunities for the public. The types of recreational activities associated with State forests include camping, hunting, fishing, cross-country skiing, horseback riding, nature observation, hiking, and snowmobiling. These activities are allowed anywhere on State forests, unless an area is specifically posted to prohibit an activity. In November of 2001, Region 7 published the Draft Recreation Plan For State Forests. To receive public input for the Recreation Plan, the Department held four Public Scoping meetings in Central New York during the spring of 1999. Additionally, a questionnaire was distributed through several local businesses and clubs involved in outdoor recreation. A total of 223 people attended the meetings and 341 people responded to the questionnaire. The information received from these sources will be used in a variety of ways to improve the quality of recreation on State forests. Based on this information, the Department will seek to reduce potential conflicts between activities, provide improved recreational facilities on State forests, reduce the amount of adverse environmental impacts from recreational activities, improve access and provide better information to the public on the available opportunities for State forest recreation.

1. <u>Existing Facilities</u>. Presently, other than parking areas, there is only one developed facility on any of the forests of the Chenango Trail Unit. This is a trail on the Coventry State Forest that has been designated for use by persons with disabilities who have a valid permit for using an ATV on State lands.

2. <u>Hunting and Trapping</u>. The most popular recreational activity on the forests of the Unit is hunting. Big game hunting for white tail deer brings the greatest amount of hunting activity on the forests. **Appendices IX, X** and **XI** provide information on the number of game animals and furbearers taken during hunting and trapping seasons within the township of Coventry. Hunting and trapping are allowed on all of the Chenango Trail State Forests by persons who possess a valid New York State hunting or trapping license and who abide by the regulations. Hunting and trapping do not require the development of any facilities on State forests, except for parking areas.

3. <u>Camping</u>. Primitive style camping is available on State forests at both designated and non-designated sites. Presently, there are no designated camping sites on any of the Unit's forests, but camping is allowed on these properties in compliance with the current regulations. The regulations for camping on State forests are listed in Title 6, Chapter II, Part 190 of the NYCRR. A generalization of these rules is listed in **Appendix XVI.**

4. Skiing. Although there are no designated ski trails on any of the Chenango Trail forests, cross-country skiing is allowed on these properties. Areas with mature tree cover and gentle terrain are usually preferred along with unplowed roads or trails, and there are several of these on the forests.

5. Snowmobiling. A snowmobile trail is proposed on the Bobell Hill and Beaver Flow State Forests. This trail will be designed as part of a larger system of trails on private, municipal and State properties. The majority of maintenance, including grooming, would become the responsibility of a local snowmobile club through an Adopt-A-Natural Resource Agreement with the Department.

6. ATV and Off-Road Vehicle Riding. Off-road vehicle riding, including the use of ATVs, motorcycles and trucks, is recognized as a popular outdoor recreational activity; however, a specific program for this activity is not offered on public lands owned and managed by the Department. Although the Department does not encourage ATV and off-road vehicle use on public lands, it does recognize that ATVs are one of several possible means that the public may utilize to gain access to certain Department programs (e.g. hunting, fishing, camping) on public lands that are deemed appropriate for such use. To this end, the Department has developed a program and facilities for persons with disabilities to use ATVs for the purpose of accessing certain public lands under the jurisdiction of the Department. Qualified persons must obtain a CP-3 permit for this activity. A trail has been designated on the Coventry State Forest for ATV use by persons with a disability.

The Department's Draft Policy, Public ATV Access on Public and Conservation Easement Lands Managed by the Department of Environmental Conservation, identifies certain criteria to be followed through the UMP process in evaluating the compatibility of roads and trails within reforestation areas with public use of ATVs. These criteria include natural resource protection, compatibility with other public uses, public safety, maintenance and others. Based on these criteria, it has been determined that the existing roads and trails within the reforestation areas of the Chenango Trail UMP are not compatible with the use of ATVs and other off-road vehicles with the exception of use by persons with disabilities.

7. **Mountain Biking.** There are currently no designated trails for mountain biking on the forests of the Unit. Mountain biking has greatly increased in popularity since 1990 and there is some activity on the forests. Mountain biking is not prohibited on these properties except where posted, but it is recommended that this activity be restricted to existing trails and roadways on the properties. Some State forests within the Region have been damaged by intensive mountain biking activity, especially activity which has resulted in unauthorized trails on sensitive ground. Although this type of activity has not been observed on the Chenango Trail forests, if it should occur, it could result in areas or entire properties being posted against mountain biking.

8. Fishing. The two most popular fisheries near the Chenango Trail Unit are the Chenango River and Susquehanna River. These two fisheries seem to satisfy much of the local demand for walleye, small mouth bass, northern pike and panfish. Neither of these watercourses flows through any of the Chenango Trail forests, but many of the tributaries do traverse the forests. Several of these tributaries are classified as trout streams (Ct), but a native brook trout population has only been confirmed in one of them, Wylie Brook. A short section of Wylie Brook passes through the eastern most portion of the Bobell Hill State Forest. The other

tributaries on the forests are known to contain a variety of darters, chubs, shiners, sculpins, dace and minnows. Historically, some of these tributaries were stocked with trout; however, records indicate that no stocking has occurred since 1952. Only two ponds on the forests are known to attract anglers. These are the ponds located in the northern most section of the Beaver Flow State Forest and the pond located in the eastern most section of the Coventry State Forest. Access to the pond on the Coventry State Forest will be addressed in this UMP.

9. Horseback Riding. There are no long distance trail systems for horseback riding near the Chenango Trail Unit. There are many riders residing within the Coventry township and most of the riding activity is satisfied through facilities on private land. The nearest long distance horse riding trail system provided by State Forest property is located in Brookfield, Madison County. Horseback riding is allowed on the Chenango Trail forests, but as with mountain bike riding, it is recommended that this activity be limited to existing trails and roadways in the forests.

10. Hiking, Snowshoeing, and Nature Observation. These activities can be enjoyed anywhere on the forests of the Chenango Trail UMP. The variety of topography, forest cover, and wildlife habitat provides an attractive and ever-changing setting when exploring these lands.

11. Regulations Applicable to Recreational Activities on State Forests. No fees are charged to the users of State forest lands for recreational activities. However, a permit may be required for group activities or events. A **Temporary Revocable Permit** is required for the following types of recreational activities on State forests: organized and advertized events, such as club-sponsored rides or scouting camporees; competitive events, such as mountain bike races or orienteering tournaments. The Draft Region 7 Recreation Master Plan provides specific details on the permitting process and the requirements for liability insurance.

K. OTHER FACILITIES

1. State Forest boundary lines

Br/Chen-1	7.90 miles
Chen-10	17.53 miles
Chen-13	6.50 miles
Chen-27	10.70 miles
Chen-30	7.07 miles
Chen-33	7.55 miles
Total	57.25 miles

2. Impoundments

There are two earthen dams on the Unit which were constructed to create ponds. One dam is located on the east side of Owlville Pond on the Coventry State Forest. This dam is routinely maintained. The second dam is located on the south side of the six acre pond on the Beaver Flow State Forest. This dam has not been maintained in many years. Future maintenance of this dam is unlikely. Should the integrity of either of these dams become jeopardized, they would not present a significant hazard.

3. State Forest Identification Signs

State Forest	# of signs	Location
Br/Chen-1	1	Davey-Mendenhall Rd.
Chen-10	1	Cueball & Horton Rd.
Chen-13	1	Stumptown Rd.
Chen-27	2	Owlville Rd.; Corner of North & Harvey Rd.
Chen-30	1	Bobell & Page Brook Rd
Chen-33	1	Sprauge Rd.

4. Shale pits

There are no shale pits located on the Chenango Trail forests.

5. Parking Areas

Several pull-off areas are located on each of the State forests, however, there are presently no designated parking areas.

Existing unpaved parking areas (pull-offs)

State Forest	Location
Chen-10	Stand A-7
Chen-10	Stand C-12
Chen-27	Stand B-22
Chen-27	Stand B-35
Chen-27	Stand B-2
Chen-27	Stand A-20
Chen-27	Stand B-10
Chen-30	Stand A-25
Chen-30	Stand A-42
Chen-30	Stand C-12
Chen-33	Stand A-16

6. Gates

There are two metal gates on the Unit. One is located on Chenango 27 at the intersection of Owlville Road & the abandoned section of Harvey Road. This gate is owned & maintained by the Department. The other gate is located on Chenango 10, on the northern most boundary, off of Bobell Road. This gate is privately owned & maintained. It restricts access to a roadway that is bisected by a private property/State property boundary line. This gate remains intentionally unlocked, and the roadway may be used by the public.

L. PROPERTY USE AGREEMENTS

1. Deeded Rights-of-Way

No deeded rights-of-way, with the exception of the utility R.O.W. listed below, exist on the Unit.

2. Property Reservations

Three spring and/or water reservations exist on the Unit.

State Forest	Reservation Type	Proposal (survey reference) & original owner
Br/Chen-1	spring & water	(E). Fowler
Br/Chen-1	spring	(F). Soest
Chen-10	spring & water	(J). McIntosh

3. Revocable Permits

No long-term Revocable Permits exist.

4. Utility R.O.W., Easements and Permits

A utility right-of-way for electric transmission exists on Chenango 10. The facility is located in the southern-most section of Proposal F, also known as the F. L. Carroll Proposal. In 1968, a Temporary Revocable Permit (TRP) was issued to New York State Electric &Gas for the construction of the R.O.W.

5. Uses of State Lands Without Known Permits or Easements

A power line exists on Stiles Road, Proposal A of Chenango 27 leading to the 1.51 acre parcel identified as the “E. Stiles Reserve” on the 1936 Proposal Map. There is no record of a permit or easement for this facility.

M. FOREST HEALTH

There are many species of insects and diseases, as well as pollutants, that are active in the northeastern forests. All play important roles in the ecology of the forest. The following list describes a few of these insects and diseases, in their role as forest pests, and their present or historical impacts on the ecosystem.

1. Insects

a. Asian Longhorned Beetle (*Anoplophora glabripennis*) This black & white beetle with long antennae, is a native of Asia. Populations of this pest have been established in Brooklyn and Amityville, NY. Host trees are predominantly maples. Since this pest is extremely destructive and has the potential to spread at a rapid rate, authorities are destroying all trees discovered with infestations.

b. Eastern Tent Caterpillar (*Malacosoma americanum*) - This is the most common "tent maker" in New York State. The caterpillars build the nests in the crotches of tree branches. They prefer cherry trees and apples trees. The nests are formed in late April or early May each year and the caterpillars feed on the leaves. Most of the feeding is done from dusk through the evening hours.

c. Elm Spanworm (*Ennomos subsignarius*) (and other species of loopers) - The common name of this insect is deceiving, as it is not only associated with elm trees, but will defoliate beech, oak, hickory, maple, and ash as well. More than 20 major outbreaks have occurred in the past century. Typically, outbreaks of the Elm Spanworm succumb to mortality from a complex of natural agents, including egg parasites and larval diseases.

d. Emerald Ash Borer (*Agrilus planipennis* Fairmaire) This metallic green beetle is native to Asia. It was first discovered in the US (Michigan) in 2002. Since that time, it has killed at least 10 million ash trees in the states of Michigan, Indiana, Maryland, and Ohio. The larva feed on the inner bark of ash trees. They will feed on trees of any size and will usually kill the tree within 3 years of infestation. In 2009, it was discovered in the Town of Randolph in Cattaraugus County. Quarantine zones have been established to restrict the transportation of infected wood.

f. Forest Tent Caterpillar (*Malacosoma disstria*) - This insect can be a serious defoliator of sugar maple. Unlike other "tent caterpillars," the forest tent caterpillar does not construct a tent on the tree branches. Most healthy hardwoods can withstand a single defoliation from this insect. The summer seasons of 2004 and 2005 brought heavy infestations of the forest tent caterpillar to central New York. An area near LaFayette was particularly hard hit, with hundreds of acres of hardwood trees being completely defoliated. In 2006, the defoliation in New York State was widespread and more severe than the two previous seasons. The forest canopy in Chenango County was impacted with many small areas (5-10 acres) of complete defoliation in the summer of 2006 from the Forest Tent Caterpillar.

g. Gypsy Moth (*Lymantria dispar*) - This insect has received much notoriety since it was introduced into the United States in 1868. Populations of this insect can periodically build to "outbreak levels" resulting in widespread forest defoliation. Gypsy moths will defoliate many species of northeastern trees, but they favor oaks. High populations of gypsy moths do not typically persist more than three years before they collapse. Until recently, a virus (*NucleoPolyhedrosis* Virus) has usually caused the rapid decline of Gypsy Moth populations. In recent years however, a fungus (*Entomophaga maimaiga*) has also proved to be effective in reducing moth populations. This fungus was introduced to the U.S. from Japan in 1910 and again in 1985. Its effectiveness had been dismissed until its presence was identified in seven states in 1989. Because of the presence of both the virus and the fungus, it is hoped that future Gypsy Moth outbreaks will be less severe and less frequent.

h. Hemlock Woolly Adelgid (*Adelges tsugae*) - This **exotic**, or non-native, insect is currently posing a significant threat to the health of eastern hemlock across much of its natural range. Adelgid infestations can cause rapid **defoliation** of hemlock trees and can result in the complete mortality of all hemlock trees in affected stands within four years. This insect has been the focus of many recent studies in an attempt to discover methods of reducing its impact. Presently, the adelgid has not caused any significant damage to hemlock trees in Chenango County.

i. Peach Bark Beetle (*Phloeotribus liminaris*) - This insect has recently gained increased attention from foresters in the northeast due to the amount of damage it has caused to black cherry trees. Infestations of this insect can result in large amounts of gum deposits on the trunks of black cherry. The damage can significantly reduce the value of the timber and it causes a general decline in tree health. Peach Bark Beetle populations build up in the tree tops following the harvest of cherry timber. **Residual**, healthy cherry trees are then attacked. Cultural practices (e.g. reducing quantities of slash and seasonal cutting) are being investigated to minimize the negative impacts of peach bark beetles.

j. Pear Thrips (*Taeniothrips inconsequens*) - Introduced from Europe to the United States in 1904. It attacks a variety of orchard and forest trees. There were several population explosions of Pear thrips in the northeast during the late 1980s. The outbreak of 1988, damaged or defoliated more than 1.5 million acres of sugar maple trees. In addition to causing leaf damage, Pear thrips may also be capable of transmitting a fungal disease, maple anthracnose. This disease often coincides with Pear thrip infestations. Maple anthracnose decreases the photosynthetic ability of leaves, which can kill trees, if they are severely infected.

k. Pine Shoot Beetle (*Tomicus piniperda*) - This beetle, native to Europe and Asia, attacks the new shoots of pine trees, including scotch pine and red pine, stunting the growth of the tree. The USDA's Animal and Plant Health Inspection Service (APHIS) has issued regulations resulting in "quarantines" within the infested counties of New York State, and other states, to prevent the spread of this insect. These quarantines are of significance because they affect the transportation of pine logs. In general, the regulation restricts the transportation of pine logs from a quarantined area to a non-quarantined area. In 2004, nearly every county in New York State was listed as quarantined, with the exception of the eastern-most counties and the downstate area.

l. Sirex Woodwasp (*Sirex noctilio*) This exotic pest was first discovered in New York State on September 7, 2004 in Fulton, NY (Oswego County). The Sirex woodwasp is native to Europe,

Asia and Northern Africa, and it attacks most species of pine trees, including red pine and white pine, which are common in New York. The female woodwasp carries a fungus (*Amylostereum areolatum*) that it deposits in the tree while laying eggs. This fungus can kill the host trees in just a few weeks. It is anticipated that the woodwasp will easily adapt to most U.S. climates. As of late summer 2006, the Sirex woodwasp had been confirmed in most counties of central New York and significant, localized damage to pine trees from this pest had been observed. Control methods for the woodwasp are being researched, including a biological control involving the use of parasitic nematodes.

2. <u>Diseases</u>

a. Beech Bark Disease - This disease has caused a widespread decline in the health of American beech, and it limits the life span of these trees. Beech trees are infected when the beech scale (*Cryptococcus fagi*) punctures the bark, allowing the spores of the fungus (*Nectria coccinea*) to enter the tree. American beech saplings are still abundant in the **understory** of northeastern forests, however mature beech trees are declining and becoming less common.

b. Chestnut Blight - This is one of the most famous plant diseases in North America. It has resulted in the near extinction of American chestnut trees throughout their natural range. The blight is caused by a fungus (*Cryphonectria parasitica*) that enters through wounds in the bark. American chestnut saplings can still be found in a few, isolated areas of the forests in the Coventry area, but it is rare for a tree to survive long enough to attain a stem diameter greater than six inches.

c. Dutch Elm Disease - This disease entered North America in 1930, and it has killed most of the American elm trees in the northeastern United States. The causal agent is a fungus (*Certatocystis ulmi*) which is spread by elm bark beetles. Although the disease has killed most elms, a few resistant individuals have survived. It is still possible to find mature elm trees within the Coventry area.

d. Sudden Oak Death The syndrome of Sudden Oak Death (SOD) is caused by a fungus (*Phytophthora ramorum*). SOD was first reported in California in 1995. It can infect many species of oak trees resulting in death of the trees. While it has not yet been confirmed in New York State, however, it has been determined that Northern red oak is highly susceptible to the fungus. Since host plants for the pathogen include rhododendrons, it is feared that the transportation of infected rhododendrons may lead to the establishment of the fungus within New York State.

3. <u>Pollutants</u>

a. Acid Rain - Acid rain comes in many forms: rain, snow, sleet, hail, fog and as dry particles. It is formed when sulfur dioxide and oxides of nitrogen combine with moisture to produce sulfuric acid and nitric acid. The combustion of fossil fuels (coal, oil, natural gas) and the combustion of wood are the primary cause of acid rain. Emissions of SO2 and Nox from heavily industrialized sections of the country, especially the mid-west, have been identified as significant contributors to New York's air pollution. Sulfur and nitrogen deposition have caused adverse impacts on certain highly sensitive forest ecosystems, most notably in the high elevation spruce-

fir forests in the eastern United States. Forests are damaged because acid precipitation leaches nutrients from the soil. Excess atmospheric nitrogen may also adversely affect tree growth. Some evidence of decreased growth and dieback has been found in the Adirondacks.

b. Global Warming and the Significance of Carbon Sequestration. - Industrial activities, such as the combustion of fossil fuels, contribute to the amount of CO2 in the atmosphere. CO2, along with methane, nitrous oxide, and other gases absorb longwave radiation from the earth's surface. As the volumes of these gases increase, more of this energy is trapped in the atmosphere, instead of being released into space. The absorption of this energy creates a "greenhouse" effect, increasing the atmospheric temperature. Carbon sequestration refers to the ability of trees and other plant life to absorb and store (or sequester) carbon. As part of the photosynthetic process, trees transform atmospheric CO2 into the basic elements of carbon and oxygen. The oxygen is released back into the atmosphere while the carbon is used to form carbohydrates, or sugars, which are the food source for tree growth. Forests may be viewed as "carbon sinks," where large amounts of carbon are being stored. Carbon sequestration plays a key role in the issue of global warming. The more carbon that is sequestered in forests, the less available carbon there will be for the formation of atmospheric CO2.

4. <u>Other Significant "Pests</u>"

a. Black flies (*Simulium nigricoxum*) - Within New York State, high populations of this insect were always associated with the Adirondacks, until recently. The territory of the black fly has expanded during the past two decades and they are now prevalent in Chenango County. They breed in streams and the adults are most active in the cool, wet weather of spring and early summer. If cool weather persists, significant populations may extend throughout the summer; however, the population of black flies is usually reduced by mid-June. Springtime infestations can reach levels that necessitate protective clothing or repellants to be worn when spending time in the woods.

b. Lyme disease - This disease is caused by a bacterial infection (*Borrelia burgdorferi*), resulting from the bite of a deer tick (*Ixodes dammini*). It was first recognized in the town of Lyme, Connecticut in 1976. The deer tick lives in grassy, brushy or wooded areas in the northeast, and it feeds on many different mammals including raccoons, deer and humans. People may acquire lyme disease if bitten by an infected tick. The use of long-sleeved, light-colored clothing is recommended, along with the use of certain insect repellents, and routine monitoring for ticks after spending time outdoors. During the five year period of 1999 through 2003, there were a total of 5 confirmed cases of Lyme disease in residents of Chenango County. Any or all of these cases may have been contracted when the residents traveled outside of Chenango County to areas such as the Hudson Valley or Long Island. Presently, Chenango County is a low risk area for Lyme disease.

c. West Nile Virus - This virus has received significant attention since it was found in downstate New York in the summer of 1999. This was the first recorded occurrence of this virus in the Western Hemisphere. West Nile virus can cause arboviral encephalitis (arthropod-borne encephalitis). Birds are the primary vertebrate host of West Nile encephalitis, and the virus is carried between vertebrate hosts by mosquitoes. The house mosquito (*Culex pipiens*) is the common vector of viral encephalitis in the eastern United States. This mosquito breeds in any

type of standing water, including **forested wetlands**, but many of the breeding grounds are found in urban areas. People may acquire West Nile encephalitis if they are bitten by an infected mosquito. Protective measures include the use of insect repellents, wearing long-sleeved, light-colored clothing and avoiding mosquito infested areas, especially during evening hours and early morning when the insect is most active. Through the year 2003, there have been no confirmed cases in humans of West Nile Virus in Chenango County. In 2002, 27 dead birds were tested for the virus in Chenango County, and five of them tested positive. In 2003, four birds were tested and two of them were confirmed to have the virus. One of these was a bald eagle, and one was a cooper's hawk.

RESOURCE DEMANDS ON THE UNIT

The charge of the Conservation Department in 1929 was to acquire lands adapted for reforestation and establish thereon forests for watershed protection, timber production, recreation and kindred purposes. Seventy-five plus years after the passing of the Hewitt Reforestation Act by the State Legislature, New York State continues to benefit from the careful management of natural resources on these State forests.

Society's demand for natural resources continues to increase. In the United States, consumption of wood, water and non renewable mineral resources surpasses that of other industrialized and developing countries. On a more local scale, recent trends reflect an ever steady to increasing demand for the natural resources available from State forest lands throughout New York including those in this Unit Management Plan (UMP). The recent trend of business and industry capitalizing on global markets has spurred an increased demand for both hardwood and softwood lumber production on a regional scale. The desire for more domestic sources of oil and gas by our expanding economy has also added to the demand for exploration and extraction of these natural resources from both public and private lands within New York.

Larger tracts of public ownership allow for greater flexibility in protecting, managing or extracting natural resources as compared to private lands with similar resources. Although the vast majority of land acreage throughout Central New York is held in private ownership, the individual parcels tend to be on a much smaller acreage scale as compared to the public land holdings. The private lands are held by a wide array of landowners exercising many diverse management views and actions throughout their time of ownership. Combined with frequent ownership changes and increased parcelization of existing properties, private lands and their associated natural resources tend to be in a much greater state of flux than those of the public lands.

The historic ownership of the State Forests has allowed several generations of resource managers to consider long range planning with a commitment to quality natural resource management. Societal views of natural resource management continually demand higher standards for sustainable practices and responsible management. State Forests will play a vital role in the balancing of natural resource use and protection for the foreseeable future.

A. TIMBER RESOURCES

The continuous, long term management of State forests has resulted in a timber resource of very high quality. State forest land represents a considerable resource upon which wood-using industries within New York and the surrounding region depend for part of their raw material needs.

There is an ongoing demand for a variety of commercial wood products on these forests. Hardwood **sawtimber**, hardwood **pulpwood** and firewood, red pine poles, red pine cabin stock, Norway spruce sawtimber and spruce pulpwood are the primary timber resources available from State lands.

Much of the information on demand for timber resources that follows is based on the Stumpage Price Report published by the Department semi-annually. Comparisons were made between Reports published for the 2000 season and the 2009 season. The following table lists the most common price paid per thousand board feet (**Doyle log scale**) as reported for the area covering Chenango county for the major group of hardwood species found on the Unit.

Stumpage Prices ($/mbf) by Species for 2000-2009 All prices are for Doyle Log Rule

Year	00	01	02	03	04	05	06	07	08	09
Hard Maple	740	830	720	720	770	850	910	800	600	525
Red Maple	230	240	210	210	240	270	260	225	250	200
White Ash	350	330	230	250	270	280	250	200	205	225
Black Cherry	1080	1250	980	1160	1240	1380	1270	1300	1200	800
Hemlock	50	60	50	50	50	60	50	60	70	50

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. At the regional level, there had been a steady demand for hardwood sawtimber from local sawmills. Until recently the prices paid for high quality hardwood logs throughout New York and the northeast steadily increased and remained at historic high levels. The recent national economic downturn has seen these upward trends of both hardwood stumpage prices and demand for saw logs level off and decline. These changes started with the nationwide housing market downturn in 2007 and the simultaneous rise in fuel and operating costs the wood products industry. These combined influences have kept the market trends below the historic high prices of the last several years. These trends or cycles will most likely continue until other economic influences bring about changes in demand for the hardwood industry.

There had been a limited demand for hardwood cordwood or firewood. Most of this stumpage is sold within local firewood markets. Up until recently (2007), prices had remained stable for this market with the actual number of requests through DEC's homeowner firewood program in

Chenango County on the decline. However, prices for home heating oil have increased dramatically in recent years, and this increase has had a direct impact on the demand for firewood. This demand will most likely remain higher than the historic averages until alternative heating fuel prices adjust downward.

Unlike hardwood timber, the supply of red pine and Norway spruce stumpage (standing timber) is concentrated on State lands and subsequently DEC has an important role in the regional softwood timber and pulpwood market. Based on the stumpage reports from 1996 to 2006, the price for red pine sawtimber has increased 25% from $60 to $75 per thousand board feet while prices for utility pole stock has increased 66% from $60 to $100 per thousand. Utility poles, pressure treated lumber and stock for pre-fabricated log homes are the primary uses for red pine timber. Demand for pine pulpwood is small with limited markets available for scotch, white pine and red pine pulpwood. Future demand for red pine timber may be constrained by efforts to control the movement of the pine shoot beetle and the woodwasp, *Sirex noctilio*. The USDA Animal and Plant Health Inspection Service has established a federal quarantine on red pine throughout much of New York resulting in restrictions on the shipment of pine logs outside of the quarantined area.

Recent years has shown a notable increase in the supply of Norway spruce sawtimber stumpage coming from State lands. Although softwood stumpage is typically purchased by local firms, the majority of logs are transported to Canadian mills for processing. Currently, the market for spruce is almost exclusively for saw logs. There are no spruce sawmills in New York State, so nearly all spruce logs are sold and trucked north to Canadian sawmills. These Canadian mills also purchase red pine logs. The Canadian demand for spruce and pine logs fluctuates along with the general state of the U.S. economy. Most Canadian mills only haul logs north after they have delivered a load of retail products into New York State. When the retail market slows, the number of trucks available for log hauling decreases. The other primary factor affecting the demand for spruce logs is the housing market Since spruce lumber is primarily used for wood framing construction, a slow down in housing markets also slows demand for spruce logs.

During the 1980s and 1990s , there was a steady demand for spruce pulpwood from State lands throughout central New York. The primary need was for raw material used by the paper making industry. However, the market for spruce pulpwood is now limited due to the closing of several paper mills in northern New York; the most recent being the Deferiet Paper Company which phased out operations in 2001, citing various economic reasons. Now, increased shipping costs to more distant markets have reduced the economic feasability of marketing pulpwood for many local contractors. Considering this limited market and reduced quantities of pulpwood being cut from these maturing spruce stands, the demand for spruce pulpwood is projected to decrease.

As both plantation pine and spruce stands continue to mature, the supply of softwood sawtimber is expected to increase for the near foreseeable future. The supply of this softwood resource is expected to change over time as these stands reach and pass their economic and biological maturity. The original softwood tree planting of the 1930s was undertaken to bring abandoned farmland back into productive forests. Much of this effort was to conserve and restore soil productivity and control erosion from these sites. Throughout New York, thousands of acres were planted to the various softwood species in a relatively short time frame. Since then, the opportunity to replant on State lands has been limited by acres available to reforest and the gradual succession of plantations to natural hardwood species. As the number of plantation acres

on State forests is inevitably reduced over time, the supply of softwood timber will subsequently decrease in the long run.

Some of the management practices that promote sustainable forestry that are incorporated into this plan include: retaining **coarse woody debris** (CWD), harvest restrictions on steep slopes and along riparian corridors, protecting areas with significant cultural or historic resources and following **best management practices** during timber harvesting. This management plan includes goals and objectives consistent with sustainable forestry criteria established by the Forest Stewardship Council**.**

B. MINERAL RESOURCES

Gravel and hard rock resources exist in the areas surrounding the Unit. There are no mining contracts, permits, or operations on any areas in this Unit Management Plan. The nearest area of extensive gravel mining to the Unit is located approximately 3.5 miles east of the Coventry State Forest, close to the Chenango River. Under Article 7 of the Public Lands Law, any citizen of the United States may apply for permission to explore and/or extract any mineral on State lands. However, to protect surface resources, current Department policy is to decline any commercial mining application(s) pertaining to any lands covered by this Unit Management Plan.

Exploration for gas continues to expand in Chenango County and the towns in and around the Chenango Trail Unit. This activity increases the possibility of future impacts to the lands contained within this Unit Management Plan, as a result of gas exploration operations. The closest commercial natural gas production to the Chenango Trail Unit is located in the Towns of Smyrna and Plymouth in northern Chenango County. Wells in these towns are producing from the Oneida, Oswego, and Herkimer Sandstones at depths ranging from approximately 3500 to 4600 feet. Drilling permits have also been issued for wells in the Towns of Preston and McDonough, approximately 10 miles north of the Coventry State Forest (Chenango Reforestation Area #27). A drilling permit application has been recently received for a well targeting the Oneida Sandstone in the Town of Oxford, approximately five miles north of the Chenango trail Unit. Several wells have been drilled in neighboring Broome County, targeting the Oriskany Sandstone at approximate depths of 4500 to 5000 feet. These wells have been drilled in the Town of Colesville, approximately 5 miles south of the Beaver Flow State Forest (Broome/Chenango Reforestation Area #1) and have not produced gas commercially. There have been several wells drilled in Broome County targeting Trenton-Black River hydrothermal dolomite reserviors; however, there has been only one well that has produced commercially. The Beagell #2A well, located in the Town of Kirkwood, produced almost 377 million cubic feet of gas from the Trenton-Black River formation at an approximate depth of 10,000 feet. The production from this well has declined significantly and the well is in the process of being plugged back to a depth of 4800 feet to test the Marcellus Shale.

Initial title review indicates the State owns the mineral estate under all State forests covered by this Unit Management Plan, with the qualification that mineral reservations may exist and no expressed or implied warranty of title is being offered in this document. As of 2006, there are no oil and gas lease agreements pertaining to the mineral estate under the State forests contained in this Plan. In the future, the State may receive requests to nominate some or all of the tracts

contained in this Unit for oil and gas leasing. Additional information on oil and gas leasing procedures can be found in **Appendices XIII** and **XIV.** For further information contact the NYSDEC Mineral Resource staff, Region 8, 6274 East Avon-Lima Road, Avon, New York 14414-9591

C. BIOLOGICAL RESOURCES

Although the variety of biological resources on the Chenango Trail forests may not be infinite, it would require an exhaustive study to develop a comprehensive list. More than 20 tree species, 100 species of understory plants, 120 bird species, 40 mammals, 15 fish, 20 reptiles & amphibians and vast numbers of insects, fungi, and bryophytes. The conservation of biological resources is an increasingly significant societal demand. Legislation such as the Endangered Species Act, the National Environmental Policy Act (NEPA), and the New York State Environmental Quality Review Act (SEQRA) have had a lasting effect on both resource management and public perception of land stewardship. The Chenango Trail forests will be managed for multiple interests. As previously stated in this plan, biodiversity is an important interest. While trees will be harvested for utilization, the harvesting will be done on a sustainable basis with consideration to protect any special biological resources. The discovery of unique wildlife, or vegetation, will initiate a management objective to protect or enhance that unique population. It is recognized that some of the existing biological resources cannot be sustained. Red pine, Norway spruce, Scotch pine, and Japanese larch are all non-native species that were planted on the Unit. Many of these plantations have been successful, with the trees developing into high-quality, mature timber that satisfies a strong consumer demand. However, it is difficult and often infeasible to regenerate these plantations, so most of these species will likely vanish from these forests in the future. All native biological resources will be managed for sustainable populations.

