



Division of Lands & Forests

**HEMLOCK-CANADICE
UNIT MANAGEMENT PLAN**

DRAFT

Livingston County towns of Livonia, Conesus and Springwater
Ontario County towns of Richmond and Canadice

February, 2013

Lead Agency:
NYS Department of Environmental Conservation
Region 8 Sub-Office
7291 Coon Rd.
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NYS Department of Environmental Conservation's Mission

"The quality of our environment is fundamental to our concern for the quality of life. It is hereby declared to be the policy of the State of New York to conserve, improve and protect its natural resources and environment and to prevent, abate and control water, land and air pollution, in order to enhance the health, safety and welfare of the people of the state and their overall economic and social well-being." - Environmental Conservation Law 1-0101(1)

PREFACE

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

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

Green Certification

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

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

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

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

consumers that the raw material was harvested from well-managed forests.

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



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The Unit Management Planning Process

New York State's management policy for public lands follows a multiple use concept established by New York's Environmental Conservation Law. This allows for diverse enjoyment of state lands by the people of the state. Multiple use management addresses all demands placed on these lands, such as: watershed management, timber management, wildlife management, mineral resource management, rare plant and community protection, recreational use, taxes paid, and aesthetic appreciation.

In this plan, an initial resource inventory and other information is provided, followed by an assessment of existing and anticipated uses and demands. This information is used to set goals and management objectives. Management actions tables provide an estimated cost and timetable for accomplishing these objectives.

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Acknowledgments

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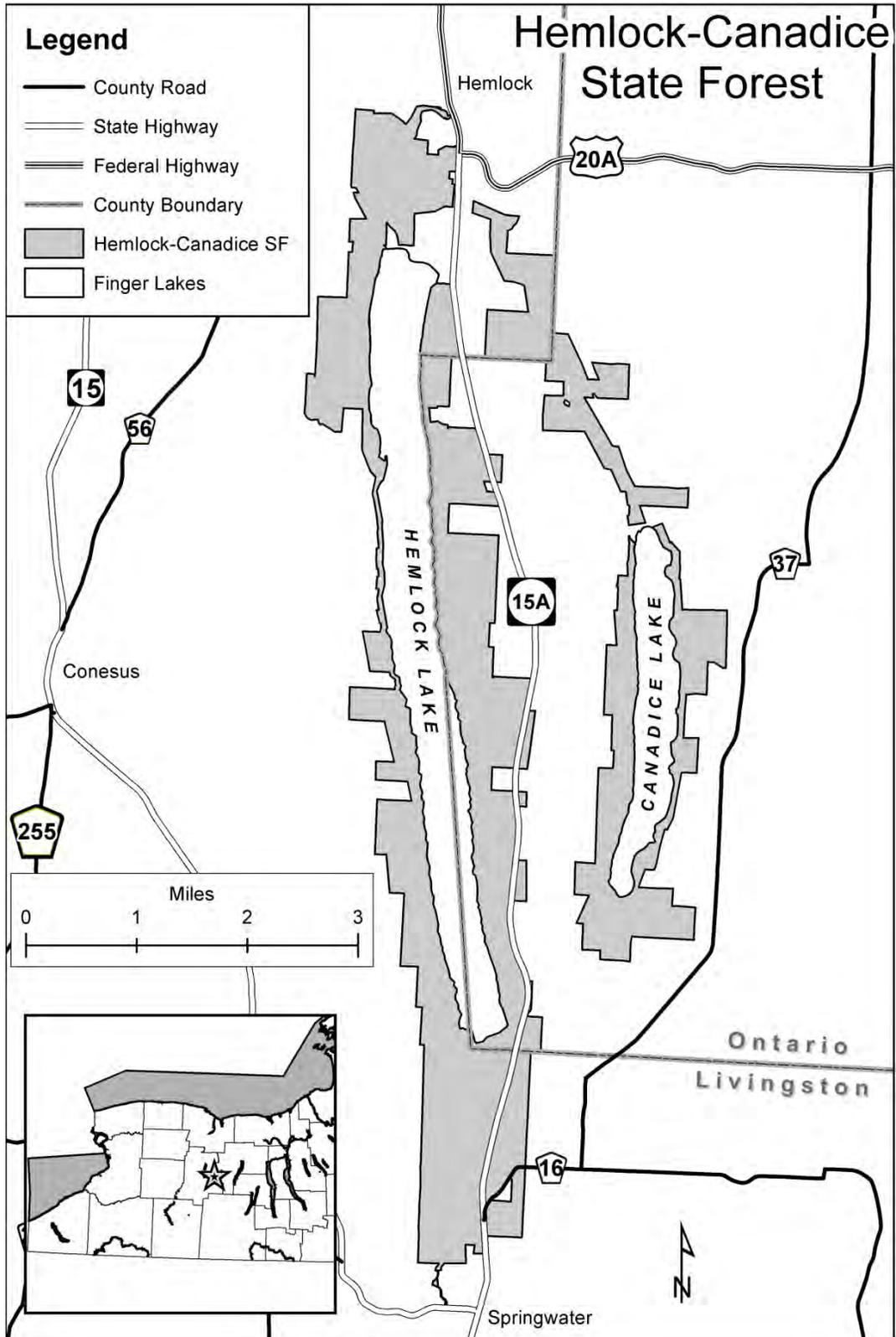
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HEMLOCK-CANADICE UNIT LOCATION MAP



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INTRODUCTION

History of State Forests and Wildlife Management Areas

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

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

The State Reforestation Law of 1929 and the Hewitt Amendment of 1931 set forth the legislation which authorized the Conservation Department to acquire land by gift or purchase for reforestation purposes. These state forests consisting of not less than 500 acres of contiguous land were to be forever devoted to reforestation and the establishment and maintenance thereon of forests for watershed protection, the production of timber, and for recreation and kindred purposes. This broad program is presently authorized under Article 9, Title 5, of the NYS Environmental Conservation Law.

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

During the war years of 1941-1945, little was accomplished on the reforestation areas. Plans for further planting, construction, facility maintenance, and similar tasks had to be curtailed. However, through postwar funding, conservation projects once again received needed attention.

The Park and Recreation Land Acquisition Act of 1960 and the Environmental Quality Bond Acts of 1972 and 1986 contained provisions for the acquisition of state forest lands, these lands would serve multiple purposes involving the conservation and development of natural resources, including the preservation of scenic areas, watershed protection, forestry, and recreation.

Wildlife management areas in New York, like state forests, have a varied history of acquisition. Many were gifted to the New York State by the Federal Government or other cooperating public or private organization. Some parcels were purchased with Bond Act funds or Federal Aid in Wildlife Restoration Program funds. The latter which is commonly called the Pittman-Robertson Act is a federal fund supported by hunters from their purchase of hunting licenses, firearms and ammunition.

Today there are over 750,000 acres of State Forests and over 200,000 acres of Wildlife Management Areas throughout the state. The use of these lands is important to the economy and to the health and well-being of the people of the state.

History of Hemlock-Canadice Unit

The state forest covered by the Hemlock-Canadice Unit Management Plan has seen numerous changes in the landscape.

The area was originally inhabited by Seneca Indians; the Seneca are a member of the Haudenosaunee (people of the long house) or Iroquois Confederacy. The Haudenosaunee were nomadic hunters and farmers. The famous Seneca chief, Red Jacket, resided in what is now Branchport on the north end of Keuka Lake. They undoubtedly hunted and fished in the Hemlock-Canadice Unit and practiced agriculture in the surrounding flats.

The destruction and devastation of the Seneca homeland by the Sullivan-Clinton Campaign of 1779 resulted in the opening of Seneca lands, as well as other Haudenosaunee lands, to American expansion. The Campaign was ordered by General George Washington during the middle of the American Revolution in order to deal both with a perceived threat of potential Indian alliances on the Colonies' western frontier, as well as retribution for actual alliances some Haudenosaunee made with the British in response to the Revolution. The Campaign came close to achieving its essential goal that Indian country "not be merely overrun, but destroyed".

In 1788, Oliver Phelps and Nathaniel Gorham purchased 2,600,000 acres from the State of Massachusetts, which owned all the land known as "western" New York. The pre-emption line delineated the boundary between New York and "western" New York. In 1790, they sold 1,250,000 acres to Robert Morris, who sold 750,000 acres to William Pulteney. Colonel Charles Williamson was the chief land agent for the Pulteney purchase. He sub-divided the Pulteney tract and sold by contract to individual homesteaders.

Settlers came to the valleys in the late 1700's, followed by farmers looking to clear the hillsides for farms. European immigrants competed with settlers moving west from Vermont, Massachusetts, Connecticut, New Jersey and eastern New York for offers of large tracts of land for farming. By the late 1800s, only 30 percent of the land was forested.

Almost all land in Livingston and Ontario Counties was cleared of tree growth to make way for crops or pasture land for grazing. A walk in most woodlots shows evidence of stone fences or old hedgerows. Lands not cleared for crops were cut for wood to supply the water powered sawmills that sprang up all over the area. This early timber industry supplied wood via railroads and canals all over the eastern United States.

The farming boom was short-lived however. After one or two generations, the heavy clay soils and short growing season discouraged farming. Many farmers moved on to settle the midwest, Oregon and Washington territories. The Depression of the 1930's bankrupted many of the marginal hillside farms in this area of New York. Much of this abandoned land reverted to brush and tree growth.

The State Reforestation Law of 1929 and the Hewitt Amendment of 1931 set forth the legislation which authorized the Conservation Department to acquire land by gift or purchase for reforestation areas. These lands were to be forever devoted to "reforestation and the establishment and maintenance thereon of forests for watershed protection, production of timber, and for recreation and kindred purposes." In 1930, forest districts were established and land acquisition and reforestation were started.

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 serve multiple purposes involving the conservation and development of natural resources, including the preservation of scenic areas, watershed protection, forestry and recreation.

In 2010 NYS DEC purchased the City of Rochester's Watershed property under the State Reforestation Law. However, the history of the area as public land dates back for over a century to when the City began to acquire land in order to protect the public water supplied by Hemlock Lake.

City of Rochester: Water Supply and Stewardship

Hemlock and Canadice Lakes have been the protected source of the City of Rochester's public water since 1876. In 1896 the City of Rochester began the land acquisition process that eventually resulted in ownership of the entire shoreline and portions of the hillsides of Hemlock and Canadice Lakes in order to safeguard the public water supplied by the lakes. Stewardship by the City resulted in arguably the best protected large public water supply in New York State. Also, City efforts restored Hemlock and Canadice Lakes as the only Finger Lakes with largely undeveloped shorelines. This unique condition not only helps to minimize the City's water treatment costs by protecting water quality, but it also offers a serene atmosphere that is peerless in this section of New York.

Protecting water quality continues as the most important function of this property; however the additional benefits offered by this exceptional property were also recognized by the City.

Early City administrations were convinced of the value of a water supply protected by forest cover. However, much of the watershed property being acquired in the early 1900's was in agricultural use. Therefore, in 1902, an aggressive tree-planting program began in order to provide the desired forest cover. During next 29 years, 3.7 million conifer seedlings were planted on 3000 acres. Species included Scots pine, white pine, red pine, Norway spruce and a few others.

In 1904, a fungal disease called chestnut blight was discovered in New York, having been accidentally imported from Europe. Within 30 years, it spread across the nation and virtually eliminated the American chestnut. Evidence of American chestnut can still be seen in the form of stumps and sprouts from root systems of chestnut. Overhead, the holes left by the death of the chestnuts has been filled by red maple, white ash, hickories and oaks.



Figure 1: Water pipeline under construction between Hemlock Lake and Rochester.

In 1929 disease was noted in the plantations. Dr. H.H. York, NYS Forest Pathologist, was called upon to investigate. Three fungal diseases, “new to Dr. York,” were observed. A cooperative effort between the City and NYS Conservation Department began. In order to retain forest cover if the conifers died, a program to under plant the stressed conifers with hardwood seedlings commenced. To provide the seedlings, a hardwood nursery was started by the City in 1934. From 1936-1940, 475,000 hardwood seedlings including oak, hickory, ash, walnut, and others were planted beneath the conifers. This effort was apparently not very successful, due largely to the conifers not dying out. However, there are remnants evident today, notably on the north side of Wheaton Hill Rd, where straight rows of planted hardwoods illustrate this unique work. The City was very active in watershed forestry during this period. At other times over the decades, City forestry efforts have been minimal.

In 1939, a Forest Pathology laboratory was established by the City in Springwater, N.Y., at the head of the Hemlock Lake. It was the only municipal forest lab in the country. Records are not readily available but it seems that this period of great forestry activity ended with the start of WWII.

Once the forest cover was established, more attention was given to the maintenance of the forest resource. There were periods of pruning, thinning, and harvesting. Successional changes of the forest took place. By the mid 1960's, hardwood forests were considered to be an aging, but renewable, resource. Timber was aggressively harvested in some easily accessible hardwood forest stands during the late 1970's and early 1980's. Many of these stands were high-graded at that time, leaving the residual forest in poor condition. Today, 30+ years post harvest, the forest is still recovering.

