

Division of Lands & Forests

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**CUYLER HILL  
UNIT MANAGEMENT PLAN**

**FINAL**

Towns of Taylor and Truxton, Cortland County

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December, 2010

NYS Department of Environmental Conservation  
Region 7 Sub Office  
1285 Fisher Avenue  
Cortland, New York 13045  
(607) 753-3095

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DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
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ACTING COMMISSIONER

## MEMORANDUM

**TO:** The Record  
**FROM:** Peter M. Iwanowicz *PMI*  
**DATE:** DEC 23 2010  
**SUBJECT:** Final Cuyler Hill UMP

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

**Cuyler Hill**  
**Unit Management Plan**

A Management Unit Consisting of three State Forests, in Northeastern Cortland County

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## I. PREFACE

The Department of Environmental Conservation conducts management planning on state lands to maintain **ecosystems\*** and provide a wide array of benefits for current and future generations. The Cuyler Hill Unit Management Plan addresses future management of Cuyler Hill, Dog Hollow and Maxon Creek State Forests. This plan is the basis for supporting a multiple-use goal through the implementation of specific objectives and management strategies. Management will ensure the sustainability, **biological diversity** and protection of the Unit's ecosystems and optimize the many benefits that these State lands provide. The multiple-use goal will be accomplished through the applied integration of compatible and sound land management practices.

It is the policy of the Department to manage state lands for multiple benefits to serve the people of New York State. This Unit Management Plan is the first step in carrying out that policy. This plan has been developed to address management activities on the Cuyler Unit for the next twenty years, with a review due in ten years. Some management recommendations may extend beyond the twenty-year period. Factors such as budget challenges, wood product markets, and forest health problems may necessitate deviations from the scheduled management activities.

The Cuyler Hill Unit Management Plan is based on a long-range vision for the management of this area. Specific goals and objectives to support that vision are based on the rapidly evolving principles and technologies of **ecosystem management**, balanced with the increased demands for public use.

This plan and the activities it recommends will be in compliance with State Environmental Quality Review (SEQR), 6NYCRR Part 617. The Division of Lands and Forests has initiated this process by preparing a full Environmental Assessment Form. This process will be complete after the public comment period when a final Plan will be issued.

Article 9, Titles 5 and 7, of the Environmental Conservation Law authorize the Department of Environmental Conservation to manage lands acquired outside the Adirondack and Catskill Parks. Management, as defined by these laws, includes **watershed** protection, the production of timber and other forest products, recreation and kindred purposes. The Draft State Forest Land Master Plan provides direction and a framework for meeting this legal mandate.

New York State DEC-Bureau of State Land Management contracted with NSF-International and Scientific Certification Systems to conduct auditing for the purpose of obtaining dual certification under Forest Stewardship Council (FSC) and the Sustainable Forestry Initiative (SFI) program standards on over 762,000 acres of State Forests in Regions 3 through 9. This independent audit of State Forests was conducted by these auditing firms from May until July 2007, with dual certification awarded in January 2008.

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

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



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



**#NSF-SFIS-61741**  
NY DEC use of the  
Sustainable Forestry Initiative®  
program logo mark indicates that  
State Forests have been certified by a  
qualified independent auditor to be  
in conformance with the SFI Standard.

## II. VISION STATEMENT

State Forests on the Cuyler Unit will be managed to maintain and enhance ecosystem health, **biodiversity**, and sustainability while providing environmental, social, and economic benefits for the people of New York State.

\* highlighted (**bold**) terms are defined in the glossary.

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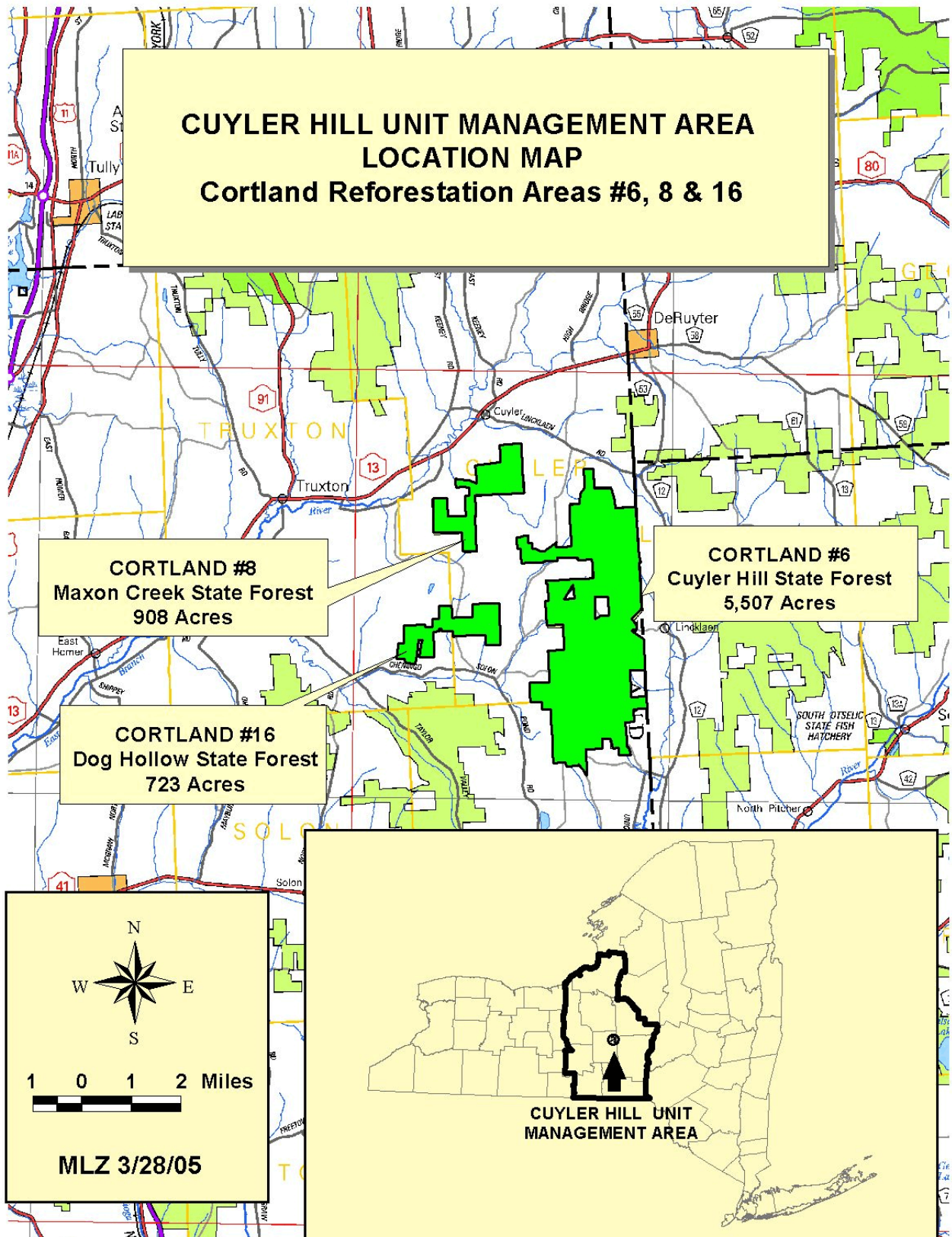
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## V. WHAT IS A UNIT MANAGEMENT PLAN?

A unit management plan (UMP) is an assessment of the natural and physical resources on land managed by the Department of Environmental Conservation. The UMP guides the Department's activities for a twenty-year period. Each plan addresses specific objectives for public use and ecosystem management which are consistent with the land classification guidelines and the wild character of these lands.

## VI. WHO WRITES THE UNIT MANAGEMENT PLAN?

State Forest UMPs are written by the Division of Lands and Forests with input from the Division of Fish, Wildlife, and Marine Resources, the Division of Operations, the Division of Mineral Resources, and the Division of Forest Protection and Fire Management. A description of each Division's responsibilities is listed below. Additional information can be found on the Department's website.

### *Division of Lands and Forests*

The Division of Lands and Forests is responsible for the stewardship, management, protection, and recreational use of State Forest lands, the care of the people who use these lands and the acquisition of additional lands to conserve unique and significant resources. The Department also provides **forestry** leadership by providing technical assistance to private forest landowners and the forest products industry.

### *Division of Fish, Wildlife, and Marine Resources*

The Division of Fish, Wildlife, and Marine Resources serves the public by using their collective skills to describe, understand, manage, and perpetuate a healthy and diverse assemblage of fish, wildlife, and ecosystems.

### *Division of Operations*

The Division of Operations provides technical services, facilities management, and maintenance of physical assets to insure effective and efficient operation of the Department and safe public use of Department lands and facilities.

### *Division of Mineral Resources*

The Division of Mineral Resources is responsible for ensuring the environmentally sound, economic development of New York's non-renewable energy and mineral resources for the benefit of current and future generations.

### *Division of Forest Protection and Fire Management*

The Division of Forest Protection and Fire Management is responsible for the preservation, protection, enhancement of the state's forest resources, and the safety and well-being of the public using these resources.

## VII. HOW IS THE UNIT MANAGEMENT PLAN DEVELOPED?

There are a series of steps involved in developing a unit management plan:

Step 1: Conduct a resource inventory of the unit.

Step 2: Solicit written and verbal input from the public through press releases, mass mailings and a scoping meeting.

Step 3: Develop a draft UMP

Step 4: Internal review and approval of draft UMP.

Step 5: Release draft UMP and conduct public meetings to gather comments.

Step 6: Address issues and develop a final UMP.

Step 7: Comply with State Environmental Quality Review (SEQR).

Step 8: DEC Commissioner approves final UMP and implementation begins.

## VIII. LAND MANAGEMENT APPROACH

Our goal is to provide healthy, sustainable and biologically diverse forest ecosystems using the principles of ecosystem management. Ecosystem management is a process that considers the total environment - including all living and non-living components. It requires the skillful use of ecological, economic, social and managerial principles to produce, restore, or sustain ecosystem integrity and desired conditions, uses, products, values and services over the long term. Ecosystem management recognizes that people and their social and economic needs are an integral part of ecological systems (Bureau of Land Management, 1994).

One of the simplest definitions of ecosystem management points out the almost unfathomable complexity of managing an ecosystem. That definition is in the form of a slogan on a United States Forest Service poster promoting ecosystem management. The slogan simply defines ecosystem management as "Considering All Things." This approach asks that management decisions consider all living things from soil micro-organisms to large mammals, including their complex interrelationships and **habitat** requirements; all non-living components of the ecosystem, including physical, natural and geological components; and all social, cultural and economic factors as well. As we apply ecosystem management in this Plan, we will blend the needs of people with those of the ecosystem to insure that State Forest management promotes biodiversity and healthy, productive, sustainable forests.

Biodiversity refers to the variety and abundance of living things, their habitats and their interdependence in a given area or "landscape." Ecosystem integrity would not be enhanced if all factors of biodiversity were manipulated into every acre or every hundred acres. Some attributes of biodiversity need to be present in large blocks or acreages to be functional. Having a wide range of vegetative types, stages of growth and connectivity between and among habitats in a landscape increases the resiliency of ecosystems. Identifying vegetative types, **age classes** of habitat and habitat connectivity that are lacking in a landscape is called gap analysis. By identifying habitat **gaps** land managers can look to improve biodiversity by creating, or enhancing more of the habitat that is lacking.

To practice ecosystem management we must examine the interrelationship between the natural resources and all of the various demands placed on them. Land managers must balance the demands, such as timber harvesting, recreation, watershed protection and oil and gas exploration and development, to ensure compatibility while maintaining biodiversity and ecosystem health.

All these demands and the management strategy to reach them must be considered in this management plan. The first step is to assess the natural resources, **cultural resources** and facilities in the surrounding area or “landscape”. Once the assessments are complete, data analysis is done to determine the habitat gaps on the landscape. Using the assessment data and identified habitat gaps, management objectives and actions are developed to meet the management goals. Upon completion of the Draft UMP, a public meeting will be held to get input that will further help define the social demands on the unit.

The management strategy implemented in this Plan will follow an **adaptive management** approach. Adaptive management is the process of continually adjusting management in response to new information, knowledge or technologies.

## **IX. INFORMATION ABOUT THE LANDSCAPE SURROUNDING THE UNIT**

### **A. General Observations**

The landscape surrounding the Cuyler Hill Unit differs from the rest of Cortland County because of the higher percentage of forest land. The higher elevation uplands surrounding the unit are typically heavily forested. The lower elevations and/or gently sloping lands surrounding the unit are a matrix of agriculture, small woodlands, residences and commercial uses.

According to the United States Forest Service 1993 inventory statistics for Cortland County:

- About 53% of the county is forested.
- Less than 50 acres of the forest land is listed as reserved from management.
- 88.6% of the total land base is held by private non-industrial owners.
- 9.7% is State land, mostly in the State Forest classification.
- 1.6% is privately owned by forest-industry-related businesses.
- 0.1% is owned by the county or municipalities.

### **B. Landscape Assessment**

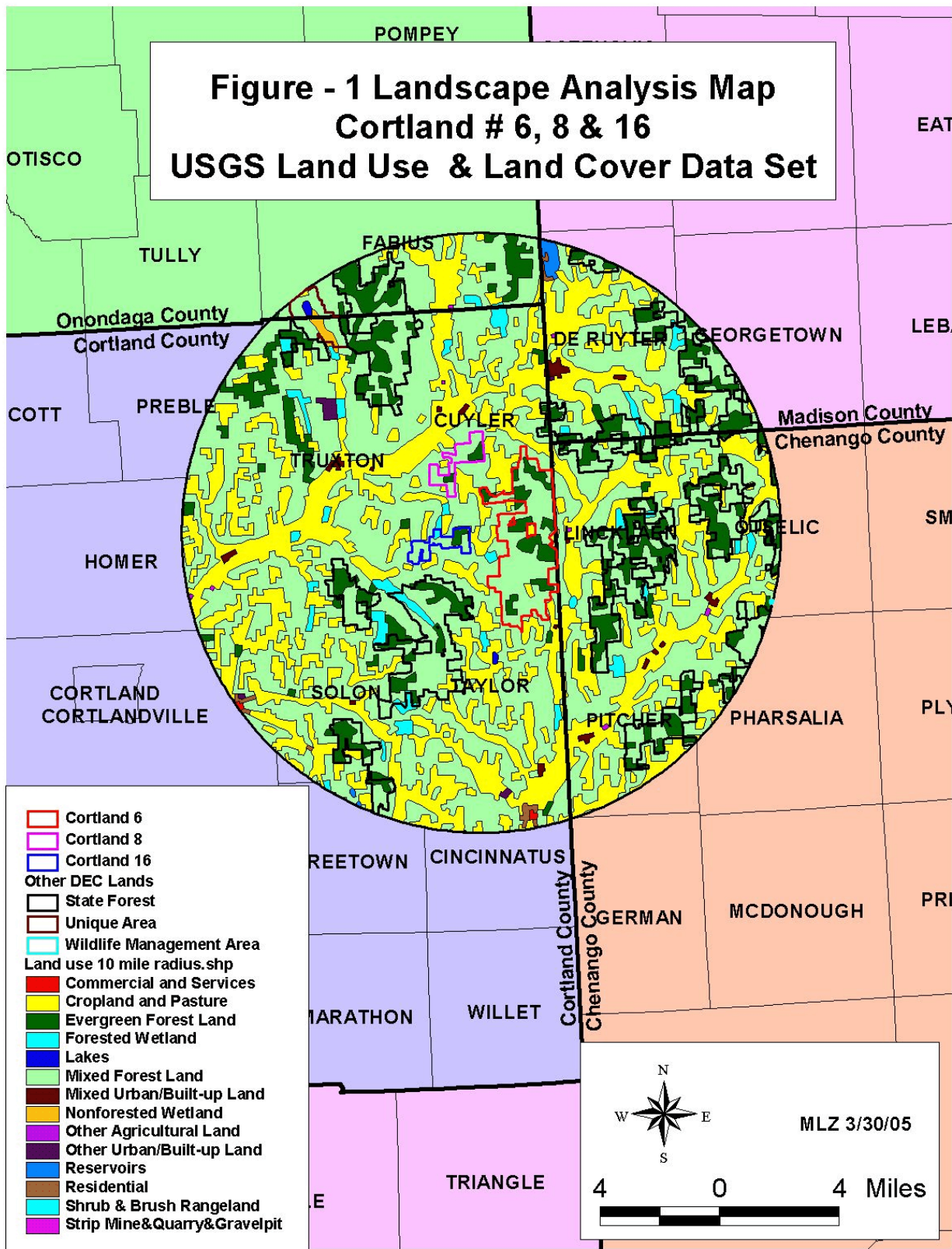
The land management decision making process must consider the types, amount and condition of the natural resources on the landscape. In order to practice ecosystem management you must first assess the natural resources in and around the Unit.

To assess the surrounding landscape, the United States Geological Survey (USGS) Land Use and Land Cover data set from the DEC Master Habitat Database (MHDB) was analyzed using ArcView version 3.3 **Geographic Information System (GIS)** software. Table 1 illustrates the land **cover types** found within a 10 miles radius extending from the center of the State Forests. This area equates to 200,905 acres or about 315 square miles. For the purpose of this UMP the term landscape will be used to represent this 315 square mile area.

**Table 1: Land Use and Land Cover for the Landscape Surrounding the Cuyler Hill Unit (United States Geological Survey 1998).**

<b>Land Use and Land Cover</b>	<b>Acreage</b>	<b>% of Landscape</b>
Mixed Forest	110,901	55.22
Crop Land and Pasture	62,577	31.15
Conifer Forest	20,587	10.25
Shrub & Brush Range Land (seedling/sapling)	3,262	1.62
Forested Wetland	994	.49
Mixed Urban/Built-up Land	798	.40
Reservoirs	436	.22
Residential	394	.20
Other Urban/Built-up Land	331	.16
Non-forested Wetlands	290	.14
Lakes	131	.06
Other Agricultural Land	88	.04
Commercial & Services	80	.03
Strip Mines, Quarries & Gravel Pits	36	.02
Old growth	0	.00
<b>Total</b>	<b>200,905</b>	<b>100.00</b>





Analysis of the landscape, based on data from a variety of sources including field observations, shows that:

- 19 % of the landscape is public land, this is higher than the county average of 9.7%.
- 2% of the landscape is in **seedling/sapling**, shrub/brush stage of growth. The USDA Forest Service's inventory data shows the amount of seedling/sapling, shrub/brush has decreased by 32% between 1980 and 1993. Seedling/sapling-brush forests are often called early successional forests. Early successional forests are dominated by small trees, ranging from 1 to 5 inches in diameter. This **forest type** is gradually disappearing from the landscape as farms naturally revert back into forest and fields are developed into building lots. Even-aged management systems have become less favored among landowners, also contributing to the decrease in the amount of young forests in New York State in general. Early successional forests with thick shrubby areas are important habitat for wildlife. Field nesting **species** use these areas for winter cover. A diversity of birds and small mammals use these sites for nesting and cover.
- 66% of the landscape is forested, this is higher than the county average of 53% and state average of 62% (Aldrich & Drake, 1995).
- 31% of the landscape is in agriculture and pasture, this is higher than the state average of 18% (Aldrich & Drake, 1995). **Grasslands** are included in the pasture classification but not identified separately in the study. Grasslands are important to a variety of field nesting birds and mammals.
- 10% of the forests in the landscape are dominated by **conifers**. Conifer trees provide a variety of special functions for many species of wildlife. Conifer forests moderate temperature extremes, which can help provide winter thermal cover. Conifer forests also provide escape cover on a year-round basis. Species that benefit from conifer cover include red squirrel, snowshoe hare, white-tailed deer, ruffed grouse and variety of songbirds.
- Most of the private forests surrounding the Unit are harvested on a regular basis. As such, the landscape lacks mature forests and many of their attributes such as closed canopies, **snags**, **den trees** and **coarse woody material**. Additionally, with frequent harvesting trees don't have the opportunity to grow to biological maturity and become biological legacies. **Biological legacy** trees are defined as trees that are of significant size and age strategically left after harvesting, or that survive natural **disturbances** such as wind or ice events. Biological legacies grow to full maturity and die naturally, thereby providing coarse woody material, seed, cavities for wildlife, and aesthetic value. Leaving biological **legacy trees** adds to the structural diversity of the forest ecosystem (<http://www.tnc-ecomanagement.org/images/FBChap4.pdf>, 2004).
- Frequent harvesting on private forests tends to target the commercially valuable tree species like black cherry, sugar maple and red oak. This harvesting is reducing the percentage of these high value species on the landscape. The reduction of black cherry and red oak is decreasing the diversity of **mast** as a food source for wildlife.
- Insect and disease infestations are reducing the percentage of beech, butternut and ash on the surrounding landscape. The reduction of beech and butternut is decreasing the diversity of mast as a food source for wildlife.
- A few private properties in the surrounding landscape are being sold and or subdivided. This is resulting in some **fragmentation** of green space and some of the forests in the surrounding landscape. The subdivision or fragmentation of properties can degrade wildlife habitat and alter movement patterns of wildlife.



- A check of the New York Natural Heritage Program and USDA Forest Service data shows that no **old growth** forests are known to exist within the landscape (New York Natural Heritage Program Element Occurrence; 2004: Tyrrell, et al; 1998). Eastern old growth forests are conceptually described as being relatively old and relatively undisturbed by humans (Hunter, 1989). The New York State DEC definition of old growth describes this forest type as: "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 canopy gaps formed by natural disturbances creating an uneven canopy and a conspicuous absence of multiple stemmed trees and coppices. Old growth forest sites typically are characterized by an irregular forest floor containing an abundance of coarse woody materials which are often covered by mosses and lichens; show limited signs of human disturbance since European settlement; and have distinct soil horizons that include definite organic, mineral, illuvial accumulation and unconsolidated layers. The **understory** displays well developed and diverse surface herbaceous layers".
- There are about 5,213 acres of protection and **natural areas** on State Forests and Unique Areas in the surrounding landscape. These protection and natural areas over time will develop old growth characteristics.

## X. INFORMATION ON THE UNIT

### A. The Cuyler Hill Unit

Reforestation Area	State Forest Name	Acres	Town
Cortland #6	Cuyler Hill	5,507	Cuyler & Taylor
Cortland #8	Maxon Creek	908	Cuyler
Cortland #16	Dog Hollow	723	Cuyler & Truxton
	<b>Total State Forest Acres</b>	<b>7,138</b>	

### B. 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. After the Revolutionary War, increased pressure for land encouraged westward expansion. Up to 91% of woodlands were cleared for cultivation and pasture.

Early farming efforts met with limited success. As the less fertile soils proved unproductive, farms were abandoned and settlement was attempted elsewhere. The stage of natural **succession** was set and new forests of young **saplings** reoccupied the ground once cleared.

The State **Reforestation** Law of 1929 and the Hewitt Amendment of 1931 set forth the legislation that authorized the Conservation Department to acquire land, by gift or by purchase, for **reforestation areas**. These State Forests, consisting of not less than 500 acres of contiguous land, were to be “forever devoted to reforestation and the establishment and maintenance thereon of forests for watershed protection, the production of timber and for recreation and kindred purposes” (Article 9, Title 5, Environmental Conservation Law).

In 1930, Forest Districts were established and the tasks of land acquisition and reforestation were started. In 1933, the Civilian Conservation Corps (CCC) began. Thousands of young men were assigned to plant millions of trees on the newly acquired State Forests. In addition to tree planting, these men were engaged in road and trail building, erosion control, watershed restoration, forest protection, and other projects.

During the war years of 1941-1945, very little was accomplished on the reforestation areas. Further planning, construction, facility maintenance and similar tasks were curtailed. However, through postwar funding, conservation projects once again received needed attention. The Park and Recreation Land Acquisition Act of 1960 and the Environmental Quality Bond Acts of 1972 and 1986 contained provisions for the acquisition of State Forest lands. These lands would serve multiple purposes involving the conservation and development of natural resources, including the preservation of scenic areas, watershed protection, forestry, and recreation.

Today there are more than 770,000 acres of State Forest land throughout New York State. The use of these lands for a wide variety of purposes such as forest products, hiking, skiing, fishing, trapping, and hunting is of tremendous importance economically and to the health and well-being of the people of the State.

### **C. Local History**

European settlement in the region began in the late eighteenth century. The first settlement in the county was established in 1791. In that year, Joseph Beebe, his wife and brother Amos Todd cleared an area near the present Village of Homer. Taylor and Truxton were settled in 1793 and Cuyler was settled in 1794. In 1808, Cortland County was formed from part of Onondaga County. The name was derived from that of the first Lieutenant-Governor of the State, General Pierre Van Courtlandt.

The Tioughnioga River has been an important natural resource in the county for many years. The Indian tribes in the area loved the Tioughnioga for its fish and canoe waters. The Tioughnioga was also instrumental in the settlement of Cortland County. It provided the entry way for early settlers and was the main highway over which needed supplies were brought in and products of the land were exported. The old state road of 1794 was built and passed through the towns of Willet, Virgil and Marathon. The road eventually reached the City of Cortland in 1806. Over the next decade roads were developed with stage routes between the larger settlements. Eventually the road system replaced the Tioughnioga River as the main travel route.

Development in the County was slow until a railroad was built between Binghamton and Syracuse in 1854. The railroad ran through Cortland and caused an increase in the rate of development. By 1860, all parts of the county had been settled.

At the time of first settlement the area that is now Cortland County was covered by an almost continuous **stand of northern hardwoods** mixed with white pine of excellent quality. The settlers cut timber to clear the land for farming. During early settlement farmers obtained additional income by selling wood, maple sugar and other forest products during the winter months. The first sawmill in the county was located in Virgil. Later other sawmills were established in Willet, Taylor and Marathon. By 1844, a total of 103 sawmills, 22 tanneries, 24 gristmills and 17 asheries were in operation. Once most of timber was cleared from the land, farming became the predominate land use in the county (The History of New York State).

The harsh economic times and the onset of the Great Depression in the 1930's drove many upland farm properties into bankruptcy. The State Reforestation Law and the Hewitt Amendment of 1931 provided funding to acquire abandoned farmland and create **State reforestation areas**. These areas were to be forever devoted to "reforestation and the establishment and maintenance thereon of forests for watershed protection, the production of timber, and for recreation and kindred purposes."

New York State purchased Cuyler Hill State Forest (Cortland #6) between 1933 and 1965, with an additional purchase in 1991. Soil erosion was a serious problem on the newly acquired lands. To solve this problem, a massive tree planting campaign began. The labor used to establish these **plantations** was provided by the Civilian Conservation Corps (CCC). This work program was established by the Roosevelt Administration to create jobs. CCC

Camp S-118 was established in Truxton and planted more than 1,488,500 trees on 1,640 acres of Cuyler Hill State Forest (Cortland #6) between 1936 and 1941. This monumental task consumed 3,056 man days of labor, since each tree was planted by hand. The DeRuyter CCC Camp S-103 hand planted more than 1,001,200 trees on 1,050 acres between 1935 and 1937. Conservation Department employees planted an additional 542,500 tree **seedlings** on 673 acres between in 1953 and 1979. These trees were planted either by hand, using a tractor and spade or a tree planting machine. A total of 3,032,200 trees were planted on 3,363 acres of Cuyler Hill State Forest (Cortland #6) between 1936 and 1979.

Maxon Creek State Forest (Cortland #8) was purchased between 1933 and 1963 with an additional purchase in 1974. The Truxton CCC Camp S-118 hand planted more than 222,350 trees on 245 acres of Maxon Creek State Forest (Cortland #8) between 1936 and 1941. The DeRuyter CCC Camp S-103 hand planted more than 295,800 trees on 199 acres in 1935. Department employees planted an additional 18,000 tree seedlings on 17 acres in 1962. These trees were planted either by hand or using a tractor and spade. A total of 536,150 trees were planted on 461 acres of Maxon Creek State Forest (Cortland #8) between 1936 and 1962.

Dog Hollow State Forest (Cortland #16) was purchased in 1963 and 1964. A total of 49,500 trees were planted on 65 acres of Dog Hollow State Forest (Cortland #16) by Department employees and Camp Georgetown crews between 1964 and 1967.

3,617,850 trees were planted on 3,889 acres of the three State Forests from 1935 to 1979.

Previous owners of the State Forests in the Unit are listed in appendix I.

Existing evidence of the early settlers and the original inhabitants includes stone walls, foundations, scattered quarries, small family cemeteries, and portions of original road systems. Vegetative remnants from homesteads include fruit trees, introduced ground cover, and flowers.

#### **D. Geographical Information**

The Cuyler Hill Unit Management Plan includes three State Forests located in the Towns of Cuyler, Taylor and Truxton in north eastern Cortland County, New York. It is part of the Susquehanna watershed, with its waters eventually flowing into the Chesapeake Bay.

This area is part of the Central Allegheny Plateau section of south central New York State (Keyes, Jr. 1995).

Elevations in Cortland County range from about 800 to 2,100 feet. The lower extremes are found in the Northwestern part of the county and along the Tioughnioga River while the higher elevations are scattered across the many hilltops. The highest point on the Unit is Randall Hill, which is on Cuyler Hill State Forest and has an elevation of 2,080 feet. The lowest point on the unit is also on Cuyler Hill State Forest and has an elevation of 1,245 feet.

Topography on the Unit varies from flat to steep. Slopes on the unit are classified as follows:

- 33 % of the Unit has slopes between 0 and 9%
- 42% of the Unit has slopes between 10 and 15%
- 25% of the Unit has slopes greater than 15%.

The average annual rainfall ranges from 39 to 41 inches. The average annual temperature is about 46 degrees Fahrenheit. The annual growing season is about 142 days (Soil Survey of Cortland County, New York 1961).

## **E. Geological Information**

### **1. Surface Geology**

Most surface geology in the Finger Lakes region and Allegheny Plateau of the Southern Tier of New York was influenced by the processes of glaciation that occurred during the Pleistocene Epoch. Ice sheets from the last glaciation episode (Wisconsinan glaciation episode) retreated from the area about ten thousand (10,000) years ago. Glacial activity left behind numerous sedimentary deposits and surficial features. These included elongate scour features. Weathering and erosion by streams and rivers has continued to sculpt the surface geology of the Allegheny Plateau to present day, resulting in the hills and valleys prevalent throughout the region. Some features filled with water creating numerous lakes, small and large. A number of these lakes to the West and Northwest of this area are now call the Finger Lakes.

Most soils and sediments in the region are related to past glacial activity, and subsequent weathering and erosion processes over the last 20,000 years. The underlying parent rocks (rocks that were subjected to the processes of glaciation, weathering and erosion) of this region are sedimentary rocks; specifically shale, sandstone and minor limestone that were deposited in shallow seas that existed in this region during the Devonian Period of the Paleozoic Era, about 370 million years ago. Any post Devonian rocks have been eroded from the region. The presence of rounded igneous and metamorphic clasts are indicative of past glacial activity transporting material into the region from the Canadian Shield to the north.

The resulting surface geology of the State lands included in this unit management plan are similar due to their close proximity. Cuyler Hill State Forest, Maxon Creek State Forest and Dog Hollow State Forest include surface geology consisting of glacial till as the dominant deposit in the area. There are minor intermittent areas in stream valleys of sand and gravel as a result of kame deposits. Bedrock outcrops and subcrops of Devonian shales, siltstones, sandstones and minor limestones are located intermittently on the sides and crests of ridges and hills in these areas. These are most likely due to the erosion of overlying glacial till, causing the exposure of the bedrock (see table 2).

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

**Table 2: Surficial Geologic Material**

<b>Name:</b>	<b>Surficial Material:</b>
Cuyler Hill State Forest	Glacial till: Deposition beneath glacial ice (predominant material) Kame Deposits: Sands & gravels deposited next to glacial ice by meltwater (minor) Bedrock: Shales & minor siltstones & limestones of the Upper Devonian Genesee Group (minor outcrops)
Maxon Creek State Forest	Glacial till: Deposition beneath glacial ice (predominant material) Bedrock: Shales & minor siltstones & limestones of the Upper Devonian Genesee Group (minor outcrops)
Dog Hollow State Forest	Glacial till: Deposition beneath glacial ice (predominant material) Bedrock: Shales & minor siltstones & limestones of the Upper Devonian Genesee Group (minor outcrops)

## **2. Soils of the Cuyler Hill Unit**

Soils found on the Unit:

- 39 % Volusia. Volusia soils consist of strongly acid, medium textured soils that are somewhat poorly drained. They have formed from firm, medium textured, glacial till that was moderately acid to slightly acid. The glacial till was derived from olive-gray to dark grayish brown siltstone, sandstone and coarse textured shale. The soils have a hard, dense, firm **fragipan** at depths of 8 to 14 inches. These soils occupy gently sloping to sloping areas in the uplands. The fragipan limits the depth to which roots can penetrate. It also causes the soils to be wet and cold in the spring and very dry during most of the rest of the growing season.
- 33 % Lordstown. Lordstown soils are medium textured, strongly acid soils that occur on the highest ridges in the uplands and on the steep walls of the valleys. The soils are well drained. They have formed in thin glacial till derived from olive-gray to dark grayish brown siltstone, sandstone and coarse textured shale. Depth to bedrock ranges from 10 to 40 inches, but it is generally between 30 to 36 inches. In places the bedrock outcrops. In some areas of shallow soil fragments of flagstone, as much as 8 to 10 inches in diameter, are in the soil material and scattered over the surface.
- 22 % Mardin. Mardin soils are medium textured soils that are strongly acid and are moderately well drained. They have a hard, compact fragipan that begins at depths between 15 and 20 inches. The soils are on sloping to rolling areas of the uplands. They have formed in glacial till of firm channery silt loam. The till was derived from slightly acid olive-gray to dark grayish brown siltstone, sandstone and coarse textured shale. The fragipan, which somewhat restricts internal drainage, makes the soil cold and wet in the spring and limits the depth to which roots can penetrate.
- 6 % classified as other. These soils include: Alden & Birdsall, Alluvial, Arnot, Bath, Bath-Chenango, Bath & Mardin, Birdsall, Chenango, Chippewa, Middlebury, Muck, Papakating, Tioga, Tuller, Valois & Howard and Wayland soils.
  - 34 % of the soils in the Unit are classified as well drained.
  - 25% moderately well drained.
  - 41% poorly drained.