D. RECREATIONAL RESOURCES

In the spring of 1999, a series of public meetings was held for the Draft Region 7 Recreation Master Plan. Discussions at these meetings focused on issues relating to recreational uses of State forests in the Region. Participants represented a broad range of recreational uses including horseback riding, hiking, snowmobiling, hunting, camping, photography, cross country skiing, trapping, birdwatching, canoeing/kayaking, target shooting, wildlife observation, fishing and horse drawn carriage riding. Input received from the public at these meetings has been incorporated into the Draft Region 7 Recreation Master Plan. This Plan, once finalized, in conjunction with this UMP, will be used to guide any recreational development on the Chenango trail Unit.

In New York State, the demand for hunting, as measured by license sales, has declined 14% since 1985. While license sales reveal declining participation, hunting on State lands may, in fact, be increasing in response to changes in regional land use. Parcelization and residential occupancy have restricted access to private lands and it is speculated that increased "posting" of private properties has shifted many activities, including hunting, to State land. While there may be no net increase in regional hunting pressure, the distribution of these activities appears to be changing. State lands provide hunting opportunities for those unable to purchase or access private land.

Similar to hunting, a regional angler survey conducted in 1988 and again in 1996 revealed a 24% decline in fishing within the nine county region.

The Chenango Trail forests will provide the public with opportunities for hunting, fishing, nature observation, snowmobiling, camping, cross-country skiing, hiking and other similar activities. The opportunity for many of these activities will be offered on a primitive scale. For example, there are no formal, designated campsites or ski trails, but the forests provide a desirable, natural environment for these activities. Some designated facilities are proposed such as a snowmobile trail on the Bobell Hill and Coventry State Forests and a hiking trail/ski trail on the Oak Ridge State Forest.

MANAGEMENT CONSTRAINTS ON THE UNIT

A. PHYSICAL CONSTRAINTS

Wetlands
Steep slopes
Storm damage
Limited access
Soil characteristics
Climatic conditions
Deeded rights-of-way
Geological characteristics
Concurrent use agreements
Presence of cultural resources
Buried telecommunication lines
Fragmented configuration of State land
Electrical transmission and telephone lines
Natural gas collection and distribution lines
Potential insect and disease infestations and associated quarantines

B. ADMINISTRATIVE CONSTRAINTS

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

C. SOCIETAL INFLUENCES

There are differing public opinions on the management practices and uses of State forests. All opinions are considered, but the degree to which they can be satisfied will vary. There are special interest groups for hunting, horseback riding, off-highway vehicles, bird watching and many other

recreational pursuits. There are industry demands for timber, natural gas, cell tower sites, field stone, rights-of-way and more. All of these demands need to be reviewed for their compatibility with the current laws, regulations, land management policies, the environmental conditions and the objectives for the forest property. It is recognized that these societal influences are dynamic and, if the State forest resources are to continue to benefit the interests of the public, some flexibility must be incorporated into the management of these resources.

D. DEPARTMENTAL RULES, REGULATIONS AND LAWS

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

VISION STATEMENT

The Chenango Trail forests will become a source of pride for the local community as a result of the many means by which these properties have enhanced the quality of life within the Coventry area. These natural resources will have contributed to the community's well-being by providing economic opportunities, recreational enjoyment, biological diversity, cultural legacies, social gratification and environmental quality. The management of these forests shall incorporate the indigenous knowledge of an engaged public. This management will adopt enough flexibility to accommodate the dynamic range of social, economic and ecological influences on these forests. It is our vision that the proper management of these lands will inspire the community to embrace these forests as a showplace for all those interested in natural resources management. (Percival P. Baxter 1955 - see **Appendix XVII**).

GOALS AND OBJECTIVES

A. LAND MANAGEMENT GOAL

It is the goal of the Department to manage State lands for multiple uses to serve the needs of the People of New York. This management will be carried out on the forests of the Chenango Trail Unit in a sustainable method. The biological diversity of these forests will be encouraged and the impacts to the ecosystem will be considered with all management actions. Interaction and shared learning between citizens and managers will be a key factor for achieving the goal.

1. Ecosystem Management

Ecosystem management is a philosophy of adopting a landscape perspective for all actions. The practical application of this philosophy is somewhat controversial due to the absence of a refined definition. In general, this style of management must address the long-term consequences of today's decisions, and it must view the interdependent relationships of the environmental system rather than focus on its individual components. It requires the engagement of the community including public and private land managers. A fundamental principle of ecosystem management is to base all decisions on the best information science can provide, with sustainability as the goal.

Ecosystem Management Principles Applied:

- A landscape perspective will be considered when setting objectives.
- A variety of habitats will be maintained.
- All water resources and sensitive sites will be protected from degradation.
- At least 40% of the Unit's acreage will be maintained in a conifer component cover type. (Conifer component cover types will have at least 10% of their **basal area** in a conifer species.)
- The values of habitats will be enhanced by establishing geographic groupings of stands with similar management directions.
- Corridors of unbroken forest canopy will be maintained along streams.
- Site specific actions will be used to enhance wildlife habitat. These actions may include **even-aged** cuttings of aspen to enhance bird habitat, **release** cuttings for apple trees and mast-producing trees, retention of roosting and cavity trees, and the retention of coarse woody debris.
- **Natural regeneration** will be favored over planting. Reforestation of a site by planting will be considered if natural **regeneration** is unsuccessful.
- The use of pesticides including **herbicides**, insecticides, or growth retardants will be considered only after all other management alternatives have been exhausted.
- Efforts will be made to protect the forest from invasive exotic plant species.
- The resources of timber, water, wildlife, recreation, and other environmental interests on these lands will be managed on a sustainable basis.
- Opportunities to interact with the community to gain knowledge of their interests in the State Forests will be pursued.
- Communications with other natural resource managers will be encouraged as future decisions are needed in the management of these lands.
- Forest management decisions will ultimately be supported through social acceptability, economic feasibility, and reliable scientific information.

a. Objectives for open land cover types.

Open land **cover types** are composed primarily of grasses, herbaceous plants, shrubs and other low, woody vegetation. Open lands provide primary habitat for many birds, small animals and insects. Here species such as deer and rabbits can find forage, seeds or berries. Many species, especially birds, seasonally use open lands for nesting, brood cover, courtship and food. Open lands provide **edges** where cover types meet and overlap. These edges form a transition zone called **ecotones**. Some wildlife species such as bluebirds and song sparrows require the special habitat conditions that the transition zone provides. The boundary lines of the Chenango Trail forests total approximately 57 miles in length. Much of the boundary adjoins roadways or private forest land; however, approximately 6 miles of the State forest boundary form an edge with open privately owned land.

Grassland and shrub land habitats can diminish within the landscape if natural succession is allowed to occur. The forests of the Chenango Trail Unit contain very little open land, while a significant portion of the landscape (Town of Coventry) is in open land, as either agricultural, grass or shrub. In keeping with the ecosystem management approach, the landscape will be considered when evaluating the need for this type of habitat. Based on analysis of the 2003 aerial photography of the town, at least 27%, or 8,400 acres, of the Town of Coventry is currently open land. If this type of habitat should greatly diminish in the future of the landscape, action will be

considered to either create open land habitat on the Unit or acquire additional acreage that can be maintained as open land. One opportunity to create some open land will be through the oil & gas development process if these lands are leased in the future. Openings that may be created in the forest canopy as a result of natural gas well pad development will be considered for establishment in an open, grassland cover type. Shrub land maintenance will include inspecting sites on a ten year cycle and removing trees when necessary to prevent plant succession.

Actions:

1.) Periodically monitor the landscape for changes in the amount of open land.

2.) Maintain 20 acres of shrub land on the State forests.

3.) Maintain compatible openings created for natural gas well pad development in an open, grassland cover type.

b. Objectives for riparian and wetland cover types:

The riparian and wetland cover types on the Unit are diverse and productive. They provide food, breeding areas and cover for many species of wildlife. They are an integral part of the hydrologic cycle (the route water takes from evaporation to rainfall) providing sediment filters, regulating runoff and recharging aquifers. The **riparian zones** along streams and other bodies of water are protected so that mechanical disturbance does not cause excessive soil movement, erosion and degradation of water quality. In general, a 50 foot forested **buffer** has been delineated on each side of all significant streams on the Unit. No harvesting will be done within these stream corridors. An additional 50 foot buffer will also be established outside of the no-harvest buffer, where at least 75% of the pre-harvest basal area must be retained. The number of crossings through these zones for timber extraction will be kept to a minimum. All crossings will comply with the DEC Protection Of Waters Program and the New York State Forestry Best Management Practices for Water Quality to protect stream banks and prevent sedimentation from entering stream channels.

Protection of ponds, lakes, and unclassified wetlands will include establishing a 100 foot no-harvest zone next to the water body and an additional 150 foot restricted-harvest zone where at least 50% of the pre-harvest basal area must be retained. Classified wetlands (NYS Freshwater Wetlands Act) will have a 250 foot no-harvest **buffer zone** established adjacent to the wetland. These wetlands and their associated buffer zones will be off limits to **silvicultural treatments** and recreational trail development.

Actions:

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

2.) Protect all class C and D streams by establishing 50 foot "no-harvest" buffer zones with an additional 50 foot "restricted-harvest" buffer zone and implementing BMPs.

3.) Protect 32 acres of ponds by creating 100 foot "no-harvest" buffer zones with an additional 150 foot "restricted-harvest" buffer zone adjacent to the water body.

4.) Protect 37 acres of non-classified open wetlands and 106 acres of non-classified forested wetlands by establishing 100 foot "no-harvest" buffer zones adjacent to the wetland.

5.) Protect 16 acres of classified open wetlands and 29 acres of classified forested wetlands by establishing 250 foot "no-harvest" buffer zones adjacent to the wetland.

6.) Protect 425 acres of forested riparian areas by not allowing timber harvesting or oil & gas development.

c. Objectives for forest cover types.

Each forest in the Unit is divided into stands of trees and other non-forested areas. A stand has species and age characteristics which distinguish it from adjoining stands. Every stand on the Unit was evaluated and given a management direction and objective cover type. This ranges from stands that are intended to attain late successional forest conditions**,** where timber is not scheduled for management, to stands that are to be managed for multiple uses including timber. The following objectives summarize the acreage devoted to each type of management.

Areas within the Unit that will be managed as **protected areas**, will include wetlands, **Late Successional Forest stands,** acreage with steep terrain or difficult access and areas with unique characteristics. The management of these areas will incorporate some restrictions on acceptable activities to protect the resource of interest.

Certain forest stands may not exhibit any particular environmental or mechanical limitations to timber harvesting. However, the stands may have a unique structure or physical characteristic that is best served without timber harvesting. An example would be an interior forest stand of native conifers with large diameter stems, exhibiting late successional characteristics. Such places are uncommon in the landscape of the Unit. Most of the land is used for working forests, agriculture, or development. Late Successional Forest stands will not be scheduled for timber harvesting and they will be protected from oil & gas development. These stands will be allowed to attain **climax forest** conditions. No silvicultural treatments will be scheduled in the Late Successional Forest stands established on the Chenango Trail forests. No well pads, roads or pipelines will be established within these areas. Recreational facilities, such as trails, will be discouraged within these stands. Late Successional Forest stands typically contain large diameter trees, often hemlock-hardwood types, with a high percentage of hemlock**.** Such forests usually contain large numbers of **snags** and cavity trees, and large amounts of downed material referred to as coarse woody debris. These structures support many species of plants, animals and microorganisms. Late Successional Forest stands are primarily established for the benefits of biodiversity. Under limited circumstances, trees may be cut, or timber harvested, from Late Successional Forest stands. These conditions may result from uncommon and unexpected events, such as storms, insect or disease outbreaks, or fires. Although silvicultural treatments will not necessarily follow such events, the Department may determine that treatment of the stand is essential to protecting the health of the forest or ensuring public safety.
Other areas of the forest may be protected from timber harvest operations for reasons pertaining to recreational values, unique visual characteristics, or historic preservation. These areas may

still receive silvicultural treatments, such as the removal of tree saplings from stone foundations, the pruning of tree branches in recreational areas, or the felling of damaged or “risk” trees. However, all commercial timber harvesting operations as well as oil & gas development will be prohibited within these areas.

Some areas of the forest will remain off-limits to timber harvesting, oil & gas development, and recreation development due to the physical limitations of steep ground or difficult access. These areas are usually not good sites for recreational trails or other improvements. These areas of the forest will be managed similar to the Late Successional Forest stands and will eventually achieve climax forest conditions.

Actions:

1.) Manage 117 acres as Late Successional Forest stands.

2.) Manage 40 acres as protection areas due to exceptional visual characteristics, recreation values, or historic significance.

3.) Manage 84 acres as protection areas due to poor access or steep slopes

d. Objectives for road corridors.

The road corridors on the forests have been delineated as separate stands. Most of these corridors are 50 feet wide (3 rods) where the roadway is within the forest property, or 25 feet wide (to road centerline) where the roadway is adjacent to one edge of the forest property. Although the forest cover within these corridors is limited, most of the roadways are lined with trees along the edges of the corridor and it is not uncommon for a road corridor to contain three acres of forested area for every one mile of distance. Maintaining this forested edge provides important **aesthetic** benefits to travelers of these roadways. While these aesthetics will remain a priority, it is also important to remove hazard trees along the roadways and to prevent the forest canopy from shading the road excessively. These road corridors will be treated with the corresponding adjacent forested stands. Advanced treatments will be scheduled where tree removal is needed for road improvement. Municipalities maintaining these roads may remove trees within the legal right-of-way. However, the Department requires such entities to obtain a Temporary Revocable Permit (TRP) if they wish to remove trees larger than 5"dbh.

Actions:

1.) Manage 53 acres as road corridors.

2.) Maintain the forested edges along these corridors for their aesthetic importance.

3.) Regulate the removal of trees within the road right-of-ways through the issuance of Temporary Revocable Permits.

e. Objectives for other habitat improvement.

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

Actions:

1.) Release and prune apple trees on seven acres of the Unit.

Overstory trees and/or competing vegetation will be removed that are shading and potentially inhibiting apple tree growth and fruit production.

2. Silviculture

The remaining stands on the Unit are to be managed for multiple uses, including timber. **Silviculture** is the science and art of cultivating forest crops. Although there are several variations, the two basic silvicultural systems for managing a stand of trees are the **even-aged system** and the **uneven-aged** system. Depending upon the type of system used, the structure of the forest is altered differently. One of the principle differences between the two systems is the type of tree species that is favored by each. The even-aged system is best suited to the growth and regeneration of shade-intolerant species, such as black cherry and white ash. These species prefer full sunlight conditions. The uneven-aged system favors shade-tolerant species such as hemlock and sugar maple. In this system, the shade of continuous **overstory** trees facilitates the regeneration of these species. The implementation of these silvicultural systems is primarily achieved through the State forest product sales program. The **cutting cycle** is the time span between treatments (i.e. timber harvests) in an uneven-aged stand. The **thinning cycle** is the interval between treatments in an even-aged stand. Cutting and thinning cycles of approximately 25 years will be used for most stands on the Chenango Trail forests. The age of trees at maturity varies and is dependent upon variables such as tree species, **site quality** and growing space.

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

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

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

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

Nearly all of the stands on the Unit are presently even-aged as a result of agricultural abandonment and **clear cutting** in the early 1900s. Where feasible, the even-aged stands may be converted to uneven-aged stands for the purpose of growing specific tree species (e.g. sugar maple), maintaining continuous forest canopy for specific wildlife (e.g. **neo-tropical migratory birds**), or providing layered canopy structure. A layered canopy structure can provide benefits to the visual aesthetics as well as the habitat of the forest. The **conversion** of these stands will require many silvicultural treatments over a long period of time. Therefore, while the management objective for many of the even-aged, conifer plantations (over 1,000 acres) is listed as even-aged northern hardwood, that vision is for the relatively near future of the next 50 years. The conversion of these stands from even-aged conifer plantations to uneven-aged northern hardwoods may take 100 years or more. One method of converting a stand from even-aged to uneven-aged is with group selection. This method removes small patches or groups of trees within the stand. The maximum width of the groups is usually twice the height of the mature trees. Harvesting the groups creates small openings throughout the forest stand which represent another age class within the stand. Over the course of time, as additional patches are created through timber harvests, enough age classes are established to define the stand as uneven-aged. If the harvested patches are kept small enough (e.g. 1/2 acre) and a seed source is available, it is possible to establish shade-tolerant regeneration within these patches.

Green tree retention is the practice of reserving certain live trees, usually conifer species, within the boundaries of a harvested area. These trees are intended to be retained permanently. This is

most commonly associated with the even-aged system, where the primary objective is to create a **stand structure** similar to that formed by natural disturbances such as fire, insects and **windthrow**. However, it can also be applied with uneven-aged management, where the objective is primarily one of biodiversity. In the Chenango Trail UMP, green-tree retention will be implemented only with the uneven-aged system. This system will be used to provide habitat that consists of remnant forest structures such as large conifers, snags, coarse woody debris, and a continuum in the forest canopy. In the Chenango Trail UMP, some stands of native conifers (e.g. white pine, hemlock) will be selected for green tree retention, while in others, non-native conifers (e.g. red pine, Norway spruce) will be chosen. In all cases, the management direction of these stands will be uneven-aged. The native conifers are expected to live long and grow larger than the non-native retained trees. Most likely, snags and coarse woody debris will be formed more quickly by the non-native retained trees.

a. Objectives for even-aged management system.

1.) Manage 1,623 acres as even-aged/ standard rotation, for Northern Hardwood or Northern Hardwood-Oak cover type.

2.) Manage 586 acres as even-aged/standard rotation, for Northern Hardwood-Norway Spruce cover type.

3.) Manage 65 acres as even-aged/standard rotation, for Northern Hardwood-Hemlock or Northern Hardwood-White Pine cover type.

4.) Manage 560 acres as even-aged/long-rotation, for Northern Hardwood or Northern Hardwood-Oak cover type.

5.) Manage 353 acres as even-aged/long-rotation, for Northern Hardwood-White Pine cover type.

6.) Manage 5 acres as even-aged/short rotation, for Pioneer Hardwood cover type.

b. Objectives for uneven-aged management system.

1.) Manage 579 acres as uneven-aged, Northern Hardwood-Hemlock or Northern Hardwood-White Pine cover type.

2.) Manage 348 acres as uneven-aged, Northern Hardwood or Northern Hardwood-Oak cover type.

3.) Manage 227 acres as uneven-aged, native green tree retention.

4.) Manage 146 acres as uneven-aged, non-native green tree retention.

Summary of Management Direction acres:

3,192	even-aged
1,300	uneven-aged
886	protected
80	other
5,458 acres	

3. Habitat

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

a. Objectives for habitat management.

1.) Provide an average of four snag trees per acre. Provide an average of four cavity trees per acre.

Tree Diameter	Snags	Cavity Trees
11-17"	2	2
18+″	2	2

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

Cavity trees may be live or dead standing stems within the forest that contain either a natural cavity or one created by animal activity. Tree cavities are preferred nesting sites for numerous song birds and owls. A range of tree diameters will be retained in order to accommodate a variety of large and small cavity users.
Emphasis will be given to maintain both snag and cavity trees near water, fields and edges where possible. This will be applied in both even and uneven-aged systems.

2.) Provide downed woody debris.

Downed woody debris is an important component of the forest ecosystem. Downed wood stores moisture, provides habitat niches for insects, plants and fungi and cycles nutrients as it decays. Downed wood naturally occurs when limbs break, trees are blown over or snags fall. Additional downed wood will be provided as follows:
- Whole tree harvesting will not be permitted.
- Minimum utilization limits will generally not be required.
- Tops of felled trees will not be sold for firewood following sawtimber harvests, except along travel corridors or where aesthetics are important.

3.) Favor fruit and mast producing trees.

Release and thin around mast producing trees in both commercial and non-commercial thinning. Species, such as wild turkey and grey squirrels depend upon hard mast-producing trees such as oaks, beech and hickories.

4.) Thin pole stands to enhance stand structure and promote timber growth.

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

5.) Encourage winter cutting of hardwoods, whenever practical.

Winter harvesting under ideal conditions causes less disturbance of the site and soils and provides some winter browse and less interference with active nesting sites.

6.) Erect nest boxes for wood duck or other water fowl species around ponds and open wetlands.

Environmental organizations will be encouraged to provide nest boxes or engage in other habitat enhancement work through the "Adopt-A-Natural Resource" program.

7.) Protect the active nest sites of raptors on the forests of the Unit.

When an active raptor (e.g. red-shouldered hawk, goshawk or other species of special concern) nest site is confirmed on the Unit, the following management recommendations will come into play: no timber harvesting or other deliberate disturbance, at any time of the year, within a radius of 300 feet (2 acre area) of a known active nest site; no timber harvesting or other deliberate disturbance, during the active breeding season, within 600 feet (8 acre area) of a known active nest site; conservative timber harvesting and minimal disturbance, during the active breeding season, within 1,320 feet (40 acre area) of a known active nest site. A general time frame covering the active breeding season for most hawk species would include the months of March through July.
Since the red-shouldered hawk is identified as a species of special concern, and was only recently removed from the threatened species list, an effort will be made to confirm the continued existence of at least one breeding pair of red-shouldered hawks within the Unit. If no reliable reports of breeding pairs are received during a five year period, a field survey will be made to determine if the species is still present within the Unit.

8.) Provide beneficial habitat for the Indiana bat.

This mammal is currently listed as an endangered species by both Federal and State Protective Status listings. One habitat requirement for this and other bat species during the breeding season is adequate roosting trees within their seasonal home range. Therefore, large specimens of Shagbark Hickory and other potential roost trees will be retained for their wildlife habitat value within the landscape. There are a few hardwood stands on Coventry State Forest that contain

large Shagbark hickory trees as part of their forest mix. These stands will be managed more for their wildlife benefits than timber values in regards to the hickory component of those forests. Any potential roost trees within these stands should be considered for that need and potentially left on site.

9.) Document the quality of habitat and the suitability of management activities by monitoring the Management Indicator Species within the Unit.

Seven Indicator Groups, which are comprised of numerous bird species, have been developed as Management Indicator Species for this UMP. These Indicator Groups will be periodically monitored in order to assess the quality of the wildlife habitat on the Unit as afforded through the implementation of scheduled management activities. The baseline data for this initiative has been derived from the 2000 - 2004 Breeding Bird Atlas surveys. Efforts will be made to encourage public participation, including bird clubs, in the continuing interest of monitoring bird species within the Unit. A database will be maintained to record reports of bird species (fitting within one of the seven Indicator Groups) as they are observed within the Unit.

4. Protection of Resources and Forest Inventory

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

a. Objective for fire protection.

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

b. Objective for insect & disease protection.

The protection of resources from injurious insects, diseases and **invasive species** will be accomplished through a program of integrated pest management. This program includes elements of reconnaissance, analysis and determination of thresholds and controls when necessary, emphasizing natural methods.

c. Objective for cultural resources protection.

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

d. Objective for forest inventory and boundary line maintenance.

Periodic forest inventory every 10 to 15 years and re-inventory after each silvicultural treatment will be conducted. Forest inventory provides a record of the conditions and characteristics of the forest. Inventory is conducted on an individual forest stand level. Information on trees, such as species, size, density and quality are recorded. Additional information is collected on ground conditions, understory composition, quality of habitat and management options.

The integrity of boundary lines is also important for resource protection. Periodic maintenance of 57.25 miles of boundary lines and surveying when necessary will maintain the integrity of the property lines.

Summary of Cover types
Cover type distribution and management objectives are presented in Table IV and Figure 1.

TABLE IV. Present and Future Cover types

Vegetative Type	Present Acres	% of Unit	Objective Acres	% of Unit
Northern Hardwoods	1,369	25	2,849	52
No. Hardwood and Natural conifer	1,622	30	1,785	33
No. Hardwood & plantation conifer	101	2	626	11
Plantation conifer	1,943	36	0	0
Mixed plantation & natural conifer	235	4	5	<1
Pioneer Hardwood	6	<1	11	<1
Ponds	32	<1	32	<1
Wetlands/Open	57	1	57	1
Shrub and Apple	40	<1	40	<1
Roads	53	1	53	1
Total	5,458	100	5,458	100

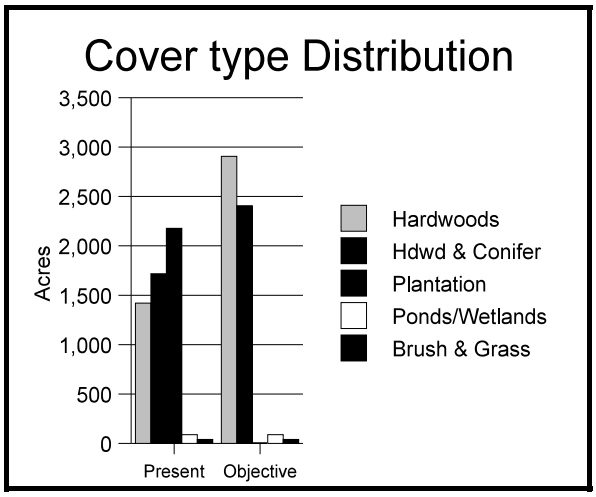


Figure 1

5. Mineral Resources

The Unit may hold oil and/or natural gas reserves beneath its surface, as well as various mineral resources.

a. Objective for oil and/or natural gas exploration.

Surface disturbance will be permitted in association with oil and/or natural gas exploration, production and development on compatible portions of the Unit. Adverse environmental impacts must be avoided to the maximum extent possible.

Sections 23-1101 and 9-0507 of the Environmental Conservation Law authorize the Department of Environmental Conservation to make leases on behalf of the State for exploration, production and development of oil and gas on certain State lands.

Proposals to lease parcels of Department of Environmental Conservation managed State lands for this purpose will be considered following public notice in the Environmental Notice Bulletin (ENB), and in local newspapers. A public meeting will be held to provide information 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, site specific conditions for avoiding and mitigating impacts on natural resources will be drafted by land managers and incorporated into contract documents. These conditions will include but not be limited to site selection, mitigation of impacts and land reclamation upon completion of drilling.

A number of factors are considered when determining where surface disturbance will be allowed or disallowed. The term “surface disturbance” refers to the process of disturbing the surface of the land for the development of well pads, access roads, pipelines or other facilities necessary for the extraction of subsurface oil or gas reserves. The presence of regulated wetlands, 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 management strategies, such as Late Successional Forest stands, may be incompatible with oil and gas well development and may result in exclusion from surface disturbance. The final determination will be made as a part of the tract assessment process on a case by case basis. As part of this UMP process, the DEC has completed individual tract proposal reviews for each forest within this Unit and has determined which areas would be excluded from surface disturbance should leasing be initiated. Included in Appendix XIX are maps depicting these areas. Any parcel nominated as a non-surface entry lease will be excluded from the process detailed above due to the prohibition of surface disturbance(s). The extraction of the oil or gas reserves located beneath sites which have been excluded from surface entry will still be allowed through the use of directional drilling techniques which do not disturb the land surface of these sites.

The Chenango Trail UMP will classify approximately 41% of the land area as compatible for surface disturbance associated with the exploration, production, and development of oil and natural gas. This area is considered compatible, within the required spacing restrictions, for the development of well pads, roads, pipelines, and other infrastructure associated with oil & gas development. This classification is subdivided into three different categories: First Preference, Second Preference, and Third Preference. The First Preference category consists of areas with

even-aged plantation species or early successional habitat cover. These are the areas where deforestation associated with the development of roads, pipeline corridors, and well pads would have the least adverse impact on the forest. Areas designated as Second Preference are mostly in even-aged Northern hardwood forest cover or mixtures of hardwood and native conifer species. The Third Preference category contains areas of uneven-aged northern hardwood forest cover. The purpose of identifying this third category areas as compatible, but least preferred, is to limit the possibility of permanently removing any late successional forest cover as well as reduce fragmentation of areas managed in the uneven-aged system. Approximately 25% of the land area will be classified as incompatible with any surface disturbance. This incompatible area consists of wet ground, riparian protection buffers, steep slopes (considered to those slopes in excess of 10%), late successional forest areas without active silviculture, and other sensitive sites including those with cultural resources. The remaining 34% of the land area within the Unit will be classified as incompatible with surface disturbance; however, in rare instances, development of infrastructure to cross these areas may be considered when such location would benefit protecting the resource. Much of this area consists of stream protection buffers, recreational trails or moderate slopes (10.1 - 15%). The development of infrastructure (e.g. pipelines, roads) through these areas will be limited to that which is necessary to support the exploration, and production of oil and/or natural gas resources on the compatible areas of the State forests. Well pads will preferably be excluded from these areas, but may be permitted if a clear environmental benefit is realized over the alternative site locations within the compatible areas of the property and the action is supported through a specific site analysis.

Actions:

The following actions, thresholds, and considerations have been developed in accordance with the current environmental analysis as well as the management interests for these State forests. Deviations from these specifications will be considered if additional site specific analysis demonstrates no adverse effects from the modification and/or a clear environmental benefit is realized from the modification, and the integrity of the forest management interests is not compromised by the modification.

1.) Potential to permit the development of well pads, associated with oil and/or natural gas, within compatible areas of the Unit at a density not to exceed one well pad per 320 acres of contiguous State forest land.

Potential to permit surface disturbance, within the well pad spacing restrictions, on 2,268 acres of the Unit in association with oil and/or natural gas exploration, production and development.

2.) Prohibit surface disturbance on 1,350 acres of the Unit in association with oil and/or natural gas exploration, production and development.

3.) Consider with site specific environmental review surface disturbance on 1,840 acres of the Unit in association with the limited development of infrastructure needed to support the exploration, production and development of oil and natural g**as.**

The criteria used to evaluate the lands of the Unit with respect to oil and/or gas operations included forest management objectives, topography, riparian protection buffers and other interests. Some of these criteria are specifically identified as:
- well pads will only be allowed on slopes of 0 to10%.

- preference will be given to infrastructure development on slopes of 0 to 10%.
- surface disturbance will not be allowed within classified wetlands or within a 250 foot distance of the boundary of these wetlands.
- surface disturbance will not be allowed in any area of forest protection management, including wet sites, historic sites, areas with unique aesthetic value, steep ground and others.
- streams will be buffered at 250 feet, each side. Within these buffers, no well pads may be located unless otherwise specifically approved by the Department. Limited development of infrastructure may be allowed to cross some of these sites.
- recreational trails (snowmobile trail) will be buffered at 250 feet, each side. Within these buffers, no well pads may be located unless otherwise specifically approved by the Department. Limited development of infrastructure may be allowed to cross some of these sites.

In the event that the lands in this Unit are leased, the Department may incorporate any number of mutually agreeable terms and conditions into the lease to beneficially serve the State. These conditions are in addition to all of the current laws and regulations pertaining to oil & gas operations. The procedures for entering into a lease are identified in **Appendices XIII** and **XIV.**

Site reclamation of disturbed areas will consist of restoring soil and grades consistent with the surrounding topography and stand conditions. The majority of disturbed sites will be seeded with native, warm-season grass cover (ie. little bluestem, big bluestem, switch grass, Indian grass). Recommendations from the Natural Resource Conservation Service staff will be followed to facilitate the establishment of this vegetation. In the event that the establishment of these grasses is unsuccessful, alternative species of grasses, shrubs or trees will be recommended. Due to the absence of open grassland habitat on these State forests, the preferred vegetative species for site reclamation will be native grasses, unless the disturbed site is located in an area where continuous forest canopy is desired. Replanting of native tree species will be recommended and soil amelioration will be required in areas managed for continuous forest canopy.