As conifer stands edged past age 50, many began to lose vitality. This was especially true for those poorly matched to soil conditions. A severe ice storm in 1991 proved to be an irreversible stress factor for many plantations. Plantations of Norway spruce, and red pine on better sites, will continue as conifer stands for thirty or more years. Scots pine, although still prominent as single stems and in residual pockets of former larger stands, are not expected to be a forest resource beyond the next fifteen years. Although the seed source for much of the Scots pine planted on City property was superior to plantings elsewhere, it is noted that Scots pine proved to be poorly adapted to area soils and did not become a widely utilized commercial species in New York.

In the mid-1980's, a committee comprised of scientists, watershed residents, town and state representatives, and others was formed to advise City staff on watershed management. A key recommendation of this committee was to revise the forestry plan that had been part of the poorly conducted, 1980 timber harvest. A forest resource inventory was compiled in 1991-1992. The Forest Resource Management Plan for City Owned Property Hemlock and Canadice Lake Watershed was then written, based upon a new inventory, by Bruce E. Robinson, Inc. It was adopted by the City in 1993.

Since 1993, forestry work has been conducted throughout the watershed property per the 1993 Plan. Cleaning & Releasing has been conducted in young pole stands and along public roads to improve aesthetics. Harvest of lower grade hardwoods and conifers has been conducted on 309 acres, 20 miles of trails have been added, most in association with timber harvest, some to enhance wetlands access. A significant accomplishment was the restoration of the City's standing as a responsible watershed steward. City timber harvests now demonstrated proper practices. The residual forest, after harvest, is healthier, more vigorous, and more diverse. Wildlife habitat is enhanced. Trails from harvests, as noted, offer great recreation opportunities.

As stated by the City in their 2005 Forestry Plan, their intention was to see the continuation of work, started over a century ago that would provide an enduring forest cover to protect the water resource. The City's 2005 Plan was based upon experience gained during implementation of their 1993 Forest Resource Management Plan. The 2005 Plan was meant to be a guide for City forest managers, or for those who follow. It endorsed a steady, efficient application of sound forestry practices to meet the goal of a healthy, diverse forest. It presented data and guidelines to accomplish specific planned actions.

Further, City staff and the consulting forester have worked cooperatively with a variety of groups interested in forestry and related efforts. A significant wetland enhancement project was conducted with the NYS DEC Fish and Wildlife Unit. Ponds and potholes were developed with access trails and overlooks at different sites around the property. Cooperation continued with NYS DEC eagle experts (there were 2 active nests on City property in 2010). The Nature Conservancy (TNC) became a welcome and active participant in watershed protection, acquiring hundreds of key acres, thus far, and promoting environmental protection efforts. The Finger Lakes Land Trust (FLLT) has been active in education and protection efforts, primarily through conservation easements. Hikes and tours have been hosted for New York Forest Owners Association (NYFOA), a Society of American Foresters (SAF) national convention, watershed neighbors, and others.

The trend toward subdivisions or fragmentation of surrounding lands is expected to continue. Hemlock-Canadice State Forest is a large block of land. As such, it will become an even more valuable public asset in the future.

INFORMATION ON THE UNIT

Identification

The approximately 6,684 acre Hemlock Canadice Unit is comprised of one state forest. For management purposes, each state forest was consecutively numbered in the order in which they were purchased in each county, or two county combination.

Please remember that this is a very sensitive area because Hemlock and Canadice Lakes are a direct source of public water for the City of Rochester and other communities.

Table 1: Acreage and Boundary Line of State Land

Name	State Forest Number	Acreage	Est. Boundary Line (Total Exterior)	Est. Road Frontage
Hemlock-Canadice State Forest	Livingston-Ontario Reforestation Area# 1	6,684*acres	80 miles (includes 22 miles of shoreline)	24 miles
*This is land acreage only; it does not include the acres of Hemlock and Canadice Lakes.				

Table 2: Hemlock and Canadice Lakes

Name	Acreage	Length	Shoreline	Max. Depth
Hemlock Lake	1,800** acres	7 miles	16 miles	91 feet
Canadice Lake	650** acres	3 miles	7 miles	95 feet
Total	2,450** acres	10 miles	23 miles	
**This is water acreage only; this will change with water level, see also Wetlands section.				

Geography

The Unit is located in the Towns of Richmond and Canadice in Ontario County and the Towns of Livonia, Conesus and Springwater in Livingston County. It is located south of Rochester, NY and north of Dansville, NY. State Route 15A bisects the middle of the Unit, providing access to it.

It is located in the Southwestern Lake Ontario Basin. Local watersheds for this unit are the Hemlock Lake Watershed, the Canadice Lake-Canadice Outlet Watershed and the Hemlock Outlet watershed.

Elevations on the Hemlock-Canadice Unit range from approximately 905 feet on Hemlock Lake to about 1,740 feet on the west side of Canadice Lake. Canadice Lake is at about 1,096 feet and the top of Bald Hill, located on private land between the two lakes, is about 1850 feet.

Climate

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

Livingston County

The average length of the freeze-free growing season in Livingston County is 140 days. The average daily high temperature in winter is 37° F and the average daily minimum temperature is 20°F. In summer, the average daily high temperature is 78°F and the average daily minimum temperature is 55°F. Ridge tops are markedly cooler than the lowland areas.

Livingston County annual precipitation averages 31 inches. Precipitation is well distributed throughout the year and is usually adequate for all crops. The City of Rochester staff has taken precipitation measurements at the Hemlock facility, located at the north end of Hemlock Lake between 1960 - 2009, with a result of 33.6", they also submitted the data to the National Oceanic and Atmospheric Administration (NOAA).

Average seasonal snowfall is 65 inches. In winter snow depths vary greatly with elevation, but on the average, snow depths are measurable for 3 months. Monthly totals of 8 to 20 inches of snow are common from December through March.

Sunshine occurs for 65% of daylight hours in the summer and 30% in the winter. The prevailing wind is from the west to southwest. Average wind speed is at its highest, 12 mph, in February.

Ontario County

The average length of the freeze-free growing season in Ontario County is 138 days. The average daily high temperature in winter is 37° F and the average daily minimum temperature is 19°F. In summer, the average daily high temperature is 79°F and the average daily minimum temperature is 53°F. Ridge tops are markedly cooler than the lowland areas.

Ontario County annual precipitation averages 30 inches. Precipitation is well distributed throughout the year and is usually adequate for all crops.

Average seasonal snowfall is 65 inches. In winter snow depths vary greatly with elevation, but on the average, snow depths are measurable for 3 months. Monthly totals of 8 to 20 inches of snow are common from December through March.

Sunshine occurs for 65% of daylight hours in the summer and 30% in the winter. The prevailing wind is from the west to southwest. Average wind speed is at its highest, 12 mph, in February.

Adjacent Land - Existing Uses

The purpose of this section is to attempt to take a brief look at land use patterns beyond the boundaries of NYS DEC ownership. This plan only applies to the Hemlock-Canadice State Forest, but it does not exist in a vacuum. The uses and conditions of the adjacent private and/or publicly owned land will impact the area and will be considered when planning actions on the Unit. This type of “landscape look” is valuable in helping to place the state forest in its proper context.

The three following tables were all created from different sources of data, all use different scales of data and cover different geographical areas. As such they are not easily comparable to each other.

However, using all of this data, and from anecdotal observations, the following generalizations can be made: For the parcels immediately adjacent to the state forest, as shown in Table 3, below, residential uses dominate, even though the parcels may be forested. Agricultural uses seem to have declined over the last 30 years, among the parcels still in an agricultural use, intensity of use seems to have declined (changes over time from active cropland to vacant agricultural land or pasture were noted).

As shown in Table 4, below, all five towns are well forested; in general, the towns furthest to the north show somewhat less forested land, due to the prevalence of better agricultural land in these locations, and agricultural abandonment becomes much more prevalent in the south.

Table 3: Real property (existing use) tax code of adjacent property

Real property tax codes were used to create this table. This is from properties that share at least one boundary with the state forest.

Percent is calculated by: # parcels / Total # parcels (NOT by acres)

County	Town	Agricultural	Residential	Abandoned Agricultural	Forested	Other
Livingston	Conesus	8.6%	42.9%	45.7%	2.8%	0
	Livonia	8.5%	59.3%	16.9%	0	15.3%
	Springwater	9.7%	61.3%	22.6%	0	6.4%
Ontario	Canadice	1.5%	71.1%	22.1%	2.9%	2.4%
	Richmond	0	84.6%	15.4%	0	0

For further information on the tax codes see Appendix C: Taxes.

1. Agricultural parcels include any parcel classed in property ownership class 100
2. Residential parcels include any parcel classed in property ownership class 200
3. Abandoned Agricultural parcels include any parcel classed in property ownership class 300
4. Other parcels include any parcel classed in any other property ownership class

The lands immediately adjacent to the State Forest are largely in private ownership, and there are no industrial forest parcels adjacent to it.

For a somewhat more broad – scale, landscape level look at land uses and land cover we use the USGS Land Use and Land Cover data.

Table 4: USGS Land Use and Land Cover Data

Please note that this data was extracted from the USGS Land Use and Land Cover data. Also note that the data is displayed, by town, for the entire town. It has **not** been extracted for adjacent to state lands only. The base data was originally gathered at a scale which makes this inappropriate.

County	Town	Forested	Agricultural	Water	Residential	Wetland
Livingston	Conesus	53.1%	35.7%	7.6%	2.1%	1.6%
	Livonia	22.2%	64.7%	6.3%	6.6%	0.3%
	Springwater	59.4%	39.6%	0.0%	0.4%	0.4%
Ontario	Canadice	73.0%	15.9%	7.5%	1.3%	2.3%
	Richmond	41.9%	47.7%	4.0%	3.0%	3.4%

Note that this data shows a percentage of the total acres contained in each town rather than a percentage of the number of parcels as is used in the tax data, above. Thus the results of this study are not directly comparable with the results of the tax parcel study, above. In addition, the data for the first study are concerned with land use. The data for the second study are concerned with vegetative cover.

In addition to the two data sets displayed above, The Nature Conservancy has also conducted a plant community or cover type survey for the watersheds surrounding these two lakes. This survey was finalized and the report produced in 1998. The entire report is attached to and made part of this document as Appendix L: Plant Communities of Hemlock-Canadice Watershed. Please make reference to the main body of the report for survey methodology, definitions, etc. The contribution of The Nature Conservancy in this regard is recognized and greatly appreciated.

Table 5: The Nature Conservancy/New York Natural Heritage plant community and cover type

The table below is the summary from The Nature Conservancy report. Once again, the percentages are of the watersheds as a whole; the data has not been manipulated to represent only the lands owned by the State of New York.

Plant Community or Cover Type	Total Watershed		Canadice Watershed		Hemlock Watershed	
Open Water		7.22%		9.22%		6.73%
Lakes	6.87%		8.68%		6.42%	
Ponds	0.36%		0.55%		0.31%	
Total Wetland Cover Types		2.56%		1.57%		2.82%
Shallow Emergent Swamp	0.18%		0.05%		0.21%	
Shrub Swamp	0.82%		0.93%		0.80%	
Sedge Meadow	0.10%		0%		0.13%	
Shallow emergent marsh/shrub swamp/sedge meadow	0.85%		0%		1.06%	
Inland poor fen	0.02%		0%		0.02%	
Highbush blueberry bog thicket	<0.01%		<0.01%		<0.01%	
Silver Maple Ash swamp	0.57%		0.58%		0.57%	
Rich Hemlock hardwood peat swamp	0.02%		0%		0.03%	
Total Successional Cover Types		20.18%		14.94%		21.48%
Successional old field	11.08%		10.17%		11.31%	
Successional shrubland	8.27%		3.66%		9.41%	

Plant Community or Cover Type	Total Watershed		Canadice Watershed		Hemlock Watershed	
Successional shrubland/old field	0.83%		1.11%		0.76%	
Total Forest Cover Types		54.67%		67.46%		51.49%
Appalachian oak-hickory forest	0.31%		1.34%		0.05%	
Maple Basswood rich mesic forest	0.11%		0%		0.14%	
Hemlock Northern Hardwood forest	4.3%		2.9%		4.62%	
Successional northern hardwoods	34.4%		41.38%		32.7%	
Successional shrublands / successional northern hardwoods	2.69%		6.89%		1.65%	
Successional northern hardwoods / conifer plantations	6.44%		7.09%		6.27%	
Conifer Plantations	6.42%		7.86%		6.06%	
Total Agricultural Types		11.26%		2.33%		13.47%
Cropland	10.52%		2.27%		12.56%	
Pasture	0.72%		0.06%		0.88%	
Vineyard	0.02%		0%		0.02%	
Total Developed Cover Types		4.1%		4.47%		4.03%
Mowed lawn	3.73%		4.47%		3.57%	
Residential / commercial	0.34%		0%		0.42%	
Gravel mine	0.03%		0%		0.04%	

Taxes

State Forest lands acquired for reforestation purposes pursuant to Section 9-0501 of the Environmental Conservation Law are subject to taxation for all purposes except county tax. Taxes on taxable State land are handled just like a private owner's taxes except all the tax bills (or rolls) are sent from the County Treasurers and go directly to the State Comptroller. The Comptroller then pays the taxes to the County Treasurer's office who then gives the money to the towns and school districts.

Reforestation Areas in the Towns of Livonia, Springwater and Conesus in Livingston County and the Towns of Canadice and Richmond in Ontario County are subject to taxation for all purposes in accordance with Section 532 of the Real Property Tax Law.

