New York State
Department of Environmental Conservation

Division of Lands & Forests | Bureau of State Land Management

BETWEEN RIVERS

UNIT MANAGEMENT PLAN

FINAL

Towns of Columbus, Guilford, New Berlin, North Norwich, Oxford, and Sherburne, Chenango County

May, 2016

NYS Department of Environmental Conservation
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BETWEEN RIVERS
UNIT MANAGEMENT PLAN

ADDRESSING NINE STATE FORESTS IN CHENANGO COUNTY:
AMBLER
BASSWOOD
HUNTS POND
LYON BROOK
PINE RIDGE
SKINNER HILL
SOUTH HILL
WHAUPAUNAUCAU
WILEY BROOK

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Preface

The Division of Lands & Forests within the New York State Department of Environmental Conservation (the Department or DEC) is responsible for the management of certain public lands in New York State including all of the **State Forests**. These lands 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 or Plan). The Between Rivers UMP addresses nine State Forests in eastern 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 UMP is the first step in implementing that policy. This 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. The management recommendations in this UMP 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 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. The Department is required to manage these lands for watershed protection, the production of timber and other forest products, recreational uses and kindred purposes. The Strategic Plan for State Forest Management (Strategic Plan) provides the overall direction and framework for meeting these legal mandates. The Between Rivers UMP conforms to the objectives, guidelines, and policies set forth in the Strategic Plan.

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

The Chenangadilla UMP was published in 1990. This UMP listed the management recommendations for State Reforestation Areas #s 8, 14, 31, 37, & 38 in Chenango County. The Between Fords UMP was published in 1993 and it addressed the management of State Reforestation Areas #s 3, 4, 7, & 29 in Chenango County. Both of these Plans were originally intended to be updated on a 10 year schedule, but these updates were never completed. The Between Rivers UMP will serve as the update for both of the aforementioned UMPs. The Between Rivers UMP contains management recommendations for all nine of the State Reforestation Areas originally addressed by the Chenangadilla and Between Fords UMPs. Consolidating of these UMPs should increase the efficiency relating to issuing updates. These nine State Forests are located in a similar geographic setting: on the uplands of eastern Chenango County and between the Chenango and Susquehanna Rivers.

Most of the original objectives outlined in the parent UMPs will be retained in the Between Rivers UMP. However, some new issues will be addressed in this Plan including those pertaining to natural gas exploration, access for persons with disabilities, Green Certification, and the relationship of deer management with forest management.

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

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Forest Certification of State Forests

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

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

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

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

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

The mark of responsible forestry

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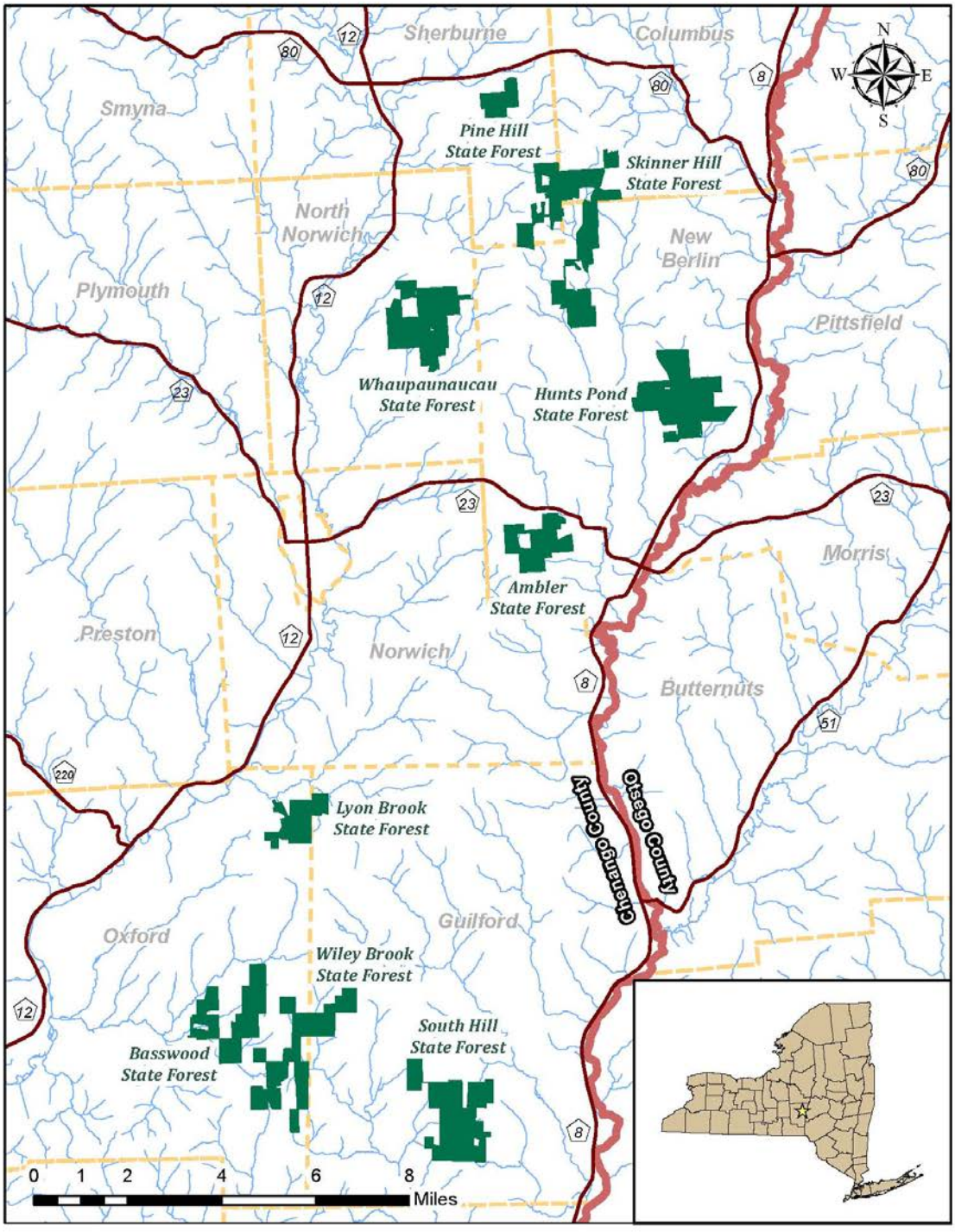
Location of the Between Rivers Unit Management Plan Area



I. 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 **sapling**s 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 the lands associated with seven of the **State Forests** addressed in this Unit Management Plan (UMP). These State Forests, consisting of not less than 500 acres of contiguous land are to be forever devoted to "reforestation and the establishment and maintenance thereon of forests for **watershed** protection, the production of timber and for recreation, and kindred purposes." This broad program is presently authorized under Article 9, Title 5 of the Environmental Conservation Law. Two of the State Forests included in this UMP, Pine Ridge and Hunt's Pond, were purchased as **Multiple Use Areas** due to the fact that they were less than 500 acres. Although Hunt's Pond State Forest is larger than 500 acres today, it was only 200 acres when originally purchased in 1962.

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

During the war years of 1941-1945, very little was accomplished on the **reforestation** areas. Plans for further planting, construction, facility maintenance, and similar tasks had to be curtailed. However, through postwar funding, conservation projects once again received needed attention. The Park and Recreation Land Acquisition Act of 1960, as well as the Environmental Quality Bond Acts of 1972 and 1986, contained provisions for the acquisition of additional State Forest lands, including in-holdings or parcels adjacent to existing State Forests. A total of

1,773.7 acres were purchased with these funds for acquisitions to the State Forests addressed in this UMP. All of these lands were acquired for the conservation and development of natural resources, including the preservation of scenic areas, **watershed** protection, **forestry**, and recreation.

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

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

B. LOCAL HISTORY

The first inhabitants of this land were the Native Americans, specifically the Iroquois. 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."

Up until the later part of the 18th century, most of the territory upon which the State Forests of the Between Rivers UMP are now located, was occupied, or "owned" by the Oneidas. 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. The treaty line followed the path of the Unadilla River, or what is now the eastern boundary of Chenango County. Therefore, at the time, the location of all of the State Forests addressed in this UMP would have been within Indian Territory or "beyond civilization".

The nine State Forests addressed in this UMP are located within six different Townships: Columbus, Guilford, New Berlin, North Norwich, Oxford, and Sherburne. The earliest European settlers within these townships are believed to be John and Joshua Mercereau, who settled within what is now known as the Town of Guilford in 1787. The other five townships were all initially

settled within the next seven years. Most of the early settlements were located along the Unadilla and Chenango Rivers, using the rivers for transportation and commerce. The title of this UMP, Between Rivers, is a reference to the geographic location of the State Forests between the Unadilla and Chenango Rivers. The actual Townships of Columbus, Guilford, New Berlin, North Norwich, Oxford, and Sherburne were established between 1793 and 1849. The following is some of the local history associated with each township:

Columbus

The present day Town of Columbus is the most sparsely populated township of the six townships included in this discussion. With a total population of 931 (2000 Census) the population density is only 24.9 people per square mile. In 1875, 22.7% (5,204 acres) of the township was forested. An analysis of 2003 aerial photography indicates that at least 42.7% (9,800 acres) of the township is forested.

Guilford

The lands now known as the Town of Guilford were originally purchased from the Oneida tribe in 1785. The first European settler arrived in 1787 and the Town was formed in 1813. Originally named Eastern, Guilford attained its present day name from Guilford, Connecticut on March 21, 1817. The town population in 1875 was 2,519. One hundred twenty five years later, the population was only slightly higher, at 3,046, yielding a population density of 49.4 people per square mile.

On the Lyon Brook State Forest, within the Town of Guilford, the foundations of several farm structures remain. These were likely associated with the C. L. Hallock farm, from which the State purchased 381 acres in 1936.

New Berlin

The first settlers began arriving in New Berlin in 1790, emigrating from the New England states. A paper mill was operated in the Village of New Berlin until 1877. Many sawmills operated within the township throughout the 19th century. A building in the Village of New Berlin, known as Preferred Manor, was built in 1831 and currently is listed on the National Register of Historic Places. This large home was once a stop on the Underground Railroad. The 2000 Census lists the Town's population as 2,803.

Anson Burlingame, an early founder of the Town, was appointed ambassador to Russia by President Abraham Lincoln.

North Norwich

Historical references have been made to a sawmill and grist mill operated within the township in the mid-1800s. The mills were located along the Chenango River and were powered by a waterfall of 4.5 feet. Additionally, there was likely a steam sawmill operated in the northern

section of town, where a road is now named for this feature. The town's population has grown from 1,024 in 1875 to 1,966 in the year 2000.

Oxford

Oxford was named for Oxford, Massachusetts in 1790 by Elijah Blackman. Early settlers of the Village of Oxford noted a semi-circular fort made of white pine logs, 3/4 acre in size, on an elevated bank along the Chenango River. Apparently, this fort predates European settlement, and is associated with an Indian chief named Thick Neck. The chief reportedly destroyed all hunters not allied with his band who came within reach of the fort. He was eventually decoyed away from his fort and was killed south of Oxford by the Oneidas.

One of the earliest literary institutions in the State, the Oxford Academy, was formed on January 27, 1794.

On April 15, 1848, five farmers met to discuss the formation of a church in South Oxford. The idea came to fruition on June 18, 1855, with the declaration of the Free Will Baptist Church of South Oxford. Timber from nearby farms supplied the necessary wood and several building bees were organized to construct the church. In 1874, the structure was damaged by fire. It was rebuilt as the Basswood Meeting House, named for its basswood pews and interior woodwork. The last service in the church was held in 1930.

The Chenango Canal (1836 - 1876) passed through town, and railroad service was provided by 1870. The population in the Town of Oxford was 2,971 in 1875. By the year 2000, the population had grown to 3,992.

Sherburne

The first sawmill in the town was operated in 1793 and located about ½ mile below Rexford Falls. In the mid-1800s, the forests in the Town were described as containing beech, birch, maple, basswood, chestnut, hickory, oak, ash, elm, and hemlock. Today, these forests are quite similar, however, there are few, if any, mature chestnut trees remaining in the Town, and elm trees are also uncommon.

On the Skinner Hill State Forest, within the Town of Sherburne, the stone foundation of a structure remains, which is said to have been used as part of the Underground Railroad.

Table 1 provides information on the land acquisitions which were made to establish the nine State Forests in the Between Rivers UMP.

Table 1. Land Acquisition History – Between Rivers Unit

Forest	Year of State Acquisition	Acres Acquired	Names of Previous Owners
Chenango R.A. # 3	1931	622.38	Barton, Covey, Smith, Teachout
	1932	30.00	Smith
	1933	147.50	Vanderwalker
	1937	65.53	Weeks
	1938	200.02	Morgan
	1939	25.34	Barton
	1940	197.45	Smith
	1979	25.94	Terry
Total		1,314.16	
Chenango R.A. # 4	1931	629.59	Stratton
	1932	176.64	Parker
	1936	131.71	Walker
Total		937.94	
Chenango R.A. # 7	1931	616.10	Broadfoot, Carroll, Federal Land Bank, Yale
	1934	78.79	Peterson
	1935	99.35	Chen Val Hom
	1938	107.07	Gilbert
	1939	167.42	Parkier
	1941	103.54	Stratton
	1985	0.03	Hill
	1988	5.05	Wilcox
	1989	62.90	TNC
Total		1,240.25	
Chenango R.A. # 8	1931	802.45	Bigford, Dilley, Hanson, Richardson, Richer, Robinson
	1932	428.31	Fannning, Finch, Skinner
	1933	259.45	O'Brian, Reynolds
	1936	35.25	Church
	1937	71.20	Kern
	1938	44.88	Lloyd
	1949	23.06	Kouba
	1974	1.62	Benedict
Total		1,666.22	
Chenango R.A. # 14	1931	506.91	Carmahan, Parker, Smith
	1933	122.40	Washburn
	1990	13.50	Siko
Total		642.81	

Forest	Year of State Acquisition	Acres Acquired	Names of Previous Owners
Chenango R.A. # 29	1936	503.17	Glen, Hallock, Stratton
	1992	24.63	Kirby, Palmer
Total		527.80	
Chenango R.A. # 31	1936	690.16	Bowers, Holliday, Little, Nichols
	1962	352.49	Jeffrey
	1963	50.00	Gorton
	1990	95.37	Niceforo
Total		1,188.02	
Chenango R.A. # 37	1937	274.07	Palmer
Total		274.07	
Chenango R.A. # 38	1962	200.00	Hunt
	1964	463.36	Angell, Boisson
	1965	84.17	Angell
	1966	635.24	Camp, Jackson, Novak, Weeks
	1967	-235.63	Land transferred to NYS OPRHP
	2011	235.63	Land transferred back to NYS DEC
Total		1,382.77	
Sum Total		9,174.04	

II. INFORMATION ON THE UNIT

A. GEOGRAPHICAL AND GEOLOGICAL INFORMATION ON THE UNIT

The Between Rivers Unit is comprised of nine State Forests:

Chenango Reforestation Area # 3
South Hill State Forest 1,314.16 acres.

Chenango Reforestation Area # 4
Basswood State Forest 937.94 acres.

Chenango Reforestation Area # 7
Wiley Brook State Forest 1,240.25 acres.

Chenango Reforestation Area # 8
Skinner Hill State Forest 1,666.22 acres.

Chenango Reforestation Area # 14		
Ambler State Forest	642.8l	acres.
Chenango Reforestation Area # 29		
Lyon Brook State Forest	527.80	acres.
Chenango Reforestation Area # 31		
Whaupaunaucau State Forest	1,188.02	acres.
Chenango Reforestation Area # 37		
Pine Ridge State Forest	274.07	acres.
Chenango Reforestation Area # 38		
Hunt's Pond State Forest	1,382.77	acres.
Total acreage:	9,174.04	acres.

Approximately 2,765.67 acres of these forests are located in the town of New Berlin. The remaining acreage is divided between Columbus (450.87), Guilford (1,751.69), North Norwich (1,188.02), Oxford (2,268.46), and Sherburne (749.33).

The nine State Forests addressed in this UMP are situated upon a ridge, lying between the two river valleys of the Unadilla and Chenango. The nine State Forests have elevation ranges as follows:

Forest	Elevation	
	Low	High
South Hill State Forest	1380	1760
Basswood State Forest	1200	1620
Wiley Brook State Forest	1440	1840
Skinner Hill State Forest	1460	1960
Ambler State Forest	1340	1920
Lyon Brook State Forest	1180	1660
Whaupaunaucau State Forest	1320	1880
Pine Ridge State Forest	1500	1840
Hunt's Pond State Forest	1280	1740

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 the Unadilla River, the Chenango River, or the Susquehanna River. The Susquehanna River is the primary watercourse feeding into the Chesapeake Bay. Numerous, perennial streams are located on or near the forests of the

Between Rivers UMP. Partial lists of these streams include Great Brook, Thompson Creek, Lyon Brook, and Wiley Brook.

Although the climate of Chenango County was sometimes described as debilitating by the early settlers, over the course of time, it has proven to be quite favorable. Data collected by the National Climatic Data Center (NCDC) at the Norwich Station, for the 30 year period from 1961 - 1990, shows an average annual rainfall of 39.9 inches which is evenly distributed throughout the year. This 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.

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 Between Rivers Unit is located in the glaciated Appalachin Plateau. The underlying bedrock in Chenango County is of the Middle and 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. 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 eastern Chenango County are primarily of the Volusia - Mardin - Lordstown Group. The most common soils on the Between Rivers 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 co-dominant 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 Between Rivers 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 of the undesirable 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 Between Rivers forests.

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 Between Rivers 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.

Beech-Maple Mesic Forest - 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.

Hemlock-Northern Hardwood Forest - 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 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 Between Rivers 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
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 CLASSIFICATION WITHIN THE UNIT

Table 2, following, identifies eight major categories of land found within the Between Rivers 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 and with a surface area of at least 0.20 acres.

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, shrubs, 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 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 2. Land Classifications Within the Unit

				1"-5" Tree Diameter (**DBH**)		6"-11" DBH		12"-18" DBH		19" + DBH	
CATEGORY	TOTAL STANDS	TOTAL ACRES	% OF UNIT TOTAL ACREAGE	# OF STANDS	# OF ACRES	# OF STANDS	# OF ACRES	# OF STANDS	# OF ACRES	# OF STANDS	# OF ACRES
NATIVE HDWDS	176	2423	26%	8	91	60	506	104	1769	3	51
NATIVE CONIFERS & HDWDS	136	1898	20%	15	110	45	569	72	1176	5	49
CONIFER PLANT.	189	3257	36%	10	171	58	814	119	2210	2	62
MIXED NATIVE & NON-NAT. SPECIES	36	513	6%	--	--	17	186	19	327	--	--
WETLANDS & PONDS	89	797	9%	--	--	--	--	--	--	--	--
GRASS	14	85	1%	--	--	--	--	--	--	--	--
SHRUBS	19	93	1%	--	--	--	--	--	--	--	--
ROADS	38	108	1%	--	--	--	--	--	--	--	--
TOTAL	697	9,174	100%	33	372	180	2075	314	5482	10	162

D. WETLANDS AND WATER RESOURCES

Wetlands

Wetlands vary widely, across the landscape, because of differences in characteristics such as: hydrology (temporarily/seasonally flooded to permanently flooded), soils, topography, and vegetation (submergent aquatic plants to forested tree cover). Common freshwater wetlands include marshes, bogs, fens, swamps, vernal pools, **forested wetland**s, and spring seeps. Wetlands perform many functions that provide numerous benefits to people, fish, and wildlife. Wetlands provide flood protection and abatement; erosion control and containment of sedimentation; improved water quality; recharge of groundwater supplies; regulation of surface water flows; essential fish and wildlife habitat; production and recycling of nutrients; recreational opportunities; open space; and **biological diversity**.

Both the federal and State governments regulate use of wetlands to protect the numerous functions and benefits of wetlands. Most wetlands are protected pursuant section 404 of the Federal Clean Water Act. Enforcement activity under the Clean Water Act is shared by the Army Corps of Engineers and EPA. The Army Corps of Engineers regulates activities that may impact wetlands, such as dredging and the placement of fill. Most wetlands have been classified by the U.S. Fish & Wildlife Service and are listed in the National Wetlands Inventory. In New York State, all freshwater wetlands are protected pursuant to the New York State Freshwater Wetlands Act, if they are at least 12.4 acres in size and meet criteria specified in section 24-0107 of the Act. Certain wetlands that are smaller than 12.4 acres may also be protected by the Act. DEC's regulations, 6 NYCRR Part 664 establishes a classification system of freshwater wetlands. This system creates four classifications for freshwater wetlands (class I, class II, class III, and class IV). The classification of a freshwater wetland, regulated under the New York State Freshwater Wetland Act, is based on the ability of the wetland to perform functions and provide benefits. Class I wetlands perform the most functions, while Class IV wetlands perform the least amount of functions.

The Between Rivers Management Unit contains about 723 acres of wetlands. Eight of these wetlands are regulated under the New York State Freshwater Wetlands Act. The delineation of these regulated wetlands totals 150 acres. The eight regulated wetlands are located entirely or partially within 14 different forest stands on the Between Rivers Unit, directly influencing 220 acres on the Unit. Some of these wetlands extend beyond the boundaries of the State Forests and influence additional acreage. The wetlands regulated under the New York State Freshwater Wetland Act include 138 acres of class II wetlands and 12 acres of class III wetlands. See **Appendix III** for additional information about the wetlands regulated under the New York State Freshwater Wetland Act. There are other wetlands on the Between Rivers Management Unit that are not regulated pursuant to the NYS Freshwater Wetlands Act. These non-classified wetlands include spring seeps, riparian areas, and other types of wetlands. They cover a total of 573 acres on the Between Rivers State Forests. All of these wetlands will be protected from activities such as timber harvesting and mineral or gas exploration through the implementation of Special Management Zone rules developed by the Division of Lands and Forests, and the use of best management practices. However, gaining access to other managed sections of the forests may require crossing some of these wetlands. If a crossing is necessary, measures such as temporary bridges, seasonal restrictions, or surface mats will be utilized to limit the impact to the wetland.

Ponds

There are four ponds on the Unit covering a total of 65 acres. The ponds range in size from 0.2 acres (Jackson Pond) to 49 acres (Hunts Pond). Jeffery Pond on the Whaupaunaucau State Forest is a popular fishing spot. In the past, Jeffery Pond was managed for trout habitat and was stocked with trout species each spring. However, due to the presence of competing species, such as black bass, the trout population was not sustainable. Puckerville Pond on the Wiley Brook State Forest contains some pan fish, but is not known to support a significant fish population. This is a man-made impoundment with associated wetlands. It does provide important habitat for amphibians, reptiles, and waterfowl, and river otters have been observed at Puckerville Pond.

Jackson Pond is named for the property owner from whom the State acquired the land. This is a small body of water within stand A-23 on the Hunt's Pond State Forest which retains enough water year-round to support a fish population. The largest pond on the Unit is Hunts Pond. This 49 acre pond offers opportunities for recreational, non-motorized boating and fishing.

Streams

All perennial streams within the Between Rivers Management Unit have one or more of the following **water quality classifications:** AA, A(t), A, C(t), or C. Class C and class C(t) streams are capable of supporting fisheries, more specifically, class C(t) streams are capable of supporting a trout population. Class AA, A(t), and A streams are used as a drinking source. Intermittent streams on the Unit are not classified. There are about 22 miles of streams, with classification of class C or higher, on the Unit. The class AA, A(t), and A streams on the Unit feed the public water supply for Bainbridge or Sidney.

Appendix II provides information about the perennial streams on the Unit. This information includes: location by State Forest; stream name; stream classification; and length of stream.

E. MINERAL RESOURCES

Oil and natural gas are valuable resources which may be located under State Forests. The extraction of these resources generates revenue and provides raw material for energy products. 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 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) generally requires a relatively low density of wells (e.g. 1 well pad per 320 acres). The low well pad density should 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 five 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 would also necessitate a greater amount of infrastructure.

Higher well densities result in greater fragmentation of the forest. This would likely 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.

For further discussion of this topic, please see Chapter 5 of the Strategic Plan for State Forest Management.

F. WILDLIFE RESOURCES

The Between Rivers Management Unit and the landscape surrounding the Unit contain a variety of wildlife including many species of mammals, birds, amphibians, reptiles, fish, and invertebrates such as snails, mussels, insects, spiders and worms. Many resources were consulted to assess the variety of wildlife and wildlife habitat in and around the Unit.

1. Landscape Habitat

To assess the available wildlife habitat, a landscape analysis was conducted using the 2001 National Land Cover Database (NLCD). The analysis of the NLCD was conducted at the township level and included the following townships: Coventry, Columbus, Guilford, New Berlin, North Norwich, Oxford, and Sherburne. The townships are about 55% forested, 40% open vegetated, 4.5% water, and about 0.5% developed. The forested areas consist of **deciduous** canopy, evergreen canopy, and mixtures of these two general tree types. The open vegetated areas consist of agricultural lands (cultivated crops and hay/pasture), shrub lands, grassland/herbaceous areas, and developed open spaces (golf courses, parks, and large lot single-family housing units). The water cover type consists of open water, woody wetlands, and emergent herbaceous wetlands. The mixture of land use and cover types, across the landscape, provides a variety of wildlife habitat, which allows the opportunity for a fairly diverse wildlife population.

The State Forests, within the Unit, cover approximately 5% of the land area within the townships listed above and contribute to about 8% of landscape's forests. However, the State Forests, within the Between Rivers Management Unit, account for less than 0.5% of the landscape's open vegetated cover type. The Unit accounts for nearly 6% of the landscape's water cover.

2. Wildlife

Mammals

The New York GAP Mammal Hexagon Database was used to determine the distribution of mammals on or in the vicinity of the Unit. Other sources were used to determine the protective status of these species. The sources include: the NYS DEC public website, the U.S. Fish and Wildlife Service website, the New York Natural Heritage Program (NYNHP) website, the Chenangadilla UMP, and the Between Fords UMP.

The New York State GAP confirmed or predicted 52 mammalian species on or in the vicinity of the Unit. A complete list of mammals that were confirmed or predicted, on the Unit or surrounding area, can be found in **Appendix VII**.

The analysis revealed two bat species that are **endangered** or of special concern. The Indiana Myotis (*Myotis sodalis*) or Indiana bat is predicted on or in the vicinity of the Unit and is listed, as endangered, by both the State and the Federal government. The other bat, the Eastern small-footed Myotis is listed, by New York State, as a species of special concern. These bats share some habitat-requirement characteristics. Both bats hibernate in caves or mines and forage near water. When the bats are in their summer ranges, they do have different roosting habits. The Indiana bat prefers to roost under the bark of living or dead trees while the Eastern small-footed Myotis prefers to roost in fractures of rock ledges. The most recent threat to both of these species is white-nose syndrome (WNS). Thousands of dead bats have been found in their hibernacula with evidence of WNS. WNS is associated with a newly identified fungus (Geomyces sp.) that thrives in the cold and humid conditions characteristic of the bats hibernacula. This fungus may be directly responsible for the bat deaths or it could be secondary to the cause.

Information on the variety of wildlife species in this area, including some of the more popular game species, can be found below.

Birds

The New York State Breeding Bird Atlas is a comprehensive, statewide survey that reveals the distribution and protective status of breeding birds in New York State. The most recent data, for the Breeding Bird Atlas, was collected from 2000 to 2005. Eighteen Breeding Bird Atlas blocks (4468A,4469D, 4568B,4569A, 4569C, 4569D, 4570B,4570C, 4571A, 4571B, 4571D, 4572B, 4572D, 4670A, 4671A, 4671C, 4671D, & 4672C) were assessed to determine the possible, probable, and confirmed breeding bird species found on the Unit and surrounding vicinity. The Breeding Bird Atlas confirmed or predicted that there are 127 bird species breeding on the Unit or the surrounding vicinity. **Appendix V** shows these species by common name, scientific name, breeding status, and protective status.

Most of the 127 bird species are protected by the New York State Environmental Conservation Law. Two species were identified as threatened in New York State and five species of birds were

identified as a species of special concern. The **threatened species** are the bald eagle and the northern harrier. The bird species of special concern include four hawks and one sparrow. The Cooper's hawk, Northern goshawk, red-shouldered hawk, sharp-shinned hawk, and vesper sparrow are the species of special concern.

Amphibians and Reptiles

The Amphibian and Reptile Atlas Project was a ten-year survey, conducted by the DEC that was designed to document the geographic distribution of New York's amphibians and reptiles. The survey was conducted from 1990 to 1998. The project predicts 28 species of amphibians and reptiles on or in the vicinity of the Between Rivers Management Unit. A complete list of the 28 species, by common name, scientific name, and protective status is found in **Appendix VI**.

Fish

All of the streams on the Unit are small headwater streams which likely support a minimal level of sport fishing. Although no formal fisheries assessments have been conducted since the 1930's on many of the streams it is likely that the fish communities are composed of the simple fish communities associated with headwater streams in the Susquehanna River drainage. Species typically found include slimy sculpin, longnose dace, blacknose dace, and common shiner. Some of the streams may also support populations of trout species.

The primary management objective for all of the streams on the Unit is to maintain good water quality by minimizing sedimentation, maintaining stream-bank stability, and providing sufficient tree canopy along the streams to limit stream temperatures. Good water quality in these streams will help to ensure good water quality in their receiving waters. The maintenance and improvement of water quality in waterways throughout the Susquehanna drainage is a taking on an ever increasing importance.

About 3.3 miles of the streams on the Unit are designated trout streams which likely support modest numbers of native brook trout. It is possible that additional streams on the Unit may also be capable of supporting trout, but there has been no confirmation of trout populations in these streams in many years. Bureau of Fisheries (BOF) staff will attempt to sample these waters in the coming years to determine if wild trout now inhabit them. If any streams do support trout, BOF staff will petition the Division of Water to have the water quality classification upgraded. Although none of these streams likely support many large fish it is probable that they are important spawning and nursery areas for trout. The primary management objective for these small trout streams again is to ensure good habitat which can support healthy, self-sustaining trout populations. Stocking of hatchery raised trout will not be considered in any of the streams segments within the Unit.

One of the ponds on the Unit which is popular for fishing is Jeffrey Pond on the Whaupaunaucau State Forest. Significant information on Jeffery Pond is available in Appendix **VIII.** The largest

pond on the Unit is Hunts Pond. This 49 acre pond supports a warm-water fishery with largemouth bass, yellow perch, chain pickerel, brown bullhead, and rock bass.

Game Species

There are many game species located on or in the vicinity of the Between Rivers Management Unit. Game species are protected by regulated hunting/trapping seasons. Game species, on or in the vicinity of the Unit include a variety of birds and mammals. Game species contribute to the local economy and provide outdoor recreation. More details of some of the major game species can be found below.

White-tailed Deer - The Department manages deer populations in Wildlife Management Units (WMUs). The Between Rivers Management Unit falls within WMU number 7M. A Citizen Task Force (CTF), made-up of local interest groups such as farmers, foresters, hunters, motorists, and the tourism industry, recommends a desirable deer population to the Department. Deer populations are controlled with regulated hunting through the use of Deer Management Permits (DMP). DMPs are permits to harvest antlerless deer. Using the recommendations, of the CTF, Department biologists determine the number of DMPs to issue within each WMU.

Excessive deer populations can be detrimental to forested **ecosystems**. Deer can alter the forest understory by over-browsing. Over-browsing can completely eliminate certain tree, shrub, and herbaceous species. Over-browsing may eliminate the forest **understory** layer, which can cause increased nest predation to ground-nesting and shrub-nesting birds, alters food sources for a variety of wildlife, can impact the future forest composition and structure. More information on the relationship between deer populations and the vegetation composition of the forest can be found in the Goals & Objectives section of this Plan, under **Ecosystem Management**. A ten-year deer harvest assessment can be found in **Appendix IX.** This assessment contains deer harvest numbers by township within the Between Rivers Management Unit.

Turkey - Once extirpated from New York State as a result of over-hunting and habitat loss, the wild turkey currently has a secure population throughout the State. Wild turkeys are protected as a game species and can be hunted during two seasons (Spring and Fall). Turkey harvest records can be found in **Appendix X**.

Furbearers - There are many species, on or in the vicinity of the Between Rivers Management Unit, that are considered furbearers. Within the Unit, some of the furbearers that can be hunted and/or trapped include the American beaver, mink, common muskrat, short-tailed weasel, long-tailed weasel, red fox, gray fox, common raccoon, coyote, gray squirrel, Virginia opossum, and the striped skunk. **Appendix XI** shows ten-year harvest records for the American beaver and the coyote.

3. Important Habitat Features

The Between Rivers Management Unit and the surrounding landscape provide diverse habitats for a variety of wildlife species. The assessments conducted above, along with forest inventories, have revealed important habitat features within the Unit. The following habitat features must be considered to ensure a healthy diverse wildlife population:

Coniferous Forest Cover Type

The coniferous (evergreen) forest canopy within the Unit accounts for about 20 percent of the coniferous forest cover type within the local landscape. Some birds require a conifer component as part of their habitat. Some of the conifer dependent birds, which are confirmed or predicted to be on or near the Unit, include pine sisken, purple finch, hermit thrush, yellow-rumped warbler, blackburnian warbler, magnolia warbler, pine warbler, black-throated green warbler, dark-eyed junco, red crossbill, golden-crowned kinglet, red breasted nuthatch, winter wren, and the blue-headed vireo.

There are also mammals that require and/or benefit from coniferous forests. Mammals that require and/or benefit from the coniferous forests on the Unit may include the red squirrel, snowshoe hare, deer mouse, Southern red-backed vole, white-tailed deer, and Hoary bat.

Continuous Mature Forest Canopy

The bald eagle population in New York State has been increasing since the 1970s. Bald eagles are still threatened by habitat loss and development pressures. The bald eagle prefers relatively undisturbed, forested areas near wetlands or large water bodies with a lot of fish. The Cooper's hawk, Northern goshawk, red-shouldered hawk, and sharp-shinned hawk have some variations in their habitat requirements, but they all require a continuous mature forest canopy. Other bird species, found on or near the Unit, that require a continuous mature forest canopy are the pileated woodpecker, common raven, and broad-winged hawk.

Mammals that require a continuous mature forest canopy include: black bear, bobcat, fisher, and Northern flying squirrel.

Multi-Layered Forest Canopy Structure

There are many bird species, on or near the Unit, that require a multi-layered forest canopy structure as a habitat requirement. Some of the birds that require a multi-layered forest canopy structure are the golden-crowned kinglet, hermit thrush, black-throated green warbler, yellow-rumped warbler, ovenbird, red-eyed vireo, warbling vireo, black-and-white warbler, least flycatcher, scarlet tanager, yellow-throated vireo, black-throated blue warbler, Canada warbler, American redstart, veery, and common yellowthroat.

Cavity Trees/Snags/Course Woody Material

Many wildlife species use **cavity trees**, **snags,** or **Coarse Woody Material (CWM)** for perching, feeding, nesting, and/or roosting. Some wildlife use live cavity trees while others use dead cavity trees.

Some of the bird species, on or near the Unit, that use cavity trees include: red-breasted nuthatch, brown creeper, Eastern bluebird, house wren, Northern mockingbird, tree swallow, American kestrel, Eastern screech owl, barred owl, black-capped chickadee, pileated woodpecker, tufted titmouse, downy woodpecker, great-crested flycatcher, Northern flicker, white-breasted nuthatch, hairy woodpecker, Carolina wren, winter wren, common merganser, hooded merganser, and wood duck.

Mammals, in or around the Unit, that use cavity trees include: Indiana bat, little brown bat, silver-haired bat, big brown bat, Virginia opossum, gray squirrel, Northern flying squirrel, porcupine, gray fox, raccoon, fisher, short-tailed weasel, and long-tailed weasel.

Snags may have cavities or they may not. Snags without cavities are used mostly as perches or foraging sites. Birds, on or near the Unit, that utilize snags include: sharp-shinned hawk, Cooper's hawk, broad-winged hawk, red-tailed hawk, turkey vulture, American kestrel, bald eagle, brown creeper, great blue heron, green heron, great-horned owl, pileated woodpecker, and barred owl.

Mammalian species that may den in CWM include the Virginia opossum, Eastern chipmunk, Southern red-backed vole, gray fox, black bear, fisher, short-tailed weasel, and long-tailed weasel, mink, striped skunk, and bobcat. CWM is home to many wood-decaying insects that are used as a food source for many birds, mammals, amphibians, and reptiles. Many species of amphibians and reptiles live in or under the moist, soft, decaying wood of CWM.

Wetlands/Riparian Areas

Although all wildlife need water to survive, there are many wildlife species that use water as their primary habitat. Many wildlife species depend upon the presence of wetlands or riparian areas including spring seeps, vernal pools, swamps, bogs, ponds, and streams. The birds, on or near the Unit, that utilize water as their primary habitat include the Canada goose, common merganser, hooded merganser, great blue heron, green heron, mallard, wood duck, belted kingfisher, spotted sandpiper, swamp sparrow, alder flycatcher, willow flycatcher, American black duck, bald eagle, marsh wren, Northern waterthrush, sora, bank swallow, cliff swallow, common yellowthroat, Virginia rail and Wilson's snipe.

Mammals, on or in the vicinity of the Unit, that use water as part of their primary habitat include the American beaver, common muskrat, Southern bog lemming, big brown bat, little brown bat, Northern myotis, Indiana myotis, silver-haired bat, star-nosed mole, raccoon, mink, long-tailed weasel, and river otter.

Nearly all the amphibians and reptiles, on or near the Unit, require water for at least part of their life cycles.

Grasslands/Early Successional Habitat

According to the New York Natural Heritage Program, there are two main reasons why the northern harrier is threatened: loss of large areas of grassland habitat and loss of wetland habitat. The vesper sparrow is also considered a grassland species and the loss of a grassland type habitat is causing their population decline. The loss of grassland habitat within the area is largely the result of a decline in agricultural activity and an increase in development. Other birds on or in the vicinity of the Unit that require a grassland type habitat are the savannah sparrow, Eastern meadowlark, barn owl, bobolink, and Northern rough-winged sparrow. More than 60 acres of grasslands are located on the Hunts Pond State Forest. Most of these grasslands are actively managed to maintain the grass cover.

If grasslands are not maintained (mowed) as grasslands, they will revert to forest through a process known as **succession**. Shrubs and **pioneer** tree species will be the first woody residents to become established. These shrubs and seedling/sapling sized trees provide habitat to a variety of wildlife species. This early successional habitat is used by a number of bird species found in and around the Unit. The bird species include the ruffed grouse, Northern cardinal, yellow-rumped warbler, Nashville warbler, blue-winged warbler, mourning warbler, yellow warbler, prairie warbler, American crow, white-throated sparrow, field sparrow, song sparrow, chipping sparrow, indigo bunting, Eastern bluebird, mourning dove, red-tailed hawk, turkey vulture, American goldfinch, American robin, American woodcock, cedar waxwing, common grackle, Eastern towhee, gray catbird, house wren, Baltimore oriole, Northern mockingbird, and Eastern phoebe. The Unit contains more than 90 acres of shrub lands.

Many mammals also depend on early successional habitat for food and cover. Mammals on or in the vicinity of the Unit that utilize early successional habitat include the red fox, gray fox, white-tailed deer, Eastern cottontail, woodland vole, Eastern chipmunk, woodchuck, Southern bog lemming, and meadow jumping mouse.

For further discussion and assessment of the landscape surrounding the unit, please see Chapter 2 of the Strategic Plan for State Forest Management. The Strategic Plan can be found online at http://www.dec.ny.gov/docs/lands_forests_pdf/spsfmfinal.pdf.

G. RARE SPECIES AND SIGNIFICANT ECOLOGICAL COMMUNITIES

The New York Natural Heritage Program (NHP) is a partnership between DEC and The Nature Conservancy. The NHP conducts inventories for rare plants, animals, and significant ecological communities. These inventories are used to identify, track, protect and help manage biodiversity. In 2004, NHP staff conducted a comprehensive inventory of all State Forests in DEC's Region 7. A survey of the NHP data indicates that there is one significant ecological community on the

Unit and one small population of an amphibian of special concern. The significant ecological community is a dwarf shrub bog and the amphibian species is the longtail salamander. No current records of any rare plants were identified upon the Unit.

Dwarf Shrub Bog

Often described more generally as a freshwater shrub wetland, a dwarf shrub bog is a peatland dominated by low-growing evergreen ericaceous (heath-like) shrubs and peat mosses. The surface of the peatland has small mounds and depressions called hummocks and hollows. These bogs are more than half covered in low-growing shrubs, and the hummocks tend to have a higher abundance of shrubs than the hollows. Water is usually nutrient-poor and acidic. The dominant shrub is often leatherleaf (*Chamaedaphne calyculata*), which frequently makes up more than half of the total vegetation. Most shrubs are typically a meter or less in height, and are taller than the herbs (Edinger 2002).

The NHP identifies dwarf shrub bogs as moderately vulnerable on the state level, with between 20 and 100 occurrences within the state. While this community is considered apparently secure globally, it may be rare in parts of its range.

This wetland has been designated as a Class II regulated wetland under the New York State Freshwater Wetlands Act.

This particular site is a small, fairly remote dwarf shrub bog with a good diversity of species. It consists of a floating Sphagnum spp. mat surrounding an acidic inland pond. The short shrub layer is characterized by leatherleaf, bog rosemary (*Andromeda glaucophylla*), highbush blueberry (*Vaccinium corymbosum*), small cranberry (*Vaccinium oxycoccos*), large cranberry (*Vaccinium macrocarpon*), and black chokeberry (*Aronia melanocarpa*), with some invasion of red maple (*Acer rubrum*). The herbaceous layer has pitcher plant (*Sarracenia purpurea*), patches of buckbean (*Menyanthes trifoliata*), and threeseeded sedge (Carex trisperma), star sedge (Carex echinata), Virginia marsh St. Johnswort (*Triadenum virginicum*), roundleaf sundew (*Drosera rotundifolia*), tawny cottongrass (*Eriophorum virginicum*), eastern marsh fern (*Thelypteris palustris)*, water arum (*Calla palustris*), earth loosestrife (*Lysimachia terrestris*), threeway sedge (*Dulichium arundinaceum*), and brownfruit rush (*Juncus pelocarpus*). Several sphagnum species, including *Sphagnum rubellum* and Magellan's sphagnum (*Sphagnum magellanicum*), occur throughout. The carnivorous pitcher plants and sundews can be found growing among the peat mosses. These unique plants flower in midsummer (Evans 2005).