Access roads associated with well sites will be built to the standards of a Class B Public Forest Access Road with a travel surface of 14 feet and a total cleared width not exceeding 34 feet. Upon completion of drilling, access roads will be closed to the public and reclaimed to a condition capable of supporting both vegetation and periodic access to maintain the well site. Site restoration and long term access will be authorized by a Temporary Revocable Permit.

For the life of the Plan, gas development on the Unit will not exceed a maximum of 13 sites, unless the Department approves a drilling pad development plan submitted by the lessee that identifies a denser development spacing. Establishing more than 13 well pads will require a change to the Plan in accordance with the UMP amendment process, including additional public meetings. Any number of well bores may be attempted from these sites. This spacing standard allows for the drainage of gas reserves without significant impact to surface conditions. The maximum surface disturbance at any well site will not exceed two acres unless otherwise approved by the Department upon justification of the lessee.

Acceptable number of well pads/forest @ 320 acre spacing		
FOREST	**ACRES**	**# WELL PADS**
BChen-1	1,028	3
Chen-10	1,417	3*
Chen-13	576	1
Chen-27	1,168	3
Chen-30	741	2
Chen-33	528	1

(*) One well pad may be located on each of the 3 main subcompartments of the forest.

All pipelines associated with the production and development of oil and/or gas will be located adjacent to existing public roads and/or the well pad access roads.

The lessee must comply with all policies and provisions of the Environmental Conservation Law and Title 6 of the New York Code of Rules and Regulations and all work associated with prospecting, drilling and laying of pipes must be approved by the Department in writing. A bonded Temporary Revocable Permit and Drilling Permit will be required before well pad development.

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

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

At the time of leasing, a public information meeting will be scheduled. The purpose of the meeting will be to provide information about natural gas development specific to the Unit including the distribution of well sites, the duration of drilling activities and any necessary site restoration.

Requests to use State land to conduct geophysical (such as seismic survey), geochemical and/or surface sampling procedures will require a Temporary Revocable Permit (TRP). The property must be subject to lease agreement and only the lessee, or parties authorized by the lessee, can be issued a TRP for these purposes.

B. PUBLIC USE AND RECREATION GOAL

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

1. Public Use and Recreation Management

State forests within the Chenango Trail Unit are included within the Region 7 Draft Recreation Master Plan. The Draft Recreation Master Plan conveys guidelines for recreational development on State forests throughout the region. In general, State lands offer opportunities for recreational activities that are best enjoyed in remote, relatively undisturbed natural areas. Such activities typically require only a minimum of facility development or site disturbance. Activities meeting these criteria are compatible with maintaining and protecting the natural character and features of State land. Visitors to State forests do not pay admission fees, and limited facility development and associated construction and maintenance costs are consistent with this principle.

There are three components to the public use and recreation section of this plan:
- Maintaining and enhancing public access;
- Maintaining and enhancing recreational opportunities and facilities;
- Providing educational opportunities.

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

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

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 the use of public accommodations. Title II of the ADA applies to the Department and requires, in part, that reasonable modifications must be made to its services and programs, 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 accomplished unless such modification would result in a fundamental alternation in the nature of the service, program or activity or an undue financial or administrative burden to the Department. Since recreation is an acknowledged program of the Department, and there are services and activities associated with that program, the Department has the mandated obligation to comply with the ADA, Title II and ADA Accessibility Guidelines, as well as Section 504 of the Rehabilitation Act.
For additional information on the ADA, please reference the ADA homepage on the internet at www.usdoj.gov/crt/ada/adahom1.htm.

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

a. Objectives for public use and recreation.

1.) Maintaining and enhancing public access.

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

2.) Maintain existing pull-offs and parking areas.

Maintenance will include annual brushing, grading and litter pick-up when needed. Additional access opportunities will be enhanced through access routes established via land management actions removing forest products. Refer to the Public Use Maps for locations.

3.) Maintain 1.2 miles of trails open to ATV use by people with disabilities.

Within the Unit, there is one trail designated for ATV use by people with disabilities through a special permit process regulated by the Department. This designated trail, which includes several short spur trails, totals 1.2 miles in length and is located on Coventry State Forest. The main trail runs easterly from the North Road to Harvey Road. There are several spurs that lead away from the main trail currently open for use. Included in the total trail length is another spur trail designated on the west side of Owlville Road. This section of trail offers access to a small pond that is popular for fishing and canoeing. The Department will maintain this trail as needed for public use and provide better parking opportunities as outlined in Objective #5.

4.) Restrict and install vehicular barriers on Bobell Hill State Forest and Beaver Flow State Forest.

Install a vehicle barrier in the form of a gate or large boulders at the west end of the existing access road off Palmetier road on Bobell Hill State Forest. This barrier is needed to prevent further degradation of this seasonal access road.

Install a vehicle barrier in the form of a gate or large boulders at the east end of the existing access road that connects to Mendenhall road on Beaver Flow State Forest. Maintenance costs would be reduced and some public safety concerns alleviated through these measures. These blocked roadways would continue to serve the public for foot travel.

5.) Install an informational kiosk and construct a parking area for each of the State forests in the Unit.

The Department will install one informational kiosk and a parking area for each of the State Forests on the Unit. The parking areas will be designed to accommodate three vehicles at one time. Parking areas with kiosks will be set along existing roadways in locations that best enhance public access for each forest. On the Coventry State Forest, a total of three parking areas will be created. The primary one, including a kiosk, will be located on the North Road near the trail designated for ATV use by persons with disabilities.

6.) Improve access for recreational and managerial purposes to Oak Ridge State Forest.

Interior access to Oak Ridge State Forest is limited from the south to a narrow strip of land that connects to Elm Drive in the Town of Bainbridge. This road access is on a residential street with no present off-road parking available. The Department will propose developing a roadside parking area on Elm Drive that will accommodate at least to vehicles.

Future timber sales on the east side of the forest will utilize the Elm Drive parking area for decking and loading logs. If this site does not provide adequate space for this purpose, the Department will consider establishing a **log deck** approximately 1500 feet west of Elm Drive, in the forest interior, with an access road connecting to Elm Drive.

7.) Acquire 140 acres of private property.

The purchase of in-holdings and the consolidation of boundary lines will facilitate public and administrative access. The Department will pursue fee simple title of eight parcels from willing sellers when funding becomes available.

8.) Maintain existing public-use facilities on the State forests of the Unit in a rustic manner.

Normal maintenance activities include mowing, periodic painting, trail signing, and litter removal. The number of signs, gates and material improvements to the forest facilities will be limited in order to maintain a rustic appearance. Maintaining a rustic character in these areas will complement the surrounding natural environment.

9.) Enhance snowmobile opportunities on the Unit.

Currently, there are two separate designated snowmobile trails on the Unit. One trail traverses through Bobell Hill State Forest and another trail on Coventry State Forest. Combined, these trails cover approximately 1.5 miles. Both trails are currently maintained under separate Temporary Revocable Permits (TRP) issued to a Broome County snowmobile club (BC Riders) and the Delaware-Otsego County Riders (DOC), respectively. The TRP outlines the approved general maintenance and grooming needs for the clubs as pertaining to the snowmobile trails on State forest. These trails are used as secondary connector routes to State Corridor trail # 7. All snowmobile trail construction must comply with best management practices.

The Broome County snowmobile club has proposed an additional secondary trail on the Unit for Beaver Flow State Forest, approximately 2.5 miles in length. This trail, if established, will become part of the N.Y.S. Snowmobile Corridor Trail System. Upon final approval of this UMP, the Department will encourage each prospective snowmobile club to maintain their designated snowmobile trails on the Unit under an Adopt -A- Natural Resource Agreement with the DEC.

The Department will work cooperatively with user groups through the TRP process or the Adopt -A- Natural Resource Agreement Program in an effort to maintain and expand the snowmobile Corridor Trail System through the Unit.

10.) Relocate vehicle parking closer to pond on Coventry State Forest.

The current parking area located on Owlville Road, used primarily for non-motorized boat access, will be moved further to the east. The new parking area will be located several hundred feet closer to the pond shore. This management action will shorten the current portage distance to the pond for ease of boating access. The parking area will have a hard, smooth surface, such as limestone dust, and it will accommodate two vehicles. No trees larger than 6" diameter will need to be removed.

11.) Develop a passive recreation trail along the stream gorge on Oak Ridge State Forest.

Located on this forest is a scenic stream gorge that passes through an older, mixed natural conifer/hardwood forest cover type. On the east side of the gorge is an existing trail that was once part of an old logging or Town road passing through the area. This trail bed could easily be incorporated into a larger loop trail that would originate from the State land boundary on Elm Drive. A passive recreational trail that would support hiking, cross-country skiing, bird watching or the like would be an ideal addition to this State Forest. A loop trail, ranging from one to two miles in length, could easily be accommodated in this area. Currently there are no formal recreation trails or facilities developed on Oak Ridge State Forest.

The Department would entertain and support trail development by an organized group through the Adopt-A Natural Resource Program as outlined above for this location.

12.) Prohibit the recreational use of ATVs and other off-road motorized vehicles.

There are several locations where ATV trails were established or proposed on State forests in Region 7 and subsequently closed due to significant environmental degradation and social conflicts. The relatively small size of the individual forests in this Unit do not lend themselves to long distance loop trails preferred by ATV riders, nor will the generally poorly drained soils support a trail without expensive upgrades. Therefore, off-road vehicle riding will not be allowed on any of the forests of the Unit, with the exception of use by people with qualifying disabilities who possess a valid permit to ride on the designated ATV trail (CP-3) within the Coventry State Forest.

C. PUBLIC AWARENESS GOAL

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

1. Community Forestry and Public Awareness.

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

a. Public awareness objectives.

1.) Conduct public programs to promote community involvement in forest management.

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

2.) Encourage participation in the DEC's Adopt-A-Natural Resource program.

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

MANAGEMENT ACTION SCHEDULES

TABLES OF LAND MANAGEMENT ACTIONS

The following tables present a 20-year schedule of planned management actions. The first table is referenced by forest stand number and the second table is referenced by the year of scheduled management. Maps showing the specific forest stand locations are located in **Appendix XXI**. Abbreviations used in the tables are listed below.

A. DEFINITION OF CODES USED IN MANAGEMENT ACTION SCHEDULES

TABLE HEADINGS

UNIT - State Forest (e.g. Chenango R.A. # 10).
SUB - forest stand subcompartment.
STAND - forest stand identification number.
FOREST TYPE - forest cover type.
ACRES - area of forest stand.
SPECIES - the two most prevalent overstory species in the forest stand.
DBH - Diameter at Breast Height. The average diameter class of overstory trees.
BASAL AREA - a measurement of tree stem density expressed in square feet.
MGT DIR - management direction.
OBJECTIVE - management objective.
TREAT TYPE - treatment type.
TREAT YEAR - year of scheduled treatment.

FOREST TYPE & OBJECTIVE CODES

AP - apple trees
DL - Dunkeld larch
EL-NS - European larch-Norway spruce
EL - European larch
JL - Japanese larch
NH - Northern hardwood
NH-HEM - Northern Hardwood-hemlock
NH-NS - Northern hardwood-Norway spruce
NH-OAK - Northern hardwood-oak
NH-SP - Northern hardwood-Scotch pine
NH-WP - Northern hardwood-white pine
NS - Norway spruce
OAK - oak species
OAK-HICK - oak-hickory
OAK-PINE - oak-pine species
OPEN - open land
OPEN/NH - open land with hardwood saplings
OTHER - miscellaneous forest cover
PH - pioneer hardwood
POND - pond
ROAD - road corridor
ROW - powerline Right-of-Way
RP - red pine
RP-JL - red pine-Japanese larch
RP-Larch - red pine-larch species
RP-WP - red pine-white pine
RP-WS - red pine-white spruce
WETLAND - wetland
WP - white pine
WP-HEM - white pine-hemlock
WP-JL - white pine-Japanese Larch
WP-NS - white pine-Norway spruce
WS - white spruce
WS-NH - white spruce-Northern hardwood

DBH CODES

0-5" - seedling & sapling
6-8" - small pole timber
9-11" - large pole timber
12-17" - saw timber
18"+ - large saw timber

SPECIES CODES

ALDER - alder species
AP - apple species
ASP - aspen species
BC - Northern black cherry
BE - American beech
BL - black locust
BW - black willow
DL - Dunkeld larch
EL - European larch
HEM - Eastern hemlock
HM - hard maple or sugar maple
JL - Japanese larch
NS - Norway spruce
RM - red maple
RO - Northern red oak
RP - red pine
SH - shagbark hickory
SP - Scotch pine
TA - thorn apple
WA - white ash
WP - Eastern white pine
WS - white spruce
YB - yellow birch

MANAGEMENT DIRECTION CODES

AP - apple tree
BR - brush
E - even-aged
EL - even-aged, long (120+ year rotation)
LSF - Late Successional Forest
PD - pond
R - road corridor
U - uneven-aged
UG - uneven-aged, green tree retention
ZA - protection, unique aesthetics
ZF - protection, recreational values
ZH - protection, historic values
ZR - protection, riparian buffer
ZS - protection, steep terrain
ZW - protection, wet groung
ZV - protection, visual buffer

TREATMENT TYPE CODES

Brush - release brush species
FW - thin firewood
FW-TSI - thin firewood & non-commercial timber stand improvement
HSI - historic stand improvement work
PH - cut pioneer hardwoods
PU - thin softwood species
PU-FW - thin softwood & firewood
PU-TSI - thin softwood & non-commercial timber stand improvement
PU-RC - thin softwood & convert pine or larch
PU-ST - thin softwood & hardwood sawtimber
RA - release apple trees
RC - convert red pine
RL - remove hardwood overstory
Roadside - thin roadside trees
RT - thin red pine
RT-PU - thin red pine & other softwood
ST - thin sawtimber
ST-FW - thin sawtimber & firewood
TSI - non-commercial timber stand improvement

B. MANAGEMENT ACTION SCHEDULE
Organized by Stand Number

Management actions scheduled in 2007 and 2008 have been completed or are in the process of completion.

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
BR/CHEN-1	A	1.00	POND	2	water	n/a	0.	PD	POND	none	N/A
BR/CHEN-1	A	2.00	NH-HEM	10	HEM, RM	12-17"	171.	LSF	NH-HEM	none	N/A
BR/CHEN-1	A	3.00	NH	12	RM, HM	9-11"	141.	LSF	NH	none	N/A

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
BR/CHEN-1	A	4.00	WP-JL	11	RM, WP	9-11"	131.	EL	WP-NH	RT	2017
BR/CHEN-1	A	5.00	NH-WP	11	RM, WP	9-11"	113.	E	NH-WP	FW	2022
BR/CHEN-1	A	6.00	NH	4	BE, HM	12-17"	155.	U	NH	ST-FW	2019
BR/CHEN-1	A	7.00	WETLAND	5	Spirea, B. berry	n/a	0.	ZW	WETLAND	none	N/A
BR/CHEN-1	A	8.00	NH-HEM	9	HEM, HM	12-17"	174.	U	NH-HEM	ST-FW	2017
BR/CHEN-1	A	9.00	NH-WP	21	RM, WP	9-11"	154.	E	NH	FW-TSI	2008
BR/CHEN-1	A	10.00	WP-JL	75	WP, JL	9-11"	181.	EL	NH-WP	ST-FW	2013
BR/CHEN-1	A	11.00	NH	11	RM, WA	18" +	120.	U	NH	ST	2013
BR/CHEN-1	A	12.00	NH-HEM	5	HEM, YB	9-11"	255.	ZR	NH-HEM	none	N/A
BR/CHEN-1	A	13.00	NH	9	HM, RM	12-17"	133.	U	NH	ST-FW	2022
BR/CHEN-1	A	14.00	NS	82	NS, RM	9-11"	163.	UG	NH	PU-FW	2019
BR/CHEN-1	A	14.01	NS	20	NS, RM	9-11"	163.	UG	NH	PU-FW	2019
BR/CHEN-1	A	14.02	NS	19	NS, RM	9-11"	163.	UG	NH	PU-FW	2019
BR/CHEN-1	A	14.03	NS	5	NS, RM	9-11"	163.	ZR	NH	none	N/A
BR/CHEN-1	A	15.00	WP	40	WP, RM	9-11"	189.	UG	NH-WP	TSI	2008
BR/CHEN-1	A	16.00	NH	19	RM, BE	9-11"	120.	E	NH	ST-FW	2014
BR/CHEN-1	A	17.00	NH-HEM	21	HEM, RM	9-11"	210.	U	NH-HEM	ST-FW	2014
BR/CHEN-1	A	18.00	WP	39	WP, RM	9-11"	195.	UG	NH-WP	TSI	2011
BR/CHEN-1	A	18.01	WP	16	WP, RM	9-11"	195.	UG	NH-WP	TSI	2011
BR/CHEN-1	A	19.00	NH-WP	43	WP, RM	9-11"	171.	UG	NH-WP	FW-TSI	2008
BR/CHEN-1	A	20.00	NH-HEM	18	HEM, HM	12-17"	163.	ZR	NH-HEM	none	N/A
BR/CHEN-1	A	21.00	NH-HEM	23	HEM, RM	12-17"	181.	U	NH-HEM	ST-FW	2014
BR/CHEN-1	A	22.00	NH-HEM	15	HM, RM	9-11"	136.	U	NH-HEM	ST-FW	2014

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
BR/CHEN-1	A	23.00	NH-HEM	14	HEM, RM	9-11"	180.	U	NH-HEM	FW-TSI	2014
BR/CHEN-1	A	24.00	NS	5	NS, RM	9-11"	190.	E	NH	PU	2014
BR/CHEN-1	A	25.00	NH-OAK	8	RM, RO	12-17"	141.	EL	NH-OAK	ST-FW	2014
BR/CHEN-1	A	26.00	NS	14	NS, RM	9-11"	151.	E	NH	PU	2007
BR/CHEN-1	A	27.00	WETLAND	1	Spirea, AP	n/a	0.	ZW	WETLAND	none	N/A
BR/CHEN-1	A	28.00	NH	6	HM, WA	12-17"	100.	U	NH	ST-FW	2022
BR/CHEN-1	A	29.00	NH-HEM	14	HEM, YB	9-11"	196.	ZR	NH-HEM	none	N/A
BR/CHEN-1	A	30.00	WP	21	WP, RM	9-11"	163.	UG	NH-WP	FW-TSI	2011
BR/CHEN-1	A	31.00	WP-NS	52	WP, NS	9-11"	215.	UG	NH-WP	PU-TSI	2011
BR/CHEN-1	A	32.00	NH-HEM	46	HEM, RM	12-17"	140.	ZR	NH-HEM	none	N/A
BR/CHEN-1	A	33.00	RP-JL	90	RP, JL	9-11"	196.	E	NH	RT	2007
BR/CHEN-1	A	34.00	RP-WS	13	RP, WS	9-11"	164.	E	NH	RT	2007
BR/CHEN-1	A	35.00	RP-JL	8	RP, JL	18" +	150.	E	NH	RT	2007
BR/CHEN-1	A	36.00	NH-HEM	5	HEM, RM	9-11"	140.	ZR	NH-HEM	none	N/A
BR/CHEN-1	A	37.00	NH	4	RM, HM	9-11"	152.	E	NH	FW	2013
BR/CHEN-1	A	38.00	NH-OAK	6	RM, RO	12-17"	160.	EL	NH-OAK	ST	2013
BR/CHEN-1	A	39.00	AP	3	AP, RM	6-8"	40.	AP	AP	RA	2007
BR/CHEN-1	A	40.00	OPEN	1	AP, BL	n/a	10.	ZH	Open/Brush	none	2014
BR/CHEN-1	A	41.00	NH-WP	18	RM, WP	9-11"	139.	EL	NH-WP	FW-TSI	2008
BR/CHEN-1	A	42.00	NH-HEM	11	HEM, HM	12-17"	141.	ZR	NH-HEM	none	N/A
BR/CHEN-1	A	43.00	WP	6	WP, RM	9-11"	170.	UG	NH-WP	PU-ST	2014
BR/CHEN-1	A	44.00	NH	6	RM, ASP	9-11"	133.	ZR	NH	none	N/A
BR/CHEN-1	A	45.00	NH-OAK	3	RM, RO	12-17"	112.	EL	NH-OAK	FW	2017

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
BR/CHEN-1	A	46.00	NH	6	ASP, RM	9-11"	76.	E	NH	FW-TSI	2017
BR/CHEN-1	A	47.00	NH	4	RM, WA	9-11"	114.	E	NH	FW	2017
BR/CHEN-1	A	48.00	RP	9	RP, RM	12-17"	210.	E	NH	RT	2007
BR/CHEN-1	A	49.00	NH	2	RM, ASP	12-17"	115.	ZR	NH	none	N/A
BR/CHEN-1	A	50.00	RP-JL	22	RP, JL	12-17"	184.	E	NH	RT	2007
BR/CHEN-1	A	51.00	NH-HEM	2	HEM, RM	9-11"	100.	ZR	NH-HEM	none	N/A
BR/CHEN-1	A	52.00	NS	3	NS, ASP	9-11"	125.	ZR	NH-NS	none	N/A
BR/CHEN-1	A	53.00	NH-WP	5	RM, WP	9-11"	122.	UG	NH-WP	ST-FW	2017
BR/CHEN-1	A	54.00	OTHER	8	BL,HM	6-8"	40.	ZH	NH	HSI	2013
BR/CHEN-1	A	55.00	WETLAND	1	Spirea, grass	0-5"	0.	ZW	WETLAND	none	N/A
BR/CHEN-1	A	56.00	NH	3	RM	9-11"	135.	ZR	NH	none	N/A
BR/CHEN-1	A	57.00	POND	1	water	n/a	0.	PD	POND	none	N/A
BR/CHEN-1	A	58.00	NH	7	WA, BL	12-17"	90.	ZH	NH	HSI	2017
BR/CHEN-1	A	59.00	NH	4	WA, HM	18" +	70.	U	NH	ST-FW	2022
BR/CHEN-1	A	60.00	WP-NS	5	WP, NS	9-11"	193.	UG	NH-WP	TSI	2014
BR/CHEN-1	A	61.00	NH	5	ASP, WP	0-5"	30.	ZH	NH	HSI	2014
BR/CHEN-1	A	62.00	WP-NS	5	WP, NS	6-8"	40.	ZR	WP-NS	none	N/A
BR/CHEN-1	A	63.00	NH-HEM	10	HEM, HM	9-11"	131.	U	NH-HEM	ST-FW	2017
BR/CHEN-1	A	64.00	NH-HEM	2	RM, HEM	9-11"	165.	U	NH-HEM	none	2027+
BR/CHEN-1	A	65.00	WP	21	WP, ASP	9-11"	178.	ZR	NH-WP	none	N/A
BR/CHEN-1	R	711.00	Road	1	n/a	n/a	0.	R	road	roadside	R
BR/CHEN-1	R	711.00	Road	1	n/a	n/a	0.	R	road	roadside	R
BR/CHEN-1	R	711.00	Road	4	n/a	n/a	0.	R	road	roadside	R

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 10	A	1.00	RP-NS	10	RP, NS	9-11"	140.	E	NH	RT-PU	2013
CHEN 10	A	2.00	WETLAND	3	open	n/a	0.	ZW	WETLAND	none	N/A
CHEN 10	A	3.00	WETLAND	5	ALDER	n/a	0.	ZW	WETLAND	none	N/A
CHEN 10	A	4.00	RP	14	RP, NS	9-11"	140.	E	NH	RT	2013
CHEN 10	A	5.00	NS	1	NS, RM	9-11"	193.	E	NH-NS	PU	2013
CHEN 10	A	6.00	OAK	1	RO, YB	18" +	125.	LSF	NH-OAK	none	N/A
CHEN 10	A	7.00	NH-OAK	18	RM, RO	9-11"	113.	EL	NH	ST-FW	2013
CHEN 10	A	8.00	NH	10	HM, RM	12-17"	93.	U	NH	ST-FW	2019
CHEN 10	A	9.00	WP-NS	36	WP, NS	9-11"	160.	EL	NH-WP	PU-TSI	2009
CHEN 10	A	10.00	EL	5	EL, RM	9-11"	115.	E	NH	FW-TSI	2019
CHEN 10	A	11.00	NH	5	HM, RM	9-11"	111.	E	NH	ST-FW	2019
CHEN 10	A	12.00	WP-NH	41	WP, RM	12-17"	145.	U	NH-WP	FW-TSI	2009
CHEN 10	A	13.00	NH-OAK	4	RM, WA	9-11"	123.	EL	NH-OAK	ST-FW	2010
CHEN 10	A	14.00	WP	56	WP, RM	9-11"	135.	EL	NH-WP	PU-FW	2010
CHEN 10	A	15.00	NH	2	BC, BL	9-11"	113.	E	NH	PH	2009
CHEN 10	A	16.00	NH	3	RM, WP	9-11"	95.	E	NH	ST-FW	2019
CHEN 10	A	17.00	OAK-HICK	3	SH, RO	12-17"	92.	E	NH-OAK	ST-FW	2019
CHEN 10	A	18.00	WP-HEM	4	WP, HEM	9-11"	192.	ZR	WP-HEM	none	N/A
CHEN 10	A	19.00	WP	5	WP, RM	9-11"	144.	EL	NH-WP	PU-TSI	2013
CHEN 10	A	20.00	NH	3	RM, WA	9-11"	107.	E	NH	ST-FW	2020
CHEN 10	A	21.00	WP	16	WP, RM	9-11"	171.	EL	NH-WP	PU-TSI	2010
CHEN 10	A	21.01	WP	5	WP, RM	9-11"	171.	EL	NH-WP	PU-TSI	2010
CHEN 10	A	22.00	WP	11	WP, RM	9-11"	139.	EL	NH-WP	FW-TSI	2013

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 10	A	23.00	NH-OAK	5	RO, HM	12-17"	105.	EL	NH-OAK	ST-FW	2020
CHEN 10	A	24.00	WP	3	WP, RM	9-11"	140.	EL	NH-WP	FW-TSI	2013
CHEN 10	A	25.00	NH	39	RM, WA	12-17"	143.	U	NH	ST-FW	2020
CHEN 10	A	26.00	NH-WP	2	WP, RM	9-11"	180.	U	NH	none	2027+
CHEN 10	A	27.00	NH-WP	5	WP, RM	9-11"	157.	EL	NH-WP	none	2027+
CHEN 10	A	28.00	NH-WP	11	RM, WP	9-11"	119.	EL	NH-WP	none	2027+
CHEN 10	A	28.01	NH-WP	15	RM, WP	9-11"	119.	EL	NH-WP	none	2027+
CHEN 10	A	28.02	NH-WP	9	RM, WP	9-11"	119.	ZR	NH-WP	none	N/A
CHEN 10	A	29.00	NH-HEM	9	HEM, HM	9-11"	154.	U	NH-HEM	ST-FW	2020
CHEN 10	A	30.00	NH	16	RM, HM	9-11"	134.	EL	NH	ST-FW	2020
CHEN 10	A	31.00	NH-HEM	25	HEM, RM	12-17"	151.	LSF	NH-HEM	none	N/A
CHEN 10	A	32.00	NH	14	RM, hm	9-11"	55.	E	NH	RL	2013
CHEN 10	R	711.00	Road	1	n/a	n/a	0.	R	road	roadside	R
CHEN 10	R	711.00	Road	1	n/a	n/a	0.	R	road	roadside	R
CHEN 10	R	711.00	Road	3	n/a	n/a	0.	R	road	roadside	R
CHEN 10	B	1.00	RP	4	RP, BC	9-11"	147.	E	NH	RT	2007
CHEN 10	B	2.00	NH-SP	9	RM, SP	9-11"	106.	E	NH	FW-TSI	2020
CHEN 10	B	3.00	RP	22	RP, RM	9-11"	157.	E	NH	RT	2007
CHEN 10	B	4.00	SP	7	SP, WS	9-11"	166.	E	NH	none	2027+
CHEN 10	B	5.00	NH	15	HM, BC	9-11"	149.	U	NH	ST-FW	2011
CHEN 10	B	6.00	NS	5	NS,HM	9-11"	113.	ZR	NH-NS	none	N/A
CHEN 10	B	7.00	NS	1	NS, ASP	9-11"	195.	ZR	NH-NS	none	N/A
CHEN 10	B	8.00	NH	5	RM, WA	9-11"	100.	E	NH	FW-TSI	2012

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 10	B	9.00	NH-OAK	1	RM, RO	9-11"	110.	ZR	NH	none	N/A
CHEN 10	B	10.00	NH	6	BC, HM	12-17"	133.	E	NH	ST-FW	2020
CHEN 10	B	11.00	WP	10	WP, RM	9-11"	184.	EL	NH-WP	FW-TSI	2023
CHEN 10	B	12.00	HEM-WP	14	HEM, WP	12-17"	175.	U	NH-HEM	ST-PU	2020
CHEN 10	B	13.00	WP-NS	5	WP, RM	9-11"	177.	U	NH-HEM	PU-TSI	2020
CHEN 10	B	14.00	NH-HEM	1	HEM, RM	9-11"	153.	ZR	NH-HEM	none	N/A
CHEN 10	B	15.00	NH-WP	4	RM, WP	9-11"	136.	EL	NH	ST-FW	2020
CHEN 10	B	15.01	NH-WP	2	RM, WP	9-11"	136.	ZR	NH	none	N/A
CHEN 10	B	16.00	WS-NH	25	WS, RM	9-11"	122.	E	NH	PU-FW	2012
CHEN 10	B	17.00	NH-OAK	6	RM, RO	9-11"	120.	EL	NH-OAK	FW-TSI	2012
CHEN 10	B	18.00	WS	10	WS, RM	9-11"	164.	E	NH	PU-FW	2009
CHEN 10	B	19.00	NS	5	NS, WS	9-11"	157.	E	NH	SC	2009
CHEN 10	B	20.00	NH	2	BL, WA	9-11"	105.	ZH	NH	HSI	2007
CHEN 10	B	21.00	NS	12	NS, RM	9-11"	157.	E	NH-NS	PU	2018
CHEN 10	B	21.01	NS	5	NS, RM	9-11"	157.	E	NH-NS	PU	2018
CHEN 10	B	21.02	NS	2	NS, RM	9-11"	157.	ZR	NH-NS	none	N/A
CHEN 10	B	22.00	NH	5	RM, RO	9-11"	108.	E	NH	FW	2020
CHEN 10	B	23.00	NS	61	NS, RM	9-11"	186.	E	NH-NS	PU	2018
CHEN 10	B	24.00	NS	46	NS, BC	12-17"	177.	E	NH-NS	PU	2012
CHEN 10	B	25.00	POND	3	water	n/a	0.	PD	POND	none	N/A
CHEN 10	B	26.00	NH-HEM	7	HEM, WA	9-11"	171.	ZR	NH-HEM	none	N/A
CHEN 10	B	27.00	NH	1	HM, BL	9-11"	83.	E	NH	PH	2018
CHEN 10	B	28.00	NS	3	NS, RM	9-11"	160.	E	NH	PU-FW	2018