The depth to mean high water table varies from 0 to 5 feet.

Additional information on soils in the region is available in the United States Soil Conservation Service Soil Survey of Cortland County, New York (1957).

### **3. Bedrock Geology**

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

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

Rock units (bedrock) outcropping or subcropping at the surface in the Cuyler Hill State Forest, Maxon Creek State Forest and Dog Hollow State Forest of the Allegheny Plateau in the southern tier of New York are shales, and intermittent siltstones and limestones of the Genesee Group that were deposited during the Upper Devonian Period (about 350 - 400 million years ago) (see table 5).

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

### **4. Geologic Structure**

Regional structure of the area is a homocline that dips (is becoming deeper) to the south-southwest at an average dip angle of about one (1) degree or deepens 100 feet per each mile traveled to the south-southwest. The *Geologic map of New York - Finger Lakes Sheet #15, 1970*, depicts progressively older rock units outcropping farther to the north, confirming the southerly dip of strata in the region.

Linements, faulting and anticlinal/synclinal structures in the region generally trend in a northeast to southwest direction. North-south trending faults have also been identified in the region. These structures are thought to be due to compressional stress and resulting strain associated with plate tectonics and the opening of the Atlantic Ocean Basin that began at the end of the Paleozoic Era. Structural reference is available at the *Preliminary Brittle Structures Map of New York, New York State Museum-Map and Chart Series No.31E, 1974*.

## **F. Forest Resources**

### **1. Inventory and Assessment Procedure**

To make sound management decisions, we must assess the present condition and composition of the natural resources on the Cuyler Hill Unit. State Forest inventory data was used to assess resources on the Unit. To ensure that the data was current, a reinventory

was done on Cortland #16 in the winter of 2002, Cortland #8 in the fall of 2002 and winter of 2003 and Cortland #6 in the fall of 2004 and winter of 2005. State Forest inventory data was collected on tree species, forest stand size, type, **stocking**, volume, and forest stand age structure.

The Cortland Forestry Office also developed and used a supplemental inventory datasheet to capture natural resource features not typically collected during a forest inventory. Supplemental inventory attribution guidelines were developed and adopted to insure that the data was organized in consistent manner. All inventory data was collected for each individual forest stand in the Unit. Table 3 illustrates the attributes collected as part of the supplemental inventory process.

**Table 3 - Supplemental Inventory Data Attributes**

<b>Natural Resource Attribute/Feature</b>	<b>Description</b>
Hydrology	Identifies hydrologic resources; <b>wetlands</b> , ponds, streams, spring seeps, waterfalls, erosion issues & beaver dams.
Herbaceous Plants	Identifies herbaceous plants related to site potential; sensitive ferns, horsetails, blue cohosh, maiden-hair fern, trout lily and orchids.
Forest Health	Identifies general forest health observed; decline, <b>blowdown</b> , crown damage, or insect/disease issues.
Recreation	Identifies recreational activity; informal camping, formal campsites, trails for individuals with mobility impairments, hiking trails & informal trail use.
Forest Treatment Recommendations	Specifies recommended treatment based on field observations.
Safety	Identifies a public safety hazard such as open water wells.
Forest Treatment Interval	Specifies a treatment interval in years for a given forest stand.
Forest Treatment Priority	Prioritizes stand level treatment needs.
Stand Age Structure (Present & Future)	Specifies observed <b>stand structure</b> at the time of inventory; even-aged or uneven-aged. Also provides a field for future (desired) age structure.
Wildlife Observations	Describes wildlife observed during the inventory/field inspection.
Evidence of Past Management	Identifies any past management activity as indicated by old stumps, tops, <b>skid trails</b> , or tree marking paint.
Protection Areas	Identifies forest land excluded from forest management, oil & gas exploration, & some recreational activities to protect sensitive sites. These sites include steep slopes, wet woodlands, unique land features, rare & endangered plant or animal habitats & riparian zones.
Early Successional Habitats	Identifies areas that could be managed for species requiring early successional habitat.



<b>Natural Resource Attribute/Feature</b>	<b>Description</b>
Oil and Gas Conflicts	Describes potential oil & gas exploration conflicts; hydrologic, steep slopes, recreation, natural areas, archeological or highly erodible soils.
Archeological Resources	Identifies archeological resources in a stand; old foundations, stone walls, or artifacts that appear over 75 years old.

As part of the supplemental inventory process, the Natural Heritage Program data and archaeological data on the DEC's Master Habitat Data Base is referenced to determine the presence of rare and endangered plants and archaeologically significant sites. The Department would also welcome public input that could add to the supplemental inventory database. The

supplemental inventory database will be appended each 10 year forest inventory cycle, or when a forest stand is actively managed. As a matter of policy DEC Forestry staff will collect and analyze updated stand data prior to marking an area for forest management treatment.

The State Forest inventory data was entered into the Arc View Geographic Information System (GIS) software for performing **spatial analysis**. Spatial analysis is perhaps best defined as a process to integrate and analyze various sets of natural resource data in a geographical context to represent where the resources occur on the ground (Goodchild, 2001).

## **2. State Forest Inventory - Data Analysis**

The following tables and statistics were developed from the spatial analysis of the data for the three State Forests in this UMP.

**Table 4. Present Land Uses and Cover Types on The Cuyler Hill Unit**

<b>Land Classification*</b>	<b>Average Stand Diameters</b>					
	<b>Total acres</b>	<b>0-5" acres</b>	<b>6-11" acres</b>	<b>12"-17" acres</b>	<b>18"+ acres</b>	<b>% of Total</b>
Utility Lines	7	-	-	-	-	0.10
Shale Pits (6)	6	-	-	-	-	0.08
Roads	84	-	-	-	-	1.18
Shrub/Brush	24	24	-	-	-	0.34
Wetlands (forested)	41	-	-	-	-	0.60
Wetlands (open)	16	-	-	-	-	0.20
Conifer Plantations	2709	0	120	2542	47	37.95
Conifer Plantation w/ Hardwood	244	0	46	198	-	3.42
Natural Hardwood/Conifer	463	0	0	463	-	6.49

Natural Hardwood	3544	180	21	3325	20	49.64
<b>TOTAL</b>	<b>7138</b>	<b>204</b>	<b>187</b>	<b>6528</b>	<b>67</b>	<b>100.00</b>

\* Key to Land Classifications:

**Shale Pits** - sites where shale has been extracted for construction & maintenance projects.

**Roads** - town roads, seasonal town roads & **public forest access roads**.

**Shrub/Brush** - early successional communities commonly containing shrubs/brush species smaller than 1" in diameter measured 4 ½ feet from the ground.

**Wetlands** - areas that may be open wet meadows or lightly wooded swamps.

**Natural Conifers** - naturally established stands that consist of conifer trees.

**Conifer Plantations** - conifer trees that have been established by planting.

**Conifer Plantations w/ Hardwood** - planted conifers growing mixed with **hardwoods**.

**Natural Hardwood/Conifer** - naturally established stands that consist of conifers growing mixed with hardwoods.

**Natural Hardwood** - naturally established stands that consist of hardwood trees.

### **3. Stages of Forest Development**

Forested areas were classified by the average diameter of the vegetation present:

- 3% - Seedling-sapling/brush, early successional (average stand diameter 0"-5")
- 3% - **Poletimber** (average stand diameter 6"-11")
- 94% - **Sawtimber** (average stand diameter 12"+)

(This analysis only represents land in forest cover and excludes acreage in roads, shale pits, parking lots and non-forest stands).

The vast majority of the forest stands have trees that average between 6 and 17 inches **diameter at breast height**. As with the surrounding landscape, the State Forests clearly lack young early successional forests, late successional forests, and old growth forest communities.

### **4. Forest Age Structure**

The data was then used to examine the existing age structure of each stand on the forests:

- 78% of the forest stands are **Even-aged** stands
- 22% of the forest stands are **Uneven-aged stands**

(This analysis only represents land in forest cover and excludes acreage in roads, shale pits, parking lots and non-forest stands). A definition of Even and Uneven-aged stands can be found in the glossary.

### **5. Silvicultural Research Areas**

Dr. Ralph D. Nyland, of the State University of New York College of Environmental Science and Forestry has been conducting silvicultural research in cooperation with DEC staff since 1969. There are twelve forest stands totaling 530 acres on Cortland #6, (Cuyler Hill) that have silvicultural research study plots in them. Included in the research areas is the 20 acre

Cuyler Hill Natural Area. The natural area was established by Regional Forester Al Roberts in 1969, as a control area where no trees would be cut. The natural area was developed to compare the silvicultural research areas to an area where no harvesting is allowed.

## **G. Water Resources**

### **1. Wetlands**

There are 15 Federally-designated Palustrine wetlands on the Unit totaling 52 acres.

In New York, wetlands are legally protected by the State if they meet the criteria found in section 24-0107 of the Freshwater Wetlands Act and occupy at least 12.4 acres.

Dog Hollow State Forest contains part of one Class II State-designated freshwater wetland totaling 4 acres. The 4 acres that are on Dog Hollow State Forest are part of a larger wetland complex designated CY-2. These 4 acres of State-designated wetland are also listed as

Federally-designated wetland and are included in the 52 acres mentioned above. There are an additional 5 acres of wetlands that were identified during the forest inventory process. These wetlands have no federal or state designation or protection.

### **2. Streams**

Sections of 23 streams totaling 11.3 linear miles lie within the Cuyler Hill Unit Management Area. Of this total, only .6 miles of Bundy Creek and .3 miles of Tributary No. 10 of Bundy Creek are protected by Article 15 of the Environmental Conservation Law. Title 5 of Article 15 of the Environmental Conservation Law was enacted to preserve and protect New York State waters. The streams located in Cuyler Hill State Forest are in either the East Branch Tioughnioga River or Otselic River watersheds. All streams located in Maxon Creek State Forest are in the East Branch Tioughnioga River watershed. All streams located in Dog Hollow State Forest are tributaries to Bundy Creek.

Individual stream classifications within the Susquehanna River Drainage may be found in 6NYSCRR Part 931 of the Environmental Conservation Law. A listing of stream sections located within each State Forest in the Unit can be found in Appendix VII.

### **3. Spring Seeps and Vernal Pools**

Spring seeps are valuable to wildlife, particularly wild turkey, in severe winters because the emerging groundwater provides snow-free feeding sites and are among the first sites to provide green plants in spring. Spring seeps are used by amphibians such as the Jefferson salamander, spotted salamander and by **neotropical migratory birds** such as the veery and wood thrush.

Vernal pools are small areas that are wet in the spring of the year. The pools derive their name from vernalis, the Latin word for spring, because they result from various combinations of snowmelt, precipitation and high water tables associated with the spring season. The pools tend to occur in small depressions and while many dry up in late summer, a few have water year-round. By definition, vernal pools are free of fish and can support a rich community of amphibians and invertebrates that would be difficult to sustain if fish were present ([http://www.na.fs.fed.us/spfo/pubs/n\\_resource/wetlands](http://www.na.fs.fed.us/spfo/pubs/n_resource/wetlands), 2004).

#### **4. Ponds**

The New York State Department of Transportation Cuyler Quadrangle shows no ponded waters in the Cuyler Unit. There are however, two small old farm ponds on Cuyler Hill State Forest. These ponds are both less than 1 acre in size and have limited fishery potential.

The Department's Bureau of Fisheries shall be notified in advance of any plan to build a pond. Any activity to build a pond shall be carried out following the guidelines and conditions of the Department's protection of waters and wetlands programs.

#### **H. Fishery Resources**

No state listed endangered, threatened or special concern fish species are known to inhabit waters in the unit.

Three Bureau of Fisheries electrofishing surveys have been carried out on streams within the unit. In 1972, a survey was carried out on the headwaters of Bundy Creek and Tributary No. 10 of Bundy Creek, located in Cuyler Hill State Forest. The fish species collected included brook trout, white sucker, mottled sculpin, cutlips minnow, creek chub, blacknose dace and longnose dace. In 1966, a survey was carried out on Union Valley Creek, located in Cuyler Hill State Forest. The fish species collected included brook trout, common shiner, blacknose dace and longnose dace. In 1963, a survey was carried out on the headwaters of Wells Creek, also located in Cuyler Hill State Forest. Fish species collected included brook trout, white sucker, common shiner, creek chub, blacknose dace and longnose dace. Past electrofishing surveys suggest many other streams in the unit may support a variety of fish species including brook trout. Fishing for wild brook trout on the small headwater streams is limited but probably does occur. A brook trout stocking policy once existed on Bundy Creek but was terminated in 1969.

#### **I. Wildlife Resources**

The Cuyler Hill, Maxon Creek and Dog Hollow State Forests and surrounding landscape are home to a wide range of wildlife. As previously mentioned, the State Forest inventory procedure was enhanced to include collection of data related to wildlife resources. We have also relied on several peer reviewed resources and surveys to predict which species can be potentially expected on the State Forests.

The New York GAP Analysis Project, U.S. EPA's Monitoring and Assessment Program, NY Herp Atlas and the New York State Breeding Bird Atlas studies were combined with field observations to help obtain a "snap-shot" of the wildlife that potentially frequent the State Forests. The United States Geological Survey states that gap analysis is a scientific means for assessing to what extent native animal and plant species should be protected. It can be done at a local, regional, state, or national level.

The goal of gap analysis is to maintain the highest level of biodiversity possible. This can be accomplished by enhancing or creating habitats that support rare and endangered species and hot spots of **species richness** in a network of conservation areas. Also, gap analysis strives to keep common species common by identifying and incorporating those species and plant communities that are not adequately represented in existing conservation lands. Common species are those not currently threatened with extinction. By identifying their habitats, gap analysis gives land managers, planners, scientists, and policy makers the

information they need to make better-informed decisions when identifying priority areas for conservation. Gap analysis came out of the realization that a species-by-species approach to conservation is not effective because it does not address the continual loss and fragmentation of natural landscapes. Only by protecting regions already rich in habitat, can we adequately protect the animal species that inhabit them ([http://www.gap.uidaho.edu/about/what\\_is\\_gap\\_analysis.htm](http://www.gap.uidaho.edu/about/what_is_gap_analysis.htm), 2004).

To help assess biodiversity, the NY GAP Project uses the U.S. EPA's Environmental Monitoring and Assessment Program (EMAP) hexagon mapping unit. EMAP is a national research program that is developing the tools necessary to monitor and assess the status and trends of national ecological resources. EMAP's goal is to develop the scientific understanding for translating environmental monitoring data from multiple spatial and temporal scales into assessments of current ecological condition and forecasts of future risks to our natural resources.

EMAP aims to advance the science of ecological monitoring and ecological risk assessment, guide national monitoring with improved scientific understanding of ecosystem integrity and dynamics, and demonstrate multi-agency monitoring through large regional projects. EMAP develops indicators to monitor the condition of ecological resources. EMAP also investigates designs that address the acquisition, aggregation, and analysis of multiscale and multilayer data (<http://www.epa.gov/emap/>, 7/23/04).

The New York Gap Analysis Project, which was developed as part of a nation wide initiative by the University of Idaho, uses predictive modeling to map species that breed or use habitats in a given landscape. To predict their distributions, species are associated with mapped habitat characteristics using computerized GIS tools. The resulting maps are checked for accuracy against verified checklists and public reports of species occurrences and peer reviewed by experts species by species. (<http://www.gap.uidaho.edu/about/gapfs2004.pdf>, 2004). The ability to successfully map natural communities and species in terrestrial as well as aquatic environments is the result of recent advances in science, technology, and effective partnering of federal, state, and private conservation agencies.

The Cuyler Hill, Dog Hollow and Maxon Creek State Forests lie within EPA EMAP hexagon 384. The EMAP hexagon is based on the EPA's global hexagonal grid system. Each hexagon is about 160,200 acres in size, or about 250 square miles. The information provided by this work will help guide the future management of Cuyler Hill, Dog Hollow and Maxon Creek State Forests.

### ***1. Reptiles and Amphibians***

The New York Gap Analysis Project confirmed or predicted 35 species of reptiles and amphibians within the 160,200 acre hexagon that comprises and surrounds the Cuyler Hill, Maxon Creek and Dog Hollow State Forests (see Appendix II). Confirmed species are known to exist within the EMAP hexagon. Predicted species have not been confirmed on the ground within the hexagon.

Amphibians and reptiles, referred to as herps from the branch of science called herpetology, are vertebrates like birds and mammals, but they are fundamentally different in one important way. Herps are cold-blooded, whereas birds and mammals are warm-blooded. Herps derive body heat from external sources, they do not need to feed regularly and can be inactive for extended periods of time. Amphibians do not have scales, feathers, or fur, so most must stay moist to survive. Reptiles are covered in scales and are less vulnerable as a result. Temperature and moisture conditions regulate when and where amphibians and reptiles are found and active. Many herps are dependent on different habitats seasonally. Herps as a group are relatively small species with a limited capacity to travel great distances or at a great pace. As such their existence and survival is strongly tied to local conditions. For example many frogs and salamanders in the Northeast breed in ponds or vernal pools but otherwise spend the rest of their lives in the terrestrial environment, usually in association with hardwood forests. (Partners in Amphibians and Reptile Conservation, 2003)

While encounters with some herps, such as frogs or toads can heighten some people's trips afield, the herps as a group include many species which often go unnoticed other than to those specifically looking for them. Despite this, the herps are an important group, with their status providing a signal of the ecological health of a **site**. Naturalists, scientists, and land managers agree that habitat alterations and degradation are the primary cause of reptile and amphibian declines in the northeast. Activities such as poorly planned or un-managed logging, poor agricultural operations and urbanization, along with wetland destruction, and stream channelization all pose threats to many species. This plan will seek to ensure that the herp species present on the area will maintain viable populations. Actions to protect wetlands and water courses and the creation of vernal pools should serve this purpose.

## **2. Mammals**

The NY Gap Project (described above) predicts or confirms 51 species of mammals in the landscape in and around the Unit, (see Appendix III).

The range of mammals present includes small obscure species rarely noticed by people, such as some small rodents, to larger mammals such as raccoons and deer which are fairly routinely seen and influence peoples' experiences on the area. There are no mammal species identified on the unit which are recognized as having special management needs. This plan will seek to ensure all **native species** remain present and in a few instances seek to maintain or enhance the positive, or minimize the negative, values some of the species present.

## **3. Birds**

One of the best available inventories of bird populations is the Breeding Bird Atlas. The Breeding Bird Atlas is a comprehensive, statewide survey that reveals the current distribution of breeding birds in New York. The New York State Ornithological Association and the Department of Environmental Conservation sponsor the project in cooperation with the New York Cooperative Fish and Wildlife Research Unit at Cornell University, Cornell University Department of Natural Resources, Cornell Laboratory of Ornithology, and Audubon New York. The backbone of the atlas is a dedicated group of volunteers who do the actual on the ground survey.

To conduct the breeding bird survey, the state has been divided into ten regions based upon the "Kingbird" reporting regions for the New York State Ornithological Association. One or two Regional Coordinators are responsible for seeing that all of the blocks in their region are surveyed. Each block measures 5 x 5 km (3 x 3 mi); there are 5,335 blocks in the entire state. Atlas volunteers visit various habitats within their assigned block(s) and record evidence of breeding for the birds they see, using defined Breeding Codes.

The Cuyler Hill, Maxon Creek and Dog Hollow State Forests fall within breeding bird atlas blocks 4172B, 4172C, 4172D, 4173D, 4272A and 4272C. The breeding bird data is from the DEC's Master Habitat Database. Appendix IV illustrates that 51 birds were confirmed breeding in the blocks that comprise part of the State Forests. Additionally, appendix V illustrates that the atlas study found 68 bird species that were classed as possible or probable breeding. Appendix VI provides information on all of the birds found in blocks, 4172B, 4172C, 4172D, 4173D, 4272A and 4272C.

The opportunity to hear and see birds enhances the field experiences of many people. There are several species of birds identified on the unit which are known to be suffering range wide declines. The unit and landscape surrounding the unit, have the potential to address the needs of two suites of these birds, those needing **early successional habitat** and those needing expanses of woodlands. The plan will seek to ensure all native species present will remain and will seek to enhance the status of species dependent on early successional habitats while continuing to provide for birds needing extensive woodland cover, including those benefitting from closed canopy areas and forests with old growth characteristics.

#### **4. Major Game Species**

Several game or furbearer species exist on the unit. A few species of high importance with regard to use demands, management needs or potential are discussed below;

##### *White-tailed Deer*

White-tailed deer are an important component of the Unit's fauna, both for their recreational value and their capacity to impact other resources and human activities and interests. Deer numbers are relatively low on the unit owing to the fact that the pole and saw timber dominated site provides limited food and cover resources for deer.

Deer populations in the state are managed in Wildlife Management Units (WMUs). The entire Cuyler Hill Unit lies in Wildlife Management Unit 7M. DEC uses Citizen Task Forces (CTF) to set a WMU's deer population objective. The CTF process convenes representatives of various community interests, i.e. farming, forestry, hunting, highway safety, ecology, small business, and asks them to share interests and concerns and ultimately make a recommendation on the desired deer population level for a Wildlife Management Unit - more, less, or the same. This process seeks to obtain community view on appropriate deer numbers and requires compromise by many participants - not all interests can be fully satisfied.

The most recent Citizen Task Force (CTF) for WMU 7M was completed in early 2006. The CTF recommended the unit's deer population be reduced by 10%. Major issues influencing this recommendation were damage to agriculture and impacts on forest **regeneration**. The recommendation resulted in the Buck Take Objective (BTO) for the unit being reduced nearly 30% from that set by the previous CTF held in 1999. The unit's new BTO is 2.5 bucks per

square mile. The BTO is the average number of bucks per square mile expected to be taken when the deer population is at the level recommended by the task force. The Department's Bureau of Wildlife monitors the deer population and annually adjusts the quota of deer management permits available to hunters striving to decrease or maintain, as appropriate, a unit's deer population to the level recommended by a task force.

Deer harvest figures for the period 1990-2006 for WMU 7M and for the 2 towns in which the bulk of the unit lies are provided in Appendix IX. The most recent trend evident in the data is the decline in numbers in the early 2000s which was in part induced by severe winters of 2002 and 2003 and a slight rebound evident in the last two years.

While this plan does not include any specific actions to manage deer numbers or their impacts, deer should benefit from those actions intended to benefit species needing early successional habitat. We recognize the need may arise to address deer's impacts on forest regeneration or other resources.

#### *Wild Turkey*

Wild turkey can be found throughout the Unit as the forests and fields found in the landscape provide excellent food and cover. In the spring and summer of year, adult wild turkeys feed on wild leeks, roots, fruits, grasshoppers, dragonflies, and snails. During the winter the animals feed on acorns, seeds, and left over fruits. In agricultural areas, they also feed on manure, silage, and any residual grains. The bird has made a remarkable recovery after disappearing from the State around the mid-1840's as the landscape was cleared for farmland.

As farming declined on the infertile hilltops, the land gradually reverted back into brush and forest. By the late 1940's, much of New York's southern tier was again capable of supporting turkeys. Around 1948, wild turkeys from a small remnant population in northern Pennsylvania crossed the border into western New York. These were the first birds in the State after an absence of 100 years. Beginning in 1959, these turkeys were the source of birds for a trap and transfer program begun by the then New York State Conservation Department which accelerated the reestablishment of turkeys across most of the state (DEC Bureau of Wildlife, NYS Chapter of the National Wild Turkey Federation, 2004).

Humans have been an important predator of wild turkeys for many thousands of years and are part of the region's natural heritage. This wonderful bird is now legally protected as a game species with provisions for spring and fall turkey hunting seasons, which are closely monitored by State biologists. This program has helped maintain healthy turkey populations throughout most of the State. While no management actions specifically targeting the turkey are included in the plan it is expected the turkey will benefit from actions intended to benefit species needing early successional habitat.

#### *Ruffed Grouse and Woodcock*

In the early 20<sup>th</sup> century, farm abandonment and the recovery of forests from unregulated logging and fires produced habitats which probably resulted in the greatest abundance of grouse in recent times in most of the northern and northeastern United States. But as forests mature under protection from fire and cutting, they lose the habitat qualities ruffed grouse require. Continued loss of early successional forest habitats are likely on private forest lands



as ownership **parcelization** increases resulting in average parcel size decreasing. Smaller parcels are more difficult to manage often resulting in changes in landowner goals and objects. For example, very few landowners are willing to do heavy cutting, needed to create early successional forest habitats, within sight of their homes. Both ruffed grouse and American woodcock depend on shrub-dominated and young forest habitats (Dessecker, McAuley). The high tree and shrub stem densities characteristic of these habitats protect them from predators and enable local populations to attain levels substantially greater than on landscapes dominated by mature forest (Sepik and Dwyer, 1982) . In many regions, ruffed grouse and woodcock numbers have declined as forests have become more extensive and older.

Ruffed grouse and woodcock are both listed as species of “greatest conservation need” in the state’s Comprehensive Wildlife Conservation Strategy, (NYSDEC 2006). They are two of many birds species which would benefit from the creation and maintenance of early successional stage habitats. Their numbers can often be readily enhanced or restored by creating habitat through heavy forest regeneration cutting on a regular basis or through the use of prescribed fire. Forest stands with low to moderately low potential productivity that have aspen as an existing component are good candidates for grouse and woodcock habitat management. The overall goal is to provide a diversity of age classes of aspen to meet the food and cover requirements in a manner consistent with their limited mobility (The Ruffed Grouse Society, 2005).

#### *Black Bear*

The Cuyler Hill Unit is within the historical range of the black bear range and the reforestation of New York State over the last 100 years has seen the current range of bears steadily expand. Sighting of bears on or near the unit are most often young wandering males with the nearest well established bear population still some distance off. Current trends and management, of both habitat and bears, would likely result in bears becoming more common in the area. Black bear thrive in areas with extensive woodland cover, particularly woodlands with abundant sources of hard and soft mast from plants such as oaks, beech, black cherry, wild blueberry, elderberries, and blackberries. Black bears are an adaptable species, however and also use open and developed areas, particularly if some patches of heavy cover are nearby. If a healthy population of black bears becomes established on the Unit and surrounding landscape, and conflicts with humans occur, management of this species may need to be considered.

#### *Beaver*

Beaver populations in New York are abundant and their populations are secure. Beaver require small to large slowly flowing brooks, streams, or rivers that are usually, but not necessarily, bordered by woodland (DeGraff and Rudis, 1986). There are several small streams and their associated **flood plains** that provide good beaver habitat in the Unit. The Department regulates trapping seasons to ensure the continued security of New York's furbearer populations (DEC Division of Fish and Wildlife, 2005). Trapping provides important benefits to New Yorkers including: the control of nuisance damage, economic benefits to trappers and people involved in the fur industry, and recreation to trappers.

## J. Significant Habitats - Rare, Threatened, Endangered and Special Concern Species

A significant habitat is an area that supports a community of rare, threatened, or endangered plants or animals. No significant habitat areas are known to exist on the Unit.

A formal plant survey was conducted on this Unit in the spring 2005 by the New York Natural Heritage Program. No rare, threatened, or **endangered species** of plants or animals are known to exist on the Unit at this time. The Element Occurrence Records for the New York Natural Heritage Program's Biological and Conservation Data System were consulted for this information.

The Environmental Conservation Law of New York, Section 11-0535 and 6 NYCRR (New York Code of Rules and Regulations) part 182 authorizes the Department to list and protect endangered, threatened and special concern wildlife species. No endangered, threatened, or special concern wildlife or plant species are known to exist within the State Forests that comprise the Cuyler Hill Unit at this time. However, at the larger landscape level, several threatened or special concern wildlife species have been recorded by the 2000 breeding bird atlas census and confirmed or predicted by the New York GAP Analysis Model. Table 5 lists these species and their required habitats.

**Table 5 - Threatened, Endangered, and Special Concern Species at the Landscape Level Scale**

<b>Common Name</b>	<b>Habitat Requirements</b>	<b>Record Source</b>	<b>Status</b>
Cooper's Hawk	Breeds and winters in extensive deciduous or mixed woodlands that are dense or open, scattered woodlots interspersed with open fields (DeGraff and Rudis,1986).	BBA 2000	PSC
Eastern Bluebird	Breeds and winters in open country with scattered trees (savannas), farmlands, open woods, swamps, sparsely inhabited residential areas, roadside fence lines, woodland edges beside fields and meadows, orchards, clearings created by fire, flood or logging (DeGraff and Rudis,1986).	BBA 2000	PSC
Indiana Myotis (bat)	Females congregate in nursery colonies under the loose bark of dead trees located along the banks of streams or lakes in forested habitat. Only a handful of colonies have ever been discovered. In New York State, these bats are known to winter in only seven caves or mines, with nearly one-half of the world's population being found in only two caves. Even though other populations have been discovered in recent years, the additions have not offset the losses recorded over the full extent of the species range (DEC Endangered Species Unit, 1999).	NY GAP Model (PRED)	E
Jefferson Salamander	Found in undisturbed, damp, shady deciduous or mixed wood, bottomlands, swamps, moist pastures, or lakeshores. Requires temporary ponds with a pH greater than 5 (DeGraff and Rudis, 1986).	NY GAP Model (CONF)	PSC

<b>Common Name</b>	<b>Habitat Requirements</b>	<b>Record Source</b>	<b>Status</b>
Long-tailed Salamander	Found in and beneath old rotting logs & under stones, in crevices, shale banks and beneath litter near margins of streams and in caves. It is associated with cool, slow moving streams and is often associated with limestone & shale substrates. (Virginia Department of Game and Inland Fisheries, 2004)	NY GAP Model (PRED)	PSC
Northern Goshawk	Breeds & winters in interiors of remote & heavily forested areas, coniferous & mixed forests (DeGraff and Rudis, 1986).	BBA 2000	PSC
Northern Harrier	Breeds in open country, fresh or salt marshes, swamps and bogs, wet meadows. Winters in coastal marshes (DeGraff and Rudis, 1986).	BBA 2000	T
Osprey	Breeds & winters near large bodies of water that support abundant fish. Birds nest along rivers and lakes (DeGraff and Rudis, 1986).	BBA 2000	PSC
Sharp-shinned Hawk	Breeds & winters in open mixed or coniferous woodlands, clearing, edges. A bird of cold-temperate conifer forest & temperate deciduous woodlands (DeGraff and Rudis, 1986).	BBA 2000	PSC
Timber Rattlesnake	Found in deciduous forests in rugged terrain. In the summer gravid (pregnant) females prefer open rocky ledges where temperatures are higher. Males & non-gravid females prefer cooler thicker woods where the forest canopy is more closed (DEC Endangered Species Unit, 1999).	NY GAP Model (PRED)	T
Vesper Sparrow	Found in various open habitats with grass, including prairie, sagebrush steppe, meadows, pastures and roadsides. Winters in the southern U.S. from South Carolina to southern California, southward to southern Mexico (Cornell Lab of Ornithology, 2005).	BBA 2000	PSC
Wood Turtle	Frequents slow-moving meandering streams with sandy bottoms and overhanging alders. Disperses from water sources during summer months to fields, woods and roadsides (DeGraff and Rudis, 1986).	NY GAP Model (CONF)	PSC

### **Key to Codes**

BBA - Breeding Bird Atlas

T - **Threatened Species** (New York)

E - Endangered Species (New York)

(PRED) - Predicted Species

PSC - Protected, Special Concern Species (New York)

(CONF) - Confirmed Species

### **K. Mineral Resources**

Article 23, Title 11, Section 23-1101 of the Environmental Conservation Law and State Finance Law authorizes the Department of Environmental Conservation to make leases on behalf of the State for exploration, production and development of oil and gas on State lands.

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

It is NYS DEC policy to recommend excluding operations in surface areas with sensitive habitats (stream banks, wetlands, steep slopes, rare communities etc.) or intensive recreational use. Sites to be excluded from drilling, production and/or other surface occupancy for mining, are illustrated by maps included at the end of this Plan. Any proposal for mineral development other than oil and gas would require SEQR review.

### ***1. Historical Drilling and Production***

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

### ***2. Recent Drilling and Production***

A limited number of wells have been drilled into the subsurface of the areas surrounding the Cuyler Hill Unit. There has been no reported commercial oil and natural gas production in Cortland County. The closest commercial natural gas production is located in Madison County at Lebanon Field and Bradley Brook Field, about 15 miles northeast of the unit in the Town of Lebanon.

During 1993, Quaker State Corporation drilled the Quaker State Corp. - NYS Reforestation Area #6, Well #1, (American Petroleum Institute#: 31-023-21,500) on lands contained in this unit. This well was drilled to a depth of 6,896 feet into the subsurface, testing the Trenton/Black River Formations at the South end of Cuyler Hill State Forest (Cortland #6).

The well was drilled at a surface location about 1.5 miles west of Union Valley, New York and within the southern portion of Cuyler Hill State Forest. The well encountered the Devonian Shale (Genesee Group) at 125 feet, Onondaga Limestone at 2,298 feet, Oriskany Sandstone at 2,363 feet, Syracuse Salt at 2,880 feet, Vernon Shale at 3,195 feet, Lockport Dolomite at 3,886 feet, Herkimer Formation at 4,012 feet, Oneida/Oswego Sandstone at 4,403 feet, Queenston Sandstone at 4,518 feet, Trenton Limestone at 6,179 feet and Black River Limestone / Dolomite at 6,485 feet. This well was drilled and plugged as a dry hole during 1993.

Drilling and production has continued into 2007 at the Bradley Brook Field in neighboring Madison County. Gas production continues to be found primarily in the Oneida /Oswego Formations. This gas production has extended recently into Chenango County to the south of Madison County and about 12 miles east of the unit.

### ***3. Recent Leasing Activity***

An initial title review indicates New York State owns the mineral estate under all areas covered by this Unit. The above statement is made with the qualification that mineral reservations may exist and no expressed or implied warranty of title is being offered in this document. All three State Forests are not currently under oil/gas lease contracts.