Due to beaver activity, the bog mat is bordered by a flooded moat that ranges from 100 to 400 feet (30 to 120 meters) wide filled with dead and floating trees. Beyond the moat, there is a narrow band of hemlock-northern hardwood forest. The larger landscape contains mostly managed forests, as well as active and reverting agricultural fields (Evans 2005).

Because dwarf shrub bogs are naturally acidic and low in nutrients, they are particularly susceptible to alteration by elevated nutrient inputs. Bogs may require larger buffers than other wetland types because of their high susceptibility to changes in nutrient concentrations. Direct impacts are typically most serious within 300 feet (90 m) of wetland areas (Sperduto 2000).

Specific threats at this location include continued beaver activity, as well as runoff from nearby agricultural fields or areas where timber is being harvested. Also, nearly one-half of the area is still under private ownership (Evans 2005).

Longtail Salamander

The longtail salamander (*Eurycea longicauda*) is a species of special concern in New York State. A species of special concern is any native species for which a welfare concern or risk of endangerment for the species has been documented within the State. Species of special concern receive no State or Federal designations for protection.

The New York State Amphibian and Reptile Atlas reported approximately 12 locations in the State between 1998 and 1999. Another location was reported in 2002 and the NHP indicates future survey efforts are likely to confirm additional populations within the State. One habitat site within the Between Rivers Unit has been identified for the longtail salamander. The longtail salamander may have fairly specific habitat requirements making it localized throughout its range. Typical adult habitat is found in moist or wet terrestrial situations along the borders of streams, seeps, swamps, and marshes. The primary ecological communities associated with the longtail salamander are hemlock-northern hardwood forests and rich **mesophytic** forests, but also intermittent, rocky headwater, and marsh headwater streams. The particular site identified on the Between Rivers Management Unit fits this basic habitat description, except the immediate **overstory** is dominated by red pine planted in the 1930s (Evans 2005).

The main threats to the longtail salamander are stream siltation and channelization, waterborne contaminants, pathogenic organisms, and unregulated collection. Of particular importance is stream water quality, wherever water quality has been significantly reduced, populations are likely to decline. Both flooding and fish predation are limiting factors to downstream distribution (Evans 2005, Petranka 1998).

H. CULTURAL RESOURCES

There are two known Archeological Sites of Sensitivity on the Between Rivers State Forests. Archeological Sites of Sensitivity in New York State describe areas that are protected through inclusion in the State Historic Preservation Office or New York State Museum archeological site files and reflect known pre-historic and historic archeological sites. Exact site locations are not given since locations are protected from disclosure by Section 304 (16 USC 4702-3) of the National Historic Preservation Act of 1966 and Section 14.07 2(F) of the State Historic

Preservation Act of 1980 (PRHPL article 14). This information can only be accessed at the State Historic Preservation Office in accordance with its policy on access to files, data, and information.

Specific sites may include settler homesteads, mills, villages, cemeteries, Native American sites or other sites with prehistoric artifacts or of other historic significance. These sites may contain artifacts and information in a sufficiently undisturbed context to help us better understand and appreciate some aspect of the human past. 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 may 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 disclosure under both State and Federal Freedom of Information Laws.

As well as listed Archeological Sites of Sensitivity, there are a number of ordinary cultural artifacts spread throughout the forests on the Between Rivers Unit that provide clues about historic patterns of living. Individual artifacts, cellar holes, mill sites, stone walls, and abandoned road or lanes each reveal a portion of the story about the people who cleared the forest and transformed wild nature into a working landscape. Most of these ordinary sites do not qualify, individually, as State or National Register resources. However, these artifacts from the early settlement period are still important **cultural resources**. One such site is located on the Skinner Hill State Forest. At this location, along Skinner Hill Road, a stone house is located on privately owned land, next to the border of the State Forest. On the State Forest side of the boundary, is the foundation and remains of a barn that was once associated with the house. Historians have indicated that this barn was once used as a safe-house by the Underground Railroad during the Civil War period. Another site of interest is located on the Lyon Brook State Forest. This site, near the entrance of the **Public Forest Access Road**, contains the foundations of several farm structures, once operated by C.L. Hallock, from whom the State acquired more than 380 acres in 1936. There are numerous other stone walls and building foundations on the forests of the Between Rivers Unit. Most of these 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 and the borders of other fields or for home and other building foundations. These walls and foundations are now part of the landscape and they provide us with information about past land uses and human history. Since the value of field stone has increased significantly in the last few years, many stone walls on privately owned land are being dismantled for the purpose of selling the stones. The Department has implemented management practices to preserve the integrity of stone walls and does not sell field stones from the State Forests.

I. ROADS

Although the State Forests of the Between Rivers Unit are located in rural areas, all of these properties can be readily accessed through a well-maintained system of Town, County, and State roadways. These roadways, including the **Public Forest Access Roads** located on some of the properties, can be traveled with any passenger car. The only restriction to access occurs with snowfall or seasonally wet conditions. Some of the Town roadways near the forest properties may not be plowed during the winter season. Additionally, the surface of these seasonal roads can become very soft during wet weather conditions, such as early spring. Travel on these roads is not advised during these conditions. The Public Forest Access Roads are not plowed during the winter. Outside of these seasonal restrictions, the roads are typically well-maintained and easily traveled.

Roadways found on the Between Rivers State Forests include Public Forest Access Roads, **Haul Roads**, **Access Trails**, Town Roads, County Roads, and Abandoned Town Roads. From this group, the Public Forest Access Roads, Town Roads, and County Roads are all designed for public use with motor vehicles. There are a total of three, relatively short, Haul Roads located on the forests of the Between Rivers Unit. These roads are designed to facilitate forest products removal (e.g., use by log trucks) and they are not intended for public use. The entrances to these roads are gated or otherwise barricaded. There are numerous Access Trails on the forest properties. These lanes are designed for temporary use by timber harvesting contractors with specific agreements with the Department. They are not available for public use with motor vehicles, except to provide opportunities for non-motorized recreation activities, such as hiking or skiing. The historic corridors from some Abandoned Town Roads may also be found on the State Forests. These lanes are no longer suitable for motor vehicle travel, having revegetated due to lack of motor vehicle use. These corridors remain important for their historic values and provide information about the cultural development of these lands. **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.

TRANSFER OF HUNTS POND STATE PARK FROM OPRHP TO DEC.

In the summer of 2011, administration of the 235.63 acre Hunts Pond State Park was transferred from the Office of Parks, Recreation, and Historic Preservation (OPRHP) to the Department of Environmental Conservation. The property was subsequently combined with the Hunts Pond State Forest. The shift in administration will most significantly impact the camping opportunities. Historically, Hunts Pond State Park offered camping on 18 designated sites. Although the facilities were more primitive than those of larger State Parks, camping was still a primary management objective on this property. Under Department management, camping will be allowed only on designated sites within this property. No fees will be charged for camping, however, permits will be required. The camping guidelines will be very similar to those associated with Stoney Pond (Madison Reforestation Area #13). The Department proposes to

maintain 12 of the original 18 designated camping sites. The specific changes are identified in the Public Use and Recreation Objectives section of this Plan.

The Department intends to maintain public access to the 49 acre pond, known as Hunts Pond and allow for fishing and non-motorized boating on the pond.

The Department will continue to support the snowmobile trail through the property. Maintenance of this trail will be allowed through a volunteer agreement with an organized snowmobile club.

Timber harvesting was not permitted while the property was managed by OPRHP. The Department will manage the timber resources on the property in conjunction with multiple-use management.

The following actions are also proposed for the property:

- No fees will be charged for camping, boating, or the use of the boat launch.

- Refer to Appendix XIV for the camping guidelines at Hunts Pond.

- Manage this property primarily for the values of wildlife, recreation, and water quality.

- Exploration of natural gas and other minerals was not allowed on this property under the administration of OPRHP. If the property is nominated for oil and gas development leasing, the Department will recommend that the parcel be leased only on a non-surface entry basis.

J. RECREATIONAL RESOURCES

In development of the Draft Region 7 Recreation Master Plan, public meetings were held to discuss issues including recreational uses of State Forests. The participants represented a broad range of recreational uses including hunting, hiking, camping, trapping, canoeing, kayaking, snowshoeing, cross country skiing, snowmobiling, horseback riding, bird-watching, wildlife observation, photography, target shooting, and fishing. Input received from the public at these meetings has been incorporated into the Draft Region 7 Recreation Master Plan. Subsequently, this information has been incorporated into the Strategic Plan for State Forest Management. The Strategic Plan, in conjunction with this UMP, will be used to guide current and future recreational use and development on the Between Rivers Unit.

State Forests provide the public with opportunities for many recreational pursuits. **Parcelization** and residential occupancy have restricted the access to private lands, resulting in an increased public use of State Forests. The opportunity for many of these activities on the Unit will be offered on a primitive scale. For example, there are abundant opportunities for camping, but

there are no camp sites that are developed to the extent that you would find in State Parks or private campgrounds.

In managing the recreational resources on the Between Rivers Unit many factors are considered. Constraints consist of property size, shape, topography, soils, access, wetlands, streams, existing uses, capital, staff, suitability, as well as enacted rules, regulations, policies, and laws. Other factors like nearby recreational opportunities, public input, history, cover type, maintenance, environmental impact, and general demand are considered also. The primary goal is to provide compatible opportunities for use while protecting and maintaining the forests.

Measuring the demand for an activity such as wildlife and nature observation is difficult since there are only estimates of participant numbers. Licenses or registration fees paid by hunters, anglers, trappers, and snowmobilers provide some measure of demand, though data is often not available on the local scale.

Snowmobiling

Registration is probably the best measure of participation in snowmobiling. Following a long increase in the number of registrations, a steady decline has occurred from the high of just over 172,000 in 2003 to the current level of about 128,000 in 2008. Speculation for the decline includes increased registration fees, poor winter conditions during several recent seasons, and the costs of travel. Two snowmobile clubs maintain trails on four of the Between Rivers forests. These clubs currently have Adopt-A-Natural-Resource agreements with the Department for the maintenance, including grooming, of the trails. The demand to route snowmobile trails onto public lands is increasing due to conflicts associated with parcelization and changes in ownership of private lands.

Hunting

Big game deer hunting is the most common form of hunting on the Unit, while turkey hunting continues to increase in popularity. Active management of the deer population is an increasingly important factor in allowing forest habitats to produce viable tree regeneration, a diversity of herbaceous plants in the forest understory, and hunter harvest opportunities. Other available hunting opportunities include the pursuit of upland game birds like grouse and woodcock. Squirrel numbers have been reduced over the last 25 years as the loss of **mast** producing trees like American chestnut, and the decline of American beech due to **Beech Bark Disease** take their toll. Predators like coyote and fox are also present. Rabbit populations are somewhat limited by poor habitat. Areas of young growth and thick low cover with readily reachable food sources are largely unavailable. The natural maturation of many plantation **softwoods** has eliminated any snowshoe hare populations once found on the Unit.

After a slow long term decline, hunting participation appears to be stabilizing over the last eight years with total gross license sales of approximately 900,000 just under 1,000,000. However, small game license sales continue to decrease. Interestingly, lifetime license buyers are growing.

Trapping

Based on records of annual statewide resident licenses sold, participation in trapping appears to be growing. Since 2000, trapper licenses sold statewide have increased from around 8,000 to more than 13,000 in 2009. Overall participation in trapping is minor when compared to other forms of hunting or fishing. However, trapping is an important means to control predator numbers and help maintain populations of small game and non-game species alike.

Fishing

Fishing appears to be stable with license sales holding near one million per year. Fishing resources on the Unit are limited. Most of the streams are small headwaters or feeder streams and only a handful of ponds exist on the nine forests.

Hiking

Based on the 2005 census, over three million people in New York State participate in hiking, backpacking, and rock climbing. Several segments of the popular Finger Lakes Trail traverse both Basswood and Wiley Brook State Forests. Recreational hikers often utilize designated ski and snowmobile trails during the non-winter seasons. The demand for hiking opportunities is expected to increase slightly.

Wildlife/Nature Observation

A diversity of forest conditions contribute to the variety of wildlife species on the Unit. Softwood plantations provide habitat diversity at the landscape scale and offer habitat for some unusual bird species dependent upon conifers such as white-winged crossbills and red crossbills. There are no specific records for local participation in this activity. Information based on the 2005 census suggests that about 3.5 million New York State residents enjoy bird-watching and wildlife viewing or nearly 18% of the population. Available access is the chief demand of this user group.

Skiing

Estimates of participation in cross-country skiing are largely unavailable even at the state or national level. Numbers are usually lumped with down-hill skiing or even snowshoeing. In general the sport seems to be increasing moderately. Trail register signings suggests about 800 to 1,000 users each annual winter season on the almost 13 miles of designated ski trails of Whaupaunaucau State Forest. A minor level of snowshoeing is also practiced on the Unit.

Horseback Riding

This is an informal activity on the Between Rivers Unit. No designated horse trails exist. Use of seasonal roads traversing the nine forests, former forest product trails, or use of other existing trail types appear to be the most common forms of use. Specific user numbers are unknown, but observed use is limited. Numerous developed opportunities for horseback riding exist on the Brookfield Management Unit located just to the north of the Between Rivers Unit.

Mountain Biking

An Adopt-A-Natural Resource Agreement (AANRA) was issued in 2010 to the Chenango Mountain Bikers Club for maintenance of the trails on the Whaupaunaucau State Forest. Prior to the Agreement, the trails on this forest were intended only for skiing and pedestrian uses. The AANRA identifies the specific trails that are compatible with mountain biking, while excluding other trails from this activity. Mountain biking is allowed on all of the forests within the Between Rivers Unit, except on trails that are specifically posted against the activity. The Finger Lakes Hiking Trail is posted against mountain biking. The Whaupaunaucau State Forest offers the best opportunity for mountain biking within the Between Rivers Unit.

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 (TRP)** is required for the following types of recreational activities on State Forests: organized and advertised events, such as club-sponsored rides or scouting camporees; competitive events, such as mountain bike races or orienteering tournaments. Chapter 5 of the Strategic Plan for State Forest Management provides specific details on the permitting process and the requirements for liability insurance.

K. OTHER FACILITIES

1. State Forest boundary lines.

The boundary line of each State Forest needs to be maintained in order to effectively manage the property. State Forest boundary lines are identified with metal signs, approximately 7"x10" in size, with the Department logo on a yellow background. The trees on the boundary line are also blazed with yellow paint. Periodic maintenance of the signs and paint, as well as survey records, are needed to protect the integrity of the boundary lines.

State Forest	Length of Boundary
Chenango RA # 3	12.1 miles
Chenango RA # 4	10.6 miles
Chenango RA # 7	13.7 miles
Chenango RA # 8	27.0 miles
Chenango RA # 14	10.0 miles
Chenango RA # 29	6.9 miles
Chenango RA # 31	17.0 miles
Chenango RA # 37	5.0 miles
Chenango RA # 38	12.5 miles
Total	114.8 miles

2. State Forest Identification Signs.

Each State Forest has an identification sign, displaying the name of the forest and its acreage. The wooden signs are approximately 4' x 5' in size with yellow lettering on a brown background.

Forest	# of signs	Location
Chenango RA # 3	2	Charles Wicks Road. Hucklebon Road.
Chenango RA # 4	1	Dr. Crouch Road & Public Forest Access Road
Chenango RA # 7	1	Bruffel Hill Road.
Chenango RA # 8	2	Skinner Hill Road. County Route 29.
Chenango RA # 14	1	Public Forest Access Road.
Chenango RA # 29	1	Wahlberg Road & Public Forest Access Road.
Chenango RA # 31	3	Post Rd., Public Forest Access Rd.(entrance & interior)
Chenango RA # 37	1	Kendricks Road.
Chenango RA # 38	1	Hunt's Pond Road.

3. Information Kiosks

State Forest Information Kiosks are weatherproof panels containing, photographs, maps, and written information relating to a specific State Forest. The Division of Lands & Forests in Region 7 is moving forward with a proposal to establish an Information Kiosk at each State Forest in the Region (9 Counties). All State Forests addressed in this UMP have Information Kiosks. Below is a listing of the forests and the kiosk location.

Forest	Location
Chenango RA #3	Charles Wicks Road.
Chenango RA #4	Dr. Crouch Road & Public Forest Access Road
Chenango RA #7	Shapley Road.
Chenango RA #8	Skinner Hill Road.
Chenango RA #14	Public Forest Access Road.
Chenango RA #29	Entrance of Public Forest Access Road.
Chenango RA #31	Proposed for South entrance parking lot.

Chenango RA #37	Kendricks Road.
Chenango RA #38	Hunt's Pond Road.

4. Impoundments

There are three earthen dams on the Unit which were constructed to create ponds. One dam is located on the south side of Jeffrey Pond on the Whaupaunaucau State Forest. A second dam is located on the south side of Puckerville Pond on the Wiley Brook State Forest. The third dam is located on the south side of Hunts Pond. All of these dams are routinely maintained. In 1997, maintenance work was performed on the dam at Jeffrey Pond. The work included dredging the pond, replacing the spillway pipe, and installing new box service spillways. At this same time, the existing fish (mostly black bass) were removed from the pond and it was restocked with trout. The Hunts Pond dam was constructed in 1940. It is a Class-A, low hazard dam with a height of 23' and a length of 125'. It was last inspected in 2003. This dam is equipped with a device designed to prevent beavers from blocking the outlet pipes.

Historically, there was a fourth earthen dam on the Unit. In 1956, the State leased the rights to flood 15 acres adjacent to Stand A-21 on the Wiley Brook State Forest for 15 years. A dike was constructed within stand A-21 to create an impoundment, "as a habitat and breeding ground for furbearing quadrupeds, as a game management area, or as a refuge for the feeding, breeding, and resting of wild waterfowl". The lease expired in 1971 and further maintenance of the facility has been suspended. The dike was allowed to deteriorate and the water level is now controlled by beaver activity.

5. Shale Pits

There are several shale pits on the Between Rivers Unit. Most of these pits were created when the Public Forest Access Roads were being constructed. Today, shale is seldom removed from these pits. Shale pits on the Between Rivers State Forests are located within stand A-20 on Chenango Reforestation Area (CRA) #4, A-22 on CRA #14, A-6 on CRA #29, B-3 & B-36 on CRA #31, and A-4 on CRA #38. The most popular activity at these sites is target shooting. Some of the shale pits may be posted against target shooting due to past law enforcement issues. 6NYCRR 190.8(ab) prohibits target shooting at breakable objects.

6. Parking Areas

Several unpaved, pull-off areas are located on each of the State Forests. Additionally, there are designated parking areas with hardened surfaces.

Forest	Location of Pull-off Areas	Parking at Designated Areas
Chenango RA #3	Along Charles-Wicks & Parker Smith Roads.	Kiosk site
Chenango RA #4	Along Access Road & Brooksbank Rd.	Kiosk site
Chenango RA #7	Along Shapley Rd.	Kiosk site Parking Quarry Rd
Chenango RA #8	Church Rd., Warren Rd., Skinner Hill Rd., West Brook Rd.	Kiosk site King Settlement Rd
Chenango RA #14	Along Access Road.	None.
Chenango RA #29	Along Access Road.	None.
Chenango RA #31	Along Access Road.	South Entrance & at Jeffrey Pond
Chenango RA #37	None.	Kiosk site.
Chenango RA #38	Along Hunt's Pond Road.	Kiosk site and the parking area on the former State Park property.

7. Gates

There are six metal gates on the Unit.

Forest	# of Gates	Location	Purpose
CH-3	1	Haul Road Entrance - off Charles Wicks Road	Limit Access - Administrative use only.
CH-4	None	n/a	n/a
CH-7	1	Puckerville Pond Dam	Protect Dam. Public Access provided with permit.
CH-8	1	Haul Road Entrance - off Skinner Hill Road	Limit Access - Administrative use only.
CH-14	None	n/a	n/a
CH-29	1	Access Road Entrance	Restrict winter access.

Forest	# of Gates	Location	Purpose
CH-31	2	Post Road & Access Road Entrance	Restrict winter access.
CH-37	None	n/a	n/a
CH-38	1	Near boat launch for Hunts Pond	Restrict interior access.

L. PROPERTY USE AGREEMENTS

1. Deeded Rights-of-Way, Utility R.O.W., Easements, and Permits

Some of the information listed below may pertain to utility lines on State Forests where there is no evidence of a legal easement. In the event that no evidence of a legal easement exists for a utility line on State Forest property, the Department will work with the utility company to determine if an easement exists and, if an easement does not exist, work with the utility company to resolve the matter.

Chenango RA # 3

Proposal D was acquired subject to a 16.5 foot wide ROW along its western boundary, but the ROW was appurtenant to the lands acquired later as Proposal N. The acquisition of Proposal N eliminated the ROW encumbering Proposal D.

Chenango RA # 4

The Chenango County Department of Highways has concurrent use and occupancy of two parcels of land that are 0.415 acre and 0.302 acre in size located on Proposal A. The parcels are along the north line of Proposal A and the west side of Quarry Road and were utilized for purposes associated with the relocation of County Road No. 35.

A 0.88 acre schoolhouse lot at the northwest corner of Proposal B (intersection of Brooksbanks & Puckerville Roads) is excepted from State ownership.

Chenango RA # 7

At the time it was acquired in 1988 this Proposal M was subject to an oil and gas lease held by Ohio Oil & Gas and recorded in Liber 607/Page 579. The abstract doesn't contain any details about the lease. The grantor's larger property was also subject to easements held by NYSEG and the Chenango and Unadilla Telephone Corporation, but no lines were located on Proposal M.

Chenango RA # 8

The deed into the State for Proposal A reserves a 0.1 acre burial ground that is labeled "Dyer Cem." on the NYSDOT quadrangle. Our files include a map with handwritten notes dated 1939 that state the right-of-way to the cemetery is .38 links (25 feet) wide and marked on each side by large iron pipes. The ROW is noted as starting at the cemetery gate and running to a point on the road that is 629.64 feet from the northwest corner of the "Skinner reserve." A resurvey in 1992 measured the cemetery at 0.124 acres.

In 1970, the Department granted NYSEG permission to install a utility pole (#P-13S) on the east side of Skinner Hill Road, within Proposal H, which is now designated as stand #A-9 of Chenango RA #8.

In 1979, the Department granted NYSEG permission to install 1,747 feet of new utility line with poles along the west side of Skinner Hill Road, within Proposal L of Chenango RA #8.

In 1982, the Department granted the Chenango & Unadilla Telephone Company permission to install 415 feet of buried telephone cable along the north side of Sheridan Hill Road, within Proposal N of Chenango RA # 8.

A private survey of lands adjacent to Proposal A showed an electric line running along County Road 29. A 1992 resurvey of Proposal A also found encroachments around the private inholding on the north line of Proposal A.

The State's deed for Proposal L is subject to a ROW running from Skinner Hill Road west to the northern reserve of "Reynolds." The location was subject to approval by the District Forester. In 2003 two roads were present and the private owner was proposing to divide the reserve into lots for development. The owner was informed that one road would be designated as the legal access. The ROW included the right to run utilities along it. This current access is located in approximately the mid-section of stands # B-6 and B-32.

In 1986, the Town of Columbus Clerk could not find any formal notice of abandonment for Church Road which crosses or borders Proposal G, M and N. A 1992 survey map of Proposals A and E notes that a portion of West Brook Road adjoining and running through Proposal A had been qualified abandoned when its intersection with County Road 29 was reconfigured. The map also notes that Miller Road along the south line of Proposal E was also qualified abandoned. A 1992 survey map of Proposal H and I notes that the road dividing those proposals had been qualified abandoned by the Town of Sherburne on 8/15/1976. Courts have ruled that filing of the certificate of abandonment by a town clerk is a ministerial act and is not determinative of whether the road has actually been abandoned. By operation of law, a road is abandoned by non-use and lack of maintenance for at least 6 years. Maps are evidence with respect to existence of a road.

Map 4507 shows Town of New Berlin Road # 26A (a.k.a. Miller Road) or an extension of it, crossing the southern section of Proposal E to reach private lands to the east.

Chenango RA # 14

The State's deed for Proposal A is subject to the reservation of the right to draw water as set forth in deed Liber 202/Page 130 dated 1/4/1890 from Nelson and Harriet E. Sage to Jay Sage for use on lands owned in 1931 by Solomon Carnahan (to the east of Proposal A) with the right of ingress and egress and the right to repair or replace the conduit.

The State's deed for Proposal B is also subject to the rights conveyed in deed 202/130 mentioned above, if such rights affect the land that was acquired as Proposal B. The location of the spring is not shown on Map 4356.

The State's deed is subject to the right to maintain a pipeline "as at present in use" from a spring on Lot 28. The location of the spring is shown on Map 4530.

Chenango RA # 29

None.

Chenango RA # 31

The State's deed is subject to the right to pipe water from two springs on Proposal B.

A Chenango County Forest is surrounded by Proposal A, D, E, and G of Chenango RA #31. At various times the county lands have been proposed for acquisition, either directly or through land exchange, but none of the proposals have proceeded because Section 219 of County Law is worded so that the County would have to donate the land to the State.

A parking area at the southern edge of the State Forest is plowed during the winter through a verbal agreement with the Town of North Norwich. This allows public parking for access to the Nordic ski trail system on the forest.

Chenango RA # 37

None.

Chenango RA # 38

In 1982, the Department granted the Chenango & Unadilla Telephone Company permission to install buried telephone cable along the north side of Buttermilk Falls Road, the north side of West Hill Road, and the east side of Hunt's Pond Road for the entire length of these roads as they adjoin the Hunt's Pond State Forest.

An above ground utility line with poles and anchors was present on the property prior to State acquisition. The line is currently operated and maintained by NYSEG. Department files contain a memo stating that the easements for the power lines along the roads are on file in Liber 324/Page 78-104 and that those affecting the State Forest start on page 82.

2. Property Reservations

Forest	Reservation Type	Proposal (Survey Reference)
Chenango RA # 3	spring & water	H
Chenango RA # 7	spring & lane	D
Chenango RA # 7	0.004 acre cemetery	E
Chenango RA # 8	0.1 acre cemetery	A
Chenango RA # 8	spring	L
Chenango RA # 8	spring	O
Chenango RA # 14	water	A
Chenango RA # 14	spring	D
Chenango RA # 31	spring & water	B

3. Revocable Permits

The conveyance of an easement cannot be accomplished through the issuance of a TRP. The Department will work with the utility company to determine if an easement exists and, if an easement does not exist, work with the utility company to resolve the matter.

Chenango RA #3
A TRP was issued in 1981 to Unadilla Valley Telephone Corp. for a buried telephone cable along Hohreiter Road through Proposals B and I.

Chenango RA #4
A TRP was issued in 1984 to CTC of New York for a buried telephone cable along Quarry Road through Proposal A.

Chenango RA #7
A TRP was issued in 1975 to NYSEG Corporation for overhead power lines along Ives Settlement Road (now Quarry Road) through Proposals C and G.

A TRP was issued in 1979 to NYSEG Corporation for overhead power lines along Basswood to Ireland Corners Road (now Puckerville Road) through Proposal I.

A TRP was issued in 1987 to CTC of New York for a buried telephone cable along Shapley Road through Proposals A and E.

A continuous TRP was issued in 2003 to the Village of Oxford Fire Department to install and maintain a dry hydrant to draw water from Puckerville Pond in Proposal F.

A Memorandum of Understanding with the Chenango County Department of Emergency Management exists for the maintenance and use of a rain gauge located on Proposal I.

4. Uses of State Lands Without Permits or Easements

Chenango RA # 3

Overhead power lines exist along Hohrieter Road through Proposals B and I. There are no records of permits or easements associated with these lines.

Chenango RA # 4

Overhead power lines along Puckerville Road through Proposal B. There are no records of permits or easements associated with these lines.

A landowner to the west of Quarry Road was reported to be crossing state land to reach fields on his property. In 1999, there was a proposal to initiate discussion of a land exchange, but there is nothing further in our files. There is no legal access from Quarry Road heading in a westerly direction across the State Forest to the private land, listed as Lot 67 on the original Proposal Map for Chenango Reforestation Area #4.

Chenango RA # 7

Overhead power lines along Shapley Road through Proposals A and E. There are no records of permits or easements associated with these lines.

Map 11363, which was completed in 1996, shows an electric line utility pole located on Proposal G along Hoffman Road. Driveways on South side of Hoffman Road cross the state boundary.

Chenango RA # 8

A private survey of lands adjacent to Proposal A showed an electric line running along County Road 29. A 1992 resurvey of Proposal A also found encroachments around the private inholding on the north line of Proposal A. Map 4507 shows Miller Road or an extension of it crossing Proposal E to reach private lands to the east.

A 1992 resurvey found a gravel drive and shed to be encroaching on Proposals H and I.

Chenango RA # 14

In 1996, a developer proposed to improve the "abandoned" town road that forms part of the northern boundary of Proposal A. It was recommended that the developer obtain a TRP and be made aware of the continued right of public and administrative access over the road.

The 1912 Everts atlas and other records show Branch Road running west from County Road 23 and coming to a dead end approximately at what is now the southwest corner of a private inholding bordered by Proposal B, C, D and F. This is the historic legal access across State land to this private inholding. Branch Road is in an unusable condition where it diverges from the PFAR. The owners of the private inholding have the right to upgrade Branch Road to provide year-round access to their properties. A Public Forest Access Road now connects the dead end section of Branch Road to Pat Farley Road. This Public Forest Access Road is owned and maintained by the State of New York. It is designed for seasonal access only. It is not plowed in winter. The owners of the private inholdings have apparently used the Public Forest Access Road as the sole access to their properties since Branch Road deteriorated into an unusable condition. In 1991, one or more of the owners petitioned the Town of New Berlin to plow the road for year-round access and proposed a concurrent use and occupancy agreement between the DEC and the Town. The State considered this proposal, however, by statute; the ownership of the Public Forest Access Road would be transferred from the State of New York to the Town of New Berlin once the road has been maintained by the town for a period of ten years. The Department believes that continued State ownership of this road is necessary to accomplish the management objectives on this property, and is not considering a concurrent use and occupancy agreement.

The NYSDOT planimetric map shows a gauging station on a stream at or near the east line of Proposal B, but there is no record of it in our files.

Chenango RA # 29

A portion of the south line of Proposal C was surveyed and marked sufficiently to support the resolution of a timber trespass and fence encroachment, but the map was not finished and therefore, the file is still active.

In 1997, at least one timber trespass was made onto the State Forest along the southern boundary of Proposal C.

Chenango RA # 31

Map 6443 shows 15± acres of Proposal G being subject to the life-use of Ray Post. The parcel was acquired in 1962 and the deed makes no mention of life-use.

Chenango RA # 37

A 1992 resurvey found a utility pole, anchor and overhead wire on Proposal A on the east side of Kendrick's Road. There is no record of an easement in our files.

Chenango RA # 38

No issues.

M. FOREST HEALTH

There are many species of insects and diseases, as well as pollutants, which 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. 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.

b. 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.

c. 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 from 2004 through 2009 have brought heavy infestations of the forest tent caterpillar to localized areas in central New York. Numerous patches of forest canopy were defoliated in Chenango County during the summers of 2007, 2008, and 2009. Many of the trees, especially sugar maple, did not survive the consecutive defoliations.

d. 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.

e. 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.

f. 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.

g. 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.

h. 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 central Massachusetts as well as 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.

i. 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 tens of millions of ash trees in southeastern Michigan alone, with tens of millions more lost in Illinois, Indiana, Kentucky, Maryland, Minnesota, Missouri, New York, Ohio, Ontario, Pennsylvania, Quebec, Tennessee, Virginia, West Virginia, and Wisconsin. 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. Quarantine zones have been established to restrict the transportation of infected wood. EAB was first discovered in New York State in 2009, at a site in Cattaraugus County and has since been found in Steuben, Ulster, Monroe, Genesee, Livingston and Green counties. EAB will likely become established throughout the state within the next 10 years, unless an effective control is discovered.

j. 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.

k. 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.

Preventing the spread of invasive insects. Invasive insects, such as the Asian longhorned beetle and the emerald ash borer, have the potential to cause widespread damage to the forest resources of New York. One of the most effective ways to prevent the spread of these insects is to not transport firewood beyond the localized area of its origin. Invasive insects will harbor inside wood and the transportation of firewood can inadvertently expand the territory of these insects. The Department has developed a regulation (6 NYCRR Section 192.5) which prohibits the import of firewood into New York, unless it has been heat treated to kill pests. The regulation also limits the transportation of untreated firewood to less than 50 miles from its source. Additionally, the Department may issue a quarantine for certain counties to prevent the

spread of invasive insects once they have been confirmed. The quarantine order restricts the transportation of **regulated articles** outside of the designated boundaries of the quarantine.

2. Diseases

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. 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 area of the Between Rivers Management Unit.

c. 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, 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.

d. 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 are present on several of the Between Rivers forests, but it is rare for a tree to survive long enough to attain a stem diameter greater than six inches. A 14" diameter American Chestnut tree was growing on the Wiley Brook State Forest in the mid-1990's, but it has since died from the blight.

3. Pollutants

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. Acid precipitation leaches nutrients from the soil

damaging forest health. Excess atmospheric nitrogen may also adversely affect tree growth. 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 carbon dioxide (CO_2) in the atmosphere. CO_2, 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 CO_2 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 CO_2.

4. Other Significant "Pests"

a. Black flies (*Simulium nigricoxum*) – Historically, within New York State, high populations of this insect were always associated with the Adirondacks. 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 on your body 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.

For further discussion and assessment of the landscape surrounding the unit, please see Chapter 6 of the Strategic Plan for State Forest Management. The Strategic Plan can be found online at http://www.dec.ny.gov/docs/lands_forests_pdf/spsfmfinal.pdf.

III. 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 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.

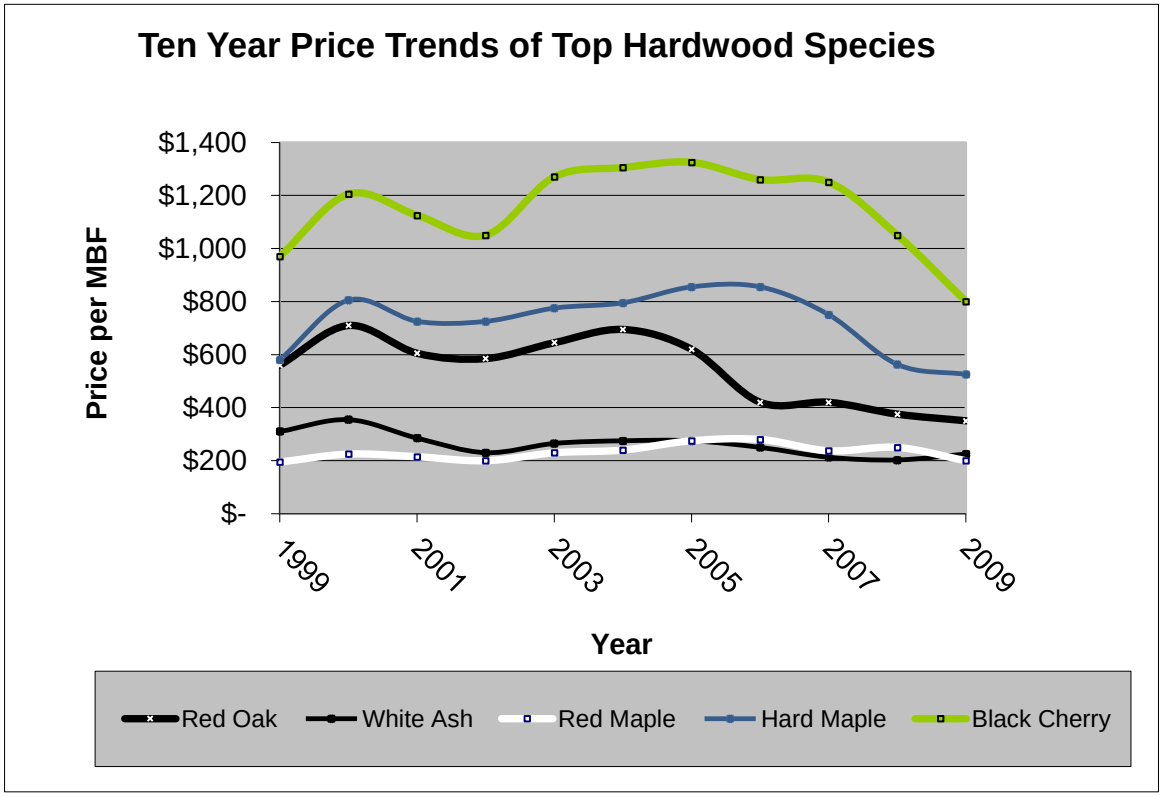
The historic ownership of the State Reforestation Areas has allowed for several generations of resource managers to consider long range planning with a commitment to quality natural resource management. Societal views of natural resource management continually demand higher standards for sustainable practices and responsible management for the betterment of all people. 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, spruce sawtimber and 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 1995 season through the 2009 season. The following graph shows the most common price or the median 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.



Source: Stumpage Price Reports

In the Region, there is a strong demand for hardwood sawtimber from regional sawmills. The price paid for high quality hardwood logs throughout New York and the northeast steadily increased to historic high levels until the recent downturn in the economy, which lowered stumpage prices to the level associated with the mid 1990s. High quality hardwood stumpage prices depend on new home construction, especially homes with high-end cabinetry and flooring. Demand for hardwood lumber and the coinciding hardwood stumpage are expected to increase when the state of the economy increases.

There is limited demand for hardwood cordwood and most of this stumpage is sold within local firewood markets. Prices have remained stable during the last ten years. Recent requests through the Department's homeowner firewood program in Chenango County have increased. 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 1999 to 2009, the price for red pine sawtimber has increased 8% from $60 to $65 per thousand board feet. In 2010, some buyers were paying as much as $160 per thousand board feet for standing red pine on State Forests in Chenango County. 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 pine, 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 have 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.

During the same reporting period, there has been a notable increase in the supply of Norway spruce sawtimber stumpage from State land. Although stumpage is typically purchased by local firms, the majority of logs are transported to Canadian mills for processing. The stumpage reports indicate that prices for spruce sawtimber have increased over 10% from an average of $90 to $100 per thousand board feet during the same ten year reporting period.

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 in the paper 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. Now increased shipping costs to more distant markets have reduced the economic feasibility of marketing pulpwood for many local contractors, although there may be new markets available for "green certified" pulpwood. The demand for spruce pulpwood is projected to remain stable.

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 intended 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 the lack of newly acquired agricultural lands 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.

B. Mineral Resources

Mineral deposits available in central New York State include shale, sand, gravel, bluestone, salt, oil, and natural gas. There are presently no mining contracts, permits, or other mineral resource operations on any of the State Forests of this Management Unit. Gravel and hard rock resources exist in the areas surrounding the Unit, and operations to extract these resources are located on privately-owned land.

There are several gravel mining operations located along the NYS Route 12 corridor between the villages of Sherburne and Oxford. 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 Management Plan.

Historical Natural Gas Exploration and Production

The drilling of the first commercial oil and natural gas well in the United States occurred in northwestern Pennsylvania during the middle 1800s. The results of this drilling activity carried over into neighboring New York State. Eventually this activity extended from western New York to areas surrounding what is now the Between Rivers Unit. The first well drilled in the UMP area was the Norwich Well #1 drilled in 1888 approximately three miles northwest of the Lyon Brook State Forest (Chenango **Reforestation** Area #29) in the Town of Guilford. From 1949 to 1960, several additional wells were drilled generally east of the UMP area in Otsego and northern Chenango Counties less than four to six miles from the Unit. These wells were all unsuccessful and plugged and abandoned.

In 1974, Amoco Production Company drilled several wells within two to six miles of the Unit in the Towns of Oxford and Guilford, Chenango County and to the east in the Towns of Morris and Unadilla, Otsego County. These wells were drilled to approximate depths of 4000 to 6600 ft. through the Oneida Sandstone. These wells were unsuccessful in establishing commercial gas production in the area and were plugged and abandoned.

Recent Natural Gas Exploration and Production

The closest commercial natural gas production to the Between Rivers Unit is in the Towns of Smyrna, Preston, and Oxford, Chenango County approximately six to seven miles west of the Unit. Gas wells have been recently permitted and drilled by Norse Energy Corporation (formerly Nornew) to the west of the Unit targeting the Oneida and Herkimer Sandstones. Gas production has been developed from the Oneida and Herkimer Sandstones in the Beaver Meadow and Hawley Brook Fields located approximately seven miles northwest of the Whaupaunaucau State Forest (Chenango State Reforestation Area #31) in the Town of Smyrna. Wells in these fields have been producing since 2006. Drilling permit applications have been recently received and permits issued to Nornew for wells to the east of these fields closer to the Unit. Recent drilling activity in these fields and other areas west of the Unit has focused on horizontal wells targeting the Herkimer Sandstone.

Several drilling permit applications were submitted by Norse to the Department in 2008 for wells targeting the Marcellus Shale in the Towns of Coventry, greater than four miles southwest of the Wiley Brook (Chenango State Reforestation Area #7), and Plymouth, approximately five miles west of the Whaupaunaucau State Forest, in Chenango County. The Parker #1 well, located in the Town of Oxford approximately four miles west of the Lyon Brook State Forest, was recently completed in the Marcellus Shale at an approximate depth of 3000 ft.

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 2009, 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 in the Strategic Plan for State Forest Management, which can be found online at http://www.dec.ny.gov/docs/lands_forests_pdf/spsfmfinal.pdf.

For further information contact the NYSDEC Mineral Resource staff, Region 8, 6274 East Avon-Lima Road, Avon, New York 14414-9591.

C. Biological Resources

An important variety of biological resources exist on the Between Rivers Unit. Conservation of those resources is an increasing significant societal demand. Varied habitat types across the forests provide diverse conditions to an array of species. No comprehensive study has been made on the forests for a wholly inclusive list of species, but recognized fish, birds, mammals, reptiles, and amphibians are listed in several included appendices. More than 100 species of understory plants and over 20 tree species are known to exist on the Unit as well. In 2004 the New York Natural Heritage Program (NHP) which is a partnership between DEC and The Nature Conservancy conducted an inventory for rare plants, animals, and significant ecological communities on these forests. That inventory is used to help identify, track, protect, and manage biodiversity. Through the survey a significant ecological community and a population of salamanders of special concern were identified. No rare plants were documented for the Unit (see also the Rare Species and Significant Ecological Communities section).