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 10	B	29.00	NS	15	NS, RM	9-11"	175.	E	NH-NS	PU	2009
CHEN 10	B	30.00	OPEN	1	brush	n/a	0.	ZH	Open/Brush	HSI	N/A
CHEN 10	B	31.00	NS	21	NS, WP	9-11"	139.	E	NH	PU	2012
CHEN 10	B	32.00	NH-OAK	9	HM, BE	12-17"	106.	EL	NH-OAK	ST-FW	2020
CHEN 10	B	33.00	NH	7	RM, HM	9-11"	126.	ZS	NH	none	N/A
CHEN 10	B	34.00	OPEN	1	AP, TA	n/a	10.	ZH	Open/Brush	HSI	2012
CHEN 10	B	35.00	NH	5	BC, RM	0-5"	30.	E	NH	none	2027+
CHEN 10	B	36.00	NH	16	HM, BC	9-11"	146.	E	NH	ST-FW	2011
CHEN 10	B	37.00	NH	19	RM, HM	0-5"	40.	E	NH	none	2027+
CHEN 10	B	38.00	WETLAND	2	TA, BW	0-5"	20.	ZW	WETLAND	none	N/A
CHEN 10	B	39.00	NH	8	HM, RM	9-11"	102.	ZR	NH	none	N/A
CHEN 10	B	40.00	NS	2	NS, ASP	6-8"	120.	E	NH	PU-TSI	2012
CHEN 10	B	41.00	RP-WP	8	RP, WP	9-11"	268.	E	NH	RC	2011
CHEN 10	B	42.00	NH-WP	4	RM, WP	9-11"	156.	E	NH	ST-FW	2011
CHEN 10	B	43.00	WP-NH	11	WP, BC	18" +	198.	LSF	WP-NH	none	N/A
CHEN 10	B	44.00	NH-HEM	4	HEM, WP	12-17"	217.	ZR	NH-HEM	none	N/A
CHEN 10	B	45.00	NH-HEM	3	HEM, RM	12-17"	182.	ZA	NH-HEM	none	N/A
CHEN 10	B	46.00	NH-OAK	4	WA, RM	9-11"	160.	EL	NH	ST-FW	2012
CHEN 10	R	711.00	Road	1	n/a	n/a	0.	R	road	roadside	R
CHEN 10	R	711.00	Road	1	n/a	n/a	0.	R	road	roadside	R
CHEN 10	R	711.00	Road	6	n/a	n/a	0.	R	road	roadside	R
CHEN 10	C	1.00	NH-HEM	8	HEM, RM	6-8"	133.	ZR	NH-HEM	none	N/A
CHEN 10	C	2.00	NH-HEM	12	HEM, RM	6-8"	206.	ZR	NH-HEM	none	N/A

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 10	C	3.00	NH-WP	8	RM, WP	6-8"	149.	U	NH-WP	ST	2021
CHEN 10	C	3.01	NH-WP	1	RM, WP	6-8"	149.	ZR	NH-WP	none	N/A
CHEN 10	C	4.00	NH-HEM	4	HEM, RM	9-11"	146.	ZR	NH-HEM	none	N/A
CHEN 10	C	5.00	NH-HEM	25	HEM, RM	9-11"	180.	U	NH-HEM	ST-FW	2021
CHEN 10	C	6.00	NH	2	HM, WA	9-11"	150.	U	NH	ST-FW	2021
CHEN 10	C	7.00	OAK	28	RO, RM	12-17"	112.	EL	NH-OAK	ST-FW	2021
CHEN 10	C	8.00	RP-NS	53	RP, NS	9-11"	218.	E	NH-NS	RT	2008
CHEN 10	C	9.00	NH-HEM	17	HEM, WP	9-11"	130.	ZR	NH-HEM	none	N/A
CHEN 10	C	10.00	NH-HEM	2	HEM, RM	9-11"	230.	U	NH-HEM	ST-FW	2021
CHEN 10	C	11.00	NH-HEM	10	HEM, RM	9-11"	192.	U	NH-HEM	ST-FW	2016
CHEN 10	C	12.00	RP	10	RP, WP	9-11"	203.	E	NH	ST	2008
CHEN 10	C	13.00	NH	4	RM, RO	9-11"	132.	U	NH	FW-TSI	2016
CHEN 10	C	14.00	WP-EL	9	EL, WP	9-11"	189.	E	NH	ST-PU	2016
CHEN 10	C	15.00	NH	9	HM, BC	9-11"	136.	U	NH	FW-TSI	2016
CHEN 10	C	16.00	RP-WP	16	RP, WP	9-11"	215.	EL	NH-WP	RT	2010
CHEN 10	C	17.00	NH-WP	4	RM, WP	9-11"	153.	E	NH	RT	2016
CHEN 10	C	18.00	RP-WP	7	RP, RM	9-11"	192.	E	NH	RT	2010
CHEN 10	C	19.00	NH-HEM	4	HEM, RM	9-11"	133.	U	NH-HEM	FW	2010
CHEN 10	C	20.00	NH	7	RM, HM	9-11"	140.	U	NH	ST-FW	2016
CHEN 10	C	21.00	RP	18	RP, RM	9-11"	189.	E	NH	RT	2010
CHEN 10	C	22.00	NH	4	RM, ASP	0-5"	50.	E	NH	none	2027+
CHEN 10	C	23.00	NH-OAK	16	RM, RO	12-17"	107.	EL	NH-OAK	ST-FW	2021
CHEN 10	C	24.00	RP-NS	58	RP, NS	9-11"	161.	E	NH-NS	RT	2009

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 10	C	25.00	NH-WP	13	RM, WP	9-11"	131.	EL	NH-WP	ST-FW	2021
CHEN 10	C	26.00	NH	5	RM, RO	9-11"	148.	E	NH	ST-FW	2021
CHEN 10	C	27.00	RP	14	RP, BC	9-11"	201.	E	NH	RT	2010
CHEN 10	C	28.00	PH	5	ASP,RM	9-11"	50.	ZR	PH	none	N/A
CHEN 10	C	29.00	RP	1	RP, BC	9-11"	240.	E	NH-NS	RC	2027+
CHEN 10	C	30.00	RP-NS	21	RP, NS	9-11"	161.	E	NH	ST-FW	2016
CHEN 10	C	31.00	NH-RP	3	RP, RM	9-11"	175.	E	NH	RT-FW	2021
CHEN 10	C	32.00	NH-OAK	9	RM, RO	9-11"	112.	EL	NH-OAK	ST-FW	2022
CHEN 10	C	32.01	NH-OAK	35	RM, RO	9-11"	112.	EL	NH-OAK	ST-FW	2022
CHEN 10	C	32.02	NH-OAK	5	RM,RO	9-11"	112.	ZR	NH-OAK	none	N/A
CHEN 10	C	33.00	RP	9	RP, RM	9-11"	188.	E	NH	ST	2010
CHEN 10	C	34.00	NH-RP	8	RM, RP	9-11"	134.	E	NH	FW-TSI	2016
CHEN 10	C	35.00	NH-NS	2	RM, NS	9-11"	203.	E	NH	ST-FW	2016
CHEN 10	C	36.00	NH-OAK	24	RM, RO	9-11"	92.	EL	NH-OAK	ST-FW	2021
CHEN 10	C	37.00	NH	30	HM, RM	9-11"	89.	U	NH	ST-FW	2021
CHEN 10	C	38.00	NH-HEM	8	HEM, RM	9-11"	187.	ZA	NH-HEM	none	N/A
CHEN 10	C	39.00	Power Line ROW	6	brush	n/a	0.	ZF	Open/Brush	none	N/A
CHEN 10	C	40.00	RP	1	RP, RM	9-11"	189.	E	NH	RT	2009
CHEN 10	C	41.00	OPEN/NH	1	N/A	0-5"	20.	E	NH	FW-TSI	2027+
CHEN 10	C	42.00	OPEN/NH	3	N/A	0-5"	20.	E	NH	FW-TSI	2027+
CHEN 10	C	43.00	OPEN/NH	4	N/A	0-5"	20.	E	NH	FW-TSI	2027+
CHEN 10	R	711.00	Road	1	n/a	n/a	0.	R	road	roadside	R

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 10	R	711.00	Road	3	n/a	n/a	0.	R	road	roadside	R
CHEN 13	A	1.00	NH-OAK	26	RM, BE	9-11"	142.	U	NH	ST-FW	2012
CHEN 13	A	2.00	RP-NS	11	NS, RP	9-11"	167.	U	NH	PU	2007
CHEN 13	A	3.00	NH-OAK	35	RO, RM	12-17"	98.	EL	NH-OAK	ST-FW	2018
CHEN 13	A	4.00	EL-NS	3	EL, NS	12-17"	130.	E	NH	ST	2018
CHEN 13	A	5.00	NH-WP	9	RM, WP	12-17"	135.	EL	NH-WP	ST-FW	2018
CHEN 13	A	6.00	EL-NS	6	EL, RM	12-17"	159.	E	NH	ST	2018
CHEN 13	A	7.00	EL-NS	13	EL, RM	9-11"	155.	E	NH	RC	2017
CHEN 13	A	8.00	OAK	59	RO, RM	9-11"	132.	EL	NH-OAK	ST-FW	2014
CHEN 13	A	8.01	OAK	11	RO, RM	9-11"	132.	EL	NH-OAK	ST-FW	2014
CHEN 13	A	8.02	OAK	4	RO, RM	9-11"	132.	ZR	NH-OAK	none	N/A
CHEN 13	A	9.00	NH-OAK	18	RM, RO	9-11"	157.	U	NH	ST-FW	2014
CHEN 13	A	9.01	NH-OAK	10	RM, RO	9-11"	157.	U	NH	ST-FW	2014
CHEN 13	A	10.00	OAK-HEM	65	HEM, WP	12-17"	186.	ZR	OAK-HEM	none	N/A
CHEN 13	A	11.00	NH-OAK	117	RM, RO	12-17"	137.	EL	NH-OAK	ST-FW	2017
CHEN 13	A	12.00	EL-NS	6	EL, NS	12-17"	150.	E	NH	ST	2018
CHEN 13	A	13.00	OAK	82	RO, RM	12-17"	134.	EL	NH-OAK	ST-FW	2014
CHEN 13	A	14.00	NH-HEM	53	HEM, WP	9-11"	148.	ZS	NH-HEM	none	N/A
CHEN 13	A	15.00	NH-OAK	13	RO, RM	9-11"	143.	EL	NH-OAK	ST-FW	2012
CHEN 13	A	16.00	NH	2	YB, RM	6-8"	30.	ZR	NH	none	N/A
CHEN 13	A	17.00	NH-WP	3	RM, WP	12-17"	130.	U	NH-WP	ST-FW	2018
CHEN 13	A	18.00	NH-WP	11	WP, HEM	12-17"	145.	ZR	NH-WP	none	N/A
CHEN 13	A	19.00	OAK-PINE	10	WA, RO	9-11"	165.	ZR	OAK- PINE	none	N/A

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 13	A	20.00	OAK-HEM	6	HEM, WP	9-11"	212.	ZR	OAK-HEM	none	N/A
CHEN 13	R	711.00	Road	2	n/a	n/a	0.	R	road	roadside	R
CHEN 13	R	711.00	Road	1	n/a	n/a	0.	R	road	roadside	R
CHEN 27	A	1.00	NH-OAK	11	RM, RO	9-11"	143.	U	NH-OAK	FW	2015
CHEN 27	A	1.01	NH-OAK	9	RM, RO	9-11"	143.	U	NH-OAK	FW	2015
CHEN 27	A	1.02	NH-OAK	2	RM, RO	9-11"	143.	ZR	NH-OAK	none	N/A
CHEN 27	A	2.00	NS	53	NS, RM	9-11"	160.	E	NH	PU	2009
CHEN 27	A	3.00	NH-HEM	8	HEM, RM	9-11"	121.	ZR	NH-HEM	none	N/A
CHEN 27	A	4.00	NS	1	NS, RM	6-8"	160.	E	NH-NS	PU-TSI	2018
CHEN 27	A	5.00	JL	32	JL,, ASP	9-11"	122.	E	NH	PU	2018
CHEN 27	A	6.00	NH-HEM	9	HM, HEM	12-17"	114.	U	NH-HEM	ST-FW	2015
CHEN 27	A	7.00	NS	6	NS, RM	6-8"	162.	E	NH-NS	PU-TSI	2018
CHEN 27	A	8.00	NH-WP	6	WP, RM	9-11"	130.	EL	NH-WP	PU-FW	2015
CHEN 27	A	9.00	NH-OAK	24	RM, RO	9-11"	123.	E	NH-OAK	ST-FW	2015
CHEN 27	A	9.01	NH-OAK	7	RM, RO	9-11"	123.	ZR	NH-OAK	none	N/A
CHEN 27	A	9.02	NH-OAK	2	RM, RO	9-11"	123.	E	NH-OAK	ST-FW	2015
CHEN 27	A	10.00	NS	89	NS, RM	9-11"	170.	E	NH-NS	PU	2010
CHEN 27	A	11.00	NH-HEM	30	RM, HEM	9-11"	153.	E	NH-HEM	ST-FW	2015
CHEN 27	A	11.01	NH-HEM	1	RM, HEM	9-11"	153.	ZR	NH-HEM	none	N/A
CHEN 27	A	11.02	NH-HEM	2	RM, HEM	9-11"	153.	E	NH-HEM	ST-FW	2015
CHEN 27	A	12.00	NH-HEM	50	HEM, RM	9-11"	155.	ZR	NH-HEM	none	N/A
CHEN 27	A	12.01	NH	7	RM, HM	12-17"	97.	ZR	NH	none	N/A
CHEN 27	A	12.02	NS	2	NS,RM	9-11"	170.	ZR	NH-NS	none	N/A

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 27	A	13.00	NH	2	BC, HM	9-11"	105.	U	NH	FW	2015
CHEN 27	A	14.00	NH	3	RM, HM	12-17"	97.	U	NH	ST-FW	2015
CHEN 27	A	15.00	NH-HEM	31	RM, HEM	12-17"	136.	U	NH-HEM	FW	2015
CHEN 27	A	16.00	RP	9	RP, NS	9-11"	166.	E	NH	RT	2012
CHEN 27	A	17.00	WS	5	WS, NS	9-11"	146.	ES	PH	RC	2012
CHEN 27	A	18.00	NS	23	NS, BC	12-17"	211.	E	NH-NS	PU	2012
CHEN 27	A	19.00	RP-NS	81	RP, NS	9-11"	162.	E	NH-NS	RT-PU	2012
CHEN 27	A	20.00	NH-HEM	2	HEM, WA	6-8"	93.	E	NH-HEM	FW	2018
CHEN 27	A	21.00	NH-HEM	66	HEM, RM	12-17"	139.	U	NH-HEM	ST-FW	2018
CHEN 27	A	21.01	NH-HEM	2	HEM, RM	12-17"	139.	ZR	NH-HEM	none	N/A
CHEN 27	A	22.00	NH-OAK	6	RO, HM	9-11"	116.	U	NH-OAK	FW	2015
CHEN 27	A	23.00	OPEN	1	BL, WA	n/a	0.	BR	Open/Brush	FW	2009
CHEN 27	A	24.00	WETLAND	2	Grass, Spirea	n/a	0.	ZW	WETLAND	none	N/A
CHEN 27	A	25.00	OPEN/NH	4	N/A	0-5"	20.	E	NH	FW-TSI	2027+
CHEN 27	A	26.00	OPEN/NH	2	N/A	0-5"	20.	E	NH	FW-TSI	2027+
CHEN 27	R	711.00	Road	5	n/a	n/a	0.	R	road	roadside	R
CHEN 27	B	1.00	NH-HEM	4	RM, HEM	12-17"	163.	U	NH-HEM	ST-FW	2018
CHEN 27	B	1.01	NH-HEM	8	RM, HEM	12-17"	163.	ZR	NH-HEM	none	N/A
CHEN 27	B	2.00	RP	36	RP, RM	9-11"	144.	E	NH	RC	2007
CHEN 27	B	3.00	NH-HEM	5	HEM, RO	9-11"	150.	U	NH-HEM	FW	2018
CHEN 27	B	4.00	NH-HEM	21	HEM, RM	12-17"	126.	U	NH-HEM	FW	2018
CHEN 27	B	5.00	NS-SP	19	NS, SP	9-11"	133.	E	NH-NS	ST-PU	2021
CHEN 27	B	5.01	NS-SP	13	NS, SP	9-11"	133.	E	NH-NS	ST-PU	2021

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 27	B	6.00	WETLAND	13	wetland	n/a	0.	ZW	WETLAND	none	N/A
CHEN 27	B	7.00	NH-WP	22	RM, WP	9-11"	123.	EL	NH-WP	ST-FW	2025
CHEN 27	B	7.01	NH-WP	3	RM, WP	9-11"	123.	ZR	NH-WP	none	N/A
CHEN 27	B	8.00	NS	23	NS, SP	12-17"	163.	E	NH-NS	PU	2021
CHEN 27	B	9.00	WETLAND	8	AP, ASP	n/a	20.	ZW	WETLAND	none	N/A
CHEN 27	B	10.00	RP-NS	1	RP, NS	12-17"	217.	E	NH-NS	RT-PU	2027+
CHEN 27	B	11.00	NS	3	NS, RM	9-11"	205.	E	NH-NS	PU-FW	2016
CHEN 27	B	12.00	NH-HEM	29	RM, HEM	9-11"	152.	U	NH-HEM	ST-PU	2016
CHEN 27	B	13.00	NH-HEM	8	HEM, RM	9-11"	152.	ZR	NH-HEM	none	N/A
CHEN 27	B	14.00	NH-HEM	16	RM, HEM	9-11"	170.	E	NH-HEM	PU-FW	2016
CHEN 27	B	15.00	NH-HEM	8	HEM, BE	9-11"	186.	ZR	NH-HEM	none	N/A
CHEN 27	B	16.00	POND	10	water	n/a	0.	PD	POND	none	N/A
CHEN 27	B	17.00	NH-HEM	31	HM, RM	12-17"	93.	U	NH-HEM	ST-FW	2020
CHEN 27	B	18.00	NH	13	RM, BC	9-11"	140.	ZA	NH	none	N/A
CHEN 27	B	19.00	POND	16	water	n/a	0.	PD	POND	none	N/A
CHEN 27	B	20.00	NH-WP	7	RM, WP	9-11"	106.	EL	NH-WP	FW-TSI	2020
CHEN 27	B	20.01	NH-WP	3	RM, WP	9-11"	106.	ZR	NH-WP	none	N/A
CHEN 27	B	21.00	WETLAND	4	wetland	n/a	0.	ZF	WETLAND	public access	N/A
CHEN 27	B	22.00	NS	1	NS, WP	9-11"	130.	E	NH	PU	2022
CHEN 27	B	22.01	NS	3	NS, WP	9-11"	130.	ZR	NH	none	N/A
CHEN 27	B	23.00	RP	4	RP, NS	6-8"	190.	E	NH	none	2027+
CHEN 27	B	23.01	RP	1	RP, NS	6-8"	190.	ZR	NH	none	N/A
CHEN 27	B	24.00	NS	3	NS	0-5"	30.	E	NS	none	2027+

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 27	B	24.01	NS	1	NS	0-5"	30.	ZR	NS	none	N/A
CHEN 27	B	25.00	NH	6	RM,, BC	6-8"	50.	ZR	NH	none	N/A
CHEN 27	B	26.00	NS-NH	4	NS, HEM	9-11"	134.	U	NH-NS	PU-FW	2018
CHEN 27	B	26.01	NS-NH	2	NS, HEM	9-11"	134.	ZR	NH-NS	none	N/A
CHEN 27	B	27.00	RP	3	RP, BC	9-11"	138.	E	NH	TSI	2012
CHEN 27	B	28.00	NS	2	NS	0-5"	30.	E	NH	none	2026
CHEN 27	B	29.00	BL	4	BL	0-5"	20.	E	NH	PH	2026
CHEN 27	B	30.00	NH-HEM	16	RM, HEM	9-11"	127.	U	NH-HEM	FW-TSI	2020
CHEN 27	B	30.01	NH-HEM	1	RM, HEM	9-11"	127.	ZR	NH-HEM	none	N/A
CHEN 27	B	31.00	NH-HEM	5	HEM, RM	12-17"	166.	U	NH-HEM	ST-FW	2020
CHEN 27	B	32.00	NS	4	NS, RM	9-11"	140.	E	NH	PU	2018
CHEN 27	B	33.00	NH-WP	13	RM, WA	9-11"	87.	E	NH	FW	2020
CHEN 27	B	34.00	NH-HEM	4	WA, HM	12-17"	120.	U	NH-HEM	ST-FW	2020
CHEN 27	B	35.00	WETLAND	7	wetland	n/a	0.	ZW	WETLAND	none	N/A
CHEN 27	B	36.00	BL	3	BL	0-5"	20.	E	NH	PH	2020
CHEN 27	B	37.00	NS	3	NS, WP	6-8"	147.	E	NH	PU	2018
CHEN 27	B	38.00	NH-HEM	14	RM, HEM	9-11"	146.	ZR	NH-HEM	none	N/A
CHEN 27	B	39.00	PH	1	ASP, RM	9-11"	125.	ZR	PH	none	N/A
CHEN 27	B	40.00	NH	26	RM, WA	0-5"	30.	E	NH	none	2027+
CHEN 27	B	41.00	NS-NH	24	NS, RM	0-5"	40.	E	NH-NS	none	2027+
CHEN 27	B	42.00	NH-WP	3	WP, RM	12-17"	147.	EL	NH-WP	ST-FW	2016
CHEN 27	B	43.00	WETLAND	2	fern, WP	n/a	0.	ZW	WETLAND	none	N/A
CHEN 27	B	44.00	NS-NH	12	NS, RM	9-11"	137.	E	NH	PU-TSI	2021

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 27	B	45.00	NS	8	NS, RM	9-11"	110.	E	NH	PU	2018
CHEN 27	B	46.00	OPEN/NH	23	N/A	0-5"	20.	E	NH	FW-TSI	2027+
CHEN 27	B	46.01	OPEN/NH	7	N/A	0-5"	20.	E	NH	FW-TSI	2027+
CHEN 27	B	47.00	OPEN/NH	2	N/A	0-5"	20.	E	NH	FW-TSI	2027+
CHEN 27	B	48.00	RP-NS	4	RP, NS	12-17"	217.	E	NH-NS	none	2027+
CHEN 27	B	49.00	RP-NS	24	RP, NS	12-17"	217.	E	NH-NS	RT-PU	2011
CHEN 27	R	711.00	Road	3	n/a	n/a	0.	R	road	roadside	R
CHEN 27	R	711.00	Road	2	n/a	n/a	0.	R	road	roadside	R
CHEN 27	R	711.00	Road	1	n/a	n/a	0.	R	road	roadside	R
CHEN 27	R	711.00	Road	2	n/a	n/a	0.	R	road	roadside	R
CHEN 30	A	1.00	NH	13	RM, WA	9-11"	135.	E	NH	ST-FW	2022
CHEN 30	A	2.00	RP	11	RP, RM	9-11"	176.	E	NH	RT	2008
CHEN 30	A	3.00	NH-HEM	12	RM, HEM	9-11"	117.	LSF	NH-HEM	none	N/A
CHEN 30	A	4.00	NS-NH	3	RM, NS	9-11"	170.	LSF	NH	none	N/A
CHEN 30	A	5.00	NH-HEM	10	HEM, RM	9-11"	170.	LSF	NH-HEM	none	N/A
CHEN 30	A	6.00	NH-NS	14	RM, NS	9-11"	84.	LSF	NH-NS	none	N/A
CHEN 30	A	7.00	NH-RP	2	RM, RP	9-11"	155.	E	NH	RC	2008
CHEN 30	A	8.00	NH-NS	6	RM, NS	9-11"	182.	LSF	NH-NS	none	N/A
CHEN 30	A	9.00	NH	6	RM, BC	9-11"	96.	LSF	NH	none	N/A
CHEN 30	A	10.00	RP	7	RP, RM	9-11"	180.	E	NH	RT	2008
CHEN 30	A	11.00	NH	13	HM, RM	9-11"	144.	U	NH	ST-FW	2013
CHEN 30	A	12.00	NH-HEM	2	HEM, RM	9-11"	165.	ZR	NH-HEM	none	N/A
CHEN 30	A	13.00	RP-EL	11	RP, RM	9-11"	209.	E	NH	RC	2008

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 30	A	14.00	NH	16	RM, HM	9-11"	130.	E	NH	FW	2013
CHEN 30	A	15.00	RP	26	RP, RM	9-11"	168.	E	NH	RT	2008
CHEN 30	A	16.00	NH	3	RM, HM	9-11"	150.	E	NH	FW	2008
CHEN 30	A	17.00	RP	24	RP, RM	9-11"	152.	E	NH	RT	2008
CHEN 30	A	18.00	NH	37	HM, BC	9-11"	149.	U	NH	ST-FW	2013
CHEN 30	A	19.00	NH	9	RM, BB	9-11"	130.	E	NH	FW	2008
CHEN 30	A	20.00	NH-NS	29	HEM-NS	9-11"	115.	ZR	NH	none	N/A
CHEN 30	A	21.00	NH-OAK	48	RO, RM	9-11"	111.	EL	NH-OAK	ST-FW	2021
CHEN 30	A	22.00	RP-EL	12	RP, EL	9-11"	144.	E	NH	RT	2019
CHEN 30	A	23.00	NH	1	RM, BC	9-11"	160.	E	NH	FW	2019
CHEN 30	A	24.00	OPEN	4	RP, TA	n/a	20.	ZH	Open/Brush	HSI	N/A
CHEN 30	A	25.00	RP-EL	4	RP, EL	12-17"	142.	E	NH	RT	2019
CHEN 30	A	26.00	RP	4	RP,WP	12-17"	140.	E	NH	RC	2007
CHEN 30	A	27.00	NH	5	RM, RO	9-11"	120.	E	NH	ST-FW	2021
CHEN 30	A	28.00	RP	57	RP, RM	12-17"	160.	E	NH	RT	2007
CHEN 30	A	28.01	RP	2	RP, RM	12-17"	160.	E	NH	RT	2007
CHEN 30	A	28.02	RP	1	RP, RM	12-17"	160.	ZR	NH	none	N/A
CHEN 30	A	29.00	EL-NS	12	NS, RM	9-11"	174.	E	NH	PU	2016
CHEN 30	A	30.00	RP	2	RP, RM	9-11"	245.	E	NH	RC	2016
CHEN 30	A	31.00	NS-NH	22	RM, NS	9-11"	137.	E	NH	PU	2016
CHEN 30	A	32.00	NH-OAK	12	RM, RO	9-11"	90.	E	NH	FW	2015
CHEN 30	A	33.00	RP-EL	6	RP, EL	9-11"	158.	E	NH	RC	2007
CHEN 30	A	33.01	RP-EL	3	RP, EL	9-11"	158.	ZR	NH	none	N/A

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 30	A	34.00	NH	2	RM, HM	9-11"	163.	E	NH	FW-TSI	2016
CHEN 30	A	35.00	NS-NH	14	NS, RM	9-11"	115.	E	NH-NS	PU-FW	2009
CHEN 30	A	36.00	RP-EL	4	RP, EL	12-17"	130.	E	NH	RT	2016
CHEN 30	A	37.00	RP-EL	51	RP, EL	12-17"	143.	E	NH	RC	2015
CHEN 30	A	38.00	NS-EL	51	NS, EL	9-11"	149.	E	NH	PU, RC	2019
CHEN 30	A	39.00	AP	4	AP, TA	6-8"	30.	AP	AP	RA	2007
CHEN 30	A	40.00	NS-NH	22	RM, NS	9-11"	99.	E	NH	PU-FW	2019
CHEN 30	A	41.00	NH	15	RM, NS	0-5"	20.	E	NH	TSI	2007
CHEN 30	A	42.00	OPEN	1	brush	n/a	0.	BR	Open/Brush	brush	2022
CHEN 30	A	43.00	SP-RP	2	SP, RP	12-17"	120.	ZA	NH	none	N/A
CHEN 30	A	44.00	NH	2	WA, BC	9-11"	44.	E	NH	FW	2021
CHEN 30	A	45.00	NS	24	NS, WP	9-11"	133.	E	NH	PU	2013
CHEN 30	A	46.00	NS	6	NS, WP	9-11"	184.	E	NH	PU	2022
CHEN 30	A	47.00	NH	10	HM, RM	9-11"	90.	U	NH	ST-FW	2021
CHEN 30	A	48.00	RP-NS	17	RP, NS	9-11"	129.	E	NH	RT	2013
CHEN 30	A	49.00	NS-WP	6	RM, NS	9-11"	112.	E	NH-NS	PU	2021
CHEN 30	A	50.00	NH-HEM	19	HEM, ASP	9-11"	143.	ZR	NH-HEM	none	N/A
CHEN 30	A	51.00	NH	5	BC, HM	9-11"	77.	ZA	NH	none	N/A
CHEN 30	A	52.00	NH-HEM	7	RM, HEM	12-17"	134.	U	NH-HEM	ST-FW	2013
CHEN 30	A	53.00	NH	4	RM, HM	0-5"	30.	E	NH	none	2022
CHEN 30	A	54.00	NH	5	RM, WA	0-5"	20.	E	NH	none	2027+
CHEN 30	A	55.00	RP-NH	4	RM, RP	9-11"	148.	E	NH-HEM	RT	2007
CHEN 30	A	56.00	HEM	1	HEM	12-17"	150.	ZV	HEM	none	N/A

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 30	A	57.00	NH-HEM	6	HEM, RM	9-11"	100.	ZR	NH-HEM	none	N/A
CHEN 30	R	711.00	Road	4	n/a	n/a	0.	R	road	roadside	R
CHEN 30	R	711.00	Road	4	n/a	n/a	0.	R	road	roadside	R
CHEN 33	A	1.00	NH-WP	7	WP, RM	12-17"	126.	LSF	NH-WP	none	N/A
CHEN 33	A	2.00	RP	14	RP, JL	9-11"	169.	UG	NH	RT	2009
CHEN 33	A	3.00	NH-RP	6	RM, RP	9-11"	121.	E	NH	RT	2009
CHEN 33	A	4.00	RP	6	RP, NS	9-11"	170.	UG	NH	RT	2012
CHEN 33	A	5.00	NH-HEM	14	HEM, RM	12-17"	187.	U	NH-HEM	ST-FW	2015
CHEN 33	A	5.01	NH-HEM	8	HEM, RM	12-17"	187.	U	NH-HEM	ST-FW	2015
CHEN 33	A	5.02	NH-HEM	15	HEM, RM	12-17"	187.	U	NH-HEM	ST-FW	2015
CHEN 33	A	5.03	NH-HEM	8	HEM, RM	12-17"	187.	ZR	NH-HEM	none	N/A
CHEN 33	A	6.00	RP	3	RP, BC	9-11"	163.	E	NH	RT	2012
CHEN 33	A	7.00	DL	5	DL, BC	9-11"	170.	UG	NH	RC	2009
CHEN 33	A	8.00	RP-Larch	51	RP-JL	9-11"	177.	E	NH	RT	2010
CHEN 33	A	8.01	RP-Larch	5	RP-JL	9-11"	177.	E	NH	RT	2009
CHEN 33	A	8.02	RP-Larch	1	RP-JL	9-11"	177.	ZR	NH	none	N/A
CHEN 33	A	9.00	NH-OAK	7	RM, RO	12-17"	103.	E	NH	ST	2024
CHEN 33	A	10.00	NS	4	NS, RP	9-11"	177.	E	NH	PU	2022
CHEN 33	A	11.00	NH-RP	7	RM-RP	9-11"	138.	U	NH-HEM	RC	2012
CHEN 33	A	11.01	NH-RP	2	RM-RP	9-11"	138.	ZR	NH-HEM	none	N/A
CHEN 33	A	12.00	RP	12	RP, NS	9-11"	188.	E	NH	RT	2012
CHEN 33	A	12.01	RP	2	RP, NS	9-11"	188.	ZR	NH	none	N/A
CHEN 33	A	13.00	NH-WP	18	WP, RM	12-17"	151.	U	NH-WP	ST-FW	2012