#### **4. Future Leasing Activity**

Due to recent drilling and production activity in the western New York and the Finger Lakes Region, the State may again receive requests to nominate lands for leasing. For further information on lease procedures, well drilling permitting procedures, historical and statistical information go to the Department's website at <http://www.dec.state.ny.us/website/dmn/index.html> or contact the NYS DEC Mineral Resource staff at (585) 226-5376 or by mail at Region 8, 6274 East Avon-Lima Road, Avon, New York 14414-9591. Additional contacts include; New York State Department of Environmental Conservation-Division of Mineral Resources- Bureau of Oil and Gas Regulation, 3rd Floor, 625 Broadway, Albany, New York 12233 (518) 402-8056.

#### **5. Gravel & Hard Rock Mining**

Gravel and hard rock resources in the Unit are limited. Currently there are six shale pits on the Unit. There are no current mining contracts, permits, or operations on any areas in this Unit Management Plan. 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 covered by this Plan. The Department may occasionally mine small quantities of shale rock or gravel for use on state facilities such as access roads, parking lots or recreational trails. Should those actions be anticipated there will be an evaluation regarding the need for a permit. Further information may be found at the Department's website or with the Division of Mineral Resources.

#### **L. Cultural Resources**

The term cultural resources encompasses a number of categories of human created resources including structures, archaeological sites and related resources. The Department is required by the New York State Historic Preservation Act (SHPA) (PRHPL Article 14) and SEQRA (ECL Article 8) to include such resources in the range of environmental values that are managed on public lands. On lands managed by the Division of Lands and Forests, the number of standing structures is generally limited due to the nature of land use.

Archaeological sites are, simply put, any location where materials (artifacts, ecofacts) or modifications to the landscape reveal evidence of past human activity. This includes a wide range of resources ranging from pre-contact Native American camps and villages to Euro-American homesteads and industrial sites. Such sites can be entirely subsurface or can contain above ground remains such as foundation walls or earthwork features.

As a part of the inventory effort associated with the development of this plan the Department arranged for the archaeological site inventories maintained by the New York State Museum and the Office of Parks, Recreation and Historic Preservation to be searched in order to identify known archaeological resources that might be located within or near the unit. The two inventories overlap to an extent, but do not entirely duplicate one another. The purpose of this effort was to identify any known sites that might be affected by actions proposed within the unit and to assist in understanding and characterizing past human use and occupation of the unit.

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

There are no known archaeologically significant sites on the unit. However, numerous old foundations from the homes of early settlers are common throughout the Unit. There are also many stone walls which were created on the **edges** of areas that at one time were cultivated fields as the stones were removed from the fields during plowing.

### **M. Recreational Resources**

Varied recreational opportunities exist and are occurring on the Unit. State Forests offer opportunities for recreational activities that are best enjoyed in remote, relatively undisturbed natural areas. Such activities typically require few or no facilities.

Currently, the following activities are occurring on the Unit: hiking, cross-country skiing, small and big game hunting, fishing, trapping, horseback riding, camping, snowshoeing, snowmobiling, boating, picnicking, orienteering, **geocaching** and nature observation. By existing Environmental Conservation Laws and management policy, the following are not permitted on the Unit: riding all-terrain vehicles, motorized dirt bikes and off-road motor vehicles.

The following recreation trails exist on the Unit:

- 12.5 miles of snowmobile trails cross Cuyler Hill State Forest. The trails are part of corridor trail C-5E that provide snowmobiling between DeRuyter and Pitcher.
- 2.2 miles of snowmobile trail cross Dog Hollow State Forest.
- 12.2 miles of Foot Trails cross the Unit.

Foot trails are designed for hiking. Hiking includes people using the trails for just day hikes and also long distance hikers who go on multi-day backpacking trips. Trail runners use these trails for training and exercise. Snowshoers use foot trails for primarily day use excursions. Foot trails are also used by cross country skiers.

The foot trails are broken down into the following classifications:

- 6.6 miles of North Country National Scenic Trail/Finger Lakes Trail
- 1.5 miles of North Country National Scenic Trail/Onondaga Trail
- 3.7 miles of Fingers Lakes Side Trails.
- .4 miles of Onondaga Side Trails.

Long distance trails are important recreational resources that provide opportunities to access natural and cultural landscapes throughout the area. The unfragmented nature of State lands play a critical role in advancing long distance trails. There are 9.8 miles of long distance trails that cross the Unit and 2.4 miles of side trails, some of which lead to special features on or near the Unit.

Historically, State Forests have provided open space for outdoor recreational activities that require minimal facilities. In the past, the intensity of recreational use was low. This resulted in low environmental impacts and few user conflicts. However, during the 1990s demand for recreational trails increased substantially (DEC Region 7 Draft Recreation Plan, 2001). In addition, more private land has been posted to restrict hunting, fishing and trapping. As a result hunting pressure on State Forests could increase in the future.

Recreational use of the unit also includes group events. State Forests provide opportunities for group events. Any group organizing a competitive or group event must apply for a **Temporary Revocable Permit (TRP)** from the Department. The permit process offers the Department an opportunity to address health, safety and resource protection issues related to the event. There is a \$25 application fee for this permit. A group event is defined as any gathering that has been advertised to the public by the sponsoring organization in flyers, newsletters, newspapers, websites, or through other media. To hold any event, the sponsoring organization must request permission in writing at least 30 days in advance of the date of the proposed activity. The sponsoring organization must provide proof of liability insurance.

Cuyler Hill, Dog Hollow and Maxon Creek State Forests are valued recreational assets for the residents of the surrounding areas. Recreational opportunities on these State Forests significantly add to the quality of life and to the overall value of the property to the People of the State of New York. With increasing pressures from the subdivision of private lands it is expected that State Forests will continue to provide significant opportunities for a wide range of recreational stakeholders. Recreational activities will increasingly benefit local economies as well.

There are no designated off-road motor vehicle trails on this Unit. Off-road vehicle travel is prohibited. The use of all terrain vehicles (ATVs) on all State Forests in the Unit, including all roads, is prohibited. Existing management actions, poor soils, and the relatively small size of the State Forests in this Unit have precluded the development of an ATV trail system on this Unit.

## **N. Roads**

The DEC Public Forest Access Road System provides both public and administrative access to the Unit. The roads are built by the Department to standards that will provide reasonably safe travel and keep maintenance costs at a minimum. Access roads are not normally plowed or sanded during the winter months. There are three types of roads: Public Forest Access Roads (formerly called Truck Trails), **Haul Roads**, and **Access Trails**. They provide different levels of access depending on the level of standards to which they were built.

Public Forest Access Roads (PFARs) are permanent, unpaved roads. These roads are open for public use unless the road is gated and/or signed to prohibit use. PFARs may be designed for all-weather use depending on their location and surfacing. These roads provide primary access to the Unit. The standards for these roads are those of the Class A and Class B access roads as described in the Department's Unpaved Forest Road Handbook. The speed limit on the PFARs is 25 miles per hour. There are 4 PFARs totaling 9.6 miles in the Unit. Listed in appendix VIII are the PFARs in the Unit.

Haul roads are permanent, unpaved roads, but are not designed for all-weather use. They are built primarily for the removal of forest products and provide only limited access on the Unit. As such, most of these roads are not open for motor vehicle use by the public. The standards for these roads are those of a Class C road as described in the Department's Unpaved Forest Road Handbook. There are 3 haul roads totaling .7 miles in the Unit. Listed in appendix VIII are the Haul Roads in the Unit.

Access trails may be permanent, are unpaved, and do not provide all-weather access on the Unit. These trails are originally designed for removal of forest products and may be used to meet other management objectives such as recreational trails. These trails are built according to **Best Management Practices**. There are 5.7 miles of access trails in the Unit. Listed in appendix VIII are the miles of access trails in the Unit.

Public highways and town roads also serve as access to, from, and through the State Forests on the Unit. The roads are maintained by state, county or town highway departments. Listed in appendix VIII are the Town Roads in the Unit.

## **O. Other Facilities that Require Maintenance**

### **Boundary Lines:**

<u>State Forest</u>	<u>Miles</u>
Cortland #6, (Cuyler Hill)	26.2
Cortland #8, (Maxon Creek)	9.6
Cortland #16, (Dog Hollow)	7.8
<b>TOTAL</b>	<b>43.6</b>

### **Signs and Registers:**

<u>State Forest</u>	<u>Type</u>	<u>Number</u>
Cortland #6, (Cuyler Hill)	Identification Sign	3
Cortland #8, (Maxon Creek)	Identification Sign	1
Cortland #16, (Dog Hollow)	Identification Sign	2

### **Shale Pits:**

<u>State Forest</u>	<u>Number</u>	<u>Size</u>
Cortland #6, (Cuyler Hill)	3	1.4 acres
Cortland #8, (Maxon Creek)	1	.6 acre
Cortland #16, (Dog Hollow)	2	.7 acres

### **Parking Areas:**

<u>State Forest</u>	<u>Location</u>	<u>Size (approximate)</u>
Cortland #6, (Cuyler Hill)	Cuyler Hill Natural area	Small (1-5 cars)



**Impoundments (Dams):**

<u>State Forest</u>	<u>Number</u>
Cortland #6, (Cuyler Hill)	2

**Miscellaneous:**

<u>State Forest</u>	<u>Feature and Number</u>
Cortland #6, (Cuyler Hill)	Bench south of Stoney Brook Road on the FLT (1)
Cortland #16, (Dog Hollow)	Snowmobile Bridge (1)

Other Facilities that Require Maintenance that are not owned by the Department

**Utilities Lines:**

<u>State Forest</u>	<u>Type</u>	<u>Number</u>	<u>Size</u>
Cortland #16, (Dog Hollow)	Gas	1	4.4 acres
Cortland #16, (Dog Hollow)	Electric	2	1.2 acres

**P. Taxes Paid on State Forests**

Many State Forests are subject to town, school and fire district property taxes, but are exempted from county taxes. State Forest land is taxed at the same rate as private forest land. In 2006, \$205,842 in property taxes were paid by New York State for Cuyler Hill and Maxon Creek State Forests. Dog Hollow State Forest was purchased with 1960 Bond Act Funds and, is therefore, exempt from taxation. A summary of town, school and fire district property taxes paid by township can be found in Appendix XII.

**Q. Property Use Agreements**

The State Forests in the Unit are subject to the following deed restrictions and easements:

**Cortland #6, (Cuyler Hill); Deed exceptions or reservations**

- Proposal B The deed conveying this property to the State was filed in the Cortland County Clerk's Office in Liber 170 of Deeds at Page 388, and recites "Also subject to terms and conditions of an oil and gas lease in favor of Penn-York Natural Gas Corporation of Buffalo, New York, dated October 30, 1931. It is mutually understood and agreed that all rents and royalties becoming due under the above excepted oil and gas lease shall remain the property of the grantor herein to be paid to him by the holder of the said lease." This lease had a twenty year term (without production) and is assumed extinguished.
- Proposal C The deed conveying this property to the State was filed in the Cortland County Clerk's Office in Liber 170 of Deeds at Page 384, and recites "Subject to terms and conditions of the existing contract executed between Cleve H. Swan of Lincklaen, N.Y. and D.S. Webber of Columbus, Ohio, August 26, 1930. It is mutually understood and agreed that all rents and royalties becoming due under the above excepted oil and gas lease shall remain the property of Cleve H. Swan and shall be paid to him by the holder of the said excepted lease." The status of this lease is unknown as The Abstract of Title for this proposal does not include this lease.
- Proposal F The deed conveying this property to the State was filed in the Cortland County Clerk's Office in Liber 174 of Deeds at Page 315, and recites "Subject to the

lease made between George W. Lee and the Penn-York Natural Gas Corporation of Buffalo, New York, October 14, 1931." This lease had a five year term (without production) and is assumed extinguished.

- Proposal P The deed conveying this property to the State was filed in the Cortland County Clerk's Office in Liber 177 of Deeds at Page 369, and recites "Subject to an oil and gas lease recorded in Cortland County Clerk's Office in Liber 168 of Deeds at page 311." This lease had a five year term (without production) and is assumed extinguished.

#### Outstanding Survey Requests

- Survey 7-12-14 - (1975) A survey was not performed in conjunction with the acquisition of Proposal FF. This proposal is still lacking a survey to delineate 4,500 ± feet of exterior boundary line.
- Survey 7-12-31 - (1976) (1988) Request to survey the triangle shaped in-holding surrounded by Proposals P, U, and AA. Potential development and questions of access to this island of private land spurred this request for 4,300 ± feet of line to be surveyed.
- Survey 7-12-32 - (1976) Request for survey of about 11 chains (726 ± feet) of line on Proposal AA and resetting of a corner on Proposal I. Although a current survey to determine these issues would likely include more boundary, the request is to delineate 726± feet of line.
- Survey 7-12-33 - (1976) Request to survey the exterior boundary of Proposal DD. This survey would delineate 4,800± feet of line.
- Survey 7-09-79 - (1977) A survey was not performed in conjunction with the acquisition of Proposal CC. In addition to the exterior lines of this proposal, about 10 chains (660 ± feet) of Proposal F was requested for survey because of concerns of encroachment of a pasture fence. About 2000 ± feet of boundary would need survey to satisfy this request.

#### Cortland #8, (Maxon Creek): Deed exceptions or reservations

- The deeds conveying the properties to the State in this Area do not include specific exceptions or reservations which currently apply to this Area.

Outstanding Survey Requests: All requests for survey for this Area have been satisfied.

#### Cortland #16, (Dog Hollow): Deed exceptions or reservations

- Proposal C The deed conveying this property to the State was filed in the Cortland County Clerk's Office in Liber 288 of Deeds at Page 912, and recites: "Excepting rights reserved by Guernsey H. And Cora M. Brown or their successors in a deed to Allie L. Potter and Paul M. Potter which deed was dated June 11, 1955, recorded June 17, 1955 in Book 236 of Deeds at page 159; and the right of ingress and egress to said spring for the purposes of repairing and maintaining the same including the pipes leading from the spring to the house, which rights are more particularly described in the aforementioned deed." (The excepted rights in Book 236 of Deeds at page 159 refer to the right to use the water from the spring which is apparently now located on State land on the east side of Brown Road.)

"Also excepting rights of the New York State Natural Gas Corporation in a pipe line easement

over the premises, which easement is recorded in Liber 236, cp65.”(This easement grants the rights to install, use, and maintain pipeline(s) through the property.)

Outstanding Survey Requests: All requests for survey for this Area have been satisfied.

Please note that the Abstracts of Title for the proposals in these Areas were not reviewed other than when specific calls in the deeds needed investigation. Further, more complete research may show other exceptions or reservations which encumber these properties. Also, old atlas maps indicate the presence of old roads passing through the State lands in this management unit, but Real Property records do not show any unsettled claims of access by private parties along these routes.

## XI. RESOURCE DEMANDS ON THE UNIT AND THE LANDSCAPE

### A. Forest Resources

The demand for traditional and non-traditional forest products can vary over time. Following is a list of forest products and trends that State foresters have observed in the demand for these products in the Cortland County area.

<u>PRODUCT</u>	<u>TREND</u>
Firewood	Increased
<b>Softwood</b> Sawtimber	Increased
Hardwood Sawtimber	Increased
Hardwood <b>Pulpwood</b>	Increased
Softwood Pulpwood	Increased
Mushrooms	Stable
Maple Syrup	Stable
Medicinal Plants	Stable
Ginseng	Increased
Honey	Stable
Fence Posts	Decreased

The use trends for these products are expected to continue in the future.

The following recommendations regarding forest products have been expressed at a public scoping session held at Hartnett Elementary School in Truxton, New York on March 29, 2007 and through written correspondence.

- continue managing State Forests in same manner as before
- create more young growth
- more timber sales
- continue firewood cutting
- manage to limit effects of sirex wood wasp
- manage more for hardwoods including planting
- put up signs to educate the public about logging

### B. Mineral Resources

The demand for oil and gas exploration and leasing has increased dramatically in the Cortland County area. The following demands with regard to oil and gas exploration and leasing have been received at four oil and gas exploration and leasing public meetings held June 27, 28 & 29, 2005, a public scoping session held at Hartnett Elementary School in Truxton, New York on March 29, 2007 and through written correspondence .

- prevent all oil and gas exploration and leasing
- allow oil and gas exploration and leasing

### C. Diverse Plant, Animal and Water Resources

Diverse ecosystems and water quality are general societal demands that are also specific to this Unit. The following demands with regard to diversity, plant, wildlife, and water quality have been received at a public scoping session held at Hartnett Elementary School in

Truxton, New York on March 29, 2007 and through written and verbal correspondence.

- restoration of old apple trees.
- practice **Quality Deer Management**.
- do not practice Quality Deer Management.
- improve deer, turkey & grouse hunting by creating more young growth.
- plant oak to provide mast for wildlife.
- plant witchhobble.
- want to see more deer.
- manage for wildlife diversity.
- funding for research on **Beech Bark Disease**.
- plant hybrid Chestnut trees.
- replacement/replanting of red pine.
- spray to prevent **defoliation** by forest tent caterpillars.
- replacement/replanting of evergreens.
- create a deer fence demonstration area to show effects of deer on vegetation.
- better erosion control/stream improvements to minimize the effects of flooding.
- develop plans for service projects for Boy Scouts and other volunteer groups.
- law enforcement plan/more enforcement to prevent littering and illegal ATV use.
- use correctional camp crews for maintenance of the State Forests.
- better job of trash pickup.
- allow volunteers to pick up trash.

#### **D. “Gaps” in the Landscape Surrounding the Unit**

To promote biodiversity, the vegetative cover types in the existing landscape (the geographical area) around the State Forests were assessed to determine its current diversity. This process identified “gaps” where individual components of biodiversity may be lacking. Having identified these gaps we can consider management options on State Forests which might fill the gaps and at the same time add to the biodiversity of the landscape. State Forests represent about ten percent of the land base in Cortland County. As such, the long term public ownership of State Forests can contribute some components of biodiversity that can not be expected from private forest ownership patterns.

Identified Gaps and Landscape Issues Applicable to the Unit:

- Early successional forest types
- Mature forest types and many of their attributes such as closed canopies, snags, den trees biological legacy trees and coarse woody material.
- Mast producing species of trees.
- Old growth forest types and many of their attributes such as biological legacy trees, snags, den trees and coarse woody material.

## **XII. PUBLIC USE AND FACILITY DEMANDS ON THE UNIT**

### **A. Recreational Uses**

The following lists a variety of recreational pursuits on the Unit and their estimated trends based on observations by Department foresters during the past ten years:

<u>USE</u>	<u>TREND</u>
Camping	Stable
Cross Country Skiing	Stable
Fishing	Stable
Hiking	Stable
Horseback Riding	Stable
Hunting	Stable
Illegal ATV Use	Increased
Nature Observation	Stable
Snowmobiling	Increased
Trapping	Decreased

### **B: Application of the Americans with Disabilities Act (ADA)**

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

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

An assessment was conducted, in the development of this UMP, to determine appropriate accessibility enhancements which may include developing new or upgrading of existing facilities or assets. The Department is not required to make each of its existing facilities and assets accessible so long as the Department's programs, taken as a whole, are accessible. New facilities, assets and accessibility improvements to existing facilities or assets proposed in this UMP are identified in 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 [cafraser@gw.dec.state.ny.us](mailto:cafraser@gw.dec.state.ny.us)

## **B. Facilities**

Demands for the following facilities have been expressed through a public scoping session held at Hartnett Elementary School in Truxton, New York on March 29, 2007, written correspondence and verbal correspondence.

- do not allow all-terrain vehicle (ATV) trails.
- create loop ATV trails that connect seasonal town roads in the town of Cuyler.
- do not allow off-road vehicle (ORV) trails.
- create off-road vehicle (ORV) trails.
- create big ponds, for fishing and wildlife.
- build a privy on snowmobile corridor trail C - 5E, Cuyler Hill State Forest, at the intersection of Randall Hill road & Cuyler Hill PFAR for use by snowmobilers.
- no additional trails.
- make forests more accessible for recreation.
- create areas for camping and picnicking.

### **XIII. MANAGEMENT CHALLENGES ON THE UNIT**

#### **A. Physical Challenges**

The following factors pose physical limitations on the management of the Unit's lands and waters: steep slopes; geologic properties; soil characteristics; density and placement of recreational trails; potential insect and disease infestations; limited access; presence of rare or endangered species, cultural resources and invasive **exotic** species; proximity of the Unit's forests; presence of county, town, state roads, electrical transmission lines, telephone lines, pipelines, buried telecommunication lines, deeded right-of-ways, easements; and non-native conifer species planted on incompatible soils.

#### **B. Administrative Challenges**

The following factors are administrative limitations on the management of the Unit: limited budgets, decreased staffing, availability of Operations work crews, fluctuations in wood markets and reduced availability of inmate work crews.

#### **C. Societal Challenges**

Public opinion on the following subjects pose societal limitations on the management of the unit: trapping, hunting, clearcutting, public ownership, pesticides, old forest reserves and recreation. All opinions are considered, but the degree to which they can be satisfied will vary.

#### **D. Departmental Rules, Regulations, Laws, and Policies**

Appendix XI lists Department Rules, Regulations, Environmental Conservation Laws and Policies governing the management activities on the Unit.



## **XIV. CUYLER HILL UNIT MANAGEMENT AREA GOALS, OBJECTIVES, AND ACTIONS**

### **GOAL 1: Provide Healthy, Sustainable, and Biologically Diverse Forest Ecosystems.**

Our goal is to provide healthy, sustainable and biologically diverse forest ecosystems using the principles of ecosystem management. This management will be considered on a local and landscape level, not only to ensure the biological diversity and protection of the ecosystem, but also to optimize the many benefits to the public that these lands provide.

#### **Objective 1.1: Apply a Landscape Perspective to Decision-Making.**

Management decisions in this plan will consider opportunities to increase biodiversity in the landscape. These decisions will be integrated with other management goals including economic, recreational and environmental management goals. State Forests represent about ten percent of the land base in Cortland County. The long term public ownership of State Forests provides opportunities to contribute some components of biodiversity that can not be expected from private lands due to the frequent changes in ownership and small parcel size. Research conducted by the USDA Forest Service found that the average nonindustrial forest land parcel changes ownership every 10 years (Birch, et.al., 1994). Specifically, State Forests can look to provide early successional, old growth and minimally fragmented high canopy forest types.

Ecosystems are very complex systems where almost all life forms are interrelated in some manner. The task of managing an ecosystem is impractical on a species-by-species basis. Enhancements made to the ecosystem to help one species will invariably affect numerous other species as well, in both positive and negative manners. It is impossible to rank the value of all the common species present on the forest to choose which populations should be helped at the expense of others. For these reasons, the management strategy in this plan will be to promote the diversity of forest structure, composition and cover types in the landscape.

#### **Action 1.1.1: Apply Ecosystem Management using GIS technology.**

GIS (or Geographic Information Systems) and a landscape approach were used in the development of this unit management plan. GIS use computer-based mapping and databases to assist with decision-making and spacial analysis. GIS technology will be employed to make landscape level decisions which take into account the components of ecosystem management. By insuring that a variety of different habitats are present in a landscape, we can be assured that species diversity will also be enhanced.

#### **Objective 1.2: Protect Soil and Water Resources.**

Sustainability of a forest ecosystem depends on protecting the soil and water resources. While the aquatic, riparian and wetland ecotypes on the Unit are limited, they provide food, breeding areas and cover for numerous plant and animal species, as well as water which is essential for the growth of plants and animals. These water resources are an integral part of the hydrologic cycle (the route water takes from rainfall to evaporation), providing sediment filters, regulating runoff and recharging aquifers. The **riparian zones** along streams, wetlands and other bodies of water, as well as spring seeps and vernal pools are protected so that mechanical disturbance does not cause excessive soil movement, erosion and degradation of water quality. Soil is an extremely important component of the forest ecosystem. Soil provides

habitat for many invertebrates as well as a medium for plant growth. Protection of the soil resource is imperative as it can take between 250 to 1,000 years for one inch of soil to form.

Action 1.2.1: Apply Best Management Practices on all Operations Including Timber Harvesting, the Development of Recreational Facilities and Oil or Gas Exploration and Development.

When properly managed, harvesting and construction activities are not a major cause of soil erosion and water quality problems. However, skid trails, haul roads, landings, parking lots and any earth moving construction project have the potential to be sources of sedimentation, erosion and siltation. Sediment and erosion are the primary potential non-point source pollution problems associated with construction and forest management activities, especially at stream crossings. Sedimentation and turbidity (cloudiness) - caused when eroded soil gets into a stream, wetland, pond or lake - damages fish habitat, spawning areas and makes the water unsuitable for other uses down stream such as fishing and swimming. Erosion moves soil and can damage or destroy natural resources and personal property.

The key to success is proper planning and the appropriate use of Best Management Practices (BMPs). These are simple, often low-cost practices and techniques incorporated into timber harvests and construction projects. BMPs have been developed to protect streams, ground water and soils in order to maintain the productivity of the forest, improve public confidence in logging, and maintain public support for activities, which are essential for **sustainable forest management**.

Best Management Practices will be followed for all construction, maintenance, logging, forest product landings, and mineral extraction projects. All main skid trails will be located by Department Foresters prior to harvesting. BMP recommendations for road placement, grading, water diversion devices, and culverts will be followed. Whenever possible, landings will be located at least 250 feet away from water bodies. If any landings are located closer than 250 feet, additional sediment control methods will be employed (including straw bales and silt fences) to prevent sedimentation and minimize erosion. Cutting and filling on roads and trails will be limited.

Upon completion of a logging job, the landing must be back-bladed and may be seeded with conservation mix to reduce erosion and provide food and cover for wildlife.

New York's BMPs are consistent with the United States Environmental Protection Agency approved Non-Point Source Pollution Management Plan. The State's plan outlines our approach to implementing timber harvesting BMPs. Proper use of BMPs can eliminate these problems before they occur (New York Forestry BMP Field Guide 2000).

Action 1.2.2: Establish special management zones and **buffer strips** along water resources.

The primary management objective for streams within the Unit is to maintain good water quality and bank stability which are essential in supporting healthy, self-sustaining fish populations. Good water quality in these streams will help ensure good water quality in their receiving waters. Wherever possible, a 100-foot special management zone (SMZ) will be established along both sides of all streams in the unit. The first 50 feet of the SMZ will be a protection buffer in which active timber management will not take place and harvesting equipment will not be allowed in order to aid in maintaining stream bank stability and to ensure adequate shading. Limiting the extent of solar heating during summer months will help maintain cool water temperatures necessary to support wild trout. The next 50 feet should maintain at least 75% of the pre-harvest **basal area**, (tree density). Exceptions may be made if necessary to maintain forest health, such as in the case of insect infestations. Clearcutting should be avoided within 100 feet of any stream. Studies conducted in the western United States, in areas that have been **clearcut**, indicate that ambient air temperature in adjacent, uncut narrow stream **corridor** riparian zones tends to be much higher after clearcutting than prior to the clearcut. Increased ambient air temperature usually leads to increased water temperatures which, in turn, can negatively impact resident fish, herp and invertebrate populations. Stream habitat management activities (willow planting, bank stabilization projects, construction of fish habitat improvement structures, etc.) should be allowed within the Unit.

To protect spring seeps, special management zones will be established. The special management zones should be at least 100 foot around seeps where at least 50% of the pre-harvest basal area is maintained. All trees will be felled away from seeps.

To protect vernal pools, special management zones will be established. The special management zone should be at least (if possible, wider is better) 150' wide around the perimeter of pools. At least 50% **crown** cover will be maintained and disturbance of leaf litter and soil will be minimized. In the special management zones, logging will be restricted to frozen ground conditions if possible. Ruts deeper than 6 inches will not be allowed. If rutting begins, operations will be immediately suspended. Any ruts must be leveled. Tops & slash will be kept out of pool areas.

Harvesting will be restricted on 573 acres of special management zones. These zones will be sheltered from most mechanical activities for environmental and aesthetic reasons. Stream banks, spring seeps and vernal pools will be protected so that mechanical disturbance does not cause excessive soil movement, erosion, and degradation of water quality.

Land clearing for **log landings** and oil and gas activities will be avoided within 250 feet of all water resources (stream, wetland) on the forests. Vegetation will be retained along water courses and stream crossings during timber harvesting, recreational facility development, and all other construction activities. If stream crossings are necessary, temporary bridges or culverts will be required to protect the stream bank and prevent sedimentation from entering the stream channel. All stream crossings will comply with the Department's Protection of Waters Program and the New York State Forestry Best Management Practices for Water Quality.

All surface disturbance related to oil and gas exploration and development will be avoided within 250 feet of all streams, spring seeps and vernal pools.

Action 1.2.3: Protect 57 acres of freshwater wetlands from harvesting, recreational development and oil/natural gas exploration activities.

No timber harvesting equipment will be allowed in wetlands. Any trees cut within wetlands must be winched out. At least 75% of pre-harvest basal area will be maintained evenly spread throughout both the wetlands and a 100 foot special management zone surrounding the wetlands. Any newly built forest access roads, haul roads or work associated with oil and gas development will be kept at least 250 feet from all wetlands.

All surface disturbance related to oil and gas exploration and development will be avoided within 250 feet of any waterbody including wetlands.

Action 1.2.4: Protect Water Resources from Hazardous materials spills

All contractors using heavy equipment on the Unit will be required to maintain their equipment to prevent the leakage of fluids. They will also be required to have fluid containment kits present on the job site at all times. In the event of a spill, all tainted soil will be removed and disposed of properly. Cleanup will be supervised by DEC Environmental Remediation staff.

Action 1.2.5: Protect aquatic and terrestrial ecosystems from the negative impacts resulting from invasive exotic species.

In the event that invasive exotic (non-native) plants or insects are found, an overall assessment of the impacts will be conducted and control measures evaluated and considered. **Herbicides** and pesticides may be used to control invasive exotic plants and insects, when other options are not viable, effective and/or practical. Instead, we favor Integrated Pest Management (IPM). IPM is a comprehensive approach to controlling insects, weeds and plant pathogens with environmentally and economically sound practices that minimize risks to people and the environment. Promoting species diversity, structural diversity, a variety of size classes and enhancing forest health are cornerstones of IPM on State Forests. Healthy forests are better able to resist insect infestations.

When invasive exotic species are not able to be controlled by the methods described above, all other available methods of eradication and control will be considered, including the use of herbicides and/or pesticides if necessary. If it is determined that herbicides and/or pesticides are necessary, SEQR (State Environmental Quality Review) will be followed.

### **Objective 1.3: Protect Endangered Species.**

Protection of endangered species is a priority. No rare or endangered species of animals or plants are known to exist on the forests at this time.

Action 1.3.1: Work with the New York Natural Heritage Program to identify the locations of rare and endangered species on the Unit. The New York Natural Heritage Program conducted a biological inventory of the forests in 2005 to identify unique or rare forest communities, as well as rare and endangered species. No rare or endangered species of animals or plants were found.

**Objective 1.4: Conduct Periodic Forest Inventories.**

Natural resource research can influence management decisions and strategies. Periodic collection of data on vegetation and wildlife will monitor ecosystem conditions and help predict future changes. A forest inventory was conducted on the forests during the winters of 2002, 2003 & 2005. Periodic inventories and re-inventory after each silvicultural treatment will continue to be conducted.

Action 1.4.1: A new State Forest Inventory Database (SFID) has been developed by the Department for statewide implementation. This inventory will sample a wider array of plant species and the data will support and enhance future management direction. All new inventory on the Unit will be done using the new SFID program.

Action 1.4.2: Forest inventories will be conducted every 10 years according to the schedule in the project and cost estimate table.

**Objective 1.5: Address the “Gaps” Identified in the Landscape Surrounding the Unit.**

Action 1.5.1: Address changes in forest structure by increasing early successional forest acreage through **natural regeneration** harvests. The long term goal will be to maintain 20% of the Unit in an early successional forest stage. Early successional forests provide critical habitat for a **suite** of wildlife species that require early successional cover such as the ruffed grouse, American woodcock, white-throated sparrow, chestnut-sided warbler, yellow warbler, Alder flycatcher, brown thrasher, gray catbird and white tailed deer.

A). Over the next 20 years, 262 acres of even-aged early successional forests will be created through even-aged regeneration harvests. These harvests will strategically promote plant species that require high amounts of sunlight, such as aspen, red oak, chestnut oak, white ash, black cherry, pin cherry. Larger stands may be converted to natural hardwoods with a series of smaller regeneration harvests over time, instead of one large regeneration harvest. Most regeneration harvests will vary from 1 to 25 acres in size.

B). Designate 91 stands totaling 1,296 acres to be managed on a 60-year **rotation** to provide early successional habitat. Over the next 20 years, 677 acres of these stands will be regenerated. Many of these stands contain aspen and will be managed to perpetuate aspen. Aspen is a relatively short-lived tree with an average life span of about 60 to 80 years. It can be a prolific seeder with good germination given the proper conditions. The preferred method of aspen regeneration is by even-aged management. Aspen is well known for its sprouting capabilities. Cutting stands to induce regeneration by sprouts is known as the **coppice** method. The conditions created in this approach provide important habitat for many species, most notably woodcock and ruffed grouse. The regenerated aspen thickets provide ideal brood cover while older trees provide good winter food. Aspen management will be accomplished as a trade-off with a commercial forest products sale that is conducted in the

vicinity of these stands. Large stands may be converted to early successional habitat with a series of smaller regeneration harvests over time. Most regeneration harvests will vary from 1 to 25 acres in size.

C). Over the next 20 years, 372 acres of early successional forests will be created through **uneven-aged group selection** method. Group selection is the selection of a group of trees up to 2 acres in size for harvest. This method is used to create openings for the regeneration of **shade-intolerant** species such as black cherry, red oak and white ash. Group selection allows for greater species diversity in uneven-aged stands. While openings of 1 to 2 acres in size may not provide early successional habitat for song birds, it will help provide habitat for grouse and white-tailed deer.

A total of 939 acres or 13% of the Unit is scheduled for even-aged regeneration harvests. These regeneration harvests are scheduled evenly throughout a 20 year cutting cycle so as to provide a shifting mosaic of early successional habitat. Most of these stands are softwood plantations that have received little or no past treatment. Some of these stands are beginning to decline. Therefore these softwood plantations will be salvaged before they decline and will be regenerated to natural hardwoods. Also, 372 acres or 5% of the Unit is scheduled for group **selection cuts**. The regeneration harvests and group selection cutting combined with the existing early successional habitat will result in a total of 21% of the Unit in early successional forest at the end of this planning period.