Although the resources of the Between Rivers Unit will be managed for multiple interests, biodiversity is an important concern that will be maintained and enhanced where possible. Timber harvests for utilization will be done on a sustainable basis with consideration to protect any special biological resources. It is recognized that some of the existing biological resources cannot be sustained. Introduced plantations of red pine, Norway spruce, Scotch pine, and Japanese larch are all non-native species that were successful for their original intents of soil stabilization and the production of forest products. These plantations often provide habitat as a substitute to native softwood species such as white pine, hemlock, and red spruce. However, it is difficult, and often infeasible to regenerate these plantations, particularly where native vegetation is naturally replacing these introduced species. The extent and occurrence of these species will surely decrease and may completely disappear from these forests eventually. The introduction and spread of **invasive species** is a significant problem that threatens nearly every habitat type on both public and private land across New York. Invasive species frequently take over and preclude the survival of many native species or drastically reduce their occurrence. Proactive

control including the use of pesticides is most often the only successful way to address these species. 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, mountain biking, cross country skiing, trapping, birdwatching, canoeing/kayaking, target shooting, wildlife observation, fishing and horse drawn carriage riding. Although the Master Plan was never finalized, input received from the public at these meetings has been incorporated into this plan and the SPSFM, which should be read in conjunction with this UMP.

In New York State, the demand for hunting, as measured by license sales, has declined 14% since over the 15 year period of 1985 through 2000. 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 regions.

The Between Rivers forests will provide the public with opportunities for hunting, fishing, nature observation, snowmobiling, camping, cross-country skiing, hiking, mountain biking, and other similar activities. The opportunity for many of these activities will be offered on a primitive scale. A cross nordic ski trail system is maintained on the Whaupaunaucau State Forest. While the trails are not groomed, they are kept clear of downed tree limbs. Many of the Whaupaunaucau forest trails also serve the interests of mountain bikers. Sections of snowmobile trails cross the Wiley Brook, Lyons Brook, and Hunt's Pond State Forest. The local snowmobile clubs have permission to groom and maintain these trails through an AANRA. The Finger Lakes Hiking Trail passes through the Wiley Brook and Basswood State Forests. This trail is maintained by the local chapter of the Finger Lakes Trail Club.

For further discussion of the DEC's recreation goals and objectives on State Forests, please see Chapter 5 of the Strategic Plan for State Forest Management, which can be found online at http://www.dec.ny.gov/docs/lands_forests_pdf/spsfmfinal.pdf.

IV. Management Constraints on the Unit

A. Physical Constraints

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

B. Administrative Constraints

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

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. Department Rules, Regulations and Laws

Chapter 7 of the Strategic Plan for State Forest Management identifies the Department's Rules, regulations and laws governing management activities on the Unit.

V. VISION STATEMENT

We believe that the Between Rivers State Forests contain numerous valued assets which contribute to the welfare of the community. The responsible management of these forest resources requires a commitment to environmental quality, resource sustainability, and community involvement. Our stewardship of these lands is rooted in this commitment and the forests of the Between Rivers Unit will continue to provide public benefits for many generations.

VI. 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 Between Rivers 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

- 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.) Less than 20% of the High Allegheny Plateau ecoregion, in which this unit is located, is made up of these cover types.

- 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 material.
- **Natural regeneration** will be favored over planting. Many of the plantations of pine, spruce, and larch were established on the Between Rivers forests in the 1930s. As timber from these plantations has been harvested, it is common for natural hardwood tree seedlings to become established in the understory. Although the coniferous plantation species are valuable, it is difficult to artificially re-establish these species with the competing natural hardwood regeneration. Therefore the natural regeneration is typically favored. In some areas, spruce will regenerate naturally. 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 evaluating all other management alternatives and determining a clear, environmental benefit to the use of a specific pesticide. The Department has successfully used herbicides in recent years to control both invasive and undesirable plant species in the forest. An example of an exotic, invasive plant species is pale swallow-wort (*Vincetoxicum rossicum*). This plant has been discovered on several forests within Chenango County. It has the potential to monopolize sections of the forest and prevent the development of native vegetation. An example of undesirable forest vegetation is American beech (*Fagus grandifolia*). Although mature beech trees are very much a desirable component of our forests, beech saplings can sometimes become a monoculture in the forest understory and suppress the establishment of a diversity of other species. In these circumstances, a decision must be made on the proper course of action for achieving the management objectives. Mechanical means have been used in the past and will continue to be used in the future to control certain invasive and undesirable forest vegetation. Pesticides containing active ingredients such as glyphosate or triclopyr may also be used. The factors influencing the decision include soil types, slopes, proximity to water, proximity to sensitive features, vegetation size, density, area size, influences to wildlife and habitat, and the success of previous treatments under similar conditions.
- Efforts will be made to protect the forest from exotic, invasive plant species.
- The resources of timber, water, wildlife, recreation, and other environmental interests on these lands will be managed on a sustainable basis. Some of the practices that promote **sustainable forest management** that are incorporated into this plan include: retaining coarse woody material, 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.

- 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.

- This management plan shall include goals and objectives consistent with sustainable forestry criteria established by the **Forest Stewardship Council** and the Sustainable Forestry Initiative**.**

The Relationship Between Deer Populations and the Vegetative Composition of the Forest.

It is important to understand that the forest is an ecosystem and, therefore, not simply a group of trees. The forest is the combination of all of the physical and biological elements in the environment and their interrelationships. One of the more prominent relationships in the forest exists between white-tailed deer and understory vegetation. The understory layer of the forest (between ground level and about 4.5' above the ground) is the food source for white-tailed deer. It should be noted that agricultural crops are also a significant food source for white-tailed deer and the proximity of agricultural lands to the forest affects the impact of deer browsing on both properties. In the forest, deer have "favorite foods". Vegetation that is most palatable to deer includes sugar maple, white ash, and red oak, while vegetation that is less palatable to deer includes American beech, striped maple, and hophornbeam. When deer populations are high, the forest understory can be dominated by species that are less palatable to the deer. Many of these species interfere with the establishment and growth of native hardwood tree species. The extremely high densities of these interfering vegetation are what causes forest managers to classify them as "undesirable". New York fern, hay-scented fern, American beech, striped maple, and hophornbeam are the primary species of interfering vegetation on the Between Rivers Unit. In forest stands that have a mature overstory of sugar maple, black cherry, white ash, or red oak; the understory can be dense with American beech saplings and hophornbeam. Forest managers would prefer an understory in such stands that is primarily composed of the same species as the overstory. The reasons why interfering vegetation commonly dominates the understory of Northern hardwood stands in this area are rather complex and include timber harvesting techniques and the adaptive traits of certain tree species, but the white-tailed deer population plays a pivotal role. Therefore, the challenge is to find a method of balancing these elements so that desirable forest regeneration can become established. Managing the white-tailed deer population is necessary to maintain species diversity and to provide a sustainable timber resource.

The Department establishes acceptable limits for deer populations based upon input from the Deer Management Task Force for each Deer Management Unit (DMU). The Between Rivers Unit is within DMU number 7F. The present deer population is approximately 23 deer /square mile including approximately 3.3 bucks/square mile. Deer populations at this level impact forest

vegetation by restricting the growth and development of hardwood seedlings. The Department expects the deer population to increase slightly in the near future.

In 2006, the Department conducted a study to evaluate the growth and development of forest regeneration after **thinning** in hardwood stands on State Forests in Madison, Chenango, and Broome Counties. The 2006 Regeneration Study showed that traditional individual tree selection and small group selection silvicultural practices in native hardwood stands have failed to regenerate adequate quantities of desirable species. In fact, it verified that interfering vegetation is proliferating in the understory of many hardwood stands. The study showed that repeated browsing by white-tailed deer is limiting the growth and establishment of species such as hard maple, white ash, and red maple as well as other native tree species. At the same time, sapling species such as American beech, striped maple, and hophornbeam are thriving since the white tailed deer find them less palatable. Repeated browsing by deer often results in the proliferation of interfering woody and herbaceous vegetation in the forest understory. These interfering species are either not preferred by deer or are resistant to the effects of repeated browsing. Furthermore, the presence of interfering species above threshold stocking levels will prevent the establishment of other tree species, resulting in greatly reduced vegetation diversity and severely limited potential for future timber production (Bashant & Nyland, et al., 2005). Excessive deer browsing can also reduce understory plant species diversity. Forest herbaceous species sensitive to deer **browse** include trillium, Canada mayflower, and Indian cucumber. Furthermore, excessive deer browsing can have secondary impacts in the forest, such as a reduced diversity of breeding birds, due to the altered structure of understory vegetation.

To address this issue, the Department will use the following strategies for achieving successful regeneration:

- Utilize the Group Selection method of timber harvesting in addition to traditional Individual Tree Selection in forest stands designated for uneven-aged management.
Including the use of group selection along with individual tree selection will create larger canopy gaps, up to one acre in size. This will have a variety of benefits including the potential for more species diversity in the forest regeneration. Any regeneration that does become established in the larger gaps should grow at a faster rate, so that it can grow above the reach of deer more quickly.

- Increase the deer harvest on selected State Forests to temporarily reduce the deer population.
The Department will seek to develop a focused hunting program, open to the public, on selected State Forests through the Deer Management Area Assistance Program or other population reduction program administered by the Bureau of Wildlife. Temporarily reducing the deer population for a period of several years on select forests could provide a "window of opportunity" to allow regeneration to become established and grow above the deer browse level. This period of lower deer populations will also allow herbaceous understory species that are sensitive to deer browsing a period of recovery for growth and development.

- Remove interfering vegetation at select locations where it dominates the forest understory.

Where interfering vegetation exceeds threshold levels and limits the establishment of desirable tree species, a variety of methods will be used to reduce its dominance in the understory. These methods will include cutting of individual stems and **herbicide** application where necessary. Herbicides will only be applied where mechanical methods will not be effective. When herbicides are applied, the least toxic and most specific type of application will be used to achieve the desired objective. The preferred methods include backpack spraying of the foliage and applying herbicide to the cut stumps or bark of individual trees. The application methods will also include provisions for protecting future stand species diversity since the objective is not to eliminate all interfering vegetation, but to reduce its dominance to allow other species to grow. Application of the herbicides will be done according to the specifications of the label to protect water quality and impacts to non-target species. All herbicide applications will comply with the State Environmental Quality Review law and State regulations.

1a. Objectives for open land ecotypes.

Open land **ecotypes** 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 ecotypes 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 Between Rivers forests total approximately 115 miles in length. Much of the boundary adjoins roadways or private forest land, however, approximately 15 miles of the State Forest boundary form an edge with open privately owned land. The majority of this land is agricultural land.

Grass and shrub land habitats can diminish within the landscape if natural succession is allowed to occur. It is important to maintain some open land cover types within the landscape. Less than 1.7% of the forest cover on the Between Rivers Unit is open, such as shrub or grassland cover types. However, an analysis of the land cover within a 2 mile buffer distance of the Between Rivers State Forests shows at least 37% of this privately owned land is in an open cover type. Therefore, the local landscape does contain a significant amount of open land. If the landscape experiences a decline in this type of habitat in the future, actions will be considered to either create open land habitat on the Unit or acquire additional acreage that can be maintained as open land. Shrub land maintenance will include inspecting sites on a ten year cycle and removing trees when necessary to prevent succession.

1b. Actions for desirable open land ecotypes.

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

2.) Maintain **140** acres of open land on the State Forests. This will include **55** acres of shrub cover and **85** acres of grass cover.

1c. Objectives for riparian and wetland ecotypes.

The riparian and wetland ecotypes 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 (BMPs) for Water Quality to protect stream banks and prevent sedimentation from entering stream channels.

Protection of ponds, lakes, streams, spring seeps, classified wetlands, and unclassified wetlands will be guided by the DEC Division of Lands & Forests Management Rules for Establishment of Special Management Zones on State Forests (Version: June 2008 or revised).

No new access trails or recreational trails will be developed through any of these wetlands.

1d. Actions for desirable riparian and wetland ecotypes.

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

2.) Protect all C and D classified streams by establishing a 50 foot "no-harvest" buffer along both sides of the streams. The total acreage of the 50 foot no harvest buffer within the Unit is approximately 37 acres. Beyond the initial buffer, an additional 50 foot "restricted-harvest" buffer zone will be established. BMP's will also be implemented to protect the streams.

3.) Protect 576 acres of forest that is either non-classified open wetlands or non-classified forested wetlands, including two ponds, by establishing a 100 foot Special Management Zone adjacent to the wetlands. No timber harvesting will be allowed within the wetlands. At least 75% of pre-harvest basal area will be retained within the Special Management Zone.

4.) Protect 221 acres of forest that is either classified open wetlands or classified forested wetlands, including one pond, by establishing a 100 foot Special Management Zone adjacent

to the wetlands. No timber harvesting will be allowed within the wetlands. At least 75% of pre-harvest basal area will be retained within the Special Management Zone.

5.) Protect the water quality of Hunts Pond by managing the **40** acres within the three adjacent stands (B-44, 46, &48) as protection forests. No timber harvesting will be allowed within these stands, with the exception of tree removal for the maintenance of the designated campsites located within these stands.

6.) Remove 834 acres of forest described in the above-mentioned buffer zones, from silvicultural treatment. The soils, topography, and cover type of this acreage would otherwise be compatible with silvicultual treatments. The absence of disturbance within these buffer zones is intended to protect the water quality of the forests. This acreage does not necessarily conform to current stand boundary lines. The forest stands in which these buffer zones are located may be scheduled for silvicultural treatments. However, the buffered portions of these stands will be excluded from silvicultural treatments.

1e. Objectives for forest ecotypes.

Each forest in the Unit is divided into stands of trees or 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 **protection forest** 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 material (CWM). 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 Unit 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 Unit will be managed similar to the Late Successional Forest stands and will eventually achieve climax forest conditions.

1f. Actions for desirable forest ecotypes.

1.) Manage **416** acres as Late Successional Forest stands or Retention stands.

2.) Manage **29** acres for protection due to exceptional visual characteristics, recreation values, or historic significance

3.) Manage **118** acres for protection due to poor access or steep slopes

1g. 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 cut trees within the legal right-of-way. In some cases, the legal road right-of-way may be limited to the distance between maintained ditches instead of a measured distance, such as 3 rods. The Department requires municipalities to obtain a Temporary Revocable Permit (TRP) if they wish to remove trees larger than **3"diameter at breast height** (**DBH**), within the legal right-of-way.

1h. Actions for desirable road corridors.

1.) Manage **103** acres as road corridors and an additional **5** acres as shale pits.

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

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

1i. 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 food.

1j. Actions for desirable habitat improvement.

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

1k. Objectives for steep slopes and inaccessible sites.

Timber harvesting will not be permitted on steep slopes due to the potential for soil erosion. Log landings and clearings for other management activities will only be constructed on relatively level ground to limit the amount of slope modification. Sites having conditions suitable for management, but otherwise inaccessible due to adjacent riparian, wetland, or other protection zones, will be designated as incompatible with management activities. With these considerations, a total of 118 acres of steep slopes and inaccessible sites on the Unit will be protected by restricting management actions.

1l. Actions to protect steep slopes and inaccessible sites.

1). Timber harvesting will not be performed on slopes exceeding a 40% grade.

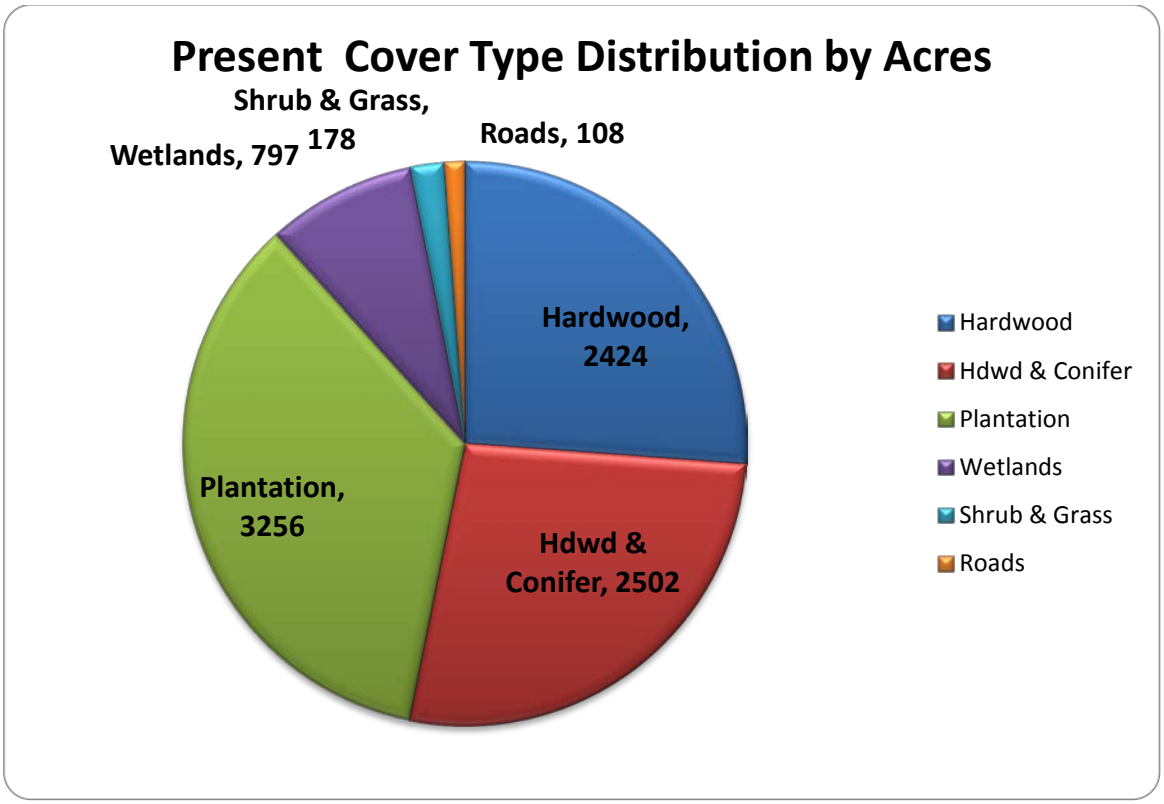
2). Log landings will not be constructed on slopes exceeding a 10% grade.

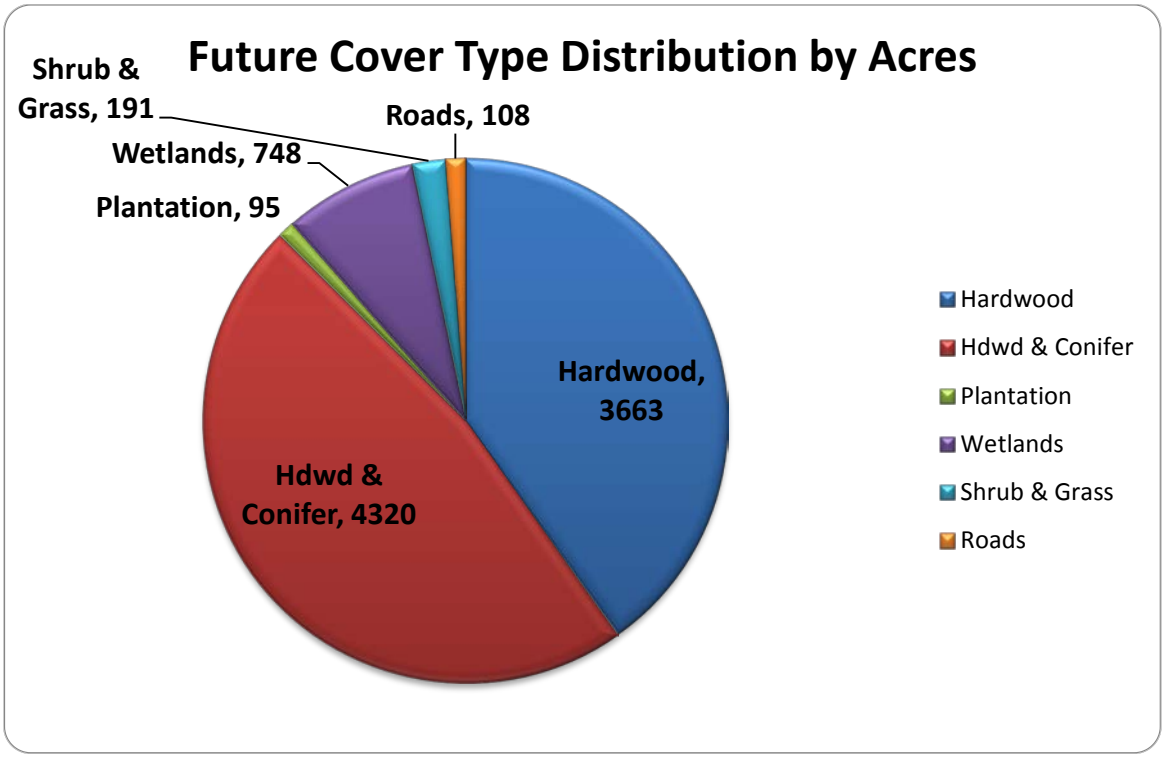
3). Unless the environmental benefit clearly outweighs the associated costs of establishing access to such sites, no management activities will be performed in areas of the State Forests that are considered to be otherwise inaccessible.

Summary of Ecotypes
Ecotype distribution and management objectives are presented in Table 4 and Figure 1.

Table 4. Present and Future Cover types

Vegetation Type	Present Acres	% of Unit	Objective Acres	% of Unit
Northern Hardwoods	2,418	26	3,657	40
N. Hardwoods & Natural Conifer	1,904	20	2,239	24
N. Hardwoods & Plantation Conifer	513	6	2,087	23
Plantation Conifer	3,256	36	95	1
Shrub, Apple, PH	93	1	106	1
Ponds & Wetlands	797	9	797	9
Grassland	85	1	85	1
Roads, Shale	108	1	108	1
Total	**9,174**	**100**	**9,174**	**100**


Present Cover Type Distribution by Acres
Shrub & Grass, 178
Roads, 108
Wetlands, 797
Hardwood, 2424
Plantation, 3256
Hdwd & Conifer, 2502
Hardwood
Hdwd & Conifer
Plantation
Wetlands
Shrub & Grass
Roads


Future Cover Type Distribution by Acres
Shrub & Grass, 191
Roads, 108
Wetlands, 748
Plantation, 95
Hardwood, 3663
Hdwd & Conifer, 4320
Hardwood
Hdwd & Conifer
Plantation
Wetlands
Shrub & Grass
Roads

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 Between Rivers 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 Between Rivers 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 mixed with 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.

2a. Objectives for even-aged management system.

Manage 57% of the forest acreage with the even-aged management system. Implement even-aged silvicultural practices to improve and regenerate both deciduous and coniferous tree species. Utilize extended rotation periods for long-lived species, such as white pine. Where pioneer hardwood species are available, utilize the coppice system, on a short rotation basis to maintain this cover type.

2b. Actions involving the even-aged management system.

1. Manage **2,289** acres as even-aged/ standard rotation, for Northern Hardwood or Northern Hardwood-Oak cover type.

2. Manage **2,048** acres as even-aged/standard rotation, for Northern Hardwood-Norway Spruce cover type and other plantation species mixes.

3. Manage **639** acres as even-aged/long-rotation, for Northern Hardwood-White Pine or Northern Hardwood-Hemlock cover type.

4. Manage **31** acres as even-aged/short rotation, for Pioneer Hardwood or Apple cover type.

5. Comply with the Department's "Retention Policy" when administering all applicable silvicultural practices.

2c. Objectives for uneven-aged management system.

Manage 28% of the forest acreage, across a variety of cover types, with the uneven-aged management system. Apply the uneven-aged management system with geographic considerations to establish corridors of continuous forest canopy on the State Forests.

2d. Actions involving the uneven-aged management system.

1. Manage **1,189** acres as uneven-aged, Northern Hardwood-Hemlock or Northern Hardwood-White Pine cover type.

2. Manage **1,330** acres as uneven-aged, Northern Hardwood or Northern Hardwood-Oak cover type.

3. Comply with the Department's "Retention Policy" when administering all applicable silvicultural practices.

The term **retention** refers to retaining certain elements of the original **stand structure** following silvicultural treatment. These elements may include coarse woody material (CWM), Legacy trees, snags, or cavity trees. Previous UMP's have incorporated the concepts of Variable Retention or Green Tree Retention and listed them as a separate silvicultural category. In 2010, the Department developed a Retention Policy which requires the retention of elements such as **biological legacy** trees or patches of live trees in all treated stands. Therefore, identifying this as a separate type of silvicultural practice is no longer applicable.

Retention is to be incorporated into all silvicultural treatments undertaken on State Forests

- Retain one live (Legacy) tree, 18" DBH per acre.
- Retain reserve trees and/or patches in even aged stands at time of regeneration harvest. In regeneration harvest areas 5 acres, retain 5% of the stand area in reserve patches that are 0.1-2 acres in size or 5% of the pre-harvest basal area in dispersed individual trees. Reserve patches and/or dispersed individual trees will satisfy all requirements for recruitment and cavity trees in even aged stands at time of regeneration harvest.
- Consider the habitat needs of Species of Greatest Conservation Need, Species of Special Concern, Threatened, or Endangered species known or likely to be found in or near the harvest area when deciding between dispersed and patch retention.
- Promote mixed stand conditions having both conifers and hardwoods where possible. In conifer plantations, retain at least 10% of the residual basal area in hardwood where possible. In natural stands, where possible retain native conifers in hardwood stands and retain hardwoods in native conifer stands so that they compose at least 5% of residual basal area**.**

Summary of silvicultural objectives

	5,007 acres even-aged
	2,519 acres uneven-aged
	1,540 acres protected
	108 acres other
Total:	9,174 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.

3a. Objectives for snag and cavity tree habitat.

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 material.

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.
Recruitment trees are live trees that are permanently retained to eventually develop into cavity trees, snags, and downed woody material within the stand.

3b. Actions for desirable densities of snag and cavity trees.

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

Tree Diameter	Snags	Cavity Trees	Recruitment Trees
11-17"	2	3	N/A
18+"	2	1	1

3c. Objectives for downed woody material.

Downed woody material 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. Typically, woody material is placed into two general size categories; material with a diameter greater than 4" and material with a diameter less than 4". The larger sized material is referred to as Coarse Woody Material (CWM) and the smaller sized material is Fine Woody Material (FWM).

3d. Actions to provide desirable amounts of downed woody material.

1). Retain at least 3 downed tree stems per acre that are at least 10" diameter at the small end and at least 16' in length.

2). Tops of felled trees will not be sold for firewood following sawtimber harvests, except along travel corridors or where aesthetics are important.

3). Minimum utilization limits will generally not be required.

4). Whole tree harvesting will not be permitted.

3e. Objectives for fruit and mast producing trees.

Species, such as wild turkey and grey squirrels depend upon hard mast-producing trees such as oaks, beech and hickories. Silvicultural techniques will be implemented to improve and regenerate mast-producing species for the benefit of wildlife.

3f. Actions to provide desirable densities of fruit and mast-producing trees.

1). Release and thin around mast producing trees in both commercial and non-commercial silvicultural treatments.

3g. Objectives for enhancing stand structure and promoting timber growth.

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

3h. Actions for enhancing stand structure and promoting timber growth.

1). Even-aged, pole sized stands will be scheduled for silvicultural treatments that release crop trees to promote their growth and that create openings in the forest canopy to stimulate tree regeneration on the forest floor.

3i. Objectives for winter timber harvesting.

The benefits of winter timber harvesting include; a limited disturbance of the site and soils, availability of winter **browse** for wildlife, and less interference with active nesting sites. When practical, winter timber harvesting will be encouraged.

3j. Actions to encourage winter timber harvesting.

1). Seasonal restrictions that limit harvesting to the winter only, will be included in timber sale contracts to protect soils, tree seedlings, and wildlife habitat when such protections are needed on a specific site. Seasonal harvesting restrictions will also be implemented, when it is practical, for timber sale sites that may not require such protection, but will benefit from winter harvesting.

3k. Objectives for water fowl nesting sites.

Constructed nest boxes increase the successful breeding opportunities for water fowl by providing protection of nest eggs from predators. The forests of the Between Rivers Unit will utilize nest boxes on sites with suitable habitat for water fowl.

3l. Actions for water fowl nesting sites.

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

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

3m. Objectives for nest sites of raptors on the forests of the Unit.

Certain raptors will construct tree nests in areas with an expanse of continuous forest canopy. These nest sites are rather uncommon in this area and they will be protected for the benefits of diversity that these wildlife species contribute to the ecosystem.

3n. Actions for protecting active nest sites of raptors.

1). The active nesting site of raptors that are listed as species of special concern will be protected. Many raptors in New York State are listed as species of special concern. Within the Unit, these may include: Sharp-shinned Hawk, Cooper's Hawk, Goshawk, and Red-shouldered Hawk. Each species has specific habitat requirements when nesting. Birds may occupy territory seasonally, or return to the same location yearly. During breeding season, usually between April and July, human activity near nests may disrupt breeding or cause the adult birds to abandon their young. DEC Bureau of Wildlife staff will be consulted and management activities will be adapted to minimize disturbance to birds that are known to be nesting on the Unit. Adaptive management strategies and actions will be developed and applied on a case by case basis. These strategies may place restrictions on timber harvesting and gas exploration activities and could include: set-backs, no-cut or no disturbance zones, or seasonal restrictions. For recreational uses, actions may include trail closures or rerouting of trails. When specific management strategies for individual species are developed, they will be incorporated into the management plan.

Licensed falconers will continue to be permitted to remove raptors from the Unit, in compliance with ECL Article 11 and 6 NYCRR Part 173. Licensed falconers seeking to remove raptors from State land are required to obtain a permit from the Regional Wildlife Manager. To obtain additional data on the distribution, abundance, and allowable levels of take, the Department's Wildlife Diversity Section requires the cooperation of the falconry community in providing the Department with the locations of known active nests. This should be done at the time of application for the taking of **eyas**. Additionally, the Wildlife Diversity Section recommends that Regional Wildlife Staff accompany the falconer when the eyas is taken to assess immediate impacts on the breeding pair. The falconer should be required to provide a minimum of 24 hours notice to both the Regional Wildlife Manager and Regional Law Enforcement Office to enable them to accompany the falconer to the nest site and witness the capture of the eyas. Falconers are required to leave at least one eyas within the nest and to install flashing near the base of the nest tree to protect against predators after an eyas is removed from a nest.

The Department will encourage monitoring and research on the status of the northern goshawks to ensure sustainable populations, and to ensure that our knowledge of the natural history and ecology of the raptors continues to increase.

4. Protection of Resources and Forest Inventory

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

4a. 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.

4b. 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, with an emphasis on early detection and rapid response where appropriate. This program includes elements of reconnaissance, analysis, and determination of thresholds and controls when necessary, emphasizing natural methods.

4c. Actions for insect & disease protection.

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

2.) Develop rapid and long term response capabilities at the local level to minimize degree of impact.

3.) Support research and technology transfer on significant insects and diseases and their impacts on forest resources.

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

4d. Objective for cultural resources protection.

Cultural resources on the Unit will be protected. These resources offer valuable information about past activities on the land and the lifestyles of those people who previously dwelled here. Farm sites, house foundations, stone walls, remnants of equipment, and other artifacts reveal cultural practices and provide clues about settlement practices. Preservation of these cultural resources will ensure that future generations will be able to experience the value of these items in their original settings. Cultural resources will be managed to preserve the integrity of individual sites such that the association between site features is not diminished. Stone walls, old foundation, and other resources will be protected from disturbances associated with timber harvesting, well site construction, and some recreational activities. 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, a designated crossing will be established. If damage outside of the designated crossing occurs, the forest product sales contracts shall require repair of the structures. In some cases, live trees may be removed from stone walls or foundations for the sole purpose of protecting the resource from damage that would otherwise result from the growth of the trees and their root systems.

On the Skinner Hill State Forest, a stone monument is located with the inscription, "On the 13th day of June 1822. At half past 10 A.M. on the spot where this monument stands Albert Allen Ainsworth son of Stephen & Debby Ainsworth was instantly killed by 3 large logs rolling over him. Aged 10 years 9 mo & 22 days". The State Museum has been informed of this monument and the Department will abide by the recommendations for protecting it.

4e. Objective for forest inventory and boundary line maintenance.

Periodic forest inventory every seven to ten 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 113.3 miles of boundary lines and surveying when necessary will maintain the integrity of the property lines.

4f. Actions forest inventory and boundary line maintenance.

State Forest	Last Year of Inventory	Next Year of Inventory	Last Year of Boundary Maintenance	Next Year of Boundary Maintenance
CH- RA #3	2004	2019	2006	2021
CH- RA #4	2003	2018	2007	2022
CH- RA #7	2003	2018	2007	2022

CH- RA #8	1999	2014	2004	2019
CH- RA #14	2000	2015	2004	2019
CH- RA #29	2003	2018	2007	2022
CH- RA #31	2000	2015	2004	2019
CH- RA #37	2007	2022	2009	2024
CH- RA #38	2012	2027	2004	2019

5. MINERAL RESOURCES

5 a. Evaluate the compatibility of surface disturbance associated with natural gas exploration, production, and development on the Unit.

Article 23, Title 11, Section 23-1101 of the Environmental Conservation Law and State Finance Law authorizes the Department to make leases on behalf of the State for exploration, production and development of oil and gas on State lands. Proposals to lease parcels of Department regulated State lands for this purpose will be considered following public notice in the Environmental Notice Bulletin (ENB), and in local newspapers.

Initial title review indicates that the State owns the mineral estate under all State Forests within the Unit, with the qualification that the mineral reservation may exist and no expressed or implied warranty of title is being offered in this Plan.

Prior to leasing any land in the Unit, a public meeting will be held to provide information about natural gas development specific to the Unit and receive comments. A 30-day public comment period will follow and the Department will consider all comments prior to making a decision. If the proposal meets the SEQRA thresholds and criteria setforth in the SPSFM, no further SEQRA is necessary. Otherwise, additional site specific SEQRA review will be necessary in accordance with the SPSFM.

If the Department decides to pursue leasing, a tract assessment may indicate that a no-surface occupancy lease is preferred to avoid potential conflicts with biodiversity conservation, public recreation, cultural resource preservation, and protection of water quality. The site specific conditions for limiting impacts on natural resources encompassed in this plan will be drafted by land managers in coordination with Mineral Resource staff and incorporated into contract documents. These conditions will include but not be limited to criteria for site selection, mitigation of impacts, and land reclamation upon completion of drilling.

A number of factors are considered to determine the compatibility of surface disturbance associated with natural gas development including, but not limited to the proximity to wetlands, riparian areas, recreation trails, unique ecological communities, and rare, threatened or endangered species. The slope of the terrain is also considered. (See Chapter 5 of SPSFM). Compatibility will be determined during field inspection and the tract assessment process on a case by case basis. Buffers will be established around sensitive features, such as streams or wetlands, and surface disturbance will not be allowed within these features or their associated

buffer zones. Individual tract proposal reviews for each forest within this Unit will be completed with determinations made regarding exclusion zones prior to awarding a lease. Any parcel designated for non-surface entry in the lease will no longer be subject to the review process detailed above due to the prohibition of surface disturbance(s). Exceptions to the tract assessments are possible if additional analysis, protective measures, new technology, or other issues warrant a change in compatibility status of an area.

Upon completion of drilling, well sites will be reclaimed with native vegetation to best serve the forest management objectives. Vegetation may include trees, shrubs, or grasses.

Access roads associated with well sites will not exceed 14' in width between ditches. On turns and intersections, roads will not exceed a total cleared width of 36'. Roads will be constructed with gravel over filter fabric to minimize soil disturbance. Upon completion of drilling, access roads will be closed to the public and reclaimed to a condition that maximizes the amount of desirable vegetative cover, while still allowing periodic access for maintain the well site. Site restoration and long term access will be authorized by a **Temporary Revocable Permit** (TRP).

The transportation of gas using distribution and collection lines (pipelines), and utility lines will be located adjacent to existing roads or the existing disturbed areas created to construct the well sites.

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 plan, the drilling pad development plan, management of disturbed soils at the well site, and the location of distribution, collection, and utility lines.

Requests to use State land to conduct geophysical (such as seismic survey), geochemical and/or surface sampling procedures will require an approved lease and a Temporary Revocable Permit. These procedures are necessary to determine the extent and distribution of natural gas fields. Sampling procedures are less invasive than development operations and will be subject to the Department's seismic testing guidelines. If the property is subject to lease agreement, only the lessee, or parties authorized by the lessee, can be issued a TRP for these purposes. Seismic testing will not be permitted prior to leasing.

The Unit is not being considered for underground 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, and will precipitate the UMP amendment process, including additional public meetings and full compliance with SEQRA. Any proposal for gas storage development must be consistent with the objectives of this Plan. Once wells are played out, they will be properly plugged and abandoned.

5b. Prohibit the commercial sale of gravel or hard rock resources.

Gravel and hard rock resources located on the forests of the Between Rivers Unit will be protected from commercial use. There are no mining contracts, permits, or mining operations on any of the forests in this Unit. Under Article 7 of the New York Consolidated Laws / Public Lands, any citizen of the United States may apply for permission to explore and/or extract any mineral on State lands. However, current Department policy is to decline any commercial mining application(s) pertaining to any lands in this Unit. The Department will occasionally mine small quantities of shale or gravel for use on State facilities such as access roads or parking lots.

5c. Protect water quantity and quality on the Unit.

The waters on the Unit are the tributaries to the Chenango River and Susquehanna River. Protecting these tributaries is important for aquatic habitat of these streams and the water quality for the larger downstream rivers.

Waters on the Unit will be protected by following the Management Rules for Special Management Zones on State Forests (see **Appendix XIX**). In addition, all timber harvesting, gas drilling and development, and other management activities on the Unit will comply with the NYS publication Best Management Practices for Water Quality.

Wells will not be allowed to be drilled for water extraction.

5d. Protect the forest and streams on the Unit from impacts associated with brine application to roads.

The development of gas drilling in Chenango County has led to the practice of disposing gas well production fluids, known as brine, onto town roads. Brine consists of the fluids produced by a gas well after the drilling phase is completed. This practice is allowed under permit (a Beneficial Use Determination) issued from the Department's Division of Solid & Hazardous Materials. The permits may be issued when requested by a waste transporter and where approved by the town government. The permit allows the conditional spreading of gas well brine on town roads for the beneficial purposes of road de-icing, dust suppression and road surface stabilization.

The Unit contains a wide variety of road conditions, some of which are more suitable for brine application than others. Application of brine on unsuitable roads may cause negative impacts to streams, wetlands and forest vegetation due to the high amounts of salts, heavy metals and other chemicals. Unsuitable roads may contain impermeable surfaces, ungradeable surfaces, lack of ditches, poor drainage, pot holes and no associated housing along the road front. The application of brine will not be allowed on the portions of the following roads that are on State land:

State Forest #	Town(s)	Road Name
Chenango RA #3	Guilford	Hohreiter Road
	Guilford	Parker-Smith Hill Road

	Guilford	Charles Wicks Road
	Guilford	Junction Road
Chenango RA #4	Oxford	Puckerville Road
	Oxford	Forest Access Road
Chenango RA #7	Oxford	Puckerville Road
Chenango RA #8	Columbus	Church Road
	New Berlin	Warren Road
Chenango RA #14	New Berlin	Forest Access Road
Chenango RA #29	Oxford	Forest Access Road
Chenango RA #31	North Norwich	Post Road
	North Norwich	Forest Access Road
Chenango RA #37	- -	- -
Chenango RA #38	New Berlin	Hunts Pond Road
	New Berlin	Buttermilk Falls Road
	New Berlin	Forest Access Road

5d. Protect the quality of State Forests by addressing concerns associated with the hydraulic fracturing process.

Refer to Chapter 5 of the Strategic Plan for State Forest Management for information on hydraulic fracturing.

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

The Strategic Plan conveys guidelines for recreational development on State Forests throughout the state. 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 principles 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. Please refer to Chapter 5 in the Strategic Plan for State Forest Management for information on the Departments efforts to provide accessible facilities on State Forests.

New facilities, assets, and accessibility improvements to existing facilities or assets proposed in this UMP are identified in the Proposed Management Actions section.

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

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

1a. 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 are identified in the following objectives.

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

Each of the nine State Forests in the Between Rivers UMP has several roadside areas where a vehicle can be parked to gain access to the property. Additionally, eight of the forests have a

designated parking area with an information kiosk. The kiosks contain a map panel and information panel. Maintenance will include annual brushing, grading and litter pick-up when needed. The Whaupaunaucau State Forest does not have a kiosk. A new kiosk is proposed to be placed near the south entrance of the forest. Additional access opportunities for all forests will be enhanced through access routes established via land management actions removing forest products. Refer to the Public Use Maps for locations. Continue to maintain the parking area near the entrance to the former State Park area of Hunts Pond. This parking area can accommodate at least 12 vehicles. Continue to maintain the parking area located on the east side of Hunts Pond Road, overlooking Hunts Pond. This parking area can accommodate at least four vehicles.

3). Maintain seasonal vehicular barriers on Lyon Brook and Whaupaunaucau State Forests. Maintain year-round vehicle barriers on Hunts Pond, Skinner Hill and South Hill State Forests.

Lyon Book and Whaupaunaucau State Forests have Public Forest Access Roads that are not plowed during winter. Gates are maintained at the entrances to these roadways and the gates are closed during the winter season. Skinner Hill and South Hill State Forests have haul roads that were not designed for public use. A locked gate blocks vehicle access to the haul road on South Hill State Forest. A soil berm blocks vehicle access to the haul road in the southern section of Skinner Hill State Forest. Another locked gate blocks vehicle access to the haul road on the east side of Skinner Hill Road. A locked gate will be maintained on Hunts Pond State Forest. The gate is located on the east side of Hunts Pond, near the boat launch site. The gate restricts motor vehicle access to the interior section of the property.

4). Maintain an informational kiosk and designated parking area for each of the State Forests in the Unit.

The Department has installed informational kiosks and parking areas for eight of the State Forests on the Unit. These kiosks contain a map of the property along with photos and text descriptions of the property features. The kiosk and trail register at Whaupaunaucau State Forest was recently vandalized and is no longer in place. A new kiosk and trail register are proposed for this location, near the south entrance to the forest. The new kiosk will be of similar design to the other kiosks in this Unit. This kiosk will be updated within the next five years. The parking areas at all of these sites will be periodically maintained by grading the surface and removing encroaching vegetation. The kiosks will be maintained in a weather-tight condition and the information will be updated as needed.

5). Improve recreational opportunities on the South Hill State Forest.

A proposal was made in the original Between Fords UMP to develop a non-motorized, multiple-use trail system on Chenango RA #3 (South Hill State Forest). The Department was willing to support the development of such a trail with the assistance of an interested, organized user group. Recently, the local snowmobile club (Delaware-Otsego-Chenango) has developed and maintained a snowmobile trail in the southern section of the forest with an Adopt-A-Natural Resource Agreement. The snowmobile trail forms a loop with Hohreiter and Charles Wicks Roads. The Department still supports the idea of developing this trail as a non-motorized recreational trail

during the non-winter seasons. If an organized group expresses interest in maintaining this trail, the Department will consider expansions to the trail system along abandoned roadways within the forest, **skid trail**s, and haul roads. Support for development of this trail will be implemented with a volunteer group agreement.