Prior to NYS DEC ownership the City of Rochester had entered into agreements with the county of Livingston, the towns of Conesus and Livonia, and the Livonia Central School District effective January 1, 1988, pursuant to subdivision 3 of section 406 of the real property tax law, relating to exemptions from taxes in return for payments in lieu of such taxes (PILOT agreements).

The PILOT agreements are subject to Chapter 774 of the Laws of 1989 which bind the People of the State of New York to the agreements at the time of acquisition. Upon the acquisition, the provisions of section 532 of the real property tax law shall not apply to the lands so acquired but the taxation thereof shall be governed by the agreements. The taxation of such lands will be governed by such section 532 at such time as the agreements cease to be effective.

Due to the subdivision of the City property and in accordance with a Memorandum of Agreement between the City of Rochester and the Department of Environmental Conservation, dated June 17, 2010, the PILOT obligations are divided as follows:

1. The State agreed to pay the Conesus PILOT and the Livingston County PILOT;
2. The City will continue to pay the Town of Livonia PILOT;
3. The City and State agreed to split the Livonia Central School PILOT: the State will pay the Conesus portion of the Livonia Central School District PILOT payment and the City will pay the Livonia portion.

Appendix C: Taxes - lists the taxes paid in 2010 by the City of Rochester on the lands purchase by the NYS DEC for the Hemlock-Canadice State Forest. In that appendix, the PILOT payments as agreed upon by the Memorandum of Agreement, dated June 17, 2010, are also shown.

Further details may be found in Section 532 of the Real Property Tax Law as well as in Chapter 774 of the Laws of 1989.

Geology

Surface Geology

Background

Most surface geology in the Finger Lakes region and Southern Tier of New York was influenced by the processes of glaciation that occurred during the Pleistocene Epoch. Ice sheets from the last glaciation episode (Wisconsinan glaciation episode) retreated from the area approximately ten thousand (10,000) years ago, leaving behind numerous sedimentary deposits and surficial features; including elongated scour features. Some of these scour features filled with water creating numerous lakes, small and large; the larger ones are now call the Finger Lakes.

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

Hemlock-Canadice Unit

The state lands included in this unit management plan have similar surface geologies. Surface sediments within the unit are primarily glacial till, except at the north and south ends of Hemlock Lake where lacustrine silts and clays were deposited in the pro glacial lake. Swamp deposits over lie a portion of these sediments in an area adjacent to the south end of the lake.

Bedrock outcrops and subcrops of Upper Devonian shales, siltstones, sandstones and minor limestones of the West Falls Group are located intermittently on the sides and crests of ridges and hills that surround Hemlock and Canadice lakes. The only other bedrock Group that outcrops or subcrops within the unit are the older shales and siltstones of the Sonyea Group and Genesee Group that are exposed at the north end of Hemlock Lake due to regional dip to the south. Outcrops of bedrock are most likely due to the erosion of overlying glacial sediments, causing the exposure of the bedrock.

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 6: Surficial Geologic Material

Name	Surficial Geologic Material
Around Hemlock Lake	<ul style="list-style-type: none"> • Glacial Till - Deposition of clays, silts and boulders beneath glacial ice. Located at interlake high elevations • Lacustrine Deposits – Deposition of laminated clays and silts in proglacial lake. Located at north and south ends of lake. • Swamp Deposits – Peat, muck organic silt and sand in poorly drained unoxidized areas that overlie lacustrine deposits. Located at south end of lake. • Bedrock - Shales, silts and minor limestones of the Devonian West Falls Group, intermittent outcrops/subcrops. Located along steep slopes at the east, west, and south sides of the lake valley. Shales, silts and minor limestones of the the Devonian Sonyea and Genesee Groups, intermittent outcrops/subcrops. Located along steep slopes of the lake valley at the north end of lake.
Around Canadice Lake	<ul style="list-style-type: none"> • Glacial Till - Deposition of clays, silts and boulders beneath glacial ice. Located at interlake high elevations • Bedrock - Shales, silts and minor limestones of the Devonian West Falls Group, intermittent outcrops/subcrops. Located along steep slopes at the west, and north sides of the lake valley.

Soils

The most common soil on this Unit is the Lordstown association, followed by the Hornell and Holly soil types. Specific soil series occurring on the unit are described and mapped in the USDA publications, Soil Survey of Livingston County, New York and Soil Survey of Ontario County, New York.

The major soil limitation which affects management is the depth of the soil to the hardpan, fragipan, or bedrock or water level. The Chippewa, Volusia, and Mardin soils all have shallow fragipans which create seasonal wetness and restrict depth of rooting. Top soil is lacking and coarse rock fragments are common at the soil surface.

Detailed soil information is contained in the above referenced publications. Digital data for soils information is currently available for both counties in this plan. Appendix M: Maps contains simplified versions of the soil types.

Bedrock Geology

Background

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

Younger bedrock units deposited during the post-Devonian Periods (such as Mississippian and Pennsylvanian Periods) have been subsequently eroded away by erosion 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.

Hemlock-Canadice Unit

The majority of the lands within this Unit contain bedrock outcropping or subcropping at or near the surface that are shales, siltstones, sandstones and intermittent limestones of the West Falls Group that were deposited during the Upper Devonian Period (approximately 350 - 400 million years ago). The northern end of Hemlock Lake contains rock units outcropping or subcropping at or near the surface that are shales, siltstones and intermittent limestones of the older Sonyea and Genesee Groups. These older Groups are exposed at the north end of the lake due to the structural dip to the south.

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.

No wells have been drilled into the subsurface of the areas within the Hemlock-Canadice Unit. A number of wells have been drilled into the subsurface of the areas surrounding the Hemlock-Canadice Unit. Subsurface information pertaining to the bedrock (that does not outcrop) has been acquired through three specific wells. These wells were drilled during 1956, 1993, and 2000 while exploring for oil and natural gas reserves in areas surrounding the Hemlock-Canadice State Forest.

These three wells were drilled to vertical depths ranging from 2,650 feet to 7,535 feet into the subsurface. The wells tested the shallower Lower Silurian (430 million years old) Medina Sandstone at two locations in areas surrounding the unit (approximately three miles from the unit) for natural gas. The third well tested the deeper Middle Ordovician (450 million years old) Trenton and Black River Formations in an area ten miles south of the unit, for natural gas.

The northern most of the three wells was drilled approximately three miles northeast of the north end of Hemlock Lake in the Town of Richmond. This well is the Empire Exploration, Inc. – Swingle #7264 (American Petroleum Institute (API) # 31-069-21503), it encountered the top of the Devonian Marcellus Shale at 790 feet, Onondaga Limestone at 831 feet, Silurian Salt at 1,367 feet, Lockport Dolomite at 1,953 feet, Medina Sandstone at 2,350 feet, and Queenston Sandstone at 2,475 feet. The well was drilled to a total depth of 2,650 feet during the fall of 1993. It was tested at a rate of 20 thousand cubic feet of gas per day from the Medina Sandstone Formation in November of 1993, and was plugged and abandoned during the same month.

The next well to the south was drilled approximately three miles west of the central part of Hemlock Lake in the Town of Conesus. This well is the Livingston Oil and Gas Company – H. Hunt #1 (API# 31-051-03305), it encountered the top of the Devonian Marcellus Shale at 1,775 feet, Onondaga Limestone at 1,815 feet, Silurian Salt at 2,175 feet, Lockport Dolomite at 2,930 feet, Medina Sandstone at 3,266 feet, Queenston Sandstone at 3,386 feet. The well was drilled to a total depth of 3,398 feet in the early part of 1956. It was tested at a rate of 304 thousand cubic feet of gas per day from the top of the Queenston Sandstone in May of 1956.

The southern most of the three wells was drilled at a surface location approximately ten miles south of Hemlock Lake, in the Town of Wayland. This well is the Belden & Blake Corporation – Huber #1 (API# 31-101-22859). It encountered the top of the Marcellus Shale at 2,282 feet, Onondaga Limestone at 2,315 feet, Silurian Salt at 2,670 feet, Lockport Dolomite at 3,510 feet, Medina Sandstone at 3,935 feet, Queenston Sandstone at 4,070 feet, Trenton Limestone at 6,039 feet, and Black River Limestone/Dolomite at 6,662 feet, Theresa Sandstone at 7,390 feet. The well was drilled to a total depth of 7,526 feet during the fall of 2000. It was subsequently plugged and abandoned in November of 2000. (See Appendix I: Bedrock Cross Section for the geologic cross section.)

Structure

Regional structure of the area is a homocline that dips (is becoming deeper) to the south-southwest at an average dip angle of approximately one degree or deepens 100 feet per each mile traveled to the south-southwest. The Geologic Map of New York - Finger Lakes Sheet #15, 1970, depicts progressively older rock units outcropping farther to the north, confirming the southern 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 orogenic events during the Paleozoic Era, culminating with the opening of the Atlantic Ocean that began at the end of the Paleozoic Era. Structural reference is available at the Preliminary Brittle Structures Map of New York, New York state Museum-Map and Chart Series No. 31E, 1974.

Mineral Resources

Oil and Gas

Introduction

Section 23-1101 of the Environmental Conservation Law and State Finance Law authorizes the Department of Environmental Conservation to make leases on behalf of the State for exploration, production and development of oil and gas on State lands. Proposals to lease parcels of NYS DEC administered State lands for this purpose will be considered following public notice in the Environmental Notice Bulletin (ENB), and in local newspapers. As of the writing of this plan, the Revised Draft Supplemental Generic Environmental Impact Statement (SGEIS) on the Oil, Gas and Solution Mining Regulatory Program and the proposed regulations for high-volume hydraulic fracturing (HVHF) are under review, but not yet finalized. When finalized, the new regulations will be followed on this and other State Forests.

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 State lands (such as improving safe and restricted access through upgrading existing roads, culverts and gates) and creation of grassy openings to enhance habitat diversity. As with any other human activity on State lands, oil and natural gas exploration and development can impact the environment. Most impacts are short term and occur during the siting and drilling phases of a well.

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

For more information on the procedures of gas leasing, see the Mineral Resources section on pg 97.

Historical Drilling & Production

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

Numerous wells have been drilled in the areas surrounding the Hemlock Canadice Unit to test the Medina Sandstone for natural gas at depths ranging from 2000' to 3400'. This drilling began in the late 1950's and has continued to present day.

During the late 1950's, natural gas was discovered approximately three miles northeast of the Unit in Ontario County at the Honeoye Field. (See Appendix M: Maps) Commercial gas production was from the Medina Sandstone Formation that was deposited during the Lower Silurian Period. Gas was produced from depths of approximately 2,000-2500 feet. The Honeoye Field was depleted of natural gas and is currently used as a natural gas storage field.

Following the discovery of the Honeoye (Medina Sandstone) Field, many attempts were made to discover additional gas reserves in the Medina Sandstone from the areas surrounding the Hemlock Canadice Unit. No additional commercial gas was discovered in the Medina Sandstone, and by 1990 operators had given up in their efforts to find gas reserves in the Medina Sandstone in this area. In 2009, interest in the Medina Sandstone surfaced again when 12 drilling permits were issued to allow an operator to test the Medina Sandstone for gas within five miles and northwest of Hemlock Lake. None of the wells were drilled and subsequently the permits expired.

Approximately ten miles south of Hemlock Lake, in the Town of Wayland, Belden and Blake Corporation drilled the Belden and Blake Corporation – Huber #1 well. This well was drilled to a total depth of 7,526 feet in November of 2000 to test the Trenton Limestone and Black River Dolomite formations for natural gas. The well was never produced and was subsequently plugged and abandoned as a dry hole during the same year.

Approximately eight miles southwest of Hemlock Lake, in the Towns of Sparta and West Sparta, a number of operators have drilled several wells, testing the Marcellus Shale. These wells were drilled to total depths ranging from approximately 1,000 feet to 1,500 feet. Most wells were drilled in the 1920's, with a few home use wells being drilled in 1980. Gas production was uneconomical and the wells were either plugged and abandoned, or assigned and transferred to the landowner for home use.

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

Recent Activity

Drilling & Production

There has been no recent (2000 to 2011) drilling and production activity within a five mile radius of the Hemlock Canadice Unit.

Exploration & Drilling

Interest in exploration for natural gas in the Medina Sandstone has recently occurred in an area approximately two to five miles northwest of Hemlock Lake. The general area is located between the village of Livonia and the hamlet of Hemlock. In 2009, the US Energy Corporation was issued twelve drilling permits to test the Medina Sandstone Formation for natural gas. The company did not drill any of the wells and the drilling permits subsequently expired.

Recent interest in the shallower Marcellus Shale as a gas producing formation has resulted in a number of wells being drilled approximately 40 miles south of the Hemlock Canadice Unit in southern Steuben County. These wells tested the Marcellus shale for natural gas at depths ranging from 2,500 feet to 3,500 feet and were found to be marginal economically. It is unlikely that drilling for natural gas in the Marcellus Shale will occur in this area because of the limited gas reserve potential due to the thickness and much shallower depths (1,000 to 2,000 feet) of the formation. (See Appendix M: Maps)

Leasing Activity

Initial title review indicates the NYS DEC owns the mineral estate under all areas covered by this unit, with the qualification that mineral reservations may exist and no expressed or implied warranty of title is being offered in this document.

There are no lands in the Hemlock Canadice State Forest currently under oil/gas lease contracts.