Action 1.5.2: Address changing forest composition - reduced presence of high value species.

The demand for high value timber species (black cherry, hard maple, and red oak) has resulted in these species being harvested from private lands at a rate that reduces their dominance in the forest. As a result, species like red maple, which is not in high demand, have become more dominant and plentiful in the forest. Since many life forms from fungi, to insects, to birds, depend on specific tree species, their populations could also be altered.

Changes in the prevalence of oak types provide a picture of this issue. According to the United States Forest Service surveys between 1980 and 1993, the oak types in the South Central Highlands Unit have declined 35 percent (Aldrich 1995). The three forests addressed in this assessment are within the South Central Highlands Unit. From the standpoint of biological diversity, it is important to continue to perpetuate oak types within this Unit. Insects and diseases have affected other mast-producing species including beech, ash, and butternut. The decline of these hardwood species has the potential to negatively impact wildlife populations.

When conducting intermediate forest thinnings the department will favor high quality black cherry, hard maple and red oak as future crop trees where site conditions are favorable.

Action 1.5.3: Address changing forest composition - the small percentage of conifers in the landscape.

Long term conifer areas were identified through the forest inventory process because this cover type is especially important to wildlife and for landscape diversity. Conifer trees provide a variety of special functions for many species of wildlife. Conifer forests moderate

temperature extremes, which can help provide winter thermal cover, help moderate snow depth, provide shelter from wind and provide escape cover on a year-round basis. Conifer stands provide valuable habitat for many groups of wildlife species, including white-tailed deer, grouse, and wild turkey. In native eastern hemlock stands, the diversity of wildlife species increases with age. This is due to increased diversity of structural habitat in these older stands (DeGraff et al, 1989). For purposes of this assessment, long term conifers are **long lived conifer** species - specifically eastern hemlock, eastern white pine, and Norway spruce. Norway spruce, which is a non-native species, will be considered a long term conifer species because it has proven well suited to the heavy clay soils of Central New York. Also, it is a desirable forest product, regenerates more readily than most native conifers, is relatively disease resistant, and has proven to be a valuable substitute for natural species.

Long term conifer areas are forest stands where the management objective is to maintain at least 50% conifer species in the stand. Species of conifers that will be retained are hemlock, white pine and Norway spruce. The long term objective in DEC Region 7 is to maintain a minimum of 20% of each State Forest in conifer cover.

On the Unit, the Department will attempt to maintain at least 27% in conifer cover by perpetuating the existing hemlock component and promoting natural regeneration of spruce, when conducting timber harvests. Softwood cover types provide essential habitat for numerous species from fungi to birds and mammals. This will help to maintain the biodiversity of both the State Forests and the surrounding landscape. The softwood component will be enhanced by managing:

- 754 acres of Norway spruce plantations, 368 acres of Norway spruce mixed with other softwood plantations, and 88 acres of Norway spruce mixed with hardwoods using even-aged management techniques to create future forests which are predominately comprised of conifers.
- 22 acres of white pine plantations, 95 acres of white pine mixed with other softwood plantations using even-aged management.
- 19 acres of white cedar mixed with hardwoods using even-aged management.
- 216 acres of native northern hardwoods mixed with hemlock using the uneven-aged management system on 20-30-year **cutting intervals** to perpetuate the hemlock component.
- 355 acres of northern hardwoods mixed with hemlock that are either **forested wetlands**, natural areas or riparian zones. There will be no forest management activities in these areas. These areas will help provide some of the softwood cover.

Creating additional softwood acreage by future tree planting may be considered. However, natural regeneration methods will be attempted first as tree planting would necessitate extensive **site preparation**, the use of herbicides and considerable expense.

Action 1.5.4: Address changing forest composition - impacts from introduced insects and diseases by retaining healthy ash, beech, butternut and elm trees.

Ash, beech and butternut trees have been declining in recent years. **Ash decline** has been used to describe the decline and death of ash trees by unknown pathogens. Some pathogens may include diseases, poor soil/sites, cankers, insects, winter injury, or drought.

The discovery of the emerald ash borer in New York in 2009 may contribute to ash decline if it spreads to other parts of New York in the future. There are many other problems that affect ash trees including ash yellows and ash anthracnose.

Beech bark disease has damaged and killed many of the oldest beech trees. The disease is a pathogen complex involving a scale insect and a nectria fungus. The insect pierces the bark to feed, creating a place for the fungus to enter at a later date. The fungus begins to grow within the bark, resulting in round scars. Fungal activity interrupts the tree's normal physiological processes and a severely infected tree will most likely die. Trees that do not die will remain weak and become more susceptible to wind damage.

Cuyler Hill, Maxon Creek and Dog Hollow State Forests are within the native range of butternut, but these trees are very rare on the Unit. Butternut is being killed throughout its range by a fungus most likely introduced from outside North America. The fungus initially infects trees through buds, leaf scars, and possibly insect wounds or other openings in the bark. The fungus rapidly kills small branches and spreads throughout the tree. Butternut is the only natural host known to be killed by the fungus. The fungus can survive on dead trees for at least two years.

Healthy ash, beech and butternut trees are occasionally found growing among diseased and dying trees. Also healthy elm trees are occasionally found growing on these forests. Forest management activities will retain these potentially resistant trees using the following guidelines:

- Retain some dead or declining trees for their wildlife value (snags and/or coarse woody material).
- Retain trees free of symptoms with at least 50% live crown which are growing among diseased trees. These trees may be resistant and have value for the gene pool.
- All butternut and elm trees will be retained.

As stated in the Land Management Strategy, we are taking an adaptive management approach. Therefore management activities may be altered in the event that exotic pests species such as Asian long-horned beetle, emerald ash borer, hemlock wooly adelgid and *Sirex noctilio* wood wasps invade the Unit.

Action 1.5.5: Address fragmentation on the landscape through land acquisition or conservation easements.

Fragmentation of the landscape occurs when there is a change in land use. For example, many times when a farmer sells his or her land, the farm is broken into smaller parcels with different land uses. Fragmentation can also be caused by forests being subdivided and cleared for home development. Fragmentation of the landscape can adversely affect ecosystems and the overall beauty of the landscape. Fragmentation of the landscape surrounding the Unit is occurring at a relatively slow rate.



The landscape surrounding the two State Forests is about 62% forested and 31% in agriculture. There are several large blocks of undeveloped land on the landscape. These large blocks are made up of State Forest land and the private land next to these State Forests. Some of the adjacent private parcels are partly or totally surrounded by State Forest land.

In order to prevent fragmentation of the landscape next to the State Forests, the Department will seek to purchase or obtain conservation easements on in-holdings and some adjacent private parcels. Purchases will only be made from willing sellers. The Department will also work with local land trusts and conservation based not-for-profit organizations which can purchase and hold conservation easements on adjacent private lands.

Action 1.5.6: Provide large blocks of forest land with high canopy cover.

Areas with continuous high canopy forest conditions are noticeably lacking in the surrounding landscape. To promote biodiversity, each State Forest in the Unit will have a **high canopy forest area**. The Department will manage 974 acres as high canopy forest areas using uneven-aged **silviculture** adapted to limit forest openings and to provide specific habitat components.

High canopy forest areas are portions of a State Forest that will be dedicated to establishing and maintaining forest stands with high canopy cover. The areas will be created to provide habitat for wildlife species that require mature forests. Studies suggest that forests with a minimum of 60% (on average) forest canopy closure provide the greatest benefit to species of wildlife that require mature forest habitat. Therefore, the high canopy forest areas will be managed to maintain this level of forest canopy closure. For the long term, the areas will be either northern hardwood or northern hardwood-softwood stands. Some of the trees in these areas will be grown to a large size, therefore long lived species of trees like sugar maple, hemlock, white pine and oaks will be favored. Management of the areas will be carried out to minimize openings in the forest canopy. If possible the areas will be centrally located within the State Forest. The area should be a minimum of 100 acres in size. High canopy forest areas may be made up of several different types of forest stands.

Northern hardwood stands that are part of the high canopy forest areas will be managed as uneven-aged. Some trees will be grown to biologic maturity, and left as biological legacies. Over time these trees will develop into den trees, snags and coarse woody material. The stands will be managed on a long rotation, (120 to 150 years) and long cutting cycle, (25 to 30 years). Treatments will be predominately single tree selection with a minimum **residual** basal area of 70 to 90 square feet. Group selection may also be done with groups no larger than ½ acre. Some of the mast producing trees like oak, cherry, hickory and healthy beech will be maintained in the stand as long as possible. However over time the oak, cherry and hickory may naturally be replaced by sugar maple, beech and hemlock.

In order to provide a 100-acre high canopy forest area, some conifer plantations may be included. Most plantations will be regenerated to Northern hardwood stands over time. Norway spruce plantations will be managed as mixed hardwood /softwood stands. The

plantations will be managed like uneven-aged hardwood stands. Treatments will be predominately single tree selection with a minimum residual basal area of 120 to 170 square feet. Group selection may also be done with groups no larger than ½ acre.

Some stands included in the high canopy forest areas may be immature hardwoods or plantations. As these stands mature, they will be managed uneven-aged to maintain a high canopy forest.

Natural areas and **protection areas** will be part of the high canopy forest areas. A total of 750 acres have been set aside as protection areas and natural areas. State forest protection areas are excluded from forest management, oil and gas exploration, and some recreational activities to protect sensitive sites. Protection areas may include rare threatened and endangered species habitat, steep slopes, forested wetlands and riparian zones. Natural areas are areas left in a natural condition, usually without direct human intervention, to attain and sustain a **climax forest** condition, the final stage of succession. As such, protection and natural areas will develop some “old growth” characteristics. Where practical natural areas and protection areas will be located in the center of the high canopy forest areas.

Storm damage and insect or disease infestation in a high canopy forest area may or may not be salvaged. Light damage or infestation may be left to help create den trees, snags and coarse woody material. Catastrophic damage or infestation may be salvaged for sanitation purposes. During **salvage cutting** of a catastrophic event, a few damaged trees may be left to help create den trees, snags and coarse woody material.

Action 1.5.7: Provide attributes of mature forests such as coarse woody material, den trees, and snag trees.

Coarse woody material is an important component of the forest ecosystem. This woody material stores moisture, cycles nutrients as it decays and provides habitat niches for insects, reptiles, plants and fungi. Coarse wood material naturally occurs when limbs break, trees are blown over or snags fall. Coarse woody material will be provided as follows:

- Tops of felled trees will not be sold for firewood following sawtimber harvests, except along travel corridors or where **aesthetics** are important.
- Non-commercial logs will be left in the woods during harvesting.
- Minimum utilization limits will generally not be required in timber harvests.
- Whole tree harvesting will not be permitted.

Where den trees and snags are present, an average of one den tree and three snag trees per acre will be retained during forest management activities. The Occupational Safety and Health Administration, (OSHA) considers snag trees to be hazard trees. During harvesting operations timber harvesters are required to either stay two tree lengths away from hazard trees or fell the trees to eliminate the hazard. Therefore, it may be difficult to retain snag trees in managed forest stands. However, over time high concentrations of snag trees will develop in the protection and natural areas on the Unit.

Den trees and snags will provide foraging, perching and nesting opportunities for cavity nesting birds (woodpeckers, owls, wrens, nuthatches, vultures, ducks) and cavity nesting mammals (raccoons, squirrels, bats, mice, opossum, black bear, porcupine) as well as

insects. Snags will eventually become coarse woody material. To provide wildlife habitat, emphasis will be given to maintaining den trees and snags near water, fields and edges where possible. This will be applied in both **even-aged and uneven-aged systems**. In many instances, den trees and snags are not present (i.e. red pine plantations). Some declining trees will be retained to become future den and or snag trees where needed.

Action 1.5.8: Address the lack of mast producing trees in the landscape.

Many species of birds and mammals use mast as a food source. To provide diversity of mast producing trees on the landscape, all management activities on the Unit will favor the retention of healthy beech, black cherry, butternut, hickories and oaks.

There is some oak growing on the landscape surrounding the Unit, but very little growing on the Unit. There are 22 stands totaling 120 acres that will have 8,000 to 9,000 red oak trees planted in them following the harvesting of the stands. Two year old (2-0) Northern red oak trees will be planted on a minimum spacing of 25 feet x 25 feet. The tree seedlings will be minimally 6 to 12 inches in height and grown from seed with demonstrated frost hardiness in USDA hardiness zone 4. Trees will be planted during moist soil conditions. Trees will be protected by using five foot high solid polyethylene vented tube-type tree shelters. Weed mats will be properly installed to control competing vegetation. Additional stands may be planted to oak if conditions allow. Planting will be done as additional work required in conjunction with forest product sales. Individual stands range in size from two to twelve acres. Stands are dispersed throughout the unit and treatments will occur over the next 20 years, so as to avoid large-scale visual impacts. The stands to be planted are listed in Appendix XIV.

Action 1.5.9: Address the lack of old growth forest characteristics in the landscape.

There are no large blocks of old growth forests in the landscape. By its very definition, true old growth forests can not be created. However, stands which are protected from direct human impact over a very long period of time can develop many of the valuable characteristics associated with old growth. A long term management strategy of this nature can not be implemented on private land, considering the typically short tenure of ownership. Publically held forest land is better suited to support long term management strategies such as the development of old growth characteristics in dedicated areas. There are 750 acres (or 10%) of these three forests that have been designated as natural areas and protection areas. Additionally, there are about 4,341 acres that have been designated as natural areas and protection areas on seventeen State Forests and one Unique Area in the surrounding landscape.

There are 217 acres designated as protection areas that are excluded from forest management, oil and gas exploration and some recreational activities to protect sensitive sites. Protection areas may include rare threatened and endangered species habitat, steep slopes, forested wetlands and riparian zones. There are 533 acres designated as natural areas that are areas left in a natural condition, usually without direct human intervention, to attain and sustain a climax condition, the final stage of succession. By management direction, these areas are not managed for the production of wood products or mineral resources. Protection and natural areas provide continuous closed canopy conditions and have the potential to exhibit some old growth characteristics.

The portions of the high canopy forest areas which are open to timber management, will also be managed to develop some old growth characteristics such as coarse woody material, snags, den trees and biological legacy trees.

Even though old growth forests are limited in this landscape there are 3 million acres of preserved forests in the Adirondack Forest Preserve, Catskill Forest Preserve, Allegheny State Park and many other smaller State Parks. These preserves and parks are dedicated to developing forests with old growth characteristics and represent 16% of New York States forest land and 10% of the entire State.

**Objective 1.6: Provide for Species and Structural Diversity by Employing a Variety of Silvicultural Systems and Strategies Throughout the Time Frame of this Plan.**

Forest product sales are the primary means of achieving the desired structures. Forest management activities may vary slightly due to workloads, natural disturbances such as ice storms and wind storms, and the availability of markets for low grade forest products. The forest product sales procedure starts by analyzing the stand to be treated. **Stand analysis** includes collecting updated stand inventory data, then summarizing and analyzing the data to determine if a treatment is necessary and referencing the UMP to determine the long term management direction in the stand. Once the analysis is complete the information is used along with published silvicultural guides to develop a forest products marking prescription. A marking prescription details how many and what types of trees will be marked for harvest and the residual trees to leave. The long term management direction is the primary factor in determining the marking prescription. Upon completion of the forest products marking, a notice of sale is developed.

A notice of sale includes:

- a summary of the forest products for sale, listed by tree species
- a location map of the sale area
- minimum acceptable bid
- bid opening date
- terms and conditions of the sale such as:
  - timing of harvest
  - required use of Best Management Practices
  - Environmental Protection requirements
  - insurance requirements
  - equipment limitations
  - payment schedule
  - length of the contract
  - cleanup work required
  - additional work required
  - performance bond requirements

Once the notice of sale is completed and approved, the forest products are offered for sale to the forest products industry through a competitive bid process. When bids are received the sale is awarded to the highest approved bidder and a forest products sale contract is signed and approved. The high bidder is allowed to harvest the forest products in

compliance with the terms and conditions of the forest products sale contract and under close supervision of a Department Forester. Upon completion of harvesting the buyer must restore the sale area to a condition that is acceptable to the Department.

**Table 6 - Summary of Present and Predicted Management Direction**

<i>Present Stand Structure</i>			<i>Predicted Future Stand Structure</i>		
Structure	# Stands	Acres	Structure	# Stands	Acres
Even-aged	332	4853.0	Even-aged	159	2607.0
Uneven-aged	44	1594.0	Uneven-aged	142	2837.0
*Even or Uneven-aged	0	0.0	*Even or Uneven-aged	56	849.0
Protection/ Natural Areas	45	596.0	Protection/ Natural Areas	64	750.0
**Other	26	95.0	**Other	26	95.0
<b>TOTAL</b>	<b>447</b>	<b>7138</b>	<b>TOTAL</b>	<b>447</b>	<b>7138</b>

\*These include stands where the decision of what long term management system to use has been delayed until the time of treatment. This includes stands that will not be managed for 20 years, stands that need additional analysis and young stands that need time to develop.

\*\*Other includes roads, shale pits, parking lots and non-forest stands (open land, open wetlands and shrub and brush lands).

Action 1.6.1: Manage 2,837 acres using uneven-aged silvicultural systems.

Uneven-aged silviculture is a management system that maintains at least three or more age groups ranging from seedlings and saplings to very large, mature trees. Uneven-aged silviculture is commonly referred to as the **selection system**. The selection system uses two different methods, single tree selection and group selection.

Single tree selection is the selection of individual or very small groups of trees for harvest. This method is used to maintain unbroken forest canopy as desired in the uneven-aged high canopy forest areas. Single tree selection tends to favor **shade tolerant** tree species such as hemlock, beech, and sugar maple. Many of these species are long lived. Through this system, a vertical layering of tree crown canopy is created with each layer providing distinct habitat niches. This maintains a relatively continuous tree crown canopy which lessens the impact for plant and animal species that cannot tolerate substantial changes in their habitat.

Group selection is the selection of a group of trees up to 2 acres in size for harvest. This method is used to create openings for the regeneration of shade-intolerant species such as black cherry, red oak and white ash. Group selection allows for greater species diversity in uneven-aged stands.

Many of the uneven-aged stands in this Unit will be managed using a combination of single tree and group selection. Single tree and group selection treatments will occur every 20 to 30 years in uneven-aged stands. In these treatments, trees up to 25" in diameter may be left as residual crop trees. Some trees of unique characteristic and size will be left as biological legacy trees as determined by the forester. There are 974 acres of these uneven-aged stands which will be managed as high canopy forest areas as outlined in Action 1.5.6.

Action 1.6.2: Manage 2,607 acres using even-aged silvicultural systems.

Even-aged silviculture is a management system that maintains a forest stand where the trees are about the same age. Even-aged silviculture will promote natural regeneration of **shade intolerant** species such as black cherry, red oak, aspen and white ash. This system most often involves several intermediate thinnings in a stand over time and ends with a regeneration cut at a rotation age. Rotation age is the time between stand establishment and the final regeneration harvest. In most cases **intermediate treatments** will occur every 20 years in even-aged stands. At the end of the rotation seed cuts are done to establish regeneration. Once the regeneration is established a **release** cut or **overstory** removal will be done to release the new stand of trees. Rotation age on the unit will vary from 60 to 120 years. Regeneration of even-aged stands will be accomplished using one of three methods: clearcut, shelterwood, and seed tree methods.

The clearcut method is the removal of all trees in a stand at the same time. There are insufficient amounts of advance regeneration present on the ground when the overstory trees are removed. After the removal of the overstory trees, seedlings become established in several ways: trees in adjacent stands provide seed that will help establish new growth; the increased sunlight allowed to reach the ground will cause some seeds on the forest floor to germinate and establish new growth; and some of the trees that are cut will sprout at the stump and establish new growth. In clearcuts of 20 acres and larger, variable patch retention may be practiced. This involves leaving patches of uncut trees and large individual trees in the clearcut area. The patches provide islands of forest cover as well as seed source in the middle of the clearcut areas. The number and size of patches retained will vary depending on the size of the clearcut. The individual trees and some of the trees in the patch retention areas may blow down over time. These blown down trees will provide 2 important benefits to the forest ecosystem. First they will create coarse woody material on the forest floor. Second they will contribute to the establishment of pit and mound micro-topography. This is especially important in plantations where past agricultural practices had eliminated the micro-topography.

The **shelterwood method** is the removal of all trees in a series of two to three treatments. The preparatory cut is done to prepare the site for the establishment of regeneration. Preparatory cuttings maybe done to encourage the development of thrifty seed bearing trees, to eliminate undesirable trees or to accelerate the decomposition of unfavorable humus layers. The seed cut is done to establish regeneration. This involves a heavy **thinning** that will allow enough light to reach the forest floor and encourage the establishment of tree seedlings. The trees that remain provide seed source and shelter for the establishment of regeneration. The best quality timber trees in the stand are left for this purpose. Finally the removal cut is done to release tree seedlings when they are established. All of the overstory trees are removed in this treatment and a new stand is created.

The **seed tree method** is the removal of all trees in a series of one or two treatments. This method is similar to the clearcut method except that a few individual trees or groups of trees are left to provide seed source. The remaining trees may or may not be removed once regeneration has become established.

Action 1.6.3: Manage 849 acres using uneven-aged or even-aged silvicultural systems.

The decision of which management system to use on these stands will be delayed until the time of treatment. Many of these stands need more time for stand structure to develop before a management system can be considered.

### **Objective 1.7: Enhance Wildlife Habitat.**

Action 1.7.1: Protect habitat for birds of prey.

Many raptors in New York 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: setbacks, **natural areas**, 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.

Action 1.7.2: Licensed falconers will be permitted to remove raptors from the Unit, in compliance with ECL Article 11 and 6 NYCRR Part 173.

Action 1.7.3: The Department will encourage monitoring and research on the status of Northern Goshawks to ensure sustainable populations, and to ensure that our knowledge of the natural history and ecology of these raptors continues to increase.

Action 1.7.4: Diversify the State Forest landscape through adaptive forest management.

Management activities will provide important landscape components for wildlife.

- Gradually convert 939 acres of conifer plantations into natural hardwood seedling/sapling stands as previously described by action 1.5.1. This action will provide habitat for a suite of birds that require young dense vegetation for breeding, nesting, and foraging. Bird species represented include the ruffed grouse, American woodcock, white-throated sparrow, American goldfinch, rufous-sided towhee, chestnut-sided warbler, yellow warbler, blue-winged warbler, white-eyed vireo, alder flycatcher, willow flycatcher, least flycatcher, hermit thrush, brown thrasher, indigo bunting and gray catbird. Early successional forests provide habitat for mammals that benefit from a brushy habitat component. Many mammals benefit from a variety of

habitats and edges with adjacent cover types. Species that use brushy areas include the red fox, gray fox, white-tailed deer, eastern cottontail, woodland vole, eastern chipmunk, woodchuck, southern bog lemming, and meadow jumping mouse.

- Maintain and develop 1,917 acres of long term conifer areas as previously described in action 1.5.3. This conifer area will provide important habitat for a suite of bird species requiring conifers such as the magnolia warbler, Blackburnian warbler, pine warbler, yellow-rumped warbler, pine siskin, red-breasted nuthatch, and black-throated green warbler. Long-Lived conifer forests provide unique habitats for mammals such as the red squirrel. Conifer forests moderate temperature extremes and thereby provide winter thermal cover. Mammals that require or benefit from conifer cover include the red squirrel, snowshoe hare, white-tailed deer and bobcat.
- Create 974 acres of high canopy forest as previously described in action 1.5.6. These high canopy forest areas will provide continuous forest canopy for neotropical migratory birds that are moderate to high in conservation priority in the landscape such as the wood thrush, scarlet tanager, Canada warbler, Louisiana waterthrush and black-throated blue warbler. Neotropical migrants are birds that breed in the United States and Canada and spend their Winters in Mexico, Central America or South America. They include about ½ of the birds in the United States. Other Neotropical migratory birds that prefer mature **deciduous** and mixed coniferous-deciduous forest stands include the red-eyed vireo, veery, American redstart and ovenbird. Additionally, the high canopy forest will be managed to have higher densities of live or dead hollow trees to provide homes and/or forage areas for cavity nesting birds such as the northern flicker, yellow-bellied sapsucker, black-capped chickadee, downy woodpecker, hairy woodpecker, red-bellied woodpecker, eastern screech owl, great crested flycatcher, wood duck and pileated woodpecker. The high canopy forest also provides breeding habitat for raptors that require extensive forested areas such as the northern goshawk. High canopy forests are important open space habitat for mammals that benefit from the presence of continuous high canopy forest cover such as the black bear, bobcat, fisher, smoky shrew, pygmy shrew and northern flying squirrel. High canopy areas will provide den trees that act as homes for animals such as the gray squirrel, red squirrel, northern flying squirrel, Keen's bat, Indiana bat, little brown bat, silver-haired bat and raccoon. High canopy areas will also provide coarse woody material which is important food source (decay related insects) and cover for amphibians and mammals. Also high canopy areas provide moist forested conditions which are required by amphibians.
- Designate natural/protection areas to grow trees beyond financial maturity as described in action 1.5.9. Over time, natural/protection areas will eventually develop old growth forest characteristics. Old growth forests provide unique aesthetic and biological values.

Action 1.7.4: Create 10 to 20 vernal pools to enhance habitat for wildlife.

Vernal Pools are seasonal wetlands. Their defining characteristics are that they dry up and do not contain fish. Drying may occur annually or in drought years. In North America, about one half of all frogs and one third of all salamanders rely on seasonal or temporary wetlands



(vernal pools) for development. Vernal pools are less likely than permanent wetlands to contain *Sapro legnia*, a fungus that is detrimental to frog, toad and salamander eggs. Vernal pools also have low numbers of eastern and red spotted newts that prey heavily on amphibian eggs. Reptiles such as the eastern box turtle and common garter snake also use vernal pools. (Biebighauser, 2003) Vernal pools are used by mammals, including the Indiana bat as a source of drinking water. Neotropical migratory birds such as the worm-eating warbler, veery and wood thrush also use vernal pools.

Creation of vernal pools may be done in conjunction with forest products sales. The pools will be 30 to 100 square feet in size and about 1 to 3 feet deep. Vernal pools will be created in high canopy forest areas near protection and natural areas. This will provide closed canopy forest cover and minimize impacts from mechanical activities. Over time the areas around the vernal pools will provide coarse woody material which is also important habitat for many amphibians and reptiles.

Action 1.7.5 Protect and enhance spring seeps and wetlands as valuable wildlife habitat.

Spring seeps are broad shallow flows that occur where groundwater emerges on sloping terrain usually on the lower slopes of hillsides and mountains. Spring seeps provide important habitat for many species of reptiles and amphibians. Many animals that use them do so opportunistically, but several species of salamanders, including the long-tailed and dusky salamanders, are dependent upon the existence of spring seeps. Eastern box turtles may forage in the shallow waters and rehydrate before further upland travels. Leopard frogs may also be found hunting insects in such areas, and many snakes such as garter snakes visit in search of the frogs. (Partners in Amphibians and Reptile Conservation, 2003) Spring seeps are also valuable to birds and mammals, particularly wild turkey, in severe winters because the emerging groundwater provides snow-free feeding sites in winter and are among the first sites to provide green plants in spring. Spring seeps are used by neotropical migratory birds such as the worm-eating warbler, veery and wood thrush.

Wetlands are areas that are either transitional between land and water (where the water table is at or near the land surface) or areas of land that are covered by shallow water. Wetlands provide habitat for birds that require water in close proximity for breeding, nesting, or foraging. The pond provides habitat for birds such as the tree swallow, wood duck, hooded merganser, mallard, American black duck, green heron, and Canada goose. Wetlands also provide important habitat for a variety of amphibians and reptiles.

Action 1.7.6 Release and prune wild apple trees to improve habitat for wildlife.

There are 20 forest stands totaling 293 acres that contain wild apple trees on the Unit. Wild apples provide a valuable food source for many species of game including cottontail rabbit, gray squirrel, ruffed grouse, white-tailed deer and woodcock. Apples or apple seeds have been found in the stomachs of bobcat, fisher, fox, porcupine and red squirrel. Apple trees also provide good habitat for songbirds including blue birds, fly catchers, orioles and robins. Release and pruning of wild apple trees will improve the overall health of the trees and thereby increase the production of apples. The release will include cutting trees that overtop

or potentially will overtop the apple trees. Many of the stands that contain wild apple trees will be managed as early successional habitat. Most of the forest management activities on the Unit will favor the retention of wild apple trees.

**Objective 1.8: Maintain Existing Fisheries Habitat.**

There are .9 miles of protected streams on the Unit that are known to support brook trout. Past surveys suggest many other streams in the Unit may support a variety of fish species including brook trout. As such, all streams in the unit will receive protection as outlined in the Department's Protection of Waters Program.

Action 1.8.1: Apply Best Management Practices on all management activities as outlined in Action 1.2.1.

Action 1.8.2: Establish buffers along all streams in the Unit to aid in maintaining stream bank stability and to ensure adequate shading as outlined in Action 1.2.2.

A brook trout stocking policy once existed on Bundy Creek, but was terminated in 1969. Trout stocking in the Unit to support a recreational trout fishery is currently not being considered. Bureau of Fisheries staff shall have the option to create new fishing access sites where appropriate.

There are two old farm ponds on Cuyler Hill State Forest. Both ponds are less than 1 acre in size and have limited fishery potential. The ponds will be maintained to provide habitat for wildlife and fish. There are no plans to build any new ponds on the Unit.

**Objective 1.9: Conduct Silvicultural Research in Cooperation with the State University of New York College of Environmental Science and Forestry.**

Dr. Ralph D. Nyland, of the State University of New York College of Environmental Science and Forestry has been conducting silvicultural research in cooperation with DEC staff since 1969. There are twelve forest stands totaling 530 acres on Cortland #6, (Cuyler Hill) that have silvicultural research study plots in them. These research areas are being monitored by State University of New York College of Environmental Science and Forestry, (SUNY ESF) forestry staff and graduate students. Experimental cuttings are carried out in conjunction with other forest management activities on the forest.

Action 1.9.1: Manage 168 acres as even-aged silvicultural research areas.

Action 1.9.2: Manage 342 acres as uneven-aged silvicultural research areas.

Action 1.9.3: Conduct research in the 20 acre Cuyler Hill Natural Area.

Action 1.9.4: Assist SUNY ESF forestry staff in developing additional research sites as needed, provided they do not conflict with other goals or objectives outlined in this plan.

## **GOAL 2: Provide Forest-Based Recreational Opportunities**

Our goal is to provide a variety of rustic, forest-based recreational opportunities that are sustainable and compatible with the resources of the three forests. Trails are designed for family enjoyment for beginner-to-intermediate level users. New recreational facilities will be designed to provide access for people with disabilities as required by the Americans with Disabilities Act (ADA). Construction will be guided by the Principles of Universal Design.

Compatible recreation is a mainstay in a use-oriented management plan. Outdoor activities are widely enjoyed by millions of Americans. These State Forests provide opportunities for both active and passive forms of recreation. Some of the important attributes that contribute to pleasurable recreational experiences include public safety, accessibility, aesthetic character and quality of facilities.

A landscape perspective was applied when considering recreational opportunities. State Forest management proposes not to duplicate services and opportunities found nearby or within the landscape. Many developed recreational opportunities are provided at other locations in the area.

### **Objective 2.1: Maintain and Enhance Existing Recreation Trails**

The Department will focus resources on the maintenance of existing trail systems in a way that protects the resource and maintains the rustic character of State Forests. The Department will continue to work cooperatively with user groups through Adopt-A-Natural Resource agreements to maintain existing trails. Building trails without authorization from the Department is prohibited. Trail relocation requests will be considered on a case-by-case basis. Seasonal trail closures and other restrictions may be required to protect the trail surface from degradation.

To help meet the increasing demand for recreation, the DEC has established partnerships with recreation groups to help maintain, enhance and build recreational assets. Partnerships are formalized through the Department's Adopt-A-Natural Resource (AANR) program. The program is authorized by Section 9-0113 of the Environmental Conservation Law. The statute authorizes the Department to use a stewardship agreement for activities it approves for the preservation, maintenance or enhancement of State-owned natural resources. Volunteerism is the cornerstone of the AANR program. Activities may involve remediating vandalism, establishing or maintaining access or nature trails, building camping sites, providing interpretive services for school groups and other citizens, managing fish and wildlife habitats and otherwise providing positive benefits to the natural resource. The AANR program is a valuable tool that allows land managers to accomplish tasks with volunteers that otherwise would not be completed and with minimum cost to the State.

#### **Action 2.1.1:** Designate all hiking trails on the Unit as foot trails only.

Foot trails are designed for hiking. Hiking includes people using the trails for just day hikes and also long distance hikers who go on multi-day backpacking trips. Trail runners use these trails for training and exercise. Snowshoers use foot trails for primarily day use excursions. Foot trails are also used by cross country skiers. The following recreational uses are prohibited on the foot trails in the Unit; horseback riding, mountain biking, and snowmobiling.

Action 2.1.2: Maintain 12.2 miles of Foot Trails with the assistance of volunteers under the DEC's Adopt-A-Natural Resource program.

An Adopt-A-Natural Resource agreement currently exists with the Finger Lakes Trail Conference Inc. to maintain the foot trails on Cortland #6 (Cuyler Hill) and Cortland #8 (Maxon Creek). Routine trail maintenance is performed by volunteers in cooperation with Department Foresters. The Department will supply materials whenever possible within budget constraints. In some instances the FLTC has provided materials through grants or fund raising within the organization.

Action 2.1.3 :Maintain existing opportunities for snowmobiling on designated trails.

Snowmobiles primarily use corridor trails which pass through the State Forests. There are 14.7 miles of snowmobile trails on Cortland #6 (Cuyler Hill) and Cortland #16 (Dog Hollow). Snowmobiling will be restricted to designated roads and trails. Requests from snowmobile clubs for additional corridor trail connections will be considered on a case-by-case basis.