6). Acquire approximately 530 acres of private property.

The purchase of undeveloped in-holdings and certain adjacent parcels would help to consolidate forest boundary lines and improve access. Several of the forests have a fragmented shape structure, such as Chenango RA #8 (Skinner Hill State Forest). The Department has an interest in reducing this fragmentation. The Department will pursue fee simple title of parcels that further this goal from willing sellers when funding becomes available.

7). 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.

8). Support snowmobiling on the Unit.

The Office of Parks, Recreation and Historic Preservation (OPRHP) has been given the responsibility to plan for the development, maintenance and oversight of a statewide snowmobile program. The long distance trails associated with this program cross through a mosaic of publicly and privately owned lands. The snowmobile trails on the State Forests of the Between Rivers Unit are a part of this program. Currently, designated snowmobile trails pass through Hunts Pond, Lyon Brook, Basswood, Wiley Brook, and South Hill State Forests. The Department has entered into Adopt-A-Natural Resource Agreements (AANRA) with the Delaware-Otsego-Chenango Snowmobile Club (DOCS) and the Unadilla Valley Snow Drifters these trails on the forests of the Between Rivers Unit. A proposal has been made to expand the snowmobile trail system with an additional 0.5 mile trail segment on the Wiley Brook State Forest, parallel to Ward Loomis Road. This proposal is currently supported by a TRP and will soon be incorporated into the AANRA with DOCS. The Department will continue to support the snowmobile trail located on the former Hunts Pond State Park property. This trail section will be maintained through a volunteer agreement. Although the Department is not aware of any additional proposals to expand the snowmobile trail system in the Between Rivers Unit, the Department will consider opportunities to support any future proposals in this interest. Designated snowmobile trails crossing through State Forests must be part of a larger, long distance trail system. New trails on the Between Rivers State Forests will be considered only if the majority of the trail can be aligned with an existing open corridor of the forest.

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

The Strategic Plan for State Forest Management addresses the issue of ATV and off-road vehicle riding. Consistent with the Strategic Plan, ATV use will not be allowed on the State Forests in the Between Rivers Unit, except as may be considered to accommodate a connector trail, or on routes specifically designated for use by people with a DEC-issued Motorized Access Permit for People with Disabilities.

10). Support long distance hiking opportunities through maintenance of the Finger Lakes Trail.

Portions of the Finger Lakes Trail (FLT) are located on Wiley Brook and Basswood State Forests. The entire FLT system is over 900 miles in length. The Finger Lakes Trail Conference has entered into an AANRA with the Department for maintenance of the trail segments on the forests of the Between Rivers Unit. This trail in intended for pedestrian uses only.

11). Construct a Lean-to on the Wiley Brook State Forest.

A proposal has been received from the Finger Lakes Trail Conference (FLTC) to construct a lean-to near the hiking trail in the southern section of Wiley Brook State Forest. The Department supports this proposal. The rustic campsite near Puckerville Pond will still be maintained as a separate facility. Funding for construction of the lean-to will be the responsibility of the FLTC.

12.) Construct a Lean-to in the designated camping area of Hunt's Pond State Forest.

One lean-to is proposed to be constructed in the designated camping area on the Hunt's Pond State Forest. The proposal is conditioned upon the donation of building materials for the lean-to. In 2009, such materials were valued at about $1,400. The logs would be an additional cost, however, larch logs may be available from the State Forest. If materials are provided, the lean-to would be constructed on one of the existing 12 designated sites.

13). Maintain and improve the Nordic ski trail system on the Whaupaunauca State Forest.

Whaupaunaucau State Forest contains a 13 mile Nordic ski trail system which is utilized by 800 to 1,000 visitors per year, according to trail register records. This ski trail system will continue to be maintained by performing periodic clearing of the trail corridors, posting trail signs, plowing of the south entrance and parking area, and maintaining the trail register. Portions of ski trails number 6 & 7 pass through the Chenango County Forest, which is encompassed by the Whaupaunaucau State Forest. The cooperative agreement to maintain these ski trails on the county property will continue to be supported.

14). Allow mountain biking on Whaupaunaucau State Forest.

The 13 miles of trails on the Whaupaunaucau State Forest have historically been designated for cross country skiing. In 2010, the Chenango Mountain Bike Club requested an AANRA with the Department to maintain the trails on the Whaupaunaucau State Forest for use with mountain

bikes. The AANRA was issued to the Chenango Mountain Bike Club for a 5 year period, and most of the ski trails have been opened to mountain bike use. Some trails, or sections of trails, have been posted against the use of mountain bikes due to wet soil conditions. 6NYCRR Part 190.8 (s) states that no person shall operate or possess a bicycle on forest access roads, truck trails, roads, trails or other areas on State lands outside of the forest preserve which are posted or designated by the Department as closed to bicycle use. Mountain biking will be allowed on all of the trails, unless they are posted against the activity. Mountain biking on these trails is restricted to the designated season beginning May 1st and ending October 31st each year. The Department may restrict bicycle use further, or require improvements through a volunteer agreement, if conditions of the trails deteriorate significantly from this activity.

15). Maintain the lean-to site on Whaupaunaucau State Forest.

A lean-to camping site is located on Whaupaunaucau State Forest, about 500' south of Jeffery Pond. The AANRA with the Chenango Mountain Bike Club also addresses the maintenance of this lean-to. The Club has agreed to help maintain the site with litter pick-ups and painting of the structure. The Department will periodically inspect the site and make any necessary structural repairs.

16). Develop a new trail brochure for the trails on Whaupaunaucau State Forest.

Both Nordic skiing and mountain biking are allowed on the Whaupaunaucau State Forest trail system. The current trail brochure only addresses skiing and needs to be updated. A new brochure, with a trail map, will be developed to identify the specific trails that are available for each activity. Trail etiquette, regulations, seasonal restrictions, and forest information will be addressed. The Department will not provide a facility for storing and distributing these brochures on the forest property. The updated map and information will be available on the Department website. The paper brochures will be available at the Sherburne DEC office.

17). Provide camping opportunities at designated sites on Hunts Pond State Forest.

Maintain 12 of the 18 designated camping sites previously managed by OPRHP near Hunts Pond. Allow camping on these sites from Memorial Day though mid-December.

- Retain site #'s 1-8, along the north shore of the pond. These sites will be accessible by motor vehicle.
- Improve four campsites within the group of #1-8 to meet ADA standards.
- Retain sites 9-12 (previously designated as #11, 12, 13, & 17) near the south shore of the pond. Improve surface of site # 11 to allow for adequate drainage. These sites will be accessible for walk-in access only (no motor vehicles).
- Improve the boat launch parking area to accommodate vehicles associated with the walk-in campsites #9-12.
- Sites previously designated as 9, 10, 14, 15, 16, and 18 will no longer be designated as camping sites.
- Provide one portable toilet near sites 1-8 and a second portable toilet near sites 9-12. Portable toilets will be ADA compliant.

- Remove the present restroom structures (two) and remove the administration office.
- Remove any deteriorated picnic tables. Retain any picnic tables that are presently in good condition.
- Install one fire ring at each of the 12 designated camping sites.
- Discontinue application for Certificate of Waiver for Mandatory Disinfection of Water as previously issued to OPRHP by the Chenango County Health Department. The Department does not intend to provide a source of tap water on the property.
- Require carry-in/carry-out use of the property. No trash/recycling receptacles will be available and no trash collection service will be provided.
- Encourage the continued maintenance of these camping facilities to be administered through an Adopt-A-Natural Resource Agreement with an organized interest group.

18). Provide boating, fishing, and hunting opportunities on Hunts Pond.

- Allow for the use of non-motorized boats on the pond including canoes, kayaks, row boats, and pedal boats. Allow for the use of electric trolling motors. Prohibit the use of powerboats and jet skis on the pond. Specific permits for boating will not be required.
- Maintain the present boat launch site or relocate the boat launch site.
- Allow open water fishing and ice fishing on the pond.
- Continue to maintain the dam for Hunts Pond with the present infrastructure. Periodic maintenance will include mowing the surface of the dam, removing debris from the culvert pipes, and inspecting the integrity of the dam.
- Continue to allow hunting on the property and abolish the "No Hunting" zone that was previously established by OPRHP. Hunting activity is not expected to conflict with camping activity due to seasonal use differences. If a conflict does develop, the Department will consider re-establishing a no-hunting zone.

19.) Improve pedestrian access to the Hunt's Pond camping area.

- Develop a walking trail from the upper parking area on Hunt's Pond Road, across the dam, and connecting to the interior road system near campsite #11. The total length of the trail will be about 650 feet. Once developed, the combination of Hunt's Pond Road, the interior forest access road, and the walking trail will form a 1.7 mile loop around the pond. This trail will also allow provide a shorter access route for those using campsites #9-12.

20). Improve access for persons with disabilities.

Two CP-3 (Commissioner's Policy #3) trails will be developed on the Unit for use by persons with disabilities. These trails will be designed and available for ATV use by persons possessing a valid Motor Vehicle Access Permit for People with Disabilities. The primary objective of these trails is to provide improved hunting access to the forest interior for persons with mobility impairments. One trail will be located within stand A-4 on the Hunts Pond State Forest. This trail will be approximately 0.25 miles in length. The other trail will be approximately 0.33 miles

in length and provide access to stand A-6 on the Wiley Brook State Forest. Parking areas with hardened surfaces will be associated with each trail.

Additional CP3 trails will be considered within the Unit if there is a recognized demand for these facilities, funding is available, and the proposed locations are compatible with the management objectives of this plan. CP3 trails must follow existing corridors within the forest. New corridors will not be cut through the forest for this purpose. The trails must be located on terrain and soil types that are suitable for the objectives of the CP3 trail program.

C. Public Awareness Goal

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

1. <u>Community Forestry and Public Awareness</u>.

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.

1a). 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 public participation through volunteer agreements.

The Department will encourage volunteer participation in State land management projects. Volunteer agreements will facilitate and strengthen the role of citizens in planning and implementation of recreation and habitat improvement projects. Projects in need of volunteerism include recreational trail maintenance, researching, documenting and preserving cultural sites, watershed restoration, and invasive plant removal.

VII. Management Action Schedules

A. 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 available for viewing at the NYS DEC office in Sherburne.

Abbreviations used in the tables are listed below:

TABLE HEADINGS

UNIT – State Forest (e.g. Chenango R.A. # 10).
SUB – forest stand sub-compartment.
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.

1. DEFINITION OF CODES USED

FOREST TYPE CODES

Cedar – Northern white cedar
Cultural – site of cultural importance
Fir – Douglas fir or Balsam fir
Grassland – Open grass land
HEM – Eastern hemlock
Larch – Either European or Japanese larch
NH – Northern hardwood
NH-HEM – Northern Hardwood-hemlock
NH-NS – Northern hardwood-Norway spruce
NH-OAK – Northern hardwood-oak
NH-Shrub – Northern hardwood & shrub mix

NH-WP – Northern hardwood-white pine
NS – Norway spruce
OAK-Pine – oak-pine species
Other – miscellaneous forest cover
PH – pioneer hardwood
Pine-Nat – Plantation pine mixed with natural species
POND – pond
Riparian – Wet ground or adjacent to water courses
Road – road corridor
RP – red pine
RP-Larch – red pine mixed with larch species
RP-Spruce – red pine mixed with spruce species
RP-WP – red pine - white pine mix
S/S - Nat – Seedling/Saplings of natural species
S/S - Plant – Seedling/Saplings of plantation species
Shale – Shale source.
Shrub – Shrub species
SP – Scotch pine
SP-Spruce – Scotch pine mixed with spruce species
Spruce Nat – Plantation spruce mixed with natural species
Wetland **–** wetland
WP – white pine
WP-HEM – white pine-hemlock
WP-Spruce – white pine- spruce species
WS – white spruce

SPECIES CODES

APP – apple species
ASP – aspen species
BB – black birch
BC – Northern black cherry
BE – American beech
BL – black locust
BW – black willow
DF – Douglas fir
EL – European larch
Grassland – grass cover
HEM – Eastern hemlock
HM – hard maple or sugar maple
JL – Japanese larch
NS – Norway spruce

RM – red maple
RO – Northern red oak
Road – public roadway
RP – red pine
Shale – shale source
Shrub – shrub species
SP – Scotch pine
WA – white ash
WC – Northern white cedar
Wetland – wetland
WP – Eastern white pine
WS – white spruce
YB – yellow birch

DBH CODES

0-6" – seedling & sapling
6-11" – pole timber
12-17" – saw timber
18"+ – large saw timber

MANAGEMENT DIRECTION CODES

EA – even-aged
LSF – late successional forest
NONE – no management
Road – road corridor
UA – uneven-aged, green tree retention
ZA – protection, difficult access
ZC – protection, cultural values
ZR – protection, riparian buffer
ZRT – protection, biomass retention
ZS – protection, steep terrain
ZW – protection, wet ground

OBJECTIVE TYPE CODES

CEDAR – Northern white cedar
GRASS – grassland
HEMLOCK – Eastern hemlock
NH – Northern hardwood species
NH-APPLE – N. hardwood & apple species
NH-FIR – N. hardwood & fir species
NH-HEM – N. hardwood & hemlock mix

NH-LARCH – N. hardwood & larch species
NH-NS – N. hardwood & Norway spruce mix
NH-OAK – N. hardwood & oak species
NH-SHRUB N. – hardwood & shrub species
NH-SPRUCE – N. hardwood & spruce species
NH-WP – N. hardwood & Eastern white pine
NS-NAT – plantation Norway spruce & natural species
OAK-HEM – oak species & Eastern hemlock mix
OAK-PINE – oak species & pine species mix
PH – pioneer hardwoods
POND – pond
RIPARIAN – water course buffer zone
ROAD – public roadway
RP – red pine
RP-NS – red pine & Norway spruce mix
SHALE – shale source
SHRUB – shrub species
SPRUCE – spruce species
SPRUCE-FIR – spruce & fir species mix
STREAM – stream corridor
WETLAND – wetland
WP-HEM – Eastern white pine & hemlock mix

TREATMENT TYPE CODES

BURN – prescribed fire
CLEARCUT – remove forest cover
CONVERSION – convert to hardwood cover
COPPICE – coppice cut for regeneration
FW – firewood selection
FW/ ASPEN – firewood & aspen selection
FW/ REM PINE - firewood selection & remove all pine
FW/ REM SPR – firewood selection & remove all spruce
FW/ TSI – firewood selection & timber stand improvement
FW/ ST - firewood selection & saw timber selection
FW/ THIN PINE - firewood selection & thin pine
FW/ THIN SPR - firewood selection & thin spruce
HERBICIDE – herbicide application
MOW – mow grass cover
MOW/ BURN – mow or prescribed fire
NONE – no treatment
PATCH – patch cut
PULP/ TSI – remove pulpwood & timber stand improvement
RELEASE APP – release apple trees
REM SP/ COPPICE – remove scotch pine

REMOVE PINE – remove pine species
REMOVE SPR – remove spruce species
REMOVE TREES – remove trees from open area
SHELTERWD-2 – 2nd cut of shelterwood
SHELTERWOOD – shelterwood treatment
ST – saw timber harvest
TSI – timber stand improvement
TSI/ THIN – timber stand improvement & thin overstory
THIN ASPEN – thin aspen
THIN CEDAR – thin cedar
THIN/ CONVERT – thin or convert conifer species
THIN FIR – thin fir
THIN HEM – thin hemlock
THIN LARCH – thin larch
THIN PINE – thin pine
THIN RP/ JL – thin red pine & larch
THIN RP/ NS – thin red pine & Norway spruce
THIN SPR – thin spruce

FOREST TREATMENT SCHEDULE

ORGANIZED BY STAND I.D. NUMBER

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 3	R	711.00	Road	4.7	Road	--	0	Road	ROAD	NONE	NONE
CHEN 3	R	711.00	Road	2.1	Road	--	0	Road	ROAD	NONE	NONE
CHEN 3	R	711.00	Road	16.3	Road	--	0	Road	ROAD	NONE	NONE
CHEN 3	A	1.10	NH	5.9	RM, BC	12-17	120	EA	NH	FW/ST	2024
CHEN 3	A	1.20	NS	2.8	NS, RM	12-17	125	ZW	NH-SPRUCE	NONE	NONE
CHEN 3	A	2.10	NS	43.6	NS, WP	18+	145	EA	NH-SPRUCE	THIN SPRUCE	2024
CHEN 3	A	2.20	NS	12.1	NS, WP	12-17	150	EA	NH-SPRUCE	THIN SPRUCE	2024
CHEN 3	A	2.30	NH-Shrub	1.3	APP, WP	6-11	125	EA	NH-SHRUB	RELEASE APP	2024
CHEN 3	A	2.40	Wetland	0.7	Wetland	--	0	ZW	WETLAND	NONE	NONE
CHEN 3	A	3.00	NS	41.8	NS, RM	12-17	132	EA	NH-SPRUCE	THIN SPRUCE	2024
CHEN 3	A	4.00	NH	3.3	RM, NS	6-11	106	EA	NH	FW	2024
CHEN 3	A	5.00	NH	30.3	HM, RM	12-17	100	UA	NH	FW/ST	2019
CHEN 3	A	6.00	NH	15.7	RM, HM	12-17	116	UA	NH	FW/ST	2024
CHEN 3	A	7.00	Pine-Nat	6.2	WP, RM	12-17	106	UA	NH-WP	FW/ST	2024
CHEN 3	A	8.10	NH-HEM	3.0	HEM, RM	12-17	150	ZW	NH-HEM	NONE	NONE
CHEN 3	A	8.20	NH-HEM	26.7	RM, HEM	12-17	118	ZW	NH-HEM	NONE	NONE
CHEN 3	A	9.10	Pine-Nat	54.5	WP, RM	12-17	172	UA	NH-WP	FW/ST	2015
CHEN 3	A	9.20	Wetland	1.6	Wetland	--	0	ZW	WETLAND	NONE	NONE
CHEN 3	A	9.30	NH-WP	4.2	RM, WP	12-17	114	EA	NH-WP	FW/ST	2021
CHEN 3	A	10.00	NH-WP	9.8	WP, WA	12-17	154	EA	NH-WP	THIN PINE	2021

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 3	A	11.00	WP	5.0	WP, APP	12-17	140	EA	NH-WP	THIN PINE	2015
CHEN 3	A	12.00	NS	11.9	NS	12-17	174	EA	NH-SPRUCE	THIN SPRUCE	2021
CHEN 3	A	13.10	NH	6.4	RM, HM	12-17	110	EA	NH	FW/ST	2021
CHEN 3	A	13.20	NH	12.8	HM, RM	12-17	106	EA	NH	HERBICIDE	2015
CHEN 3	A	14.10	NH	14.9	RM, HM	12-17	118	EA	NH	FW/ST	2021
CHEN 3	A	14.20	Spruce-Nat	16.3	NS, RM	6-11	119	EA	NH-SPRUCE	THIN SPR/FW	2021
CHEN 3	A	15.10	NH	7.1	HM, WA	6-11	104	EA	NH	FW	2019
CHEN 3	A	15.20	Shrub	1.7	APP, WA	6-11	55	EA	SHRUB	RELEASE APP	2014
CHEN 3	A	15.30	NS	8.3	NS, RM	12-17	131	EA	NH-SPRUCE	THIN SPR/FW	2014
CHEN 3	A	16.00	WS	23.2	WS, RM	6-11	134	EA	NH	TSI/FW	2014
CHEN 3	A	17.00	NH-WP	15.5	RM, WP	12-17	139	UA	NH-WP	FW	2030
CHEN 3	A	18.00	NH	8.7	BC, RM	12-17	80	EA	NH	SHELTERWD-2	2021
CHEN 3	A	19.00	NH-Oak	39.7	RM, RO	12-17	99	UA	NH-OAK	FW/ST	2021
CHEN 3	A	20.00	NH-HEM	13.2	HEM, WA	12-17	138	ZR	NH-HEM	NONE	NONE
CHEN 3	A	21.00	NH-WP	29.4	WP, BC	12-17	167	EA	NH-WP	TSI PINE	2027
CHEN 3	A	22.10	NH	12.4	BE, RM	12-17	110	UA	NH	FW/ST	2015
CHEN 3	A	22.20	NH-WP	3.8	RM, WP	12-17	130	EA	NH-WP	CLEARCUT	2015
CHEN 3	A	23.00	NH-HEM	15.2	HEM, RM	12-17	155	EA	NH-HEM	FW/ST	2015
CHEN 3	A	24.00	Spruce-Nat	2.5	NS, RM	6-11	85	EA	NH-SPRUCE	THIN SPR/FW	2015
CHEN 3	A	25.00	NH	25.8	RM, BE	12-17	119	EA	NH	FW/ST	2030

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 3	A	26.10	NS	21.8	NS, WS	12-17	154	EA	NH-SPRUCE	THIN SPRUCE	2014
CHEN 3	A	26.20	Wetland	1.9	- -	--	0	ZW	WETLAND	NONE	NONE
CHEN 3	A	27.00	NH-WP	7.1	RM, WP	12-17	107	UA	NH-WP	FW	2030
CHEN 3	A	28.00	WS	10.5	WS, NS	6-11	142	EA	NH-SPRUCE	TSI/THIN	2014
CHEN 3	A	29.10	Spruce-Nat	10.1	RM, NS	12-17	141	EA	NH-WP	TSI SPRUCE	2014
CHEN 3	A	29.20	NH	4.2	RM, WP	6-11	118	EA	NH	FW	2014
CHEN 3	A	30.10	RP	37.0	RP, RM	12-17	100	UA	NH	CONVERT	2015
CHEN 3	A	30.20	RP	38.8	RP, RM	12-17	150	EA	NH	CONVERT	2015
CHEN 3	A	30.30	Wetland	1.9	ASP, RP	6-11	60	ZW	WETLAND	NONE	NONE
CHEN 3	A	30.40	NH	1.7	RM, BC	6-11	65	EA	NH	FW	2019
CHEN 3	A	31.00	NH	5.3	RM, HM	12-17	190	EA	NH	FW/TSI	2030
CHEN 3	A	32.00	NH	10.0	RM, BC	12-17	138	EA	NH	FW/ST	2030
CHEN 3	A	33.00	NS	2.7	NS	12-17	190	EA	NH-SPRUCE	THIN SPRUCE	2019
CHEN 3	A	34.00	NH-WP	2.7	RM, WP	12-17	127	EA	NH-WP	FW	2030
CHEN 3	B	1.10	NH-Shrub	2.8	BC, SHB	1-6	0	EA	NH-SHRUB	BURN	BURN
CHEN 3	B	1.20	RP	5.2	RP, ASP	12-17	100	ZR	NH	NONE	NONE
CHEN 3	B	1.30	Shrub	1.3	Shrub	1-6	0	EA	SHRUB	TSI	2019
CHEN 3	B	2.10	RP	18.4	RP, BC	12-17	190	UA	NH	CONVERT	2014
CHEN 3	B	2.20	RP	2.5	RP, BC	12-17	157	EA	NH	THIN PINE	2014
CHEN 3	B	2.30	RP	22.6	RP, BC	12-17	177	UA	NH	THIN PINE	2014

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 3	B	3.10	NH-WP	19.2	RM, WP	12-17	112	EA	NH-WP	THIN PINE	2021
CHEN 3	B	3.20	NH-Oak	6.7	RM, RO	12-17	120	EA	NH-OAK	FW/ST	2021
CHEN 3	B	3.30	NH-Oak	7.4	RM, RO	12-17	113	EA	NH-OAK	FW/ST	2021
CHEN 3	B	4.00	NH-WP	5.2	WP, RM	12-17	138	EA	NH-WP	FW/TSI	2021
CHEN 3	B	5.00	RP	14.2	RP, BC	12-17	170	EA	NH	CONVERT	2014
CHEN 3	B	6.10	NH	20.8	RM, WA	12-17	70	EA	NH	FW	2030
CHEN 3	B	6.20	Riparian	13.6	RP	--	0	ZR	RIPARIAN	NONE	NONE
CHEN 3	B	6.30	RP	3.4	RP, RM	12-17	158	EA	NH	THIN PINE	2021
CHEN 3	B	6.40	RP	4.7	RP, RM	12-17	190	EA	NH	CONVERT	2015
CHEN 3	B	7.00	NH	24.8	RM, BC	12-17	123	EA	NH	FW/ST	2021
CHEN 3	B	8.10	RP	7.8	RP, WP	12-17	113	EA	NH	CONVERT	2014
CHEN 3	B	8.20	Riparian	3.0	ASP, RM	--	0	ZR	RIPARIAN	NONE	NONE
CHEN 3	B	8.30	RP	16.0	RP, RM	12-17	159	EA	NH	THIN PINE	2014
CHEN 3	B	9.10	NH-Oak	24.4	RO, RM	12-17	110	EA	NH-OAK	FW/ST	2027
CHEN 3	B	9.20	NH-HEM	2.8	HEM, WA	12-17	130	EA	NH-HEM	ST	2027
CHEN 3	B	9.30	NH-HEM	4.4	HEM, RO	12-17	143	EA	NH-HEM	FW/ST	2027
CHEN 3	B	9.40	NH-WP	3.6	WP, RM	12-17	83	EA	NH-WP	FW	2027
CHEN 3	B	10.00	NH	42.3	RM, HM	12-17	92	UA	NH	FW/ST	2027
CHEN 3	B	11.00	NH-WP	3.1	WP, RM	18+	148	EA	NH-WP	TSI/THIN WP	2024
CHEN 3	B	12.00	NS	75.0	NS, RM	12-17	203	UA	NH-SPRUCE	THIN SPRUCE	2030

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 3	B	13.00	NS	15.9	NS, RM	6-11	161	EA	NH-SPRUCE	FW/TSI	2027
CHEN 3	B	14.00	NH	10.3	HM, RM	12-17	130	UA	NH	FW/ST	2027
CHEN 3	B	15.00	RP-Spruce	48.8	RP, NS	12-17	122	EA	NH-SPRUCE	REMOVE RP	2011
CHEN 3	B	16.00	Wetland	16.7	ASP, NS	--	0	ZW	WETLAND	NONE	NONE
CHEN 3	B	17.00	RP-Spruce	11.6	NS, RP	12-17	166	EA	NH-SPRUCE	THIN RP/NS	2014
CHEN 3	B	18.10	RP-Spruce	29.9	RP, NS	12-17	122	EA	NH-SPRUCE	THIN PINE	2024
CHEN 3	B	18.20	Wetland	1.5	- -	--	0	ZW	WETLAND	NONE	NONE
CHEN 3	B	19.10	RP-Spruce	4.8	NS, RP	12-17	126	EA	NH-SPRUCE	THIN RP/NS	2024
CHEN 3	B	19.20	RP-Larch	9.5	RP, JL	12-17	121	EA	NH	THIN RP/JL	2030
CHEN 3	B	20.10	RP-Spruce	11.1	RP, NS	12-17	151	EA	NH-SPRUCE	THIN PINE	2015
CHEN 3	B	20.20	RP	8.1	RP, RM	6-11	180	ZS	NH	NONE	NONE
CHEN 3	B	21.00	NH-HEM	13.2	HEM, RM	12-17	119	EA	NH-HEM	FW/ST	2019
CHEN 3	B	22.00	NH	30.3	HM, RM	12-17	119	UA	NH	FW/ST	2030
CHEN 3	B	23.10	NH-Oak	8.3	RO, RM	6-11	136	EA	NH-OAK	FW	2017
CHEN 3	B	23.20	NH-Oak	7.7	RO, RM	6-11	115	EA	NH-OAK	FW/TSI	2017
CHEN 3	B	24.00	WP-HEM	12.3	HEM, WP	12-17	122	ZR	WP-HEM	NONE	NONE
CHEN 3	B	25.00	NH-WP	2.4	WP, RM	12-17	170	EA	NH-WP	TSI	2030
CHEN 4	A	1.00	NH	4.6	HM, RM	6-11	72	EA	NH	FW	2027
CHEN 4	A	2.00	NH-HEM	16.5	HEM, HM	6-11	86	UA	NH-HEM	FW/ST	2027
CHEN 4	A	3.00	NH-HEM	21.6	HEM, RM	6-11	118	UA	NH-HEM	FW	2027

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 4	A	4.10	NH-HEM	28.7	HEM, RM	6-11	124	UA	NH-HEM	FW	2027
CHEN 4	A	4.20	Wetland	1.4	HEM, YB	- -	- -	ZW	Wetland	NONE	NONE
CHEN 4	A	5.00	NS	14.8	NS, RM	12-17	153	EA	NH-SPRUCE	FW	2015
CHEN 4	A	6.10	RP	18.9	RP, RM	12-17	185	EA	NH	THIN PINE	2021
CHEN 4	A	6.20	RP	23.0	RP, RM	12-17	185	EA	NH	THIN PINE	2030
CHEN 4	A	7.00	NH-WP	9.9	WP, BC	12-17	150	ZR	NH-WP	NONE	NONE
CHEN 4	A	8.00	NH-HEM	14.3	HEM, YB	12-17	186	ZW	NH-HEM	NONE	NONE
CHEN 4	A	9.00	NH	5.0	WA, BC	12-17	126	EA	NH	ST	2015
CHEN 4	A	10.00	NH	3.6	WA, BC	12-17	110	EA	NH	FW/ST	2015
CHEN 4	A	11.00	Shale	1.0	Shale	--	0	--	SHALE	NONE	NONE
CHEN 4	A	12.00	NH	8.1	WA, HM	12-17	100	EA	NH	FW/ST	2015
CHEN 4	A	13.00	NH	36.0	HM, RM	18+	111	UA	NH	FW/ST	2015
CHEN 4	A	14.00	NH	13.5	HM, RM	12-17	136	EA	NH	FW	2017
CHEN 4	A	15.00	WS	16.6	WS, RM	12-17	109	EA	NH	FW/TSI	2024
CHEN 4	A	16.10	NS	93.2	NS, BC	12-17	150	EA	NH-SPRUCE	THIN SPRUCE	2011
CHEN 4	A	16.20	NS	15.4	NS, RM	12-17	177	EA	NH-SPRUCE	THIN SPRUCE	2011
CHEN 4	A	17.00	NH-HEM	4.9	HEM, RM	12-17	194	UA	NH-HEM	THIN FW/HEM	2014
CHEN 4	A	18.10	WP	8.3	WP, BC	12-17	162	EA	NH-WP	TSI WP	2014
CHEN 4	A	18.20	PH	1.2	WA, ASP	12-17	80	EA	PH	FW/TSI	2014
CHEN 4	A	19.00	Pine-Nat	8.4	WP, WA	12-17	143	EA	NH-WP	FW/ST	2014

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 4	A	20.00	Pine-Nat	36.5	WP, RM	6-11	116	UA	NH-WP	FW	2019
CHEN 4	A	21.00	NH	4.3	RM, WA	18+	154	EA	NH	ST	2011
CHEN 4	A	22.00	Pine-Nat	49.5	BC, SP	12-17	143	EA	NH	ST	2021
CHEN 4	A	23.00	NH	8.0	HM, BC	12-17	124	UA	NH	FW/ST	2021
CHEN 4	A	24.00	NH	2.6	HM, RM	12-17	116	EA	NH	ST	2021
CHEN 4	A	25.00	SP	17.8	SP, APP	12-17	66	Z	NH-APPLE	NONE	NONE
CHEN 4	A	26.00	NH	4.0	BC, WA	12-17	107	EA	NH	FW/ST	2021
CHEN 4	A	27.00	NH-HEM	32.9	HEM, YB	18+	190	ZR	NH-HEM	NONE	NONE
CHEN 4	A	28.00	NH	10.7	HM, WA	18+	135	ZA	NH	NONE	NONE
CHEN 4	A	29.10	Pine-Nat	10.2	SP, BC	12-17	154	EA	NH	FW	2015
CHEN 4	A	29.20	Pine-Nat	11.4	BC, SP	12-17	139	EA	NH	FW/Remove SP	2019
CHEN 4	A	30.10	NH-HEM	16.2	HEM, BC	12-17	167	UA	NH-HEM	FW/ST	2019
CHEN 4	A	30.20	NH-WP	7.9	WP, RM	12-17	103	ZW	NH-WP	NONE	NONE
CHEN 4	A	31.00	NH	8.8	RM, BC	12-17	120	EA	NH	FW/ST	2030
CHEN 4	A	32.00	WP	49.4	WP, RM	12-17	90	UA	NH-WP	FW/ST	2019
CHEN 4	A	33.00	WP	44.0	WP, RM	12-17	158	UA	NH-WP	FW	2024
CHEN 4	A	34.00	NH	3.7	RM, HM	12-17	130	EA	NH	FW/ST	2024
CHEN 4	A	35.00	NH-WP	6.0	RM, WP	12-17	164	EA	NH-WP	FW/ST	2019
CHEN 4	A	36.10	NH-HEM	19.4	HEM, RM	12-17	145	UA	NH-HEM	FW/ST	2019
CHEN 4	A	36.20	NH-HEM	12.1	HM, HEM	12-17	121	EA	NH-HEM	FW/ST	2019

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 4	A	37.00	NH	4.5	HM, RM	12-17	130	EA	NH	ST	2027
CHEN 4	A	38.00	NH	2.1	HM, RM	12-17	90	EA	NH	FW/ST	2027
CHEN 4	A	39.10	NH	9.1	RM, BC	12-17	109	EA	NH	FW	2027
CHEN 4	A	39.20	NS	2.4	NS, BC	12-17	153	EA	NH-SPRUCE	THIN SPRUCE	2017
CHEN 4	A	40.00	NH	20.3	RM, HM	12-17	89	EA	NH	FW	2019
CHEN 4	A	41.00	NH	10.7	HM, BC	12-17	108	UA	NH	FW/ST	2027
CHEN 4	A	42.00	NS	13.9	NS, BC	12-17	146	EA	NH-SPRUCE	THIN SPRUCE	2030
CHEN 4	A	43.00	NS	8.7	NS, BC	12-17	148	EA	NH-SPRUCE	THIN SPRUCE	2030
CHEN 4	A	44.00	NH	18.4	WA, RM	12-17	53	EA	NH	FW	2027
CHEN 4	A	45.00	NS	8.3	NS, BC	12-17	140	EA	NH-SPRUCE	THIN SPRUCE	2017
CHEN 4	A	46.00	Pine-Nat	4.1	BC, RM	6-11	95	EA	NH	FW	2027
CHEN 4	A	47.00	NS	9.7	NS, SP	12-17	130	EA	NH-SPRUCE	THIN SPRUCE	2030
CHEN 4	A	48.00	SP-Spruce	13.3	SP, NS	12-17	100	EA	NH-SPRUCE	REMOVE SP	2017
CHEN 4	A	49.00	Wetland	4.1	Wetland	--	0	ZW	WETLAND	NONE	NONE
CHEN 4	A	50.00	Wetland	6.4	Wetland	--	0	ZW	WETLAND	NONE	NONE
CHEN 4	A	51.00	NS	18.1	NS, BC	18+	164	EA	NH-SPRUCE	THIN SPRUCE	2017
CHEN 4	A	52.00	Shrub	12.9	ASP, RM	--	0	EA	SHRUB	THIN NH	2014
CHEN 4	A	53.10	NH-HEM	19.0	HEM, HM	12-17	164	ZR	NH-HEM	NONE	NONE
CHEN 4	A	53.20	NH	3.9	HM, BAS	12-17	116	EA	NH	FW/TSI	2014
CHEN 4	R	0.00	Road	0.9	Road	--	0	Road	ROAD	NONE	NONE

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 4	R	0.00	Road	8.3	Road	--	0	Road	ROAD	NONE	NONE
CHEN 4	R	0.00	Road	2.3	Road	--	0	Road	ROAD	NONE	NONE
CHEN 4	R	0.00	Road	11.4	Road	--	0	Road	ROAD	NONE	NONE
CHEN 4	R	0.00	Road	1.3	Road	--	0	Road	ROAD	NONE	NONE
CHEN 7	A	1.00	NS	59.1	NS, RM	12-17	157	EA	NH-SPRUCE	THIN SPRUCE	2017
CHEN 7	A	2.00	NH-Oak	11.6	HM, YB	6-11	73	EA	NH-OAK	ST	2014
CHEN 7	A	3.00	RP	28.6	RP, RO	6-11	143	EA	NH-OAK	CONVERT	2019
CHEN 7	A	4.10	RP-Larch	32.4	RP, JL	12-17	162	EA	NH	THIN PINE	2019
CHEN 7	A	4.20	RP	7.1	RM, RP	12-17	192	EA	NH	THIN PINE/FW	2014
CHEN 7	A	5.00	RP-Larch	7.6	JL, RP	12-17	180	EA	NH	CONVERT	2014
CHEN 7	A	6.00	NH-Oak	46.1	RM, RO	12-17	98	EA	NH-OAK	FW/ST	2024
CHEN 7	A	7.00	NS	17.0	ASP, NS	6-11	145	EA	NH-SPRUCE	THIN SPR/FW	2011
CHEN 7	A	8.10	RP-Spruce	9.2	RP, NS	12-17	162	EA	NH-SPRUCE	THIN RP/NS	2011
CHEN 7	A	8.20	NS-Larch	14.0	JL, NS	1-6	25	EA	NH-SPRUCE	TSI	2030
CHEN 7	A	9.00	NS	73.6	NS, RM	12-17	204	EA	NH-SPRUCE	THIN SPRUCE	2014
CHEN 7	A	10.00	NS	32.6	NS, BC	12-17	189	EA	NH-SPRUCE	THIN SPRUCE	2014
CHEN 7	A	11.00	Wetland	10.6	Wetland	--	0	ZW	WETLAND	NONE	NONE
CHEN 7	A	12.00	NH-HEM	15.2	HEM, RM	12-17	200	ZRT	NH-HEM	NONE	NONE
CHEN 7	A	13.10	NH-WP	25.0	WP, BC	12-17	183	ZA	NH-WP	NONE	NONE
CHEN 7	A	13.20	NS	1.4	NS, ASP	6-11	180	ZA	NH-SPRUCE	NONE	NONE

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 7	A	14.00	NH	5.6	RM, HM	12-17	124	UA	NH	FW/ST	2014
CHEN 7	A	15.10	Cedar	7.1	WC, RM	6-11	208	EA	CEDAR	Thin FW/Cedar	2014
CHEN 7	A	15.20	Wetland	2.3	Wetland	--	0	ZW	WETLAND	NONE	NONE
CHEN 7	A	15.30	Riparian	5.0	WC	--	0	ZR	CEDAR	NONE	NONE
CHEN 7	A	15.40	NS	6.1	NS, BC	12-17	146	EA	NH-SPRUCE	THIN SPRUCE	2011
CHEN 7	A	15.50	PH	8.9	ASP, RM	1-6	25	EA	PH	COPPICE	2014
CHEN 7	A	15.60	Wetland	10.7	Wetland	--	0	ZW	WETLAND	NONE	NONE
CHEN 7	A	15.70	PH	11.1	ASP, BC	6-11	99	ZW	PH	NONE	NONE
CHEN 7	A	16.00	RP	7.0	RP, BC	12-17	176	EA	NH	CONVERT	2014
CHEN 7	A	17.00	NH-HEM	10.8	HM, HEM	12-17	100	UA	NH-HEM	FW/ST	2019
CHEN 7	A	18.00	RP	13.5	ASP, RP	12-17	96	EA	NH	CONVERT	2011
CHEN 7	A	19.10	RP	23.8	RP, BC	12-17	151	EA	NH	THIN	2011
CHEN 7	A	19.20	NH	29.7	ASP, RM	1-6	25	EA	NH	FW/TSI	2024
CHEN 7	A	20.00	NH	54.9	RM, WA	12-17	174	EA	NH	FW/ST	2030
CHEN 7	A	21.00	Wetland	9.6	Wetland	--	0	ZW	WETLAND	NONE	NONE
CHEN 7	A	22.00	NH-HEM	48.3	HEM, RM	12-17	131	UA	NH-HEM	FW/ST	2030
CHEN 7	A	23.00	NH-HEM	52.2	RM, HEM	12-17	163	UA	NH-HEM	FW/ST	2017
CHEN 7	A	24.10	RP	52.0	RP, RM	12-17	123	UA	NH	CONVERT	2017
CHEN 7	A	24.20	Riparian	3.3	Wetland	--	0	ZR	STREAM	NONE	NONE
CHEN 7	A	24.30	RP	2.5	RP, RM	12-17	100	EA	NH	CONVERT	2017

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 7	A	25.00	WP	60.6	WP, BC	12-17	133	EA	NH-WP	THIN FW/WP	2024
CHEN 7	A	26.00	RP-Spruce	14.9	RP, NS	12-17	164	EA	NH-SPRUCE	CONVERT	2024
CHEN 7	A	27.10	WS	10.1	WS, RM	6-11	160	EA	NH	THIN SPRUCE	2011
CHEN 7	A	27.20	NH	0.8	BL, BC	6-11	130	ZC	NH	NONE	NONE
CHEN 7	A	28.10	RP	48.8	RP, SP	6-11	132	EA	NH	THIN PINE	2021
CHEN 7	A	28.20	PH	5.9	ASP, BE	1-6	25	EA	PH	COPPICE	2011
CHEN 7	A	29.00	NH-HEM	32.3	HEM, RM	18+	138	UA	NH-HEM	FW/ST	2030
CHEN 7	A	30.00	Shale	1.9	Shale	--	25	EA	SHALE	NONE	NONE
CHEN 7	A	31.00	RP	2.3	RP, BC	12-17	177	EA	NH	THIN PINE	2011
CHEN 7	A	32.00	Wetland	12.8	Wetland	--	0	ZW	WETLAND	NONE	NONE
CHEN 7	A	33.00	NH	5.2	RM, BC	12-17	113	EA	NH	FW	2030
CHEN 7	A	34.10	RP-Spruce	12.2	NS, RP	12-17	174	EA	NH-SPRUCE	THIN PINE	2024
CHEN 7	A	34.20	RP-Spruce	22.8	RP, NS	12-17	208	EA	NH-SPRUCE	THIN PINE	2011
CHEN 7	A	35.00	Spruce-Nat	23.7	RM, NS	12-17	184	ZR	NH-SPRUCE	NONE	NONE
CHEN 7	A	36.00	NH-HEM	12.4	HEM, BB	12-17	111	UA	NH-HEM	FW/ST	2019
CHEN 7	A	37.00	PH	2.8	ASP, APP	1-6	25	EA	PH	RELEASE APP	2011
CHEN 7	A	38.00	RP-WP	16.1	WP, RP	12-17	179	EA	NH-WP	THIN PINE	2017
CHEN 7	A	39.00	RP	7.6	RP, RM	12-17	106	EA	NH	THIN PINE	2011
CHEN 7	A	40.00	NH	22.3	RM, HM	12-17	129	EA	NH	FW/ST	2017
CHEN 7	A	41.00	RP-Larch	29.9	RP, JL	12-17	179	EA	NH	THIN PINE	2011