If the NYS DEC were to lease the mineral estate for oil and gas exploration and production, the leases would normally be for a period of five years (primary term) or as long as oil or gas is produced from the property in commercially paying quantities (secondary term).

Pipeline Activity

NYS DEC, pursuant to ECL § 9-0507, may lease State lands for the construction and placement of oil and gas pipelines only if a portion of the mineral resources to be transported was extracted from State lands. Pipeline and road development must be in compliance with State Forest tract assessments, the Strategic Plan for State Forest Management, and the Generic Environmental Impact Statement and Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program.

Future Leasing Activity

Due to recent drilling and production activity in western New York, the NYS DEC may receive requests to nominate lands contained in this unit for oil and gas leasing. In the event of this occurrence, the procedures outlined in the Mineral Resources section on pg. 97 will be used. For further information contact the NYSDEC Mineral Resource staff, Region 8, 6274 East Avon-Lima Road, Avon, NY 14414.

Mining

Sand, Gravel, Hard Rock and Other Mineable Materials

There are no mining contracts, permits or operations located in the Hemlock-Canadice State Forest. Under Article 7 of the New York consolidated Laws/Public Lands, any citizen of the United States may apply for permission to explore and /or extract any mineral on State lands. However, current Department policy is to decline any commercial mining application(s) associated with State Forest lands.

The surficial geology of the Hemlock-Canadice State Forest area predominately consists of poorly sorted glacial till of variable texture along with exposed or near surface (within one meter) Paleozoic bedrock outcrops. At the south end of Hemlock Lake, Lacustrine silt and clay deposits exist along with swampy deposits consisting of peat and muck. Lacustrine deposits can also be found at the north end of Hemlock Lake as well.

Although there are no mines within State Forest limits, mining operations do exist in surrounding lands. Most of these mine sites are no longer in operation and have undergone reclamation returning the land to a productive use. The closest of these is a reclaimed peat mine located approximately 0.8 miles west of the State Forest. An aerial map in Appendix M: Maps shows the location of the nearby mines that are currently under permit, or were permitted at one time before being reclaimed. The Mined Land Reclamation Number for each mine is included on the map. Of the ten mines shown on the map, only four are still active (80326, 80520, 80275, and 80326). All are standard sand and gravel mines, except for 80315 which is the reclaimed peat mine mentioned previously. Hard rock quarries are not found in this area. Bedrock may be exposed or within one meter of the surface but are not generally considered suitable for commercial mining.

Timber and Vegetation

Green Certification of State Forests

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

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

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

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

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

Significant Plants and Communities

The Hemlock-Canadice Unit contains one rare plant listed as endangered in New York State, the Kentucky coffee tree. There is a small population located in an ecotone between a silver maple-ash swamp and successional northern hardwoods.

The Hemlock-Canadice Unit contains two significant ecological communities tracked by the New York State Natural Heritage Program. There are two silver maple-ash swamps located within the unit. Along the Canadice Outlet is an 87 acre silver maple-ash swamp. It is a fairly large wooded wetland occasionally broken up by meadows of lake sedge (*Carex lacustris*) or rice cutgrass (*Leersia oryzoides*). The uplands surrounding the swamp consist of pine plantations, successional shrubland and successional old fields. A second 70 acre silver maple-ash swamp is located at the south end of Canadice Lake along Hemlock Canadice Inlet. This forested hardwood swamp is bisected by a dirt road, with successional northern hardwoods to the east, a shrub swamp to the south, and a shallow emergent marsh to the northern and directly bordering the lake.

Current Vegetative Types and Stages

Plant communities are by nature dynamic and ever changing. Young stands of trees get older, and species composition changes with time. Disturbances from fire, wind, insects, disease, timber harvest, and other land-use practices have been an important part of the history of New York forests and have determined the composition and structure of today's forests. By applying different forest management or silvicultural practices, land managers can affect change in vegetative types and stages and associated use

by wildlife. The production of forest products is a clearly stated goal in the Reforestation Law of 1929 and is consistent with the proposed management actions in the Hemlock-Canadice State Forest. Future management is covered in the Timber and Vegetation Management section on page 60 and in Appendix F: Timber Management and in Appendix M: Maps.

The Hemlock-Canadice Unit vegetation contains a mix of species, but is dominated by oak-hemlock, northern hardwood, oak, transition hardwood, and swamp hardwood, mostly sawtimber sized (12 or more inch diameter at 4.5 ft) natural hardwood forests. The dominant species of trees are red oak, green ash, sugar maple, hemlock, and red maple, other species present to a lesser extent include hickories white and black oaks, white ash, white and red pine, aspen, birches, walnut, cottonwood, beech, Norway spruce and apple.

In the Finger Lakes region of New York, northern hardwood forests predominate on the north facing slopes and oak-hickory forests occupy the south facing slopes. Past man-made disturbances have created even more diversity. Many of the formerly agricultural fields, for example, have reverted back to "pioneer" forest types comprised of aspen, red maple and white pine. On Hemlock-Canadice State Forest there are almost no seedling/sapling size stands. These stands are typically even-aged. (All of the trees in a stand are approximately the same age.) Non-forest land consists of wetland, pond, road, recreation, grassland and brushy cover.

The softwood component is well balanced. The conifer segment is about two-thirds plantation, mostly red pine, Norway spruce, white pine, and larch, most of the Scots pine has died. The remaining one-third is natural conifer/conifer hardwood stands, with the most common conifer species of hemlock and white pine. In addition, many of the hardwood forest stands have a small softwood component made up of white pine and/or hemlock.

Most of the rest of the stands fit into either the category of transition hardwoods or pioneer hardwoods". Common species include red oak, red maple, aspen, basswood, white ash, and sugar maple. Former agricultural fields have reverted back to "pioneer" forest types. There are no significant areas of brushy or grassy upland meadows. The City of Rochester leased out approximately 130 acres of fields for agricultural use, some of it produced hay, others sections row crops. Currently NYS DEC does not have the authority to lease out State Forest land for agricultural use. In 2011 the fields which had been in row crops were planted to a mix of cool season grassland species.

The following table lists vegetative types and stages for the Hemlock-Canadice Unit. These records are estimated from the most recent inventory available; in this case, after acquisition of the property from the City of Rochester in 2010 the process of inventorying it began, and was completed within a year. Current division policy requires that a forest inventory be conducted every 10 years and whenever stands are changed by any silviculture operation or by the forces of nature. Forest inventory is accomplished by a statistical analysis of stands. Samples are taken from random locations (called plots) within each stand. Information collected during a forest inventory includes, among other items, species, forest type, tree density, forest health issues, topography, drainage, previous management, and site limiting factors. The required number of plots for each stand varies according to the variability of the stand, subject to a minimum number. For each plot, data is recorded in the field on a hand held data recorder, and then electronically transferred via the internet to servers in Albany. Maps are digitally drawn using ArcGIS on the computer over top of corrected aerial photo's, and then the computer program is used to calculate acreage.

Table 7: Vegetative Types and Stages for the Hemlock-Canadice Unit

Inventory completed in 2010- 2011

Vegetative Type	Acres by Ave. Tree Diameter Size Class				Total (Acres)	% of Total	
	0-5 in (seedling-sapling)	6-11 in (pole)	12+ in (sawtimber)	Other			
Natural Forest Hardwood	114	1,359	1,770		3,243	48.5%	
Natural Forest Conifer/Conifer Hardwood*		283	403		686	10.3%	
Plantation		404	907		1,311	19.6%	
Wetland (Forest)		551	323		874	13.1%	
Wetland (Open and/or Shrub)				197	197	3.0%	
Ponds (not including Hemlock and Canadice Lakes)				30	30	0.4%	
Open/Brush				206	206	3.1%	
Other (Road, ROW, Parking, etc.)				137	137	2.0%	
	Total (Acres)	114	2,597	3,403	570	6,684	
	% of Total	1.7%	38.9%	50.9%	8.5%		100%

*Total percent of all conifer species is 33%, or more, of the total for the stand.

Additional information can be found in the Timber and Vegetation Management section on page 60.

Fish, Wildlife and Habitat

The fish, wildlife and their habitats found here are products of the landscape's history. Like many places in Western New York, European settlement in the 1700s and the decline of Native American cultures set the stage for widespread changes in the distribution and richness of wildlife resources. Human-induced changes in land cover, along with unregulated exploitation of fish and wildlife resources, caused the decline of many wildlife species. Forests were either cut heavily or burned, resulting in most of the land being cleared for farming and pasturing. Most big game animals as well as native brook trout and other creatures of pristine and wild environments were either eliminated or their populations greatly reduced. Streams filled with sediments. Wetlands were filled. Wild fires were suppressed. Very little of the landscape was left untouched.

In the 1930s the depression set the stage for the landscape pendulum to swing in a different direction. As farms failed, a large portion of the area started to revert back toward mature hardwoods. The resulting young forests lacked significant age to provide timber products, but the wildlife species

that were adapted to these transitional habitats quickly colonized these areas and rapidly moved back onto the landscape. Cottontail rabbits and other farm wildlife that once were in great supply diminished, and species of young forests such as grouse and deer took advantage of the maturing woodlands. Today, forests have matured and the wildlife species present on the Hemlock-Canadice State Forest are those commonly associated with such habitats. Black bears, white-tailed deer, bobcat, bald eagles, beavers, otter and fisher now roam where farm wildlife species thrived at the beginning of the 20th century.

The Hemlock-Canadice Unit lies on the northern edge of the Central Appalachian Ecological Subzone immediately south of the Erie-Ontario Plain subzone. The Central Appalachian Subzone encompasses an area of approximately 8,830 square miles, with elevations ranging between 1,000-2,200 feet above sea level. The landscape is dominated by forests, reverting farm lands and occasional dairy farms. Habitat present for wildlife includes numerous structural types from old field and brush land, to mature forest. Considerable wetland habitat exists, but these environments are fairly restricted to the north and south ends of the two lakes. Natural succession continues to result in the reappearance of wetland plant associations on previously farmed lands with wetter soils.

Hemlock-Canadice State Forest is in Wildlife Management Unit (WMU) 8N. Prior to 1999, the property (then owned by the City of Rochester) was divided between two Wildlife Management Units. A statewide restructuring and re-naming of WMUs in 1999 resulted in the shifting of what was then the western boundary of WMU 83 westward, putting the entirety of the Hemlock-Canadice State Forest in the newly-named WMU 8N.

Deer populations in each of the state's WMUs are managed at levels recommended by Citizen Task Forces (CTFs); committees of citizen stakeholders representing various deer-related stakes. The deer management target in each WMU is expressed as a Buck Take Objective (BTO), an index to deer population size. The current BTO for 8N is 4.6 bucks per square mile in the fall harvest. Historically speaking, deer populations peaked in the early 2000s in Western New York, and WMU 8N was no exception. Populations since that time have declined some 20-40%, but through it all, WMU 8N has had among the densest deer populations of any unit in the state (of 98 WMUs statewide) for the last 15-20 years. These historically high deer populations took their toll on the forests of 8N (and the Hemlock-Canadice Unit) through increased deer browsing on the understory, and forest regeneration has been poor as a result. Owing to several years now of lower deer numbers, recently there have been signs of increased regeneration within the unit. But it remains to be seen how the high deer populations of the past have affected the long-term forest composition of the unit.

The northward expansion of black bear populations into the western Finger Lakes has been well-documented, and although no bears have been harvested to date on the unit, recent expansion of bear hunting opportunity into WMU 8N provides the opportunity for this to take place. The predominantly forested habitats of the Hemlock-Canadice Unit offer superior black bear habitat and ample denning sites to ensure that bears stay as permanent residents of the area.

The habitats of the Hemlock-Canadice Unit are home to most, if not all, of the common furbearers of Western New York including beaver, muskrat, red and grey fox, raccoon, coyote, mink, opossum, and skunk. Fisher, bobcat and river otter are all expanding their range in Western New York and have been documented in Ontario and Livingston Counties. If not already permanent residents of the unit, these species could well be present in the near future.

Upland game birds of the Hemlock-Canadice Unit include wild turkey, ruffed grouse, woodcock, and crow. Due to low numbers in New York State generally, and the lack of substantial suitable habitat on the unit in particular, wild ring-necked pheasants are rare.

Indigenous waterfowl include Canada goose and several species of both diving and puddle ducks such as mallards, wood ducks, teal, mergansers, ring-necks and bufflehead. Common loons are occasional visitors as well.

Common small mammals include red and grey squirrel, cottontail rabbit, white-footed mouse, meadow vole, weasel, and several species of bats.

Although numerous wildlife habitat types are found on the Hemlock-Canadice Unit, two-thirds of the land is made up of mixed deciduous forest. Consequently, the bulk of the upland wildlife found on the area are those that favor this habitat type, such as deer, wild turkey, raccoon, woodpeckers, and grey squirrels. About 30% of the non-open water area of the unit is coniferous forest favoring such species as red squirrels, great horned owls, and ruffed grouse. Old fields or grassland make up only about 3% of the land, but provide needed interspersions amidst the forests. Woodcock, vesper sparrows, meadow voles, and northern harriers are some of the species using this habitat type. Freshwater wetlands comprise nearly 16% of the non-lake habitat, are perhaps the most productive habitats of the unit, and are home to many species of reptiles, amphibians, shore birds, waterfowl, aquatic mammals, fish, invertebrates, and insects. In addition to four major New York State-protected wetlands on the area, several smaller Federally-protected wetlands exist. Most of the areas wetlands are found at the north and south ends of both major lakes. Few permanent wetlands exist on the area outside these flat valley locations.