The Department has an Adopt-A-Natural Resource Agreement with the Cortland/Chenango Trail-Hounds Snowmobile Club for the grooming and maintenance of the snowmobile trails on Cortland #6 (Cuyler Hill). Also the Department has an Adopt-A-Natural Resource Agreement with the Truxton Snowmobile Club for the grooming and maintenance of the snowmobile trails on Cortland #16 (Dog Hollow). Routine trail maintenance is performed by volunteers in cooperation with Department Foresters. Funding for these activities is provided in part by the Snowmobile Trail Fund administered by New York State Office of Parks, Recreation and Historic Preservation.

Action 2.1.4: Maintain aesthetics along trails by establishing special management zones.

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. Where possible, the department will avoid clearcutting over and across any recreational trail. Oil and gas exploration and development surface disturbance will be avoided within 250' of trails. Temporary trail closures may be required to avoid conflicts and prevent safety hazards.

## **Objective 2.2: Provide Recreational Opportunities for Activities that do not Require Developed Facilities**

The State Forests of the Cuyler Hill Unit have been identified as forests that will have minimal recreational development. Therefore, the Cuyler Hill Unit will concentrate on providing opportunities for recreational activities that do not require developed recreational facilities. These activities will include fishing, geocaching, hiking, hunting, nature observation, orienteering, trapping, and informal camping, cross country skiing, and horseback riding. The Department will maintain existing trails, as outlined in objective 2.1. However, no new recreational facilities are planned. The Unit does not provide opportunities for people with mobility impairments. Demand for such facilities is very low and is being met by existing and contemplated facilities on adjacent Units.

### **Objective 2.3: Enhance Public Information.**

Action 2.3.1: Produce public use brochures and maps for the State Forests.

Brochures for Cortland #6 (Cuyler Hill), will be produced in 2010, for Cortland #8 (Maxon Creek) in 2012 and for Cortland #16 (Dog Hollow) in 2014. The brochures will use at least 12-point type to comply with the Principles of Universal Design (See Objective 2.5). We will develop large print versions on request. When brochures and maps have been completed, they will be posted on the Department website.

Action 2.3.2: Educate the public on forest management activities.

During forest product harvesting operations, educational signs will be posted in the area to explain the goals and objectives of the harvest.

### **Objective 2.4: Restrict ATV Use to Protect Forest Sustainability**

All-terrain vehicles (ATVs) are prohibited everywhere on the three forests. The construction of a new ATV trail system in the Cuyler Hill, Maxon Creek and Dog Hollow State Forests is not compatible for the following reasons:

A viable ATV trail system must include at least 40 miles of trails. Maxon Creek and Dog Hollow State Forests are not large enough to support such a system. Cuyler Hill State Forest may be large enough, however there are 530 acres of silvicultural research projects and 974 acres of High Canopy Forest that are not compatible with ATV use. These areas combined with 8.5 miles of FLT will prevent development of an ATV trail system.

There is a significant risk of illegal ATV use off of the trail system and trespass onto adjacent properties. Previous efforts in other parts of New York and other states have shown that enforcement is extremely costly and often ineffective. A majority of the soils on these State Forests cannot sustainably support ATV use. Funding for construction and maintenance of an ATV trail system is not available.

## **GOAL 3: Provide Economic Benefits to the Local Community and to the State of New York.**

### **Ecotourism**

State Forests provide a base for eco-tourism business. Individuals using the forests for recreational purposes also frequent local businesses for other needs. Thus, the recreational services provided by the lands in the Cuyler Hill Unit benefits the service and retail sectors of the local economy.

### **Renewable Resources**

Well-managed forests produce sustainable forest products. Properly designed prescriptions and harvest plans promote biodiversity and forest health. At the same time, the State Forests of the Unit provide jobs and locally produced natural materials to support the local economy.

## Mineral Resources

The leasing and development of natural gas and oil resources can provide jobs and income to the State while increasing domestic energy supplies. Oil and natural gas are valuable resources which can provide energy and revenue, as well as the opportunity for improvements to the existing infrastructure of the Cuyler Hill Unit (such as improving safe and restricted access through upgrading existing roads, culverts and gates) and creation of additional early successional habitat which may or may not enhance habitat diversity. As with any other human activity on State lands, oil and natural gas exploration and development can impact the environment. Most impacts are short term and occur during the siting and drilling phases of a well. Natural gas is a cleaner energy alternative to other fossil fuels such as coal and diesel fuel.

### **Objective 3.1: Provide a Steady Flow of Forest Products to Generate Income to the State of New York, Raw Materials to the Forest Products Industry, and Create Local Jobs.**

These activities will be managed to limit their impact and protect the important ecological, recreational and water resources on the Unit.

Action 3.1.1: Designate 6,293 acres (88%) on the forests as available for long term forest management and harvesting on a sustainable basis using science-based silvicultural systems and ecosystem management. 5,075 acres (71%) of the Unit will be treated during the planning period. Best Management Practices including appropriate buffers will be employed.

Action 3.1.2: Salvage forest stands that are destroyed or severely damaged by natural events before they lose significant value from decay. Leave some snag trees and coarse woody material.

Action 3.1.3: Sell up to 150 standard cords of firewood to homeowners in the area as a fuel source for home heating.

### **Objective 3.2: Lease Natural Gas Exploration and Development Rights while Protecting Sensitive Areas and Other Management Objectives.**

Action 3.2.1: Allow the State Forests to be leased for natural gas exploration and development while protecting sensitive areas from surface disturbance.

Action 3.2.2: Reduce impacts related to oil and natural gas exploration and development on natural resources and other State Forest goals and objectives.

The Department will manage the surface disturbances associated with oil and natural gas exploration and development to protect sensitive habitats (riparian areas, wetlands, steep slopes, unique ecological communities, rare, threatened or endangered species), cultural resources, and formal recreational trail systems on the forests. Properly planned oil and gas exploration/development will have minimal impact on the early successional/brush, young forest and conifer plantation component at the landscape level.

This plan identifies high use recreational areas, recreational trails, and special ecosystem areas that must be appropriately buffered from oil and natural gas well drilling sites. Developing a well pad may require as much as a 2 to 3 acre clearing, which removes and

compacts the organic soil layer. As such, the original soil profile is altered. The topsoil is replaced during reclamation of the site. Surface runoff from well pad sites could potentially impact surface water quality if not properly filtered and buffered. Construction of well pads on slopes exceeding 15% would require significant additional mitigation measures and therefore are not recommended on the Unit.

To reduce potential conflicts, surface disturbances for oil and gas exploration and well siting will be consistent with the management objectives in this document. The unique impacts associated with oil and gas exploration and development were considered in formulating the actions below. A hierarchical approach was used to focus surface disturbances on the least sensitive areas of the Unit and to exclude the highly sensitive areas. The recommendation of the Division of Lands and Forests is that well density does not exceed one well per 320 acres. Current oil and gas leases for some of the lands in the unit require a drilling pad development plan to be submitted for the Department's approval if the drilling pad density exceeds one drilling pad per 320 acres. Additional well pad development would be required to be compatible with the Oil and Gas exploration and gas exploration hierarchy maps and in consideration of all other goals and objectives of the Plan. Maps depicting this oil and gas exploration hierarchy are included at the end of this document. Exceptions to these tract assessments are possible if additional analysis, protective measures, new technology, or other issues warrant a change in the compatibility status of an area.

Action 3.2.3\*: The hierarchical approach classifies the forests into four categories.

Category A - *Compatible with well pad, road, and utility development*. Defined as areas compatible for pipelines, access roads, and associated well pad development. These areas include existing shale pits and areas within 250 feet of existing public highways and public forest access roads. These areas are the least sensitive to surface disturbances and should be considered first for well placement to limit the overall impact of road and pipeline development. This category represents about 2,382 acres (34 %) of the Unit's land surface area and is depicted by green on the attached draft UMP comprehensive oil and gas exploration maps. Any areas within this 250 foot zone that have limitations related to soils, slope, streams and wetlands as well as high use recreational areas were excluded from this classification. Also excluded are high canopy forest areas and protected natural areas. The intent is to focus as much of the surface disturbances as possible in this zone to reduce the overall environmental impact.

Category B - *High canopy forest Areas with one well pad per State Forest*. These areas will be managed to maintain or develop a high canopy forest through uneven-aged silvicultural methods. To reduce fragmentation of the canopy and limit disturbance of the soil profile, only one well pad per State Forest will be permitted in this category unless otherwise approved by the Department. Only roads and pipelines servicing category B wells will be permitted. This category represents about 730 acres of the 974 acre high canopy forest area. The remaining portion of the high canopy area is chiefly category D protection area. Category B represents 10 % of the State Forest land area and is depicted by orange on the draft UMP comprehensive oil and gas exploration maps located at the end of this document.

Category C - 250-foot stream and **designated recreational trail** buffers. *Not compatible with well pad development; may be compatible with road and utility development.* This category includes the following:

- streams and a 250-foot buffer along them
- designated and signed recreational trails and a 500-foot buffer along them

This category represents about 742 acres (10 %) of the State Forest land area and is depicted by red slashes on the draft UMP comprehensive oil and gas exploration maps located at the end of this document.

Category D - *Protection areas. Not compatible with well pad, road, or utility development.* This category includes:

- wetlands and a 250-foot buffer around them
- slope greater than 15%
- archeological and Cultural concerns
- rare and Endangered Species (Natural Heritage database occurrences)
- ponds and a 250-foot buffer around them
- Natural Areas not related to buffers and slope
- spring seeps, vernal pools, and an appropriate buffer around them (determined in the field)

Category D represents 3,284 acres (46 %) of the Unit's State Forest land area and is depicted by red shading on the draft UMP comprehensive oil and gas exploration maps located at the end of this document.

Action 3.2.4\*\*: Permit utilities (pipelines) for the extraction and transport of natural gas.

Utilities (pipelines) associated with gas well sites should parallel existing public highways and existing public forest access roads whenever possible. Pipelines along public highways and public State Forest access roads (PFARs) are not subject to the same hierarchy as surface disturbances and well siting. Pipeline siting will be reviewed on a case-by-case basis prior to well siting. A Temporary Revocable Permit (TRP) will be required to construct pipelines on the State Forests in the Unit.

Action 3.2.5\*\*: New road development or rehabilitation. Any new roads built to access well sites will be located in consideration of the hierarchy established above with the intent of protecting the resource and limiting their impact on other uses of the forest. Placement of these roads in the Unit will be reviewed and approved by Department foresters on a case-by-case basis. As such, a Temporary Revocable Permit (TRP) will be required for any road construction.

**\* Note 1:** Where criteria for these categories overlap, the most restrictive classification was applied.

**\*\* Note 2:** The Department will allow access to State Forest land in the Unit from adjacent private lands when access is required to drill or develop wells and associated infrastructure. This will only be permitted when written permission is provided from the private landowner



granting access. The lessee will be required to build a gate to Department specifications at the state boundary line and must maintain the gate for the duration of the lease. *Access to private land across State Land will not be permitted.*

**Objective 3.3: Provide Property Tax Income to Local Governments and Schools.**

Action 3.3.1: The State Forests are subject to town, school, and fire district property taxes, but are exempt from county taxes. State Forest land is taxed at the same rate as private forest land.

**Objective 3.4: Attract Forest-Based Tourism which Creates Spinoff Income and Benefits for Local Businesses.**

Action 3.4.1: Enhance the Department's website to include downloadable trail maps. Produce and make available on the Department's website, downloadable trail maps for Cortland #6 (Cuyler Hill) in 2010, for Cortland #8 (Maxon Creek) in 2012 and for Cortland #16 (Dog Hollow) in 2014.

**GOAL 4: Provide Sound Stewardship of the Three State Forests.**

**Objective 4.1: Protect the Cultural Resources**

Action 4.1.1: Protect stone walls and old foundations.

Stone walls and old foundations on the Unit will be protected during management activities and recreational trail development. Should stone wall disturbances be necessary for access during forest product sales and oil and gas development, the contract or TRP will require that the structures be returned to their pre-impact condition.

**Objective 4.2: Protect the Natural Resources on the State Forests.**

Action 4.2.1: Protect the natural resources from wildfire.

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 Forest Rangers from the Department's Division of Forest Protection and Fire Management.

Action 4.2.2: Protect the natural resources from insects, disease, and **invasive species**.

The protection of resources from injurious insects, diseases and invasive exotic (non-native) species will be accomplished through a program of integrated pest management. This program includes elements of reconnaissance, analysis, and determination of thresholds and controls when necessary, emphasizing natural methods. Forest management activities have been designed to promote a wide diversity of tree species and forest structure. Diverse forests are more resilient to insect and disease attacks.

Aerial detection flights will be conducted annually to identify significant insect and disease problems. On the ground follow-up will be conducted when problems are identified.

The application of control methods will be determined using **Integrated Pest Management (IPM)**. IPM is a science-based decision-making process that guides land managers when investigating a pest situation. The IPM approach determines the most appropriate and cost

effective management solution for the specific pest situation. IPM includes identification of the pest, understanding the use and significance of a site or the importance of protecting unique resources, and education of the people involved. IPM also establishes pest tolerance levels and monitoring protocols. Then, with the help of technical experts and on a case-by-case basis, DEC foresters develop an effective, site specific and low risk strategy to manage the pest. This includes altering conditions which attracted pests to the site in the first place. IPM often involves changing human behavior as well.

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

- **Silvicultural Remedies**  
Changes in forest composition and structure may create conditions that are less favorable to some invasive species.
- **Hunting**  
Invasive and nuisance species can be kept in balance within the ecosystem by applying hunting as addressed within the Deer Management section of this plan.
- **Mechanical Control**  
Digging, pulling or cutting may be effective in altering site conditions to control invasives and directly controlling some plant species.
- **Grazing**  
Although many invasive plants may be resistant to applied scientific grazing, this method may be appropriate for some species. Grazing on State Forest lands would require the availability of an agricultural partner along with staff and funding resources.
- **Biological Control**  
Biological control is the science of reconnecting invasive plants with the specialized natural enemies that often limit their density in their native ranges. The U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) is responsible for controlling introductions of species brought into the United States for biological control of plants, in accordance with the requirements of several plant quarantine laws, the National Environmental Policy Act, and the Endangered Species Act. Petitions for release of plant biological control agents are judged by a Technical Advisory Committee, which represents the interests of a diverse set of federal and other agencies. Van02\1033 (Van Driesche, et al. 2002)
- **Herbicide Treatment**  
All pesticide/herbicide use will conform to guidelines identified in the Active Forest Management section of the Strategic Plan for State Forest Management.

Action 4.2.3: Protect the natural resources from over browsing by white-tailed deer.

High deer populations can have adverse impacts on forest regeneration and herbaceous plants. Over-browsing by deer can drastically alter biodiversity and change the dynamics of ecosystems. While there is no known impact from white-tailed deer on the Unit at this time, we recognize the need may arise to address deer impacts. In the event that the deer impacts are identified, Department Foresters and Wildlife biologists will work together to alleviate problems. This could range from using fencing to protect a site with a rare plant species, to adjusting the scale of forest management activities, to taking measures to reduce deer numbers on the Unit. If deer population reduction is needed measures seeking to maximize deer harvest through traditional hunting programs would be used and use of the Deer Management Assistance Program (DMAP) would be considered. DMAP provides a mechanism for landowners or managers to boost doe harvests by providing additional antlerless tags valid only on designated lands.

Quality Deer Management (QDM) is slowly becoming an accepted method of deer management. Many private landowners, clubs and several States across the country have adopted QDM or some variation of QDM. There are no plans to implement QDM on DEC lands in Wildlife Management Area 7M at this time.

Action 4.2.4: Protect the natural resources from damage by beavers.

The colonization of a site by beavers results in the flooding of an area. This on occasion can inundate sites with rare plants or other rare habitat features. Beavers can also cause flooding damage to adjoining property owners, recreational trails and roads. Currently there are no known sites where beaver have damaged adjoining property owners, rare plants or other rare habitat features. However, there are two sites in the Unit where beavers have caused damage to roads in the past. In many cases flooding by beavers enhances biodiversity. Ponds created by beavers can provide valuable habitat for amphibians, aquatic insects, fish and waterfowl, and provide water for a variety of wildlife. Therefore, the Department will only look to control beaver numbers in sensitive areas and areas that would adversely impact adjoining property owners, recreational trails and roads. Recreational trapping is a valuable tool in beaver population control. However, reduced popularity in trapping and fluctuations in the markets for beaver fur have caused an overall reduction in recreational trapping. If recreational trapping is not effective in controlling beaver populations on the Unit, the Department may obtain an Article 11 permit and hire a nuisance wildlife trapper to remove problem beavers.

**Objective 4.3: Prevent Illegal Activities on the State Forests.**

Action 4.3.1: Maintain patrols and enforcement on the State Forests.

Communicate closely with Forest Rangers and Conservation Officers to maintain patrols and enforcement on the Unit on a regular basis. Encourage the public to provide specific information on any illegal activities they observe.

Action 4.3.2: Install barriers to restrict illegal use by four-wheel drive and all terrain vehicles.

Illegal ATV (all terrain vehicle) and 4x4 use is a problem on Cortland #6 (Cuyler Hill), Cortland #8 (Maxon Creek) and Cortland #16 (Dog Hollow). This has resulted in erosion and environmental degradation. Litter and conflicts with other users are additional problems that have been encountered. Old skid trails that have been illegally used for off road access to the Unit will be blocked with large rocks in conjunction with forest products sales. Some of the illegal use by four-wheel drive and all terrain vehicles has been addressed and mitigation work completed in conjunction with forest product sales. Annual inspections to assess the damage done by illegal use will be conducted. Measures needed to mitigate damage done by illegal use and prevent further illegal use will continue to be carried out through trade-off work in conjunction with forest product sales, or through work projects by the DEC's Division of Operations.

**Objective 4.4: Maintain Public Forest Access Roads, Access Trails, Haul Roads and Parking Areas.**

The public forest access road system exists to provide reasonable vehicular access throughout the State Forests for management activities and recreational purposes. Well-maintained roads are important for safe, enjoyable vehicular travel. Periodic maintenance activities include road grading, culvert cleaning, mowing, and replacement of culverts and signs.

Access trails are not built to public forest access road standards. They endure less travel and therefore, require maintenance sufficient only to keep the road passable unless scheduled for an upgrade. Haul roads used at the time of forest product sales are maintained during forest product sales.

Action 4.4.1: Maintain 9.6 miles of existing public forest access roads and one parking area.

Roads will be graded, shoulders mowed, culvert catch basins cleaned and culvert head walls repaired every three years. Roads and parking areas will be resurfaced as outlined in the project and estimated cost table.

Roads and parking areas may be resurfaced by contractors during timber harvests in lieu of payment. To maintain water quality standards, all road maintenance activities on State Forests including but not limited to, ditch cleaning, stream bank stabilization and culvert replacement, will be done in accordance with Bureau of Fisheries/Bureau of Habitat guidelines or as described in "New York Guidelines for Urban Erosion and Sediment Control."

**Objective 4.5: Maintain Boundary Lines to Prevent Timber Theft and Encroachment.**

Timber theft is a real threat to the proper management of public lands. Properly marked and maintained boundary lines are a significant deterrent to trespass and theft. Periodic maintenance of 43.6 miles of boundary lines on the State Forests and surveying, when necessary, will maintain the integrity of the property lines.

Action 4.5.1: Post State Forest signs every 0.1 mile along boundary lines and public roads passing through the Unit. Repaint all 43.6 miles of boundary lines. Posting of signs and painting of boundary lines will be done every seven years according to the schedule in the project and cost estimate table.

**Objective 4.6: Acquire Adjacent Land from Willing Sellers.**

Action 4.6.1: It is the intention of the Department to purchase fee title to, or a conservation easement on, parcels that will consolidate State ownership (in-holdings and properties surrounded on three sides by State property), or will protect endangered species or habitat. The purchase of in-holdings, lands that will consolidate boundary lines and lands that connect two or more State Forests will facilitate public and administrative access, reduce management costs and provide larger blocks of undeveloped land on the landscape. The Department will pursue fee title or a conservation easement of unimproved parcels which fit the criteria above, if they are put up for sale by their owner. Purchases will only be made from willing sellers.

**Objective 4.7: Maintain and Repair Impoundments (Dams).**

Action 4.7.1: Maintain two impoundments (dams) on Cortland #6 (Cuyler Hill).

Maintenance includes mowing the dike on an annual basis after August 1<sup>st</sup>, cleaning the drop box, trickle tube, and spillway when necessary. The impoundments will be inspected every five years and necessary repairs and maintenance will be determined at that time. The Department's Bureau of Fisheries will be notified when maintenance activities are planned. At present, no repairs or draw downs are expected.

**Objective 4.8: Maintain usable Shale Pits.**

All five shale pits on the Unit will be blocked to prevent illegal use. The shale pits will be available for future use. Shale from these pits may be used to repair and resurface PFARs, to build and maintain parking lots and to build and maintain recreational trails. Each time a shale pit is used the active face will be restored to a slope of 2:1 upon completion of use. The Regional Mined Land Reclamation Specialist will be notified and given the opportunity to make an assessment of materials that will be extracted to determine if a mined land use permit is required.

Action 4.8.1: Restore 2 shale pits totaling 1.1 acres on Cortland #6, (Cuyler Hill) in 2010. The pits will be restored after mining enough material to repair and resurface 5.8 miles of PFARs.

Action 4.8.2: Restore the .3 acre shale pit on Cortland #6, (Cuyler Hill) in 2012. The pit will be restored after mining enough material to repair and resurface 1.9 miles of PFAR.

Action 4.8.3: Restore .6 acre shale pit on Cortland #8, (Maxon Creek) in 2016. The pit will be restored after mining enough material to repair and resurface 1 mile of PFAR.

Action 4.8.4: Restore .7 acre shale pit on Cortland #16, (Dog Hollow) in 2016. The pit will be restored after mining enough material to repair and resurface .9 miles of PFAR.

If the Department proposes future mineral resource extraction within the unit, the Regional Forester, Operations Supervisor and Mined Land Reclamation Specialist will determine if a mined land reclamation permit is required before excavation begins. If it is determined that proposed annual extraction requirements will be above present Mined Land Reclamation Law thresholds, then a mining and reclamation permit application will be prepared and submitted to the Regional Mined Land Reclamation Specialist for review and approval before any excavation takes place.

If it is so determined that a mined land reclamation permit is not required, but mineral resources will be extracted for infrastructure maintenance and construction necessitated by the Department, then the basic mining and reclamation standards will be followed as recommended by the Division of Mineral Resources. These recommendations are outlined in Appendix XIII.

If extraction takes place at any level within the Unit, the site location will be identified on the State Forest inventory mosaic and will be incorporated into the UMP.

## XV. MANAGEMENT ACTION SCHEDULES

Maps of existing and proposed management directions are included in Appendix XVI.

### A. Key to Land Management Action Schedules

The following table presents the 20-year schedule of planned management actions referenced by stand number and time of management. Maps showing the specific stand locations are available for viewing at the Department's Cortland office. Abbreviations used in the management table are listed below.

*Please note:* Stand acreages in the following tables were generated by geographical information system (GIS) computations which potentially could vary as much as 1.5% from land record or deed acreages. These differences could be caused by cumulative errors in deed or GIS calculations, and/or rounding errors. This slight variation does not affect management decision making.

<b><u>State Forest Codes:</u></b>	<b><u>Definition:</u></b>
Cortland 6	Cuyler Hill State Forest
Cortland 8	Maxon Creek State Forest
Cortland 16	Dog Hollow State Forest

<b><u>Forest Type Codes:</u></b>	<b><u>Definition:</u></b>
10	Natural: Northern Hardwood
11	Natural: Northern Hardwood-Hemlock
12	Natural: Northern Hardwood-White Pine
14	Natural: <b>Pioneer</b> Hardwood
15	Natural: Swamp Hardwood
17	Natural: Black Locust
20	Natural: Hemlock
32	Natural: Other
40	Plantation: Red Pine
41	Plantation: White Pine
42	Plantation: Scotch Pine
45	Plantation: Norway Spruce
46	Plantation: White Spruce
47	Plantation: Japanese Larch
48	Plantation: European Larch

**Forest Type Codes:****Definition:**

49	Plantation: White Cedar
54	Plantation: Miscellaneous Pure Species
60	Plantation: Red Pine-White Pine
61	Plantation: Red Pine-Spruce
62	Plantation: Red Pine-Larch
64	Plantation: White Pine-Larch
65	Plantation: Scotch Pine-Spruce
67	Plantation: Larch-Spruce
68	Plantation: Bucket Mix
70	Plantation: Pine-Natural Species
71	Plantation: Spruce-Natural Species
97	Natural: Seedling-Sapling
99	Non-forest

**Size Class:****Definition:**

S-S	Seedling-Sapling; trees up to 5" diameter at breast height
PT	Poletimber; trees 6"-11" diameter at breast height
SST	Small Sawtimber; trees 12"-17" diameter at breast height
MST	Medium Sawtimber; trees 18"-23" diameter at breast height
LST	Large Sawtimber; trees 24" & larger diameter at breast height

**Management Codes:****Definition:**

EA	Even-aged
EAES	Even-aged Early Successional 60 Year Rotation
EASR	Even-aged Silvicultural Research
EUA	Even-aged or Uneven-aged
NA	Natural Area
PA	Protection Area
UAHC	Uneven-aged High Canopy Forest
UA	Uneven-aged
UASR	Uneven-aged Silvicultural Research



**Treatment Codes:****Definition:**

TAT	<b>Apple Tree Release</b> for Wildlife
TBM	Brush hog/mow
TCT	Intermediate Commercial Thinning
TG	Group Selection
TGST	Single Tree and Group Selection
TNO	No Treatment Recommended
TR	Regeneration Cuts for Wildlife
TS	Salvage
TSS	Shelterwood/Seed Tree Cut
TST	Single Tree Selection

**Treatment Period:****Years:**

A	2010-2014
B	2015-2019
C	2020-2024
D	2025-2029

**B. Land Management Action Schedule**  
***Cortland #6 Cuyler Hill State Forest***

State Forest	Stand	Acres	Forest Type	Size Class	Manage.	Treat.	Treat. Period	Treat. Acres
Cortland 6	A-1.1	16	32	SST	UA	TNO		
Cortland 6	A-1.2	7	32	PT	UA	TGST	D	7
Cortland 6	A-2.1	39	47	SST	EAES	TR	A&D	20
Cortland 6	A-2.2	2	40	PT	EAES	TNO		
Cortland 6	A-2.3	3	47	SST	EAES	TNO		
Cortland 6	A-3.1	4	99	-	EA	TNO		
Cortland 6	A-3.2	8	46	PT	EAES	TAT	D	8
Cortland 6	A-3.3	5	99	-	PA	TNO		
Cortland 6	A-4	31	97	S-S	EAES	TNO		
Cortland 6	A-5.1	7	11	SST	UA	TGST	D	7
Cortland 6	A-5.2	5	11	SST	NA	TNO		

State Forest	Stand	Acres	Forest Type	Size Class	Manage.	Treat.	Treat. Period	Treat. Acres
Cortland 6	A-6.1	47	10	SST	UA	TGST	D	47
Cortland 6	A-6.2	1	99	-	PA	TNO		
Cortland 6	A-7	8	47	PT	EA	TCT	D	8
Cortland 6	A-8.1	9	10	SST	UA	TGST	A	9
Cortland 6	A-8.2	3	99	-	PA	TNO		
Cortland 6	A-9.1	5	11	SST	UA	TGST	C	5
Cortland 6	A-9.2	10	10	SST	UA	TGST	C	10
Cortland 6	A-10	2	10	SST	UA	TGST	A	2
Cortland 6	A-11	11	46	PT	UA	TNO		
Cortland 6	A-12	34	67	SST	EUA	TCT	C	34
Cortland 6	A-13	5	47	SST	EA	TR	C	5
Cortland 6	A-14.1	12	10	PT	EAES	TR	A	6
Cortland 6	A-14.2	10	10	PT	UA	TGST	A	10
Cortland 6	A-14.3	9	40	PT	EAES	TR	C	9
Cortland 6	A-15	34	45	SST	EUA	TCT	D	34
Cortland 6	A-16	26	71	PT	EA	TCT	C	26
Cortland 6	A-17	9	10	SST	UA	TGST	A	9
Cortland 6	A-18.1	9	11	SST	UA	TGST	A	9
Cortland 6	A-18.2	8	11	SST	NA	TNO		
Cortland 6	A-19	6	10	SST	NA	TNO		
Cortland 6	A-20	2	99	-	PA	TNO		
Cortland 6	A-21.1	5	42	PT	EAES	TR	A	5
Cortland 6	A-21.2	10	40	PT	EAES	TR	D	10
Cortland 6	A-21.3	14	42	S-S	EAES	TR	A	14
Cortland 6	A-21.4	8	40	PT	EAES	TR	D	8
Cortland 6	A-21.5	2	40	PT	EAES	TR	D	2
Cortland 6	A-21.6	3	40	PT	EAES	TR	A	3
Cortland 6	A-21.7	17	42	SST	EAES	TR	A	17
Cortland 6	A-21.8	2	40	PT	EAES	TR	A	2

<b>State Forest</b>	<b>Stand</b>	<b>Acres</b>	<b>Forest Type</b>	<b>Size Class</b>	<b>Manage.</b>	<b>Treat.</b>	<b>Treat. Period</b>	<b>Treat. Acres</b>
Cortland 6	A-21.9	2	40	PT	EAES	TR	D	2
Cortland 6	A-22.1	17	11	SST	UA	TGST	C	17
Cortland 6	A-22.2	7	32	SST	EAES	TR	A	7
Cortland 6	A-22.3	8	32	SST	PA	TNO		
Cortland 6	A-23.1	4	32	PT	UA	TGST	A	4
Cortland 6	A-23.2	4	10	SST	NA	TNO		
Cortland 6	A-23.3	1	97	S-S	EAES	TAT/TBM	A	1
Cortland 6	A-23.4	3	32	SST	EAES	TAT	A	3
Cortland 6	A-23.5	4	32	PT	EAES	TAT/TBM	A	4
Cortland 6	A-24	8	10	SST	UA	TGST	A	8
Cortland 6	A-25	6	40	SST	EAES	TR	A	6
Cortland 6	A-26.1	12	47	SST	EAES	TR	D	6
Cortland 6	A-26.2	2	32	SST	EAES	TR	A	2
Cortland 6	B-1.1	28	45	SST	EUA	TCT	D	28
Cortland 6	B-1.2	5	45	SST	NA	TNO		
Cortland 6	B-2	5	11	SST	UA	TGST	A	5
Cortland 6	B-3.1	6	10	SST	UA	TGST	A	6
Cortland 6	B-3.2	9	47	SST	EAES	TR	B	9
Cortland 6	B-4.1	69	47	SST	EAES	TR	B&D	34
Cortland 6	B-4.2	5	32	PT	EAES	TR	B	5
Cortland 6	B-5	7	11	SST	UA	TGST	A	7
Cortland 6	B-6.1	10	11	SST	NA	TNO		
Cortland 6	B-6.2	12	15	SST	NA	TNO		
Cortland 6	B-7	25	10	SST	UA	TGST	A	25
Cortland 6	B-8	29	11	SST	UA	TGST	A	29
Cortland 6	B-9	38	61	SST	EA	TR	B	10
Cortland 6	B-10.1	16	10	SST	UA	TGST	D	16
Cortland 6	B-10.2	4	11	SST	UA	TGST	D	4
Cortland 6	B-11	21	40	PT	EA	TR	B	11

State Forest	Stand	Acres	Forest Type	Size Class	Manage.	Treat.	Treat. Period	Treat. Acres
Cortland 6	B-12.1	5	42	PT	EA	TCT	B	5
Cortland 6	B-12.2	17	42	PT	EA	TNO		
Cortland 6	B-12.3	5	42	PT	NA	TNO		
Cortland 6	B-13.1	29	40	PT	EAES	TR	B&D	15
Cortland 6	B-13.2	4	11	PT	UA	TGST	D	4
Cortland 6	B-14.1	1	99	-	PA	TNO		
Cortland 6	B-14.2	31	40	SST	EAES	TR	B&D	15
Cortland 6	B-15	20	10	SST	UA	TGST	D	20
Cortland 6	B-16.1	11	11	PT	UA	TGST	D	11
Cortland 6	B-16.2	4	11	PT	NA	TNO		
Cortland 6	B-16.3	2	32	PT	NA	TNO		
Cortland 6	B-17	8	32	PT	UA	TGST	A	8
Cortland 6	B-18.1	35	67	PT	EAES	TR	B&D	18
Cortland 6	B-18.2	7	32	PT	NA	TNO		
Cortland 6	B-19	3	45	PT	EUA	TCT	B	3
Cortland 6	B-20.1	65	45	SST	EUA	TCT	C	65
Cortland 6	B-20.2	8	97	S-S	EA	TNO		
Cortland 6	B-21	12	10	PT	UA	TGST	A	12
Cortland 6	C-1	25	67	SST	EUA	TR	B	6
Cortland 6	C-2	11	68	PT	UA	TST	C	11
Cortland 6	C-3	10	10	PT	UA	TST	A	10
Cortland 6	C-4	34	10	PT	UA	TGST	C	34
Cortland 6	C-5	11	68	PT	EAES	TR	A&D	5
Cortland 6	C-6	33	32	PT	PA	TAT	A	10
Cortland 6	C-7	16	10	PT	UASR	TST	A	16
Cortland 6	C-8.1	6	10	PT	UAHC	TST	A	6
Cortland 6	C-8.2	16	11	PT	NA	TNO		
Cortland 6	C-8.3	5	32	PT	UAHC	TR	B	5
Cortland 6	C-9.1	5	10	PT	EUA	TNO		