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 7	A	42.00	NH-HEM	8.6	HEM, RM	12-17	190	UA	NH-HEM	FW/ST	2017
CHEN 7	A	43.00	NH	15.2	RM, HM	12-17	139	UA	NH	FW/ST	2017
CHEN 7	A	44.00	Wetland	7.3	HEM, RM	6-11	144	ZW	WETLAND	NONE	NONE
CHEN 7	A	45.00	NH-HEM	31.7	HEM, WP	12-17	195	ZW	NH-HEM	NONE	NONE
CHEN 7	A	46.00	Wetland	10.9	WP, HEM	12-17	100	ZW	WETLAND	NONE	NONE
CHEN 7	A	47.00	NH-HEM	26.8	HEM, RM	12-17	163	UA	NH-HEM	FW/ST	2017
CHEN 7	A	48.00	WP	4.5	WP, RM	18+	152	EA	NH-WP	THIN PINE	2017
CHEN 7	A	49.00	WP-HEM	0.6	HEM, WP	12-17	85	ZRT	NH-HEM	NONE	NONE
CHEN 7	A	50.00	Wetland	1.7	Wetland	--	0	ZW	WETLAND	NONE	NONE
CHEN 7	A	51.00	Grassland	15.9	Grass	--	0	EA	GRASSLAND	MOW/BURN	MOW
CHEN 7	R	0.00	Road	2.1	Road	--	0	Road	ROAD	NONE	NONE
CHEN 7	R	0.00	Road	0.7	Road	--	0	Road	ROAD	NONE	NONE
CHEN 7	R	0.00	Road	2.3	Road	--	0	Road	ROAD	NONE	NONE
CHEN 7	R	0.00	Road	0.7	Road	--	0	Road	ROAD	NONE	NONE
CHEN 7	R	0.00	Road	2.2	Road	--	0	Road	ROAD	NONE	NONE
CHEN 7	R	0.00	Road	2.3	Road	--	0	Road	ROAD	NONE	NONE
CHEN 7	R	0.00	Road	3.1	Road	--	0	Road	ROAD	NONE	NONE
CHEN 7	R	0.00	Road	0.1	Road	--	0	Road	ROAD	NONE	NONE
CHEN 7	R	0.00	Road	2.8	Road	--	0	Road	ROAD	NONE	NONE
CHEN-8	A	1.00	NH-HEM	8.2	HEM, RO	6-11	171	EA	NH-HEM	FW/ST	2020

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN-8	A	2.00	HEM	6.8	HEM, HM	6-11	85	ZS	NH-HEM	NONE	NONE
CHEN-8	A	3.00	NS	15.9	NS, BC	12-17	153	EA	NH-SPRUCE	THIN SPRUCE	2020
CHEN-8	A	4.00	NS	5.8	NS, WS	12-17	140	EA	NH-SPRUCE	THIN SPRUCE	2020
CHEN-8	A	5.00	WS	2.2	WS, RM	6-11	150	EA	NH	REMOVE SPR	2020
CHEN-8	A	6.00	NH	20.5	HM, BC	6-11	72	EA	NH	FW	2023
CHEN-8	A	7.00	NS	20.4	NS, SP	12-17	109	EA	NH-SPRUCE	THIN SPRUCE	2020
CHEN-8	A	8.00	NS	26.2	NS, WA	12-17	167	EA	NH-SPRUCE	THIN SPRUCE	2020
CHEN-8	A	9.00	WS	9.9	WS, WA	6-11	100	EA	NH	REMOVE SPR	2020
CHEN-8	A	10.00	SP	8.8	SP, RM	12-17	96	EA	NH	FW	2029
CHEN-8	A	11.00	RP	87.6	RP, BC	12-17	157	UA	NH	THIN/ Convert	2029
CHEN-8	A	12.00	PH	6.0	ASP	1-6	25	EA	PH	COPPICE	2018
CHEN-8	A	13.00	NH	41.9	HM, RM	12-17	93	UA	NH	FW/ST	2018
CHEN-8	A	14.00	NH	3.7	RM, HM	6-11	95	EA	NH	FW	2018
CHEN-8	A	15.00	NH-HEM	9.1	HEM, YB	12-17	161	ZW	NH-HEM	NONE	NONE
CHEN-8	A	16.00	RP-Spruce	30.0	RP, NS	12-17	166	EA	NH-SPRUCE	THIN PINE	2026
CHEN-8	A	17.00	WS	8.9	WS, RM	6-11	184	EA	NH	TSI/THIN SPR	2012
CHEN-8	A	18.00	WP	38.7	WP, BC	6-11	155	EA	NH-WP	THIN WP/ NH	2026
CHEN-8	A	19.00	NS	3.9	NS, BC	12-17	93	EA	NH-SPRUCE	THIN SPRUCE	2020
CHEN-8	A	20.00	NS	56.5	NS, BC	12-17	166	EA	NH-SPRUCE	THIN SPRUCE	2012
CHEN-8	A	21.00	NH	8.4	HM, BE	6-11	103	EA	NH	FW/ST	2028

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN-8	A	22.00	NH	16.8	HM, WA	6-11	71	UA	NH	FW	2028
CHEN-8	A	23.00	NS	33.5	NS, BC	12-17	134	EA	NH-SPRUCE	THIN SPRUCE	2028
CHEN-8	A	24.00	Pine-Nat	5.4	BC, SP	6-11	100	EA	NH	REMOVE PINE	2016
CHEN-8	A	25.00	RP-Spruce	26.2	RP, SP	12-17	128	EA	NH-SPRUCE	THIN PINE	2016
CHEN-8	A	26.00	NH	9.1	RM, BC	6-11	124	EA	NH	FW	2016
CHEN-8	A	27.00	NH	3.3	HM, WA	6-11	130	EA	NH	FW	2020
CHEN-8	A	28.00	WS	11.4	WS, NS	6-11	96	EA	NH-SPRUCE	FW/ ASPEN	2023
CHEN-8	A	29.00	NH	13.0	RM, BC	12-17	67	EA	NH	FW/ASPEN	2023
CHEN-8	A	30.00	NH	16.0	RM, BC	12-17	67	EA	NH	FW/ASPEM	2023
CHEN-8	A	31.00	NH	17.6	WA, BC	6-11	96	EA	NH	FW/ASPEN	2023
CHEN-8	A	32.00	NH	5.9	WA, BC	6-11	60	EA	NH	FW	2023
CHEN-8	A	33.00	Wetland	2.3	ASP, SP	--	0	ZW	WETLAND	NONE	NONE
CHEN-8	A	34.00	S/S-Nat	20.8	- -	1-6	25	EA	NH	FW	2029
CHEN-8	A	35.00	Wetland	2.1	- -	--	0	ZW	WETLAND	NONE	NONE
CHEN-8	A	36.00	Pine-Nat	2.8	ASP, SP	12-17	90	EA	PH	Rem SP/Coppice	2016
CHEN-8	A	37.00	NS	0.2	NS, RP	12-17	150	ZA	NH-SPRUCE	NONE	NONE
CHEN-8	R	0.00	Road	1.3	Road	--	0	Road	ROAD	NONE	NONE
CHEN-8	R	0.00	Road	0.9	Road	--	0	Road	ROAD	NONE	NONE
CHEN-8	R	0.00	Road	0.9	Road	--	0	Road	ROAD	NONE	NONE
CHEN-8	B	1.10	SP-Spruce	8.4	NS, SP	12-17	186	EA	NH-SPRUCE	Thin SPR/PINE	2028

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN-8	B	1.20	NS	3.6	NS, --	12-17	200	EA	NH-NS	THIN SPRUCE	2026
CHEN-8	B	1.30	SP-Spruce	1.8	SP, NS	12-17	110	EA	NH	THIN/Rem Pine	2026
CHEN-8	B	1.40	RP	2.9	RP, SP	12-17	140	EA	NH	THIN PINE	2026
CHEN-8	B	1.50	SP	3.9	SP, BC	12-17	80	EA	NH	Rem PINE/FW	2026
CHEN-8	B	2.00	NH-Oak	25.8	RM, RO	6-11	183	EA	NH-OAK	FW/ST	2028
CHEN-8	B	3.10	RP-Spruce	17.1	SP, RP	12-17	151	EA	NH	THIN PINE	2028
CHEN-8	B	3.20	SP	8.2	SP, BC	12-17	140	EA	NH	THIN PINE	2012
CHEN-8	B	3.30	SP	8.8	SP, RP	12-17	120	EA	NH	THIN/Rem Pine	2012
CHEN-8	B	3.40	RP	14.3	RP, SP	12-17	120	EA	NH	THIN PINE	2012
CHEN-8	B	4.00	NH-Oak	21.0	RO, RM	12-17	98	EA	NH-OAK	FW/ST	2028
CHEN-8	B	5.00	NS	8.0	NS, RM	6-11	144	EA	NH-SPRUCE	THIN SPRUCE	2018
CHEN-8	B	6.00	NH	7.4	RM, RO	1-6	25	EA	NH-OAK	FW	2028
CHEN-8	B	7.00	NS	66.7	NS, WA	12-17	181	EA	NH-SPRUCE	THIN SPRUCE	2018
CHEN-8	B	8.00	NH	20.5	- -	1-6	25	EA	NH	FW	2023
CHEN-8	B	9.00	NS	4.1	NS, RM	12-17	196	EA	NH-SPRUCE	THIN SPR/ FW	2026
CHEN-8	B	10.00	NS	25.2	NS, RM	12-17	200	EA	NH-SPRUCE	THIN SPRUCE	2026
CHEN-8	B	11.00	Wetland	13.3	- -	--	0	ZW	WETLAND	NONE	NONE
CHEN-8	B	12.00	HEM	2.5	HEM, WP	18+	240	ZR	NH-HEM	NONE	NONE
CHEN-8	B	13.00	WP	7.3	WP, BC	6-11	164	ZR	NH-WP	NONE	NONE
CHEN-8	B	14.00	NH	2.7	RM, WA	6-11	160	EA	NH	FW	2018

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN-8	B	15.00	NH	5.5	BC, ASP	6-11	56	EA	NH	THIN FW/ ASP	2018
CHEN-8	B	16.00	NS	83.6	NS, RM	6-11	235	EA	NH-SPRUCE	THIN SPRUCE	2028
CHEN-8	B	17.00	Wetland	4.1	- -	--	0	ZW	WETLAND	NONE	NONE
CHEN-8	B	18.00	NH-HEM	29.6	HEM, RM	12-17	152	EA	NH-HEM	FW/ST	2020
CHEN-8	B	19.00	NH	70.7	RM, HM	12-17	126	UA	NH	FW/ST	2020
CHEN-8	B	20.00	HEM	3.2	HEM, RM	6-11	153	ZR	HEMLOCK	NONE	NONE
CHEN-8	B	21.00	NH-HEM	6.0	HEM, RM	6-11	126	UA	NH-HEM	FW/ST	2020
CHEN-8	B	22.00	Pine-Nat	11.1	SP, WA	6-11	114	EA	NH	FW/ REM SP	2020
CHEN-8	B	23.00	NH-HEM	14.6	HEM, YB	6-11	182	ZW	NH-HEM	NONE	NONE
CHEN-8	B	24.00	NH	10.8	WA, HM	12-17	116	EA	NH	FW/ST	2016
CHEN-8	B	25.00	Wetland	3.3	- -	--	0	ZW	WETLAND	NONE	NONE
CHEN-8	B	26.00	SP	24.2	SP, BC	6-11	142	EA	NH	FW/ THIN PINE	2020
CHEN-8	B	27.00	Wetland	10.4	BF, ASP	--	95	ZW	WETLAND	NONE	NONE
CHEN-8	B	28.00	NH	13.1	RM, WA	6-11	136	EA	NH	FW/ REM SP	2028
CHEN-8	B	29.00	Wetland	2.2	- -	--	0	ZW	WETLAND	NONE	NONE
CHEN-8	B	30.00	NH-HEM	2.2	HEM, RM	12-17	100	ZW	NH-HEM	NONE	NONE
CHEN-8	B	31.00	NH	15.1	RM, BC	6-11	103	EA	NH	FW	2028
CHEN-8	B	32.00	NH-HEM	3.1	RM, HEM	6-11	190	ZW	NH-HEM	NONE	NONE
CHEN-8	B	33.00	NH-Oak	2.2	RO, HM	12-17	150	UA	NH-OAK	FW/ST	2018
CHEN-8	B	34.00	NH	2.3	RM, AS	12-17	80	ZS	NH	NONE	NONE

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN-8	B	35.00	SP	6.8	SP, ASP	6-11	80	ZW	NH	NONE	NONE
CHEN-8	B	36.00	NH-NS	6.1	BF, ASP	6-11	120	EA	NH-FIR	THIN FIR	2016
CHEN-8	B	37.00	NH-HEM	5.8	HEM, BC	6-11	143	ZW	NH-HEM	NONE	NONE
CHEN-8	B	38.00	SP	1.6	SP, BC	6-11	146	EA	NH	REMOVE SP	2018
CHEN-8	B	39.00	Spruce-Nat	4.5	RM, NS	6-11	140	EA	NH-SPRUCE	FW	2018
CHEN-8	B	40.00	NH-HEM	5.7	ASP, HEM	6-11	40	ZR	NH-HEM	NONE	NONE
CHEN-8	B	41.00	NH	6.7	WA, RM	6-11	92	EA	NH	FW	2020
CHEN-8	R	0.00	Road	1.5	Road	--	0	Road	ROAD	NONE	NONE
CHEN-8	R	0.00	Road	0.3	Road	--	0	Road	ROAD	NONE	NONE
CHEN-8	R	0.00	Road	1.4	Road	--	0	Road	ROAD	NONE	NONE
CHEN-8	C	1.00	WP	14.5	WP, WA	12-17	147	EA	NH-WP	THIN PINE	2026
CHEN-8	C	2.00	NH	5.9	WA, HM	12-17	120	EA	NH	FW	2016
CHEN-8	C	3.00	NH-HEM	4.8	HEM, RM	6-11	175	ZRT	NH-HEM	NONE	NONE
CHEN-8	C	4.00	NH	13.8	HM, BC	12-17	64	UA	NH	FW/ST	2023
CHEN-8	C	5.10	RP	12.3	RP, BC	12-17	116	EA	NH	CONVERT	2026
CHEN-8	C	5.20	NH	12.8	BC, WA	12-17	0	EA	NH	FW	2023
CHEN-8	C	5.30	NH	2.0		12-17	0	EA	NH	FW	2023
CHEN-8	C	6.00	NS	10.6	NS, HM	6-11	190	EA	NH-SPRUCE	THIN SPRUCE	2012
CHEN-8	C	7.00	NS	18.4	NS, BC	12-17	180	EA	NH-SPRUCE	THIN SPRUCE	2026
CHEN-8	C	8.00	NH-HEM	15.0	HEM, RM	6-11	143	ZW	NH-HEM	NONE	NONE

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN-8	C	9.00	NH	54.6	BC, RM	12-17	106	UA	NH	REMOVE SP	2013
CHEN-8	C	10.00	NH-HEM	39.1	HEM, RM	12-17	140	UA	NH-HEM	FW/ST	2022
CHEN-8	C	11.00	NH-HEM	30.1	HEM, HM	12-17	121	EA	NH-HEM	FW/ST	2022
CHEN-8	C	12.00	NH	4.9	HM, WA	12-17	105	UA	NH	FW/ST	2022
CHEN-8	C	13.00	NS	117.4	NS, RM	6-11	196	EA	NH-SPRUCE	THIN SPRUCE	2025
CHEN-8	C	14.00	NH	1.8	RM, NS	6-11	106	ZW	NH-SPRUCE	NONE	NONE
CHEN-8	C	15.00	Wetland	2.9	ASP	--	0	ZW	WETLAND	NONE	NONE
CHEN-8	C	16.00	WP	1.5	WP, WA	12-17	170	UA	NH-WP	FW/ FSI	2016
CHEN-8	C	17.00	NH-HEM	14.6	HEM, HM	6-11	118	EA	NH-HEM	FW/ST	2023
CHEN-8	C	18.00	NH	28.5	BC, BE	1-6	25	EA	NH	FW	2023
CHEN-8	C	19.00	Riparian	5.1	HM, RM	12-17	0	ZR	NH	NONE	NONE
CHEN-8	C	20.00	NH	1.8	- -	1-6	0	EA	NH	FW	2023
CHEN-8	C	21.00	Spruce-Nat	2.2	RO, NS	6-11	120	EA	NH-SPRUCE	FW/ST	2012
CHEN-8	C	22.00	NH	1.1	RM, BC	6-11	95	EA	NH	FW	2022
CHEN-8	C	23.00	NH	2.3	WA, HM	6-11	127	EA	NH	FW	2025
CHEN-8	C	24.00	NH	1.6	RM, WA	6-11	130	EA	NH	FW	2025
CHEN-8	C	25.00	NS	4.0	NS, RO	6-11	183	EA	NH-SPRUCE	THIN SPRUCE	2012
CHEN-8	R	0.00	Road	1.0	Road	--	0	Road	ROAD	NONE	NONE
CHEN-8	R	0.00	Road	2.5	Road	--	0	Road	ROAD	NONE	NONE
CHEN-8	R	0.00	Road	0.3	Road	--	0	Road	ROAD	NONE	NONE

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 14	A	1.00	NH-WP	10.3	WA, RM	12-17	84	UA	NH-WP	FW/ST	2022
CHEN 14	A	2.00	NH-HEM	33.0	HEM, RM	6-11	130	UA	NH-HEM	FW/ST	2022
CHEN 14	A	3.00	NH	26.0	HM, WA	12-17	111	UA	NH	FW/ST	2022
CHEN 14	A	4.00	NH	12.1	WA, HM	12-17	94	UA	NH	FW	2022
CHEN 14	A	5.00	NH	1.6	HM, ASP	1-6	25	EA	NH	FW	2022
CHEN 14	A	6.00	NH	0.9	HM	1-6	25	EA	NH	FW	2022
CHEN 14	A	7.00	NH-WP	3.8	WP, WA	12-17	110	UA	NH-WP	FW/TSI	2022
CHEN 14	A	8.00	RP-Spruce	62.9	RP, NS	12-17	160	EA	NH-SPRUCE	THIN PINE	2016
CHEN 14	A	9.00	RP-Spruce	4.3	RP, NS	12-17	194	EA	NH-SPRUCE	Thin/Rem PINE	2016
CHEN 14	A	10.00	NH-WP	2.3	WP, RM	6-11	127	ZA	NH-WP	NONE	NONE
CHEN 14	A	11.00	Spruce-Nat	3.0	NS, RO	6-11	135	EA	NH-SPRUCE	FW/TSI	2016
CHEN 14	A	12.00	NH	6.8	RM, RO	6-11	90	EA	NH	FW	2022
CHEN 14	A	13.00	Spruce-Nat	61.8	NS, RM	12-17	171	EA	NH-SPRUCE	THIN SPRUCE	2026
CHEN 14	A	14.00	NH-HEM	7.3	RM, HEM	6-11	120	EA	NH-HEM	FW/ST	2022
CHEN 14	A	15.00	NH-HEM	1.1	HEM, YB	12-17	110	ZW	NH-HEM	NONE	NONE
CHEN 14	A	16.00	NH-WP	8.3	RM, WP	6-11	134	UA	NH-WP	FW/ST	2022
CHEN 14	A	17.00	NH-WP	10.9	WP, RM	12-17	148	UA	NH-WP	FW/ST	2022
CHEN 14	A	18.00	RP-Spruce	44.4	RP, NS	12-17	164	EA	NH-SPRUCE	Thin PINE/SPR	2016
CHEN 14	A	19.00	NH	20.6	HM, WA	6-11	136	UA	NH	FW	2016
CHEN 14	A	20.00	NH-WP	3.9	WA, RM	12-17	115	EA	NH-WP	ST	2023

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 14	A	21.00	Grassland	7.6	Grass	--	0	EA	GRASSLAND	MOW/BURN	MOW
CHEN 14	A	22.00	NH	2.6	WA, HM	6-11	77	EA	NH	RELEASE APP	2016
CHEN 14	A	23.00	Pine-Nat	3.7	WP, RM	12-17	145	EA	NH-WP	FW/TSI	2016
CHEN 14	A	24.00	NH-HEM	10.4	HEM, WP	6-11	136	UA	NH-HEM	FW/ST	2023
CHEN 14	A	25.00	NH-HEM	8.5	HEM, BE	6-11	147	UA	NH-HEM	FW/ST	2023
CHEN 14	A	26.00	Spruce-Nat	2.3	RM, NS	6-11	100	EA	NH-SPRUCE	FW/REM SPR	2026
CHEN 14	A	27.00	NS	2.6	NS, WA	12-17	145	EA	NH-SPRUCE	THIN SPRUCE	2026
CHEN 14	A	28.00	NH	6.1	RM, YB	12-17	122	ZR	NH	NONE	NONE
CHEN 14	A	29.00	NH	10.4	HM, WA	6-11	101	EA	NH	FW	2025
CHEN 14	A	30.00	Spruce-Nat	23.8	WS, BC	6-11	85	EA	NH	FW/THIN SPR	2025
CHEN 14	A	31.00	Shrub	1.8	- -	--	0	EA	SHRUB	TSI BRUSH	2016
CHEN 14	A	32.00	NS	8.6	NS, WP	12-17	151	EA	NH-SPRUCE	THIN SPRUCE	2025
CHEN 14	A	33.00	Wetland	2.5	- -	--	0	ZW	WETLAND	NONE	NONE
CHEN 14	A	34.00	NH	8.9	WA, HM	6-11	107	UA	NH	FW	2025
CHEN 14	A	35.00	NS	54.7	NS, WA	12-17	164	EA	NH-SPRUCE	THIN SPRUCE	2016
CHEN 14	A	36.00	NH-HEM	7.1	HEM, RM	6-11	124	UA	NH-HEM	FW	2025
CHEN 14	A	37.00	NH-HEM	3.7	HEM, YB	12-17	100	ZR	NH-HEM	NONE	NONE
CHEN 14	A	38.00	NH-HEM	3.9	HEM, RM	12-17	170	UA	NH-HEM	FW/ST	2025
CHEN 14	A	39.00	NH	11.1	HM, RM	6-11	90	UA	NH	FW/ST	2025
CHEN 14	A	40.00	NH	28.2	RM, WA	12-17	103	UA	NH	FW/ST	2023

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 14	A	41.00	NS	28.3	NS, RM	6-11	184	EA	NH-SPRUCE	THIN SPRUCE	2026
CHEN 14	A	42.00	Fir	18.8	BC, RM	6-11	64	EA	NH-FIR	FW	2025
CHEN 14	A	43.00	Spruce-Nat	6.7	WS, ASP	6-11	95	ZR	NH	NONE	NONE
CHEN 14	A	44.00	WP-Spruce	15.2	NS, WP	12-17	119	EA	NH-WP	THIN SPRUCE	2026
CHEN 14	A	45.00	NH-Oak	1.3	RM, HM	12-17	100	EA	NH-OAK	FW	2025
CHEN 14	A	46.00	NH	25.1	HM, RM	6-11	82	UA	NH	FW/ST	2025
CHEN 14	A	47.00	NH	7.0	RM, AS	6-11	25	EA	NH	FW	2025
CHEN 14	A	48.00	NH	5.9	HM, WA	12-17	25	EA	NH	FW	2025
CHEN 29	A	1.00	Pine-Nat	23.4	RM, SP	6-11	143	EA	NH	FW/ST	2027
CHEN 29	A	2.00	NH-HEM	14.3	HEM, HM	6-11	202	ZR	NH-HEM	NONE	NONE
CHEN 29	A	3.00	NH	63.0	RM, HM	12-17	109	UA	NH	FW/ST	2021
CHEN 29	A	4.00	S/S-Nat	3.0	WA, RM	1-6	25	EA	NH	FW	2027
CHEN 29	A	5.00	NH	10.6	WA, HM	12-17	111	EA	NH	FW	2021
CHEN 29	A	6.00	Shale	0.6	Shale	--	25	EA	SHALE	NONE	NONE
CHEN 29	A	7.10	NS	2.7	NS, BC	12-17	167	EA	NH-SPRUCE	THIN FW/SPR	2027
CHEN 29	A	7.20	NH	6.0	HM, WA	12-17	138	EA	NH	FW/ST	2027
CHEN 29	A	7.30	NS	5.4	NS, RM	12-17	148	EA	NH-SPRUCE	FW	2027
CHEN 29	A	8.10	NS	3.4	NS, WA	12-17	115	EA	NH-SPRUCE	FW	2027
CHEN 29	A	8.20	Shrub	1.9	APP, WA	6-11	107	EA	NH-APPLE	RELEASE APP	2027
CHEN 29	A	8.30	NH	3.6	WA, HM	12-17	117	EA	NH	FW/ST	2021

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 29	A	9.00	NS	12.0	NS, BC	12-17	193	EA	NH-SPRUCE	THIN SPRUCE	2015
CHEN 29	A	10.10	NH	13.2	HM, BC	12-17	130	ZS	NH	NONE	NONE
CHEN 29	A	10.20	Spruce-Nat	4.3	HM, NS	12-17	110	EA	NH-SPRUCE	FW/ST	2014
CHEN 29	A	10.30	NH	3.9	WA, RM	12-17	137	EA	NH	FW/ST	2014
CHEN 29	A	11.00	NS	4.6	NS, BC	12-17	116	EA	BRUSH/SPR	THIN BRUSH	2014
CHEN 29	A	12.00	NS	18.9	NS, HM	12-17	195	EA	NH-SPRUCE	THIN SPRUCE	2015
CHEN 29	A	13.00	NH	10.9	RM, BC	12-17	97	EA	NH	FW/ST	2019
CHEN 29	A	14.00	Pine-Nat	6.8	RM, SP	6-11	73	EA	NH	FW	2019
CHEN 29	A	15.00	NH	25.2	RM, HM	6-11	132	UA	NH	FW/TSI	2011
CHEN 29	A	16.00	NH	11.6	RM, HM	12-17	134	EA	NH	FW/ST	2019
CHEN 29	A	17.00	NH	4.4	RM, WA	6-11	48	EA	NH	Remove RP/FW	2021
CHEN 29	A	18.00	NH	6.9	BC, HM	6-11	25	EA	NH	FW	2027
CHEN 29	A	19.10	RP	18.9	RP, WA	12-17	161	EA	NH	CONVERT	2021
CHEN 29	A	19.20	NH	4.6	RM, WA	12-17	117	EA	NH	FW/ST	2015
CHEN 29	A	19.30	Wetland	1.6	WA, APP	6-11	25	ZW	WETLAND	NONE	NONE
CHEN 29	A	20.00	Spruce-Nat	9.2	WA, NS	12-17	157	EA	NH-SPRUCE	REMOVE SPR	2015
CHEN 29	A	21.00	Cultural	4.3	BC, HM	6-11	126	ZC	NH	NONE	NONE
CHEN 29	A	22.10	NH-HEM	3.3	HEM, RM	6-11	153	ZW	NH-HEM	NONE	NONE
CHEN 29	A	22.20	NH-HEM	5.8	HEM, RM	12-17	167	EA	NH-HEM	FW/ST	2019
CHEN 29	A	23.00	NH	26.3	RM, HEM	12-17	139	UA	NH	FW/ST	2015

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 29	A	24.00	NH-HEM	11.7	HEM, RM	12-17	156	EA	NH-HEM	FW/ST	2027
CHEN 29	A	25.10	NH	14.7	RM, HM	12-17	128	EA	NH	FW/ST	2027
CHEN 29	A	25.20	Spruce-Nat	5.7	RM, NS	12-17	154	EA	NH-SPRUCE	FW/TSI	2027
CHEN 29	A	25.30	NH	5.6	RM, BC	12-17	154	EA	NH	FW/ST	2015
CHEN 29	A	26.00	WP-HEM	13.4	HEM, WP	6-11	152	ZW	NH-HEM	NONE	NONE
CHEN 29	A	27.00	NH-Oak	7.6	RM, RO	6-11	114	EA	NH-OAK	FW	2027
CHEN 29	A	28.00	Spruce-Nat	8.4	RM, NS	12-17	151	EA	NH-SPRUCE	FW/ THIN SPR	2027
CHEN 29	A	29.00	NH	4.8	RM, HM	12-17	113	EA	NH	FW/ST	2027
CHEN 29	A	30.00	NH-HEM	10.0	HEM, RM	12-17	146	EA	NH-HEM	FW/ST	2027
CHEN 29	A	31.00	NS	10.4	NS, RM	12-17	178	EA	NH-SPRUCE	THIN SPRUCE	2027
CHEN 29	A	32.10	NH	9.1	HM, BC	12-17	84	UA	NH	FW/ST	2019
CHEN 29	A	32.20	NH-HEM	38.7	HEM, RM	12-17	122	UA	NH-HEM	FW/ST	2019
CHEN 29	A	33.00	NH-HEM	20.6	HEM, RM	6-11	229	ZW	NH-HEM	NONE	NONE
CHEN 29	A	34.10	NH	17.6	RM, HM	12-17	142	UA	NH	FW/ST	2027
CHEN 29	A	34.20	NH-HEM	6.2	RM, HEM	12-17	158	EA	NH-HEM	FW/ST	2027
CHEN 29	R	0.00	Road	7.2	Road	--	0	Road	ROAD	ROAD	NONE
CHEN 31	A	1.00	NH-HEM	33.7	HM, HEM	12-17	132	UA	NH-HEM	FW-ST	2013
CHEN 31	A	2.00	NH-HEM	8.3	HEM, BE	6-11	134	UA	NH-HEM	FW-ST	2013
CHEN 31	A	3.00	NH	7.5	RM, HM	12-17	113	EA	NH	FW-ST	2018
CHEN 31	A	4.00	NH	31.5	HM, BAS	12-17	109	UA	NH	FW-ST	2018

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 31	A	5.00	NH	6.8	HM, WA	6-11	90	EA	NH	FW	2018
CHEN 31	A	6.00	HEM	3.0	HEM, BE	6-11	150	EA	NH-HEM	FW/TSI	2018
CHEN 31	A	7.00	RP	14.3	RP, SP	6-11	180	EA	NH	THIN PINE	2013
CHEN 31	A	8.00	S/S-Nat	10.7	- -	1-6	132	EA	NH	TSI	2029
CHEN 31	A	9.00	NS	2.8	NS, RO	12-17	165	EA	NH-OAK	THIN SPRUCE	2013
CHEN 31	A	10.00	NH-HEM	11.5	RM, HEM	6-11	211	UA	NH-HEM	FW-ST	2026
CHEN 31	A	11.00	NH-HEM	54.4	HM, RM	12-17	89	UA	NH-HEM	FW-ST	2026
CHEN 31	A	12.00	NH	9.1	HM, WA	12-17	78	UA	NH	FW-ST	2026
CHEN 31	A	13.00	NH-HEM	30.0	RM, HEM	6-11	154	UA	NH-HEM	FW-ST	2029
CHEN 31	A	14.00	NH-HEM	13.0	RM, WA	6-11	140	ZW	NH-HEM	NONE	NONE
CHEN 31	A	15.00	NH-HEM	32.7	HEM, HM	6-11	117	UA	NH-HEM	FW-ST	2026
CHEN 31	A	16.00	NH-Oak	10.5	RO	12-17	164	EA	NH-OAK	ST	2029
CHEN 31	A	17.00	NH-Oak	15.4	RO, RM	12-17	111	EA	NH-OAK	ST	2029
CHEN 31	A	18.00	NH-HEM	9.6	HEM, RM	12-17	169	UA	NH-HEM	FW-ST	2029
CHEN 31	A	19.00	NH-WP	2.6	WP, RM	12-17	110	UA	NH-WP	FW-ST	2029
CHEN 31	A	20.00	NH-HEM	10.1	RM, HEM	6-11	160	UA	NH-HEM	FW	2029
CHEN 31	A	21.00	NH	10.8	RM, BE	6-11	111	EA	NH	FW	2013
CHEN 31	A	22.00	NH-HEM	3.4	HEM, RM	6-11	165	ZB	NH-HEM	NONE	NONE
CHEN 31	A	23.00	NH	23.4	HM, BC	12-17	113	UA	NH	FW/ST	2028
CHEN 31	A	24.00	NH-HEM	2.7	HEM, HM	6-11	145	ZB	NH-HEM	NONE	NONE

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 31	A	25.00	NH-HEM	4.0	HM, HEM	6-11	116	ZS	NH-HEM	NONE	NONE
CHEN 31	A	26.00	NH-HEM	2.4	HEM, HM	18+	137	ZS	NH-HEM	NONE	NONE
CHEN 31	A	27.00	S/S-Nat	0.5	- -	1-6	0	EA	NH	TSI	2029
CHEN 31	A	28.00	NH	5.2	RM, HM	12-17	106	EA	NH	FW	2023
CHEN 31	A	29.00	Pine-Nat	7.1	RM, RP	6-11	160	EA	NH	Conversion	2018
CHEN 31	A	30.00	NH-HEM	6.6	HM, HEM	12-17	73	UA	NH-HEM	FW-ST	2023
CHEN 31	A	31.00	NH-HEM	3.6	HEM, YB	6-11	173	ZB	NH-HEM	NONE	NONE
CHEN 31	A	32.00	RP	8.8	RP, WA	6-11	250	EA	NH	THIN PINE	2018
CHEN 31	A	33.00	RP	10.5	RP, ASP	6-11	141	EA	NH	THIN PINE	2018
CHEN 31	A	34.00	NH	1.4	RM, BC	6-11	57	EA	NH	FW	2029
CHEN 31	A	35.00	NH-HEM	7.2	RM, HEM	6-11	128	UA	NH-HEM	FW-ST	2023
CHEN 31	A	36.00	NH	20.3	RM, ASP	12-17	104	EA	NH	FW/ST	2023
CHEN 31	A	37.00	RP	4.8	RP, WA	6-11	165	EA	NH	Convert	2018
CHEN 31	A	38.00	S/S-Nat	1.7	- -	1-6	0	EA	NH	FW/TSI	2029
CHEN 31	A	39.00	RP	2.6	RP, HEM	12-17	210	EA	NH	Thin Pine	2018
CHEN 31	A	40.00	RP	5.2	RP, BC	6-11	127	EA	NH	Convert	2018
CHEN 31	A	41.00	RP	1.0	RP, RM	6-11	190	EA	NH	Convert	2018
CHEN 31	A	42.00	NH-HEM	15.6	HEM, RM	6-11	112	EA	NH-HEM	FW	2023
CHEN 31	A	43.00	RP	2.7	RP, RM	12-17	210	EA	NH	Thin Pine	2018
CHEN 31	A	44.00	RP	2.0	RP, NS	12-17	260	ZA	RP, NS	NONE	NONE

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 31	A	45.00	NH-HEM	6.2	RM, RO	6-11	105	UA	NH-OAK	FW	2023
CHEN 31	A	46.00	RP	6.0	RP, NS	12-17	206	EA	NH	Thin Pine	2016
CHEN 31	A	47.00	NH	3.1	RM, ASP	12-17	120	EA	NH	FW	2013
CHEN 31	A	48.00	NH-HEM	21.0	HM, HEM	12-17	139	UA	NH-HEM	FW/ST	2013
CHEN 31	B	1.00	NH	15.4	HM, BC	12-17	64	EA	NH	FW	2028
CHEN 31	B	2.00	NH-HEM	15.7	HEM, RO	12-17	163	UA	OAK-HEM	FW-ST	2028
CHEN 31	B	3.00	NH	29.8	HM, RM	12-17	116	UA	NH	FW-ST	2028
CHEN 31	B	4.00	Oak-Pine	7.1	RO, WP	18+	108	UA	Oak-Pine	FW-ST	2029
CHEN 31	B	5.00	NH-HEM	7.9	HEM, YB	6-11	120	ZW	NH-HEM	NONE	NONE
CHEN 31	B	6.00	NH-HEM	16.1	HEM, RM	6-11	147	UA	NH-HEM	FW-ST	2028
CHEN 31	B	7.00	NH-HEM	2.2	HEM, RM	6-11	126	ZW	NH-HEM	NONE	NONE
CHEN 31	B	8.00	NH	24.4	RM, HM	12-17	110	EA	NH	FW-ST	2013
CHEN 31	B	9.00	NH-WP	3.8	RM, WP	6-11	108	ZS	NH-WP	NONE	NONE
CHEN 31	B	10.00	NH-HEM	8.1	HEM, RM	6-11	144	ZS	NH-HEM	NONE	NONE
CHEN 31	B	11.00	NH-HEM	7.9	HEM, RM	12-17	126	UA	NH-HEM	FW-ST	2025
CHEN 31	B	12.00	NH-HEM	11.9	HEM, RM	6-11	175	ZW	NH-HEM	NONE	NONE
CHEN 31	B	13.00	NH-HEM	13.1	HEM, RM	12-17	179	EA	NH-HEM	FW-ST	2023
CHEN 31	B	14.00	NH-HEM	7.6	HEM, YB	6-11	217	ZW	NH-HEM	NONE	NONE
CHEN 31	B	15.00	NH-Oak	9.8	RO, RM	12-17	100	EA	NH-OAK	FW-ST	2023
CHEN 31	B	16.00	NH-Oak	10.8	RM, RO	6-11	120	EA	NH-OAK	FW	2023

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 31	B	17.00	S/S-Nat	5.2	- -	1-6	0	EA	SHRUB	FW	2023
CHEN 31	B	18.00	NH-WP	6.1	WP, RM	12-17	116	ZR	NH-WP	NONE	NONE
CHEN 31	B	19.00	NH-HEM	20.5	HEM, RO	6-11	100	EA	NH-HEM	FW/TSI	2012
CHEN 31	B	20.00	NH	7.1	RM, WA	6-11	60	EA	NH	FW	2012
CHEN 31	B	21.00	NH	8.9	RM, WA	6-11	92	EA	NH	FW	2023
CHEN 31	B	22.00	NS	2.1	NS, WA	6-11	193	EA	NS-NAT	TSI	2016
CHEN 31	B	23.00	NH	5.3	RM, WA	6-11	64	EA	NH	FW	2023
CHEN 31	B	24.00	NS	18.5	NS, WA	6-11	191	EA	NS-NAT	PULP/TSI	2016
CHEN 31	B	25.00	NH	2.7	RM, HM	6-11	116	EA	NH	FW/TSI	2023
CHEN 31	B	26.00	S/S-Nat	2.2	- -	1-6	40	EA	NH	FW/TSI	2023
CHEN 31	B	27.00	Fir	1.1	DF, HM	6-11	90	EA	NH-FIR	FW	2023
CHEN 31	B	28.00	S/S-Nat	4.2	- -	1-6	40	EA	NH	FW/TSI	2023
CHEN 31	B	29.00	NS	1.6	NS, BC	6-11	134	ZW	NS-NAT	NONE	NONE
CHEN 31	B	30.00	Shrub	1.4	- -	--	0	EA	SHRUB	TSI	2016
CHEN 31	B	31.00	NS	2.9	NS, BC	6-11	134	EA	NS-NAT	PULP/TSI	2016
CHEN 31	B	32.00	S/S-Nat	4.4	- -	1-6	0	EA	NH	TSI	2029
CHEN 31	B	33.00	WP	9.1	WP, RM	12-17	138	EA	NH-WP	FW	2025
CHEN 31	B	34.00	NH-HEM	8.8	HEM, RM	6-11	147	UA	NH-HEM	FW-ST	2029
CHEN 31	B	35.00	NH-WP	4.0	WP, RM	6-11	145	UA	NH-WP	FW/TSI	2013
CHEN 31	B	36.00	Shale	1.3	- -	--	0	NONE	SHALE	NONE	NONE

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 31	B	37.00	NH-HEM	3.7	HEM, WP	6-11	102	EA	NH-HEM	FW	2029
CHEN 31	B	38.00	RP	1.2	RP, RM	12-17	130	EA	NH	CONVERT	2023
CHEN 31	B	39.00	NH	4.9	RM, WA	12-17	117	UA	NH	FW	2023
CHEN 31	B	40.00	RP	2.5	RP, WA	6-11	213	EA	NH	CONVERT	2023
CHEN 31	B	41.00	NH	8.6	WA, RO	6-11	120	UA	NH	FW-ST	2013
CHEN 31	B	42.00	NH	14.6	RM, HM	6-11	90	EA	NH	FW/TSI	2013
CHEN 31	B	43.00	Fir	4.0	BF, WS	1-6	153	EA	SRUCE-FIR	TSI	2013
CHEN 31	B	44.00	Grassland	1.8	Grass	--	0	EA	GRASS	MOW	MOW
CHEN 31	B	45.00	Riparian	7.6	ASP, RM	6-11	134	ZR	NH	NONE	NONE
CHEN 31	B	46.00	NH	4.5	RM, BC	6-11	123	EA	NH-OAK	FW	2013
CHEN 31	B	47.00	Pine-Nat	7.6	SP, BC	6-11	76	EA	NH	THIN PINE	2018
CHEN 31	B	48.00	NS	1.6	NS, BC	6-11	190	EA	NS-NAT	PULP/TSI	2016
CHEN 31	B	49.00	Shrub	0.7	- -	--	0	EA	SHRUB	TSI	2016
CHEN 31	B	50.00	NH-WP	16.9	WP, RP	6-11	126	UA	NH-WP	FW/TSI	2022
CHEN 31	B	51.00	NH-HEM	24.2	HEM, RM	12-17	156	EA	NH-HEM	FW/TSI	2022
CHEN 31	B	52.00	Pine-Nat	17.7	WP, RM	12-17	180	UA	NH-WP	FW-ST	2022
CHEN 31	B	53.00	NH-HEM	4.3	HEM, YB	6-11	166	ZW	NH-HEM	NONE	NONE
CHEN 31	B	54.00	NH-WP	7.4	WP, RM	12-17	154	EA	NH-WP	FW-ST	2022
CHEN 31	B	55.00	NH-WP	11.1	WP, RM	6-11	174	UA	NH-WP	TSI	2022
CHEN 31	B	56.00	S/S-Nat	24.1	- -	1-6	0	EA	NH-WP	FW/TSI	2025