Reptiles found within the unit include garter snakes, snapping turtles and painted turtles. Both species of turtles found within the unit are common turtles found in lakes and ponds. Painted turtles can often be viewed sunning themselves on logs or along the shore. Both of these species are almost entirely aquatic except when they come on shore to find appropriate soils to lay their eggs. The Hemlock-Canadice Unit was also at one time home to the queen snake, a New York State Endangered Species. The most recent records for queen snake at this location are approximately 100 years old. Any new records of this snake would be of great interest to NYS DEC and should be reported to the New York Natural Heritage Program.

The unit is also the residence of several New York State Threatened Species including northern harrier hawks and Henslow's sparrows. An additional Threatened Species whose history is closely tied to the Hemlock-Canadice watershed is the bald eagle. Hemlock-Canadice State Forest has played an important role in the bald eagle success story. Decades of indiscriminate killing, habitat destruction, and the widespread use of harmful chemicals nearly destroyed New York's bald eagle population until there was only one known pair of bald eagles nesting in New York located at Hemlock Lake. A national ban on DDT in 1972, prohibitions against taking or killing bald eagle in the federal Endangered Species Act of 1973, and the initiation of New York's Endangered Species Program in 1976 marked a dramatic turnaround for this impressive bird. New York's Bald Eagle Restoration Project (1976-1988) undertook an unprecedented effort -- to bring back a breeding population of eagles to New York by importing young birds from other states and hand rearing them to independence (a process known as hacking). During this project, nestling bald eagles were also brought to Hemlock Lake to enhance the production of the nest when the pair had difficulty successfully breeding. Thanks to long standing cooperation between NYS DEC and the City of Rochester, descendants of that pair continue to nest here. There are

currently at least 192 occupied breeding territories across the state including the two within the Hemlock-Canadice State Forest. Monitoring of eagle nesting at Hemlock is a continuing, long-term project with NYS DEC. Special management restrictions apply to the nesting areas chosen by bald eagles. Within the unit a floating sanctuary is established to define the perimeter of the nesting zone. It is the responsibility of NYS DEC Division of Fish and Wildlife to designate boundaries of any changed nesting location.

The Hemlock-Canadice Unit is the site for breeding, foraging, or migration stopover for at least 11 bird species listed as Special Concern in New York State. Forest breeding raptors, such as long-eared owl, red-shouldered hawk, northern goshawk, Cooper's hawk and sharp-shinned hawk, make up the bulk of the species listed as Special Concern in this unit. In general, the major threat to forest breeding raptors is the loss of relatively large blocks of forest land, for example fragmentation by clearing. On the other hand, other Special Concern species within the unit, such as forest interior and early successional forest/shrubland birds, would benefit from careful management of the forest including selective cutting and/or judicious clear cutting.

There are also Special Concern species, horned lark, vesper sparrow, and grasshopper sparrow, that require open grassland habitat. Suitable habitat for these species was closely tied to active agricultural use over thousands of acres. Formerly suitable habitat for these species has been replaced with planted conifer stands or naturally developing hardwood stands.

While not restricted to the Hemlock-Canadice Unit, the entire watershed has also been recognized by Audubon NY as an Important Bird Area (IBA). This recognition was accorded, in part, due to the presence in the 1970's of the last "wild" bald eagle nest located on the property at Hemlock Lake.

Additional information can be found in the Fish and Wildlife Habitat section on page 78 and Appendix B: Animals of the Hemlock-Canadice Unit Management Plan Area.

Species of Greatest Conservation Need

The State Wildlife Grants program is a federal program that provides funds at the state level for conservation efforts aimed at preventing fish and wildlife populations from declining, reducing the potential for these species to be listed as endangered. In order to access these grant funds, New York State was required to develop a Comprehensive Wildlife Conservation Strategy (CWCS) that focuses on the "species of greatest conservation need." This includes those species that are deemed rare, imperiled and those for which status has not been established. NYS DEC staff produced a list of 537 species of greatest conservation need (SGCN). For this program, New York State is divided into major watersheds and each watershed has a specific list of SGCN. The Hemlock-Canadice unit is within the Southwest Lake Ontario Watershed. The list of species is certainly not exhaustive, but includes those species for which systematic assessments had been made by staff of the NYSDEC Division of Fish, Wildlife and Marine Resources and the New York Natural Heritage Program. For further information on how the list was compiled, visit the web site www.dec.ny.gov/animals/9406 which also has the entire list of species as well as by watershed.

Wetlands and Water Resources

Streams

The entire Unit is located within the Genesee River basin. The streams within the State Forest range from intermittent, meaning that stream flow does not occur year round, to high quality trout streams with year round flow. The majorities of the streams are class “C” and have fishery resources consisting of sucker and minnow species. Species composition of streams that are tributaries to Hemlock or Canadice Lakes will change seasonally as some species will leave the lakes and enter the tributaries during some portions of the year.

Springwater Creek, Tributary 5 of Springwater Creek, Limekiln Creek, and Reynolds Gully Creek all provide wild rainbow trout fisheries. Springwater and Limekiln Creeks are the largest and provide the most significant fishery. The headwaters of these streams also contain wild brook trout.

Aquifers

Information about aquifers comes from two GIS data sets maintained by NYS DEC as part of the Master Habitat Databank. These sets are titled as “Primary Aquifers” and “Unconsolidated Aquifers @ 250K”. As per the above data sets, the Hemlock-Canadice Unit does not overlay any primary aquifers; however, located at the north end of Hemlock Lake and the south ends of each of the lakes are confined unconsolidated aquifers with no overlying surficial aquifer. At the north end of Canadice lake is a confined aquifer of unknown depth and thickness. Adequate protection of all aquifers is assured by using Best Management Practices for water quality. Further information on these BMP’s is provided by the publication: New York State Forestry Best Management Practices for Water Quality: BMP Field Guide.

Wetlands

Information about wetlands comes from two GIS data sets maintained by NYS DEC as part of the Master Habitat Databank. These sets are titled as “New York Regulatory Freshwater Wetlands” and “National Wetlands Inventory”. Considerable further information has also been developed from personal observation by NYS DEC staff.

There are four main New York State-protected Freshwater Wetlands located wholly or in part on the Hemlock-Canadice Unit.

Table 8: NYS Freshwater Wetlands on the Hemlock-Canadice Unit

Wetland	Location	Size	Class	Type
HO-1	North end Hemlock Lake	171.3 ac.	I	Palustrine; Forested/shrub, Emergent and Riverine subtypes
SP-1	South end Hemlock Lake	452.4 ac.	I	Palustrine; Forested/shrub and Emergent subtypes

Wetland	Location	Size	Class	Type
SP-4	North end Canadice Lake	89.7 ac.	II	Palustrine; Forested/shrub subtype
SP-2	South end Canadice Lake	120.1 ac.	I	Palustrine; Forested/shrub subtype

In addition, there are numerous large and small federally-protected wetlands identified in the National Wetlands Inventory coverage, the majority of which overlap the state wetlands described above. Hemlock and Canadice Lakes themselves are also identified in the National Wetlands Inventory.

Table 9: National Wetlands Inventory – Federally-protected Wetlands on the Hemlock-Canadice Unit

Wetland Type	Number of Each Type	Acres*
Palustrine, emergent	12	246.3
Palustrine forested/shrub	23	635.4
Pond	2	0.9
Lacustrine (lake)	2**	2,758.5
Riverine	1	1.4
Totals	40	3,642.5

*This water acreage will change with water level, see also Table 2: Hemlock and Canadice Lakes.

** Hemlock and Canadice Lake.

Please see also the map in Appendix M: Maps for spatial information and site specific data, and Appendix G: Glossary for definitions.

Wetlands, though sometimes difficult to define, are easily accepted as valuable assets to the watersheds involved. They have many widely recognized benefits including flood attenuation, water quality improvement, wildlife habitat, and groundwater recharge. Wetlands come in many shapes and sizes, some more obvious than others; however our ability to notice them has nothing to do with how important they are to the environment.

One wetland type that is particularly easy to overlook is the vernal pool. Vernal Pools (vernal meaning spring) in the Northeast are generally found in forests and are typically wet on a seasonal basis. In addition to being only seasonally wet, they tend to be extremely small, usually only fragments of an acre in size. No matter how inconspicuous they are, their contribution to the forest ecosystem in which they are found is monumental. Spotted Salamanders (up to 8 inches long), Wood Frogs, and many other amphibians depend on these pools as breeding sites and rarely entrust their larvae anywhere else. The fact that they also exist on the steeper, forested slopes of the Unit, in addition to the flatter areas, is further testament to their importance in terms of spatial interspersion.

Ponded Waters

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

Lakes

Hemlock and Canadice Lakes make up a large portion of this Unit. Both of these lakes are considered “two-story” lakes, meaning that they support both shallow warm water fish species as well as deep cold water species. The warm water fisheries resource includes black crappie, bluegill, brown bullhead, chain pickerel, common carp, largemouth bass, pumpkinseed, rock bass, smallmouth bass, and yellow perch. Hemlock Lake also contains walleye. The cold water fisheries resource includes brown trout, lake trout, landlocked Atlantic salmon, rainbow smelt, and rainbow trout. Lake whitefish are present in both lakes but are no longer abundant.

See also the inventory of streams and ponded waters in Appendix E: Water Resources.

Roads

The State Forest Transportation system provides for both public and administrative access to the unit. The Hemlock - Canadice Unit is accessed by a combination of Town, County and State Highways and public forest access roads. Some portions of these roads are not maintained for winter travel. Many of the abandoned roads are used as recreational trails. Roads and trails are constructed to standards that will provide reasonably safe travel and to keep maintenance costs at a minimum. There are six types of transportation corridors providing different levels of access, depending on the standards to which they are constructed. NYS DEC reserves the right to limit access to state lands when public safety or resource damage issues occur.

The next several paragraphs give brief descriptions of the six types of roads that can be found on State Land.

Public Forest Access Roads - 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 (8/04). As a general guideline, sufficient access is typically achieved when 1 mile of public forest access road is developed for each 500 acres of state land and no position within the unit lies more than ½ mile from a public forest access road or public highway.

Haul Roads - Permanent, unpaved roads which are not designed for all weather travel, but may have hardened or improved surfaces with artificial drainage. They are constructed according to best management practices primarily for the removal of forest products, providing limited access within the unit by log trucks and other heavy equipment. These roads may or may not be open for public motor vehicle use, depending on management priorities and objectives. They may serve as recreational access corridors, but are not maintained according to specific standards or schedules. The design standards for these roads are below those of the Class B access roads as provided in the Unpaved Forest Road Handbook.

Access Trails - Temporary, unpaved roads which do not provide all weather access within the unit. They are not designed for long term and repeated use by heavy equipment. These corridors were originally constructed for the seasonal removal of forest products by skidding to landings or other staging areas. Constructed according to best management practices, these trails may be used to support

other management objectives such as recreational access corridors. Maintenance is limited to activities which minimally support seasonal access objectives.

Recreational Trail - Unpaved recreational corridors which do not provide all weather access within a unit, and are designed to achieve specific recreational access objectives. Constructed according to best management practices, and following accepted regional standards for design, these trails may be used to support multiple types of seasonal recreation access. Maintenance is limited to activities which minimally support the access objectives and design.

Public Road - Permanent, paved or unpaved roads primarily designed for motor vehicle travel which are maintained by federal, state or local government. These roads may or may not provide year round access.

Rights-Of-Way - Permanent, paved or unpaved roads which allow the NYS DEC access to state forest properties while crossing private land, or, corridors across state forests allowing access to private in-holdings.

The public forest access roads and haul roads are all maintained by the NYS DEC and the access trails that are accessible by mower are also maintained. The public forest access roads are open to the public use all year round but are not maintained during the winter months. The haul roads and access trails are used by the public for hiking, biking, cross country skiing, and snowshoeing. The public forest access roads, haul roads and some of the access and recreation trails are used by the NYS DEC for administrative access. See Appendix M: Maps for names and types of roads and trails. There are also many other unmarked trails connecting some of the access trails.

This Unit is oriented around Hemlock and Canadice Lakes. In order to protect the water supply, the objective at the time of purchase by the City was to obtain continuous ownership of the shoreline of both lakes. As noted elsewhere in this plan, the initial acquisition of these properties was done by the City of Rochester. Points of access to City property were apparently not considered essential with property purchase. As a result, large areas, such as along the west side of Hemlock Lake, have no direct access to a public road. Some land parcels were divided, with the City purchasing only a required minimum distance of 200' from the lakeshore, but little acreage. Other parcels transferred more acreage, but access to the new City ownership was not obtained. Fortunately, some parcels purchased in their entirety provided access points along bordering state highways or town roads. The lack of continuous road frontage, or strategic points of access, is a limitation to property management.

Access is also limited by terrain. The narrow, lineal property on the sides of both lakes transects a large number of intermittent streams, many of which have created gullies of varying degrees. Some gullies cannot be crossed by a simple, conventional trail. Slope is also a factor as approximately one-third of the property exceeds slopes of 25%.