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 33	A	14.00	NH	9	HM, BC	9-11"	77.	U	NH	ST	2021
CHEN 33	A	15.00	NS	6	NS, WP	9-11"	134.	E	NH	PU	2022
CHEN 33	A	16.00	RP	8	RP, JL	9-11"	200.	E	NH	RT	2009
CHEN 33	A	17.00	NS	6	NS, BC	9-11"	168.	E	NH	PU	2022
CHEN 33	A	18.00	NH-HEM	11	HEM, YB	9-11"	106.	U	NH-HEM	none	2027+
CHEN 33	A	19.00	NH	3	RM, BC	9-11"	126.	U	NH	FW	2017
CHEN 33	A	20.00	NH-RP	13	RP, RM	9-11"	141.	U	NH	RT	2017
CHEN 33	A	21.00	NH-HEM	27	HEM, HM	9-11"	94.	U	NH-HEM	ST	2023
CHEN 33	A	22.00	WETLAND	2	BW, spirea	n/a	0.	ZW	WETLAND	none	N/A
CHEN 33	A	23.00	RP	75	RP, BC	9-11"	160.	E	NH	RT	2017
CHEN 33	A	23.01	RP	21	RP, BC	9-11"	160.	E	NH	RT	2017
CHEN 33	A	23.02	RP	6	RP, BC	9-11"	160.	ZR	NH	none	N/A
CHEN 33	A	23.03	RP	6	RP, BC	9-11"	160.	E	NH	RT	2017
CHEN 33	A	24.00	NH-HEM	13	HEM, RM	9-11"	153.	U	NH-HEM	ST	2023
CHEN 33	A	24.01	NH-HEM	10	HEM, RM	9-11"	153.	U	NH-HEM	ST	2023
CHEN 33	A	25.00	NS	4	NS,BC	9-11"	111.	E	NH-NS	PU-FW	2008
CHEN 33	A	26.00	SP	8	SP, BC	9-11"	111.	E	NH	RC	2008
CHEN 33	A	27.00	RP	6	RP, BC	9-11"	111.	E	NH	RC	2008
CHEN 33	A	27.01	RP	2	RP, SP	9-11"	111.	E	NH	RC	2008
CHEN 33	A	27.02	SP	1	SP, BC	9-11"	111.	ZR	NH	none	N/A
CHEN 33	A	28.00	NH	1	HM, RM	9-11"	80.	ZR	NH	none	N/A
CHEN 33	A	29.00	WETLAND	2	SPIREA	n/a	0.	ZW	WETLAND	none	N/A
CHEN 33	A	30.00	NH	7	HM, BC	12-17"	110.	U	NH	ST-FW	2015

UNIT	SUB	STAND	FOREST TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 33	A	31.00	NH-OAK	6	RM, RO	9-11"	150.	E	NH	ST-FW	2024
CHEN 33	A	32.00	NH	2	RM, HM	9-11"	100.	E	NH	TSI	2015
CHEN 33	A	33.00	NH-OAK	2	RO, WA	9-11"	100.	E	NH-OAK	ST-FW	2024
CHEN 33	A	34.00	NH-HEM	4	HEM, BC	12-17"	155.	U	NH-HEM	ST-FW	2024
CHEN 33	A	35.00	NH-OAK	1	RM-ASP	9-11"	100.	U	NH-OAK	FW	2015
CHEN 33	A	36.00	NH-HEM	2	HM-HEM	9-11"	110.	U	NH-HEM	FW-TSI	2024
CHEN 33	A	37.00	NH-HEM	3	RM, HEM	9-11"	140.	U	NH-HEM	FW	2017
CHEN 33	A	38.00	NH-HEM	1	HEM, RM	9-11"	30.	ZR	NH-HEM	none	N/A
CHEN 33	A	39.00	OPEN/NH	2	n/a	0-5"	0.	E	NH	FW-TSI	2027+
CHEN 33	A	40.00	OPEN/NH	1	n/a	0-5"	0.	E	NH	FW-TSI	2027+
CHEN 33	A	41.00	OPEN/NH	1	n/a	0-5"	0.	E	NH	FW-TSI	2027+
CHEN 33	A	42.00	OPEN/NH	1	n/a	0-5"	0.	E	NH	FW-TSI	2027+
CHEN 33	A	43.00	OPEN/NH	35	n/a	0-5"	0.	E	NH	FW-TSI	2027+
CHEN 33	A	44.00	OPEN	18	n/a	0-5"	0.	BR	Open/Brush	FW-TSI	2027+
CHEN 33	R	711.00	Road	2	n/a	9-11"	0.	R	road	roadside	R
CHEN 33	R	711.00	Road	2	n/a	9-11"	0.	R	road	roadside	R
CHEN 33	R	711.00	Road	2	n/a	n/a	0.	R	road	roadside	R

C. MANAGEMENT ACTION SCHEDULE
Organized by Year of Treatment

YEAR	UNIT	SUB	STAND	FOREST TYPE	MGT DIR	TREAT TYPE	ACRES	TREATMENT
2007	BR/CH-1	A	26.00	NS	E	PU	14	Thin spruce
2007	BR/CH-1	A	33.00	RP-JL	E	RT	90	Thin Red Pine
2007	BR/CH-1	A	34.00	RP-WS	E	RT	13	Thin Red Pine
2007	BR/CH-1	A	35.00	RP-JL	E	RT	8	Thin Red Pine
2007	BR/CH-1	A	39.00	AP	AP	RA	3	Release apple trees
2007	BR/CH-1	A	48.00	RP	E	RT	9	Thin Red Pine
2007	BR/CH-1	A	50.00	RP-JL	E	RT	22	Thin Red Pine
2007	CHEN 10	B	1.00	RP	E	RT	4	Thin Red Pine
2007	CHEN 10	B	3.00	RP	E	RT	22	Thin Red Pine
2007	CHEN 13	A	2.00	RP-NS	U	PU	11	Thin spruce
2007	CHEN 27	B	2.00	RP	E	RC	36	Convert Red Pine
2007	CHEN 30	A	26.00	RP	E	RC	4	Convert Red Pine
2007	CHEN 30	A	28.00	RP	E	RT	57	Thin Red Pine
2007	CHEN 30	A	28.01	RP	E	RT	2	Thin Red Pine
2007	CHEN 30	A	33.00	RP-EL	E	RC	6	Convert Red Pine
2007	CHEN 30	A	39.00	AP	AP	RA	4	Release apple trees
2007	CHEN 30	A	55.00	RP-NH	E	RT	4	Thin Red Pine
Total for Year 2007: 309 acres								
2008	BR/CH-1	A	9.00	NH-WP	E	FW-TSI	21	TSI & thin firewood
2008	BR/CH-1	A	19.00	NH-WP	UG	FW-TSI	43	TSI & thin firewood
2008	BR/CH-1	A	41.00	NH-WP	EL	FW-TSI	18	TSI & thin firewood
2008	CHEN 10	C	8.00	RP-NS	E	RT	53	Thin Red Pine
2008	CHEN 10	C	12.00	RP	E	ST	10	Thin sawtimber
2008	CHEN 30	A	2.00	RP	E	RT	11	Thin Red Pine
2008	CHEN 30	A	7.00	NH-RP	E	RC	2	Convert Red Pine
2008	CHEN 30	A	10.00	RP	E	RT	7	Thin Red Pine
2008	CHEN 30	A	13.00	RP-EL	E	RC	11	Convert Red Pine
2008	CHEN 30	A	15.00	RP	E	RT	26	Thin Red Pine
2008	CHEN 30	A	16.00	NH	E	FW	3	Thin firewood

YEAR	UNIT	SUB	STAND	FOREST TYPE	MGT DIR	TREAT TYPE	ACRES	TREATMENT
2008	CHEN 30	A	17.00	RP	E	RT	24	Thin Red Pine
2008	CHEN 30	A	19.00	NH	E	FW	9	Thin firewood
2008	CHEN 33	A	25.00	NS	E	PU-FW	4	Thin spruce & firewood
2008	CHEN 33	A	26.00	SP	E	RC	8	Remove Scotch & Jack pine
2008	CHEN 33	A	27.00	RP	E	RC	6	Convert Red Pine
2008	CHEN 33	A	27.01	RP	E	RC	2	Convert Red Pine
Total for Year 2008: 258 acres								
2009	CHEN 10	A	9.00	WP-NS	EL	PU-TSI	36	TSI & thin NS & firewood
2009	CHEN 10	A	12.00	WP-NH	U	FW-TSI	41	TSI & thin firewood
2009	CHEN 10	A	15.00	NH	E	PH	2	Thin B. locust posts
2009	CHEN 10	B	18.00	WS	E	PU-FW	10	Thin spruce & firewood
2009	CHEN 10	B	19.00	NS	E	SC	5	Convert spruce
2009	CHEN 10	B	29.00	NS	E	PU	15	Thin spruce
2009	CHEN 10	C	24.00	RP-NS	E	RT	58	Thin Red Pine
2009	CHEN 10	C	40.00	RP	E	RT	1	Thin Red Pine
2009	CHEN 27	A	2.00	NS	E	PU	53	Thin spruce
2009	CHEN 27	A	23.00	OPEN	BR	FW	1	Thin firewood
2009	CHEN 30	A	35.00	NS-NH	E	PU-FW	14	Thin spruce & firewood
2009	CHEN 33	A	2.00	RP	UG	RT	14	Thin Red Pine
2009	CHEN 33	A	3.00	NH-RP	E	RT	6	Thin Red Pine
2009	CHEN 33	A	7.00	DL	UG	RC	5	Convert Larch
2009	CHEN 33	A	8.01	RP-Larch	E	RT	5	Thin Red Pine
2009	CHEN 33	A	16.00	RP	E	RT	8	Thin Red Pine
Total for Year 2009: 274 acres								
2010	CHEN 10	A	13.00	NH-OAK	EL	ST-FW	4	Thin sawtimber & firewood
2010	CHEN 10	A	14.00	WP	EL	PU-FW	56	Thin spruce & firewood
2010	CHEN 10	A	21.00	WP	EL	PU-TSI	16	TSI & pulp w.pine
2010	CHEN 10	A	21.01	WP	EL	PU-TSI	5	TSI & pulp w.pine
2010	CHEN 10	C	16.00	RP-WP	EL	RT	16	Thin Red Pine
2010	CHEN 10	C	18.00	RP-WP	E	RT	7	Thin Red Pine
2010	CHEN 10	C	19.00	NH-HEM	U	FW	4	Thin firewood
2010	CHEN 10	C	21.00	RP	E	RT	18	Thin Red Pine

YEAR	UNIT	SUB	STAND	FOREST TYPE	MGT DIR	TREAT TYPE	ACRES	TREATMENT
2010	CHEN 10	C	27.00	RP	E	RT	14	Thin Red Pine
2010	CHEN 10	C	33.00	RP	E	ST	9	Thin sawtimber
2010	CHEN 27	A	10.00	NS	E	PU	89	Thin spruce
2010	CHEN 33	A	8.00	RP-Larch	E	RT	51	Thin Red Pine
Total for Year 2010: 289 acres								
2011	BR/CH-1	A	30.00	WP	UG	FW-TSI	21	TSI & thin firewood
2011	BR/CH-1	A	31.00	WP-NS	UG	PU-TSI	52	TSI & thin spruce
2011	CHEN 10	B	5.00	NH	U	ST-FW	15	Thin sawtimber & firewood
2011	CHEN 10	B	36.00	NH	E	ST-FW	16	Thin sawtimber & firewood
2011	CHEN 10	B	41.00	RP-WP	E	RC	8	Convert red pine
2011	CHEN 10	B	42.00	NH-WP	E	ST-FW	4	Thin sawtimber & firewood
2011	CHEN 27	B	49.00	RP-NS	E	RT-PU	24	Thin red pine & spruce
Total for Year 2011: 140 acres								
2012	CHEN 10	B	8.00	NH	E	FW-TSI	5	TSI & thin firewood
2012	CHEN 10	B	16.00	WS-NH	E	PU-FW	25	Thin spruce & firewood
2012	CHEN 10	B	17.00	NH-OAK	EL	FW-TSI	6	TSI & thin firewood
2012	CHEN 10	B	24.00	NS	E	PU	46	Thin spruce
2012	CHEN 10	B	31.00	NS	E	PU	21	Thin spruce
2012	CHEN 10	B	34.00	OPEN	ZH	HSI	1	Release cultural resources
2012	CHEN 10	B	40.00	NS	E	PU-TSI	2	TSI & thin spruce
2012	CHEN 10	B	46.00	NH-OAK	EL	ST-FW	4	Thin sawtimber & firewood
2012	CHEN 13	A	1.00	NH-OAK	U	ST-FW	26	Thin sawtimber & firewood
2012	CHEN 13	A	15.00	NH-OAK	EL	ST-FW	13	Thin sawtimber & firewood
2012	CHEN 27	A	16.00	RP	E	RT	9	Thin Red Pine
2012	CHEN 27	A	17.00	WS	ES	RC	5	Convert Red Pine
2012	CHEN 27	A	18.00	NS	E	PU	23	Thin spruce
2012	CHEN 27	A	19.00	RP-NS	E	RT-PU	81	Thin red pine & spruce
2012	CHEN 33	A	4.00	RP	UG	RT	6	Thin Red Pine
2012	CHEN 33	A	6.00	RP	E	RT	3	Thin Red Pine
2012	CHEN 33	A	11.00	NH-RP	U	RC	7	Convert Red Pine
2012	CHEN 33	A	12.00	RP	E	RT	12	Thin Red Pine
2012	CHEN 33	A	13.00	NH-WP	U	ST-FW	18	Thin sawtimber & firewood

YEAR	UNIT	SUB	STAND	FOREST TYPE	MGT DIR	TREAT TYPE	ACRES	TREATMENT
Total for Year 2012: 313 acres								
2013	BR/CH-1	A	10.00	WP-JL	EL	ST-FW	75	Thin sawtimber & firewood
2013	BR/CH-1	A	11.00	NH	U	ST	11	Thin sawtimber
2013	BR/CH-1	A	37.00	NH	E	FW	4	Thin firewood
2013	BR/CH-1	A	38.00	NH-OAK	EL	ST	6	Thin sawtimber
2013	CHEN 10	A	1.00	RP-NS	E	RT-PU	10	Thin Red Pine & spruce
2013	CHEN 10	A	4.00	RP	E	RT	14	Thin Red Pine
2013	CHEN 10	A	5.00	NS	E	PU	1	Thin spruce
2013	CHEN 10	A	7.00	NH-OAK	EL	ST-FW	18	Thin sawtimber & firewood
2013	CHEN 10	A	19.00	WP	EL	PU-TSI	5	TSI & pulp w. pine
2013	CHEN 10	A	22.00	WP	EL	FW-TSI	11	TSI & thin firewood
2013	CHEN 10	A	24.00	WP	EL	FW-TSI	3	TSI & thin firewood
2013	CHEN 10	A	32.00	NH	E	RL	14	Remove overstory
2013	CHEN 30	A	11.00	NH	U	ST-FW	13	Thin sawtimber & firewood
2013	CHEN 30	A	14.00	NH	E	FW	16	Thin firewood
2013	CHEN 30	A	18.00	NH	U	ST-FW	37	Thin sawtimber & firewood
2013	CHEN 30	A	45.00	NS	E	PU	24	Thin spruce
2013	CHEN 30	A	48.00	RP-NS	E	RT	17	Thin Red Pine
2013	CHEN 30	A	52.00	NH-HEM	U	ST-FW	7	Thin sawtimber & firewood
Total for Year 2013: 372 acres								
2014	BR/CH-1	A	16.00	NH	E	ST-FW	19	Thin sawtimber & firewood
2014	BR/CH-1	A	17.00	NH-HEM	U	ST-FW	21	Thin sawtimber & firewood
2014	BR/CH-1	A	21.00	NH-HEM	U	ST-FW	23	Thin sawtimber & firewood
2014	BR/CH-1	A	22.00	NH-HEM	U	ST-FW	15	Thin sawtimber & firewood
2014	BR/CH-1	A	23.00	NH-HEM	U	FW-TSI	14	TSI & thin firewood
2014	BR/CH-1	A	24.00	NS	E	PU	5	Thin spruce
2014	BR/CH-1	A	25.00	NH-OAK	EL	ST-FW	8	Thin sawtimber & firewood
2014	BR/CH-1	A	43.00	WP	UG	PU-ST	6	Sawtimber & pulp w. pine
2014	CHEN 13	A	8.00	OAK	EL	ST-FW	59	Thin sawtimber & firewood
2014	CHEN 13	A	8.01	OAK	EL	ST-FW	11	Thin sawtimber & firewood
2014	CHEN 13	A	9.00	NH-OAK	U	ST-FW	18	Thin sawtimber & firewood
2014	CHEN 13	A	9.01	NH-OAK	U	ST-FW	10	Thin sawtimber & firewood

YEAR	UNIT	SUB	STAND	FOREST TYPE	MGT DIR	TREAT TYPE	ACRES	TREATMENT
2014	CHEN 13	A	13.00	OAK	EL	ST-FW	82	Thin sawtimber & firewood
Total for Year 2014: 291 acres								
2015	CHEN 27	A	1.00	NH-OAK	U	FW	11	Thin firewood
2015	CHEN 27	A	1.01	NH-OAK	U	FW	9	Thin firewood
2015	CHEN 27	A	6.00	NH-HEM	U	ST-FW	9	Thin sawtimber & firewood
2015	CHEN 27	A	8.00	NH-WP	EL	PU-FW	6	Thin spruce & firewood
2015	CHEN 27	A	9.00	NH-OAK	E	ST-FW	24	Thin sawtimber & firewood
2015	CHEN 27	A	9.02	NH-OAK	E	ST-FW	2	Thin sawtimber & firewood
2015	CHEN 27	A	11.00	NH-HEM	E	ST-FW	30	Thin sawtimber & firewood
2015	CHEN 27	A	11.02	NH-HEM	E	ST-FW	2	Thin sawtimber & firewood
2015	CHEN 27	A	13.00	NH	U	FW	2	Thin firewood
2015	CHEN 27	A	14.00	NH	U	ST-FW	3	Thin sawtimber & firewood
2015	CHEN 27	A	15.00	NH-HEM	U	FW	31	Thin firewood
2015	CHEN 27	A	22.00	NH-OAK	U	FW	6	Thin firewood
2015	CHEN 30	A	32.00	NH-OAK	E	FW	12	Thin firewood
2015	CHEN 30	A	37.00	RP-EL	E	RC	51	Convert Red Pine
2015	CHEN 33	A	5.00	NH-HEM	U	ST-FW	14	Thin sawtimber & firewood
2015	CHEN 33	A	5.01	NH-HEM	U	ST-FW	8	Thin sawtimber & firewood
2015	CHEN 33	A	5.02	NH-HEM	U	ST-FW	15	Thin sawtimber & firewood
2015	CHEN 33	A	30.00	NH	U	ST-FW	7	Thin sawtimber & firewood
2015	CHEN 33	A	35.00	NH-OAK	U	FW	1	Thin firewood
Total for Year 2015: 243 acres								
2016	CHEN 10	C	11.00	NH-HEM	U	ST-FW	10	Thin sawtimber & firewood
2016	CHEN 10	C	13.00	NH	U	FW-TSI	4	TSI & thin firewood
2016	CHEN 10	C	14.00	WP-EL	E	ST-PU	9	Thin Larch & WP (row)
2016	CHEN 10	C	15.00	NH	U	FW-TSI	9	TSI & thin firewood
2016	CHEN 10	C	17.00	NH-WP	E	RT	4	Thin Red Pine
2016	CHEN 10	C	20.00	NH	U	ST-FW	7	Thin sawtimber & firewood
2016	CHEN 10	C	30.00	RP-NS	E	ST-FW	21	Thin sawtimber & firewood
2016	CHEN 10	C	34.00	NH-RP	E	FW-TSI	8	TSI & thin firewood
2016	CHEN 10	C	35.00	NH-NS	E	ST-FW	2	Thin sawtimber & firewood
2016	CHEN 27	B	11.00	NS	E	PU-FW	3	Thin spruce & firewood

YEAR	UNIT	SUB	STAND	FOREST TYPE	MGT DIR	TREAT TYPE	ACRES	TREATMENT
2016	CHEN 27	B	12.00	NH-HEM	U	ST-PU	29	Thin spruce & hardwood
2016	CHEN 27	B	14.00	NH-HEM	E	PU-FW	16	Thin FW & hemlock pulp
2016	CHEN 27	B	42.00	NH-WP	EL	ST-FW	3	Thin sawtimber & firewood
2016	CHEN 30	A	29.00	EL-NS	E	PU	12	Thin spruce
2016	CHEN 30	A	30.00	RP	E	RC	2	Convert Red Pine
2016	CHEN 30	A	31.00	NS-NH	E	PU	22	Thin spruce
2016	CHEN 30	A	34.00	NH	E	FW-TSI	2	TSI & thin firewood
2016	CHEN 30	A	36.00	RP-EL	E	RT	4	Thin Red Pine
Total for Year 2016: 167 acres								
2017	BR/CH-1	A	4.00	WP-JL	EL	RT	11	Thin Red Pine
2017	BR/CH-1	A	8.00	NH-HEM	U	ST-FW	9	Thin sawtimber & firewood
2017	BR/CH-1	A	45.00	NH-OAK	EL	FW	3	Thin firewood
2017	BR/CH-1	A	46.00	NH	E	FW-TSI	6	TSI & thin firewood
2017	BR/CH-1	A	47.00	NH	E	FW	4	Thin firewood
2017	BR/CH-1	A	53.00	NH-WP	UG	ST-FW	5	Thin sawtimber & firewood
2017	BR/CH-1	A	63.00	NH-HEM	U	ST-FW	10	Thin sawtimber & firewood
2017	CHEN 13	A	7.00	EL-NS	E	RC	13	Convert Larch
2017	CHEN 13	A	11.00	NH-OAK	EL	ST-FW	117	Thin sawtimber & firewood
2017	CHEN 33	A	19.00	NH	U	FW	3	Thin firewood
2017	CHEN 33	A	20.00	NH-RP	U	RT	13	Thin Red Pine
2017	CHEN 33	A	23.00	RP	E	RT	75	Thin Red Pine
2017	CHEN 33	A	23.01	RP	E	RT	21	Thin Red Pine
2017	CHEN 33	A	23.03	RP	E	RT	6	Thin Red Pine
2017	CHEN 33	A	37.00	NH-HEM	U	FW	3	Thin firewood
Total for Year 2017: 300 acres								
2018	CHEN 10	B	21.00	NS	E	PU	12	Thin spruce
2018	CHEN 10	B	21.01	NS	E	PU	5	Thin spruce
2018	CHEN 10	B	23.00	NS	E	PU	61	Thin spruce
2018	CHEN 10	B	27.00	NH	E	PH	1	Thin B. locust posts
2018	CHEN 10	B	28.00	NS	E	PU-FW	3	Thin spruce & firewood
2018	CHEN 13	A	3.00	NH-OAK	EL	ST-FW	35	Thin sawtimber & firewood
2018	CHEN 13	A	4.00	EL-NS	E	ST	3	Thin sawtimber

YEAR	UNIT	SUB	STAND	FOREST TYPE	MGT DIR	TREAT TYPE	ACRES	TREATMENT
2018	CHEN 13	A	5.00	NH-WP	EL	ST-FW	9	Thin sawtimber & firewood
2018	CHEN 13	A	6.00	EL-NS	E	ST	6	Thin sawtimber
2018	CHEN 13	A	12.00	EL-NS	E	ST	6	Thin sawtimber
2018	CHEN 13	A	17.00	NH-WP	U	ST-FW	3	Thin sawtimber & firewood
2018	CHEN 27	A	4.00	NS	E	PU-TSI	1	TSI & thin spruce
2018	CHEN 27	A	5.00	JL	E	PU	32	Thin larch
2018	CHEN 27	A	7.00	NS	E	PU-TSI	6	TSI & thin spruce
2018	CHEN 27	A	20.00	NH-HEM	E	FW	2	Thin firewood
2018	CHEN 27	A	21.00	NH-HEM	U	ST-FW	66	Thin sawtimber & firewood
2018	CHEN 27	B	1.00	NH-HEM	U	ST-FW	4	Thin sawtimber & firewood
2018	CHEN 27	B	3.00	NH-HEM	U	FW	5	Thin firewood
2018	CHEN 27	B	4.00	NH-HEM	U	FW	21	Thin firewood
2018	CHEN 27	B	26.00	NS-NH	U	PU-FW	4	Thin spruce & firewood
2018	CHEN 27	B	32.00	NS	E	PU	4	Thin spruce
2018	CHEN 27	B	37.00	NS	E	PU	3	Thin spruce
2018	CHEN 27	B	45.00	NS	E	PU	8	Thin spruce
Total for Year 2018: 301 acres								
2019	BR/CH-1	A	6.00	NH	U	ST-FW	4	Thin sawtimber & firewood
2019	BR/CH-1	A	14.00	NS	UG	PU-FW	82	Thin spruce & firewood
2019	BR/CH-1	A	14.01	NS	UG	PU-FW	20	Thin spruce & firewood
2019	BR/CH-1	A	14.02	NS	UG	PU-FW	19	Thin spruce & firewood
2019	CHEN 10	A	8.00	NH	U	ST-FW	10	Thin sawtimber & firewood
2019	CHEN 10	A	10.00	EL	E	FW-TSI	5	TSI & thin firewood
2019	CHEN 10	A	11.00	NH	E	ST-FW	5	Thin sawtimber & firewood
2019	CHEN 10	A	16.00	NH	E	ST-FW	3	Thin sawtimber & firewood
2019	CHEN 10	A	17.00	Oak-Hick	E	ST-FW	3	Thin sawtimber & firewood
2019	CHEN 30	A	22.00	RP-EL	E	RT	12	Thin Red Pine
2019	CHEN 30	A	23.00	NH	E	FW	1	Thin firewood
2019	CHEN 30	A	25.00	RP-EL	E	RT	4	Thin Red Pine
2019	CHEN 30	A	38.00	NS-EL	E	PU, RC	51	Thin NS; larch. Remove RP
2019	CHEN 30	A	40.00	NS-NH	E	PU-FW	22	Thin spruce & firewood
Total for Year 2019: 241 acres								

YEAR	UNIT	SUB	STAND	FOREST TYPE	MGT DIR	TREAT TYPE	ACRES	TREATMENT
2020	CHEN 10	A	20.00	NH	E	ST-FW	3	Thin sawtimber & firewood
2020	CHEN 10	A	23.00	NH-OAK	EL	ST-FW	5	Thin sawtimber & firewood
2020	CHEN 10	A	25.00	NH	U	ST-FW	39	Thin sawtimber & firewood
2020	CHEN 10	A	29.00	NH-HEM	U	ST-FW	9	Thin sawtimber & firewood
2020	CHEN 10	A	30.00	NH	EL	ST-FW	16	Thin sawtimber & firewood
2020	CHEN 10	B	2.00	NH-SP	E	FW-TSI	9	TSI & thin firewood
2020	CHEN 10	B	10.00	NH	E	ST-FW	6	Thin sawtimber & firewood
2020	CHEN 10	B	12.00	HEM-WP	U	ST-PU	14	Thin hemlock & hardwood
2020	CHEN 10	B	13.00	WP-NS	U	PU-TSI	5	TSI & pulp w. pine
2020	CHEN 10	B	15.00	NH-WP	EL	ST-FW	4	Thin sawtimber & firewood
2020	CHEN 10	B	22.00	NH	E	FW	5	Thin firewood
2020	CHEN 10	B	32.00	NH-OAK	EL	ST-FW	9	Thin sawtimber & firewood
2020	CHEN 27	B	17.00	NH-HEM	U	ST-FW	31	Thin sawtimber & firewood
2020	CHEN 27	B	20.00	NH-WP	EL	FW-TSI	7	TSI & thin firewood
2020	CHEN 27	B	30.00	NH-HEM	U	FW-TSI	16	TSI & thin firewood
2020	CHEN 27	B	31.00	NH-HEM	U	ST-FW	5	Thin sawtimber & firewood
2020	CHEN 27	B	33.00	NH-WP	E	FW	13	Thin firewood
2020	CHEN 27	B	34.00	NH-HEM	U	ST-FW	4	Thin sawtimber & firewood
2020	CHEN 27	B	36.00	BL	E	PH	3	Thin B. locust posts
Total for Year 2020: 203 acres								
2021	CHEN 10	C	3.00	NH-WP	U	ST	8	Thin sawtimber
2021	CHEN 10	C	5.00	NH-HEM	U	ST-FW	25	Thin sawtimber & firewood
2021	CHEN 10	C	6.00	NH	U	ST-FW	2	Thin sawtimber & firewood
2021	CHEN 10	C	7.00	OAK	EL	ST-FW	28	Thin sawtimber & firewood
2021	CHEN 10	C	10.00	NH-HEM	U	ST-FW	2	Thin sawtimber & firewood
2021	CHEN 10	C	23.00	NH-OAK	EL	ST-FW	16	Thin sawtimber & firewood
2021	CHEN 10	C	25.00	NH-WP	EL	ST-FW	13	Thin sawtimber & firewood
2021	CHEN 10	C	26.00	NH	E	ST-FW	5	Thin sawtimber & firewood
2021	CHEN 10	C	31.00	NH-RP	E	RT-FW	3	Thin Red Pine & firewood
2021	CHEN 10	C	36.00	NH-OAK	EL	ST-FW	24	Thin sawtimber & firewood
2021	CHEN 10	C	37.00	NH	U	ST-FW	30	Thin sawtimber & firewood
2021	CHEN 27	B	5.00	NS-SP	E	ST-PU	19	Thin spruce & S. pine

YEAR	UNIT	SUB	STAND	FOREST TYPE	MGT DIR	TREAT TYPE	ACRES	TREATMENT
2021	CHEN 27	B	5.01	NS-SP	E	ST-PU	13	Thin spruce & S. pine
2021	CHEN 27	B	8.00	NS	E	PU	23	Thin spruce
2021	CHEN 27	B	44.00	NS-NH	E	PU-TSI	12	TSI & thin/remove spruce
2021	CHEN 30	A	21.00	NH-OAK	EL	ST-FW	48	Thin sawtimber & firewood
2021	CHEN 30	A	27.00	NH	E	ST-FW	5	Thin sawtimber & firewood
2021	CHEN 30	A	44.00	NH	E	FW	2	Thin firewood
2021	CHEN 30	A	47.00	NH	U	ST-FW	10	Thin sawtimber & firewood
2021	CHEN 30	A	49.00	NS-WP	E	PU	6	Thin spruce
2021	CHEN 33	A	14.00	NH	U	ST	9	Thin sawtimber
Total for Year 2021: 303 acres								
2022	BR/CH-1	A	5.00	NH-WP	E	FW	11	Thin firewood
2022	BR/CH-1	A	13.00	NH	U	ST-FW	9	Thin sawtimber & firewood
2022	BR/CH-1	A	28.00	NH	U	ST-FW	6	Thin sawtimber & firewood
2022	BR/CH-1	A	59.00	NH	U	ST-FW	4	Thin sawtimber & firewood
2022	CHEN 10	C	32.00	NH-OAK	EL	ST-FW	9	Thin sawtimber & firewood
2022	CHEN 10	C	32.01	NH-OAK	EL	ST-FW	35	Thin sawtimber & firewood
2022	CHEN 27	B	22.00	NS	E	PU	1	Thin spruce
2022	CHEN 30	A	1.00	NH	E	ST-FW	13	Thin sawtimber & firewood
2022	CHEN 30	A	42.00	OPEN	BR	brush	1	Release brush species
2022	CHEN 30	A	46.00	NS	E	PU	6	Thin spruce
2022	CHEN 30	A	53.00	NH	E	FW-TSI	4	TSI & thin firewood
2022	CHEN 33	A	10.00	NS	E	PU	4	Thin spruce
2022	CHEN 33	A	15.00	NS	E	PU	6	Thin spruce
2022	CHEN 33	A	17.00	NS	E	PU	6	Thin spruce
Total for Year 2022: 115 acres								
2023	CHEN 10	B	11.00	WP	EL	FW-TSI	10	TSI & thin firewood
2023	CHEN 33	A	21.00	NH-HEM	U	ST	27	Thin sawtimber
2023	CHEN 33	A	24.00	NH-HEM	U	ST	13	Thin sawtimber
2023	CHEN 33	A	24.01	NH-HEM	U	ST	10	Thin sawtimber
Total for Year 2023: 60 acres								
2024	CHEN 33	A	9.00	NH-OAK	E	ST	7	Thin sawtimber
2024	CHEN 33	A	31.00	NH-OAK	E	ST-FW	6	Thin sawtimber & firewood