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 31	B	57.00	RP-Spruce	41.0	RP, RM	12-17	136	EA	NH	THIN PINE	2016
CHEN 31	B	58.00	NH-HEM	7.6	HEM, RM	6-11	171	ZS	NH-HEM	NONE	NONE
CHEN 31	B	59.00	NS	30.9	NS, RM	12-17	158	EA	NS-NAT	THIN SPRUCE	2020
CHEN 31	B	60.00	Larch	32.8	EL, BC	12-17	175	EA	NH	THIN LARCH	2022
CHEN 31	B	61.00	NH	2.6	WA, BC	12-17	105	ZS	NH	NONE	NONE
CHEN 31	B	62.00	NS-Larch	26.7	EL, BC	12-17	110	EA	NH	THIN LARCH	2022
CHEN 31	B	63.00	Larch	4.3	JL, NS	12-17	163	EA	NH	THIN LARCH	2016
CHEN 31	B	64.00	NS-Larch	5.1	NS, JL	12-17	287	EA	NH	THIN SPRUCE	2020
CHEN 31	B	65.00	NH-Oak	1.4	RO, RM	6-11	143	EA	NH-OAK	FW	2013
CHEN 31	B	66.00	Spruce-Nat	8.2	NS, RO	12-17	202	EA	NH	THIN SPRUCE	2020
CHEN 31	B	67.00	NS-Larch	17.8	NS, JL	12-17	134	EA	NH	THIN SPRUCE	2026
CHEN 31	B	68.00	NS-Larch	13.6	EL, BC	12-17	109	EA	NH	THIN LARCH	2026
CHEN 31	B	69.00	Pond	9.8	- -	--	0	ZW	POND	NONE	NONE
CHEN 37	A	1.00	NH	30.7	HM, WA	12-17	106	UA	NH	FW/ST	2023
CHEN 37	A	2.00	RP	8.2	RP, NS	6-11	201	EA	NH	THIN PINE	2012
CHEN 37	A	3.00	Larch	4.8	JL, WA	12-17	101	EA	NH	THIN LARCH	2012
CHEN 37	A	4.00	RP	4.7	RP, WA	6-11	136	EA	NH	THIN PINE	2012
CHEN 37	A	5.00	NH	2.6	WA, HM	6-11	77	EA	NH	FW/TSI	2012
CHEN 37	A	6.00	RP-Larch	10.9	RP, EL	12-17	140	EA	NH	Conv/Thin RP	2012
CHEN 37	A	7.00	RP-Larch	9.8	JL, RP	12-17	137	UA	NH	THIN LARCH	2012

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 37	A	8.00	NH	6.1	HM, WA	6-11	97	UA	NH	FW	2023
CHEN 37	A	9.00	RP	21.8	RP, BC	12-17	148	UA	NH	THIN PINE	2012
CHEN 37	A	10.00	NH	4.4	WA, HM	6-11	100	EA	NH	FW	2023
CHEN 37	A	11.00	Larch	5.7	EL, WA	12-17	120	EA	NH	THIN LARCH	2012
CHEN 37	A	12.00	NH	2.0	WA, RM	12-17	95	ZS	NH	NONE	NONE
CHEN 37	A	13.00	WS	2.3	WS, RP	6-11	127	EA	NH	THIN SPRUCE	2018
CHEN 37	A	14.00	NH	5.7	WA, HM	6-11	54	EA	NH	FW	2018
CHEN 37	A	15.00	SP	6.9	SP, BC	12-17	104	EA	NH	CONVERT	2018
CHEN 37	A	16.00	RP	64.6	RP, RM	12-17	146	UA	NH-SPRUCE	THIN PINE	2018
CHEN 37	A	17.00	RP	4.8	RP, NS	6-11	166	ZS	NH	NONE	NONE
CHEN 37	A	18.00	S/S-Nat	2.9	- -	1-6	0	EA	NH	FW/TSI	2029
CHEN 37	A	19.00	Oak-Pine	2.0	RO, WP	12-17	80	EA	NH	FW/TSI	2012
CHEN 37	A	20.00	NS	2.5	NS, RP	12-17	185	EA	NH-SPRUCE	THIN PINE	2018
CHEN 37	A	21.00	NH	2.9	RM, BC	6-11	70	EA	NH	FW	2018
CHEN 37	A	22.00	NH-HEM	5.0	HEM, RM	12-17	117	EA	NH-HEM	PATCH	2023
CHEN 37	A	23.00	NS	1.6	NS, RP	6-11	180	EA	NH-SPRUCE	REMOVE RP	2012
CHEN 37	A	24.00	NH-Shrub	1.5	WA, RM	6-11	75	ZW	NH-APPLE	NONE	NONE
CHEN 37	A	25.00	S/S-Plant	5.4	- -	1-6	0	EA	NH-SPRUCE	TSI	2029
CHEN 37	A	26.00	NS	8.9	NS, RP	12-17	178	EA	NH-SPRUCE	THIN SPRUCE	2012
CHEN 37	A	27.00	NH	17.1	RM, BE	12-17	106	EA	NH	FW/ST	2012

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 37	A	28.00	NH-Oak	2.7	RM, RO	6-11	105	EA	NH	TSI	2023
CHEN 37	A	29.00	NH	2.2	RM, WA	6-11	65	EA	NH	FW/TSI	2012
CHEN 37	A	30.00	Larch	1.7	JL, WA	12-17	127	EA	NH	THIN LARCH	2012
CHEN 37	A	31.00	S/S-Nat	8.4	- -	1-6	0	EA	NH	TSI	2023
CHEN 37	A	32.00	RP	4.2	RP, WC	12-17	163	ZR	RP	NONE	NONE
CHEN 37	A	33.00	Larch	4.3	JL, WA	12-17	143	EA	NH	THIN LARCH	2012
CHEN 37	R	0.00	Road	1.1	Road	--	0	Road	ROAD	NONE	NONE
CHEN 37	R	0.00	Road	3.2	Road	--	0	Road	ROAD	NONE	NONE
CHEN 38	A	1.00	NH-HEM	12.3	HM, HEM	12-17	97	EA	NH-HEM	SHELTERWD	2025
CHEN 38	A	2.00	NH-WP	61.7	RM, WP	6-11	118	EA	NH-WP	FW/TSI	2025
CHEN 38	A	3.00	RP	4.3	RP, RM	6-11	130	EA	NH	CONVERSION	2012
CHEN 38	A	4.00	Grassland	40.3	Grass	--	0	EA	GRASS	MOW/BURN	MOW
CHEN 38	A	5.00	RP	2.8	RP, BC	6-11	140	EA	NH	THIN PINE	2012
CHEN 38	A	6.00	Larch	7.5	JL, HM	6-11	92	EA	NH	CONVERSION	2012
CHEN 38	A	7.00	Shrub	6.9	Shrub	--	0	EA	SHRUB	REM TREES	2020
CHEN 38	A	8.00	S/S-Nat	4.6	- -	1-6	25	EA	NH	FW/TSI	2020
CHEN 38	A	9.00	NH-HEM	15.7	HM, HEM	12-17	100	EA	NH-HEM	SHELTERWD	2020
CHEN 38	A	10.00	S/S-Plant	28.0		1-6	56	EA	SPRUCE	TSI	2020
CHEN 38	A	11.00	NH	3.0	BL, RM	12-17	85	EA	NH	FW	2020
CHEN 38	A	12.00	HEM	5.2	HEM, WP	6-11	120	ZW	HEMLOCK	NONE	NONE

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 38	A	13.00	NH-HEM	16.3	HEM, WP	6-11	182	UA	NH-HEM	FW/ST	2020
CHEN 38	A	14.00	NH-HEM	37.4	HM, HEM	12-17	93	UA	NH-HEM	FW/ST	2029
CHEN 38	A	15.00	Grassland	1.6	Grass	--	0	EA	GRASS	MOW/BURN	MOW
CHEN 38	A	16.00	RP	49.2	RP, NS	6-11	111	EA	NH	THIN PINE	2028
CHEN 38	A	17.00	Grassland	0.7	Grass	--	0	EA	GRASS	MOW/BURN	MOW
CHEN 38	A	18.00	Grassland	1.9	Grass	--	0	EA	GRASS	MOW/BURN	MOW
CHEN 38	A	19.00	Grassland	3.2	Grass	--	0	EA	GRASS	MOW/BURN	MOW
CHEN 38	A	20.00	NH-HEM	7.1	WP, HEM	12-17	134	UA	NH-HEM	FW/ST	2029
CHEN 38	A	21.00	NH-WP	4.6	RM, WP	6-11	70	EA	NH-WP	FW	2029
CHEN 38	A	22.00	S/S-Plant	60.7	- -	1-6	60	EA	SPRUCE	TSI	2029
CHEN 38	A	23.00	NS	19.4	NS	6-11	121	EA	NH-SPRUCE	THIN SPRUCE	2029
CHEN 38	A	24.00	NS	8.0	NS, WA	6-11	118	EA	NH-SPRUCE	THIN SPRUCE	2029
CHEN 38	A	25.00	Grassland	1.6	Grass	--	0	EA	GRASS	MOW/BURN	MOW
CHEN 38	A	26.00	Grassland	4.3	Grass	--	0	EA	GRASS	MOW/BURN	MOW
CHEN 38	A	27.00	S/S-Plant	11.5	- -	1-6	86	EA	NH-LARCH	TSI	2022
CHEN 38	A	28.00	NH-HEM	9.2	HM, BE	12-17	108	UA	NH-HEM	FW/ST	2029
CHEN 38	A	29.00	Larch	6.2	EL	6-11	93	EA	NH-LARCH	THIN/TSI	2022
CHEN 38	A	30.00	Grassland	3.5	Grass	--	0	EA	GRASS	MOW/BURN	MOW
CHEN 38	R	0.00	Road	3.1	Road	--	0	Road	ROAD	NONE	NONE
CHEN 38	R	0.00	Road	1.8	Road	--	0	Road	ROAD	NONE	NONE

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 38	B	1.00	S/S-Plant	3.4	- -	1-6	25	EA	NH-LARCH	TSI	2013
CHEN 38	B	2.00	Larch	14.9	JL, BC	6-11	128	EA	NH	THIN LARCH	2016
CHEN 38	B	3.00	NS	1.1	NS, BC	6-11	200	EA	NH-SPRUCE	THIN SPRUCE	2013
CHEN 38	B	4.00	Other	14.7	Shrub	--	0	EA	SHRUB	TSI	2013
CHEN 38	B	5.00	Other	18.3	- -	--	0	ZW	WETLAND	NONE	NONE
CHEN 38	B	6.00	Larch	3.7	JL	6-11	96	EA	NH	THIN LARCH	2016
CHEN 38	B	7.00	NS	24.9	NS, ASP	6-11	96	EA	NH-SPRUCE	THIN SPRUCE	2028
CHEN 38	B	8.00	Other	3.2	ASP, APP	6-11	100	ZR	NH-SHRUB	NONE	NONE
CHEN 38	B	9.00	NH-HEM	12.7	HEM, RM	6-11	180	ZR	NH-HEM	NONE	NONE
CHEN 38	B	10.00	S/S-Nat	4.6	- -	1-6	150	EA	NH-WP	THIN PINE	2016
CHEN 38	B	11.00	S/S-Nat	12.4	- -	1-6	25	EA	NH	FW/TSI	2016
CHEN 38	B	12.00	NH	32.0	HM, BE	12-17	148	UA	NH-HEM	FW/TSI	2013
CHEN 38	B	13.00	NH	20.6	RM, BE	6-11	133	LSF	NH	NONE	NONE
CHEN 38	B	14.00	NH-HEM	13.3	HEM, HM	12-17	131	LSF	NH-HEM	NONE	NONE
CHEN 38	B	15.00	NH-HEM	8.3	RM, HEM	6-11	133	LSF	NH-HEM	NONE	NONE
CHEN 38	B	16.00	Other	5.4	Shrub	--	0	LSF	SHRUB	NONE	NONE
CHEN 38	B	17.00	NH-HEM	12.1	RM, HEM	6-11	151	LSF	NH-HEM	NONE	NONE
CHEN 38	B	18.00	Other	19.8	RM, HM	6-11	114	LSF	NH	NONE	NONE
CHEN 38	B	19.00	Other	2.8	HM, WA	12-17	141	LSF	NH	NONE	NONE
CHEN 38	B	20.00	S/S-Plant	33.7	- -	1-6	25	EA	NH-SPRUCE	TSI	2018

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 38	B	21.00	Other	0.8	Grass	--	0	EA	GRASS	MOW/BURN	MOW
CHEN 38	B	22.00	S/S-Plant	9.3	- -	1-6	25	EA	NH-SPRUCE	TSI	2013
CHEN 38	B	23.00	NH-HEM	6.1	HEM, RM	6-11	170	ZW	NH-HEM	NONE	NONE
CHEN 38	B	24.00	NH	159.0	HM, HEM	12-17	116	ZRT	NH-HEM	NONE	NONE
CHEN 38	B	25.00	Other	1.4	Grass	--	0	EA	GRASS	MOW/BURN	MOW
CHEN 38	B	26.00	RP	35.0	RP, BC	6-11	145	EA	NH	THIN PINE	2028
CHEN 38	B	27.00	Other	54.7	- -	--	0	ZW	WETLAND	NONE	NONE
CHEN 38	B	28.00	WP	7.0	WP, HEM	12-17	184	ZW	WP-HEM	NONE	NONE
CHEN 38	B	29.00	RP	1.1	RP, WP	6-11	110	ZR	NH	NONE	NONE
CHEN 38	B	30.00	NH-HEM	27.8	HEM, WP	6-11	162	ZW	NH-HEM	NONE	NONE
CHEN 38	B	31.00	RP-WP	23.1	RP, WP	6-11	140	EA	NH-WP	THIN PINE	2013
CHEN 38	B	32.00	NH	84.7	HM, HEM	12-17	121	ZRT	NH	NONE	NONE
CHEN 38	B	33.00	Other	4.8	HEM, RM	6-11	220	ZW	NH-HEM	NONE	NONE
CHEN 38	B	34.00	Other	0.8	Grass	--	0	EA	GRASS	MOW/BURN	MOW
CHEN 38	B	35.00	NS	18.3	NS	6-11	118	EA	NH-SPRUCE	TSI/THIN	2013
CHEN 38	B	36.00	HEM	5.1	HEM, RM	6-11	120	ZW	HEM	NONE	NONE
CHEN 38	B	37.00	RP	6.1	RP	6-11	162	EA	NH	TSI/THIN	2013
CHEN 38	B	38.00	WS	2.3	WS, SP	6-11	200	EA	NH-WP	TSI/THIN	2013
CHEN 38	B	39.00	RP	4.0	RP	6-11	152	EA	NH	TSI/THIN	2013
CHEN 38	B	40.00	S/S-Plant	4.5	- -	1-6	25	EA	NH-SPRUCE	TSI/THIN	2013

UNIT	COMP	STAND	TYPE	ACRES	SPECIES	DBH	BASAL AREA	MGT DIR	OBJECTIVE	TREAT TYPE	TREAT YEAR
CHEN 38	B	41.00	RP	4.5	RP, WA	6-11	128	EA	NH	THIN	2013
CHEN 38	B	42.00	NH	4.9	RM, APP	6-11	70	EA	NH	FW	2015
CHEN 38	B	43.00	NS	10.8	NS, WA	6-11	119	EA	NH-SPRUCE	THIN	2013
CHEN 38	B	44.00	Shrub	14.0	Misc.	6-11	62	ZR	Shrub	NONE	NONE
CHEN 38	B	45.00	NH	12.6	RM, WA	12-17	97	EA	NH	FW	2015
CHEN 38	B	46.00	NH-HEM	9.1	RM, WA	12-17	98	ZR	NH-HEM	NONE	NONE
CHEN 38	B	47.00	POND	48.8	POND	- -	- -	ZW	POND	NONE	NONE
CHEN 38	B	48.00	NH-HEM	17.0	HEM, RM	12-17	138	ZR	NH-HEM	NONE	NONE
CHEN 38	B	49.00	NH-HEM	48.2	HEM, RM	12-17	141	LSS	NH-HEM	NONE	NONE
CHEN 38	B	50.00	NS	3.3	NS, RM	12-17	143	EA	NH-SPRUCE	THIN	2013
CHEN 38	B	51.00	NH	14.2	HM, WA	12-17	137	LSS	NH	NONE	NONE
CHEN 38	B	52.00	NH	13.2	RM, WA	6-11	51	EA	NH	FW/TSI	2015
CHEN 38	B	53.00	NH	1.0	ASPEN	6-11	65	ZW	NH	NONE	NONE
CHEN 38	B	54.00	NH	3.5	RM, WA	6-11	123	EA	NH	FW/ST	2015
CHEN 38	R	0.00	Road	6.1	Road	--	0	Road	ROAD	NONE	NONE
CHEN 38	R	0.00	Road	6.4	Road	--	0	Road	ROAD	NONE	NONE
CHEN 38	R	0.00	Road	0.1	Road	--	0	Road	ROAD	NONE	NONE

FOREST TREATMENT SCHEDULE

ORGANIZED BY TREATMENT YEAR

Includes both Commercial & Non-Commercial Treatments

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2011	CHEN 3	B	15.00	RP-Spruce	EA	48.8	REMOVE RP
2011	CHEN 4	A	16.10	NS	EA	93.2	THIN SPRUCE
2011	CHEN 4	A	16.20	NS	EA	15.4	THIN SPRUCE
2011	CHEN 4	A	21.00	NH	EA	4.3	ST
2011	CHEN 7	A	7.00	NS	EA	17.0	THIN SPR/FW
2011	CHEN 7	A	8.10	RP-Spruce	EA	9.2	THIN RP/NS
2011	CHEN 7	A	15.40	NS	EA	6.1	THIN SPRUCE
2011	CHEN 7	A	18.00	RP	EA	13.5	CONVERT
2011	CHEN 7	A	19.10	RP	EA	23.8	THIN
2011	CHEN 7	A	27.10	WS	EA	10.1	THIN SPRUCE
2011	CHEN 7	A	28.20	PH	EA	5.9	COPPICE
2011	CHEN 7	A	31.00	RP	EA	2.3	THIN PINE
2011	CHEN 7	A	34.20	RP-Spruce	EA	22.8	THIN PINE
2011	CHEN 7	A	37.00	PH	EA	2.8	RELEASE APP
2011	CHEN 7	A	39.00	RP	EA	7.6	THIN PINE
2011	CHEN 7	A	41.00	RP-Larch	EA	29.9	THIN PINE
2011	CHEN 29	A	15.00	NH	UA	25.2	FW/TSI
				Total Acres:		337.9	
2012	CHEN-8	A	17.00	WS	EA	8.9	TSI/THIN SPR
2012	CHEN-8	A	20.00	NS	EA	56.5	THIN SPRUCE
2012	CHEN-8	B	3.20	SP	EA	8.2	THIN PINE
2012	CHEN-8	B	3.30	SP	EA	8.8	THIN/Rem Pine
2012	CHEN-8	B	3.40	RP	EA	14.3	THIN PINE
2012	CHEN 37	A	2.00	RP	EA	8.2	THIN PINE
2012	CHEN 37	A	3.00	Larch	EA	4.8	THIN LARCH
2012	CHEN 37	A	4.00	RP	EA	4.7	THIN PINE
2012	CHEN 37	A	5.00	NH	EA	2.6	FW/TSI

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2012	CHEN 37	A	6.00	RP-Larch	EA	10.9	Conv/Thin RP
2012	CHEN 37	A	7.00	RP-Larch	UA	9.8	THIN LARCH
2012	CHEN 37	A	9.00	RP	UA	21.8	THIN PINE
2012	CHEN 37	A	11.00	Larch	EA	5.7	THIN LARCH
2012	CHEN 37	A	19.00	Oak-Pine	EA	2.0	FW/TSI
2012	CHEN 37	A	23.00	NS	EA	1.6	REMOVE RP
2012	CHEN 37	A	26.00	NS	EA	8.9	THIN SPRUCE
2012	CHEN 37	A	27.00	NH	EA	17.1	FW/ST
2012	CHEN 37	A	29.00	NH	EA	2.2	FW/TSI
2012	CHEN 37	A	30.00	Larch	EA	1.7	THIN LARCH
2012	CHEN 37	A	33.00	Larch	EA	4.3	THIN LARCH
				Total Acres:		203.0	
2013	CHEN-8	C	9.00	NH	UA	54.6	REMOVE SP
2013	CHEN 31	A	1.00	NH-HEM	UA	33.7	FW-ST
2013	CHEN 31	A	2.00	NH-HEM	UA	8.3	FW-ST
2013	CHEN 31	A	7.00	RP	EA	14.3	THIN PINE
2013	CHEN 31	A	9.00	NS	EA	2.8	THIN SPRUCE
2013	CHEN 31	A	21.00	NH	EA	10.8	FW
2013	CHEN 31	A	47.00	NH	EA	3.1	FW
2013	CHEN 31	A	48.00	NH-HEM	UA	21.0	FW/ST
2013	CHEN 31	B	8.00	NH	EA	24.4	FW-ST
2013	CHEN 31	B	35.00	NH-WP	UA	4.0	FW/TSI
2013	CHEN 31	B	41.00	NH	UA	8.6	FW-ST
2013	CHEN 31	B	42.00	NH	EA	14.6	FW/TSI
2013	CHEN 31	B	43.00	Fir	EA	4.0	TSI
2013	CHEN 31	B	46.00	NH	EA	4.5	FW
2013	CHEN 31	B	65.00	NH-Oak	EA	1.4	FW

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2013	CHEN 38	B	1.00	S/S-Plant	EA	3.4	TSI
2013	CHEN 38	B	3.00	NS	EA	1.1	THIN SPRUCE
2013	CHEN 38	B	4.00	Other	EA	14.7	TSI
2013	CHEN 38	B	12.00	NH	UA	32.0	FW/TSI
2013	CHEN 38	B	22.00	S/S-Plant	EA	9.3	TSI
2013	CHEN 38	B	31.00	RP-WP	EA	23.1	THIN PINE
2013	CHEN 38	B	35.00	NS	EA	18.3	TSI/THIN
2013	CHEN 38	B	37.00	RP	EA	6.1	TSI/THIN
2013	CHEN 38	B	38.00	WS	EA	2.3	TSI/THIN
2013	CHEN 38	B	39.00	RP	EA	4.0	TSI/THIN
2013	CHEN 38	B	40.00	S/S-Plant	EA	4.5	TSI/THIN
2013	CHEN 38	B	41.00	RP	EA	4.5	THIN
2013	CHEN 38	B	43.00	NS	EA	10.8	THIN
2013	CHEN 38	B	50.00	NS	EA	3.3	THIN
				Total Acres:		347.5	
2014	CHEN 3	A	15.20	Shrub	EA	1.7	RELEASE APP
2014	CHEN 3	A	15.30	NS	EA	8.3	THIN SPR/FW
2014	CHEN 3	A	16.00	WS	EA	23.2	TSI/FW
2014	CHEN 3	A	26.10	NS	EA	21.8	THIN SPRUCE
2014	CHEN 3	A	28.00	WS	EA	10.5	TSI/THIN
2014	CHEN 3	A	29.10	Spruce-Nat	EA	10.1	TSI SPRUCE
2014	CHEN 3	A	29.20	NH	EA	4.2	FW
2014	CHEN 3	B	2.10	RP	UA	18.4	CONVERT
2014	CHEN 3	B	2.20	RP	EA	2.5	THIN PINE
2014	CHEN 3	B	2.30	RP	UA	22.6	THIN PINE
2014	CHEN 3	B	5.00	RP	EA	14.2	CONVERT
2014	CHEN 3	B	8.10	RP	EA	7.8	CONVERT

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2014	CHEN 3	B	8.30	RP	EA	16.0	THIN PINE
2014	CHEN 3	B	17.00	RP-Spruce	EA	11.6	THIN RP/NS
2014	CHEN 4	A	17.00	NH-HEM	UA	4.9	THIN FW/HEM
2014	CHEN 4	A	18.10	WP	EA	8.3	TSI WP
2014	CHEN 4	A	18.20	PH	EA	1.2	FW/TSI
2014	CHEN 4	A	19.00	Pine-Nat	EA	8.4	FW/ST
2014	CHEN 4	A	52.00	Shrub	EA	12.9	THIN NH
2014	CHEN 4	A	53.20	NH	EA	3.9	FW/TSI
2014	CHEN 7	A	2.00	NH-Oak	EA	11.6	ST
2014	CHEN 7	A	4.20	RP	EA	7.1	THIN PINE/FW
2014	CHEN 7	A	5.00	RP-Larch	EA	7.6	CONVERT
2014	CHEN 7	A	9.00	NS	EA	73.6	THIN SPRUCE
2014	CHEN 7	A	10.00	NS	EA	32.6	THIN SPRUCE
2014	CHEN 7	A	14.00	NH	UA	5.6	FW/ST
2014	CHEN 7	A	15.10	Cedar	EA	7.1	Thin FW/Cedar
2014	CHEN 7	A	15.50	PH	EA	8.9	COPPICE
2014	CHEN 7	A	16.00	RP	EA	7.0	CONVERT
2014	CHEN 29	A	10.20	Spruce-Nat	EA	4.3	FW/ST
2014	CHEN 29	A	10.30	NH	EA	3.9	FW/ST
2014	CHEN 29	A	11.00	NS	EA	4.6	THIN BRUSH
				Total Acres:		386.4	
2015	CHEN 3	A	9.10	Pine-Nat	UA	54.5	FW/ST
2015	CHEN 3	A	11.00	WP	EA	5.0	THIN PINE
2015	CHEN 3	A	13.20	NH	EA	12.8	HERBICIDE
2015	CHEN 3	A	22.10	NH	UA	12.4	FW/ST
2015	CHEN 3	A	22.20	NH-WP	EA	3.8	CLEARCUT
2015	CHEN 3	A	23.00	NH-HEM	EA	15.2	FW/ST

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2015	CHEN 3	A	24.00	Spruce-Nat	EA	2.5	THIN SPR/FW
2015	CHEN 3	A	30.10	RP	UA	37.0	CONVERT
2015	CHEN 3	A	30.20	RP	EA	38.8	CONVERT
2015	CHEN 3	B	6.40	RP	EA	4.7	CONVERT
2015	CHEN 3	B	20.10	RP-Spruce	EA	11.1	THIN PINE
2015	CHEN 4	A	5.00	NS	EA	14.8	FW
2015	CHEN 4	A	9.00	NH	EA	5.0	ST
2015	CHEN 4	A	10.00	NH	EA	3.6	FW/ST
2015	CHEN 4	A	12.00	NH	EA	8.1	FW/ST
2015	CHEN 4	A	13.00	NH	UA	36.0	FW/ST
2015	CHEN 4	A	29.10	Pine-Nat	EA	10.2	FW
2015	CHEN 29	A	9.00	NS	EA	12.0	THIN SPRUCE
2015	CHEN 29	A	12.00	NS	EA	18.9	THIN SPRUCE
2015	CHEN 29	A	19.20	NH	EA	4.6	FW/ST
2015	CHEN 29	A	20.00	Spruce-Nat	EA	9.2	REMOVE SPR
2015	CHEN 29	A	23.00	NH	UA	26.3	FW/ST
2015	CHEN 29	A	25.30	NH	EA	5.6	FW/ST
2015	CHEN 38	B	42.00	NH	EA	4.9	FW
2015	CHEN 38	B	45.00	NH	EA	12.6	FW
2015	CHEN 38	B	52.00	NH	EA	13.2	FW/TSI
2015	CHEN 38	B	54.00	NH	EA	3.5	FW/ST
				Total Acres:		386.3	
2016	CHEN-8	A	24.00	Pine-Nat	EA	5.4	REMOVE PINE
2016	CHEN-8	A	25.00	RP-Spruce	EA	26.2	THIN PINE
2016	CHEN-8	A	26.00	NH	EA	9.1	FW
2016	CHEN-8	A	36.00	Pine-Nat	EA	2.8	Rem SP/Coppice
2016	CHEN-8	B	24.00	NH	EA	10.8	FW/ST

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2016	CHEN-8	B	36.00	NH-NS	EA	6.1	THIN FIR
2016	CHEN-8	C	2.00	NH	EA	5.9	FW
2016	CHEN-8	C	16.00	WP	UA	1.5	FW/ FSI
2016	CHEN 14	A	8.00	RP-Spruce	EA	62.9	THIN PINE
2016	CHEN 14	A	9.00	RP-Spruce	EA	4.3	Thin/Rem PINE
2016	CHEN 14	A	11.00	Spruce-Nat	EA	3.0	FW/TSI
2016	CHEN 14	A	18.00	RP-Spruce	EA	44.4	Thin PINE/SPR
2016	CHEN 14	A	19.00	NH	UA	20.6	FW
2016	CHEN 14	A	22.00	NH	EA	2.6	RELEASE APP
2016	CHEN 14	A	23.00	Pine-Nat	EA	3.7	FW/TSI
2016	CHEN 14	A	31.00	Shrub	EA	1.8	TSI BRUSH
2016	CHEN 14	A	35.00	NS	EA	54.7	THIN SPRUCE
2016	CHEN 31	A	46.00	RP	EA	6.0	Thin Pine
2016	CHEN 38	B	2.00	Larch	EA	10.9	THIN LARCH
2016	CHEN 38	B	6.00	Larch	EA	3.7	THIN LARCH
2016	CHEN 38	B	10.00	S/S-Nat	EA	4.6	THIN PINE
2016	CHEN 38	B	11.00	S/S-Nat	EA	12.4	FW/TSI
2016	CHEN 31	B	22.00	NS	EA	2.1	TSI
2016	CHEN 31	B	24.00	NS	EA	18.5	PULP/TSI
2016	CHEN 31	B	30.00	Shrub	EA	1.4	TSI
2016	CHEN 31	B	31.00	NS	EA	2.9	PULP/TSI
2016	CHEN 31	B	48.00	NS	EA	1.6	PULP/TSI
2016	CHEN 31	B	49.00	Shrub	EA	0.7	TSI
2016	CHEN 31	B	57.00	RP-Spruce	EA	41.0	THIN PINE
2016	CHEN 31	B	63.00	Larch	EA	4.3	THIN LARCH
				Total Acres:		375.9	
2017	CHEN 3	B	23.10	NH-Oak	EA	8.3	FW

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2017	CHEN 3	B	23.20	NH-Oak	EA	7.7	FW/TSI
2017	CHEN 4	A	14.00	NH	EA	13.5	FW
2017	CHEN 4	A	39.20	NS	EA	2.4	THIN SPRUCE
2017	CHEN 4	A	45.00	NS	EA	8.3	THIN SPRUCE
2017	CHEN 4	A	48.00	SP-Spruce	EA	13.3	REMOVE SP
2017	CHEN 4	A	51.00	NS	EA	18.1	THIN SPRUCE
2017	CHEN 7	A	1.00	NS	EA	59.1	THIN SPRUCE
2017	CHEN 7	A	23.00	NH-HEM	UA	52.2	FW/ST
2017	CHEN 7	A	24.10	RP	UA	52.0	CONVERT
2017	CHEN 7	A	24.30	RP	EA	2.5	CONVERT
2017	CHEN 7	A	38.00	RP-WP	EA	16.1	THIN PINE
2017	CHEN 7	A	40.00	NH	EA	22.3	FW/ST
2017	CHEN 7	A	42.00	NH-HEM	UA	8.6	FW/ST
2017	CHEN 7	A	43.00	NH	UA	15.2	FW/ST
2017	CHEN 7	A	47.00	NH-HEM	UA	26.8	FW/ST
2017	CHEN 7	A	48.00	WP	EA	4.5	THIN PINE
				Total Acres:		330.9	
2018	CHEN-8	A	12.00	PH	EA	6.0	COPPICE
2018	CHEN-8	A	13.00	NH	UA	41.9	FW/ST
2018	CHEN-8	A	14.00	NH	EA	3.7	FW
2018	CHEN-8	B	5.00	NS	EA	8.0	THIN SPRUCE
2018	CHEN-8	B	7.00	NS	EA	66.7	THIN SPRUCE
2018	CHEN-8	B	14.00	NH	EA	2.7	FW
2018	CHEN-8	B	15.00	NH	EA	5.5	THIN FW/ ASP
2018	CHEN-8	B	33.00	NH-Oak	UA	2.2	FW/ST
2018	CHEN-8	B	38.00	SP	EA	1.6	REMOVE SP
2018	CHEN-8	B	39.00	Spruce-Nat	EA	4.5	FW

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2018	CHEN 31	A	3.00	NH	EA	7.5	FW-ST
2018	CHEN 31	A	4.00	NH	UA	31.5	FW-ST
2018	CHEN 31	A	5.00	NH	EA	6.8	FW
2018	CHEN 31	A	6.00	HEM	EA	3.0	FW/TSI
2018	CHEN 37	A	20.00	NS	EA	2.5	THIN PINE
2018	CHEN 31	A	29.00	Pine-Nat	EA	7.1	Conversion
2018	CHEN 31	A	32.00	RP	EA	8.8	THIN PINE
2018	CHEN 31	A	33.00	RP	EA	10.5	THIN PINE
2018	CHEN 31	A	37.00	RP	EA	4.8	Convert
2018	CHEN 31	A	39.00	RP	EA	2.6	Thin Pine
2018	CHEN 31	A	40.00	RP	EA	5.2	Convert
2018	CHEN 31	A	41.00	RP	EA	1.0	Convert
2018	CHEN 31	A	43.00	RP	EA	2.7	Thin Pine
2018	CHEN 38	B	20.00	S/S-Plant	EA	33.7	TSI
2018	CHEN 31	B	47.00	Pine-Nat	EA	7.6	THIN PINE
2018	CHEN 37	A	13.00	WS	EA	2.3	THIN SPRUCE
2018	CHEN 37	A	14.00	NH	EA	5.7	FW
2018	CHEN 37	A	15.00	SP	EA	6.9	CONVERT
2018	CHEN 37	A	16.00	RP	UA	64.6	THIN PINE
2018	CHEN 37	A	21.00	NH	EA	2.9	FW
				Total Acres:		360.5	
2019	CHEN 3	A	5.00	NH	UA	30.3	FW/ST
2019	CHEN 3	A	15.10	NH	EA	7.1	FW
2019	CHEN 3	A	30.40	NH	EA	1.7	FW
2019	CHEN 3	A	33.00	NS	EA	2.7	THIN SPRUCE
2019	CHEN 3	B	1.30	Shrub	EA	1.3	TSI
2019	CHEN 3	B	21.00	NH-HEM	EA	13.2	FW/ST

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2019	CHEN 4	A	20.00	Pine-Nat	UA	36.5	FW
2019	CHEN 4	A	29.20	Pine-Nat	EA	11.4	FW/Remove SP
2019	CHEN 4	A	30.10	NH-HEM	UA	16.2	FW/ST
2019	CHEN 4	A	32.00	WP	UA	49.4	FW/ST
2019	CHEN 4	A	35.00	NH-WP	EA	6.0	FW/ST
2019	CHEN 4	A	36.10	NH-HEM	UA	19.4	FW/ST
2019	CHEN 4	A	36.20	NH-HEM	EA	12.1	FW/ST
2019	CHEN 4	A	40.00	NH	EA	20.3	FW
2019	CHEN 7	A	3.00	RP	EA	28.6	CONVERT
2019	CHEN 7	A	4.10	RP-Larch	EA	32.4	THIN PINE
2019	CHEN 7	A	17.00	NH-HEM	UA	10.8	FW/ST
2019	CHEN 7	A	36.00	NH-HEM	UA	12.4	FW/ST
2019	CHEN 29	A	13.00	NH	EA	10.9	FW/ST
2019	CHEN 29	A	14.00	Pine-Nat	EA	6.8	FW
2019	CHEN 29	A	16.00	NH	EA	11.6	FW/ST
2019	CHEN 29	A	22.20	NH-HEM	EA	5.8	FW/ST
2019	CHEN 29	A	32.10	NH	UA	9.1	FW/ST
2019	CHEN 29	A	32.20	NH-HEM	UA	38.7	FW/ST
				Total Acres:		394.7	
2020	CHEN-8	A	1.00	NH-HEM	EA	8.2	FW/ST
2020	CHEN-8	A	3.00	NS	EA	15.9	THIN SPRUCE
2020	CHEN-8	A	4.00	NS	EA	5.8	THIN SPRUCE
2020	CHEN-8	A	5.00	WS	EA	2.2	REMOVE SPR
2020	CHEN-8	A	7.00	NS	EA	20.4	THIN SPRUCE
2020	CHEN-8	A	8.00	NS	EA	26.2	THIN SPRUCE
2020	CHEN-8	A	9.00	WS	EA	9.9	REMOVE SPR
2020	CHEN-8	A	19.00	NS	EA	3.9	THIN SPRUCE

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2020	CHEN-8	A	27.00	NH	EA	3.3	FW
2020	CHEN-8	B	18.00	NH-HEM	EA	29.6	FW/ST
2020	CHEN-8	B	19.00	NH	UA	70.7	FW/ST
2020	CHEN-8	B	21.00	NH-HEM	UA	6.0	FW/ST
2020	CHEN-8	B	22.00	Pine-Nat	EA	11.1	FW/ REM SP
2020	CHEN-8	B	26.00	SP	EA	24.2	FW/ THIN PINE
2020	CHEN-8	B	41.00	NH	EA	6.7	FW
2020	CHEN 31	B	59.00	NS	EA	30.9	THIN SPRUCE
2020	CHEN 31	B	64.00	NS-Larch	EA	5.1	THIN SPRUCE
2020	CHEN 31	B	66.00	Spruce-Nat	EA	8.2	THIN SPRUCE
2020	CHEN 38	A	7.00	Shrub	EA	6.9	REM TREES
2020	CHEN 38	A	8.00	S/S-Nat	EA	4.6	FW/TSI
2020	CHEN 38	A	9.00	NH-HEM	EA	15.7	SHELTERWD
2020	CHEN 38	A	10.00	S/S-Plant	EA	28.0	TSI
2020	CHEN 38	A	11.00	NH	EA	3.0	FW
2020	CHEN 38	A	13.00	NH-HEM	UA	16.3	FW/ST
				Total Acres:		362.8	
2021	CHEN 3	A	9.30	NH-WP	EA	4.2	FW/ST
2021	CHEN 3	A	10.00	NH-WP	EA	9.8	THIN PINE
2021	CHEN 3	A	12.00	NS	EA	11.9	THIN SPRUCE
2021	CHEN 3	A	13.10	NH	EA	6.4	FW/ST
2021	CHEN 3	A	14.10	NH	EA	14.9	FW/ST
2021	CHEN 3	A	14.20	Spruce-Nat	EA	16.3	THIN SPR/FW
2021	CHEN 3	A	18.00	NH	EA	8.7	SHELTERWD-2
2021	CHEN 3	A	19.00	NH-Oak	UA	39.7	FW/ST
2021	CHEN 3	B	3.10	NH-WP	EA	19.2	THIN PINE
2021	CHEN 3	B	3.20	NH-Oak	EA	6.7	FW/ST

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2021	CHEN 3	B	3.30	NH-Oak	EA	7.4	FW/ST
2021	CHEN 3	B	4.00	NH-WP	EA	5.2	FW/TSI
2021	CHEN 3	B	6.30	RP	EA	3.4	THIN PINE
2021	CHEN 3	B	7.00	NH	EA	24.8	FW/ST
2021	CHEN 4	A	6.10	RP	EA	18.9	THIN PINE
2021	CHEN 4	A	22.00	Pine-Nat	EA	49.5	ST
2021	CHEN 4	A	23.00	NH	UA	8.0	FW/ST
2021	CHEN 4	A	24.00	NH	EA	2.6	ST
2021	CHEN 4	A	26.00	NH	EA	4.0	FW/ST
2021	CHEN 7	A	28.10	RP	EA	48.8	THIN PINE
2021	CHEN 29	A	3.00	NH	UA	63.0	FW/ST
2021	CHEN 29	A	5.00	NH	EA	10.6	FW
2021	CHEN 29	A	8.30	NH	EA	3.6	FW/ST
2021	CHEN 29	A	17.00	NH	EA	4.4	Remove RP/FW
2021	CHEN 29	A	19.10	RP	EA	18.9	CONVERT
				Total Acres:		410.9	
2022	CHEN-8	C	10.00	NH-HEM	UA	39.1	FW/ST
2022	CHEN-8	C	11.00	NH-HEM	EA	30.1	FW/ST
2022	CHEN-8	C	12.00	NH	UA	4.9	FW/ST
2022	CHEN-8	C	22.00	NH	EA	1.1	FW
2022	CHEN 14	A	1.00	NH-WP	UA	10.3	FW/ST
2022	CHEN 14	A	2.00	NH-HEM	UA	33.0	FW/ST
2022	CHEN 14	A	3.00	NH	UA	26.0	FW/ST
2022	CHEN 14	A	4.00	NH	UA	12.1	FW
2022	CHEN 14	A	5.00	NH	EA	1.6	FW
2022	CHEN 14	A	6.00	NH	EA	0.9	FW
2022	CHEN 14	A	7.00	NH-WP	UA	3.8	FW/TSI

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2022	CHEN 14	A	12.00	NH	EA	6.8	FW
2022	CHEN 14	A	14.00	NH-HEM	EA	7.3	FW/ST
2022	CHEN 14	A	16.00	NH-WP	UA	8.3	FW/ST
2022	CHEN 14	A	17.00	NH-WP	UA	10.9	FW/ST
2012	CHEN 31	B	19.00	NH-HEM	EA	20.5	FW/TSI
2012	CHEN 31	B	20.00	NH	EA	7.1	FW
2022	CHEN 31	B	50.00	NH-WP	UA	16.9	FW/TSI
2022	CHEN 31	B	51.00	NH-HEM	EA	24.2	FW/TSI
2022	CHEN 31	B	52.00	Pine-Nat	UA	17.7	FW-ST
2022	CHEN 31	B	54.00	NH-WP	EA	7.4	FW-ST
2022	CHEN 31	B	55.00	NH-WP	UA	11.1	TSI
2022	CHEN 31	B	60.00	Larch	EA	32.8	THIN LARCH
2022	CHEN 31	B	62.00	NS-Larch	EA	26.7	THIN LARCH
2012	CHEN 38	A	3.00	RP	EA	4.3	CONVERSION
2012	CHEN 38	A	5.00	RP	EA	2.8	THIN PINE
2012	CHEN 38	A	6.00	Larch	EA	7.5	CONVERSION
2022	CHEN 38	A	27.00	S/S-Plant	EA	11.5	TSI
2022	CHEN 38	A	29.00	Larch	EA	6.2	THIN/TSI
				Total Acres:		392.9	
2023	CHEN-8	A	6.00	NH	EA	20.5	FW
2023	CHEN-8	A	28.00	WS	EA	11.4	FW/ ASPEN
2023	CHEN-8	A	29.00	NH	EA	13.0	FW/ASPEN
2023	CHEN-8	A	30.00	NH	EA	16.0	FW/ASPEM
2023	CHEN-8	A	31.00	NH	EA	17.6	FW/ASPEN
2023	CHEN-8	A	32.00	NH	EA	5.9	FW
2023	CHEN-8	B	8.00	NH	EA	20.5	FW
2023	CHEN-8	C	4.00	NH	UA	13.8	FW/ST