All town and county highways are assumed to exist as a result of a prescriptive easement. Stated another way, they were established by use, rather than through a specific legal dedication process, and there are no deeds conferring the right to construct them. Since these are prescriptive easements they are limited to the width actually occupied by the highway, subject to a 49.5 foot (3 Rods) maximum width. The easement is for highway purposes only; no right exists to "sub-let" the easement to utility companies.

All state highways were acquired through appropriation by NYS DOT. The deed from the City of Rochester to NYS DEC excepts these areas. The boundaries depicted in this plan for the state highways are reasonably accurate. However, prior to beginning projects which involve the state highways, reference should be made to the actual appropriation documents for the pertinent highway segment.

Rights of Way, Concurrent Use & Occupancy, and Deeded Exceptions

Hemlock Lake and Canadice Lake are part of the public water supply for the City of Rochester and other communities. The waters contained in the beds and banks of Hemlock and Canadice Lakes are regulated by the State of New York. The City of Rochester withdraws water (up to specified maximum amounts) under the terms and conditions of an Article 15 Water Supply Permit issued by NYS DEC. The City's water rights are currently limited to surface waters, with no rights reserved to withdraw water from any aquifers which might be located beneath state forest lands.

The deed from the City of Rochester to the People of the State of New York excepts and reserves easements as follows:

- 1) To the Town of Springwater Sewage District #1 to discharge treated sewage effluent, from their plant on Kellogg Road, into Hemlock Lake Inlet / Springwater Creek. The outflow is located on what is a now state forest land.
- 2) To three private owners along the east side of Canadice Lake for driveways to serve adjacent private lands.
- 3) For a water withdrawal point along the west side of Hemlock Lake. Water serves the Mission and the winery.
- 4) For the water intake structures as they currently exist within the bed and banks of Hemlock and Canadice Lakes.
- 5) A 60' wide easement for a 36" water conduit, across state lands between Rix Hill Road and State Route 15A.

There is one permanent easement which provides access to this Unit beyond the town, county, and state highways. This easement is located on the west side of Hemlock Lake and proceeds easterly from Marrowback Road to the state land boundary. The easement is improved by drainage structures and a crushed stone surface. However, access along this easement is limited to employees, permittees, etc. of the state. The terms of the easement did not include use by the general public.

All motorized access by non DEC personal on the haul roads beyond the gates on Hemlock-Canadice State Forest is prohibited. The only exception to this is a road use agreement in place for the use of the northerly end of the Canadice Lake haul road which allows joint use of the haul road by the City of Rochester, NYS DEC, and National Grid.

There are deeded exceptions for utility rights of way and easements as they may exist on the date of acquisition by the state. As part of our inventory efforts, we have created what we believe to be a fairly accurate GIS coverage of the utilities in place as of the summer/fall/winter of 2010. This is shown in Appendix M: Maps

Utility companies include:

Electricity: Niagara Mohawk / National Grid

Telephone: Frontier Communications

Natural Gas: NYSEG / RG&E / National Fuel Gas

Towers

This part of New York State has the potential for generating electricity with windmills or the construction of towers for radio, cell etc. transmission, in the area of the Hemlock-Canadice Unit. There are currently no windmills, or applications for windmills, for power generation on the Hemlock-Canadice State Forest. NYS DEC does not have the legal authority to lease State Forests for the construction of windmills, new power lines, or commercial towers. However, this plan does not cover any actions or construction on any adjacent privately owned lands.

City of Rochester Facilities

NYS DEC did **not** acquire all of the real property owned by the City of Rochester in the Hemlock-Canadice Watershed. In addition to the above listed Rights of Way, Concurrent Use & Occupancy, and Deeded Exceptions, the City retained control of the water filtration plant, intake pipes on Hemlock and Canadice Lakes, the dams on Canadice Lake and Outlet, associated maintenance facilities and Hemlock Park. Facilities such as these are outside of NYS DEC's mandated program. Those facilities are not included in the new Hemlock-Canadice State Forest and activities taking place on those facilities are not covered by this plan.

In 2011 the city of Rochester sold off two additional parcels. The Town of Livonia acquired Hemlock Park, and the Hemlock Lake Union Agricultural Society, which runs the Hemlock Fair, acquired the field they had previously leased for parking for the Hemlock Fair.

Recreation

The Hemlock-Canadice State Forest provides an abundance of recreational opportunities within a one hour drive of metropolitan Rochester. The area was used for recreation prior to the City of Rochester acquiring the property, and it continues to be heavily used for recreation purposes. However, recreational use can be concentrated in certain areas and have seasonal variation.

We ask visitors to respect this very sensitive area as a source of public drinking water.

Many of the recreation facilities started out as farm lanes, skid roads, town roads, log landings, etc. After they were no longer used for the original purpose they were converted to recreational use. On occasion, as part of the active timber management, sections of multiple use trails, roads, parking lots, etc may need to be temporarily closed to public use.

Additional information can be found in the Public Recreation and Use section on page 83.

Recreation Opportunities Include:

- Fishing
- Hunting
- Trapping
- Hiking
- Canoe/ kayak/ boating
- Wildlife observation
- Mountain biking
- Snowmobiling (on marked trail only)
- Cross country skiing
- Snowshoeing
- Picnicking
- Photography
- Nature study
- Orienteering
- Running

Depositing or leaving rubbish or waste material is prohibited. Cutting, removing, or destroying any living, or standing dead trees or plants is prohibited. Camping and fires are **not** allowed on Hemlock-Canadice State Forest, as they are allowed on other State Forests. Hunting, trapping, and fishing are allowed only during legal season; consult the NYS DEC Hunting and Trapping, and the Fishing Regulations Guides for seasons, hours, and bag limits.

Restricted Use Areas

It is unlawful to possess or operate a boat, to ice fish, to traverse the ice or water, or to fish from shore on;

- Hemlock Lake: north of the northerly boat launch, and between Boat Launch Road and Hemlock Lake.
- Canadice Lake; within the northernmost 500 feet of the lake

Hemlock and Canadice Lakes are a source of public drinking water for the City of Rochester and other communities, in order to protect this resource, part of Hemlock-Canadice State Forest and Hemlock and Canadice Lakes are restricted from public use. Activities in Hemlock-Canadice State Forest are subject to DEC's Rules and Regulations for the Use of State Lands, 6 NYCRR Part 190, as well as any other applicable state statutes, rules and regulations. In addition, specific regulations - §190.26 - have been developed by NYS DEC, mirroring those established by the City of Rochester, allowing many recreational activities on Hemlock-Canadice State Forest, but prohibiting uses that could threaten water quality.

The road easement located off of Marrowback Road does **not** include use by the general public.

See Appendix K: Special Regulations for the 6NYCRR §190.26, current as of the publication of this Unit Management Plan. They are also available on NYS DEC's web site at www.dec.ny.gov/regs/13943.html#13956 for the most current version.

Off-Road Vehicle Use

There are no designated Off-Road Vehicle (ORV) trails on this Unit. New York State Vehicle and Traffic Law prohibits All Terrain Vehicle (ATV) use on Public Highways which, by definition, also include Public Forest Access Roads, unless such roads are specifically designated for ATV use. ATV and ORV riding is not a specific program offered on Public Lands owned in fee and managed by the NYS DEC. Existing management actions, poor soils, conflicts with other uses, impacts on neighboring residents, safety concerns, maintenance costs and challenges, and existing issues with illegal ATV and ORV use were some of the factors which have prevented the NYS DEC from developing ORV or ATV trails in the past. However, people with qualifying mobility impairments who possess a valid permit from the NYS DEC may operate ATVs on specifically designated and signed accessible trails. See Access for Persons with Disabilities, page 35.

Boat Launches and Boating

The Hemlock-Canadice Unit has four unimproved boat launch sites. Three of them can be used for launching boats from trailers; one includes a short hand carry from the parking area. Only boat motors 10HP or less may be used, and only on boats 17 feet or less in length. Non-mechanically powered boats may be up to 24 feet in length.

- North Hemlock Boat Launch - Located on the east shore near the north end of Hemlock Lake, accessed from State Highway 15A, with room for vehicles with trailers to park.
- South Hemlock Boat Launch - Located on the east shore near the south end of Hemlock Lake, accessed from State Highway 15A, with room for vehicles with trailers to park. This launch is shallow, and in dry years is unusable.
- Canadice Boat Launch - Located on the east shore of Canadice Lake, accessed from Canadice Lake Rd, park along Canadice Lake Road.
- Canadice Canoe Launch - Located on the south end of Canadice Lake, a short walk from Canadice Lake Rd, with room for vehicles to park.

No Camping

Camping is **not** allowed on Hemlock-Canadice State Forest, however it is permitted on most other State Forests.

Hunting and Trapping

Hunting and trapping are valuable wildlife management methods and popular outdoor activities on the Unit (see the, Public Recreation and Use, Fish, Wildlife and Habitat, and Timber and Vegetation sections). For hunting, both small and big game opportunities exist, with white-tailed deer being the most popular hunted species. Ruffed grouse, woodcock, cottontail rabbit, grey squirrel, turkey, raccoon, and several varieties of waterfowl are favorite small game species pursued. For trapping, all the major furbearers of Western New York are present, including mink, muskrat, red and grey fox, raccoon, coyote, skunk, and opossum. Although no Hemlock-Canadice State Forest-specific harvest estimates exist for any hunted or trapped species on the Unit, DEC compiles and maintains estimates for most of the species mentioned on a Wildlife Management Unit (WMU), County, or Management Zone basis. Results for these larger areas containing the Hemlock-Canadice State Forest are shown in Appendix H: Wildlife Harvests and Hunting Use.

Hunting and trapping seasons span early September through late March, with the bulk of activity occurring October through December. All existing state regulations pertaining to hunting and trapping in WMU 8N, Livingston, and Ontario Counties apply to the Unit, with no additional restrictions, bag limit changes, or special permits required.

For many years, City of Rochester staff has maintained a count of deer hunter vehicles parked on opening day of the regular season as an index to deer hunting use on the area. The results of these annual user surveys are displayed in Appendix H: Wildlife Harvests and Hunting Use. While these data show

year-to-year trends in deer hunter use, (and by extension, relative number of deer harvested on the area), perhaps their greatest use is in simply demonstrating the overwhelming popularity of deer hunting as a recreational activity on the Unit. As can be seen from a graphical representation of these data, (see Appendix H:) there is a strong correlation between the number of hunter vehicles parked on the area opening morning and the Deer Management Permit (DMP) deer harvest in WMU 8N.

High deer populations can cause major impacts to understory vegetation and forest regeneration. Over browsing can negatively impact plant and animal species diversity and richness, and contribute to the establishment of unwanted invasive vegetation. High deer numbers also lead to increased local farm crop damage and higher deer-vehicle collisions on nearby roadways. Deer hunters perform a valuable service to the State and local communities by controlling deer numbers on the Unit, and the harmful effects they can cause.

As on all State Forests, permanent tree stands are prohibited on the Unit. Also prohibited is any equipment that damages trees, including screw-in steps, and eye hooks etc. However, a temporary tree stand or blind is allowed, provided that it does not injure any trees, is properly marked or tagged with the owner's name and address or valid hunting or fishing license number, and is placed and used during big game season, migratory game bird season, or turkey season, but no more than thirty days in one location per calendar year, per 6 NYCRR §190.8.

Fishing

Fishing opportunities within the Unit range from extremely limited, to a few very significant fishing sites. Most streams are small and do not provide much of a fishing resource, but a few streams provide very significant fisheries. Hemlock and Canadice Lakes are both unique and important fishing resources.

The most significant fishing resource streams within the Unit are Hemlock Outlet, Springwater Creek, Limekiln Creek, and Reynolds Gully Creek. Hemlock Outlet provides fisheries for largemouth bass and chain pickerel. Springwater, Limekiln, and Reynolds Gully creeks all provide spring fisheries for spawning rainbow trout that migrate from Hemlock Lake. These streams will also occasionally receive fall migrations of spawning brown trout. All three streams contain wild brook trout in their headwaters. Some of the small tributaries entering Hemlock and Canadice Lakes also provide a limited spring smelt dipping fishery.

Hemlock and Canadice Lakes are both unique resources because they provide much more shoreline access and small boat fishing opportunities compared to other Finger Lakes. During most winters these lakes also provide ice fishing conditions that allow anglers to fish for trout, rainbow smelt, and other species that cannot usually be fished for through the ice on other nearby lakes. The most commonly fished for species on Hemlock Lake include brown trout, lake trout, rainbow trout, black crappie, brown bullhead, chain pickerel, smallmouth bass, largemouth bass, sunfish, yellow perch and walleye. The most commonly fished for species on Canadice Lake include brown trout, lake trout, rainbow trout, rainbow smelt, brown bullhead, chain pickerel, smallmouth bass, largemouth bass, sunfish, and yellow perch. Both lakes are well known for above average sized lake trout.

Current stocking for Hemlock Lake includes 3,200 yearling and 6,600 fingerling lake trout annually. Rainbow trout were stocked in the past but are currently maintained through natural reproduction from Springwater and Limekiln Creeks. Walleye stocking has been permitted and conducted in the past by a local club. The most recent permitted walleye stocking was 800 fingerlings each year from 2006 through 2008. Current stocking for Canadice Lake includes 5,000 brown trout yearlings and 2,100 lake trout yearlings annually.