State Forest	Stand	Acres	Forest Type	Size Class	Manage.	Treat.	Treat. Period	Treat. Acres
Cortland 6	C-9.2	7	32	PT	UAHC	TNO		
Cortland 6	C-9.3	5	40	SST	PA	TNO		
Cortland 6	C-10.1	10	32	PT	UAHC	TST	A	10
Cortland 6	C-10.2	7	71	PT	UAHC	TST	B	7
Cortland 6	C-11	10	11	SST	NA	TNO		
Cortland 6	C-12	11	10	PT	UAHC	TST	C	11
Cortland 6	C-13	180	10	SST	UAHC	TST	C	180
Cortland 6	C-14	12	10	PT	UAHC	TST	C	12
Cortland 6	C-15	7	10	PT	UAHC	TST	C	7
Cortland 6	C-16	6	32	PT	PA	TNO		
Cortland 6	C-17	10	32	PT	UAHC	TST	B	10
Cortland 6	C-18	66	10	PT	UAHC	TST	C	66
Cortland 6	C-19	41	10	PT	UASR	TST	C	41
Cortland 6	C-20	17	10	PT	UAHC	TST	C	17
Cortland 6	C-21	5	10	SST	NA	TNO		
Cortland 6	C-22	16	54	PT	UAHC	TST	A	16
Cortland 6	C-23	115	45	SST	UAHC	TST	A	115
Cortland 6	C-24	23	10	SST	UAHC	TST	C	23
Cortland 6	C-25	17	61	SST	UAHC	TST	A	17
Cortland 6	C-26	13	32	PT	PA	TAT	B	13
Cortland 6	C-27	7	10	S-S	UAHC	TST	C	7
Cortland 6	C-28.1	9	10	SST	UAHC	TST	A	9
Cortland 6	C-28.2	7	10	SST	NA	TNO		
Cortland 6	C-29	8	61	SST	UAHC	TST	A	8
Cortland 6	C-30	12	61	SST	EUA	TCT	A	12
Cortland 6	C-31	21	61	SST	EAES	TR	A&D	10
Cortland 6	C-32.1	12	17	PT	EUA	TAT	C	12
Cortland 6	C-32.2	3	32	PT	EA	TAT	A	3
Cortland 6	C-33.1	15	10	SST	UAHC	TST	A	15

State Forest	Stand	Acres	Forest Type	Size Class	Manage.	Treat.	Treat. Period	Treat. Acres
Cortland 6	C-33.2	5	10	SST	UAHC	TST	A	5
Cortland 6	C-34	9	10	PT	UAHC	TST	A	9
Cortland 6	D-1	8	15	SST	UA	TGST	C	8
Cortland 6	D-2	23	45	SST	EUA	TCT	D	23
Cortland 6	D-3	1	97	S-S	EASR	TNO		
Cortland 6	D-4	6	40	PT	EAES	TR	A	6
Cortland 6	D-5.1	36	45	PT	EA	TCT	D	36
Cortland 6	D-5.2	1	45	PT	EA	TCT	C	1
Cortland 6	D-6.1	5	47	PT	EAES	TR	C	5
Cortland 6	D-6.2	4	47	PT	EAES	TR	D	4
Cortland 6	D-6.3	10	47	PT	EAES	TR	D	10
Cortland 6	D-7	6	47	PT	EAES	TBM/TR	D	6
Cortland 6	D-8.1	3	45	PT	EUA	TCT	A	3
Cortland 6	D-8.2	2	45	PT	EUA	TCT	A	2
Cortland 6	D-9	9	10	SST	UA	TGST	A	9
Cortland 6	D-10.1	4	10	SST	UA	TGST	D	4
Cortland 6	D-10.2	4	10	PT	UA	TGST	C	4
Cortland 6	D-11.1	10	10	SST	UA	TGST	A	10
Cortland 6	D-11.2	8	10	SST	NA	TNO		
Cortland 6	D-11.3	23	10	SST	UA	TGST	A	23
Cortland 6	D-12.1	3	32	S-S	EAES	TAT	A	3
Cortland 6	D-12.2	5	14	PT	EAES	TR	A	5
Cortland 6	D-12.3	8	32	PT	PA	TNO		
Cortland 6	D-13.1	7	10	SST	UA	TGST	A	7
Cortland 6	D-13.2	13	32	PT	NA	TNO		
Cortland 6	D-14	20	45	SST	EUA	TNO		
Cortland 6	D-15.1	46	45	SST	EA	TR	D	12
Cortland 6	D-15.2	9	61	SST	EUA	TCT	C	9
Cortland 6	D-16	13	32	PT	UA	TGST	D	13

State Forest	Stand	Acres	Forest Type	Size Class	Manage.	Treat.	Treat. Period	Treat. Acres
Cortland 6	D-17	13	45	SST	EUA	TNO		
Cortland 6	D-18	3	10	PT	UA	TGST	A	3
Cortland 6	D-19	13	10	PT	UA	TGST	D	13
Cortland 6	D-20.1	11	47	SST	EA	TCT	C	11
Cortland 6	D-20.2	7	32	PT	PA	TAT	B	4
Cortland 6	D-20.3	8	47	SST	EA	TR	C	8
Cortland 6	D-21	10	11	MST	NA	TNO		
Cortland 6	D-22.1	61	67	SST	EAES	TR	A&D	30
Cortland 6	D-22.2	4	64	PT	EUA	TCT	A	4
Cortland 6	D-22.3	10	64	SST	EA	TR	A&D	5
Cortland 6	D-23.1	2	14	PT	EAES	TR	B	2
Cortland 6	D-23.2	5	10	SST	UA	TGST	C	5
Cortland 6	D-24	4	65	SST	EA	TR	A	4
Cortland 6	E-1	8	11	SST	NA	TNO		
Cortland 6	E-2	13	32	SST	PA	TAT	A	5
Cortland 6	E-3.1	2	47	SST	PA	TNO		
Cortland 6	E-3.2	4	47	SST	EA	TCT	C	4
Cortland 6	E-4	10	40	PT	EAES	TR	A	10
Cortland 6	E-5	14	46	SST	EA	TR	A&D	7
Cortland 6	E-6.1	26	10	PT	EUA	TNO		
Cortland 6	E-6.2	4	40	SST	NA	TNO		
Cortland 6	E-7.1	27	11	SST	NA	TNO		
Cortland 6	E-7.2	4	32	PT	EUA	TCT	A	4
Cortland 6	E-8.1	74	10	SST	UA	TGST	C	74
Cortland 6	E-8.2	6	10	PT	UA	TGST	C	6
Cortland 6	E-9.1	10	40	SST	EA	TSS	A	10
Cortland 6	E-9.2	3	10	SST	UA	TGST	C	3
Cortland 6	E-9.3	10	61	SST	EAES	TR	A&D	5
Cortland 6	E-10	94	67	SST	EAES	TR	A&D	47

State Forest	Stand	Acres	Forest Type	Size Class	Manage.	Treat.	Treat. Period	Treat. Acres
Cortland 6	E-11.1	17	10	SST	UA	TGST	C	17
Cortland 6	E-11.2	12	10	SST	NA	TNO		
Cortland 6	E-12.1	18	10	SST	UA	TGST	C	18
Cortland 6	E-12.2	93	10	SST	UA	TGST	C	93
Cortland 6	E-12.3	55	10	MST	EASR	TSS	C	55
Cortland 6	E-12.4	38	10	MST	EASR	TCT	C	38
Cortland 6	E-12.5	4	32	SST	UA	TGST	C	4
Cortland 6	E-13.1	28	10	MST	UASR	TGST	A	28
Cortland 6	E-13.2	17	11	SST	NA	TNO		
Cortland 6	F-1	30	61	SST	EA	TCT	A	15
Cortland 6	F-2.1	5	32	PT	EAES	TAT	B	5
Cortland 6	F-2.2	14	32	PT	EAES	TAT	A	14
Cortland 6	F-3	6	67	SST	EA	TCT	B	6
Cortland 6	F-4	54	45	SST	EAES	TNO		
Cortland 6	F-5	17	32	SST	UA	TGST	B	17
Cortland 6	F-6.1	40	68	SST	EAES	TNO		
Cortland 6	F-6.2	15	62	SST	EAES	TR	A&D	7
Cortland 6	F-6.3	17	62	SST	EAES	TR	A&D	8
Cortland 6	F-6.4	3	70	PT	EUA	TNO		
Cortland 6	F-7	13	61	SST	EUA	TCT	A	13
Cortland 6	F-8.1	87	61	SST	EA	TR	A&D	44
Cortland 6	F-8.2	2	97	S-S	EUA	TNO		
Cortland 6	F-9	7	10	SST	UA	TGST	C	7
Cortland 6	F-10.1	6	45	SST	EUA	TCT	A	6
Cortland 6	F-10.2	12	71	SST	EUA	TCT	B	12
Cortland 6	F-11	37	32	SST	NA	TNO		
Cortland 6	F-12.1	235	10	SST	UASR	TGST	B	235
Cortland 6	F-12.2	20	10	SST	PA	TNO		
Cortland 6	F-12.3	13	10	S-S	EUA	TNO		



State Forest	Stand	Acres	Forest Type	Size Class	Manage.	Treat.	Treat. Period	Treat. Acres
Cortland 6	F-13	12	32	PT	EUA	TCT	B	12
Cortland 6	F-14	46	10	SST	UA	TGST	A	46
Cortland 6	F-15	10	10	PT	UA	TGST	B	10
Cortland 6	G-1	10	10	S-S	EASR	TNO		
Cortland 6	G-2	6	10	SST	EUA	TCT	A	6
Cortland 6	G-3	6	68	MST	EAES	TR	D	6
Cortland 6	G-4.1	43	32	PT	EASR	TR	D	
Cortland 6	G-4.2	70	62	SST	EAES	TR	B&D	35
Cortland 6	G-5	23	67	SST	EA	TCT	B&D	14
Cortland 6	G-6	23	32	PT	PA	TAT	B	5
Cortland 6	G-7	28	62	SST	EAES	TR	B&D	14
Cortland 6	G-8	8	10	S-S	EUA	TNO		
Cortland 6	G-9	25	45	SST	EUA	TCT	B	25
Cortland 6	G-10	9	10	SST	UA	TGST	D	9
Cortland 6	G-11	31	45	SST	EA	TR	D	8
Cortland 6	G-12.1	15	67	S-S	EUA	TCT	D	15
Cortland 6	G-12.2	4	10	PT	EUA	TCT	D	4
Cortland 6	G-12.3	3	67	SST	EUA	TNO		
Cortland 6	G-13.1	11	32	PT	EUA	TNO		
Cortland 6	G-13.2	40	10	PT	UA	TGST	C	40
Cortland 6	G-14	12	62	PT	EA	TCT	C	12
Cortland 6	G-15	30	45	SST	EA	TR	D	8
Cortland 6	G-16	9	10	PT	UA	TGST	D	9
Cortland 6	G-17	18	61	SST	EA	TR	D	4
Cortland 6	G-18	36	10	PT	UA	TGST	B	36
Cortland 6	G-19.1	10	67	PT	EAES	TNO		
Cortland 6	G-19.2	4	99	S-S	EAES	TBM	A	4
Cortland 6	G-20	24	10	PT	UA	TGST	B	24
Cortland 6	G-21	37	10	SST	UA	TGST	B	37

State Forest	Stand	Acres	Forest Type	Size Class	Manage.	Treat.	Treat. Period	Treat. Acres
Cortland 6	G-22.1	45	45	PT	EA	TCT	C	45
Cortland 6	G-22.2	6	47	PT	EAES	TR	B	6
Cortland 6	H-1.1	22	10	SST	UASR	TGST	D	22
Cortland 6	H-1.2	32	10	SST	UA	TGST	D	32
Cortland 6	H-1.3	17	10	MST	EASR	TR	D	4
Cortland 6	H-1.4	14	10	SST	EASR	TR	B	3
Cortland 6	H-1.5	24	10	SST	UA	TGST	D	24
Cortland 6	H-2.1	32	10	SST	UA	TGST	D	32
Cortland 6	H-2.2	3	10	SST	NA	TNO		
Cortland 6	H-3.1	2	97	-	EAES	TBM	A	2
Cortland 6	H-3.2	4	99	S-S	EA	TI	A	4
Cortland 6	H-3.3	10	97	S-S	EUA	TNO		
Cortland 6	H-4.1	19	45	SST	EUA	TCT	A	19
Cortland 6	H-4.2	3	45	SST	EUA	TCT	A	3
Cortland 6	H-5.1	15	10	SST	UA	TGST	D	15
Cortland 6	H-5.2	2	62	SST	EUA	TCT	A	2
Cortland 6	H-6	26	10	PT	UA	TGST	D	26
Cortland 6	H-7	8	32	PT	PA	TNO		
Cortland 6	H-8	13	10	SST	NA	TNO		
Cortland 6	H-9	36	10	SST	UA	TGST	D	36
Cortland 6	H-10	16	67	SST	EA	TCT	B	16
Cortland 6	H-11	11	32	PT	EA	TCT	D	11
Cortland 6	H-12	26	10	SST	UA	TGST	D	26
Cortland 6	H-13	7	54	PT	EA	TCT	B	7
Cortland 6	H-14.1	24	41	PT	EAES	TR	A&D	12
Cortland 6	H-14.2	10	60	SST	EAES	TR	A	10
Cortland 6	H-15	10	10	PT	EUA	TCT	C	10
Cortland 6	H-16	12	71	PT	EA	TCT	A	12
Cortland 6	H-17.1	9	10	SST	EUA	TCT	B	9

State Forest	Stand	Acres	Forest Type	Size Class	Manage.	Treat.	Treat. Period	Treat. Acres
Cortland 6	H-17.2	3	10	PT	NA	TNO		
Cortland 6	H-18	7	40	SST	EUA	TCT	A	7
Cortland 6	H-19	23	10	SST	EUA	TCT	B	23
Cortland 6	H-20.1	4	10	S-S	NA	TNO		
Cortland 6	H-20.2	17	32	S-S	PA	TAT	A	6
Cortland 6	H-21.1	8	47	PT	EA	TCT	B	6
Cortland 6	H-21.2	1	97	S-S	EAES	TBM	A	1
Cortland 6	H-21.3	4	47	SST	EA	TCT	B	4
Cortland 6	H-22	11	14	PT	NA	TNO		
Cortland 6	H-23	6	46	PT	EA	TCT	B	6
Cortland 6	H-24	16	45	PT	EUA	TCT	A	16
Cortland 6	H-25.1	11	10	PT	UA	TGST	D	11
Cortland 6	H-25.2	3	10	SST	EA	TCT	A	3
Cortland 6	H-26	12	42	SST	EAES	TNO		
Cortland 6	I-1.1	30	47	SST	EA	TR	B	8
Cortland 6	I-1.2	6	97	S-S	EAES	TNO		
Cortland 6	I-1.3	18	62	SST	EAES	TR	B&D	9
Cortland 6	I-1.4	14	97	S-S	EAES	TNO		
Cortland 6	I-2	3	99	S-S	PA	TNO		
Cortland 6	I-3	5	10	SST	UA	TGST	A	5
Cortland 6	I-4	31	70	SST	EA	TCT	B	31
Cortland 6	I-5	28	45	SST	EA	TCT	A	28
Cortland 6	I-6	10	10	PT	UA	TGST	D	10
Cortland 6	I-7.1	27	10	SST	UA	TGST	A	27
Cortland 6	I-7.2	18	10	PT	UA	TGST	D	18
Cortland 6	I-8	15	32	SST	EUA	TCT	C	15
Cortland 6	I-9.1	4	70	PT	EAES	TAT/TBM	D	4
Cortland 6	I-9.2	4	99	PT	EAES	TAT/TBM	C	4
Cortland 6	I-10	18	47	SST	EAES	TR	B&D	9

State Forest	Stand	Acres	Forest Type	Size Class	Manage.	Treat.	Treat. Period	Treat. Acres
Cortland 6	I-11	32	32	S-S	EA	TNO		
Cortland 6	I-12.1	5	67	PT	EUA	TCT	B	5
Cortland 6	I-12.2	19	32	PT	EAES	TNO		
Cortland 6	I-13	5	10	PT	UA	TGST	B	5
Cortland 6	I-14	24	32	PT	PA	TAT	A	10
Cortland 6	I-15	9	41	SST	EAES	TR	A&D	4
Cortland 6	I-16	14	10	SST	UA	TGST	D	14
Cortland 6	I-17	17	10	PT	UA	TGST	D	17
Cortland 6	I-18	30	67	SST	EA	TSS	A	30
Cortland 6	I-19	15	47	SST	EAES	TR	A&D	8
Cortland 6	I-20	8	32	PT	EAES	TR	A&D	4
Cortland 6	I-21	12	32	SST	UA	TGST	D	12
Cortland 6	I-22	6	10	PT	UA	TGST	A	6
Cortland 6	I-23	42	60	SST	EAES	TR	A	42
Cortland 6	I-24	24	10	SST	UA	TGST	D	24
Cortland 6	I-25	8	45	PT	EUA	TCT	A	8
Cortland 6	I-26	13	32	PT	EUA	TGST	A	13
Cortland 6	I-27	16	10	SST	UA	TGST	D	16
Cortland 6	I-28	42	11	PT	NA	TNO		
Cortland 6	I-29	23	45	PT	EUA	TCT	C	23
Cortland 6	I-30.1	2	14	PT	EAES	TR	D	2
Cortland 6	I-30.2	11	32	S-S	EAES	TR	D	11
Cortland 6	I-31	22	67	SST	EA	TCT	B	22
Cortland 6	I-32	8	10	PT	UA	TGST	D	8
Cortland 6	I-33	7	11	SST	UA	TGST	B	7
Cortland 6	Roads	70						
Cortland 6	S. Pits	3						
Cortland 6		<b>5507</b>						<b>3911</b>

**Cortland #8 Maxon Creek State Forest**

State Forest	Stand	Acres	Forest Type	Size Class	Manage	Treat.	Treat. Period	Treat. Acres
Cortland 8	A-1	13	10	SST	UA	TG	B	13
Cortland 8	A-2	42	71	PT	EAES	TR	B&D	21
Cortland 8	A-3	18	11	PT	NA	TNO		
Cortland 8	A-4	6	15	PT	EAES	TR	B	6
Cortland 8	A-5	7	45	PT	EA	TCT	C	7
Cortland 8	A-6	5	61	SST	EA	TCT	D	5
Cortland 8	A-7	17	45	SST	EA	TCT	D	17
Cortland 8	A-8	12	45	SST	EA	TCT	D	12
Cortland 8	A-9	25	65	S-S	EA	TNO		
Cortland 8	A-10	7	42	PT	UAHC	TST	D	7
Cortland 8	A-11	13	10	SST	UAHC	TST	D	13
Cortland 8	A-12	45	10	PT	UAHC	TST	A	45
Cortland 8	A-13	3	45	PT	UAHC	TST	D	3
Cortland 8	A-14	79	11	SST	NA	TNO		
Cortland 8	A-15	67	10	SST	UAHC	TST	D	67
Cortland 8	A-16	12	10	PT	UAHC	TST	D	12
Cortland 8	A-17	65	10	SST	UAHC	TST	B	65
Cortland 8	A-18	14	11	SST	UAHC	TST	B	14
Cortland 8	A-19	5	10	PT	UAHC	TST	B	5
Cortland 8	A-20	61	71	PT	EA	TSS	C	30
Cortland 8	A-21	8	11	PT	UAHC	TNO		
Cortland 8	A-22.1	10	45	PT	UAHC	TST	D	45
Cortland 8	A-22.2	1	45	PT	NA	TNO		
Cortland 8	A-23	19	71	PT	UAHC	TST	B	19
Cortland 8	A-24	9	10	PT	UAHC	TST	A	9
Cortland 8	A-25	22	67	SST	EA	TR	C	6
Cortland 8	A-26	131	10	SST	EUA	TCT	D	131
Cortland 8	A-27.1	22	10	SST	UA	TG	D	22
Cortland 8	A-27.2	25	10	SST	UA	TG	D	25

State Forest	Stand	Acres	Forest Type	Size Class	Manage	Treat.	Treat. Period	Treat. Acres
Cortland 8	A-28	12	10	PT	UA	TG	D	12
Cortland 8	A-29	6	68	PT	UA	TGST	A	6
Cortland 8	A-30.1	26	45	SST	EUA	TCT	C	26
Cortland 8	A-30.2	3	45	SST	NA	TNO		
Cortland 8	A-31	14	10	PT	EA	TCT	B	14
Cortland 8	A-32	11	61	PT	EAES	TR	C	11
Cortland 8	A-33	4	97	S-S	EAES	TNO		
Cortland 8	A-34	8	11	PT	UA	TGST	B	8
Cortland 8	A-35	7	70	PT	EAES	TR	B	7
Cortland 8	A-36.1	15	97	S-S	EUA	TNO		
Cortland 8	A-36.2	15	11	PT	NA	TNO		
Cortland 8	A-36.3	18	97	S-S	EUA	TNO		
Cortland 8	Roads	5						
Cortland 8	S. Pit	1						
<b>Total</b>		<b>908</b>						<b>683</b>

***Cortland #16 Dog Hollow State Forest***

State Forest	Stand	Acres	Forest Type	Size Class	Manage.	Treat.	Treat. Period	Treat. Acres
Cortland 16	A-1	14	10	SST	UAHC	TST	B	14
Cortland 16	A-2	28	11	SST	NA	TNO		
Cortland 16	A-3	37	10	PT	UAHC	TST	B	37
Cortland 16	A-4	23	48	PT	UAHC	TST	B	23
Cortland 16	A-5	10	71	PT	NA	TNO		
Cortland 16	A-6	4	10	PT	UAHC	TST	C	4
Cortland 16	A-7	1	10	PT	EA	TCT	A	1
Cortland 16	A-8	13	10	PT	EUA	TCT	B	13
Cortland 16	A-9	44	45	SST	EA	TCT	B	44
Cortland 16	A-10	8	45	SST	UA	TGST	D	8
Cortland 16	A-11	3	48	PT	EUA	TCT	B	3

State Forest	Stand	Acres	Forest Type	Size Class	Manage.	Treat.	Treat. Period	Treat. Acres
Cortland 16	A-12	4	32	PT	UA	TGST	D	4
Cortland 16	A-13	2	32	PT	EUA	TCT	B	2
Cortland 16	A-14	1	10	PT	EAES	TR	C	1
Cortland 16	A-15	4	14	PT	EAES	TAT	A	4
Cortland 16	A-16	3	10	PT	UA	TGST	D	3
Cortland 16	A-17	8	48	PT	UA	TGST	D	8
Cortland 16	A-18	9	10	-	PA	TNO		
Cortland 16	A-19	3	10	PT	EUA	TNO		3
Cortland 16	A-20	3	48	PT	EAES	TR	C	3
Cortland 16	A-21	27	10	SST	UA	TGST	D	27
Cortland 16	B-1	35	10	SST	UA	TGST	D	35
Cortland 16	B-2	9	11	SST	UA	TGST	D	9
Cortland 16	B-3	5	99	-	PA	TNO		
Cortland 16	B-4	5	11	PT	NA	TNO		
Cortland 16	B-5	16	99	PT	NA	TNO		
Cortland 16	B-6	8	45	PT	EUA	TCT	B	8
Cortland 16	B-7	10	32	PT	UA	TGST	C	10
Cortland 16	B-8	6	97	S-S	EAES	TNO		
Cortland 16	B-9	20	99	PT	PA	TNO		
Cortland 16	B-10	2	32	PT	EAES	TAT	A	2
Cortland 16	B-11	5	46	PT	EA	TCT	C	5
Cortland 16	B-12	4	46	PT	EA	TCT	C	4
Cortland 16	C-1	7	10	SST	UA	TGST	B	7
Cortland 16	C-2	32	40	SST	EA	TR	C	8
Cortland 16	C-3	40	40	SST	EAES	TR	C	10
Cortland 16	C-4.1	4	97	S-S	EAES	TAT	B&D	2
Cortland 16	C-4.2	9	97	PT	EAES	TAT	B&D	4
Cortland 16	C-5	5	32	PT	UA	TGST	D	5
Cortland 16	C-6	8	32	PT	EAES	TR	B&D	4

<b>State Forest</b>	<b>Stand</b>	<b>Acres</b>	<b>Forest Type</b>	<b>Size Class</b>	<b>Manage.</b>	<b>Treat.</b>	<b>Treat. Period</b>	<b>Treat. Acres</b>
Cortland 16	C-7	15	47	PT	EAES	TR	B&D	8
Cortland 16	C-8	10	70	PT	EA	TR	A	5
Cortland 16	C-9	6	40	SST	EA	TR	A	3
Cortland 16	C-10	10	41	PT	UA	TGST	A	10
Cortland 16	C-11	16	32	SST	UA	TGST	B	16
Cortland 16	C-12	17	11	SST	NA	TNO		
Cortland 16	C-13	35	68	SST	UA	TGST	B	35
Cortland 16	C-14	32	10	SST	UA	TGST	B	32
Cortland 16	C-15	27	10	SST	EA	TCT	B	27
Cortland 16	C-16.1	2	97	S-S	EAES	TR	A	2
Cortland 16	C-16.2	12	97	PT	EAES	TR	A&D	6
Cortland 16	C-17	3	45	PT	EAES	TCT	C	3
Cortland 16	C-18	12	45	PT	EUA	TCT	A	12
Cortland 16	C-19	29	60	PT	EA	TR	A	7
Cortland 16	Gas Line	4						
Cortland 16	Power Lines	3						
Cortland 16	Roads	9						
Cortland 16	S. Pits	2						
<b>Total</b>		<b>723</b>						<b>481</b>



## XVI. PROJECTS AND ESTIMATED COSTS

Construction projects are not started unless the necessary funds and staffing are assigned to the project. This estimated budget is for variable costs; it does not include wages of permanent employees (Operations, Law Enforcement, Real Property, Forestry). The costs outlined below include seasonal labor costs, materials, and equipment rental.

State Forest	Action	Year/Time Frame	Cost (\$)	L&F Days	Oth. Days
<b>Cort #6</b>	Maintain 7.7 miles of roads, (grade&rake)	2010,2014,2017 2020,2023,2026	46200		62
	Inspect/repair & mow 2 impoundments (every 5 years)	2010, 2013, 2018, 2023	5000		10
	<b>*Forest stand improvement(40 acres)</b>	2010	4000	13	
	*Forest stand improvement (17 acres)	2010	1700	6	
	*Replace culverts & resurface 5.8 mile Cuyler Hill PFAR	2010	232000		90
	Reclaim 1.1 acres of 2 shale pits	2010	2800		4
	Create brochure/map & post on website	2010	400	2	
	Maintain 26.2 miles of boundary line (post signs/repaint every 7 years)	2010,2017, 2024	7900		60
	Maintain 5.8 miles of roads, (grade&rake)	2011	5800		8
	*Forest stand improvement (18 acres)	2011	1800	6	
	*Replace culverts & resurface 1.9 mile Jipson Hill PFAR	2012	76000		30
	Reclaim .3 acre shale pit	2012	1000		2
	*Forest stand improvement (27 acres)	2012	2700	9	
	*Forest stand improvement (13 acres)	2013	1300	4	
	Conduct natural resource inventory	2015	15200	110	
	*Forest stand improvement (12 acres)	2015	1200	4	
	*Forest stand improvement (12 acres)	2016	1200	4	
	*Forest stand improvement (5 acres)	2017	500	2	
	*Forest stand improvement (8 acres)	2021	800	3	
	*Forest stand improvement (44 acres)	2022	4400	15	
	*Forest stand improvement (43 acres)	2024	4300	15	
	*Forest stand improvement (32 acres)	2025	3200	11	

State Forest	Action	Year/Time Frame	Cost (\$)	L&F Days	Oth. Days
	*Forest stand improvement (4 acres)	2027	400	2	
<b>Cort #8</b>	Maintain 1 mile of road, (grade&rake)	2011,2014,2017 2020,2023 & 2026	7000		9
	*Forest stand improvement (42 acres)	2010	4200	14	
	Create brochure/map & post on website	2012	400	2	
	Conduct natural resource inventory	2013	2500	20	
	Maintain 9.6 miles of boundary lines (post signs/repaint every 7 years)	2014,2021	2000		15
	*Forest stand improvement (6 acres)	2015	600	2	
	Reclaim .6 acre shale pit	2016	1500		2
<b>Cort #16</b>	Maintain .9 miles of road, (grade&rake)	2011,2014,2017 2020,2023 & 2026	6500		8
	*Forest stand improvement (15 acres)	2010	1500	5	
	*Forest stand improvement (2 acres)	2010	200	2	
	*Forest stand improvement (4 acres)	2012	400	2	
	Conduct natural resource inventory	2012	1990	15	
	Maintain 7.8 miles of boundary lines (post signs/repaint every 7 years)	2012, 2019& 2026	2400		18
	*Forest stand improvement (14 acres)	2014	1400	5	
	Create brochure/map & post on website	2014	400	2	
	Reclaim .7 acre shale pit	2016	1800		2
<b>Unit wide</b>	Acquire private property from willing sellers at appraised value		1379000		
	Wood product sales, about 254 acres/year	Annually		2180	
	Coordination w/other agencies or divisions	Annually		20	20
	Coordination w/ public user groups	Annually		20	20

<b>State Forest</b>	<b>Action</b>	<b>Year/Time Frame</b>	<b>Cost (\$)</b>	<b>L&amp;F Days</b>	<b>Oth. Days</b>
	Post-harvest inventory	Annually		280	
	Supervision, training & reporting	Annually		40	
	Coordination w/ Law enforcement	Annually		20	20
	Disease Control	Annually	72000	40	20
	Monitor illegal use	Annually	72000	40	20
<b>Total</b>			<b>1977590</b>	<b>2915</b>	<b>420</b>

\* These items in the work schedule will be completed as additional work required in a forest product sales contract wherever feasible.