YEAR	UNIT	SUB	STAND	FOREST TYPE	MGT DIR	TREAT TYPE	ACRES	TREATMENT
2024	CHEN 33	A	33.00	NH-OAK	E	ST-FW	2	Thin sawtimber & firewood
2024	CHEN 33	A	34.00	NH-HEM	U	ST-FW	4	Thin sawtimber & firewood
2024	CHEN 33	A	36.00	NH-HEM	U	FW-TSI	2	TSI & thin firewood
Total for Year 2024: 21 acres								
2025	CHEN 27	B	7.00	NH-WP	EL	ST-FW	22	Thin sawtimber & firewood
Total for Year 2025: 22 acres								
2026	CHEN 27	B	28.00	NS	E	PU-TSI	2	TSI & thin spruce
2026	CHEN 27	B	29.00	BL	E	PH	4	Thin B. locust posts
Total for Year 2027: 6 acres								
2027+	BR/CH-1	A	64.00	NH-HEM	U	20 yrs +	2	Review at 20+ years
2027+	CHEN 10	A	26.00	NH-WP	U	20 yrs +	2	Review at 20+ years
2027+	CHEN 10	A	27.00	NH-WP	EL	20 yrs +	5	Review at 20+ years
2027+	CHEN 10	A	28.00	NH-WP	EL	20 yrs +	11	Review at 20+ years
2027+	CHEN 10	A	28.01	NH-WP	EL	20 yrs +	15	Review at 20+ years
2027+	CHEN 10	B	4.00	SP	E	20 yrs +	7	Review at 20+ years
2027+	CHEN 10	B	35.00	NH	E	20 yrs +	5	Review at 20+ years
2027+	CHEN 10	B	37.00	NH	E	20 yrs +	19	Review at 20+ years
2027+	CHEN 10	C	22.00	NH	E	20 yrs +	4	Review at 20+ years
2027+	CHEN 10	C	29.00	RP	E	RC	1	Convert Red Pine
2027+	CHEN 10	C	41.00	Open/NH	E	FW-TSI	1	TSI & thin firewood
2027+	CHEN 10	C	42.00	Open/NH	E	FW-TSI	3	TSI & thin firewood
2027+	CHEN 10	C	43.00	Open/NH	E	FW-TSI	4	TSI & thin firewood
2027+	CHEN 27	A	25.00	Open/NH	E	FW-TSI	4	TSI & thin firewood
2027+	CHEN 27	A	26.00	Open/NH	E	FW-TSI	2	TSI & thin firewood
2027+	CHEN 27	B	10.00	RP-NS	E	RT-PU	1	Thin red pine & spruce
2027+	CHEN 27	B	23.00	RP	E	20 yrs +	4	Review at 20+ years
2027+	CHEN 27	B	24.00	NS	E	20 yrs +	3	Review at 20+ years
2027+	CHEN 27	B	40.00	NH	E	20 yrs +	26	Review at 20+ years
2027+	CHEN 27	B	41.00	NS-NH	E	20 yrs +	24	Review at 20+ years
2027+	CHEN 27	B	46.00	Open/NH	E	FW-TSI	23	TSI & thin firewood
2027+	CHEN 27	B	46.01	Open/NH	E	FW-TSI	7	TSI & thin firewood
2027+	CHEN 27	B	47.00	Open/NH	E	FW-TSI	2	TSI & thin firewood

YEAR	UNIT	SUB	STAND	FOREST TYPE	MGT DIR	TREAT TYPE	ACRES	TREATMENT
2027+	CHEN 27	B	48.00	RP-NS	E	20 yrs +	4	Review at 20+ years
2027+	CHEN 30	A	54.00	NH	E	20 yrs +	5	Review at 20+ years
2027+	CHEN 33	A	18.00	NH-HEM	U	20 yrs +	11	Review at 20+ years
2027+	CHEN 33	A	39.00	Open/NH	E	FW-TSI	2	TSI & thin firewood
2027+	CHEN 33	A	40.00	Open/NH	E	FW-TSI	1	TSI & thin firewood
2027+	CHEN 33	A	41.00	Open/NH	E	FW-TSI	1	TSI & thin firewood
2027+	CHEN 33	A	42.00	Open/NH	E	FW-TSI	1	TSI & thin firewood
2027+	CHEN 33	A	43.00	Open/NH	E	FW-TSI	35	TSI & thin firewood
2027+	CHEN 33	A	44.00	Open	BR	FW-TSI	18	TSI & thin firewood
Total for Years 2027+: 253 acres								

D. MANAGEMENT ACTION SCHEDULE
Non-Commercial Treatments

YEAR	FOREST	SUB	STAND	TYPE	DIR	MGT	ACRES	TREATMENT
2009	CHEN 10	B	20.00	NH	ZH	HSI	2	Release cultural resources
2009	CHEN 30	A	41.00	NH	E	TSI	15	TSI
2009	BR/CHEN-1	A	15.00	WP	UG	TSI	40	TSI
2011	BR/CHEN-1	A	18.00	WP	UG	TSI	39	TSI
2011	BR/CHEN-1	A	18.01	WP	UG	TSI	16	TSI
2012	CHEN 27	B	27.00	RP	E	TSI	3	TSI
2013	BR/CHEN-1	A	54.00	OTHER	ZH	HSI	8	Release cultural resources
2014	BR/CHEN-1	A	40.00	OPEN	ZH	HSI	1	Release cultural resources
2014	BR/CHEN-1	A	60.00	WP-NS	UG	TSI	5	TSI
2014	BR/CHEN-1	A	61.00	NH	ZH	HSI	5	Release cultural resources
2014	CHEN 10	B	30.00	OPEN	ZH	HSI	1	Release cultural resources
2014	CHEN 30	A	24.00	OPEN	ZH	HSI	4	Release cultural resources
2015	CHEN 33	A	32.00	NH	E	TSI	2	TSI
2017	BR/CHEN-1	A	58.00	NH	ZH	HSI	7	Release cultural resources

E. FOREST INVENTORY DATA COLLECTION SCHEDULE

Year	State Forest	Acres
2011	Chenango 10 Bobell Hill State Forest	1,417
2011	Chenango 13 Oak Ridge State Forest	576
2012	Chenango 27 Coventry State Forest	1,156
2011	Chenango 30 Bobell Hill State Forest	741
2012	Chenango 33 Bumps Creek State Forest	528
2012	Broome- Chenango 1 Beaver Flow State Forest	1,028

APPENDIX I

Information on roads within or adjacent to the Chenango Trail Unit

Forest	Road Name	Type	Miles	Description
B/C-1	Chenango County section of Glendenning Road	Town - Abandoned	0.73	Needs repair. Will be maintained for passenger car travel. Year-round maintenance to forest boundary.
	Broome County section of Glendenning Road	Town - Abandoned	1.23	Poor condition south of Spur Road - No motor vehicle use.
	Lippa Road	Town	0.26	Good condition - Year-round maint.
	Davey Road	Town	0.35	Good condition - Year-round maint.
	Glendenning Spur Road	Town - Abandoned	0.31	Poor condition - No motor vehicle use.

Forest	Road Name	Type	Miles	Description
Ch-10	Bobell Road	Town	1.30	Good condition - Year-round maint.
	Wylie-Horton Rd.	Town	1.50	Good condition - Year-round maint.
	Cueball Road	Town	0.73	Good condition - Year-round maint.
	Seymour Hill Road	Town	0.28	Good condition - Year-round maint.
	Palmiter Road	Town	0.38	Good condition - Year-round maint.
	Access Road off Palmiter Road	DEC	0.24	Entrance blocked - Not intended for public motor vehicle use.
	Bowbell Rd - south of Seymour Hill Rd	Town - Abandoned	0.19	Poor condition - no motor vehicle use.
	Schaeffer Road (to Osmond property)	DEC - Private	0.39	Entrance gated - Not intended for public motor vehicle use.
Ch-13	Stumptown Road	Town	0.39	Good condition - Year-round maint.
	Stumptown Rd. Ext.	Town - Abandoned	0.50	No public access - No motor vehicle use.
	Elm Drive	Town	0.07	Good condition - Year-round maint.
Ch-27	Brown Spur Road	Town	0.17	Road section adjacent to forest can not be traveled.
	North Road	Town	1.13	Good condition - Year-round maint.
	Harvey Road	Town	0.54	Good condition - Year-round maint.
	Owlville Road	Town	0.54	Good condition - Year-round maint.
	Stiles Road	Town	0.48	Good condition - Year-round maint.
	“Owlville Rd-to-pond access”	DEC	0.12	Poor condition - entrance blocked.
	“Owlville Rd -to-private land”	DEC	0.39	Entrance gated - Not intended for public motor vehicle use.
Ch-30	Bobell Road	Town	1.00	Good condition - Year-round maint.
	Page Brook Road	Town	0.86	Good condition - Year-round maint.
Ch-33	Sprague Road	Town	0.81	Good condition - Year-round maint.
	Tracy Road	Town	0.27	Good condition - Year-round maint.
	Buckley Hill Road	Town	0.36	Good condition - Year-round maint.

APPENDIX II

Watercourses on the Unit

State Forest	Stream Identification	Common Name	Length (miles)	Standard
B/C-1	SR123-1	unnamed trib. to Wylie Brook	1.91	C
B/C-1	SR123-1-1	unnamed trib. to Wylie Brook	0.60	C
B/C-1	SR123-6	unnamed trib. to Wylie Brook	0.07	C
CH-10	SR123-1-2	unnamed trib. to Wylie Brook	0.49	C
CH-10	SR123-7-2	unnamed trib. to Wylie Brook	0.02	C
CH-10	SR123	Wylie Brook	0.18	Ct
CH-10	SR123-7-3-1	unnamed trib. to Wylie Brook	0.42	C
CH-10	SR123-8	unnamed trib. to Wylie Brook	0.85	C
CH-10	SR123-8-1	unnamed trib. to Wylie Brook	0.71	C
CH-10	SR123-no I.D.#	unnamed trib. to Wylie Brook	0.09	C
CH-10	SR44-11-8-2	unnamed trib. to Chalker Creek	0.02	C
CH-10	SR44-11-8	Chalker Creek	0.40	C
CH-10	SR44-11	Page Brook	0.39	C
CH-10	SR44-11-11-3	unnamed trib. to Page Brook	0.08	C
CH-13	SR138	Guthrie Brook	1.39	C
CH-13	SR138-1	unnamed trib. to Guthrie Brook	0.55	C
CH-13	SR138-2	unnamed trib. to Guthrie Brook	0.05	C
CH-13	SR138-1-1	unnamed trib. to Guthrie Brook	0.19	C
CH-27	SR44-37-3	unnamed trib. to Forrel Creek	0.05	Ct
CH-27	SR134-8-no I.D. #	unnamed trib. to Wilkins Brook	0.59	C
CH-27	SR44-37-4	unnamed trib. to Forrel Creek	0.25	C
CH-27	SR134-8-15	unnamed trib. to Wilkins Brook	0.09	C
CH-27	SR44-37	Forrel Creek	1.08	Ct
CH-27	SR44-32-8	unnamed trib. to Wheeler Brook	1.10	C
CH-27	SR44-37-no I.D.#	unnamed trib. to Forrel Creek	0.39	C
CH-27	SR134-8-14	unnamed trib. to Wilkins Brook	0.22	Ct

State Forest	Stream Identification	Common Name	Length (miles)	Standard
CH-27	SR44-32-8-3	unnamed trib. to Wheeler Brook	0.15	C
CH-30	SR44-11-14-2	unnamed trib. to Page Brook	0.30	C
CH-30	SR44-11-14-3	unnamed trib. to Page Brook	0.51	C
CH-30	SR44-11-15	unnamed trib. to Page Brook	0.08	C
CH-30	SR44-11-16	unnamed trib. to Page Brook	0.61	C
CH-30	SR44-11-16-no I.D. #	unnamed trib. to Page Brook	0.22	C
CH-30	SR44-11-14	unnamed trib. to Page Brook	0.45	C
CH-30	SR44-11	Page Brook	0.25	C
CH-30	SR44-11-14-1	unnamed trib. to Page Brook	0.34	C
CH-33	SR134-8-9-1	unnamed trib. to Wilkins Brook	0.54	C
CH-33	SR134-8-9	unnamed trib. to Wilkins Brook	0.70	C
CH-33	SR134-1-4	unnamed trib. to Bumps Creek	0.53	C

APPENDIX III

Classified Wetlands on the Unit

Forest	wetland I.D. code	acres	legal status	coinciding stand #'s	NWI * classification
CH-27	WB-8	50	II	A-12	PFO4E
CH-27	WB-7	16	III	B-19	PSS1E
CH-27	B-5	2	III	B-43	PFO1/EM1E
Total		**68**			

(*) **N**ational **W**etlands **I**nventory

APPENDIX IV

Code Definitions for Protective Status of Wildlife on the Chenango Trail Management Unit

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

Federal Definitions

E - Endangered Species are determined by the U. S. Department of the Interior to be in danger of extinction throughout all or a significant portion of their range. All such species are fully protected, including their habitat.

T - Threatened Species are determined by the U. S. Department of the Interior as likely to become endangered within the foreseeable future throughout all or a significant portion of their range. All such species are fully protected.

UN - "Unprotected" under Federal Law.

State Definitions

Protected Protected wildlife means "wild game, protected wild birds, and endangered species of wildlife" as defined in the Environmental Conservation Law.

E Endangered Species are determined by the DEC to be in imminent danger of extinction or extirpation in New York State, or are federally listed as endangered. All such species are fully protected under New York State Environmental Conservation Law.

T Threatened Species are determined by the DEC as likely to become endangered within the foreseeable future in New York State, or are Federally listed as threatened. All such species are fully protected under the New York State Environmental Conservation Law.

SC Special Concern Species are those native species that are not yet recognized as endangered or threatened, but for which documented evidence exists relating to their continued welfare in New York State. The Special Concern category exists within DEC rules and regulations, but such designation does not in itself provide any additional protection. However, Special Concern species may be protected under other laws.

GS Game species are defined as "big game", "small game", or "game bird" species as stated in the Environmental Conservation Law; many normally have an open season for at least part of the year, and are protected at other times.

UN Unprotected means that the species may be taken at any time without limit. However, a license to take may be required.

APPENDIX V

Breeding Species Of Birds In The Vicinity Of The Chenango Trail Management Unit (2000 - 2004 Atlas Data)

COMMON NAME	*SCIENTIFIC NAME*	BREEDING CODE	PROTECTED-NEW YORK STATE
Canada Goose	*Branta canadensis*	Confirmed	Game Species
Wood Duck	*Aix sponsa*	Confirmed	Game Species
Mallard	*Anas platyrhynchos*	Confirmed	Game Species
Common Merganser	*Mergus merganser*	Possible	Game Species
Hooded Merganser	*Lophodytes cucullatus*	Possible	Game Species
Ruffed Grouse	*Bonasa umbellus*	Confirmed	Game Species
Wild Turkey	*Meleagris gallopavo*	Confirmed	Game Species
Ring-necked Pheasant	*Phasianus colchicus*	Possible	Game Species
American Bittern	*Botaurus lentiginosus*	Confirmed	Protected-Special Concern
Great Blue Heron	*Ardea herodias*	Possible	Protected
Green Heron	*Butorides virescens*	Probable	Protected
Turkey Vulture	*Cathartes aura*	Possible	Protected
Osprey	*Pandion haliaetus*	Possible	Protected-Special Concern
Bald Eagle	*Haliaeetus leucocephalus*	Possible	Threatened
Sharp-shinned Hawk	*Accipiter striatus*	Confirmed	Protected-Special Concern
Cooper's Hawk	*Accipiter cooperii*	Possible	Protected-Special Concern
Northern Goshawk	*Accipiter gentilis*	Confirmed	Protected-Special Concern
Red-shouldered Hawk	*Buteo lineatus*	Confirmed	Protected-Special Concern
Broad-winged Hawk	*Buteo platypterus*	Probable	Protected
Red-tailed Hawk	*Buteo jamaicensis*	Confirmed	Protected
American Kestrel	*Falco sparverius*	Confirmed	Protected
Virginia Rail	*Rallus limicola*	Probable	Game Species
Killdeer	*Charadrius vociferus*	Confirmed	Protected
Spotted Sandpiper	*Actitis macularia*	Probable	Protected
American Woodcock	*Scolopax minor*	Possible	Game Species
Rock Pigeon	*Columba livia*	Confirmed	Unprotected
Mourning Dove	*Zenaida macroura*	Probable	Protected
Black-billed Cuckoo	*Coccyzus erythropthalmus*	Confirmed	Protected
Yellow-billed Cuckoo	*Coccyzus americanus*	Possible	Protected
Great Horned Owl	*Bubo virginianus*	Possible	Protected
Eastern Screech-Owl	*Megascops asio*	Probable	Protected
Barred Owl	*Strix varia*	Probable	Protected
Chimney Swift	*Chaetura pelagica*	Possible	Protected
Ruby-throated Hummingbird	*Archilochus colubris*	Probable	Protected
Belted Kingfisher	*Ceryle alcyon*	Probable	Protected
Yellow-bellied Sapsucker	*Sphyrapicus varius*	Confirmed	Protected

COMMON NAME	*SCIENTIFIC NAME*	BREEDING CODE	PROTECTED-NEW YORK STATE
Downy Woodpecker	*Picoides pubescens*	Probable	Protected
Hairy Woodpecker	*Picoides villosus*	Confirmed	Protected
Northern Flicker	*Colaptes auratus*	Confirmed	Protected
Pileated Woodpecker	*Dryocopus pileatus*	Probable	Protected
Eastern Wood-Pewee	*Contopus virens*	Probable	Protected
Alder Flycatcher	*Empidonax alnorum*	Confirmed	Protected
Willow Flycatcher	*Empidonax traillii*	Probable	Protected
Least Flycatcher	*Empidonax minimus*	Probable	Protected
Eastern Phoebe	*Sayornis phoebe*	Confirmed	Protected
Great Crested Flycatcher	*Myiarchus crinitus*	Probable	Protected
Eastern Kingbird	*Tyrannus tyrannus*	Confirmed	Protected
Yellow-throated Vireo	*Vireo flavifrons*	Possible	Protected
Blue-headed Vireo	*Vireo solitarius*	Confirmed	Protected
Warbling Vireo	*Vireo gilvus*	Probable	Protected
Red-eyed Vireo	*Vireo olivaceus*	Confirmed	Protected
Blue Jay	*Cyanocitta cristata*	Confirmed	Protected
American Crow	*Corvus brachyrhynchos*	Confirmed	Game Species
Common Raven	*Corvus corax*	Probable	Protected
Tree Swallow	*Tachycineta bicolor*	Confirmed	Protected
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Probable	Protected
Bank Swallow	*Riparia riparia*	Possible	Protected
Cliff Swallow	*Petrochelidon pyrrhonota*	Possible	Protected
Barn Swallow	*Hirundo rustica*	Confirmed	Protected
Black-capped Chickadee	*Poecile atricapillus*	Confirmed	Protected
Tufted Titmouse	*Baeolophus bicolor*	Confirmed	Protected
Red-breasted Nuthatch	*Sitta canadensis*	Confirmed	Protected
White-breasted Nuthatch	*Sitta carolinensis*	Confirmed	Protected
Brown Creeper	*Certhia americana*	Confirmed	Protected
House Wren	*Troglodytes aedon*	Confirmed	Protected
Winter Wren	*Troglodytes troglodytes*	Probable	Protected
Golden-crowned Kinglet	*Regulus satrapa*	Possible	Protected
Eastern Bluebird	*Sialia sialis*	Confirmed	Protected
Veery	*Catharus fuscescens*	Confirmed	Protected
Hermit Thrush	*Catharus guttatus*	Confirmed	Protected
Wood Thrush	*Hylocichla mustelina*	Probable	Protected
American Robin	*Turdus migratorius*	Confirmed	Protected
Gray Catbird	*Dumetella carolinensis*	Confirmed	Protected
Brown Thrasher	*Toxostoma rufum*	Confirmed	Protected
European Starling	*Sturnus vulgaris*	Confirmed	Unprotected
Cedar Waxwing	*Bombycilla cedrorum*	Probable	Protected

COMMON NAME	*SCIENTIFIC NAME*	BREEDING CODE	PROTECTED-NEW YORK STATE
Blue-winged Warbler	*Vermivora pinus*	Confirmed	Protected
Nashville Warbler	*Vermivora ruficapilla*	Probable	Protected
Yellow Warbler	*Dendroica petechia*	Confirmed	Protected
Chestnut-sided Warbler	*Dendroica pensylvanica*	Confirmed	Protected
Magnolia Warbler	*Dendroica magnolia*	Probable	Protected
Black-throated Blue Warbler	*Dendroica caerulescens*	Possible	Protected
Yellow-rumped Warbler	*Dendroica coronata*	Probable	Protected
Black-throated Green Warbler	*Dendroica virens*	Probable	Protected
Blackburnian Warbler	*Dendroica fusca*	Probable	Protected
Prairie Warbler	*Dendroica discolor*	Confirmed	Protected
Black-and-white Warbler	*Mniotilta varia*	Probable	Protected
American Redstart	*Setophaga ruticilla*	Confirmed	Protected
Ovenbird	*Seiurus aurocapilla*	Confirmed	Protected
Northern Waterthrush	*Seiurus noveboracensis*	Possible	Protected
Louisiana Waterthrush	*Seiurus motacilla*	Possible	Protected
Mourning Warbler	*Oporornis philadelphia*	Probable	Protected
Common Yellowthroat	*Geothlypis trichas*	Confirmed	Protected
Canada Warbler	*Wilsonia canadensis*	Confirmed	Protected
Scarlet Tanager	*Piranga olivacea*	Probable	Protected
Eastern Towhee	*Pipilo erythrophthalmus*	Probable	Protected
Chipping Sparrow	*Spizella passerina*	Confirmed	Protected
Field Sparrow	*Spizella pusilla*	Confirmed	Protected
Savannah Sparrow	*Passerculus sandwichensis*	Confirmed	Protected
Song Sparrow	*Melospiza melodia*	Confirmed	Protected
Swamp Sparrow	*Melospiza georgiana*	Confirmed	Protected
White-throated Sparrow	*Zonotrichia albicollis*	Confirmed	Protected
Dark-eyed Junco	*Junco hyemalis*	Confirmed	Protected
Northern Cardinal	*Cardinalis cardinalis*	Confirmed	Protected
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	Confirmed	Protected
Indigo Bunting	*Passerina cyanea*	Probable	Protected
Bobolink	*Dolichonyx oryzivorus*	Confirmed	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	Confirmed	Protected
Eastern Meadowlark	*Sturnella magna*	Confirmed	Protected
Common Grackle	*Quiscalus quiscula*	Confirmed	Protected
Brown-headed Cowbird	*Molothrus ater*	Probable	Protected
Baltimore Oriole	*Icterus galbula*	Confirmed	Protected
Purple Finch	*Carpodacus purpureus*	Confirmed	Protected
House Finch	*Carpodacus mexicanus*	Confirmed	Protected
Pine Siskin	*Carduelis pinus*	Possible	Protected
American Goldfinch	*Carduelis tristis*	Probable	Protected
House Sparrow	*Passer domesticus*	Confirmed	Unprotected

APPENDIX VI

Reptiles and Amphibians of the Chenango Trail Unit Management Plan By Common Name, Scientific Name, and Protective Status

		Protective Status	
Common Name	**Scientific Name**	**Federal**	**State**
Blue spotted salamander	*Ambystoma laterale*	UN	UN-SC
Spotted salamander	*Amsytoma maculatum*	UN	UN-SC
Red spotted newt	*Notophathalmus viridescens*	UN	UN-SC
Northern dusky salamander	*Desmognathus fuscus*	UN	UN
Mountain dusky salamander	*Desmognathus ochrophaeus*	UN	UN
Redback salamander	*Plethodon cinereus*	UN	UN
Northern spring salamander	*Gyrinophilus porphyriticus*	UN	UN
Northern two-lined salamander	*Eurycea bis/ineata*	UN	UN
American toad	*Bufo americanus*	UN	UN
Northern spring peeper	*Hyla crucifer*	UN	UN
Grey tree frog	*Hyla versicolor*	UN	UN
Bull frog	*Rana catesbeiana*	UN	GS
Green frog	*Rana clamitans*	UN	GS
Wood frog	*Rana sylvatica*	UN	GS
Northern Leopard frog	*Rana pipiens*	UN	GS
Pickerel frog	*Rana palustris*	UN	GS
Common snapping turtle	*Chelydra serpentina*	UN	UN
Spotted turtle	*Clemmys guttata*	UN	UN-SC
Wood turtle	*Clemmys insculpta*	UN	GS-SC
Eastern painted turtle	*Chrysemys picata*	UN	UN
Northern water snake	*Nerodia spidedon*	UN	UN
Northern brown snake	*Storeria dekayi*	UN	UN
Northern redbelly snake	*Storeria occipitamaculata*	UN	UN
Eastern garter snake	*Thamnophis sirta/is*	UN	UN
Eastern ribbon snake	*Thamnophis sauritis*	UN	UN
Northern ringneck snake	*Diadophis punctatus edwardsi*	UN	UN
Eastern smooth green snake	*Ophreodrys verna/is*	UN	UN
Eastern milk snake	*Lampropeltis triangulum*	UN	UN

Source: Adapted from Breisch, A., et. al, Amphibian and Reptile Atlas, New York State, Internal Report, 1990-1998.

APPENDIX VII

Mammals on the Unit By Common Name, Scientific Name and Protective Status.

		Protective Status	
Common Name	**Scientific Name**	**Federal**	**State**
Masked shrew	*Sorex cinereus*	UN	UN
Northern water shrew	*Sorex palustris*	UN	UN
Smokey shrew	*Sorex fumeus*	UN	UN
Pygmy shrew	*Microsorex hoyi*	UN	UN
Northern Short-tailed shrew	*Blarina brevicauda*	UN	UN
Least shrew	*Cryptotis parva*	UN	UN
Hairy-tailed mole	*Parascalops breweri*	UN	UN
Starnose mole	*Condylura cristata*	UN	UN
Little brown bat	*Myotis lucifugus*	UN	UN
Keen's Bat	*Myotis septentrionalis*	UN	UN
Indiana Bat	*Myotis sodalis*	EE	
Small-footed Bat	*Myotis leibii*	UN	UN-SC
Silver-haired Bat	*Lasionycteris noctivagans*	UN	UN
E. Pipistrel bat	*Pipistrellus subflavus*	UN	UN
Big brown bat	*Eptesicus fuscus*	UN	UN
Red Bat	*Lasiurus borealis*	UN	UN
Hoary Bat	*Lasiurus cinereus*	UN	UN
E. Coyote	*Canis latrans*	UN	GS
Red fox	*Vulpesfulva*	UN	GS
Gray fox	*Urocyon cinereoargenteus*	UN	GS
Black bear	*Ursus americanus*	UN	GS
Racoon	*Procyon lotor*	UN	GS
Fisher	*Martes pennanti*	UN	GS
Short-tailed weasel	*Mustela ermines*	UN	GS
Long-tailed weasel	*Mustela frenata*	UN	GS
Mink	*Mustela vison*	UN	GS
River otter	*Lutra canadensis*	UN	GS
Bobcat	*Lynx rufus*	UN	GS
White-tailed deer	*Odocoileus virginiana*	UN	GS
E. Chipmunk	*Tamias straitus*	UN	UN
Woodchuck	*Marmota monax*	UN	UN
Gray squirrel	*Sciurus carolinensis*	UN	GS
Red squirrel	*Tamiasciurus hudsonicus*	UN	UN
S. Flying squirrel	*Glaucomys volans*	UN	UN

		Protective Status	
Common Name	**Scientific Name**	**Federal**	**State**
Beaver	*Castor canadensis*	UN	GS
Deer mouse	*Peromyscus maniculatus*	UN	UN
White-footed mouse	*Peromyscus leu copus*	UN	UN
Redback vole	*Clethrionomys gapperi*	UN	UN
Meadow vole	*Microtus pennsylvanicus*	UN	UN
Woodland vole	*Microtus pinetorum*	UN	UN
Pine vole	*Pitymys pinetorum*	UN	UN
Muskrat	*Ondatra zibethicus*	UN	GS
Southern bog lemming	*Synaptomys coo peri*	UN	UN
Meadow jumping mouse	*Zapus hudsonius*	UN	UN
Woodland jumping mouse	*Zapus insignis*	UN	UN
Porcupine	*Erethizon dorsatum*	UN	UN
E. Cottontail	*Sylvilagus floridanus*	UN	GS
Varying hare	*Lepus americanus*	UN	GS

Source: Adapted from Gotie, F.F. 1983. Biological Reconnaissance of the Wildlife Management areas in Region 7- Pharsalia WMA fed. Aid. Perf. Report W-137-D. 1982-83, mimco; and Chambers, R.E. op. cit.

APPENDIX VIII

Fishery Information for the Unit

Water Index #	Name	Class	Year(s) Surveyed	Species Present	Notes
SR-44-37-4	Unnamed Trib.	C	Never		
SR-44-37-3	Unnamed Trib.	C	1935	None Observed	100 BT/yr. stocked from 1936 - 1942
SR-44-37	Forrel Creek	C(t)	1935	None Observed	180 BT/yr. stocked from 1936 - 1942 downstream of State Forest
SR-44-32-8	Unnamed Trib.	C	1935	None Observed	100 BT/yr. stocked from 1936 - 1952 downstream of State Forest
SR-44-11-8	Unnamed Trib.	C	1935	None Observed	
SR-44-11-16	Unnamed Trib.	C	1935, 1974	402, 406, 423, 360	
SR-44-11-14-3	Unnamed Trib.	C	Never		
SR-44-11-14-2	Unnamed Trib.	C	Never		
SR-44-11-14-1C	Unnamed Trib.	C	Never		
SR-44-11-11	Unnamed Trib.	C	1974	406, 362, 865, 402	Surveyed approx. 1 1/2 mi. downstream of State Forest
SR-44-11	Page Brook	C	1935, 1974	362, 406, 613, 377, 444, 419	Surveyed at Bowbell Rd. bridge
SR-138-1	Unnamed Trib.	C	Never		

Water Index #	Name	Class	Year(s) Surveyed	Species Present	Notes
SR-138	Guthurie Br.	C	Never		
SR-134-8-9-1	Unnamed Trib.	C	Never		
SR-134-8-9	Unnamed Trib.	C	Never		
SR-134-8-14-P?	Unnamed Pond	C(t)	Never		Dam built on private land adjacent to State Forest.
SR-134-8-14	Unnamed Trib.	C(t)	1935	None Observed	Records indicate it may have been stocked with 180 BT/yr. for some period after 1935.
SR-134-1-7-2	Unnamed Trib.	C	Never		
SR-134-1-4	Unnamed Trib.	C	1935	None Observed	
SR-134-8-P?	Unnamed Pond	C	Never		Class III wetland
SR-123-8-1	Unnamed Trib.	C	1935	None Observed	
SR-123-8	Unnamed Trib.	C	1935	None Observed	
SR-123-7-3-1	Unnamed Trib.	C	Never		
SR-123-6	Unnamed Trib.	C	Never		
SR-123-1-2	Unnamed Trib.	C	1935	None Observed	
SR-123-1-1	Unnamed Trib.	C	Never		
SR-123-1	Unnamed Trib.	C	1935	None Observed	
SR-123	Wylie Brook	C(t)	1935, 1963	614, 406, 402, 385, 423, 362, 367, 419, 329, 403, 866	Stocked for decades with Brook Trout well downstream of the State Forest. Survey locations were up & downstream of the State Forest.