Trails

There are some designated recreation trails on the Hemlock-Canadice Unit, in addition to old roads, skid trails, and deer trails on the Unit to explore, a few of these trails are currently marked and mapped, others are not. All trails on the Unit can be used for walking, running, cross-country skiing, and snowshoeing. Motorized vehicle use is prohibited. See the list in Appendix D: Facilities and maps in Appendix M: Maps.

The Walnut Trail was initially part of a town road servicing cottages and business. As a result of its recent rehabilitation and maintenance, it is now a well-used walking track. A portion of the Bur Oak Trail is an abandoned section of the Hemlock Branch of the Lehigh Valley Railroad that used to bring visitors from Rochester to Hemlock Lake. In 1996 the City of Rochester reopened it and did additional trail work for the removal of timber. More improvements followed as part of a wetlands enhancement project conducted in cooperation with NYS DEC. Improvements included trail extensions into wetlands, old fields, and a stand of very large oak-hickory forest (the Bur Oak Loop). A southern extension that connects to Rix Hill Road was made by City crews as a third related project. Recreational hiking is the main use on a yearly basis. Trails such as the Green Ash Loop, Speckled Alder Loop, Root's View and Cattail Loop serve, primarily, for wildlife viewing and scenery appreciation.

Application of the Americans with Disabilities Act (ADA)

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

Consistent with ADA requirements, the NYS DEC incorporates accessibility for people with disabilities into the planning, construction and alteration of recreational facilities and assets supporting them. This 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, NYS DEC

employs guidelines which ensure that programs are accessible, including buildings, facilities, and NYS DEC 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 the Hemlock-Canadice Unit Management Plan, to determine appropriate accessibility enhancements which may include developing new or upgrading of existing facilities or assets. NYS DEC is not required to make each of its existing facilities and assets accessible so long as the NYS DEC's programs, taken as a whole, are accessible. New facilities, assets and accessibility improvements to existing facilities or assets proposed in this Unit are identified in the Public Recreation and Use section.

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

Access for Persons with Disabilities

While no ATV trails currently exist on this Unit, specific routes may be opened to allow ATV use by permitted persons with disabilities, pursuant to NYS DEC Commissioners Policy #3 (CP-3). This program is known as the Motorized Access Program for People with Disabilities (MAPPWD). A permit must first be obtained from NYS DEC. Individuals with qualifying disabilities may apply for a permit to operate an ATV on trails designated by the NYS DEC. For further information, contact the NYS DEC at 7291 Coon Road, Bath, New York 14810. (See Appendix D: Facilities and Appendix M: Maps of this plan or pages 177 and 178 of the "Strategic Plan for State Forest Management")

Historic and Cultural Resources

The term cultural resource encompasses a number of categories of human created resources including structures, archaeological sites and related resources. NYS DEC is required by the New York State Historic Preservation Act (SHPA) (PRHPL Article 14) and SEQRA (ECL Article 8) as well as Article 9 of Environmental Conservation Law, 6NYCRR Section 190.8 (g) and Section 233 of Education Law to include such resources in the range of environmental values that are managed on public lands.

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

As a part of the inventory effort associated with the development of this plan NYS DEC 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, especially on public lands. Therefore all current inventories must be considered incomplete. Even fewer sites have been investigated to any degree that would permit their significance to be evaluated. Many reported site locations result from 19th century antiquarian information, 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. (See also pages 139 through 143 of the “Strategic Plan for State Forest Management”)

Historic and Archaeological Site Protection

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

Archaeological Research

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

Historic and Cultural Sites

The Hemlock-Canadice State Forest contains numerous cellar holes, barn foundations, mill sites, fencing, railroad grades and other features related to historic occupation. The largest concentration is in the location of a small hamlet called Dixon Hollow, which included houses and mills. The Dixon Hollow area was settled in the late 1820's, and gone by the 1920's having been sold to the City of Rochester.

NEEDS, ISSUES AND POLICY CONSTRAINTS

This plan strives to manage the diversity of the Hemlock Canadice Unit's biological and social resources for multiple use to serve the needs of the people of New York State. In order to manage the Hemlock-Canadice Unit for multiple use, NYS DEC must manage the ecosystem in a holistic manner while reconciling the many and sometimes conflicting demands on the ecosystem. In addition Hemlock and Canadice lakes are a direct source of public water for the City of Rochester and other communities and this will be considered relative to any actions in this Plan. This must be done within the framework of the Environmental Conservation Law (ECL), Rules and Regulations, and NYS DEC policies and procedures.

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

On the Hemlock-Canadice Unit, many different issues and needs form the basis for the objectives and management actions set forth in this plan. As the need for open space and outdoor recreation increased over the past years, so too have the facilities on state forests been modified and expanded to meet that demand. The DEC recognizes that the welfare of this area requires a "focus" towards the future. Planning must be done now to insure orderly and environmentally sound management in the future.

The ECL dictates that the lands within this unit be managed for "*watershed protection, the production of forest products and recreation and kindred purposes*". Within these constraints, a need exists for protection, goods, services, safe public water, and the perpetuation of open space.

In summation, a complex combination of needs, issues and constraints on these demands together with the inventory of available resources will form the basis for the goals, objectives, and subsequent management actions which comprise this plan.

Funding

Currently NYS DEC's Bureau of State Land Management has limited budget to manage all of NYS DEC lands.

Funding, when available, is primarily derived from:

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

- Conservation Fund. Wildlife Management Areas only. A state fund consisting primarily of income from the sale of sporting licenses, fines from penalties from fish and wildlife law violations, sale of products off lands administered by the Division of Fish, Wildlife and Marine Resources, and Return a Gift to Wildlife donations. Revenues attributable to the sale of oil and gas leases from Wildlife Management Areas are deposited into the Conservation Fund.
- Wildlife Restoration Program Funds. These are federal funds commonly referred to as Pittman-Robertson Funds. This is a federal program established from money received from excise taxes on the sale of sporting guns and ammunition. Use of land purchased, or activities funded, are federally regulated to certain activities.
- Sportfish Restoration Program Funds. These are federal funds commonly referred to as Dingell-Johnson Funds. This is a federal program established from money received from excise taxes on the sale of fishing equipment, and motorboat and small engine fuels. Use of land purchased, or activities funded, are federally regulated to certain activities.

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

Cooperative partnerships using the Adopt-A-Natural-Resource-Program with private conservation organizations or other interested parties, or through Temporary Revocable Permits issued to municipal or county agencies can be used to complete projects on the Hemlock-Canadice State Forest. These partnerships are a valuable supplemental source for providing needed services.

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

Summary of Identified Issues

As part of the unit management planning process, NYS DEC is committed to active citizen participation. To achieve that involvement, adjacent property owners, local government officials, media and others potentially interested in the management unit were identified and placed on a mailing list. While public comments are accepted at any time, the formal citizen participation process began in September 2010, when an introductory letter was sent to those identified on the Hemlock-Canadice Unit Management Plan mailing list. This letter briefly described the lands identified in the Unit Management Plan and potential topics to be covered by the plan. It also asked for verbal or written comments related to the Hemlock-Canadice Unit Management Plan. A public scoping meeting was held October 26, 2010, at the Town of Springwater Firehall. Public comments and staff-identified issues have been summarized below. See Appendix A: Public Comment for a complete list of public comments received as a result of the September 2010 meeting announcement letter.

The synopsis below each category is a compendium of all public comments. Individual comments may have been combined. Others are delineated between each category.

Access

Access to Hemlock Canadice State Forest is necessary to ensure both public use and land management. From logging to hunting, bird-watching to maintenance, safe access by all users of the state forests is an essential element of management. It is NYS DEC policy to provide appropriate public and operational access to the Hemlock Canadice Unit. Restrictions on access may positively contribute to the natural character of state lands.

The following is a synopsis of public comments received related to access:

General Access

Make Hemlock and Canadice accessible for disabled hunters ■ open access paths that are presently locked on each point so that the disabled and elderly can walk to the water's edge ■ provide scooter access of approximately four foot open access ■ allow enhanced access ■ additional access to mobility impaired hunters and fishermen ■ limit access to area north of Canadice Lake.

Do not improve hunting access ■ continue access to boaters with 10hp engines ■ keep public access in its current state ■ make parking areas along the lakes accessible with proper signage ■ additional public access could cause controversy ■ continue access for hikers ■ build accessible rest areas along the shores of both lakes ■ improve parking at launch sites to keep cars off of vegetation ■ maintain parking areas ■ maintain in a natural state, with minimal public access.

Evaluate existing access areas (upland and water) for needed improvements such as drainage, road and or parking surface, and ease of entry and access to the land ■ move gate posts at the entrance to north and south boat launch trail slightly across so motorized scooters for the handicapped would be possible ■ limit access with gates, warning signs and new DEC sign signifying Forest Protection category.

Roads/Trails

No road building ■ no paving ■ no mowing ■ no pavilions ■ or no beach development ■ use existing forest road and trail system ■ do not develop new roads ■ do not allow motorized vehicles on footpaths or access roads ■ do not allow roads to be carved into the surrounding hills or around Hemlock Lake ■ do not improve roads or trails on the north end.

Improve access roads and launch area for emergency rescue operations at south end of Hemlock Lake ■ construct and maintain several loop trails within the unit ■ construct foot path and bike path on east side of lake from end to end (no motorized vehicles) ■ put in a rope bridge across creek at old bridge area ■ improve trails ■ allow 4-wheelers and snowmobile travel ■ maintain current hiking trails ■ continue to mow the footpaths currently mowed by Rochester ■ develop snowmobile trails and cross country skiing trails ■ clear and re-open old lake roads (West Lake road on Canadice).

Hill and Valley Riders, Inc. are working on an existing trail that leads into Hemlock ■ add lakes access roads to the snowmobile trails currently maintained by the Honeoye Snowmobile Club ■ Clarify status of Boat Launch Road from Rix Hill Road South ■ change the speed limit to 40-45mph on Canadice Lake Road from Purcell Hill Road to Johnson Hill Road.

Staff identified issues:

The real property of this Unit is oriented around Hemlock and Canadice Lakes. In order to protect the water supply, the objective at the time of purchase was to obtain continuous ownership of the shoreline of both lakes. As noted elsewhere in this plan, the initial acquisition of these properties was done by the City of Rochester. Points of access to City property were not deemed essential with the property purchase. As a result, large areas, such as along the west side of Hemlock Lake, have no direct access to a public road. Some land parcels were divided, with City purchasing only a required minimum distance of 200' from the lakeshore, but little acreage. Other parcels transferred more acreage, but access to the new City ownership was not obtained. Fortunately, some parcels purchased in their entirety provided access points along bordering state highways or town roads. The lack of continuous road frontage, or strategic points of access, is a limitation to property management.

The City of Rochester had numerous "wire" gates across old access roads/skid trail entrances. Due to safety concerns these were all removed shortly after acquisition by NYS DEC. These locations will be monitored for damage, and NYS DEC reserves the right to construct gates to limit motorized access to state lands when public safety issues occur, or damage to the infrastructure or other resources is likely.

The City traditionally mowed the trails and roads two times each summer, lack of money and staff may limit NYSDEC's ability to continue such frequent mowing. This mowing could be accomplished by partnering with groups under the Adopt-a-Natural-Resource Stewardship Program (AANR), within the constraints of the rules and regulations for the Hemlock-Canadice State Forest. See also the Cooperative Agreements and Public Recreation and Use sections.

The south end of Canadice Haul Road and adjacent ditch/creek is not stable in its current configuration, and requires frequent maintenance to remove excess gravel deposited in the ditch/creek to stop the water from flowing over and eroding away the haul road.

Vegetation Management

Plant communities are by nature dynamic and ever changing. Young stands of trees get older, and species composition changes with time. Disturbances from fire, wind, insects, disease, timber harvest, and other land use practices have been an important part of the history of New York forests and have determined the composition and structure of today's forests. By applying different forest management or silvicultural practices, land managers can affect change in vegetative types and stages and associated use by wildlife. The production of forest products is a clearly stated goal in the Reforestation Law of 1929 and is consistent with the proposed management actions in the Hemlock-Canadice Unit.

The demand for forest products has been reflected in a steady increase in prices paid for timber in recent years. This is especially true for hardwood sawtimber and veneer. The value of standing red oak sawtimber, for example, has increased six-fold since 1975. The demand for fuelwood and for softwood sawtimber has remained constant. The demand for pulpwood has never been strong in this part of the state. Hemlock-Canadice Unit needs to be managed to prevent damage from fires, insects and diseases. (See also pages 251 through 256 of the "Strategic Plan for State Forest Management".)

The following is a synopsis of public comments received related to vegetation management:

Protection

Give it the highest level of protection, preservation in the forest categories ■ classify the majority of the lands acquired under highest protection category for State Forest ■ do not designate as a Forest Preserve ■ no logging ■ keep it “forever wild” as a wild forest ■ do not allow timber harvest ■ keep Hemlock Lake’s west shores forever wild ■ do not allow logging or log roads ■ preserve and manage the forest so areas planted with pine stands for conservation can revert back to a more natural condition ■ do not allow heavy equipment, saws, harvesting or timbering in proximity of the lakes ■ manage it for wildlife and hunting and use good silvicultural technique ■ link these forests with preserves at the Cumming Nature Center and wildlife management areas south of Honeoye Lake to create an even larger remnant of the original wild forest ■ establish broad no forest management buffer zones around streams and lakes’ shorelines.