## XVII. GLOSSARY OF TERMS

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

**Adaptive management** - a dynamic approach to forest management in which the effects of treatments and decisions are continually monitored and used, along with research results, to modify management on a continuing basis to ensure that objectives are being met. (D)

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

**Age class** - trees of a similar size and/or age originating from a single natural event or regeneration activity. see **cohort**. (D)

**Apple tree release** - a management action; the act of removing an overstory of trees and/or competing vegetation that are shading and potentially inhibiting apple tree growth and fruit production. (F)

**Ash decline** - the progressive loss of vigor and health causing the death of ash trees by a combination of factors. Some factors may include diseases, poor soil/sites, cankers, insects, winter injury or drought. (F)

**Basal area** - the cross sectional area, measured in square feet, of a single stem, including the bark, measured at breast height (4½ ft above the ground). (D)

**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. (F)

**Best Management Practices (BMP's)** - a practice or a combination of practices that are designed for the protection of water quality of water bodies and riparian areas, and determined to be the most effective and practicable means of controlling water pollutants. (D)

**Biological diversity (Biodiversity)** - the variety, abundance, and interactions of life forms found in areas ranging in size from local through regional to global. Biodiversity also encompasses processes - both ecological and evolutionary that allow organisms to keep adapting and evolving. Includes genetic diversity (unique combinations of genes found within and among organisms), species diversity (number of species in an area), ecological diversity (organization of species into natural communities and the interplay of these communities

with the physical environment - interactions among organisms and between organisms and their environment is the key here), landscape diversity (refers to the geography of different ecosystems across large areas and the connections between them). (J)

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

**Blowdown/windthrow** - tree or trees felled or broken off by wind. (D)

**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 other vegetative zone to mitigate the impacts of actions on adjacent lands, to enhance aesthetic values, or as a best management practice. (D)

**Clearcut** - a harvesting and regeneration technique that essentially 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. (A) (F)

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

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

**Cohort** - a population of trees that originate after some type of disturbance. (F)

**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. (G)

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

**Conversion** - a change from one silvicultural system to another or from one tree species to another. (D)

**Coppice** - stems originating primarily from vegetative reproduction; e.g. the production of new stems from stumps, roots or branches. see **low forest** (D)

**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. (D)

**Cover type** - plant species forming a majority of composition across a given area. (D)

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

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

**Cutting interval** - the number of years between treatments in a stand. (F)

**Deciduous** - tree and shrub species that lose their leaves or needles in autumn. (F)

**Defoliation** - the partial or complete loss of leaves or needles, usually caused by an insect, disease, or drought. (F)

**Den tree** - a tree containing an excavation sufficiently large for nesting, dens or shelter; tree may be alive or dead. (F)

**Designated recreational trail** - a Department authorized recreational trail that is signed and/or mapped. (F)

**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. (D)

**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. Wind or ice storms are examples of natural disturbance. (A)

**Early successional habitat** - early vegetative stages of growth such as grass, shrubs or seedling/sapling trees. (F)

**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. (D)

**Ecosystem management** - the appropriate integration of ecological, economic, and social factors in order to maintain and enhance the quality of the environment to best meet our current and future needs. Involves management at the landscape level, prompting the biodiversity of natural communities of plants, animals and seeking to maintain healthy, productive environments. (C)

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

**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. (D)

**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. (J)

**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. (F)

**Exotic** - any species introduced from another country or geographic region outside its natural range. (D)

**Flood plain** - the level; or nearly level land with alluvial soils on either or both sides of a stream or river that is subject to overflow flooding during periods of high water level. (D)

**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. (D)

**Forest Stand Improvement (FSI)** - pre-commercial silvicultural treatments, intended to regulate stand density and species composition while improving wood product quality & fostering individual tree health & vigor, through the removal of undesirable trees. (F)

**Forest type** - a community of trees defined by its vegetation, particularly its dominant vegetation as based on percentage cover of trees. (D)

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

**Fragipan** - a dense and brittle layer of soil. Its hardness results mainly from extreme density or compactness rather than from high clay content. The material may be dense enough to restrict root, nutrient, and water penetration. (F)

**Fragmentation** - 1.) the condition by which a landscape is broken into small islands of forest within a mosaic of other forms of land use or ownership. 2.) islands of a particular age class that remain in areas of younger-aged forest. (D)

**Gaps** - communities, habitats, successional stages, or organisms which have been identified as lacking in the landscape. (F)

**Geocaching** - a high-tech, hide and seek, outdoor activity for utilizing the Global Positioning System (GPS). (F)

**Geographic Information System (GIS)** - an organized collection of computer hardware, software, geographic and descriptive data, personnel, knowledge and procedures designed to efficiently capture, store, update, manipulate, analyze, report and display the forms of geographically referenced information and descriptive information. (D)

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

**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. (A)

**Hardwoods** - broad-leaved, deciduous trees belonging to the botanical group Angiospermae. (D)

**Haul roads** - permanent, unpaved roads which are not designed for all-weather travel, but may have hardened or improved surfaces with artificial drainage. They are built according to best management practices primarily for the removal of forest products, providing limited access within the unit by log trucks and other heavy equipment. These roads may or may not be open for public motor vehicle use, depending on management priorities and objectives. They may serve as recreational access corridors, but are not maintained according to specific standards or schedules. (K)

**Herbicide** - a chemical used for killing or controlling the growth of plants. (D)

**High canopy forest area** - a portion of a State Forest that will be dedicated to establishing and maintaining forest stands with high canopy cover. The areas will be created to provide habitat for wildlife species that require mature forests. These areas will be strategically managed using uneven-aged management systems. Management will be predominately single tree selection. Group selection may also be done on a limited basis to regenerate mast producing trees like oak, cherry and hickory. The areas will be managed to limit the size of forest canopy openings to no greater than ½ acre in size. Management will include variable patch retention areas, (which will include protection areas and natural areas), retention of biological legacy trees, den trees, snags and coarse woody material. (F)

**Intermediate treatment** - any silvicultural treatment designed to enhance growth, quality, vigor, and composition of the stand after establishment or regeneration and prior to final harvest. (D)

**Invasive species** - species that have become established outside their natural range which spread prolifically, displacing other species and sometimes causing environmental damage. (F)

**Legacy tree** - a tree, usually mature or old-growth, that is retained on a site after harvesting or natural disturbance to provide a biological remnant. (D)

**Log landing (Log deck)** - a cleared area to which logs are skidded and are temporarily stored before being loaded onto trucks for transport. (F)

**Long lived conifer** - conifers that are capable of living 135 years or more on forest sites in Central New York. Tree species typically include eastern hemlock, eastern white pine, Norway spruce and northern white cedar. (F)



**Low forest** - a forest produced primarily from vegetative regeneration, i.e. coppice. (D)

**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. (A)

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

**Multiple Use Area** - Lands acquired pursuant to Article 15, Section 15.01 (b) of the Parks and Recreation Land Acquisition Bond Act. **Multiple Use** Areas are acquired to provide additional opportunities for outdoor recreation, including public camping, fishing, hunting, boating, winter sports, and, wherever possible, to also serve multiple purposes involving the conservation and development of natural resources, including the preservation of scenic areas, watershed protection, forestry and reforestation. (F)

**Native species** - indigenous species that is normally found as part of a particular ecosystem. (D)

**Natural area(s)** - An area allowed to develop naturally. Intervention will be considered to protect forest health ( e.g. fire or invasive plant or animal invasive species), to enhance structural or species diversity, to protect, restore or enhance significant habitats or to exploit or create regeneration opportunities for desired plant species. (F)

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

**Neotropical migratory birds** - birds that breed in Canada (F)

**Northern hardwood** - 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. (A)

**Old growth** - 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 canopy gaps formed by natural disturbances creating an uneven canopy and a conspicuous absence of multiple stemmed trees. Old growth forest sites typically are characterized by an irregular forest floor containing an abundance of coarse woody materials which are often covered by mosses and lichens; show limited signs of artificial disturbance and have distinct soil horizons. The understory displays well developed and diverse surface herbaceous layers. Single, isolated trees may be considered as old growth if they meet some of the above criteria. (F)

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

**Parcelization** - the subdivision of land into smaller ownership blocks. This intrudes new features and activities into the forest and changes its character but does not necessarily fragment it in biophysical terms. (J)

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

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

**Poletimber** - trees that are generally 6-11 inches diameter at breast height. (F)

**Protection area** - land excluded from most active management to protect sensitive sites. Exclusions include: wood product management, oil and gas exploration and development, and some recreational activities. These sites most often include steep slopes, wet woodlands and riparian zones along stream corridors. (F)

**Public Forest Access Roads (PFAR)**- permanent, unpaved roads which may be designed for all-weather use depending upon their location, surfacing and drainage. These roads provide primary access for administration and public use within the Unit. The design standards for these roads are those of the Class A and Class B access roads as provided in the Unpaved Forest Road Handbook (8/74). As a general guideline, sufficient access is typically achieved when 1 mile of PFAR is developed for each 500 acres of state land, and no position within the Unit lies more than 1 half mile from a PFAR or public highway. (I) (K)

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

**Quality Deer Management (QDM)** - is a management philosophy/practice that unites landowners, hunters and managers in a common goal of producing biologically and socially balanced deer herds within existing environmental, social and legal constraints. This approach typically involves the protection of young bucks (yearlings and some 2.5 year-olds) combined with an adequate harvest of female deer to maintain a healthy population in balance with existing habitat conditions and landowner desires. This level of deer management involves the production of quality deer (bucks, does and fawns), quality habitat, quality hunting experiences and most importantly quality hunters. (L)

**Reforestation** - the re-establishment of forest cover by natural or artificial means. (A)

**Regeneration** - seedlings or saplings of any origin. (J)

**Release** - a treatment designed to free young trees not past the *sapling* stage from undesirable competing vegetation that overtops or closely surrounds them. (E)

**Residual** - trees remaining after any type of treatment. (D)

**Riparian zone** - areas of transition between terrestrial and aquatic ecological systems. They are characterized as having soils and vegetation analogous to 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. (A)

**Rotation** - the period of years between stand establishment and regeneration as designated by management decisions. (J)

**Salvage cutting** - the removal of dead, damaged or dying trees because of injurious agents other than competition, to recover economic value that would otherwise be lost. (D)

**Sapling** - trees that are generally 1 and 5 inches diameter at breast height. (F)

**Sawtimber** - trees that are generally 12 inches and larger diameter at breast height. (F)

**Seedling** - a young tree originating from seed that is less than 1 inch in diameter. (A)

**Seedling/sapling** - trees less than 6 inches diameter at breast height. (F)

**Seed tree cut/method** - the removal of the mature timber in one cutting, except for a small number of trees left singly, or in small groups, as a source of seed for natural regeneration. (I)

**Selection cut/method/system** - the removal of trees over the entire range of size classes either singly or in groups at regular intervals, resulting in multiple age-classes 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 residual trees. (F)

**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. (D) (F)

**Shelterwood regeneration cut/method** - a regeneration action designed to stimulate reproduction by implementing a series of cuts over several years that will gradually remove the overstory trees. Gradual reduction of stand density protects understory trees and provides a seed source for stand regeneration. (A)

**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. (D)

**Site** - the area in which a plant or forest stand grows, considered in terms of its environment, particularly as this determines the type and quality of the vegetation the area can support. (D)

**Site preparation** - hand or mechanized manipulation of a site, designed to enhance the success of regeneration. (D)

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

**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. (F)

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

**Spatial analysis** - an examination of data in the context of where it occurs geographically or “on the ground”. This is usually accomplished by tying database information to GIS based maps. (F)

**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. (D)

**Species richness** - the number of different species present within a defined area. (A)

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

**Stand analysis** - systematic method of evaluating stands to determine the need for treatment. (F)

**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 down woody material. (D)

**State Forest / State Reforestation Area** - lands owned by the State of New York, administered by the Department of Environmental Conservation Division of Lands & Forests, 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). (F)

**Stocking** - the number of trees per unit area in relation to the desired number for optimum growth and management. Guides and tables have been developed that illustrate the optimum number of trees per acre based on the average diameter. (F)

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

**Suite** - species similar in their habitat needs which may respond similarly to habitat changes. (A)

**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. (A)

**Sustained yield** - the achievement and maintenance in perpetuity of a reasonable regular periodic output of the various renewable resources without impairment of the land's productivity. (B)

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

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

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

**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. (A)

**Uneven-aged group selection** - a type of *uneven-aged forest* management used to create openings in the forest canopy to promote future stand diversity and the establishment of shade intolerant species. New age classes are established in place of the small groups of trees that were removed. (F)

**Uneven-aged system** - a planned sequence of treatments designed to maintain and regenerate a stand with three or more age classes. (D)

**Uneven-aged stand/forest** - a stand with trees of three or more distinct age classes, either intimately mixed or in small groups. (D)

**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. (F)

**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. (D)

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## XX. APPENDICES

### Appendix I - Previous Owners of the State Forests in the Cuyler Hill Unit Previous Owners of Cuyler Hill State Forest

Date Acquired	Acres	Former Owner(s)	Town
7/24/1933	226.54	C.G. Smith	Cuyler-128.54/Taylor-98.00
7/24/1933	180.33	L.A. Long	Cuyler
7/24/1933	159.86	Allen-Shirley Co.	Cuyler
7/24/1933	137.11	Cortland Savings Bank	Cuyler
1/3/1936	263.62	B.F. Lee	Cuyler
1/3/1936	388.08	B.F. Lee	Cuyler
8/5/1936	58.90	A.D. Wood	Cuyler
11/27/1936	262.75	P.A. Brown	Cuyler
11/27/1936	545.04	For. Miss. Real. Co.	Cuyler
12/26/1936	317.88	P.G. Knapp	Cuyler
12/31/1936	58.07	F.T. Holl	Cuyler
1/8/1937	25.48	W.R. Holl	Cuyler
1/23/1937	190.67	Potter & Berlew	Taylor
2/2/1937	160.48	A.M. Cannon	Cuyler
2/18/1937	213.14	B.F. & G.W. Lee	Cuyler
3/1/1937	284.60	A.M. Irish	Cuyler
3/1/1937	161.55	J.N. Welsh	Taylor
11/14/1939	199.65	E. Phillips Est.	Taylor
3/21/1940	53.50	NYS Unappro. (Land Comm. Office)	Taylor
3/6/1941	52.77	E.B. Angell	Cuyler
4/30/1941	155.95	L.O. Wiltsey	Cuyler
5/21/1941	56.06	Federal Land Bank	Cuyler
10/7/1941	121.90	C.A. Swachamoor	Cuyler
7/21/1948	191.41	H.F. & F. Holl	Cuyler
10/13/1949	158.12	W. & D. Wimer	Cuyler
12/26/1951	41.64	C. Gensen	Taylor
1/15/1962	57.75	F. Eaton	Cuyler

Date Acquired	Acres	Former Owner(s)	Town
1/26/1962	105.37	M. Bush	Cuyler
4/22/1962	116.54	V.M. Hyer	Cuyler
6/19/1962	214.90	G.R. Dence	Taylor
2/13/1963	87.50	C. Lincoln	Taylor
8/8/1963	100.00	A.Rikert	Cuyler
4/7/1965	154.00	P. Brown	Taylor
12/31/1990	16.50	F. Compagni	Cuyler
	-8.12	Correction	
	-.83	Resurvey	
	-1.28	Survey	
<b>Total Acres</b>	<b>5507.43</b>		

#### Previous Owners of Maxon Creek State Forest

Date Acquired	Acres	Former Owner(s)	Town
7/20/1933	172.15	L.P. Duffy	Cuyler
7/20/1933	121.94	Federal Land Bank	Cuyler
7/20/1933	12.75	H. Hurlbutt	Cuyler
7/20/1933	235.74	E.B. Riggy	Cuyler
10/21/1936	212.45	L. Irish	Cuyler
11/13/1963	130.00	H. Hurlbutt	Cuyler
12/3/1974	11.86	Wells	Cuyler
<b>Total Acres</b>	<b>896.89</b>		

#### Previous Owners of Dog Hollow State Forest

Date Acquired	Acres	Former Owner(s)	Town
9/9/1963	265.5	P. Potter	Truxton
7/13/1964	193.70	F. Crandall	Cuyler-91.70/Truxton-101.00
10/30/1964	264.20	R.L. Brewer	Cuyler
<b>Total Acres</b>	<b>723.4</b>		

**Appendix II - Amphibians & Reptiles (Herps) New York Gap Analysis Data-  
EMAP Hexagon 384**

<b>Nature Conservancy Name</b>	<b>Scientific Name</b>	<b>Model Status</b>
Allegheny Dusky Salamander	<i>Desmognathus ochrophaeus</i>	Predicted/Confirmed
Black Rat Snake	<i>Elaphe o. obsoleta</i>	Predicted
Bullfrog	<i>Rana catesbeiana</i>	Predicted/Confirmed
Common Garter Snake	<i>Thamnophis sirtalis</i>	Predicted/Confirmed
Common Mudpuppy	<i>Necturus maculosus</i>	Predicted
Common Snapping Turtle	<i>Chelydra s. serpentina</i>	Predicted/Confirmed
Eastern American Toad	<i>Bufo a. americanus</i>	Predicted/Confirmed
Eastern Milk Snake	<i>Lampropeltis t. triangulum</i>	Predicted/Confirmed
Four-Toed Salamander	<i>Hemidactylium scutatum</i>	Predicted/Confirmed
Green Frog	<i>Rana clamitans melanota</i>	Predicted/Confirmed
Gray Treefrog	<i>Hyla versicolor</i>	Predicted/Confirmed
Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	Predicted/Confirmed
Longtail Salamander	<i>Eurycea l. longicauda</i>	Predicted
Northern Black Racer	<i>Coluber c. constrictor</i>	Predicted
Northern Brown Snake	<i>Storeria d. dekayi</i>	Predicted/Confirmed
Northern Dusky Salamander	<i>Desmognathus fuscus</i>	Predicted/Confirmed
Northern Leopard Frog	<i>Rana pipiens</i>	Predicted/Confirmed
Northern Redback Salamander	<i>Plethodon c. cinereus</i>	Predicted/Confirmed
Northern Redbelly Snake	<i>Storeria o. occipitomaculata</i>	Predicted/Confirmed
Northern Ringneck Snake	<i>Diadophis punctatus edwardsii</i>	Predicted/Confirmed
Northern Slimy Salamander	<i>Plethodon glutinosus</i>	Predicted/Confirmed
Northern Spring Peeper	<i>Pseudacris c. crucifer</i>	Predicted/Confirmed
Northern Spring Salamander	<i>Gyrinophilus p. porphyriticus</i>	Predicted/Confirmed
Northern Two-lined Salamander	<i>Eurycea bislineata</i>	Predicted/Confirmed
Northern Water Snake	<i>Nerodia s. sipedon</i>	Predicted
Painted Turtle	<i>Chrysemys picta</i>	Predicted/Confirmed
Pickerel Frog	<i>Rana palustris</i>	Predicted/Confirmed
Red-spotted Newt	<i>Notophthalmus v. viridescens</i>	Predicted/Confirmed
Smooth Green Snake	<i>Liochlorophis vernalis</i>	Predicted/Confirmed

<b>Nature Conservancy Name</b>	<b>Scientific Name</b>	<b>Model Status</b>
Spotted Salamander	Ambystoma maculatum	Predicted/Confirmed
Timber Rattlesnake	Crotalus horridus	Predicted
Wood Frog	Rana sylvatica	Predicted/Confirmed
Wood Turtle	Clemmys insculpta	Predicted/Confirmed
Western Chorus Frog	Pseudacris triseriata	Predicted

### **Appendix III - Mammals; New York Gap Analysis Data- EMAP Hexagon 384**

<b>Nature Conservancy Name</b>	<b>Scientific Name</b>	<b>Model Status</b>
American Beaver	Castor canadensis	Predicted/Confirmed
Big Brown Bat	Eptesicus fuscus	Predicted/Confirmed
Black Bear	Ursus americanus	Predicted
Bobcat	Lynx rufus	Predicted
Common Muskrat	Ondatra zibethicus	Predicted/Confirmed
Common Raccoon	Procyon lotor	Predicted
Coyote	Canis latrans	Predicted/Confirmed
Deer Mouse	Peromyscus maniculatus	Predicted/Confirmed
Eastern Chipmunk	Tamias striatus	Predicted/Confirmed
Eastern Cottontail	Sylvilagus floridanus	Predicted/Confirmed
Eastern Gray Squirrel	Sciurus carolinensis	Predicted
Eastern Pipistrelle	Pipistrellus subflavus	Predicted
Eastern Red Bat	Lasiurus borealis	Predicted
Eastern small-footed Myotis (bat)	Myotis leibii	Predicted
Fisher	Martes pennanti	Predicted
Gray Fox	Urocyon cinereoargenteus	Predicted/Confirmed
Hairy-tailed Mole	Parascalops breweri	Predicted
Hoary Bat	Lasiurus cinereus	Predicted/Confirmed
House Mouse	Mus musculus	Predicted
Indiana Myotis (bat)	Myotis sodalis	Predicted
Least Shrew	Cryptotis parva	Predicted
Little Brown Myotis (bat)	Myotis lucifugus	Predicted/Confirmed
Long-tailed Weasel	Mustela frenata	Predicted

<b>Nature Conservancy Name</b>	<b>Scientific Name</b>	<b>Model Status</b>
Masked Shrew	<i>Sorex cinereus</i>	Predicted/Confirmed
Meadow Jumping Mouse	<i>Zapus hudsonius</i>	Predicted/Confirmed
Meadow Vole	<i>Microtus pennsylvanicus</i>	Predicted/Confirmed
Mink	<i>Mustela vison</i>	Predicted/Confirmed
Northern Flying Squirrel	<i>Glaucomys sabrinus</i>	Predicted/Confirmed
Northern Myotis (Keen's Myotis (bat))	<i>Myotis septentrionalis</i>	Predicted/Confirmed
Northern Short-tailed Shrew	<i>Blarina brevicauda</i>	Predicted/Confirmed
Norway Rat	<i>Rattus norvegicus</i>	Predicted/Confirmed
Porcupine	<i>Erethizon dorsatum</i>	Predicted
Pygmy Shrew	<i>Sorex hoyi</i>	Predicted
Red Fox	<i>Vulpes vulpes</i>	Predicted/Confirmed
Red Squirrel	<i>Tamiasciurus hudsonicus</i>	Predicted/Confirmed
River Otter	<i>Lutra canadensis</i>	Predicted/Confirmed
Short-tailed Weasel (Ermine)	<i>Mustela erminea</i>	Predicted/Confirmed
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	Predicted
Smoky Shrew	<i>Sorex fumeus</i>	Predicted/Confirmed
Snowshoe Hare	<i>Lepus americanus</i>	Predicted
Southern Bog Lemming	<i>Synaptomys cooperi</i>	Predicted
Southern Flying Squirrel	<i>Glaucomys volans</i>	Predicted
Southern Red-backed Vole	<i>Clethrionomys gapperi</i>	Predicted/Confirmed
Star-nosed Mole	<i>Condylura cristata</i>	Predicted
Striped Skunk	<i>Mephitis mephitis</i>	Predicted
Virginia Opossum	<i>Didelphis virginiana</i>	Predicted
White-footed Mouse	<i>Peromyscus leucopus</i>	Predicted
White-tailed Deer	<i>Odocoileus virginianus</i>	Predicted/Confirmed
Woodchuck	<i>Marmota monax</i>	Predicted
Woodland Jumping Mouse	<i>Napaeozapus insignis</i>	Predicted
Woodland Vole	<i>Microtus pinetorum</i>	Predicted

**Appendix IV - Confirmed Breeding Birds****Blocks 4172B, 4172C, 4172D, 4173D, 4272A and 4272C**

<b>Atlas Code</b>	<b>Description</b>	<b>Count</b>
FY	Adult(s) with food for young.	23
FL	Recently fledged young (including downy young of precocial species: waterfowl, shorebirds).	21
NY	Nest with young.	3
ON	Adult(s) entering or leaving nest site in circumstances indicating occupied nest.	2
DD	Distraction display or injury-feigning.	1
UN	Used nest found.	1
<b>TOTAL</b>		<b>51</b>

**Appendix V - Probable and Possible Breeding Birds****Blocks 4172B, 4172C, 4172D, 4173D, 4272A and 4272C**

<b>Atlas Code</b>	<b>Description</b>	<b>Count</b>
X1	Species observed in possible nesting habitat but no other indication of breeding noted, or singing male(s) present (or breeding calls heard), in breeding season, based upon one visit.	25
S2	Singing male present (or breeding calls heard) on more than one date in the same place.	19
T2	Bird (or pair) apparently holding territory.	12
P2	Pair observed in suitable habitat in breeding season.	9
D2	Courtship and display, agitated behavior or anxiety calls from adults suggesting probable presence nearby of a nest or young; well developed brood-patch, includes copulation.	2
N2	Visiting probable nest site. Nest building by wrens and woodpeckers.	1
<b>TOTAL</b>		<b>68</b>



**Appendix VI - Breeding Bird Atlas Data Blocks  
4172B, 4172C, 4172D, 4173D, 4272A & 4272C**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Breed Class</b>	<b>N. Y.* Status</b>	<b>Global Rank**</b>	<b>State Rank***</b>
Alder Flycatcher	<i>Empidonax alnorum</i>	X1	P	G5	S5
American Crow	<i>Corvus brachyrhynchos</i>	T2	GS	G5	S5
American Goldfinch	<i>Carduelis tristis</i>	P2	P	G5	S5
American Kestrel	<i>Falco sparverius</i>	FL	P	G5	S5
American Redstart	<i>Setophaga ruticilla</i>	FY	P	G5	S5
American Robin	<i>Turdus migratorius</i>	FL	P	G5	S5
American Woodcock	<i>Scolopax minor</i>	X1	GS	G5	S5
Baltimore Oriole	<i>Icterus galbula</i>	UN	P	G5	S5
Bank Swallow	<i>Riparia riparia</i>	ON	P	G5	S5
Barn Swallow	<i>Hirundo rustica</i>	FY	P	G5	S5
Barred Owl	<i>Strix varia</i>	FL	P	G5	S5
Belted Kingfisher	<i>Ceryle alcyon</i>	S2	P	G5	S5
Blackburnian Warbler	<i>Dendroica fusca</i>	X1	P	G5	S5
Black & white Warbler	<i>Mniotilta varia</i>	FY	P	G5	S5
Black-billed Cuckoo	<i>Coccyzus rethrophthalmus</i>	S2	P	G5	S5
Black-capped Chickadee	<i>Poecile atricapillus</i>	FY	P	G5	S5
Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	S2	P	G5	S5
Black-throated Green Warbler	<i>Dendroica virens</i>	FY	P	G5	S5
Blue Jay	<i>Cyanocitta cristata</i>	FY	P	G5	S5
Blue-headed Vireo	<i>Vireo solitarius</i>	S2	P	G5	S5
Blue-winged Warbler	<i>Vermivora pinus</i>	FL	P	G5	S5
Bobolink	<i>Dolichonyx oryzivorus</i>	FL	P	G5	S5
Broad-winged Hawk	<i>Buteo platypterus</i>	X1	P	G5	S5
Brown Creeper	<i>Certhia americana</i>	X1	P	G5	S5
Brown-headed Cowbird	<i>Molothrus ater</i>	P2	P	G5	S5
Brown Thrasher	<i>Toxostoma rufum</i>	FY	P	G5	S5
Canada Goose	<i>Branta canadensis</i>	FL	GS	G5	S5

<b>Common Name</b>	<b>Scientific Name</b>	<b>Breed Class</b>	<b>N. Y.* Status</b>	<b>Global Rank**</b>	<b>State Rank***</b>
Canada Warbler	<i>Wilsonia canadensis</i>	X1	P	G5	S5
Carolina Wren	<i>Thryothorus ludovicianus</i>	X1	P	G5	S5
Cedar Waxwing	<i>Bombycilla cedrorum</i>	P2	P	G5	S5
Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	X1	P	G5	S5
Chimney Swift	<i>Chaetura pelagica</i>	X1	P	G5	S5
Chipping Sparrow	<i>Spizella passerina</i>	FY	P	G5	S5
Common Grackle	<i>Quiscalus quiscula</i>	FY	P	G5	S5
Common Raven	<i>Corvus corax</i>	P2	P	G5	S4
Common Snipe	<i>Gallinago gallinago</i>	X1	GS	G5	S5
Common Yellowthroat	<i>Geothlypis trichas</i>	FY	P	G5	S5
Cooper's Hawk	<i>Accipiter cooperii</i>	S2	PSC	G4	S4
Dark-eyed Junco	<i>Junco hyemalis</i>	DD	P	G5	S5
Downy Woodpecker	<i>Picoides pubescens</i>	S2	P	G5	S5
Eastern Bluebird	<i>Sialia sialis</i>	NY	PSC	G5	S5
Eastern Kingbird	<i>Tyrannus tyrannus</i>	FY	P	G5	S5
Eastern Phoebe	<i>Sayornis phoebe</i>	FY	P	G5	S5
Eastern Screech-Owl	<i>Megascops asio</i>	X1	P	G5	S5
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	T2	P	G5	S5
Eastern Wood-Pewee	<i>Contopus virens</i>	S2	P	G5	S5
European Starling	<i>Sturnus vulgaris</i>	FY	UP	G5	SE
Field Sparrow	<i>Spizella pusilla</i>	FL		G5	S5
Golden-crowned Kinglet	<i>Regulus satrapa</i>	P2	P	G5	S5
Gray Catbird	<i>Dumetella carolinensis</i>	FY	P	G5	S5
Great Blue Heron	<i>Ardea herodias</i>	X1	P	G5	S5
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S2	P	G5	S5
Great Horned Owl	<i>Bubo virginianus</i>	X1	P	G5	S5
Green Heron	<i>Butorides virescens</i>	X1	P	G5	S5
Hairy Woodpecker	<i>Picoides villosus</i>	X1	P	G5	S5
Hermit Thrush	<i>Catharus guttatus</i>	S2	P	G5	S5

<b>Common Name</b>	<b>Scientific Name</b>	<b>Breed Class</b>	<b>N. Y.* Status</b>	<b>Global Rank**</b>	<b>State Rank***</b>
Hooded Warbler	<i>Wilsonia citrina</i>	X1	P	G5	S5
House Finch	<i>Carpodacus mexicanus</i>	FL	P	G5	SE
House Sparrow	<i>Passer domesticus</i>	FY	U P	G5	SE
House Wren	<i>Troglodytes aedon</i>	S2	P	G5	S5
Indigo Bunting	<i>Passerina cyanea</i>	T2	P	G5	S5
Killdeer	<i>Charadrius vociferus</i>	FL	P	G5	S5
Least Flycatcher	<i>Empidonax minimus</i>	T2	P	G5	S5
Louisiana Waterthrush	<i>Seiurus motacilla</i>	S2	P	G5	S5
Magnolia Warbler	<i>Dendroica magnolia</i>	S2	P	G5	S5
Mallard	<i>Anas platyrhynchos</i>	FL	GS	G5	S5
Mourning Dove	<i>Zenaida macroura</i>	FL	P	G5	S5
Mourning Warbler	<i>Oporornis philadelphia</i>	FY	P	G5	S5
Nashville Warbler	<i>Vermivora ruficapilla</i>	T2	P	G5	S5
Northern Flicker	<i>Colaptes auratus</i>	FY	P	G5	S5
Northern Cardinal	<i>Cardinalis cardinalis</i>	S2	P	G5	S5
Northern Goshawk	<i>Accipiter striatus</i>	T2	PSC	G4	S4
Northern Harrier	<i>Circus cyaneus</i>	N2	T	G5	S3
Northern Mockingbird	<i>Mimus polyglottos</i>	X1	P	G5	S5
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	FL	P	G5	S5
Northern Waterthrush	<i>Seiurus noveboracensis</i>	FY	P	G5	S5
Osprey	<i>Pandion haliaetus</i>	X1	PSC	G5	S4
Ovenbird	<i>Seiurus aurocapillus</i>	FL	P	G5	S5
Pileated Woodpecker	<i>Dryocopus pileatus</i>	X1	P	G5	S5
Pine Siskin	<i>Carduelis pinus</i>	P2	P	G5	S5
Pine Warbler	<i>Dendroica pinus</i>	S2	P		
Prairie Warbler	<i>Dendroica discolor</i>	X1	P	G5	S5
Purple Finch	<i>Carpodacus purpureus</i>	T2	P	G5	S5
Rose-breasted Nuthatch	<i>Sitta cacadensis</i>	S2	P	G5	S5
Red-eyed Vireo	<i>Vireo olivaceus</i>	T2	P	G5	S5

<b>Common Name</b>	<b>Scientific Name</b>	<b>Breed Class</b>	<b>N. Y.* Status</b>	<b>Global Rank**</b>	<b>State Rank***</b>
Red-shouldered Hawk	Buteo lineatus	S2	P	G5	S4
Red-tailed Hawk	Buteo jamaicensis	FY	P	G5	S5
Red-winged Blackbird	Agelaius phoeniceus	FL	P	G5	S5
Ring-necked Pheasant	Phasianus colchicus	FL	GS	G5	SE
Rock Pigeon	Columba livia	P2	UP	G5	SE
Rose-breasted Grosbeak	Pheucticus ludovicianus	NY	P	G5	S5
Ruby-throated Hummingbird	Archilochus colubris	X1	P	G5	S5
Ruffed Grouse	Bonasa umbellus	FL	GS	G5	S5
Savannah Sparrow	Passerculus sandwichensis	FY	P	G5	S5
Scarlet Tanager	Piranga olivacea	T2	P	G5	S5
Sharp-shinned Hawk	Accipiter striatus	X1	P	G5	S4
Song Sparrow	Melospiza melodia	NY	P	G5	S5
Spotted Sandpiper	Actitis macularia	P2	P	G5	S5
Swamp Sparrow	Melospiza georgiana	FY	P	G5	S5
Tree Swallow	Tachycineta bicolor	ON	P	G5	S5
Tufted Titmouse	Baeolophus bicolor	X1	P	G5	S5
Turkey Vulture	Cathartes aura	X1	P	G4	S4
Veery	Catharus fuscescens	FY	P	G5	S5
Vesper Sparrow	Poocetes gramineus	S2	PSC	G5	S5
Virginia Rail	Rallus limicola	FL	GS	G5	S5
Warbling Vireo	Vireo gilvus	S2	P	G5	S5
White-breasted Nuthatch	Sitta carolinensis	FL	P	G5	S5
White-throated Sparrow	Zonotrichia albicollis	S2	P	G5	S5
Wild Turkey	Meleagris gallopavo	FL	GS	G5	S5
Willow Flycatcher	Empidonax traillii	T2	P	G5	S5
Wilson's Snipe	Gallinago delicata	D2	GS	NA	NA
Winter Wren	Troglodytes troglodytes	FL	P	G5	S5
Wood Duck	Aix sponsa	FL	GS	G5	S5
Wood Thrush	Hylocichla mustelina	FY	P	G5	S5

Common Name	Scientific Name	Breed Class	N. Y.* Status	Global Rank**	State Rank***
Yellow-bellied Sapsucker	Sphyrapicus varius	D2	P	G5	S5
Yellow-billed Cuckoo	Coccyzus americanus	X1	P	G5	S5
Yellow-rumped Warbler	Dendroica coronata	P2	P	G5	S5
Yellow-throated Vireo	Vireo flavifrons	T2	P	G5	S5
Yellow Warbler	Dendroica petechia	T2	P	G5	S5

**\*NY STATUS**

**GS** = Game Species

**P** = Protected **PSC** = Protected-Special Concern

**T** = Threatened

**UP** = Unprotected

**\*\*GLOBAL RANK:**

**G4** = Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.

**G5** = Demonstrably secure globally, though it may be quite rare

**\*\*\*STATE RANK:**

**S3** = Typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State.

**S4** = Apparently secure in New York State.

**S5** = Demonstrably secure in New York State.

**SE** = Exotic, not native to New York State.

**Appendix VII - Bureau of Fisheries Stream Listing**  
**Streams located in Cuyler Hill State Forest:**

Watershed Index Number/Name	Length (mi.)	Article 15 Status
SR-44-14-59-9-4 (Bundy Creek)	.6	protected
SR-44-14-59-9-4-8	.2	unprotected
SR-44-14-59-9-4-10	.3	protected
SR-44-14-59-9-4-10-1	.1	unprotected
SR-44-14-59-9-4-10-2	.7	unprotected
SR-44-14-59-9-4-12	.2	unprotected
SR-44-14-27-37-1 (Wells Creek)	.2	unprotected
SR-44-14-27-37-1-1	.1	unprotected
SR-44-14-27-38-1 (Union Valley Creek)	1.3	unprotected
SR-44-14-27-38-1-1	.1	unprotected
SR-44-14-27-38-1b (Tributary of Mud Creek)	1.0	unprotected
SR-44-14-27-38-3	.5	unprotected
SR-44-14-27-38-4	.9	unprotected

<b>Watershed Index Number/Name</b>	<b>Length (mi.)</b>	<b>Article 15 Status</b>
SR-44-14-27-38-4-1	.2	unprotected
SR-44-14-27-38-4-2	.6	unprotected
<b>Cuyler Hill State Forest Total</b>	<b>7</b>	

**Streams located in Maxon Creek State Forest:**

<b>Watershed Index Number/Name</b>	<b>Length (mi.)</b>	<b>Article 15 Status</b>
SR-44-14-59-22 (Maxon Creek)	1.0	unprotected
SR-44-14-59-22-1	.6	unprotected
SR-44-14-59-22-2	.1	unprotected
SR-44-14-59-18-4 (Tributary of Dog Hollow Brook)	.7	unprotected
<b>Maxon Creek State Forest Total</b>	<b>2.4</b>	

**Streams located in Dog Hollow State Forest:**

<b>Watershed Index Number/Name</b>	<b>Length (mi.)</b>	<b>Article 15 Status</b>
SR-44-14-59-9-4-3	.7	unprotected
SR-44-14-59-9-4-3-1	.1	unprotected
SR-44-14-59-9-4-5	.3	unprotected
SR-44-14-59-9-4-6	.8	unprotected
<b>Dog Hollow State Forest Total</b>	<b>1.9</b>	

**Appendix VIII - PFARs, Haul Roads, Access Trails, Town & County Roads in the Unit  
PFARs in the Unit**

Cortland #6, (Cuyler Hill)	Cuyler Hill PFAR	5.8 miles
Cortland #16, (Dog Hollow)	Dog Hollow PFAR	.9 miles
Cortland #6, (Cuyler Hill)	Jipson Hill PFAR	1.9 miles
Cortland #8, (Maxon Creek)	Pease Hill PFAR	1.0 miles
<b>Unit Total</b>		<b>9.6 miles</b>

**Haul Roads in the Unit**

Cortland #6, (Cuyler Hill)	Natural Area Haul Road	.2 miles
Cortland #8, (Maxon Creek)	Pardee Haul Road	.4 miles
Cortland #6, (Cuyler Hill)	Randall Hill Haul Road	.1 miles
<b>Unit Total</b>		<b>.7 miles</b>

**Miles of Access Trails in the Unit**

Cortland #6, (Cuyler Hill)	4.0 miles
Cortland #8, (Maxon Creek)	1.7 miles
Cortland #16, (Dog Hollow)	.8 miles
<b>Unit Total</b>	<b>6.5 miles</b>

**Town Roads (plowed) in the Unit**

Cortland #16, (Dog Hollow)	Brown Road	.7 miles
Cortland #6, (Cuyler Hill)	Cuyler Hill Road	.3 miles
Cortland #16, (Dog Hollow)	Dog Hollow Road	.4 miles
Cortland #16, (Dog Hollow)	Jones Road	.6 miles
Cortland #8, (Maxon Creek)	Midlum Road	.1 miles
Cortland #6, (Cuyler Hill)	Pease Hill Road	.2 miles
Cortland #6, (Cuyler Hill)	Rose Valley Road	.8 miles
<b>Unit Total</b>		<b>3.1 miles</b>

**Town Roads (seasonal limited use) in the Unit**

Cortland #6, (Cuyler Hill)	Elwood Road	.6 miles
Cortland #6, (Cuyler Hill)	Enzes Road	.7 miles
Cortland #6, (Cuyler Hill)	Jipson Hill Road	.6 miles
Cortland #6, (Cuyler Hill)	Lincklaen Hill Road	1.2 miles
Cortland #8, (Maxon Creek)	Pease Hill Road	.4 miles
Cortland #6, (Cuyler Hill)	Potter Hill Road	.8 miles
Cortland #6, (Cuyler Hill)	Randall Hill Road	.8 miles
Cortland #6, (Cuyler Hill)	Stoney Brook Road	1.8 miles
<b>Unit Total</b>		<b>6.9 miles</b>

**Appendix IX - Deer Harvest**

	<b>WMU 7M</b>				<b>Towns of Cuyler and Taylor</b>			
<b>Year</b>	<b>Buck</b>	<b>Doe</b>	<b>Total</b>	<b>Buck/ sq. mi.</b>	<b>Buck</b>	<b>Doe</b>	<b>Total</b>	<b>Buck/ sq. mi.</b>
1990	343	327	898	2.3	164	164	442	2.2
1991	401	178	716	2.7	203	89	361	2.8
1992	443	240	880	3.0	199	122	421	2.7
1993	367	364	977	2.5	171	177	468	2.3
1994	257	118	464	1.7	130	55	226	1.8
1995	291	65	400	2.0	151	32	205	2.0
1996	297	83	442	2.0	161	44	238	2.2
1997	329	97	501	2.2	164	49	253	2.2
1998	395	221	766	2.7	170	99	336	2.3
1999	393	284	842	2.6	193	120	384	2.6
2000	458	302	961	3.1	220	141	456	3.0
2001	342	249	739	2.3	160	137	378	2.2
2002	264	142	494	1.8	140	56	231	1.9
2003	256	140	472	1.7	153	71	264	2.1
2004	233	55	314	1.6	98	26	138	1.3
2005	258	29	299	1.7	110	11	127	1.5

\* The Cuyler Hill Unit is within Wildlife Management Unit 7M.