Fish Species Index

Species Code	Common Name	Scientific Name
329	brook trout	*Salvelinus fontinalis*
360	central stoneroller	*Campostoma anomalum*
362	redside dace	*Clinostomus elongatus*
367	cutlips minnow	*Exoglossum maxillingua*
385	common shiner	*Notropis cornutus*
377	golden shiner	*Notemigonus crysoleucas*
402	blacknose dace	*Rhinichthys atratulus*
403	longnose dace	*Rhinichthys cataractae*
406	creek chub	*Semotilus atromaculatus*
419	white sucker	*Catastomus commersoni*
423	northern hog sucker	*Hypentelium nigricans*
444	brown bullhead	*Ameirus nebulosus*
613	Johny darter	*Etheostoma nigrum*
614	tessellated darter	*Etheostoma olmstedi*
865	mottled sculpin	*Cottus bairdi*
866	slimy sculpin	*Cottus cognatus*

APPENDIX IX

Deer Harvest Records for Towns in the Chenango Trail Management Unit

Deer Kill By Town											
Towns	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**AVG.**
Coventry	301	162	147	212	221	196	228	256	179	215	212
Greene	553	271	336	357	356	384	473	515	467	402	411
Oxford	501	302	345	384	462	401	513	456	507	361	423
Colesville	444	260	282	258	329	312	347	347	370	449	340
Average	427	217	242	285	289	290	351	386	323	309	312

Source: 2002 New York State 20 Yr. Deer Book

Adult Bucks Killed/Sq. Mile											
Towns	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**AVG.**
Coventry	2.16	1.73	1.85	2.32	2.22	2.18	2.14	2.62	1.96	2.42	2.16
Greene	3.05	1.91	2.84	2.34	2.56	2.84	2.86	3.44	2.99	3.22	2.81
Oxford	3.31	2.53	3.43	3.05	4.06	3.57	3.94	3.81	4.64	3.15	3.55
Colesville	2.40	1.72	2.26	1.97	2.47	2.21	2.14	2.09	1.94	2.05	2.13
Average	2.61	1.82	2.35	2.33	2.39	2.51	2.50	3.03	2.48	2.82	2.48

Source: 2002 New York State 20 Yr. Deer Book

APPENDIX X

Reported Turkey Harvest 1993-2002 for Towns in the Chenango Trail Management Unit

Turkey Harvest By Town- Spring											
Towns	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**AVG.**
Coventry	12	7	12	12	11	8	7	6	10	5	9
Greene	27	42	31	22	33	22	17	14	15	13	24
Oxford	18	25	42	25	25	26	22	11	16	15	23
Colesville	25	21	33	26	22	18	22	24	24	21	24
Average	21	24	30	21	23	19	17	14	16	14	20

Source: New York State Turkey Fact Book

Turkey Harvest By Town- Fall											
Towns	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**AVG.**
Coventry	14	4	11	3	4	8	6	3	10	11	7
Greene	26	29	23	6	17	16	26	11	31	22	21
Oxford	24	20	20	10	10	16	19	12	15	18	16
Colesville	25	14	23	6	12	16	16	13	30	25	18
Average	22	17	19	6	11	14	17	10	22	19	16

Source: New York State Turkey Fact Book

APPENDIX XI

Pelt Sealed Beaver 1996-2002 for Towns in the Chenango Trail Management Unit

Town	1996	1997	1998	1999	2000	2001	2002	Average
Coventry	29	25	10	25	1	7	5	16
Greene	49	100	45	48	13	15	28	45
Oxford	63	65	82	44	7	39	50	50
Colesville	5	43	9	3	6	18	13	14

Source: NYSDEC 1996-1997 Small Game Hunter Survey

Pelt Sealed Coyote 1996-2002 in Towns Within The Chenango Trail Management Unit

Town	1996	1997	1998	1999	2000	2001	2002	Average
Coventry	2	2	2	5	0	1	4	2
Greene	8	0	6	10	22	6	4	6
Oxford	3	2	8	6	1	10	8	5
Colesville	4	1	6	5	13	7	0	6

Source: NYSDEC 1996-1997 Small Game Hunter Survey

APPENDIX XII

Property Taxes (as recorded for 2004-05)

Township	Acres	Assessment	County Tax	Town Tax (*)	School Tax	Total Tax
Afton	199.9	115,814	0	666.20	2,412.34	3,078.54
Bainbridge	366.4	231,535	0	1,592.04	5,402.12	6,994.16
Colesville	726.9	56,669	0	1,983.01	8,372.36	10,355.37
Coventry	3,386.2	2,054,549	0	18,242.72	53,516.74	71,759.46
Greene	438.6	184,564	0	1,433.14	4,246.38	5,679.52
Oxford	316.4	214,452	0	1,445.84	5,198.24	6,644.08
Total	**5,434.4**	**$2,857,583**	**0**	**$25,362.95**	**$79,148.18**	**$104,511.13**

(*) includes Town General, Town Highway and Special District Taxes.

APPENDIX XIII

Mineral Resources Procedures

Any party desiring to procure minerals, rocks or oil and gas resources (or for the use of those minerals in the case of gas or liquid storage) 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) 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 NYSDEC Division of Mineral Resources. The procurement of minerals and rocks (inorganic substances), including the solution mining of minerals (such as salt) on these same State lands, are administered by the Office of General Services. All activity associated with mining minerals and rocks, solution mining of minerals and oil and gas drilling, including production, are regulated by the NYSDEC Division of Mineral Resources (including the issuance of mining permits and drilling permits).

The surface estate of these State lands is managed through the NYSDEC Division of Lands and Forests. 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 NYSDEC Division of Lands and Forests prior to conducting any operations. It should be noted that if the mineral estate must be under a lease agreement, only the lessee, or entities authorized by the lessee, will be issued a TRP for these purposes. It is NYSDEC policy to recommend excluding operations in surface areas with sensitive habitats (stream banks, wetlands, steep slopes, rare communities etc.) or intensive recreational use.

APPENDIX XIV

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

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

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

Proposals to lease parcels of State land for exploration, production and development will only be considered following a public notice in the Environmental Notice Bulletin(ENB) and in local newspapers. A public meeting will be held to provide information and receive comments. A 30-day public comment period will follow, and the Department will consider all comments received prior to making a decision to lease State minerals located in this Unit. If the Department chooses to pursue leasing, site specific guidelines for limiting impacts on natural resources will be drafted by the Division of Mineral Resources staff, in conjunction with the Division of Lands and Forests, and incorporated into contract documents. These conditions will include, but not be limited to site selection, mitigation of impacts, and land reclamation upon completion of drilling.

A number of factors are considered when determining where surface disturbance will be allowed or disallowed. The presence of regulated wetlands, 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 management strategies, such as reserves which may be incompatible with oil and gas well development, may result in exclusion from surface disturbance. This determination will be made as a part of the tract assessment process on a case by case basis. Individual tract proposal reviews for each forest within this Unit will be completed, and determinations deciding which areas would be excluded from surface disturbance (should leasing be initiated) will be made. 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).

If it is determined that oil and gas exploration and development can proceed on these State lands, 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 are deposited into the General Fund while revenues from Wildlife Management Areas are deposited into the Conservation Fund.

In the event leases are granted and the drilling of a well is desired by the lessee on the leased property, an Application for Permit to Drill, Deepen, Plug Back or Convert a Well Subject to the Oil, Gas and Solution Mining Law (form 85-12-5) must be submitted to the Division of Mineral Resources. Site-specific impacts will then be identified by Department staff during review process and inspection of the proposed well site. The Generic Environmental Impact Statement On the Oil, Gas and Solution Mining Regulatory Program (Draft, 1988) 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 pipeline 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.

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

APPENDIX XV

Budget

Annual Budget* - estimated costs and required work days

Task	Unit	$ Cost	Days per Year Professional	Technical
General Maintenance & Refuse Pickup		6,000	1	12
Trails	5.2 mi.	3,000	3	4
Parking Areas & Pulloffs		2,500	1	6
Forest Product Sales	300 ac./yr	27,500**	110	0
Coordination w/ Other Agencies		1,000	4	0
Coordination w/ Public Interest Groups		1,000	4	0
Supervision, Training, Reporting		2,000	8	0
Disease Control		500	2	0
Post-treatment Inventory		2,500	10	0
Law Enforcement and Fire Control		2,500	10	0
Subtotal		$48,500	153	22
Periodic or One-Time Costs - estimated				
Land Acquisition	140 ac.	140,000	7	0
Boundary Line Maintenance	57.2 mi.	5,800	0	60
Inventory	5,446 ac.	15,000	0	110
Construct and Install Kiosks	6	9,000	2	8
Construct accessible parking areas	8	20,000	3	15
Subtotal		$189,800	12	193
Grand Totals - estimated over a 10 year period		$674,800	1,542	468

(*) Annual budget does not include property & school taxes.
(**)Estimated costs do not include anticipated revenues from forest products sales.

APPENDIX XVI

Rules & Regulations Pertaining to NYS Public lands

Title 6 of the New York Code of Rules and Regulations - Part 190 - Use of State Forests

Section 190.1 - Fire - no fires permitted except for cooking, warmth or smudge. Also specifies depositing matches, etc. and using live trees for fuel prohibited.
Section 190.2 - Signs and structures - no person shall deface, mutilate or destroy, etc. This section also includes the prohibition of placing trash, garbage, etc.
Section 190.3 - Camping sites - sites must be kept neat, 150 feet from trail, road, stream, pond, spring, etc. and includes emergency closure times and elevation restrictions.
Section 190.4 - Camping permits - camping at one site for four nights or more without a permit is prohibited, length of stay specified, camping restricted to posted areas, group size specified and age of permittee.
Section 190.5 - Permissible structures - no permanent structures allowed, no transfer of existing structures, listing of reasons for cancellation of existing permits for lean-to (open camps).
Section 190.6 - Open camps - specifies number of days a lean-to may be occupied, what constitutes an enclosure, etc.
Section 190.7 - Public campgrounds - Lists of additional public use requirements when a public campground exists on state land.
Section 190.8 - General - a long list of prohibitions for the public use of State lands including gambling, use of snowmobiles, toboggans and sleds on ski trails, sale of alcohol, speed limit on truck trails, deface, remove, destroy vegetation without a permit, etc. This section allows the use of horses except on intensively developed facilities (listed).
Section 190.9 - Use of pesticides on State lands - none allowed except by written permission.
Section 190.10 - Unique Areas - special regulations listed by area.
Section 190.11 - Environmentally sensitive lands - lists the sections above that apply to people using sensitive lands (Sections 190.0 - 190.9) seems redundant.
Section 190.12 - Conservation Easements - Applies to all easement lands that the public has a right to access. Goes on to list general prohibitions on use, then lists areas under easements.
Section 190.13 - 190.22 - Repealed or not in use.
Section 190.23 - Specific Areas - List of Ski Centers: Belleayre, Gore and Whiteface.
Section 190.24 - Boat launch sites - specific rules of public use of launch sites.
Section 190.25 - 190.33 - Regulations for specific areas such as Zoar Valley, Lake George, the Olympic Area, etc.

State Forest Camping Regulations:

1. Campsites must be kept clean. These are “carry-in -carry-out” areas.
2. Camping is prohibited within 150' of any road, trail, stream, or body of water, except where sites have been designated by the Department.
3. Camping is allowed for up to 3 nights without a permit. Campers occupying a site for more than 3 nights are required to obtain a written permit from the Sherburne DEC office. There is currently no fee for the permit.

4. Permits will be issued for a maximum of 10 days. A permit will not be renewed to the same person for the same site during the same calendar year.
5. Groups of 10 or more persons are required to obtain a camping permit for any length of stay.
6. Camping is prohibited in any area that is posted against camping.
7. All camping equipment and supplies must be removed from State land when the users have completed their stay.
8. No permits will be issued to persons under 18 years of age.
9. Campers are required to obtain a permit for any length of stay in a Wildlife Management Area. These permits are available from the Cortland DEC office.
10. Campers may use tents or trailers, but no permanent structures, such as tent platforms or lean-tos, may be constructed for camping.
11. Lean-tos that are provided by the DEC may not be occupied for more than 3 successive nights or for more than 10 nights in any one calendar year, if others wish to use the site.
12. Only dead and down wood may be used for campfires. Fires must be extinguished when the site if not occupied.
13. There is no fee for camping on State forests.

APPENDIX XVII

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APPENDIX XVIII

Glossary of terms

Access trails - may be permanent, unpaved and do not provide all-weather access within the Unit. These trails are originally designed for wood product removal and may be used to meet other management objectives such as recreational trails. These trails are constructed according to Best Management Practices.

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

Age class - trees of a similar size originating from a single natural event or regeneration activity.

Basal area - the cross sectional area, measured in square feet, of a single stem, including the bark, measured at breast height (4.5 ft above the ground).

Best management practices - a practice or a combination of practices that are designed for the protection of water bodies and riparian areas, and determined to be the most effective and practicable means of controlling point and non-point source water pollutants.

Biological diversity (Biodiversity) - the variety, abundance, and interactions of life forms found in areas ranging in size from local through regional to global. Biodiversity considers both the ecological and evolutionary processes, functions, and structures of plants, animals and other living organisms, as well as the variety and abundance of species, communities, gene pools, and ecosystems.

Browse - portions of woody plants including twigs, shoots, and leaves consumed by animals such as deer.

Buffer zone / Buffer strip - a vegetation strip or management zone of varying size, shape, and character maintained along a stream, lake, road, recreation site, or different vegetative zone to mitigate the impacts of actions on adjacent lands, to enhance aesthetic values, or as a best management practice.

Cavity tree - a tree containing an excavation sufficiently large for nesting, dens or shelter; tree may be alive or dead.

Clear cut - a harvesting and regeneration technique that removes all the trees, regardless of size, on an area in one operation. This practice is done in preparation of the re-establishment of a new forest through reforestation, stump sprouting, or changing habitats, e.g. from forest to brush or grass cover.

Climax forest - an ecological community that represents the culminating stage of a natural forest succession from inception to old age for its locality and/or environment.

Coarse woody debris (CWD) - any piece(s) of dead woody material on the ground in forest stands or in streams.

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

Conifer - a cone-bearing tree, also referred to as softwood.

Conversion - a change from one type or group oftree species to another e.g. from a plantation to a natural forest.

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

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

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

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

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

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

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

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

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

Ecosystem management - the appropriate integration of ecological, economic, and social factors in order to maintain and enhance the quality of the environment to best meet our current and future needs. Maintain natural communities of plants, animals, and their environments healthy and productive so people can benefit from them year to year.

Edge - the more or less well-defined boundary between two or more elements of the environment, e.g. a field adjacent to a woodland or the boundary of different silvicultural treatments.

Endangered species - any species of plant or animal defined through the Endangered Species Act of 1976 as being in danger of extinction throughout all or a significant portion of its range and published in the Federal Register.

Even-aged - a class of forest or stand composed of trees of about the same age. The maximum age difference is generally 10-20 years.

Even-aged system - a program of forest management directed to the establishment and maintenance of stands of trees having relatively little (10-20 yrs) variation in ages. The guidelines to be applied in using this system at all stages of tree development are uniquely different from the uneven-aged system.

Exotic - a plant or species introduced from another country or geographic region outside its natural range.

Forest Stewardship Council - A non-profit organization devoted to encouraging the responsible management of the world's forests.

Forestry - the profession embracing the science, art, and practice of creating, managing, using, and conserving forests and associated resources for human benefit and in a sustainable manner to meet desired goals, needs, and values.

Forest type - a category of forest usually defined by its vegetation, particularly its dominant vegetation as based on percentage cover of trees.

Forested wetland - an area characterized by woody vegetation where soil is periodically saturated with or covered by water.

Fragmentation - the process by which a landscape is broken into small islands of forest within a mosaic of other forms of land use or ownership. Fragmentation is a concern because of the effect of noncontiguous forest cover on connectivity and the movement and dispersal of animals in the landscape.

Grassland - land on which the vegetation is dominated by grasses, grasslike plants, or forbs.

Green tree retention - the practice of retaining live trees after a release cut. This practice creates higher levels of structural diversity providing varied wildlife habitat and future downed wood. The residual overstory trees also moderate the microclimate of the site and provide continuity of habitat for plant and animal species between uncut forest areas. These residual trees are left through the next rotation.

Habitat - the geographically defined area where environmental conditions (e.g., climate, topography, etc.) meet the life needs (e.g., food, shelter, etc.) of an organism, population, or community.

Hardwoods - broad-leafed, deciduous trees belonging to the botanical group Angiospermae.

Haul roads - permanent, unpaved roads, not designed for all-weather travel, but are constructed primarily for the removal of wood products and provide only limited access within the Unit. As such,

these roads may or may not be open for public use. The standards for these roads are those of Class C roads.

Herbicide - a chemical used for killing or controlling the growth of plants.

Indicator species - species with such specialized ecological needs that they can be used for assessing the quality, condition, or extent of an ecosystem on the basis of their presence and density, or the accumulation and effect of materials in their tissues.

Invasive species -
1.) a plant or animal that spreads rapidly and in great numbers in a region, often to the point of being a nuisance in an ecosystem where it is not native.
2.) species that, after they have been moved from their native habitat, spread on their own, displacing other species, and sometimes causing environmental damage.

Large sawtimber - trees 18 inches or greater diameter at breast height.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Reforestation - the re-establishment of forest cover by natural or artificial means.

Regeneration - naturally or artificially established seedlings or saplings existing in a forest stand.

Release -
1.) a treatment designed to free trees from undesirable, usually overtopping, competing vegetation.
2.) a treatment designed to free young trees not past the sapling stage from undesirable competing vegetation that overtops or closely surrounds them.

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

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

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

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

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

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

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

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

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

Species - the main category of taxonomic classification into which genera are subdivided, comprising a group of similar interbreeding individuals sharing a common morphology, physiology, and reproductive process.

Stand - a contiguous group of trees sufficiently uniform in age-class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable unit.

Stand structure - the horizontal and vertical distribution of components of a forest stand including the height, diameter, crown layers, and stems of trees, shrubs, herbaceous understory, snags, and downed woody debris.

State Forest / State Reforestation Area - lands owned by the State of New York, administered by the Department of Environmental Conservation and authorized by Environmental Conservation Law to be devoted to the establishment and maintenance of forests for watershed protection, the production of timber and other forest products, and for recreation and kindred purposes. These forests shall be forever devoted to the planting, growth and harvesting of such trees (Title 3 Article 9-0303 ECL).

Temporary revocable permit - a Department permit which authorizes the use of State land for a specific purpose for a prescribed length of time.

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

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

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

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

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

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

Windthrow - trees that have been broken, uprooted, or felled by strong winds.

APPENDIX XIX

Public Comments Received on Draft Chenango Trail Unit Manangement Plan

1. ***Comment:*** More red pine stands should be converted (to hardwoods) instead of thinned.
Response: The ultimate objective of nearly every red pine stand addressed in the Chenango Trail UMP is conversion to hardwoods. However, before this step takes place, there needs to be an adequate, established layer of natural hardwood saplings within the stand. This layer of natural regeneration becomes established after the red pine overstory has been thinned sufficiently to allow sunlight to reach the forest floor. If the overstory of red pine trees was removed prior to the establishment of a desirable sapling layer, the proper term for the treatment would be a "clearcut," not a "conversion cut." The majority of the red pine stands addressed in the Chenango Trail UMP will be converted to hardwoods as soon an adequate hardwood sapling layer becomes established in the understory.

2. ***Comment:*** Develop more snowmobile trails with multiple-use designations on the forests.
Response: Snowmobile users prefer trails that are long distance travel corridors. Snowmobile trails on State Forests are all part of a larger system of inter-connecting trails on public and private lands that allow for long distance travel. Presently, there are approximately four miles of snowmobile trails (secondary and corridor trails) established on Broome/Chenango RA #1, Chenango RA #10, and Chenango RA #27. Unless there are alterations to the larger system of snowmobile trails in the

general area, there is no need to develop additional "through-corridors" on the State Forests. In response to the comment on multiple-use designations for snowmobile trails, many other uses are presently allowed on these trails. Unless a snowmobile trail is posted against certain activities, then most activities that are otherwise allowed on the State Forest would be allowed on the snowmobile trail. Therefore, activities such as hiking, skiing, biking, and horseback riding would be allowed on snowmobile trails. Exceptions to this would include horseback riding during snow cover. Horseback riding is only allowed on snowmobile trails on State Forests during periods with no snow or ice cover (ECL Part 190.8). Additionally, uses other than snowmobiling, are not typically allowed on the adjacent private lands where the trail is located. Therefore, the multiple-use of a snowmobile trail is likely to be limited to the State Forest property.

3. ***Comment:*** Desire for more **old growth** stands in the forests. Suggestion made for 10% of the land area in old growth (climax forest conditions) and 10% clearcut (early successional cover).

Response: This comment, on providing a mixture of forest cover conditions or habitats, goes to the heart of the objective of biodiversity. The authors of this Plan feel strongly that a variety of cover types across the landscape of the Chenango Trail Unit, is essential to providing a healthy ecosystem. The Chenango Trail UMP identifies objectives for protecting (no timber harvesting) 117 acres of forest as late successional forests, 40 acres due to exceptional visual characteristics, recreational values, or historic significance, 84 acres due to poor access or steep slopes, and 420 acres of forested riparian areas. The total acreage of protection forest is 661. This is approximately 12% of the Unit. These areas will be allowed to attain climax forest conditions. Open, early successional ("clear-cut") habitat does not exist in any substantial amount on the State Forests of this UMP. However, this type of open land habitat is in adequate supply across the landscape of the Unit (private lands). Some early successional habitat will be created when red pine stands are converted on the State Forests (see comment #1).

4. ***Comment:*** Establish ATV trails on the State Forests. Specific comment to allow ATVs to travel along the pipeline corridors established from oil & gas development. Specific comment to create an ATV trail on the Coventry State Forest between North Road and Owlville Road.

Response: ATV riding has been determined to be incompatible with the current uses and natural characteristics of the State Forests in Region 7. Off-road vehicle riding will not be allowed on any of the forests of the Unit, with the exception of use by disabled persons who possess a valid permit to ride on the designated ATV trail within the Coventry State Forest.

5. ***Comment:*** Protect historic relics and cultural resources such as stone walls, foundations, and stone piles.

Response: Cultural resources are valued features of the State Forests. Cultural resources, including stone walls and foundations, are protected. A significant market exists for field stone in this area and many stone walls are being sold and dismantled. The State will not sell any field stone from cultural resources on the State Forests.

6. ***Comment:*** Plant apple trees.

Response: Several, small groupings of apple trees exist on the State Forests and the importance of these trees to wildlife is recognized. Where apple trees do exist, they are favored and treatments are scheduled to remove competing vegetation and "release" the apple trees. No specific projects have been identified in the Plan to plant additional apple trees, however, such a project would be compatible

with the objectives of the plan, should the opportunity become available. One such opportunity may be associated with oil & gas development on the State Forests. This activity will result in openings within the forest and grass cover is planned for reclamation. Portions of these sites could also be reclaimed with apple trees. The Department would welcome any volunteer groups who are interested in planting apple trees on the State Forests.

7. ***Comment:*** Establish cooperative relationships with the local towns to facilitate the completion of projects. Suggestion made for trade-offs of labor and equipment.

Response: This comment is integral to the Plan's objective of promoting community involvement in forest management. The Department will seek out and welcome any opportunity to engage local town governments or any other community group in the management of these forests. An example would be soliciting input from local town highway departments on the location, design, and maintenance of parking areas, especially those containing information kiosks.

8. ***Comment:*** Offer opportunities for Eagle Scout projects on the State Forests.

Response: This comment is also tied to the Plan's objective of involving the community in forest management. Projects such as the information kiosks, recreational trail improvements, and wildlife monitoring are some of the opportunities to involve the community. Many of these projects could be developed into an Eagle Scout project.

9. ***Comment:*** Repair Glendenning Road to accommodate passenger car travel.

Response: The Department intends to maintain Glendenning Road to allow passenger car travel into the interior of Beaver Flow State Forest as far as Spur Road.

10.***Comment:*** The works of Oliver Judd and Catherine Bickford are not listed as references in the bibliography.

Response: Both of these references are now listed in the Bibliography.

11.***Comment:*** The account of General Sullivan leading his troops along the Chenango Trail in 1778 is solely made by Oliver Judd and is not supported by other historic references.

Response: The text in the Plan has been changed to indicate that Judd is the source of this account.

12.***Comment:*** Wildlife should be protected as much as possible. Suggestion made to develop trails mid-way between the forest edge and forest interior for the purpose of causing the least disturbance to wildlife.

Response: The Chenango Trail UMP contains numerous objectives for the benefit of wildlife. The wildlife on these properties is recognized as an intrinsic value of the forest. Without such wildlife, the forests could no longer be considered an ecosystem. The wildlife of these forests is managed as protected in accordance with the laws and regulations of the NYS Environmental Conservation Law as well as those policies established by the Department. Many of these policies are listed in this Plan, such as establishing timber harvesting buffers and gas well development buffers around raptor nests and wetlands. The suggestion on trail locations is valuable; however, many other factors need to be considered prior to establishing a trail location. Features such as steep ground, wetlands, late successional forest, soil types, stream crossings, and existing corridors all need to be considered. The location of a given trail is largely dependent upon the amount and location of such features.

APPENDIX XX

SEQR Negative Declaration

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

Identifying # 2009-SLM-7-276

Date January 04, 2009

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 Chenango Trail Unit Management Plan

SEQR Status: **Type 1** X
Unlisted ___

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

Description of Action: The Chenango Trail Unit Management Plan identifies the goals, objectives, and management actions for 5,458 acres of State forests located in southern Chenango County. The plan addresses issues on six separate State Forests: Chenango RA #10, Chenango RA #13, Chenango RA #27, Chenango RA #30, Chenango RA #33 and Broome-Chenango RA #1. The management activities are proposed over a 20 year period, ending in 2029. A review and update process will take place at the end of the 10th year. Public comment was solicited through a public meeting which was held in 2007. The public input received full consideration prior to the completion of the final plan.

General management activities proposed in the plan include: boundary line surveys and maintenance; forest cover inventory; commercial timber harvesting and timber stand improvement cuts; shrub land maintenance; protection of wetlands and riparian areas; protection of natural areas; maintenance of public forest access roads; establishment of forest information kiosks and accessible parking areas; maintenance of recreational trails; development of natural gas wells and infrastructure and monitoring of unique wildlife and vegetative species.

Specific activities for Chenango RA #10 include: the establishment of a forest information kiosk and accessible parking area on the Wylie-Horton Road and enhancement of the snowmobile corridor trail. Specific activities for Chenango RA #13 include: the establishment of a forest information kiosk and an accessible parking area on Stumptown Road; construction of an off-road parking area near Elm

Drive and development of a recreation trail with the assistance of a stewardship group. Specific activities for Chenango RA #27 include: the establishment of a forest information kiosk and accessible parking area on the North Road; enhancement of the access trail for disabled persons as well as the snowmobile corridor trail and construction of two additional parking areas for access to the north and eastern sections of the forest. Specific activities for Chenango RA #30 include: the establishment of a forest information kiosk and accessible parking area on Bowbell Road. Specific activities for Chenango RA #33 include: the establishment of a forest information kiosk and accessible parking area on Sprague Road. Specific activities for Broome-Chenango RA #1 include: the establishment of a forest information kiosk and accessible parking area on Glendenning Road and enhancement of the snowmobile corridor trail. Informational brochures on the Unit will be developed to describe features and provide maps of the forests.

Boundary line surveys are needed to establish property lines and identify those lacking sufficient monumentation. Maintenance on a recurring basis is warranted in order to facilitate administrative and public use, as well as discourage trespass.

An inventory of all forest stands is needed on a 20 year cycle in order to monitor the vegetative conditions and provide the data to implement sustainable forestry. If open land habitat should decrease significantly in open land habitat will be created on the unit or additional acreage on the unit will be acquired and maintained as open land. Data on resident plants and animals is needed to establish baseline population levels and to determine cause and affect relationships resulting from specific management actions.

Location: (Include street address and the name of the municipality/county. A location map of appropriate scale is also recommended.) Chenango Reforestation Areas #10 & #30 are located within the Towns of Coventry and Greene in Chenango County. Chenango Reforestation Area #27 is located within the Towns of Coventry and Oxforsd in Chenango County. Chenango Reforestation Area #33 is located within the Town of Coventry in Chenango County. Chenango Reforestation Area #13 is located within the Towns of Afton and Bainbridge in Chenango County. Broome/Chenango Reforestation Area #1 is located in the Town of Coventry within Chenango County and the Town of Colesville within Broome County.

Reasons Supporting This Determination: Activities planned for the unit will be covered by the following Generic Environmental Impact Statements: State Forest Commercial Product Sales Program; Wildlife Management Program; Red Pine Plantation Clear-Cut Program; Plan & GEIS for Conserving Open Space In New York State; State Forest Recreation Management Program; Fish Species Management Program and GEIS on the Oil, Gas, & Solution Mining Regulatory Program.

If after the final approval of the plan, additional activities are added that are not covered by the Negative Declaration or cited Generic EIS's, the Department will undertake a specific environmental review for such activities.

Activities in the plan will be performed in accordance with the standards, policies, and procedures set forth in the following DEC documents: Continuous Forest Inventory Handbook; Automated Forest Inventory Handbook; Unpaved Forest Road Handbook; State Forest Multiple-Use Management Plan Handbook; & the Timber Handbook.

The following information relates to those questions contained in Part 2 of the EAF where a “yes” response was provided to a potential impact.

Response to EAF question #1, "Will the Proposed Action result in a physical change to the project site?" Specifically, this relates to the issue of construction of gas well drilling pads and pipeline corridors on Mardin and Volusia soils, where the depth to the water table is less than 3 feet. The seasonal high water table is at a depth of 1.5 to 2 feet in Mardin soils during early spring. The depth on Volusia soils is 0.5 to 1.5 feet. The soils of the project area are generally within the Volusia-Mardin-Lordstown Group. Volusia soils make up about 30% of this group while Mardin and Lordstown soils contribute about 20% each. The seasonal high water table in Lordstown soils is at a depth greater than 6 feet. The Plan does not provide any limits on construction based upon soil type. Individual sites will be evaluated upon nomination and the impact may be reduced by prohibiting construction within the Volusia and Mardin soil types during the spring season, when the water table is less than 3 feet.

Response to EAF question #5, "Will proposed action adversely affect groundwater quality or quantity?". Specifically, this relates to the risk of groundwater being contaminated from gas well drilling activity. Groundwater contamination from natural gas exploration activities has been documented in some of the Western States as well as locally, in the Town of Brookfield, NY. The NYS DEC is presently drafting a revised Supplemental Generic Environmental Impact Statement (dSGEIS) on the Oil, Gas and Solution Mining Regulatory Program. NYSDEC has solicited public comments on its draft scope for the environmental review of natural gas drilling in the Marcellus Shale deposit. This process, and the resulting SGIS, is designed to provide additional regulatory safeguards for environmental protection, including groundwater quality.