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2023	CHEN-8	C	5.20	NH	EA	12.8	FW
2023	CHEN-8	C	5.30	NH	EA	2.0	FW
2023	CHEN-8	C	17.00	NH-HEM	EA	14.6	FW/ST
2023	CHEN-8	C	18.00	NH	EA	28.5	FW
2023	CHEN-8	C	20.00	NH	EA	1.8	FW
2023	CHEN 14	A	20.00	NH-WP	EA	3.9	ST
2023	CHEN 14	A	24.00	NH-HEM	UA	10.4	FW/ST
2023	CHEN 14	A	25.00	NH-HEM	UA	8.5	FW/ST
2023	CHEN 14	A	40.00	NH	UA	28.2	FW/ST
2023	CHEN 31	A	28.00	NH	EA	5.2	FW
2023	CHEN 31	A	30.00	NH-HEM	UA	6.6	FW-ST
2023	CHEN 31	A	35.00	NH-HEM	UA	7.2	FW-ST
2023	CHEN 31	A	36.00	NH	EA	20.3	FW/ST
2023	CHEN 31	A	42.00	NH-HEM	EA	15.6	FW
2023	CHEN 31	A	45.00	NH-HEM	UA	6.2	FW
2023	CHEN 31	B	13.00	NH-HEM	EA	13.1	FW-ST
2023	CHEN 31	B	15.00	NH-Oak	EA	9.8	FW-ST
2023	CHEN 31	B	16.00	NH-Oak	EA	10.8	FW
2023	CHEN 31	B	17.00	S/S-Nat	EA	5.2	FW
2023	CHEN 31	B	21.00	NH	EA	8.9	FW
2023	CHEN 31	B	23.00	NH	EA	5.3	FW
2023	CHEN 31	B	25.00	NH	EA	2.7	FW/TSI
2023	CHEN 31	B	26.00	S/S-Nat	EA	2.2	FW/TSI
2023	CHEN 31	B	27.00	Fir	EA	1.1	FW
2023	CHEN 31	B	28.00	S/S-Nat	EA	4.2	FW/TSI
2023	CHEN 31	B	38.00	RP	EA	1.2	CONVERT
2023	CHEN 31	B	39.00	NH	UA	4.9	FW

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2023	CHEN 31	B	40.00	RP	EA	2.5	CONVERT
2023	CHEN 37	A	1.00	NH	UA	30.7	FW/ST
2023	CHEN 37	A	8.00	NH	UA	6.1	FW
2023	CHEN 37	A	10.00	NH	EA	4.4	FW
2023	CHEN 37	A	22.00	NH-HEM	EA	5.0	PATCH
2023	CHEN 37	A	28.00	NH-Oak	EA	2.7	TSI
2023	CHEN 37	A	31.00	S/S-Nat	EA	8.4	TSI
				Total Acres:		419.7	
2024	CHEN 3	A	1.10	NH	EA	5.9	FW/ST
2024	CHEN 3	A	2.10	NS	EA	43.6	THIN SPRUCE
2024	CHEN 3	A	2.20	NS	EA	12.1	THIN SPRUCE
2024	CHEN 3	A	2.30	NH-Shrub	EA	1.3	RELEASE APP
2024	CHEN 3	A	3.00	NS	EA	41.8	THIN SPRUCE
2024	CHEN 3	A	4.00	NH	EA	3.3	FW
2024	CHEN 3	A	6.00	NH	UA	15.7	FW/ST
2024	CHEN 3	A	7.00	Pine-Nat	UA	6.2	FW/ST
2024	CHEN 3	B	11.00	NH-WP	EA	3.1	TSI/THIN WP
2024	CHEN 3	B	18.10	RP-Spruce	EA	29.9	THIN PINE
2024	CHEN 3	B	19.10	RP-Spruce	EA	4.8	THIN RP/NS
2024	CHEN 4	A	15.00	WS	EA	16.6	FW/TSI
2024	CHEN 4	A	33.00	WP	UA	44.0	FW
2024	CHEN 4	A	34.00	NH	EA	3.7	FW/ST
2024	CHEN 7	A	6.00	NH-Oak	EA	46.1	FW/ST
2024	CHEN 7	A	19.20	NH	EA	29.7	FW/TSI
2024	CHEN 7	A	25.00	WP	EA	60.6	THIN FW/WP
2024	CHEN 7	A	26.00	RP-Spruce	EA	14.9	CONVERT
2024	CHEN 7	A	34.10	RP-Spruce	EA	12.2	THIN PINE

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
				Total Acres:		395.5	
2025	CHEN-8	C	13.00	NS	EA	117.4	THIN SPRUCE
2025	CHEN-8	C	23.00	NH	EA	2.3	FW
2025	CHEN-8	C	24.00	NH	EA	1.6	FW
2025	CHEN 14	A	29.00	NH	EA	10.4	FW
2025	CHEN 14	A	30.00	Spruce-Nat	EA	23.8	FW/THIN SPR
2025	CHEN 14	A	32.00	NS	EA	8.6	THIN SPRUCE
2025	CHEN 14	A	34.00	NH	UA	8.9	FW
2025	CHEN 14	A	36.00	NH-HEM	UA	7.1	FW
2025	CHEN 14	A	38.00	NH-HEM	UA	3.9	FW/ST
2025	CHEN 14	A	39.00	NH	UA	11.1	FW/ST
2025	CHEN 14	A	42.00	Fir	EA	18.8	FW
2025	CHEN 14	A	45.00	NH-Oak	EA	1.3	FW
2025	CHEN 14	A	46.00	NH	UA	25.1	FW/ST
2025	CHEN 14	A	47.00	NH	EA	7.0	FW
2025	CHEN 14	A	48.00	NH	EA	5.9	FW
2025	CHEN 31	B	11.00	NH-HEM	UA	7.9	FW-ST
2025	CHEN 31	B	33.00	WP	EA	9.1	FW
2025	CHEN 31	B	56.00	S/S-Nat	EA	24.1	FW/TSI
2025	CHEN 38	A	1.00	NH-HEM	EA	12.3	SHELTERWD
2025	CHEN 38	A	2.00	NH-WP	EA	61.7	FW/TSI
				Total Acres:		368.3	
2026	CHEN-8	A	16.00	RP-Spruce	EA	30.0	THIN PINE
2026	CHEN-8	A	18.00	WP	EA	38.7	THIN WP/ NH
2026	CHEN-8	B	9.00	NS	EA	4.1	THIN SPR/ FW
2026	CHEN-8	B	10.00	NS	EA	25.2	THIN SPRUCE

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2026	CHEN-8	B	1.20	NS	EA	3.6	THIN SPRUCE
2026	CHEN-8	B	1.30	SP-Spruce	EA	1.8	THIN/Rem Pine
2026	CHEN-8	B	1.40	RP	EA	2.9	THIN PINE
2026	CHEN-8	B	1.50	SP	EA	3.9	Rem PINE/FW
2026	CHEN-8	C	1.00	WP	EA	14.5	THIN PINE
2026	CHEN-8	C	5.10	RP	EA	12.3	CONVERT
2026	CHEN-8	C	6.00	NS	EA	10.6	THIN SPRUCE
2012	CHEN-8	C	7.00	NS	EA	18.4	THIN SPRUCE
2012	CHEN-8	C	21.00	Spruce-Nat	EA	2.2	FW/ST
2012	CHEN-8	C	25.00	NS	EA	4.0	THIN SPRUCE
2026	CHEN 14	A	13.00	Spruce-Nat	EA	61.8	THIN SPRUCE
2026	CHEN 14	A	26.00	Spruce-Nat	EA	2.3	FW/REM SPR
2026	CHEN 14	A	27.00	NS	EA	2.6	THIN SPRUCE
2026	CHEN 14	A	41.00	NS	EA	28.3	THIN SPRUCE
2026	CHEN 14	A	44.00	WP-Spruce	EA	15.2	THIN SPRUCE
2026	CHEN 31	A	10.00	NH-HEM	UA	11.5	FW-ST
2026	CHEN 31	A	11.00	NH-HEM	UA	54.4	FW-ST
2026	CHEN 31	A	12.00	NH	UA	9.1	FW-ST
2026	CHEN 31	A	15.00	NH-HEM	UA	32.7	FW-ST
2026	CHEN 31	B	67.00	NS-Larch	EA	17.8	THIN SPRUCE
2026	CHEN 31	B	68.00	NS-Larch	EA	13.6	THIN LARCH
				Total Acres:		421.5	
2027	CHEN 3	A	21.00	NH-WP	EA	29.4	TSI PINE
2027	CHEN 3	B	9.10	NH-Oak	EA	24.4	FW/ST
2027	CHEN 3	B	9.20	NH-HEM	EA	2.8	ST
2027	CHEN 3	B	9.30	NH-HEM	EA	4.4	FW/ST
2027	CHEN 3	B	9.40	NH-WP	EA	3.6	FW

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2027	CHEN 3	B	10.00	NH	UA	42.3	FW/ST
2027	CHEN 3	B	13.00	NS	EA	15.9	FW/TSI
2027	CHEN 3	B	14.00	NH	UA	10.3	FW/ST
2027	CHEN 4	A	1.00	NH	EA	4.6	FW
2027	CHEN 4	A	2.00	NH-HEM	UA	16.5	FW/ST
2027	CHEN 4	A	3.00	NH-HEM	UA	21.6	FW
2027	CHEN 4	A	4.10	NH-HEM	UA	28.7	FW
2027	CHEN 4	A	37.00	NH	EA	4.5	ST
2027	CHEN 4	A	38.00	NH	EA	2.1	FW/ST
2027	CHEN 4	A	39.10	NH	EA	9.1	FW
2027	CHEN 4	A	41.00	NH	UA	10.7	FW/ST
2027	CHEN 4	A	44.00	NH	EA	18.4	FW
2027	CHEN 4	A	46.00	Pine-Nat	EA	4.1	FW
2027	CHEN 29	A	1.00	Pine-Nat	EA	23.4	FW/ST
2027	CHEN 29	A	4.00	S/S-Nat	EA	3.0	FW
2027	CHEN 29	A	7.10	NS	EA	2.7	THIN FW/SPR
2027	CHEN 29	A	7.20	NH	EA	6.0	FW/ST
2027	CHEN 29	A	7.30	NS	EA	5.4	FW
2027	CHEN 29	A	8.10	NS	EA	3.4	FW
2027	CHEN 29	A	8.20	Shrub	EA	1.9	RELEASE APP
2027	CHEN 29	A	18.00	NH	EA	6.9	FW
2027	CHEN 29	A	24.00	NH-HEM	EA	11.7	FW/ST
2027	CHEN 29	A	25.10	NH	EA	14.7	FW/ST
2027	CHEN 29	A	25.20	Spruce-Nat	EA	5.7	FW/TSI
2027	CHEN 29	A	27.00	NH-Oak	EA	7.6	FW
2027	CHEN 29	A	28.00	Spruce-Nat	EA	8.4	FW/ THIN SPR
2027	CHEN 29	A	29.00	NH	EA	4.8	FW/ST

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2027	CHEN 29	A	30.00	NH-HEM	EA	10.0	FW/ST
2027	CHEN 29	A	31.00	NS	EA	10.4	THIN SPRUCE
2027	CHEN 29	A	34.10	NH	UA	17.6	FW/ST
2027	CHEN 29	A	34.20	NH-HEM	EA	6.2	FW/ST
				Total Acres:		403.2	
2028	CHEN-8	A	21.00	NH	EA	8.4	FW/ST
2028	CHEN-8	A	22.00	NH	UA	16.8	FW
2028	CHEN-8	A	23.00	NS	EA	33.5	THIN SPRUCE
2028	CHEN-8	B	1.10	SP-Spruce	EA	8.4	Thin SPR/PINE
2028	CHEN-8	B	2.00	NH-Oak	EA	25.8	FW/ST
2028	CHEN-8	B	3.10	RP-Spruce	EA	17.1	THIN PINE
2028	CHEN-8	B	4.00	NH-Oak	EA	21.0	FW/ST
2028	CHEN-8	B	6.00	NH	EA	7.4	FW
2028	CHEN-8	B	16.00	NS	EA	83.6	THIN SPRUCE
2028	CHEN-8	B	31.00	NH	EA	15.1	FW
2028	CHEN-8	B	28.00	NH	EA	13.1	FW/Rem SP
2028	CHEN 31	A	23.00	NH	UA	23.4	FW/ST
2028	CHEN 31	B	1.00	NH	EA	15.4	FW
2028	CHEN 31	B	2.00	NH-HEM	UA	15.7	FW-ST
2028	CHEN 31	B	3.00	NH	UA	29.8	FW-ST
2028	CHEN 31	B	6.00	NH-HEM	UA	16.1	FW-ST
2028	CHEN 38	B	7.00	NS	EA	16.4	THIN SPRUCE
2028	CHEN 38	A	16.00	RP	EA	49.2	THIN PINE
2028	CHEN 38	B	26.00	RP	EA	35.0	THIN PINE
				Total Acres:		451.2	
2029	CHEN-8	A	10.00	SP	EA	8.8	FW
2029	CHEN-8	A	11.00	RP	UA	87.6	THIN/ Convert

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2029	CHEN-8	A	34.00	S/S-Nat	EA	20.8	FW
2029	CHEN 31	A	8.00	S/S-Nat	EA	10.7	TSI
2029	CHEN 31	A	13.00	NH-HEM	UA	30.0	FW-ST
2029	CHEN 31	A	16.00	NH-Oak	EA	10.5	ST
2029	CHEN 31	A	17.00	NH-Oak	EA	15.4	ST
2029	CHEN 31	A	18.00	NH-HEM	UA	9.6	FW-ST
2029	CHEN 31	A	19.00	NH-WP	UA	2.6	FW-ST
2029	CHEN 31	A	20.00	NH-HEM	UA	10.1	FW
2029	CHEN 31	A	27.00	S/S-Nat	EA	0.5	TSI
2029	CHEN 31	A	34.00	NH	EA	1.4	FW
2029	CHEN 31	A	38.00	S/S-Nat	EA	1.7	FW/TSI
2029	CHEN 31	B	4.00	Oak-Pine	UA	7.1	FW-ST
2029	CHEN 31	B	32.00	S/S-Nat	EA	4.4	TSI
2029	CHEN 31	B	34.00	NH-HEM	UA	8.8	FW-ST
2029	CHEN 31	B	37.00	NH-HEM	EA	3.7	FW
2029	CHEN 37	A	18.00	S/S-Nat	EA	2.9	FW/TSI
2029	CHEN 37	A	25.00	S/S-Plant	EA	5.4	TSI
2029	CHEN 38	A	14.00	NH-HEM	UA	37.4	FW/ST
2029	CHEN 38	A	20.00	NH-HEM	UA	7.1	FW/ST
2029	CHEN 38	A	21.00	NH-WP	EA	4.6	FW
2029	CHEN 38	A	22.00	S/S-Plant	EA	60.7	TSI
2029	CHEN 38	A	23.00	NS	EA	19.4	THIN SPRUCE
2029	CHEN 38	A	24.00	NS	EA	8.0	THIN SPRUCE
2029	CHEN 38	A	28.00	NH-HEM	UA	9.2	FW/ST
				Total Acres:		388.4	
2030	CHEN 3	A	17.00	NH-WP	UA	15.5	FW
2030	CHEN 3	A	25.00	NH	EA	25.8	FW/ST

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
2030	CHEN 3	A	27.00	NH-WP	UA	7.1	FW
2030	CHEN 3	A	31.00	NH	EA	5.3	FW/TSI
2030	CHEN 3	A	32.00	NH	EA	10.0	FW/ST
2030	CHEN 3	A	34.00	NH-WP	EA	2.7	FW
2030	CHEN 3	B	6.10	NH	EA	20.8	FW
2030	CHEN 3	B	12.00	NS	UA	75.0	THIN SPRUCE
2030	CHEN 3	B	19.20	RP-Larch	EA	9.5	THIN RP/JL
2030	CHEN 3	B	22.00	NH	UA	30.3	FW/ST
2030	CHEN 3	B	25.00	NH-WP	EA	2.4	TSI
2030	CHEN 4	A	6.20	RP	EA	23.0	THIN PINE
2030	CHEN 4	A	31.00	NH	EA	8.8	FW/ST
2030	CHEN 4	A	42.00	NS	EA	13.9	THIN SPRUCE
2030	CHEN 4	A	43.00	NS	EA	8.7	THIN SPRUCE
2030	CHEN 4	A	47.00	NS	EA	9.7	THIN SPRUCE
2030	CHEN 7	A	8.20	NS-Larch	EA	14.0	TSI
2030	CHEN 7	A	20.00	NH	EA	54.9	FW/ST
2030	CHEN 7	A	22.00	NH-HEM	UA	48.3	FW/ST
2030	CHEN 7	A	29.00	NH-HEM	UA	32.3	FW/ST
2030	CHEN 7	A	33.00	NH	EA	5.2	FW
				Total Acres:		423.2	
	Short Interval, Non-Commercial, Maintenance Treatments						
BURN	CHEN 3	B	1.10	NH-Shrub	EA	2.8	MOW/BURN
MOW	CHEN 7	A	51.00	Grassland	EA	15.9	MOW/BURN
MOW	CHEN 14	A	21.00	Grassland	EA	7.6	MOW/BURN
MOW	CHEN 31	B	44.00	Grassland	EA	1.8	MOW

TREAT YEAR	UNIT	COMP	STAND	FOREST TYPE	MGT DIR	ACRES	TREAT TYPE
MOW	CHEN 38	A	4.00	Grassland	EA	40.3	MOW/BURN
MOW	CHEN 38	A	15.00	Grassland	EA	1.6	MOW/BURN
MOW	CHEN 38	A	17.00	Grassland	EA	0.7	MOW/BURN
MOW	CHEN 38	A	18.00	Grassland	EA	1.9	MOW/BURN
MOW	CHEN 38	A	19.00	Grassland	EA	3.2	MOW/BURN
MOW	CHEN 38	A	25.00	Grassland	EA	1.6	MOW/BURN
MOW	CHEN 38	A	26.00	Grassland	EA	4.3	MOW/BURN
MOW	CHEN 38	A	30.00	Grassland	EA	3.5	MOW/BURN
MOW	CHEN 38	B	21.00	Other	EA	0.8	MOW/BURN
MOW	CHEN 38	B	34.00	Other	EA	0.8	MOW/BURN
MOW	CHEN 38	B	25.00	Other	EA	1.4	MOW/BURN
				Total Acres:		88.2	
Mowing and prescribed burn treatments will be administered on a 3 year cycle.							

Summary of Maintenance and Improvement Projects.

Boundary Line Surveys Needed.

CH-4	Proposal B
CH-7	Proposals G & I

Boundary Line Maintenance.

Forest	Last Year	Next Year
CH-3	2006	2021
CH-4	2007	2022
CH-7	2007	2022
CH-8	2004	2019
CH-14	2004	2019
CH-29	2007	2022
CH-31	2004	2019
CH-37	2009	2024
CH-38	2004	2019

Forest Inventory Schedule

YEAR	STATE FOREST	ACRES
2019	Chenango RA # 3	1,314
2018	Chenango RA # 4	938
2018	Chenango RA # 7	1,240
2014	Chenango RA # 8	1,666
2015	Chenango RA # 14	643
2018	Chenango RA # 29	528
2015	Chenango RA # 31	1,188
2022	Chenango RA # 37	274
2012	Chenango RA # 38	1,147

Maintenance of Forest ID Signs and Information Kiosks.

The wooden ID signs and post will receive maintenance once every three years.
Annual maintenance of the forest kiosks and associated parking areas.

Maintenance of Other Facilities.

Annual maintenance of dams for Hunts Pond, Jeffery's Pond, and Puckerville Pond.
Annual mowing of Public Forest Access Road corridors.
Annual maintenance of barrier gates on CH-3, 8, 29, 31, and 38.
Annual maintenance of 1 campsite on CH-7 and12 campsites on CH-38.
Annual maintenance of lean-to on CH-7 and lean-to on CH-31.
Annual maintenance of ski trails on CH-31.
Annually lease two portable toilets for campsites on CH-38.

Improvement Projects.

Construct a lean-to on Ch-7.
Construct an information kiosk for CH-31.
Install fire rings at each of the 12 designated campsites on CH-38.
Improve two campsites in group #1-8 on CH-38 to meet ADA standards.
Improve surface of campsite #11 on CH-38.
Improve boat launch parking area on CH-38 to accommodate additional vehicles.
Remove two present restroom structures and the administration office from CH-38.
Construct 0.25 mile CP3 trail through stand A-4 on CH-38.
Construct 0.33 mile CP3 trail through stand A-6 on CH-7.

Publications.
Develop ski and bike trail brochure for CH-31.

VIII APPENDICIES

APPENDIX. I Roads

Information on roads within or adjacent to the Between Rivers State Forests

Forest	Road Name	Jurisdiction	Miles	Description
CH-3	Hucklebon Road	Town of Guilford	0.35	Good Condition. Year-round maint.
CH-3	Parker-Smith Hill Road	Town of Guilford	0.78	Good condition. Not plowed.
CH-3	Charles Wicks Road	Town of Guilford	0.79	Good Condition. Year-round maint.
CH-3	Hohreiter Road	Town of Guilford	1.72	S. of Chas Wicks Rd: good cond. & plowed. N. of Chas Wicks Rd: fair cond. & not plowed.
CH-3	Junction Road	Town of Guilford	0.39	Good Condition. Year-round maint.
CH-3	Forest Haul Road	NYS DEC	0.42	Entrance gated. Limited maintenance.
CH-3	North section of K. Parker Road	Abandoned	0.88	Not usable.
CH-4	Quarry Road	Town of Oxford	1.40	Good Condition. Year-round maint.
CH-4	Gospel Hill Road	Town of Oxford	0.34	Good Condition. Year-round maint.
CH-4	Brooksbanks Road	Town of Oxford	0.76	Good Condition. Year-round maint.
CH-4	Puckerville Road	Town of Oxford	0.93	Good Condition. Year-round maint.
CH-4	Dr. Crouch Road	Town of Oxford	0.57	Good Condition. Year-round maint.
CH-4	Public Forest Access Road	NYSDEC	0.97	Fair condition. Not plowed.

Forest	Road Name	Jurisdiction	Miles	Description
CH-7	Quarry Road	Town of Oxford	0.94	Good condition. Not plowed.
CH-7	Bruffel Hill Road	Town of Guilford	0.69	Good Condition. Not plowed.
CH-7	Glovers Corners Road	Town of Guilford	0.69	Good Condition. Year-round maint.
CH-7	Shapley Road	Town of Oxford	1.08	Good Condition. Year-round maint.
CH-7	Puckerville Road	Town of Oxford	0.54	Good Condition. Year-round maint.
CH-7	Ward Loomis Road	Town of Oxford	0.50	Good Condition. Year-round maint.
CH-7	Hoffman Road	Town of Guilford	0.24	Good Condition. Year-round maint.
CH-8	Maltzen-Sheridan Road	Town of Columbus	0.32	Good Condition. Year-round maint.
CH-8	Church Road	Town of Columbus	0.14	Good Condition. Year-round maint.
CH-8	South section Church Rd	Abandoned	0.99	Not usable.
CH-8	Skinner Hill Road	Town of Sherburne	0.85	Good Condition. Year-round maint.
CH-8	Warren Road	Town of New Berlin	0.31	Good Condition. Year-round maint.
CH-8	West section of Warren Road	Abandoned	0.75	Not usable.
CH-8	Forest Haul Road Intersects w/ Skinner Hill	NYSDEC	0.07	Entrance gated. Limited maintenance.
CH-8	Schmidt Road	Abandoned	0.09	Usable. Fair cond. Not plowed.
CH-8	Dilley Hill Road	Town of New Berlin	0.28	Good Condition. Year-round maint.

Forest	Road Name	Jurisdiction	Miles	Description
CH-8	Button Hollow Road	Town of New Berlin	0.04	Good Condition. Year-round maint.
CH-8	West Brook Road	Town of New Berlin	0.12	Good Condition. Year-round maint.
CH-8	Forest Haul Road Intersects w/ West Brook	NYS DEC	0.25	Entrance barricaded. Not usable.
CH-8	Miller Road	Abandoned	0.21	Not usable.
CH-8	County Route 29	Town of New Berlin	0.44	Good Condition. Year-round maint.
CH-8	Old Wilkinson Road	Abandoned	0.29	Not usable.
CH-14	Pat Farley Road	Town of New Berlin	0.15	Good Condition. Year-round maint.
CH-14	Public Forest Access Road	NYS DEC	1.77	Fair condition. Not plowed.
CH-14	West section of Branch Road	Abandoned	0.44	Not usable.
CH-29	Wahlberg Road	Town of Guilford	0.48	Good Condition. Year-round maint.
CH-29	Public Forest Access Road	NYS DEC	1.18	Good condition. Gated to restrict winter access. Not plowed.
CH-31	Post Road. From N to spur trail.	Town of North Norwich	0.64	Good condition. Gated to restrict winter access. Not plowed.
CH-31	Public Forest Access Road. From SE cnr to dead end.	NYS DEC	2.40	Good condition. Gated to restrict winter access. Not plowed.

Forest	Road Name	Jurisdiction	Miles	Description
CH-31	Public Forest Access Road. South section of Post Road.	NYS DEC	0.12	Good condition. Not plowed.
CH-31	Public Forest Access Road. Spur rd S of County land.	NYS DEC	0.36	Good condition. Not plowed.
CH-31	North section of Mudge King Road	Abandoned	0.83	Not usable.
CH-37	Turnpike Road	Town of Sherburne	0.29	Good Condition. Year-round maint.
CH-37	Kendricks Road	Town of Sherburne	0.60	Good Condition. Year-round maint.
CH-38	Hunt's Pond Road	Town of New Berlin	1.18	Good Condition. Year-round maint.
CH-38	Buttermilk Falls Road	Town of New Berlin	0.37	Good Condition. Year-round maint.
CH-38	West Hill Road	Town of New Berlin	0.54	Good Condition. Year-round maint.
CH-38	Public Forest Access Road	NYS DEC	1.67	Good Condition. Not Plowed.

APPENDIX II Watercourses

Watercourses on the Unit

State Forest	Stream Name	Standard	Length (miles)
CH-14	Unnamed tributary to Great Brook	C	0.95
CH-29	Unnamed tributary to Lyon Brook	C	0.14
CH-29	Unnamed tributary to Lyon Brook	C	0.16
CH-29	Unnamed tributary to Lyon Brook	C	0.49
CH-29	Unnamed tributary to Lyon Brook	C	0.01
CH-29	Unnamed tributary to Lyon Brook	C	0.81
CH-29	Unnamed tributary to Lyon Brook	C	0.13
CH-29	Unnamed tributary to Lyon Brook	C	0.30
CH-31	Unnamed tributary to Thompson Creek	C	0.35
CH-31	Unnamed tributary to Thompson Creek	C	0.92
CH-31	Unnamed tributary to Thompson Creek	C	0.43
CH-31	Whaupaunaucau Brook	C(T)	0.04
CH-37	Unnamed tributary to Chenango Creek	C	0.43
CH-38	Unnamed tributary to Unadilla River	C	0.92
CH-38	Unnamed tributary to Unadilla River	C	0.10
CH-38	Unnamed tributary to Unadilla River	C	0.15
CH-38	Unnamed tributary to Unadilla River	C	0.29
CH-38	Unnamed tributary to Unadilla River	C	0.55
CH-38	Unnamed tributary to Unadilla River	C	0.25
CH-38	Unnamed tributary to Unadilla River	C	0.35
CH-38	Unnamed tributary to Unadilla River	C	0.30
CH-4	Unnamed tributary to Cheshire Creek	C	0.50
CH-4	Unnamed tributary to Cheshire Creek	C	0.38
CH-4	Unnamed tributary to Cheshire Creek	C	0.46
CH-4	Unnamed tributary to Padget Brook	C	0.01
CH-4	Unnamed tributary to Cheshire Creek	C	0.52
CH-4	Unnamed tributary to Cheshire Creek	C	0.03
CH-4	Unnamed tributary to Kelsey Creek	C	0.04
CH-4	Unnamed tributary to Cheshire Creek	C(T)	0.44
CH-4	Unnamed tributary to Cheshire Creek	C(T)	0.45
CH-4	Unnamed tributary to Cheshire Creek	C(T)	0.07
CH-4	Unnamed tributary to Cheshire Creek	C(T)	0.31
CH-7	Unnamed tributary to Yaleville Brook	A	0.16
CH-7	Mud Pond Creek	A	0.29
CH-7	Unnamed tributary to Willey Brook	A	0.22
CH-7	Unnamed tributary to Willey Brook	A	0.42

State Forest	Stream Name	Standard	Length (miles)
CH-7	Unnamed tributary to Willey Brook	A	1.04
CH-7	Unnamed tributary to Willey Brook	A	0.77
CH-7	Unnamed tributary to Willey Brook	A	0.12
CH-7	Willey Brook	A(T)	0.55
CH-7	Unnamed tributary to Guilford Creek	AA	1.03
CH-7	Unnamed tributary to Guilford Creek	AA	0.23
CH-7	Unnamed tributary to Kelsey Creek	C	0.06
CH-7	Unnamed tributary to Yaleville Brook	C	0.24
CH-7	Unnamed tributary to Guilford Creek	C	0.35
CH-7	Unnamed tributary to Yaleville Brook	C	0.08
CH-7	Unnamed tributary to Yaleville Brook	C	0.08
CH-7	Unnamed tributary to Cheshire Creek	C	0.27
CH-7	Unnamed tributary to Yaleville Brook	C(T)	0.57
CH-8	West Brook	C	0.56
CH-8	Unnamed tributary to Great Brook	C	0.79
CH-8	Unnamed tributary to Great Brook	C	0.17
CH-8	Unnamed tributary to Chenango Creek	C	0.38
CH-8	Unnamed tributary to Great Brook	C	0.15
CH-8	Unnamed tributary to Great Brook	C	0.05
CH-8	Unnamed tributary to Great Brook	C	0.23
CH-8	Unnamed tributary to Great Brook	C	0.63
CH-8	Unnamed tributary to Great Brook	C(T)	0.61
CH-8	Unnamed tributary to Great Brook	C(T)	0.31
CH-8	Unnamed tributary to West Brook	C(T)	0.47
		Total (miles)	22.11

APPENDIX III Wetlands

Classified Wetlands on the Unit

Forest	Wetland I.D. Code	Common Name/ Description	Acres	Legal Status	Coinciding Stand #'s	NWI * Classification
CH-3	SD-1	Freshwater Forested/Shrub Wetland	22.3	II	A8.2	PFO1/4C, PFO1C
CH-7	WB-2	Freshwater Forested/Shrub Wetland	16.8	II	A44 & A45	PFO43
CH-7	WB-3	Mud Pond Freshwater Pond Forested/Shrub Wetland	8.3	II	A46 & A50	PUBHh, POF4/1E, PSS3E
CH-7	OX-10	Freshwater Pond	9.4	II	A21	PUBHh
CH-29	OX-5	Freshwater Forested/Shrub Wetland	7.6	III	A26	PFO4E
CH-31	H-1	Freshwater Forested/Shrub Wetland	0.2	II	B31	PFO4/1E
CH-31	H-2	Jeffrey's Pond Freshwater Pond Forested/Shrub Wetland	18.9	II	B9, B12, B14, & B69	PFO4E, PUBHL, PSS1E
CH-38	NS-1	Freshwater Forested/Shrub Wetland Freshwater Emergent Wetland	53.9	II	B27, B28, B30, & B36	PSS1/FO1C, PSS1/EM1B, PEM1E, PFO4E, PSS1E
		Total	**137.4**			

(*) **N**ational **W**etlands **I**nventory - for NWI classification definitions visit the following website: http://www.fws.gov/nwi/mapcodes.htm

APPENDIX IV Code Definitions

Code Definitions for Protective Status of Wildlife on the Between Rivers Management Unit

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

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

APPENDIX V Birds

Breeding Species Of Birds In The Vicinity Of The Between Rivers Unit (2000 to 2004 Atlas Data)

Common Name	Scientific Name	Breeding Status	Protective Status New York
Acadian Flycatcher	*Empidonax virescens*	Possible	P
Alder Flycatcher	*Empidonax alnorum*	Probable	P
American Black Duck	*Anas rubripes*	Probable	GS
American Crow	*Corvus brachyrhynchos*	Confirmed	GS
American Goldfinch	*Carduelis tristis*	Confirmed	P
American Kestrel	*Falco sparverius*	Confirmed	P
American Redstart	*Setophaga ruticilla*	Confirmed	P
American Robin	*Turdus migratorius*	Confirmed	P
American Woodcock	*Scolopax minor*	Probable	GS
Bald Eagle	*Haliaeetus leucocephalus*	Possible	T
Baltimore Oriole	*Icterus galbula*	Confirmed	P
Bank Swallow	*Riparia riparia*	Confirmed	P
Barn Owl	*Tyto alba*	Possible	P
Barn Swallow	*Hirundo rustica*	Confirmed	P
Barred Owl	*Strix varia*	Probable	P
Belted Kingfisher	*Ceryle alcyon*	Confirmed	P
Black-and-white Warbler	*Mniotilta varia*	Confirmed	P
Black-billed Cuckoo	*Coccyzus erythropthalmus*	Confirmed	P
Blackburnian Warbler	*Dendroica fusca*	Probable	P
Black-capped Chickadee	*Poecile atricapillus*	Confirmed	P
Black-throated Blue Warbler	*Dendroica caerulescens*	Probable	P
Black-throated Green Warbler	*Dendroica virens*	Confirmed	P
Blue Jay	*Cyanocitta cristata*	Confirmed	P
Blue-headed Vireo	*Vireo solitarius*	Confirmed	P
Blue-winged Warbler	*Vermivora pinus*	Confirmed	P
Bobolink	*Dolichonyx oryzivorus*	Confirmed	P
Broad-winged Hawk	*Buteo platypterus*	Probable	P
Brown Creeper	*Certhia americana*	Confirmed	P
Brown-headed Cowbird	*Molothrus ater*	Confirmed	P
Canada Goose	*Branta canadensis*	Confirmed	GS
Canada Warbler	*Wilsonia canadensis*	Confirmed	P
Carolina Wren	*Thryothorus ludovicianus*	Probable	P
Cedar Waxwing	*Bombycilla cedrorum*	Confirmed	P
Chestnut-sided Warbler	*Dendroica pensylvanica*	Confirmed	P

Common Name	Scientific Name	Breeding Status	Protective Status New York
Chimney Swift	*Chaetura pelagica*	Probable	P
Chipping Sparrow	*Spizella passerina*	Confirmed	P
Cliff Swallow	*Petrochelidon pyrrhonota*	Probable	P
Common Grackle	*Quiscalus quiscula*	Confirmed	P
Common Merganser	*Mergus merganser*	Confirmed	GS
Common Raven	*Corvus corax*	Confirmed	P
Common Yellowthroat	*Geothlypis trichas*	Confirmed	P
Cooper's Hawk	*Accipiter cooperii*	Possible	P-SC
Dark-eyed Junco	*Junco hyemalis*	Confirmed	P
Downy Woodpecker	*Picoides pubescens*	Confirmed	P
Eastern Bluebird	*Sialia sialis*	Confirmed	P
Eastern Kingbird	*Tyrannus tyrannus*	Confirmed	P
Eastern Meadowlark	*Sturnella magna*	Probable	P
Eastern Phoebe	*Sayornis phoebe*	Confirmed	P
Eastern Screech-Owl	*Megascops asio*	Possible	P
Eastern Towhee	*Pipilo erythrophthalmus*	Confirmed	P
Eastern Wood-Pewee	*Contopus virens*	Confirmed	P
European Starling	*Sturnus vulgaris*	Confirmed	UN
Field Sparrow	*Spizella pusilla*	Confirmed	P
Golden-crowned Kinglet	*Regulus satrapa*	Confirmed	P
Gray Catbird	*Dumetella carolinensis*	Confirmed	P
Great Blue Heron	*Ardea herodias*	Confirmed	P
Great Crested Flycatcher	*Myiarchus crinitus*	Confirmed	P
Great Horned Owl	*Bubo virginianus*	Probable	P
Green Heron	*Butorides virescens*	Probable	P
Hairy Woodpecker	*Picoides villosus*	Confirmed	P
Hermit Thrush	*Catharus guttatus*	Confirmed	P
Hooded Merganser	*Lophodytes cucullatus*	Confirmed	GS
House Finch	*Carpodacus mexicanus*	Confirmed	P
House Sparrow	*Passer domesticus*	Confirmed	UN
House Wren	*Troglodytes aedon*	Confirmed	P
Indigo Bunting	*Passerina cyanea*	Confirmed	P
Killdeer	*Charadrius vociferus*	Confirmed	P
Least Flycatcher	*Empidonax minimus*	Probable	P
Louisiana Waterthrush	*Seiurus motacilla*	Possible	P
Magnolia Warbler	*Dendroica magnolia*	Confirmed	P
Mallard	*Anas platyrhynchos*	Confirmed	GS
Marsh Wren	*Cistothorus palustris*	Possible	P
Mourning Dove	*Zenaida macroura*	Confirmed	P
Mourning Warbler	*Oporornis philadelphia*	Confirmed	P

Common Name	Scientific Name	Breeding Status	Protective Status New York
Nashville Warbler	*Vermivora ruficapilla*	Probable	P
Northern Cardinal	*Cardinalis cardinalis*	Confirmed	P
Northern Flicker	*Colaptes auratus*	Confirmed	P
Northern Goshawk	*Accipiter gentilis*	Confirmed	P-SC
Northern Harrier	*Circus cyaneus*	Possible	T
Northern Mockingbird	*Mimus polyglottos*	Probable	P
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Confirmed	P
Northern Waterthrush	*Seiurus noveboracensis*	Probable	P
Ovenbird	*Seiurus aurocapilla*	Confirmed	P
Pileated Woodpecker	*Dryocopus pileatus*	Probable	P
Pine Siskin	*Carduelis pinus*	Probable	P
Pine Warbler	*Dendroica pinus*	Probable	P
Prairie Warbler	*Dendroica discolor*	Probable	P
Purple Finch	*Carpodacus purpureus*	Confirmed	P
Red Crossbill	*Loxia curvirostra*	Possible	P
Red-bellied Woodpecker	*Melanerpes carolinus*	Probable	P
Red-breasted Nuthatch	*Sitta canadensis*	Confirmed	P
Red-eyed Vireo	*Vireo olivaceus*	Confirmed	P
Red-shouldered Hawk	*Buteo lineatus*	Probable	P-SC
Red-tailed Hawk	*Buteo jamaicensis*	Confirmed	P
Red-winged Blackbird	*Agelaius phoeniceus*	Confirmed	P
Ring-necked Pheasant	*Phasianus colchicus*	Possible	GS
Rock Pigeon	*Columba livia*	Confirmed	UN
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	Confirmed	P
Ruby-throated Hummingbird	*Archilochus colubris*	Confirmed	P
Ruffed Grouse	*Bonasa umbellus*	Confirmed	GS
Savannah Sparrow	*Passerculus sandwichensis*	Confirmed	P
Scarlet Tanager	*Piranga olivacea*	Confirmed	P
Sharp-shinned Hawk	*Accipiter striatus*	Probable	P-SC
Song Sparrow	*Melospiza melodia*	Confirmed	P
Sora	*Porzana carolina*	Possible	GS
Spotted Sandpiper	*Actitis macularia*	Probable	P
Swamp Sparrow	*Melospiza georgiana*	Confirmed	P
Tree Swallow	*Tachycineta bicolor*	Confirmed	P
Tufted Titmouse	*Baeolophus bicolor*	Confirmed	P
Turkey Vulture	*Cathartes aura*	Confirmed	P
Veery	*Catharus fuscescens*	Confirmed	P
Vesper Sparrow	*Pooecetes gramineus*	Possible	P-SC
Virginia Rail	*Rallus limicola*	Probable	GS

Common Name	Scientific Name	Breeding Status	Protective Status New York
Warbling Vireo	*Vireo gilvus*	Confirmed	P
White-breasted Nuthatch	*Sitta carolinensis*	Confirmed	P
White-throated Sparrow	*Zonotrichia albicollis*	Confirmed	P
Wild Turkey	*Meleagris gallopavo*	Confirmed	GS
Willow Flycatcher	*Empidonax traillii*	Probable	P
Wilson's Snipe	*Gallinago delicata*	Probable	GS
Winter Wren	*Troglodytes troglodytes*	Probable	P
Wood Duck	*Aix sponsa*	Confirmed	GS
Wood Thrush	*Hylocichla mustelina*	Confirmed	P
Yellow Warbler	*Dendroica petechia*	Confirmed	P
Yellow-bellied Sapsucker	*Sphyrapicus varius*	Confirmed	P
Yellow-billed Cuckoo	*Coccyzus americanus*	Probable	P
Yellow-rumped Warbler	*Dendroica coronata*	Confirmed	P
Yellow-throated Vireo	*Vireo flavifrons*	Probable	P

APPENDIX VI Reptiles & Amphibians

Reptiles and Amphibians of The Between Rivers Management Unit and Vicinity
By Common Name, Scientific Name, and Protective Status

Common Name	Scientific Name	Protective Status	
		State	Federal
Spotted Salamander	*Ambystoma maculatum*	UN	UN
American Toad	*Bufo americanus*	UN	UN
Common Snapping Turtle	*Chelydra serpentina*	UN	UN
Painted Turtle	*Chrysemys picta*	UN	UN
Eastern Hellbender	*Cryptobranchus alleganiensis*	SC	UN
Northern Dusky Salamander	*Desmognathus fuscus*	UN	UN
Allegheny Dusky Salamander	*Desmognathus ochrophaeus*	UN	UN
Dusky Salamander	*Desmognathus spp.*	UN	UN
Ringneck Snake	*Diadophis punctatus*	UN	UN
Northern Two-lined Salamander	*Eurycea bislineata*	UN	UN
Longtail Salamander	*Eurycea longicauda*	SC	UN
Wood Turtle	*Glyptemys insculpta*	SC	UN
Spring Salamander	*Gyrinophilus porphyriticus*	UN	UN
Gray Treefrog	*Hyla versicolor*	UN	UN

Milk Snake	*Lampropeltis triangulum*	UN	UN
Red-spotted Newt	*Notophthalmus viridescens*	UN	UN
Smooth Green Snake	*Opheodrys vernalis*	UN	UN
Northern Redback Salamander	*Plethodon cinereus*	UN	UN
Spring Peeper	*Pseudacris crucifer*	UN	UN
Bullfrog	*Rana catesbeiana*	GS	UN
Green Frog	*Rana clamitans*	GS	UN
Pickerel Frog	*Rana palustris*	GS	UN
Northern Leopard Frog	*Rana pipiens*	GS	UN
Wood Frog	*Rana sylvatica*	GS	UN
Brown Snake	*Storeria dekayi*	UN	UN
Redbelly Snake	*Storeria occiptomaculata*	UN	UN
Eastern Box Turtle	*Terrapene carolina*	SC	UN
Common Garter Snake	*Thamnophis sirtalis*	UN	UN

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

APPENDIX VII Mammals

Mammals of The Between Rivers Management Unit and Vicinity
By Common Name, Scientific Name and Protective Status.