## **Appendix X - Rare, Threatened, Endangered, and Special Concern Species**

Rare plants have been protected in New York State since 1933. After a long history of expanded protection efforts, the latest regulation was enacted in 1989 and includes three categories (rare, threatened, endangered) and one non-rare protection category (exploitably vulnerable). The categories of rare plants are defined as follows:

### **Rare Species:**

- 20 to 35 sites in the state, or
- 3,000 to 5,000 individuals

### **Threatened Species:**

- 6 to 20 sites in the state, or
- 1,000 to 3,000 individuals, or
- restricted to not less than four or more than seven United States Geological Survey 7½ minute topographical maps, or
- listed as threatened by the United States Department of the Interior, as enumerated in the Code of Federal Regulations 50 CAR 17.11

### **Endangered Species:**

- 5 or fewer sites in the state, or
- fewer than 1,000 individuals, or
- restricted to fewer than four United States Geological Survey 7½ minute topographical maps, or
- species listed as endangered by the United States Department of the Interior, as enumerated in the Code of Federal Regulations 50 CAR 17.11

### **Exploitably Vulnerable Species:**

- listed species are likely to become threatened in the near future throughout all or a significant portion of their range within the state if causal factors continue unchecked.

The exploitably vulnerable category contains plants that are likely to be picked for commercial, medicinal or personal purposes and affords the landowner extra protection ability.

Rare plants included on the list are protected under the Environmental Conservation Law, Section 9-1503. Part (f) of the law reads as follows: "It is a violation for any person, anywhere in the state to pick, pluck, sever, remove, damage by the application of herbicides or defoliants, or carry away, without the consent of the owner, any protected plant. Each protected plant so picked, plucked, severed, removed, damaged, or carried away shall constitute a separate violation." Violators of the regulation are subject to fines and penalties.

The Nature Conservancy established the New York Natural Heritage Program in 1985 as a contract unit within the Department. The Program assumed the State Museum job of compiling a status list for rare plants in the state. Each year a rare plant status review meeting is sponsored by the Natural Heritage Program botanist to review the ranks and taxonomy of the listed plants. The meeting includes the state botanist, a Department representative, and other botanists from around the state who are familiar with rare plants.

After the meeting, the list is updated and each plant is assigned a global and state rarity rank devised by The Nature Conservancy. This list is used by the Department as a basis for the legal protected plant list.

Since the Heritage Program began, the status list has changed significantly. On the positive side, many plants that were originally thought to be rare were shown to be more common after historical sites and potential habitat were searched. More than 70 plants that had not been seen in the past 20 years were rediscovered, many of them with historical records more than 50 years old. On the negative side, many plants were determined to be extirpated from the state after years of searching failed to identify a single plant.

The New York Natural Heritage Program also actively surveys rare animal species of all vertebrate groups (mammals, birds, reptiles, amphibians, and fish) and selected rare species from the invertebrate groups (butterflies and moths, beetles, dragonflies and damselflies, mayflies, and freshwater bivalve mollusks). The Heritage Program collects data on significant animal concentration areas including bat hibernacula, anadromous fish, warm and cold water fish, waterfowl, raptors and nesting areas of terns, herons and gulls.

## **Appendix XI - Department Rules, Regulations, Laws, and Policies**

### **A. New York Code Rules and Regulations**

#### **Title 6**

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

### **B. 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

### **C. Other Laws**

New York State Historic Preservation Act Article 14 PRHPL  
Education Law Section 233 State Museum Collections

#### D. Department Policies

Public Use	Prescribed Fire
Temporary Revocable Permits	State Forest Master Plan
Motor Vehicle Use	Inventory
Timber Management	Acquisition
Unit Management Planning	Road Construction
Pesticides	Recreational Use

#### Appendix XII - Taxes Paid on State Forests (2003 Tax Rolls)

<u>Town</u>	<u>State Forest</u>	<u>Acres</u>	<u>Assessment</u>	<u>Town Taxes</u> (Jan 04)	<u>School Taxes</u> (Sept 03)	<u>Special District Taxes</u> (Jan 04)
Cuyler	Cuyler Hill	3935.31	4,754,400	41,601	93,986	10,745
	Maxon Creek	780.48	1,067,700	9,342	21,798	2,413
	Dog Hollow	691.51	947,900	9,128	15,682	1,147
<b>TOTAL</b>		<b>5,407.3</b>	<b>6,770,000</b>	<b>60,071</b>	<b>131,466</b>	<b>14,305</b>

#### Appendix XIII - Mined Land Reclamation

1. All final slopes will be neatly graded and left no steeper than one vertical on two horizontal (26 degrees from horizontal).
2. All mine floor areas shall be ripped and/or disked in order to alleviate compaction after grading. All final slope areas that are left one vertical on three horizontal or flatter shall be ripped and/or disked in a contour fashion. If ripping shale, finishing grading after replacement of available topsoil may be necessary.
3. All available topsoil shall be replaced (evenly spread) on all affected lands after grading and ripping/discing.
4. Following replacement of topsoil at reclamation, soils must be immediately seeded, fertilized, limed, and mulched. Permittees must either obtain and follow specific written rate recommendations from the local Natural Resource Conservation Service or Agricultural Extension offices or use the following general recommendations:
  - a. Seed at 60 pounds per acre with a mixture that will provide an erosion resistant vegetative cover and will also provide for the long term productivity of legumes:
    - 20% Perennial Ryegrass (12 lbs)
    - 20% Creeping Red Fescue (12 lbs)
    - 25% Bird's-foot Trefoil\* (15 lbs)
    - 13% Kentucky Blue Grass (7-8 lbs)
    - 17% Annual Ryegrass (10.2 lbs)
    - 5% White Clover (3 lbs)

\*This legume must be inoculated at time of seeding. If seeding by hand, use sticking agent, such as a cola or milk, to stick inoculant to seed. If seeding with hydro-seeder, use four times the recommended rate of inoculant.

b. Fertilize at 800 pounds per acre with 10-10-10 fertilizer.

c. Mulch with straw or hydromulch to cover 100% of the soil surface (2 tons per acre).

d. Lime per soil test results (Natural Resource Conservation Service or private lab).

5. Vegetative cover must be established without rill or gully erosion before reclamation shall be approved by the Department.

#### **Appendix XIV - Stands to be Planted to Red Oak**

<b>State Forest</b>	<b>Stand</b>	<b>Stand Acres</b>	<b>Forest Type</b>	<b>Management</b>	<b>Treat.</b>	<b>Planting Acres</b>
Cortland 6	A-2.1	39	47	EAES	TP	8
Cortland 6	A-21.6	3	40	EAES	TP	3
Cortland 6	A-21.8	2	40	EAES	TP	2
Cortland 6	A-21.9	2	40	EAES	TP	2
Cortland 6	B-11	21	40	EA	TP	5
Cortland 6	B-13.1	29	40	EAES	TP	6
Cortland 6	C-31	21	61	EAES	TP	4
Cortland 6	D-4	6	40	EAES	TP	4
Cortland 6	D-22.1	61	67	EAES	TP	8
Cortland 6	E-4	10	40	EAES	TP	4
Cortland 6	E-10	94	67	EAES	TP	8
Cortland 6	F-8.1	87	61	EA	TP	12
Cortland 6	G-7	28	62	EAES	TP	8
Cortland 6	G-22.2	6	47	EAES	TP	2
Cortland 6	H-14.1	24	41	EAES	TP	4
Cortland 6	I-23	42	60	EAES	TP	8
Cortland 8	A-25	22	67	EA	TP	8
Cortland 8	A-32	11	61	EAES	TP	4
Cortland 16	A-20	3	48	EAES	TP	2

<b>State Forest</b>	<b>Stand</b>	<b>Stand Acres</b>	<b>Forest Type</b>	<b>Management</b>	<b>Treat.</b>	<b>Planting Acres</b>
Cortland 16	C-03	40	40	EAES	TP	8
Cortland 16	C-08	10	70	EA	TP	6
Cortland 16	C-09	6	40	EA	TP	4
<b>Total</b>	<b>22</b>					<b>120</b>

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

Identifying # 2010-SLM-7-282

Date January 7, 2010

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

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

**Name of Action:** Adoption of the Cuyler Hill State Forest Unit Management Plan

**SEQR Status:**     Type 1   X    
                      Unlisted       

**Conditioned Negative Declaration:**            Yes  
  X   No

**Description of Action:**

***Background***

The Cuyler Hill Unit Management Plan (UMP) sets forth the proposed goals, objectives, management actions, environmental benefits/impacts and economic costs associated with 7,138 acres of State land in the Cortland County Towns of Cuyler, Taylor and Truxton. The plan details all proposed management activities for a 10-year period, and outlines potential projects for the next 20 years. A review and update of the UMP will take place at the end of the 10 year planning period. Public input has been sought through direct mailings to affected parties via press releases, public notices and a public meeting.

Public participation is an important part of the Department of Environmental Conservation's (DEC) planning process. It adds significant value by enhancing communication between the DEC and its State Forest stakeholders as well as helping to sustain and create new relationships between the Department and these stakeholders. Ultimately public participation improves the quality of the final plan.

***Natural Resource Assessment***

Development of a comprehensive UMP requires extensive natural resource assessment. Natural resource observations were made in the field and evaluated with computer based Geographic Information System (GIS) tools. Combined with DEC staff knowledge, expertise and public input, informed land use decisions will be made as well as appropriate management actions.

***Management Actions***

The Plan schedules and estimates the costs of capital improvement, routine maintenance and land acquisition projects. Additionally, it lists forest management, fisheries, and wildlife habitat actions by location, year, silvicultural management strategy and forest treatment type.

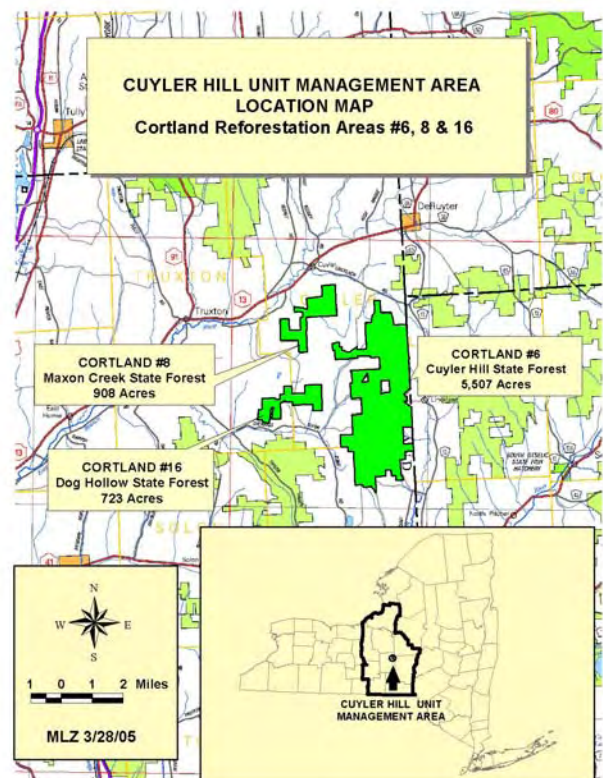
Management activities planned for the Unit include implementation of forestry and best management practices, maintenance of recreational trails and State Forest roads, boundary lines, signs, witness posts, regularly scheduled trash clean-up, oil and natural gas exploration and development, construction of vernal pools and land acquisition.

**Location:** (Include street address and the name of the municipality/county. A location map of appropriate scale is also recommended.)

**A. Cuyler Hill State Forest** (Cortland County Reforestation Area No. 6) 5,507 acres - located in the Cortland County Towns of Cuyler and Taylor; accessible by Cuyler Hill Rd., Elwood Rd., Jipson Hill Rd., Pease Hill Rd., Potter Hill Rd., Randell Hill Rd. and Stoney Brook Rd.

**B. Maxon Creek State Forest** (Cortland County Reforestation Area No. 8) 908 acres - located in the Cortland County Town of Cuyler; accessible by Midlum Rd., Pardee Rd. and Pease Hill Road.

**C. Dog Hollow State Forest** (Cortland County Reforestation Area No. 16) 723 acres - located in the Cortland County Towns of Cuyler and Truxton; accessible by Brown Rd. and Dog Hollow Road.

**Reasons Supporting This Determination:**

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

## 1. Summary

The Cuyler Hill Unit Management Plan (UMP) contains an assessment of the Unit's natural resources on a landscape scale. Informed land use decisions and stewardship management actions are outlined in the plan for the next 10 to 20 years. The Plan will establish stewardship benchmarks for the Unit's ecosystems. Several projects will be accomplished through DEC Adopt-A-Natural resource volunteer partnerships.

A Long Environmental Assessment Form (EAF) was prepared to help evaluate the potential for significant adverse impacts caused by implementation of the UMP. None of the proposed management actions will cause potentially large impacts on air quality, traffic, solid waste production, flooding, significant fish and wildlife habitats, rare, threatened or endangered species of plants or animals, historic or cultural resources, community character, recreation, open space, public access, energy use, agriculture, human health, wetlands, or aesthetic visual resources.

Small scale aesthetic impacts may be created during the harvesting of forest products and the establishment of oil and gas well pads. Aesthetic impacts will be minimized by locating log landings off road, establishing special management zones along roads when possible, and limiting the size of wildlife habitat regeneration harvests to less than 40 acres.

Additionally, all commercial forestry operations and oil and gas development will follow the guidelines established by applicable State and Federal regulations, the Generic Environmental Impact Statement (GEIS) for the Oil, Gas and Solution Mining Program, the GEIS for the State Forest Commercial Products Sales Program, DEC Policy and the Unit Management Plan (UMP). Each well drilling site will require an additional site specific environmental analysis and an individual drilling plan approved by DEC's Division of Mineral Resources and the DEC Region 7 Regional Forester or his/her designee.

In the vast majority of cases, the management actions listed in the plan will maintain or increase the number of plants and animals (biodiversity) while protecting water quality. For example, about 750 acres of minimally disturbed late successional natural forest areas will be established on the Unit, with an additional 974 acres being actively managed as late-successional closed canopy forest to provide habitat for wildlife species such as the Cerulean warbler, Scarlet tanager, Northern goshawk, Canada warbler, and Black-throated blue warbler. Additionally, the plan calls for the creation of

1,311 acres of early successional (brush and shrubs) vegetation for bird species that are in regional decline such as the Golden-winged warbler, Ruffed grouse, and the American woodcock .

No new roads, trails, parking areas or wood frame structures are planned for the site. No significant change in existing land use or land cover will occur during implementation of the UMP since the vast majority (about 90%) of the Unit's landscape



will remain covered by forest at any given point in time. Activities planned for the Unit will be covered by the following Generic Environmental Impact Statements (GEIS's) and Programmatic Environmental Impact Statements (PEIS's); Plan and Final GEIS for Conserving Open Space in New York State, PEIS for Recreational Use on State Forests, DEC Division of Mineral Resources GEIS, Oil, Gas and Solution Mining Regulatory Program, the PEIS for Wildlife Habitat Management and the PEIS for the State Forest Commercial Products Sales Program. After final approval of the plan, if activities are added to provide better management of the Unit and are not covered under this Negative Declaration or cited under the GEIS and/or PEIS, the Department will undertake a site specific environmental review.

Activities which will require a site-specific environmental review include site preparation with herbicide and clearcuts larger than 40 acres. Herbicide use may be necessary for management purposes. If so, an Herbicide Application Plan would be required.

## **2. Potential Impacts of Specific Management Actions**

The Cuyler Hill Unit Management Plan (UMP) lists the following management actions on the three (3) State Forests in the Unit. None of the following actions are deemed to extensively impact the existing environment and/or surrounding community.

**Action 2.1- Maintenance of 23.6 miles of highly valued foot trails and snowmobile trails on the Unit in partnership with DEC Adopt-A-Natural Resource (AANR) volunteers.**

***Impact(s): very limited.*** Maintenance typically involves periodic grading, installing of geotextile fabric, ditching, and trimming of vegetation with hand tools. Regular maintenance reduces soil erosion and associated water quality impacts.

**Action 2.2 - Routine maintenance of 43.6 miles of State Forest boundary lines in the Unit.**

***Impact(s): none.*** Boundary lines will be painted and in some instances blazed. Trees will not be significantly damaged by blazing during the land survey.

**Action 2.3 - Maintenance of 9.6 miles of public forest access roads (PFAR) and forest product haul roads on the Unit.**

***Impact(s): very limited.*** Regular maintenance includes mowing, grading, culvert replacement, ditching, clearing of brush from the road shoulder, and occasional use of shale from existing pits on the State Forest. Major road resurfacing will require gravel from a commercial source. All of the shale pits will be reclaimed per the DEC guidelines. If annual extraction requirements exceed the current Mined Land Reclamation threshold Mined Land Reclamation permit will be required.

**Action 2.4 - Continued implementation of best management practices (BMP's) to sustain or enhance ecosystem health, reduce soil erosion, and protect water quality.**

***Impact(s): none.*** Implementation of BMP's benefits ecosystem health and sustainability.

**Action 2.5 - Creation of a shifting mosaic of early and late succession wildlife habitats by strategically applying both even and uneven-aged silvicultural techniques, and by establishing 750 acres of natural forest areas.**

***Impact(s): very limited.*** Creation of diverse habitat will be achieved through application of scientifically based forest ecosystem management. Periodic harvesting of forest products from the Unit will be designed to mimic natural disturbance regimes and provide about 1,311 acres (18% of the Unit's landscape) of early succession cover, a land cover type that is rapidly diminishing in the Unit as the surrounding agricultural land regrows into forest or is divided into residential building lots.

**Action 2.6 - Leasing of State Forests in the Unit for oil and natural gas exploration/development with significant surface occupancy restrictions on the construction of well pads and pipelines (and related surface disturbances) which will minimize impacts to aesthetics, recreational trails, soils, late succession forests, natural areas, wetlands, streams and unique wildlife habitats.**

***Impact(s): limited.*** Based on public input and the natural resource assessment of the Unit, surface occupancy by well pads and pipelines will be limited and specifically located to minimize environmental impact. Well site development will require an additional temporary revocable permit (TRP) from the DEC Division of Lands and Forests, and require development of a site specific plan designed to minimize soil erosion and manage storm water during and after construction of well pads and pipelines. Additionally, the DEC will require that the site be reclaimed with native vegetation. Management of leased lands will use the hierarchical approach minimizing impacts to soil and water and other natural resources. The following areas are not compatible with well pad, road, or utility development:

wetlands and a 250 foot buffer around them  
slopes greater than 15%  
archaeological and cultural concerns  
rare and endangered species (Natural Heritage data base occurrences)  
ponds and a 250 foot buffer around them  
natural areas not related to buffers and slope  
spring seeps, vernal pools and an appropriate buffer around them (determined in the field)  
streams and a 250 foot buffer along them  
designated and signed recreational trails and a 500 foot buffer along them

**Action 2.7 - Protection of streams, wetlands, ponds and unique wildlife habitats on the Unit by establishing special management zones.**

***Impact(s): none.***

**Action 2.8 - Protection of cultural resources, in particular stone walls and old foundations.**

***Impact(s): none.***

**Action 2.9 - Purchasing of 1,818 acres of privately owned land from willing sellers (at fair market value) adjacent to the State Forests in the Unit.**

***Impact(s): none.*** State ownership of the land would reduce parcelization and consolidate boundary lines.

**Action 2.10 - Land Survey.** Survey, blaze, and paint about 12,326 feet of boundary line on the Unit.

***Impact(s): none.*** Boundary lines will be painted. Trees will not be significantly damaged by blazing during the land survey.

**Action 2.11 - Create 10 to 20 vernal pools to enhance habitat for amphibians, birds, mammals and reptiles.**

***Impact(s): very limited.*** Construction will require excavation with a small dozer or track-hoe. Tree removal and soil disturbance will be minimized by proper layout.

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

**For Further Information:**

**Contact Person: Mark L. Zubal, Senior Forester  
Address: NYS DEC, Lands & Forests, 1285 Fisher Ave, Cortland, NY 13045-1090**

**Telephone Number: (607) 753-3095, ext. 215**

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

**Region 7 Office of the Department of Environmental Conservation**

**Cortland County Legislature  
The Honorable Marilyn E. Brown - Chair  
County Office Building, 60 Central Ave., Cortland, NY 13045-2746**

**Town of Cuyler  
The Honorable Steven P. Breed - Supervisor  
Town Hall, PO Box 363, DeRuyter, NY 13052**

**Town of Taylor**  
**The Honorable David H. Fuller - Supervisor**  
**Town Meeting Hall, Cheningo - Solon Pond Road, Cincinnatus NY 13040**

**Town of Truxton**  
**The Honorable Gregory G Lockwood - Supervisor**  
**Town Hall - 6543 Route 91, Truxton, NY 13158**

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

**Appendix XV1 - Public Comment Summary and Response**

Public participation is an important part of the DEC's planning process. It adds significant value by enhancing communication and helps sustain and create new partnerships between the DEC and State Forest stakeholders. The DEC greatly appreciates the many comments, observations and suggestions received from the public during the development of the plan. Additionally, the DEC appreciates the many Adopt-A-Natural Resource volunteers that maintain the recreational trails on the Unit. These trails would not be possible without their advocacy and support.

Comments regarding the Draft Cuyler Hill Unit Management Plan were received by the Region 7 Division of Lands and Forests Office before, during and after development of the draft plan. Potentially affected interests such as DEC Adopt-A-Natural Resource partners, recreation groups, sporting organizations, local government officials, local residents, and forest industry were invited to participate by direct mail.

A public meeting was held on March 9, 2009 at the Hartnett Elementary School in Truxton, New York. Twenty three (23) people attended and six (6) people made verbal comments. Written comments were accepted until April 9, 2009. Draft plans were available before the public meeting at local libraries, town halls, DEC offices, by mail and on the Internet. The majority of stakeholders provided comments in person at the public meeting or by email.

Many of the public comments received involved observations, concerns and recommendations related to oil and gas leasing, recreation, aesthetics and ecosystem management. To conserve space and for reading efficiency, public comments are summarized by topic. Some of the comments have been edited for length and clarity.

A full transcript of the comments received during Truxton public meeting and the DEC's Response to Public Comments are available upon request from the DEC Cortland Lands and Forests Office by calling **(607) 753-3095 ext. 217**.

**Topic: Economics**

**Comment:** Harvest more timber.

**Response:** When fully implemented, the plan will result in an increase in harvesting, however all of the primary goals will be addressed. State Forests provide multiple benefits and values

to wildlife and society. The UMP is a strategic plan that balances these benefits and values. Harvesting activities associated with forest ecosystem management provides a steady supply of sustainably grown forest products to local industry. Increasing recreational and planning demands in the region have reduced resources available to mark and manage forest product sales. The plan identifies forest ecosystem management needs at the forest stand level and illustrates the need for additional staff to fully implement the plan.

**Comment:** Harvest mature trees on State Land with revenues (or portions of) returned to local government to support maintenance of town roads on State Forest land.

**Response:** Revenue from forest product sales on State Forest lands goes into a special revenue account that covers some of the operating expenses of the Division of Lands and Forests. While local municipalities do not receive any of this revenue, State Forests do pay town, school, and fire district taxes. Maintaining town roads on or leading to State Forests should be done using the tax base provided.

**Comment:** Will Albany increase timber harvesting in the Unit to generate more revenue.

**Response:** In January of 2008 the Department was awarded "green certification" from the Forest Stewardship Council and Sustainable Forestry Initiative. In order to maintain the certification, the Department must manage State Forests in accordance with principles of sustainable forestry and under strict environmental guidelines. These principles and guidelines have been incorporated into the UMP. Therefore harvesting more timber than the plan allows would violate the very intent of the plan and cause the revocation of "green certification".

#### **Topic: Ecosystem Management**

**Comment:** What about managing for old apple trees to produce apples for grouse and deer.

**Response:** Action 1.7.6: Release and prune wild apple trees to improve habitat for wildlife. This action indicates that about 293 acres of overgrown apple trees will be released during the planning period.

**Comment:** Longer planning period, 20 years is not long enough.

**Response:** By definition, A UMP guides the Departments management activities for the next twenty years. A closer look at the plan shows that there are long term goals stated in the plan. For example, action 1.5.1 sets a long term goal of maintaining 20% of the Unit in early successional habitat, action 1.5.3 sets a long term objective of maintaining a minimum of 20% of each State Forest in conifer cover and action 3.1.1 designates 6,293 acres as available for long term forest management. These are some of the examples of long term management strategies. The recreational assets, water resources, roads etc. will all be maintained on a long term basis not just twenty years.

**Comment:** Should not plant oak trees.

**Response:** During the initial public scoping meeting the public requested the planting of oak to improve wildlife habitat. Action 1.5.8 addresses the lack of mast producing trees on the landscape and outlines the planting of red oak trees. The 120 acres to be planted with oak are softwood plantations that will be clearcut. The planting sites are located primarily on ridge tops and were chosen based on the amount of competing understory vegetation and soil type.

**Comment:** Consider management for emerald ash borer.

**Response:** The Department will follow an adaptive management approach. This means a process of continually adjusting management in response to new information, knowledge or technologies. This will include managing to minimize effects of insect and disease infestations. Forest product sales on State Forests in the Region are already planned with the knowledge that the emerald ash borer will arrive soon.

**Topic: Insect and Disease**

**Comment:** Is there a monetary loss resulting from forest tent caterpillar defoliation and what about prevention.

**Response:** There is a loss in value of timber from forest tent defoliation. Our analysis showed a positive economic return would probably be realized by spraying areas heavily infested with Forest Tent caterpillar, as the cost of spraying would be much less than the expected loss of timber value. Unfortunately, our budget for State land management is not sufficient to pay for the treatment.

**Comment:** Spray for Forest Tent Caterpillar.

**Response:** As stated above, the budget for State land management is not sufficient to pay for the treatment. Forest tent caterpillars are native pests and many people feel that public land should not be sprayed to control native pests. Additionally, possibly affected neighbors and stake holders do not feel the public land should be sprayed.

**Topic: Oil and Gas Development (Exploration and Drilling)**

**Comment:** I oppose gas leases on State Land. I think that landowners would benefit more if drilling was done on private land.

**Response:** The State Forests of the Cuyler Hill Unit are not currently leased for oil & gas exploration/development. However, State Environmental Conservation Law (ECL) allows DEC to lease State Forests for oil and gas exploration/development. In the future one or more of the State Forests in the Unit may be leased based on the recommendations in this plan. Before leasing occurs additional public input meetings would be held. Leasing of State Lands does not deny income to private citizens but allows the State to receive bonus and royalty income from oil and gas produced from State Lands. Oil and gas production from both State and private lands is subject to local taxation under provisions of the New York State Real Property Tax Law.

**Comment:** Hope that no gas drilling will be done, due to its destructive effect on the forests.

**Response:** The hierarchical approach used in this plan to identify well pad sites will minimize effect on the forests. All oil and gas exploration/development related activities will require a DEC Temporary Revocable Permit (TRP) - approved by the Regional Forester. The TRP will require a performance bond, inspection of the job site, and specific road/site reclamation requirements. Some well access roads may remain open for public recreational use and administrative use by DEC staff.

**Topic: Recreation**

**Comment:** Wants a pullover parking area for cross country skiing.

**Response:** All of the plowed roads that provide winter access to the Unit are town roads. There has not been enough cross country ski use in the Unit to warrant a plowed parking area.

**Comment:** It should also be noted in the text and on Maps that it is concurrently the North Country National Scenic Trail right up to the Onondaga trail junction at Stoney Brook road and that the NCNST continues on the Onondaga trail that begins in the Unit. This would be consistent with other plans including the Draft Region 7 Recreation Plan, Tioughnioga UMP and Adirondack Plan that include the NCNST, FLT and Onondaga trails are concurrent for Alleghany State Park at the PA border to the Tioughnioga WMA.

**Response:** With maps supplied by the Finger Lakes Trail Council the plan has been changed to show the different classifications of foot trails.

**Comment:** The plan refers to the FLT as a hiking trail which is appreciated. "Foot Trail" emphasis would also strengthen its appropriate use. I would like to see the definition of a hiking trail strengthened with wording similar to the Region 7 Recreation Plan and the Tioughnioga UMP.

**Response:** The Draft Region 7 Recreation Plan definition of a foot trail has been incorporated into the plan.

**Comment:** Hikers want primitive/wilderness area experience that avoids mechanization.

**Response:** Through this plan the State Forests are managed for a variety of habitats from protection areas, natural areas to early successional habitats. The foot trails traverse through a variety of habitats on the Unit which will provide varying degrees of remoteness/wilderness experience. By law State Forests are managed to provide multiple benefits that include recreation, the sale of forest products and potentially oil and gas exploration and development. Therefore, hiking on State Forest land can not provide a true wilderness experience. However, management activities outlined in this plan are designed to minimize visual and audio impacts on recreational users.

**Comment:** I support the omission of mountain bikes and motorized vehicles as appropriate recreational users of a hiking trail. All other recreational uses listed are supported.

**Response:** Action 2.1.1: Designate all hiking trails on the Unit as foot trails only. The action includes the following statement. The following recreational uses are prohibited on the foot trails in the Unit; horseback riding, mountain biking, and snowmobiling.

**Comment:** I support the elimination of ATV's in this State Forest for all the reasons listed in the UMP.

**Response:** Support of this issue is appreciated.

**Comment:** I support the AANR program and our volunteers can work within it.

**Response:** Support of this issue is appreciated.

**Comment:** I support the protection of the FLT and NCT including FLT/NCT Onondaga as foot trails only. Other trails may be multiple use if designed for that purpose and do not degrade the environment or have potential user conflicts.

**Response:** Support of this issue is appreciated.

**Comment:** Would like to have an outhouse at the corner of Randall Hill Road and Cuyler Hill PFAR to accommodate Snowmobilers in the winter.

**Response:** Experience with vandalism to permanent structures on other State Forests in the area discourages construction of an outhouse. The Department may be willing to allow portable outhouses at the location that would be removed during the summer months. This would be accomplished by issuing a Temporary Revocable Permit.

**Comment:** Will the plan make provisions to allow hunting forever?

**Response:** State Forests are managed for multiple benefits including recreation. State Forests have historically provided opportunities for primitive outdoor recreation without facilities. There is a saying that nothing is forever, but this plan proposes no goals, objectives or actions that would preclude hunting on the State Forests.

**Topic: Miscellaneous**

**Comment:** Fix and maintain truck trails using shale from the State Forests.

**Response:** Objective 4.8: Maintain usable Shale Pits outlines the use of shale for the resurface and repair of public forest access roads, (PFARs) Increasing recreational and planning demands in the region have reduced resources available to maintain PFARs. PFAR repair and maintenance may be done by contractors during timber harvests in lieu of payment.

**Appendix XVII- Maps**