Response to question #9, "Will Proposed Action substantially affect non-threatened or non-endangered species?" Specifically, this relates to the affect of forest canopy disturbances created through timber harvesting or gas exploration activities on resident or migratory wildlife species. The Plan proposes silvicultural treatments to 4,485 acres of the forest over the next 20 years. Although, the removal of any trees could adversely impact wildlife, the Plan identifies numerous practices that will be implemented to protect wildlife. An average of four snag trees and four cavity trees per acre will be retained. Coarse Woody Debris will be a desired component of the forests. Fruit trees and mast-producing trees will be favored. Active nest sites of raptors will be protected. Additionally, this Plan seeks to document the quality of habitat and the suitability of management activities by monitoring the Management Indicator Species within the Unit.

Response to question #11, “Will the Proposed Action affect aesthetic resources?” Proposed land uses or project components visible to users of aesthetic resources which will significantly reduce their enjoyment of the aesthetic qualities of that resource. Specifically, this refers to aesthetic impacts from both timber harvesting and gas well development. The Plan proposes silvicultural treatments to 4,485 acres of the forests. These treatments will remove trees from the forest (typically 20% of the basal area every 20 years) and may reduce the aesthetic quality for some users. The impact could be reduced through the use of visual **buffer strips** and adherence to sustainable forestry practices. The Department is currently seeking certification for sustainable forestry through the Forest Stewardship Council and the Sustainable Forestry Initiative. Gas well development on the State forests will remove trees from the developed sites and reclaim them with grass species. Although the change in cover type

may reduce the aesthetic quality for some users, the Plan supports the conversion to grassland. The impact could be reduced by utilizing existing road corridors in the development of infrastructure.

Response to question #17, "Will there be any objectionable odors, noise, or vibration as a result of the Proposed Action?" The Proposed Action will produce operating noise (including blasting) exceeding the local ambient noise levels for noise outside of structures. This specifically relates to timber harvesting and the activities of seismic testing and gas well drilling. The Plan allows for timber harvesting which generates noise in excess of ambient levels with the use of chain saws, trucks, and harvesting equipment. The State Forests addressed in this Plan are located in rural areas with low population densities. It would be uncommon for timber harvesting activities to be taking place within close proximity of a residence. When this situation does occur, providing prior notification to the occupants of the affected properties often resolves conflicts. Seismic testing for natural gas resources involves the use of "thumper" trucks or explosive charges. Gas well drilling equipment also produces noise levels exceeding the ambient level. The impact of these activities can be reduced through the use of set-backs and public notification. Additionally, both timber harvesting and gas well drilling are relatively short-term activities.

Response to question #20, "Is there likely to be public controversy over potential adverse environmental impacts?. Specifically, this relates to the Plan's objectives for the development of gas wells. In August of 2005, a public meeting was held in Vestal, NY for the purpose of discussing the proposal to explore for natural gas on the Tracy Creek State Forest. The meeting brought forward a significant amount of public controversy. The controversy could be limited by proposing non-surface entry leases, as was the final decision for the Tracy Creek State Forest.

Gas well development activities will be excluded from lands where areas consist of wet ground, riparian protection buffers, slopes in excess of 10%, late successional forests and areas of other sensitive sites including cultural resources. Site reclamation of disturbed areas will involve restoring soil profiles and grades consistent with the surrounding topography and stand conditions. These sites will be seeded with native, warm season grass cover.

Gas development on the Unit will not exceed a maximum of 13 sites unless the Department approves a denser development spacing. Establishing more than 13 well pads will require a change to the plan according to the Unit Management Plan amendment process including additional public meetings. The Department will only consider well pad densities greater than 1 pad in 320 acres when the additional impact can be addressed with heightened mitigation measures and well location restrictions. These restrictions will address well site placement, along with routing considerations for supporting roads and pipelines.

Activities in the plan will be guided by the Environmental Conservation Law, the expertise of Department staff, and the views expressed by the participating public. In addition, all construction projects will incorporate the use of best management practices including, but not limited to the following:

Locate improvements to minimize necessary cut and fill; locate improvements away from streams, wetlands and unstable slopes; use of proper drainage devices such as water bars and broad-based dips; locate trails to minimize grade; lay out trails on existing old roads or clear or partially cleared areas;

limit construction to periods of low or normal rainfall; limit the size of parking areas to the minimum necessary to address the intended use; locate parking areas on flat, stable, well-drained sites; wherever possible, use wooded buffers to screen parking areas from roads; surface parking areas with gravel to avoid surface water runoff and erosion; avoid areas where habitats of threatened and endangered species are known to exist; use natural materials, to the greatest extent possible to blend structures into the natural surroundings.

(See 617.7(a)-(c) for requirements of this determination; see 617.7(d) for Conditioned Negative Declaration).

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: Andrew Goeller

Address: 2715 Route 80, Sherburne, NY 13460

Telephone Number: (607) 674-4036

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)

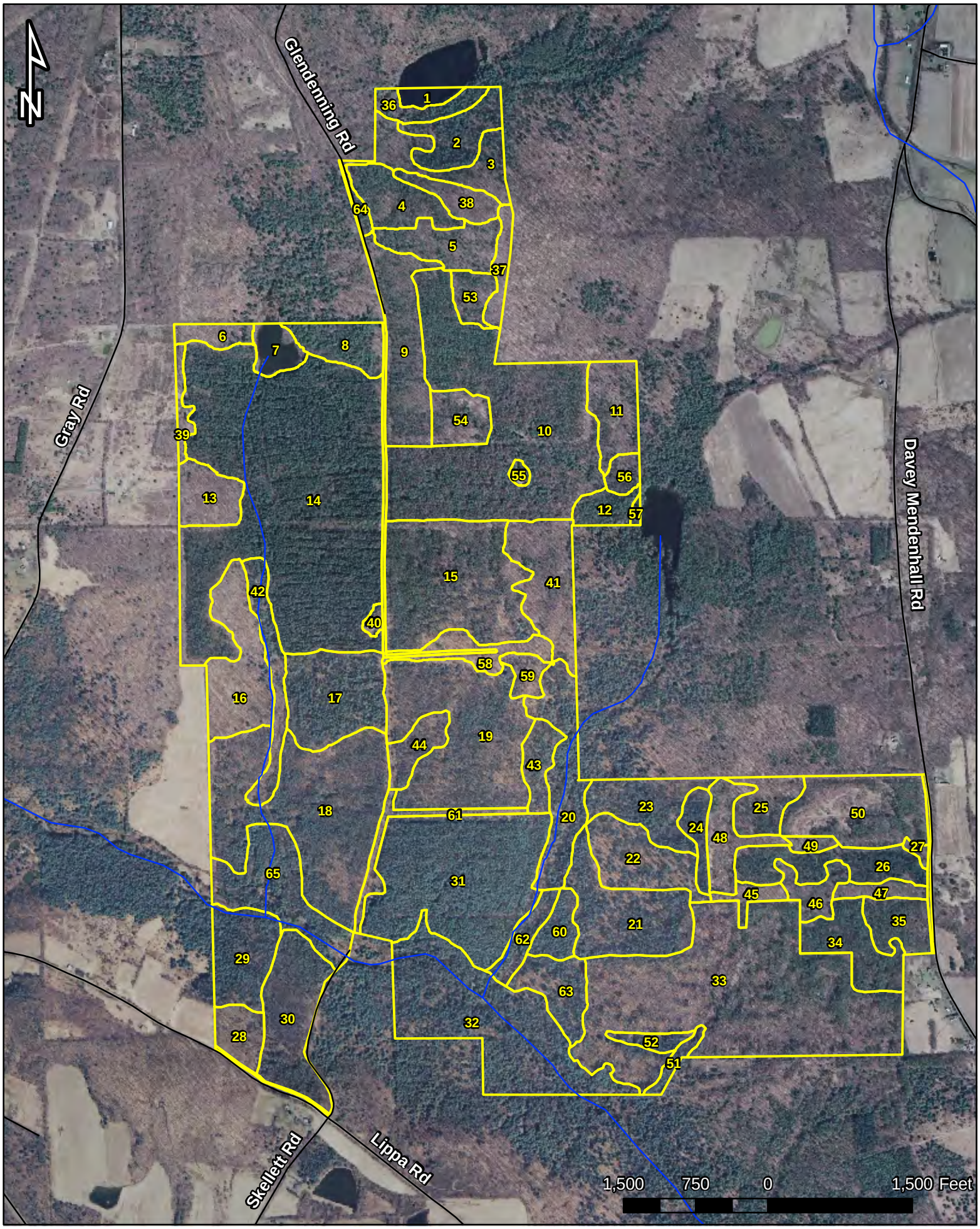
Environmental Notice Bulletin - NYS DEC - 625 Broadway - Albany, NY 12233-1750 (Type One Actions Only)

APPENDIX XXI

Maps

Broome-Chenango 1

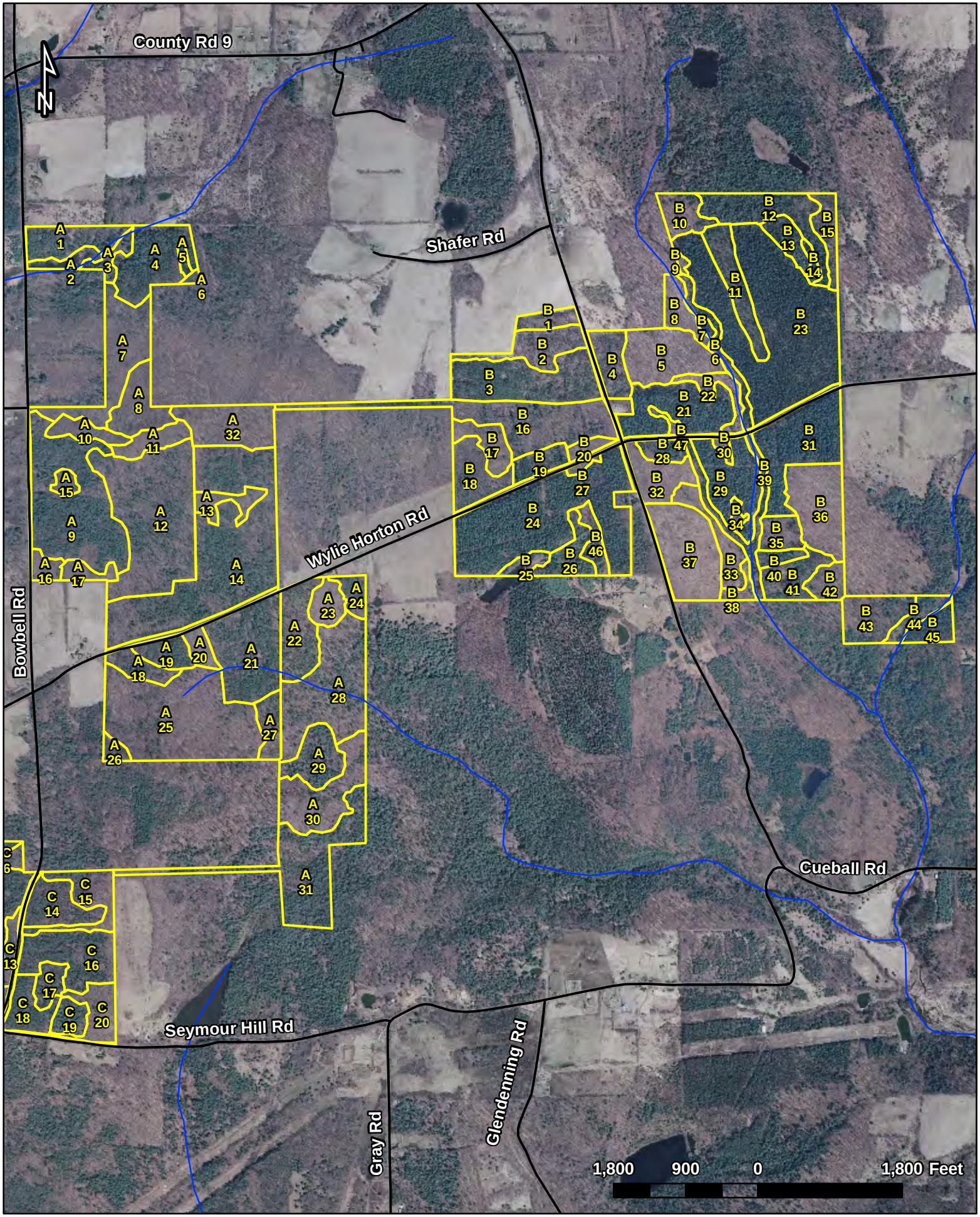
Beaver Flow State Forest



Chenango 10

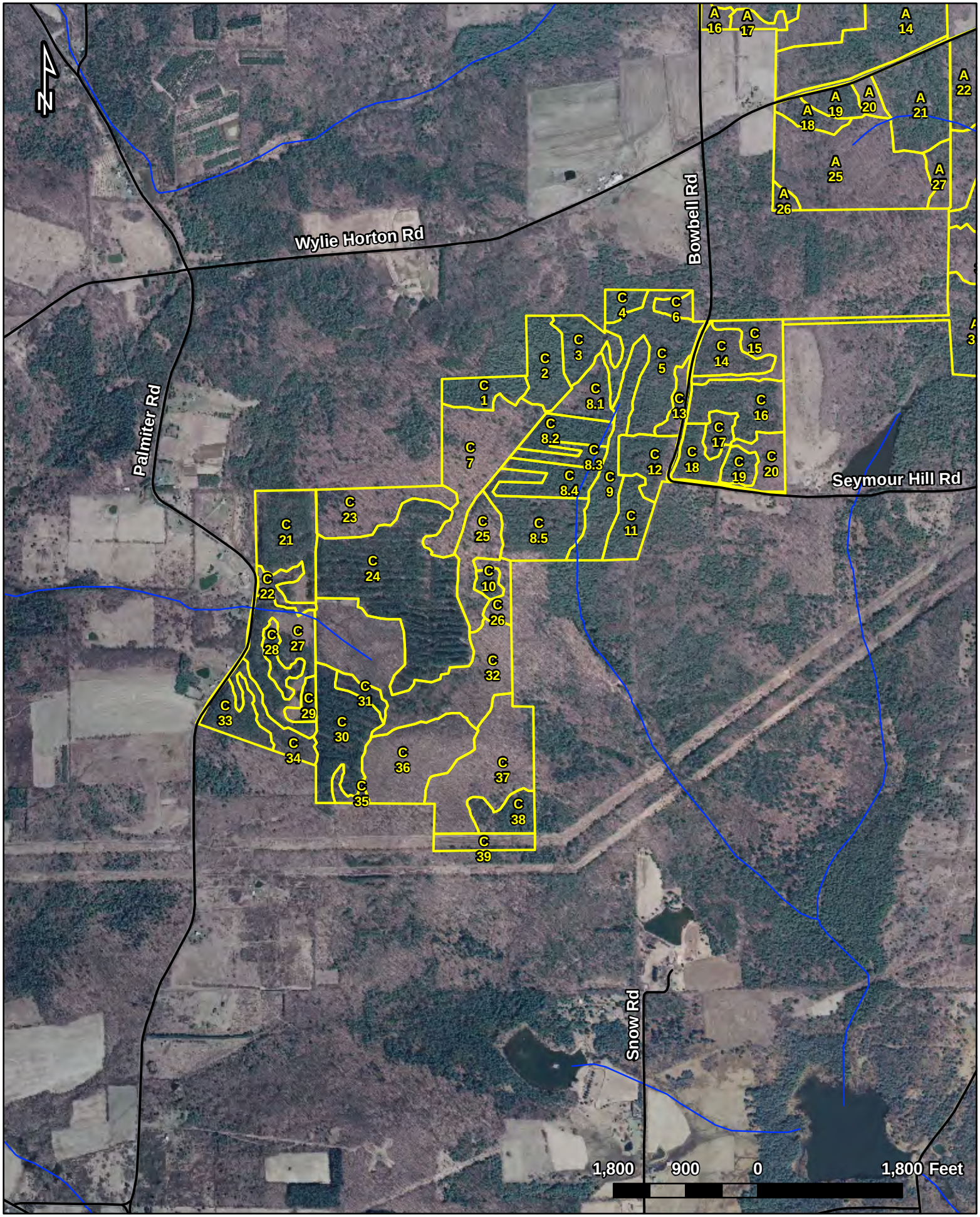
Compartments A & B

Bobell Hill State Forest



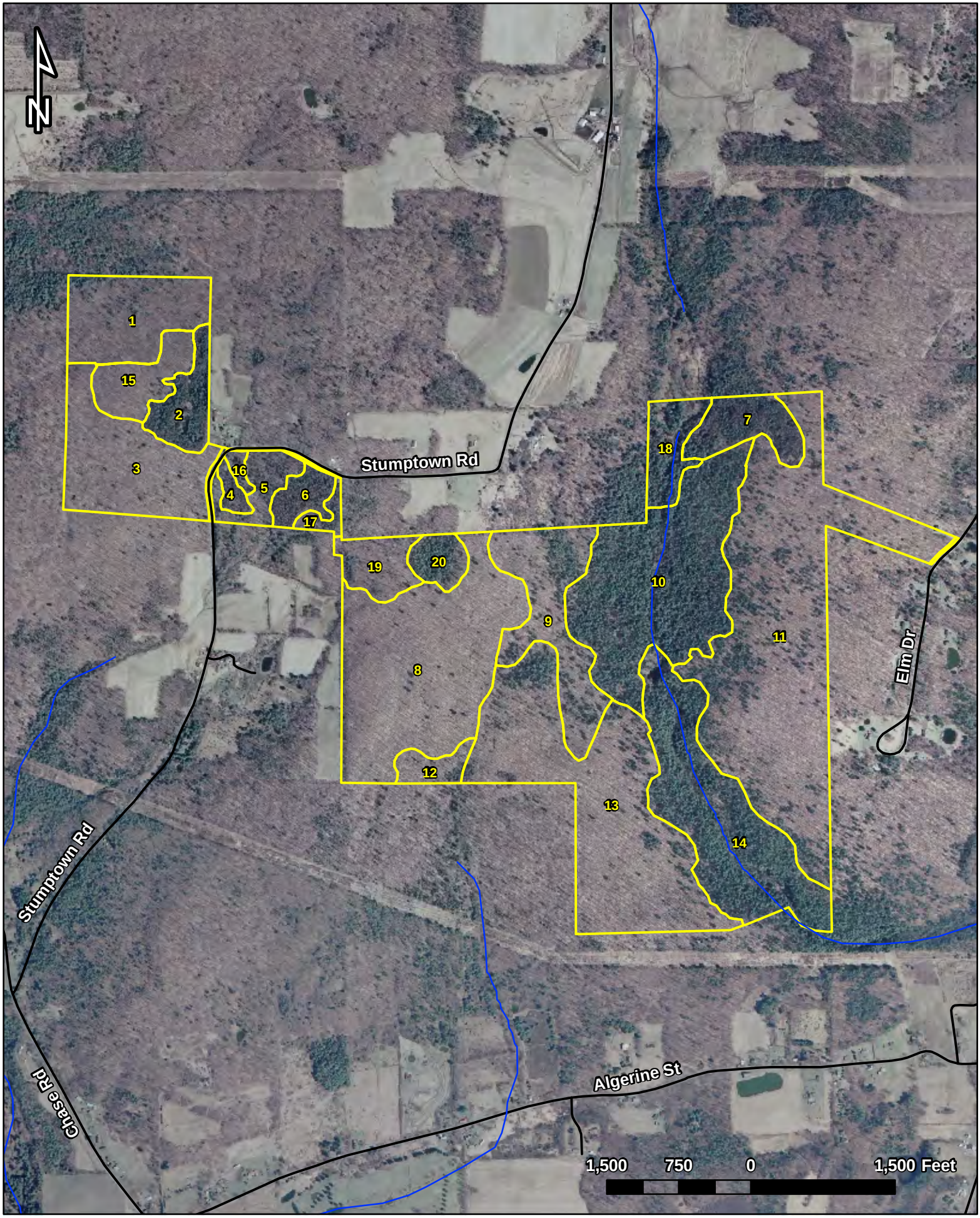
Chenango 10 Compartment C

Bobell Hill State Forest



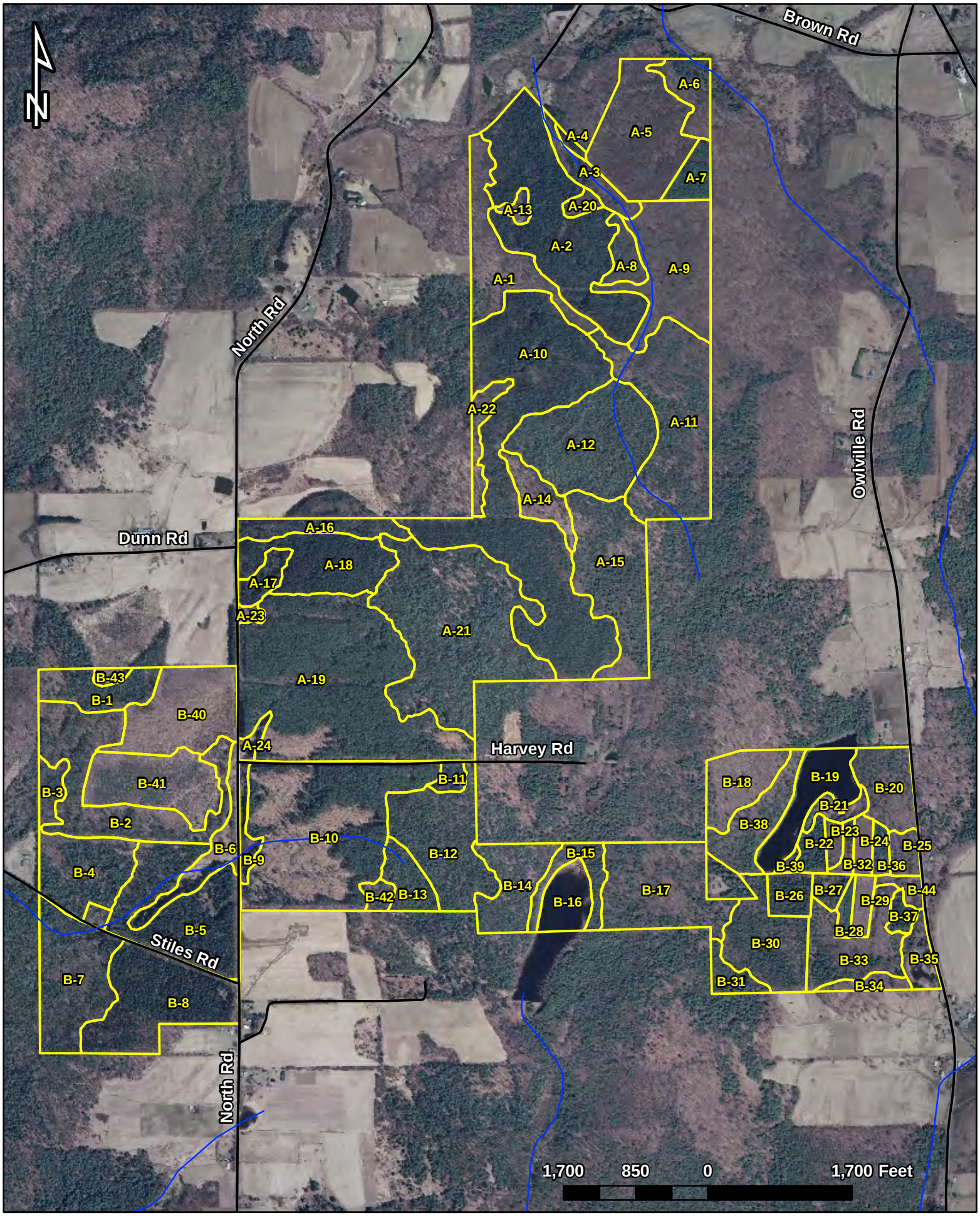
Chenango 13

Oak Ridge State Forest



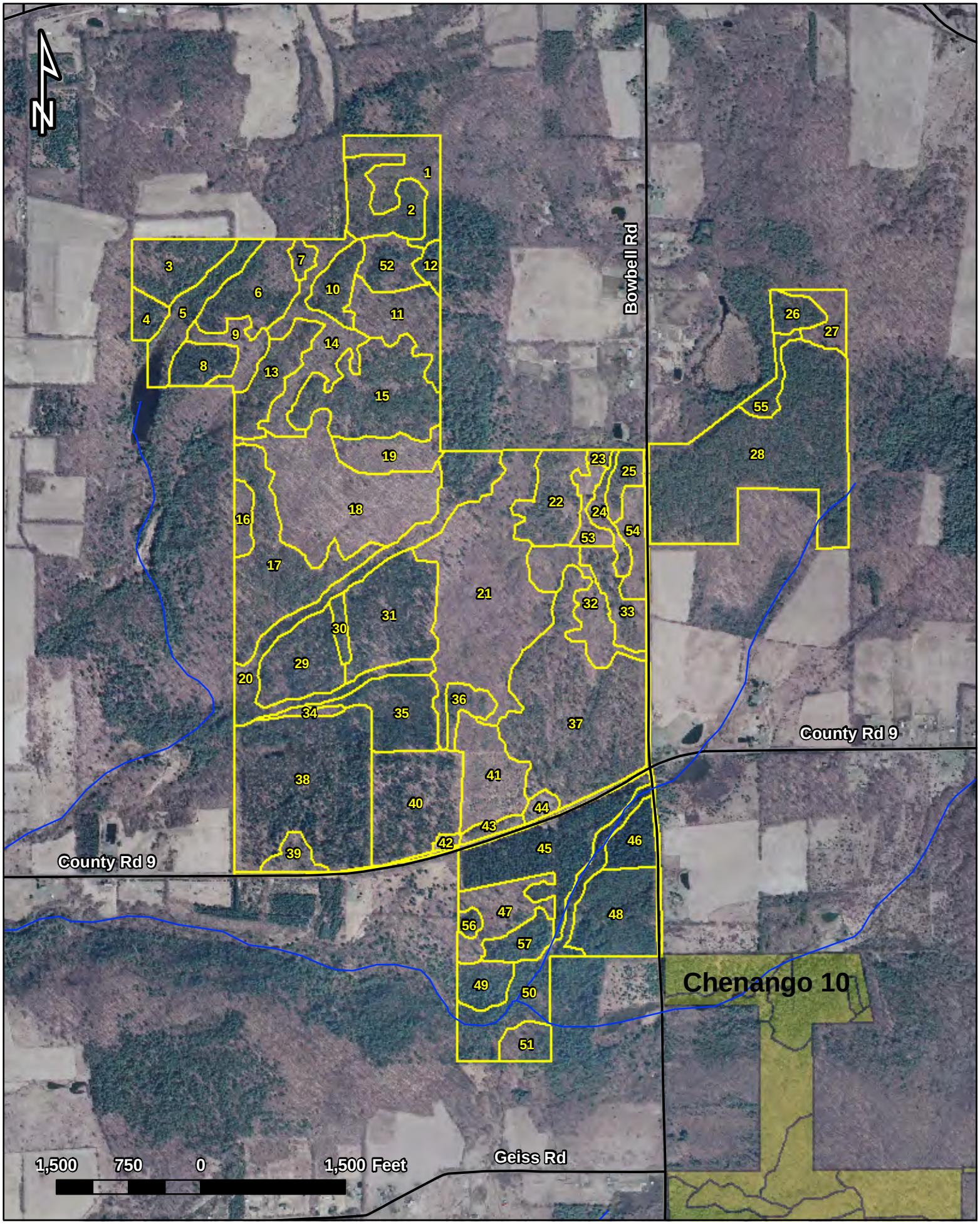
Chenango 27

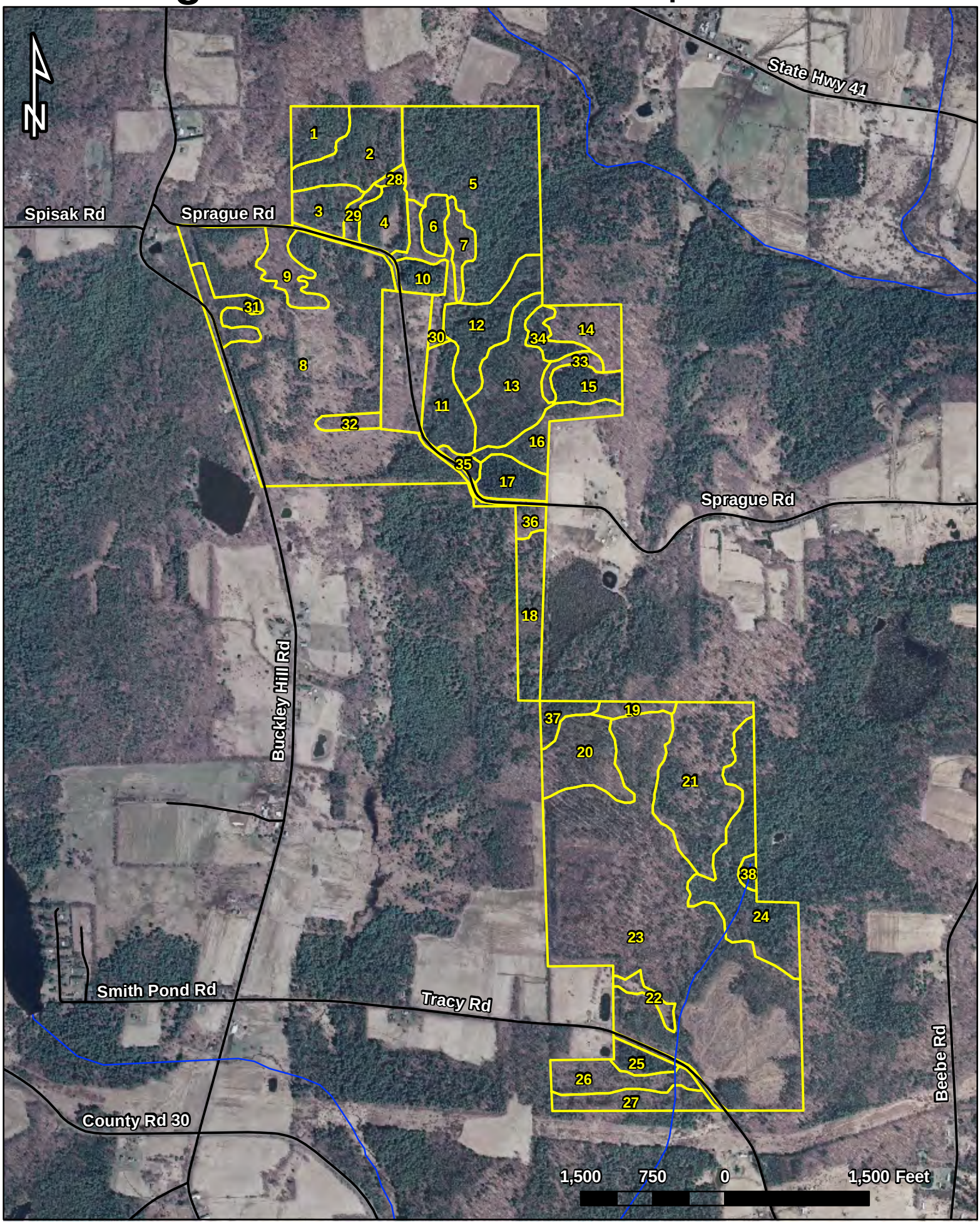
Coventry State Forest



Chenango 30

Bobell Hill State Forest



Chenango 33

Bumps Creek State Forest