Common Name	Scientific Name	Confirmed/ Predicted	Protective Status	
			Federal	State
American Beaver	*Castor canadensis*	C	UN	GS
Big Brown Bat	*Eptesicus fuscus*	C	UN	UN
Black Bear	*Ursus americanus*	P	UN	GS
Bobcat	*Lynx rufus*	C	UN	GS
Common Muskrat	*Ondatra zibethicus*	C	UN	GS
Common Raccoon	*Procyon lotor*	P	UN	GS
Coyote	*Canis latrans*	C	UN	GS
Deer Mouse b	*Peromyscus maniculatus*	C	UN	UN
E. small-footed Myotis	*Myotis leibii*	P	UN	SC
Eastern Chipmunk	*Tamias striatus*	C	UN	UN
Eastern Cottontail	*Sylvilagus floridanus*	P	UN	GS
Eastern Gray Squirrel	*Sciurus carolinensis*	C	UN	GS
Eastern Pipistrelle	*Pipistrellus subflavus*	P	UN	UN
Eastern Red Bat	*Lasiurus borealis*	P	UN	UN
Fisher	*Martes pennanti*	P	UN	GS

Common Name	Scientific Name	Confirmed/ Predicted	Protective Status	
			Federal	State
Fox Squirrel	*Sciurus niger*	P	UN	GS
Gray Fox	*Urocyon cinereoargentus*	C	UN	GS
Hairy-tailed Mole	*Parascalops breweri*	C	UN	UN
Hoary Bat	*Lasiurus cinereus*	C	UN	UN
House Mouse	*Mus musculus*	C	UN	UN
Indiana Myotis	*Myotis sodalis*	P	E	E
Least Shrew	*Cryptotis parva*	P	UN	UN
Little Brown Myotis	*Myotis lucifugus*	C	UN	UN
Long-tailed Weasel	*Mustela frenata*	P	UN	GS
Masked Shrew	*Sorex cinereus*	C	UN	UN
Meadow Jumping Mouse	*Zapus hudsonius*	C	UN	UN
Meadow Vole	*Microtus pennsylvanicus*	C	UN	UN
Mink	*Mustela vison*	P	UN	GS
N. Short-tailed Shrew	*Blarina brevicauda*	C	UN	UN
Northern Flying Squirrel	*Glaucomys sabrinus*	C	UN	UN
Northern Myotis (Keen's Myotis)	*Myotis septentrionalis*	C	UN	UN
Norway Rat	*Rattus norvegicus*	P	UN	UN
Porcupine	*Erethizon dorsatum*	P	UN	UN
Pygmy Shrew	*Sorex hoyi*	C	UN	UN
Red Fox	*Vulpes vulpes*	C	UN	GS
Red Squirrel	*Tamiasciurus hudsonicus*	C	UN	UN
River Otter	*Lutra canadensis*	C	UN	GS
Short-tailed Weasel (Ermine)	*Mustela erminea*	C	UN	UN
Silver-haired Bat	*Lasionycteris noctivagans*	P	UN	UN
Smoky Shrew	*Sorex fumeus*	C	UN	UN
Snowshoe Hare	*Lepus americanus*	P	UN	GS
Southern Bog Lemming	*Synaptomys cooperi*	C	UN	UN
Southern Flying Squirrel	*Glaucomys volans*	C	UN	UN
Southern Red-backed Vole	*Clethrionomys gapperi*	C	UN	UN
Star-nosed Mole	*Condylura cristata*	C	UN	UN
Striped Skunk	*Mephitis mephitis*	P	UN	GS
Virginia Opossum	*Didelphis virginiana*	P	UN	GS
White-footed Mouse	*Peromyscus leucopus*	C	UN	UN
White-tailed Deer	*Odocoileus virginianus*	C	UN	GS
Woodchuck	*Marmota monax*	P	UN	UN
Woodland Jumping Mouse	*Napaeozapus insignis*	C	UN	UN
Woodland Vole	*Microtus pinetorum*	C	UN	UN

Source: Adapted from The New York Gap Program, U.S. EPA EMAP Hexagons 377, 381, 411, 414, and 443.

APPENDIX VIII Fish

Fishery Information for the Between Rivers UMP

The following is a summary of two reports provided by the Bureau of Fisheries that explain the findings of multiple surveys conducted at Jeffrey Pond from 1997 to 2001 to determine if Jeffrey Pond could sustain a quality brook trout only fishery.

The Department of Environmental Conservation conducted surveys to determine if Jeffrey Pond could sustain a quality brook-trout-only fishery. Prior to the unauthorized introduction of other fish species, Jeffrey Pond did support a healthy brook trout population with fish over 15 inches reported. To reestablish and maintain a quality brook trout fishery it is essential that no other species of fish are present in Jeffrey Pond or its tributary. Other fish tend to out-compete (yellow perch, golden shiners) or eat (largemouth bass) brook trout resulting in poor growth and/or survival. Given that there are few readily accessible ponds in central New York which provide an opportunity to catch quality sized brook trout the Department, with the support of the Chenango County Federation of Sportsman Clubs, decided to attempt to manage Jeffrey Pond as a brook-trout-only water. If brook trout growth and survival is good and the angling public continues to support this philosophy we will continue to manage Jeffrey Pond in this manner.

All fish were removed from Jeffrey Pond in the summer of 1997 to restore the pond to a brook trout only fishery. Along with the removal of competing fish species, the southern end of the pond was dredged to remove organic matter which had built up over the years. Organic material tends to rob oxygen from the water making the deep, cold area of the pond uninhabitable to fish and other aquatic life during the summer. The presence of cold, well oxygenated water in the deepest part of a pond is usually the key to trout survival during the summer months.

The following are temperature and dissolved oxygen readings, from the deepest water by the dam, taken on July 27, 1998.

Depth (ft)	Temp. (°F)	Dissolved Oxygen (ppm)
0.1	76.7	7.3
5.0	70.4	4.2
10.0	59.4	0.6

NOTE: For brook trout to survive and grow they need at least 6 ppm of dissolved oxygen and temperatures no warmer than 68°F (preferably 55 - 63°F). Temperatures of 70°F or greater and/or dissolved oxygen levels less than 6 ppm for several days can result in significant brook trout mortality. Based on the conditions in 1998 poor survival of brook trout was anticipated.

Jeffrey pond received its normal stocking of 1,100 brook trout on May 4, 1998 and an additional stocking of 900 surplus brook trout on June 8, 1998. Hatchery records indicate that the May

stocked fish were 8.0 inches long while the fish stocked in June averaged 9.4 inches in length. These were the first trout stocked into the pond after the August 1997 reclamation.

To gather information on survival and growth of yearling brook trout stocked in the spring of 1988 three standard inland gillnets were set on September 9, 1998. Surprisingly, 25 brook trout were collected in this sampling effort. Given that conditions were poor for trout survival in the deeper water by the dam, it is likely that cool spring water is present in other areas of the pond. The average size of the fish caught, 9.3 inches, was nearly identical to the size of the fish stocked in June. The size range of the fish caught in the netting effort, 7.8 - 12.1 inches (s.d.- 0.85), was also very similar to the size range observed in a 50 fish sub-sample of the June stocking, 7.4 - 11.0 inches (s.d. - 0.92). From this data it is difficult to draw any conclusions on brook trout growth in Jeffrey Pond. Given that the average size and the size ranges of the two samples are so similar, an argument can be made that little or no growth has occurred. However, the fish were in good condition as indicated by an average Fulton-type condition factor of K=1.11. (*The "Fulton-type condition factor" is based on the relationship of a fish's length and weight. For trout, a K of* 1 *or more indicates a healthy fish. Trout with a K less than* 0.9 *will look skinny.*)

The fact that good numbers of fish were able to survive the relatively hot and dry summer of 1998 was promising and also indicated that a thermal refuge with adequate oxygen probably exists somewhere else in the pond. That brook trout did not appear to grow much in 1998 may be an anomaly resulting from the extreme climatic conditions they had to endure.

Temperature and oxygen levels were measured again on August 12, 1999, they follow below:

Depth (ft)	Temp. (ºF)	Dissolved Oxygen (ppm)
0.1	73.4	11.0
2.5	68.4	11.5
5.0	67.1	10.0
7.5	66.2	7.4
10.0	63.2	3.0

Both temperature and oxygen levels were better in 1999 than those recorded the previous year even though the summer of 1999 was once again dry and relatively warm. The reason for the improved conditions is unclear.

Nets were again set on August 13, 1999 in an effort to gather information on trout growth in Jeffrey Pond. A total of 30 brook trout were captured. Scale analysis revealed that all the trout captured were yearlings from the June 3, 1999 stocking. Stocking records indicate that the average length of these fish was 8.0 inches (no size range was recorded). The average size of brook trout captured in the gillnet sample was 8.3 inches (range: 6.7 - 10.8 inches) and the average K- factor was 0.94. Again it was promising that good numbers of trout survived through a very dry, hot summer, but disappointing that substantial growth did not occur.

The lack of older fish in the August 1999 sample indicates high mortality is occurring (probably related to angler harvest). It is possible that the late stocking in 1999 may have increased pressure on the remaining "holdover" fish from 1998 stockings during the early part of the trout season. Growth of these holdover fish is the factor that will determine the success of this management program.

In the continued effort to determine if significant growth is occurring, a single trapnet was fished overnight and pulled on April 7, 2000. Unfortunately, only one brook trout was captured. Two trout were captured by an angler while we were there and these fish were measured. The average size of these three fish was 9.5 inches (8.3 - 10.9 inches) but the sample size was too small to tell if significant growth had truly occurred.

Unfortunately, during the three years of sampling small numbers of other fish species were also captured. Other species captured were: brown bullhead, largemouth bass, and pumpkinseed, and in April 2000, golden shiner.

Jeffrey Pond was surveyed in the spring of 2001 as part of an on-going effort to determine if significant growth and survival of brook trout had occurred since the reclamation in 1997. The reclamation was done in conjunction with the dam repair work which required a complete draw-down of the lake.

The pond was boat electrofished during the daylight hours of April 30, 2001 resulting in the capture of just one holdover brook trout. Other species captured were largemouth bass, pumpkinseed, bullhead, and golden shiner. This survey concluded the post-reclamation monitoring effort. The unit's determination is that management of Jeffrey Pond as a brook trout only fishery is not practical at this time. Either through avoidance of the rotenone treatment and/or illegal restocking, a substantial non-trout fish community has reestablished in the pond. Additionally, survival and growth of stocked brook trout was not significant enough to warrant future efforts to control non-trout fishes. Furthermore, informal surveys of anglers who were using the pond during our various sampling efforts revealed a general lack of support for the trout only management effort.

On October 1, 2002 the special regulation prohibiting the use of fish as bait in Jeffrey Pond were rescinded. Future management efforts at Jeffrey Pond may include the re-stocking of yellow perch and largemouth bass into the pond to try and recreate the thriving pre-reclamation warm water fishery which had existed.

APPENDIX IX Deer Harvest Data

Deer Harvest Records for Towns within the Between Rivers Management Unit.

Deer Kill By Town											
Towns	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**AVG.**
Columbus	157	129	198	200	200	194	134	106	122	192	163
Guilford	556	445	552	554	489	356	316	199	238	401	411
New Berlin	310	283	324	340	294	254	242	116	135	211	251
North Norwich	99	81	108	101	127	68	55	43	43	75	80
Oxford	462	401	513	456	507	361	285	204	280	360	383
Sherburne	247	244	295	316	264	304	225	186	198	226	250
Total	1831	1583	1990	1967	1881	1537	1257	854	1016	1465	1538
Average	305	264	332	328	314	256	210	142	169	244	256

Source: 2006 New York State 20 Yr. Deer Book.

Adult Bucks Killed/Sq. Mile											
Towns	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**AVG.**
Columbus	1.92	1.61	2.45	2.87	2.95	2.92	1.92	1.66	2.76	3.16	2.42
Guilford	4.45	4.06	3.98	4.96	4.43	3.23	3.26	2.37	2.94	3.94	3.76
New Berlin	3.73	3.44	3.12	3.44	3.14	2.98	2.98	1.57	2.35	2.79	2.95
North Norwich	1.69	1.34	1.55	1.41	1.97	1.21	0.93	1.31	1.10	1.38	1.39
Oxford	4.06	3.57	3.94	3.81	4.64	3.15	2.63	2.13	3.62	3.04	3.46
Sherburne	2.65	3.00	3.07	3.39	2.71	3.81	2.78	2.71	3.54	3.09	3.08
Average	3.08	2.84	3.02	3.31	3.31	2.88	2.42	1.96	2.72	2.90	2.84

Source: 2006 New York State 20 Yr. Deer Book

APPENDIX X Turkey Harvest Data

Reported Turkey Harvest 1998-2007 for Towns within the Between Rivers Management Unit

Turkey Harvest By Town - Spring											
Towns	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**AVG.**
Columbus	7	16	14	18	14	7	7	6	10	7	10.6
Guilford	26	23	21	21	16	3	3	12	11	14	15.0
New Berlin	20	13	17	16	17	14	14	6	13	12	16.1
North Norwich	4	1	0	5	1	0	0	0	0	1	14.2
Oxford	26	22	11	16	15	13	13	16	10	19	1.2
Sherburne	14	16	11	29	20	16	16	10	11	11	15.4
Average	16.2	15.2	12.3	17.5	13.8	8.8	8.8	8.3	9.2	10.7	11.2

Source: Lance Clark, Biologist, NYS DEC

Turkey Harvest By Town - Fall											
Towns	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**AVG.**
Columbus	8	13	11	9	11	3	7	2	2	3	6.9
Guilford	23	17	9	18	12	8	5	8	8	15	12.3
New Berlin	10	11	8	17	9	3	10	7	14	5	11.9
North Norwich	0	1	2	0	2	0	1	2	0	7	9.4
Oxford	16	19	12	15	18	5	5	9	11	9	1.5
Sherburne	18	19	7	19	14	14	6	15	10	10	13.2
Average	12.5	13.3	8.2	13.0	11.0	5.5	5.7	7.2	7.5	8.2	9.2

Source: Lance Clark, Biologist, NYS DEC

APPENDIX XI Beaver & Coyote Harvest Data

Pelt Sealed Beaver 1998-2007 for Towns within the Between Rivers Management Unit

Towns	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	AVG.
Columbus	0	16	14	10	19	5	11	12	28	21	13.6
Guilford	50	64	59	38	83	28	8	48	38	6	42.2
New Berlin	15	36	6	0	42	7	17	28	43	33	22.7
North Norwich	6	6	3	0	0	25	18	5	12	12	8.7
Oxford	82	44	7	39	50	6	22	16	54	36	35.6
Sherburne	24	29	23	46	27	38	5	27	63	47	32.9
Average	29.5	32.5	18.7	22.2	36.8	18.2	13.5	22.7	39.7	25.8	26.0

Source: Lance Clark, Biologist, NYS DEC

Pelt Sealed Coyote 1995-2004[1] for Towns within the Between Rivers Management Unit

Towns	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	AVG.
Columbus	0	0	1	1	0	1	3	1	4	1	1.2
Guilford	2	1	6	13	3	0	10	4	6	2	4.7
New Berlin	1	2	3	5	7	4	3	9	1	3	3.8
North Norwich	1	1	0	5	1	3	3	0	2	0	1.6
Oxford	1	3	2	8	6	1	20	8	10	8	6.7
Sherburne	1	18	7	6	7	8	11	16	11	1	8.6
Average	1	4.2	3.2	6.3	4.0	2.8	8.3	6.3	5.7	2.5	4.4

Source: Lance Clark, Biologist, NYS DEC
[1]2004 was the last year that a pelt seal was required for coyotes.

APPENDIX XII Property Taxes

Property Taxes as recorded for 2008 - 2009

Forest	Township	Acres	Assessment	County Tax	Township General Tax	Township Highway Tax	Fire Tax	Total Township & County Tax	Total School Tax
CH-3	Guilford	1,314.16	805,556.00	Exempt	1,393.62	5,831.43	2,099.28	9,324.33	25,595.19
CH-4	Oxford	937.94	662,060.00	Exempt	2,689.96	887.16	1,283.07	4,860.19	18,285.02
CH-7	Guilford	338.74	193,374.00	Exempt	334.54	1,399.84	503.94	2,238.32	6,144.13
CH-7	Oxford	901.51	630,630.00	Exempt	2,562.24	845.05	1,221.78	4,629.07	17,416.61
CH-8	Columbus	451.05	398,030.00	Exempt	450.57	5,218.57	893.97	6,563.11	13,392.97
CH-8	New Berlin	771.28	883,000.00	Exempt	2,712.58	3,395.15	1,351.86	7,459.59	13,732.93
CH-8	Sherburne	443.89	299,466.00	3,520.70	1,744.62	710.30	387.16	6,362.78	6,180.92
CH-14	New Berlin	642.81	792,800.00	Exempt	2,435.50	3,048.31	814.98	6,298.79	12,378.74
CH-29	Guilford	98.79	55,934.00	Exempt	96.77	404.91	119.42	621.00	1,865.75
CH-29	Oxford	429.01	570,290.00	Exempt	2,17.09	764.14	1,105.22	4,186.49	16,495.75
CH-31	N. Norwich	690.53	463,286.00	Exempt	447.07	1,135.99	1,648.82	3,231.88	13,315.96
CH-31	N.Norwich	497.49	Exempt	Exempt	Exempt	Exempt	Exempt	Exempt	Exempt
CH-37	Sherburne	274.07	Exempt	Exempt	Exempt	Exempt	Exempt	Exempt	Exempt
CH-38	New Berlin	1,382.77	Exempt	Exempt	Exempt	Exempt	Exempt	Exempt	Exempt
Total		9,174.04	5,754,426.0	3,520.70	15,084.56	23,640.85	11,429.5	$55,775.65	144,803.97

APPENDIX XIII Mineral Resource 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. Camping Guidelines for Hunts Pond

The following guidelines pertain to the designated camping area on Hunts Pond State Forest.

(1) From May 1st through September 30th, CAMPING IS ALLOWED AT DESIGNATED SITES BY PERMIT ONLY! Free permits may be obtained from the office above between the hours of 7am and 3pm Monday through Friday. Applicant must be 18 years or older. Permits must be signed by the applicant and produced upon request by any Law Enforcement Officer or Department employee.

(2) Arrival time on a campsite is *after* 1pm on the first camping date of the permit. Departure time from the campsite is *before* 11am on the last camping date of the permit.

(3) The maximum length of stay on any one site or combination of sites in 14 nights. Upon issuance of the permit, the Department may limit the number of consecutive nights to less than 14. ***No more than 8 people are allowed per campsite.*** A new permit will *not* be issued for the same address until an issued permit expires.

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

(5) Motor vehicle access is not permitted beyond the gate near the boat launch. Campsites # 9-12 are "walk-in only" sites.

(6) The portable toilets must be kept clean and free of trash or debris. Damage to these facilities will jeopardize the future availability of these campsites.

(7) A potable water source is not available at Hunt's Pond.

(8) You are camping at your own risk. ***Do not*** leave your belongings unattended. Children are ***not*** to be left unattended. Dogs and other pets must be safely restrained.

(9) ***Quiet hours are 10pm to 7am.*** Day users must leave by 10pm.

(10) Fires are allowed only in fire pits provided by DEC. Only dead and downed wood may be used for campfires. No burning of scrap wood from construction or demolition is allowed. No fires are allowed on the boat launch site.

(11) Cutting, defacing or injuring in any manner any live trees, shrubs or plants is prohibited.

(12) Carry out all rubbish. Throwing glass, cans, aluminum foil, food wastes and other rubbish into the fire pit is prohibited.

(13) Use of boats with gas powered motors is prohibited, electric motors only.

(14) ATV's are prohibited. Off road operation of any vehicle is prohibited. Horses are not permitted in the camping area.

(15) DO NOT MOVE FIREWOOD! You could be spreading pests and diseases that kill our forests! A firewood regulation is in place to protect our forests and prevent the spread of invasive pests and diseases. Do not transport firewood over 50 miles or without a Self-Issued Certificate for Transport and Possession of New York-Sourced Untreated Firewood for Personal Use form. Tickets can be issued if the proper paperwork is not completed to clarify the origin of your firewood.

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

APPENDIX XV. Department Laws, Rules, Regulations and Policies

A. Environmental Conservation Laws

ECL Article 8	Environmental Quality Review
ECL Article 9	Lands and Forests
ECL Article 11	Fish and Wildlife
ECL Article 15	Water Resources
ECL Article 23	Mineral Resources
ECL Article 24	Freshwater Wetlands
ECL Article 33	Pesticides
ECL Article 51	Implementation of Environmental Quality Bond Act/1972
ECL Article 52	Implementation of Environmental Quality Bond Act/1972
ECL Article 71	Enforcement

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APPENDIX XVII. Glossary

Access trails - may be permanent, unpaved and do not provide all-weather access with 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. *see* cohort.

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

Beech bark disease - a insect and disease pathogen complex involving a scale insect (*Cryptococcus fagi*) and a nectria fungus (*Nectria coccinea* var. *faginata*). The insect pierces the bark to feed, allowing a place for the fungus to enter the tree. Fungal activity interrupts the tree's normal physiological processes and a severely infected tree will most likely die.

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

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

Biological legacy - an organism, living or dead, inherited from a previous ecosystem - *note* biological legacies often include large trees, snags, and downed logs left after timber harvesting.

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

Buffer zone / 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 / Den 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, i.e., from forest to brush or grass cover.

Climax forest - an ecological community that represents the culminating stage of a natural forest succession for its locality / environment.

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

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

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

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

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

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

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

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

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

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.

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

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

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

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

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

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

Even-aged 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.

Eyas - A nestling (unfledged) hawk or falcon, especially one to be trained for falconry.

Forest - an assemblage of trees and associate organisms on sites capable of maintaining at least 60% crown closure at maturity.

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

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

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

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

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 - islands of a particular age class that remain in areas of younger-aged forest - 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, grass-like plants, or forbs.

Group selection - an uneven-aged silvicultural practice where mature trees are removed in small groups (typically the diameter of the grouping is twice the average tree height) for the purpose of establishing a new age class of trees within the stand.

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

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

Haul roads - permanent, unpaved roads, not designed for all-weather travel, but are constructed primarily for the removal of wood products and provide only limited access within the Unit. As such, these roads may or may not be open for public use. The standards for these roads are those of Class C roads.

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

Hydrofracking – The hydraulic fracturing process used to release natural gas from limited porosity formations. Fluids are injected into the formation under pressure.

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

Late Successional Forest 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.

Medium sawtimber - trees 15-17 inches diameter at breast height.

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.

Neo-Tropical Migratory Bird – any species of bird that breeds in either Canada or the United States during our summer season and spends our winter season in Mexico, Central America, South America or the Caribbean Islands.

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

Old growth -
1.) forests that approximate the structure, composition, and functions of native forest prior to European settlement. They vary by forest type, but generally include more large trees, canopy layers, standing snags, native species, and dead organic matter than do young or intensively managed forests.
2.) the definition of "Old Growth Forest" involves a convergence of many different, yet interrelated criteria. Each of these criteria can occur individually in an area that is not old growth; however, it is the presence of all of these factors that combine to differentiate "Old Growth Forest" from other forested ecosystems. These factors include: An abundance of late successional tree species, at least 180 - 200 years of age in a contiguous forested landscape that has evolved and reproduced itself naturally, with the capacity for self perpetuation, arranged in a stratified forest structure consisting of multiple growth layers throughout the canopy and forest floor, featuring (1) canopy gaps formed by natural disturbances creating an uneven canopy, and (2) a conspicuous absence of multiple

stemmed trees and coppices. Old growth forest sites typically (1) are characterized by an irregular forest floor containing an abundance of coarse woody materials which are often covered by mosses and lichens; (2) show limited signs of human disturbance since European settlement; and (3) have distinct soil horizons that include definite organic, mineral, illuvial accumulation, and unconsolidated layers. The understory displays well developed and diverse surface herbaceous layers.

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

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

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

Protection forest - forest 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.

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

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

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

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.

Skid trail - a temporary or permanent trail used to skid or forward felled trees from the stumps to the log landing.

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

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

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).

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

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

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

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

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

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

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

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

Uneven-aged stand/forest - a stand with trees of three or more distinct age classes, either intimately mixed or in small group

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.

Water quality classes - a system of classification in ECL Article 17 which presents a ranked listing of the State's surface waters by the letters AA, A, B, C or D according to certain quality standards and specifications. AA is the highest quality rank and has the greatest suitability for human usage.

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

Wetland classes - a system of classification set forth in ECL Article 24, section 664.5 which ranks wetland I through IV based upon wetland functions and benefits, I being the highest rank.

APPENDIX XVIII. Special Management Zones

DEC Division of Lands and Forests Management Rules
for Establishment of Special Management Zones on State Forests
Version: June 2008

Streams, Wetlands, Ponds, Lakes & Spring Seeps	
Streams include naturally occurring perennial[2] and intermittent[1] drainages having defined channels. **Special management zone[4]** widths are from the edge of high water channels or, for wetlands[6], the edge of seasonally saturated soils. A spring seep is a permanent spring where water emerges from the ground and flows across the soil surface without defined bed and banks. The limits of the seep are demarked by the extent of surface water. All distances are in horizontal feet.	
Activity	**Guidelines**
Mineral Exploration and Development	• Mineral Exploration: Refer to *Guidelines for Seismic Testing on DEC Administered State Land* Draft 12/20/07 • Development Surface disturbance prohibited within 250'.

Streams, Wetlands, Ponds, Lakes & Spring Seeps	
Silviculture	• Spring Seeps and DEC Classified, Federally Classified, and Unclassified Wetlands[6]: No timber harvesting equipment allowed in any wetland or spring seep. Any trees cut within any wetland or spring seep must be winched out. Maintain at least 75% of pre-harvest basal area evenly spread throughout both the wetland or spring seep and a 100' **Special Management Zone**[4] surrounding wetland or spring seep. • Ponds & Lakes: 50' **Protection Buffer**[3]* next to water body & additional 100' **Special Management Zone** retaining at least 75% of pre-harvest basal area. • Perennial Streams[2]: 100' **Special Management Zone** on each side of stream. First 50' next to stream is a **Protection Buffer***. The next 50' - maintain at least 75% of pre-harvest basal area. • Intermittent Streams[1]: 100' **Special Management Zone** on each side of naturally occurring intermittent streams. Maintain at least 75% of pre-harvest basal area within **Special Management Zone**.
Skid Trails	• Keep skid trails at least 100' from wetlands and water bodies and at least 150' away when adjoining slopes are greater than 10%. • No skidding through spring seep origin. Where roads and trails must cross spring seeps, locate them as far from the origin as possible and ensure that crossings are at right angles to the spring seep. • Must follow guidelines presented in *New York State Forestry BMPs for Water Quality Field Guide* (BMP Field Guide) and stream crossing permit procedures.
Haul Roads**	• Avoid construction within 250' of wetlands. Must follow BMP Field Guide.
Log decks and Landings	• Must follow BMP Field Guide. • Keep log decks and landings at least 250' from all wetlands, streams and ponds.

Vernal Pools[7]
The Vernal Pool **Depression*** consists of the area fully covered by water at maximum capacity (usually during spring thaw), which may not always be wet during the period when timber is being harvested. During the dry season, the high-water mark can often be determined by the presence of blackened, water- or silt-stained leaves, aquatic debris along the edges, or a clear change in topography from the pool depression to the adjacent upland. (Phillip G. deMaynadier and Jeffry E. Houlahan, "Conserving Vernal Pool Amphibians in Managed Forests," *Science and Conservation of Vernal Pools in Northeastern North America*, CRC Press, Boca Raton, FL, 2008, p. 269)

Vernal Pools[7]	
Mineral Exploration and Development	• Mineral Exploration: Refer to *Guidelines for Seismic Testing on DEC Administered State Land* Draft 12/20/07 • Development Surface disturbance prohibited within 250' of the vernal pool depression.
Silviculture	• No disturbance, including tree cutting and use of timber harvesting equipment, is allowed within the **Vernal Pool** depression*. • Establish **Special Management Zone** at least 100' wide (if possible, wider is better) around perimeter of **vernal pool** depression*. Maintain at least 75% crown cover and minimize disturbance of leaf litter and soil. In **Special Management Zone**, avoid using heavy machinery when possible and restrict logging to frozen or dry ground conditions if necessary. Do not create ruts deeper than 6 inches. If rutting begins, immediately suspend operations. Any ruts must be leveled.
Main Skid Trails	• Keep main trails out of the 100' wide **Special Management Zone**.
Haul Roads** and Landings	• Avoid construction within 250' of **Vernal Pool** depression*.

Recreational Trails	
Mineral Exploration and Development	• Mineral Exploration: Refer to *Guidelines for Seismic Testing on DEC Administered State Land* Draft 12/20/07 • Development Surface disturbance prohibited within 250' of trails.
Silviculture	• Where possible, avoid clear cutting over and across any recreational trail. • Whenever harvesting close to or over a recreational trail, contact must be made with representatives of known trail adopter or trail user groups to explain the rationale for the harvest. Additionally, educational or interpretive signs explaining the rationale for the harvest must be installed on site. Tops & slash must be kept at least 25' back from the edge of trails.

*All perimeters of **Protection Buffers** and **Vernal Pool** depressions will be designated on the ground with flagging or paint. For Harvests, buffers and depressions will be identified on sale maps and equipment restrictions will be listed in the *Notice of Sale*.

** Haul roads refer to permanent, unpaved roads which are not designed for all weather travel, but may have hardened or improved surfaces with artificial drainage. ["Unpaved Forest Road Handbook." NYS DEC Bureau of State Land Management. 30 August 2004.]
*** Policy section, 'Possible Silvicultural Exemption Considerations' and section, 'Definitions', omitted.

APPENDIX XX. State Environmental Quality Review Act

Following a review of the management actions proposed in this plan, it has been determined that they **do not exceed the following thresholds** as set forth in the Strategic Plan/Generic Environmental Impact Statement for State Forest Management and **a separate site specific environmental review is not required.**

1. Clearcuts of 40 acres or larger
2. Pesticide applications exceeding 40 acres
3. Prescribed burning in excess of 100 acres

This Unit Management Plan does not include any of the following, and therefore does not require any separate site specific environmental review.

1. Forest management activities occurring on acreage occupied by protected species ranked S1, S2, G1, G2 or G3
2. Pesticide applications adjacent to plants ranked S1, S2, G1, G2 or G3
3. Aerial pesticide spraying by airplane or helicopter
4. Any development of facilities with potable water supplies, septic system supported restrooms, camping areas with more than 10 sites or development in excess of other limits established in this plan.
5. Well drilling plans
6. Well pad densities of greater than one well pad in 320 acres or non-compliance with limitations identified through a tract assessment
7. Carbon injection and storage or waste water disposal

Actions not covered by the Strategic Plan/Generic Environmental Impact Statement

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

APPENDIX XXI. COMMENTS RECEIVED DURING PUBLIC MEETING of 11-7-12 at UNADILLA VALLEY CENTRAL SCHOOL and DURING THE PUBLIC COMMENT PERIOD for the DRAFT UMP.

Comment: Keep up with boundary line painting schedule.
Response: The Department intends to follow the boundary line maintenance schedule identified in the Plan.

Comment: Protect cultural resources.
Response: The Department recognizes the values of the cultural resources on State Forests and has established objectives for the protection of these resources. The description of the cultural resource protection management contained in the Draft Plan has been expanded for the Final Plan. The NYS DEC Division of Forest Protection staff enforces the regulations pertaining to the removal or destruction of any cultural resources on State forests.

Comment: More mountain biker comments.
Response: Due to vandalism, the trail register at Whaupaunaucau State Forest is not currently available, therefore, trail users do not have an on-site facility to post comments. The Department intends to replace the kiosk and trail register. Comments may always be sent to the Sherburne office via mail, phone, or e-mail.

Comment: Construct lean-to on Hunt's Pond camping area.
Response: There is presently one lean-to located in the Unit on the Whaupaunaucau State Forest. The Plan includes an objective to construct a second lean-to on the Wiley Brook State Forest. The final Plan has been amended to include an objective of installing an additional lean-to at the Hunt's Pond camping area, contingent upon the donation of required building materials. In 2008, the materials for an 8' x 13' lean-to cost about $1,400. This cost did not include the logs.

Comment: Locate lean-to off road to discourage "party" use. Construct lean-to in a remote location.
Response: The lean-to will be located in the designated camping area of Hunt's Pond State Forest and near the water to optimize the experience. The waterfront location may also allow the facility to serve as a shelter to boaters and ice fishermen during inclement weather. Although the exact location has not been selected, the setting will be limited in its remoteness due to the waterfront criteria. One possible location will be in the "walk-in" camping section, which would somewhat limit ease of access and deter some vandalism.

Comment: Don't construct lean-to on Hunt's Pond.
Response: The objections to lean-to's include: the initial cost; maintenance costs; unnecessary improvement to the forest; and a gathering place for illegal or destructive activity. The initial cost for this lean-to will be covered through a donation. Maintenance

costs are minor and have been provided by interest groups for many other lean-to's, including the one on the Whaupaunaucau State Forest. Lean-to's provide a reliable shelter during periods of inclement weather and allow people to experience camping without a tent or trailer. Since the camping area at Hunt's Pond State Forest is expected to receive high recreational use, in addition to the recreational draw of the pond, it is reasonable to provide a lean-to at this site. Damage and undesirable activity has occurred at lean-to's on State Forests, but these problems are not uniquely associated with lean-to's. Law enforcement response to these problems, as well as the adoption of these facilities by interest groups, has prevented continuation of the incidents. Law enforcement staff will inspect the Hunt's Pond camping area and respond to any complaints. The Department will seek an interest group to enter into an agreement to "adopt" the lean-to.

Comment: Manage 10% early successional; 10% old growth.
Response: The Plan identifies 1,540 acres or 16.8% of the Unit to be managed as protection forest, with the potential to become old growth. Only 31 acres of the Unit contains pioneer hardwood species to be managed as early successional and there are an additional 85 acres of grasslands to be managed as such. These two cover types combine for only about 1% of the Unit. However, there are 3,256 acres or 36% of conifer plantations on the Unit. Some of these, especially the red pine plantations, will be treated to remove the mature plantation cover and release advanced hardwood regeneration. This type of treatment will provide early successional habitat until it transitions into the pole timber size class.

Comment: Use cameras at Whaupaunaucau State Forest. Contact Town of New Berlin re: remote cameras.
Response: One of the primary values of State Forests is the solitude they can offer to visitors. The use of security cameras would counteract this value. Although there will inevitably be some incidence of vandalism on State Forests, as well in nearly all areas of the community, the vast majority of visitors to the State Forests are respectful. The perpetrators of recent vandalism at the Whaupaunaucau State Forest have been identified through common law enforcement techniques. The Division of Forest Protection does utilize surveillance cameras to resolve issues of repeated crime at specific sites.

Comment: More patrols at Whaupaunaucau State Forest.
Response: Currently, there are fewer Forest Rangers available in Chenango County due to staff reductions. It's expected that positions will be replaced in the near future, allowing for more routine patrols of the State Forests in this Unit.

Comment: Replace the kiosk.
Response: The Department intends to replace the kiosk and trail register at Whaupaunaucau State Forest.

Comment: Provide more security & law enforcement presence at Hunt's Pond.
Response: Once the camp sites open at Hunt's Pond, it will likely have the highest intensity of use of any property within the Unit. Although routine patrols of the property will be made, most visits will be the result of response to complaints. Law enforcement staff encourage the public to report any problems as soon as possible.

Comment: Reconstruct the pavilion on concrete pad at Hunt's Pond.
Response: The pavilion was considered a non-conforming structure with the management objectives for this property upon transferal from the Department of Parks, Recreation, and Historic Preservation to the Department of Environmental Conservation. The pavilion will not be reconstructed.

Comment: Construct hiking trail loop around the pond at Hunt's Pond.
Response: The former state park road system encircles about 70% of the pond. Much of this road is located about 300 feet away from the water's edge. Developing a trail any closer to the shoreline would be difficult and, in some sections, environmentally irresponsible due to the poorly drained soils. Hunt's Pond Road travels along the west side of the pond, leaving only a 600 foot "trail-less" section along the south edge of the pond. The Plan includes an objective to develop a foot trail from the upper parking lot on Hunt's Pond Road, across the dam, and connecting to the interior road system. This will provide a 1.7 mile trail loop around the pond that may be used for walking or biking.

Comment: Maintain hedgerow & shrub habitat for birds.
Response: Biodiversity is an objective of the Plan. Mature forest cover will be provided through the maintenance of existing hedgerows and the 1,540 acres of protection forest. Shrub habitat will be provided with the short rotation of 31 acres of pioneer hardwood and the removal of mature conifer cover on many of the red pine plantations within the Unit.

Comment: Permits for camping: add in appendix, " by any DEC employee".
Response: The Appendix of the Plan pertaining to camping guidelines at Hunt's Pond has been amended to require camping permit holders to produce their permit upon the request of any law enforcement officer as well as any Department employee.

Comment: Recommend 2 additional ADA campsites plus ADA portable toilets (Hunt's Pond).
Response: The Draft Plan required two of the twelve designated campsites at Hunt's Pond to be designed as ADA compliant. The necessary improvements to meet ADA standards for these campsites include: level and hardened parking area, relatively level site, and raised fire ring. The Plan has been amended to improve a total of four of the campsites to ADA standards and provide ADA compliant portable toilets.

Comment: Maintain current existing grasslands for breeding birds.
Response: The existing 85 acres of grasslands within the Unit will be maintained through periodic mowing or prescribed fire to preserve the habitat requirements of bird species such as the Bobolink, Eastern Meadowlark, and Eastern Bluebird.

Comment: Consider CP3 ATV trail at Ambler SF.
Response: The Plan includes an objective to improve access for persons with disabilities. In this regard, two CP3 trails are proposed, one each on Hunt's Pond State Forest and Wiley Brook State Forest. The purpose of these trails is to provide opportunities for persons with disabilities to access the forests, primarily for hunting activities. The final Plan has been amended to allow for the development of additional CP3 trails within the Unit providing that a demand exists for these facilities, the proposed location(s) is compatible with the management objectives of this Plan, and funding is available.

Comment: Consider stocking at Hunt's Pond & Jeffery's Pond.
Response: Response: Jeffery Pond is stocked annually with 1,100 yearling brook trout. In addition to stocked brook trout, Jeffery Pond also contains self-sustaining populations of largemouth bass, pumpkinseed sunfish, brown bullhead, and golden shiner. The only species that hasn't been observed by DEC Fisheries staff, and which was present prior to the draw-down is yellow perch. Although we are not opposed to the reestablishment of yellow perch in the pond, the Department has no certified disease free stock available to use for a stocking effort.

Hunt's Pond is known to have a warm-water fish community that is typical for a water body of it's size. All the species present are self-sustaining. Bureau of Fisheries staff have not conducted a fisheries survey on this water in several decades and are not prepared to recommend any stocking until more is known about the fish community. Given the long-established fish community that is present, introduction of any new species is probably not warranted. However, Fisheries staff will attempt to schedule a fish community survey in the next few years to determine whether any management actions need to be taken.

Comment: Restrict coyote hunting to control deer.
Response: Public hunting is generally allowed on all State Forests. Wildlife management zone, season, bag limit, and the methods open for the taking of coyote are set by biologists within the Division of Fish, Wildlife, and Marine Resources. Currently, the open season is October 1 - March 31 statewide, excepting Long Island and New York City. There is no bag limit and coyotes may be hunted and trapped day or night. Such liberal settings are due to limited hunter/trapper numbers, high coyote reproductive rates, and general species mobility. Coyotes have the capability to quickly colonize or re-colonize unoccupied areas, including more urban environments. Research into diet and feeding habits reveals that coyotes are opportunistic feeders, with deer predation varying greatly

based on region and between individual animals. Deer make up only a portion of the diet and a wide range of small mammals, nesting birds, insects, and even plant and seed materials are consumed. Unmanaged coyote populations would likely have detrimental effects on unintended species.

Comment: No restrictions on hunting at Hunt's Pond.
Response: The Plan includes a provision to eliminate the "No Hunting" zone on the former State Park area. Hunting is considered compatible with State Forest use. However, should problems arise in regard to safety, special conditions may be imposed. Such restrictions would be posted by sign.

Comment: Retain hunting restrictions at Hunt's Pond park boundary. (concern for camping conflict)
Response: The Plan includes a provision to eliminate the "No Hunting" zone on the former State Park area. Hunting is considered compatible with State Forest use. However, should problems arise in regard to safety, special conditions may be imposed. Such restrictions would be posted by sign.

Comment: Restrict camping to 3 nights only at Hunt's Pond. Allow for 7 days of camping at Hunt's Pond.

Response: The Plan has adopted the guidelines from the designated camping area at Stoney Pond State Forest in Madison County. Those guidelines allow for a maximum length of stay at any one site or combination of sites of 14 days. These campsites have been managed by Department for about 25 years and the allowance of 14 days per person per season has not yielded any objectionable results. The guidelines for the Hunt's Pond Camp sites have been amended to retain the 14 day maximum limit, but indicate the Department may limit the length of consecutive days to less than 14 upon issuance of the permit. During seasonal periods of high demand, the Department may elect to limit the length of stay to less than the maximum in consideration of providing camping opportunities to more people.

APPENDIX XIX . Maps

MAPS OF THE BETWEEN RIVERS MANAGEMENT UNIT

Stand Identification Maps

Forest Cover Maps

Access & Facilities Maps

Management Direction Maps

Water Resources Maps