Logging

Prepare an inventory of trees and plants for the site ■ inventory stands of apple trees and enhance these areas by pruning ■ identify unique habitats or ecosystems ■ state how “non-forested” tracts of land will be managed.

Continue the City’s policies ■ do not allow fragmentation of the Hemlock Canadice State Forest ■ limit timber harvest ■ use sustainable logging ■ use best management practices during timber harvest ■ control invasive plants. The large mature specimen trees associated with the wetland/ upland southeast of the Cleary Road / Blank Road intersection should not be considered for harvesting.

Allow discretionary wood cutting ■ no clear cutting of forests should take place ■ continue to manage lands using a variety of silvicultural techniques ■ severely restrict logging on Hemlock lands ■ lease land for maple syrup production ■ manage as an uneven-aged northern hardwood forest ■ set long rotations to achieve a mature forest at time of harvest ■ use a 2000 yard set back from the lakes and watershed streams and no logging on slopes greater than 10 degrees ■ ensure forester is onsite during timber harvest.

Develop cutting unit sizes for even-aged managed stands that will provide the greatest benefits to the wildlife resources ■ use even-aged forest management with an emphasis on regeneration of aspen stands using short rotations to address the habitat needs of ruffed grouse, American woodcock and other species ■ control logging to increase the wildlife diversity ■ logging should be restricted from mid- to late March to prevent an impact on migrating spotted salamanders at the north at the northwest corner of Hemlock Lake ■ do not overlook the need to have pre-green up quality nest site habitat available for wild turkey hens given the timing of their egg laying in early-mid April for first nest attempts.

Use herbicides, prescribed fire, even and uneven aged timber harvest, and forest thinning ■ do timber stand improvements ■ selectively harvest mature trees and sell timber; use money from sales to improve Hemlock Canadice unit ■ timber management to 480a standard.

Create a participatory educational working forest of 100 acres; it would include experiments and harvests under the direction of an accredited forester, planting and pruning, work on wildlife habitat, wetlands conservation, and trails; maple syrup program, deer exclosures and wildlife viewing stations ■ set aside areas that prohibit logging, gas well drilling or other similar resource degrading use ■ leave a few, small acreages of “forever wild” forest ■ DEC may not be able to oversee timber harvest adequately ■ do not add layers of public process before administering timber harvesting operations ■

use existing forest access roads for timber harvesting.

Agriculture

Permit continued agriculture to benefit the local economy ■ provide wildlife habitat ■ manage them for grassland management to benefit bird species ■ minimize fertilizer contamination and ensure low erosion ■ provide quality grass and legume cover in these areas will enhance insect abundance and attract turkey broods during late spring and early summer.

Invasive Species

Include plan to control invasive species ■ include invasive vegetation, like Russian Olive, management ■ save the ash and oak trees that are being stripped of leaves every year by caterpillars.

Staff identified issues:

Because so much of the Hemlock-Canadice State Forest is in forest vegetation, maintaining areas of open grass and brush, as well as the creation of early successional seedling-sapling stands, is necessary to ensure habitat requirements and continued forest production. Unique plants need to be encouraged and protected, as well as to be aware of exotic and invasive plant species, such as giant hogweed, zebra mussels and purple loosestrife, etc.

There are a lot of ash trees on Hemlock-Canadice State Forest. If Emerald Ash Borer (EAB) arrives and kills all of them, the forest composition will be significantly changed, especially in the forested wetlands. NYS DEC staff will monitor the situation, and follow the best available science, but ultimately there may be little that can be done, except, watch and see what happens.

Water Resources

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

The following is a synopsis of public comments received related to water resources:

Ensure that water quality is primary use and other uses such as recreation are secondary and evaluated as to its impact on the water supply ■ NYS forest management plan should be written with protection of drinking water as the primary goal ■ protect the upland watershed as the source of drinking water for over 200,000 people ■ filtration of Hemlock water by Hemlock plant is not enough to ensure safe, pure drinking water for Rochester in the future ■ use Rochester city water quality codes as the primary standard for protection and multiple use of the watershed ■ field inspect wetlands for boundary accuracy ■ provide additional wetland enhancement and creation ■ control erosion in stream and gullies that feed both lakes ■ use erosion control, retention ponds and wastewater treatment for water management.

Staff identified issues:

Staff identified the need to continue to follow Best Management Practices for water quality as well as the additional special §190.26 regulation (see Appendix K: Special Regulations) that apply to Hemlock-Canadice State Forest.

Wildlife and Fish Management

The Division of Fish and Wildlife is charged by Environmental Conservation Law to protect and maintain New York's rich and diverse ecosystems. The amount and quality of different habitats will result in different amounts and health of the wildlife and fish species living in them.

The following is a synopsis of public comments received related to wildlife and fish management:

Identify rare, threatened, and endangered species and habitats present on the state forest and address management actions to protect ■ enhance these resources using the Natural Heritage Program and other competent sources of information ■ field reconnaissance surveys for biological inventories should be set on a schedule.

Wildlife habitat preservation should take precedence over hunting and fishing demands ■ turn the area north of Canadice Lake into an animal and bird sanctuary ■ Keep north end of Canadice Lake outlet a very limited access and wildlife preserve area ■ do not allow diminishment of beavers on the north side of the dam at Hemlock Lake ■ expand protection of the bald eagle to a 1000 foot setback from the water's edge of both lakes ■ control deer and bear populations ■ protect predatory birds such as eagles and hawks ■ protect songbirds.

Use an ecosystem management style using antler restriction ■ hunting should be allowed to reduce large animal populations to ecologically healthy levels ■ stock more in both lakes ■ open north end fishing access ■ allow fishing, walleye stocking and a variety of fish for anglers ■ do not allow commercial or charter fishing.

Staff identified issues:

Staff identified the need to actively manage threatened and other species and associated habitats through enforcement, habitat management, monitoring, and research. This includes the historic and continued presence of bald eagles, stocking of game such as pheasants and fish, monitoring of fish for toxic substances, and monitoring and dealing with exotic invasive species such as emerald ash borer.

Public Recreation and Use

One goal of DEC management is to provide suitable opportunities for the public enjoyment of compatible recreational pursuits in a natural setting. DEC is charged under Environmental Conservation Law with guaranteeing that the widest range of beneficial uses of the environment is attained without unnecessary degradation or other undesirable or unintended consequences. The public has an undeniable stake in identifying both beneficial uses and undesirable consequences. The recreational use of State

Forest land is a clearly stated goal in the Reforestation Law of 1929 and is consistent with the proposed management actions in the Hemlock Canadice Unit Management Plan.

The demand for open space is increasing as well as a demand for access to public land for non-consumptive uses of the forest environment such as nature study, cross-country skiing, bicycling, primitive camping, and hiking. The demand for consumptive use of the forest resources such as hunting, fishing and trapping remains constant.

The following is a synopsis of public comments received related to public recreation and use:

ATV/Snowmobile Use:

Do not allow snowmobiles in the forest for recreational purposes ■ allow snowmobiles on property ■ allow 4 wheelers ONLY to retrieve deer ■ do not permit ATVs or snowmobiles on or near the lake ■ no jet skis or water skiing ■ a few snowmobiles would be helpful for cross country skiing to keep snow packed ■ no snowmobiles, ATV's or recreation vehicles.

Boating:

Allow boats to remain chained and locked, overnight, off shoreline ■ end the practice of storing boats at the boat ramp locations ■ keep current boating restrictions ■ restrict the type of craft and boat size ■ boating on the lake should be restricted to canoes, kayaks, and fishing boats with electric motors with the long term goal to remove motorized access to the lakes for recreation ■ allow canoes and kayaks, no sailboats ■ maintain horse power limit ■ prohibit motor boats on one of the two lakes and create a "paddle only" lake ■ no speedboats, water ski, or float planes ■ keep current 16ft ■ 10hp boat restriction ■ allow some allowances of minimal water contact while launching self-propelled craft ■ eliminate length restrictions on self propelled craft ■ do not allow engines on Canadice Lake ■ limit engine size to 25hp on Hemlock Lake ■ restrict size of boat engines ■ restrict sound level of motors ■ no boats with motors.

Boat Launch:

Install a second boat launch on Canadice Lake ■ grade and level a larger area for boat, canoe, sailboat, or kayak launching ■ make two-way traffic access launch sites ■ recent road improvements at the north end of the Hemlock launch made it difficult to park, backup, and walk for purposes of launching ■ allow small boat and canoe storage and make a provision for a waiver or variance through the Commissioner to use with controls such as "within 500 feet of the launch sites" or "set back from the waters high water edge by 25 feet."

Do not improve boat launches ■ do not need an elaborate boat launch ■ improve boat launch for deep water access at south end of Hemlock Lake for emergency and recreational use ■ add a boat ramp to reduce silt and mud from entering lake ■ provide a separate launch areas for trailer boats and canoe/kayak users ■ canoe and kayak uses "tie up the launch" taking too long to load and unload ■ enforce the designated canoe and kayak launch area at the south end of Canadice Lake.

Water depth at the launch on both lakes needs to be deepened ■ move the boat launch at the south end of Hemlock Lake north a few hundred yards into deeper water ■ design separate boat and canoe ■ kayak launches with a park like setting with picnic tables and chairs at the canoe site ■ build a boat dock ■ establish a daily launch fee ■ establish mooring docks ■ piers for boaters at the launch sites.

Camping/picnicking:

Do not allow public camping, tent /trailer/ etc. ■ allow shoreline campfires using dead wood, in a pit

less than 4 feet in diameter ■ improve pavilion ■ allow campfires and camping ■ allow limited camping (campfires, etc) in specific places such as the head of Canadice Lake ■ continue the no camping ■ no campfire rules ■ no large picnics ■ allow limited primitive camping in certain areas, at least 150 from the lake (similar to some reservoirs.) ■ allow picnic privileges with a take in ■ take out rule, no trash cans ■ if primitive camping is permitted, ensure proper law enforcement and maintenance which would not be affected by budgetary concerns ■ allow picnicking in Hemlock North Park ■ do not develop (no restrooms, campsites, etc.)

Hiking/Biking:

Construct bridges over the ravines for hiking purposes and to convert the eastern side into a hiking trail after the dirt road ends ■ construct a multi-use hiking and mountain biking trail along the hillside on the east side of Hemlock Lake ■ allow only passive recreation use such as trails for hiking and skiing ■ develop former road beds surrounding the lakes as trails for walking and bicycling ■ create a trail from the Village of Livonia to Hemlock Lake and circle the lake ■ expand the Canadice trail used for bikes to the east side of the lake ■ separate hunting and hiking trails ■ maintain hiking trails and develop new trails ■ promote more multi-use trails and or water access ■ do not mow the existing foot trails in the forest ■ put in a bike lane on the east roadside ■ add a bike lane on Canadice Lake Road ■ segregate foot, bike, and ski trails from trails for motorized vehicles ■ use the Larry Canute Memorial park as the primary trail head ■ connect north and south boat launch trails on Hemlock Lake ■ use Best Management Practices for all trail construction and maintenance ■ logging roads should be used as hiking trails ■ do not allow mountain biking ■ allow mountain bikes permitted on hard pack trails ■ extend Rob's Trail to Hemlock Lake ■ create no new trails.

Horses:

Allow horseback riding on certain designated trails ■ segregate horse trails from other trails ■ open up Hemlock-Canadice for horseback riding where the terrain is suitable ■ form a linking trail system for horseback riding and hiking ■ do not allow horseback riding.

Hunting:

Use the land for hunting and fishing ■ add hunting restrictions and that hunters be aware of houses bordering this state land ■ restrict some state land on both lakes for hunting in areas where residents live and recreational parties have cottages/camps ■ not "all" the land should be open for "firearms" hunting due to safety issues ■ allow bowhunting only in certain areas ■ it is not safe to allow public hunting onto land that is only 200 feet "deep" ■ shotgun deer hunters need to be respectful of private, posted property ■ allow bow hunting and restrict gun to areas by permit only ■ allow hunting to control deer population ■ hunters should remove guts ■ maintain hunting and fishing without requiring special permits like are needed in some state parks ■ create wildlife safety zones in a few selected areas where hunting pressure and land usage create safety hazards for land owners during deer season ■ allow bow hunting only on both lakes ■ do not put any special hunting or fishing regulations in place other than those already in place to protect public drinking water ■ improve the safety conditions during deer season ■ prohibit hunting within 100 yards of designated trails ■ create "off limits" areas for other recreation activities during hunting season.

Swimming:

Maintain the no swimming regulations ■ do not allow swimming or any body contact with water ■ ban swimming and immersion in the water and enforce it ■ allow swimming be allowed with some restrictions (e.g. not within ½ mile of boat launches.) ■ allow swimming in Canadice Lake.

Enforcement:

Enhance enforcement ■ DEC needs to patrol the property on occasion to keep violators at bay ■ state how enforcement will be carried out ■ clarify if the city or state will enforce the regulations ■ need more patrolling during hunting season ■ train volunteer DEC rangers to help maintain forest ■ establish a citizen based Watch Dog Group to provide stewardship and protection of the area ■ increase staff to monitor and protect upland watershed lands ■ explore alternative stewardship for wildlife monitoring, trail maintenance and citizen enforcement ■ contract with City of Rochester for monitoring and enforcement.

Other:

Continue the free use with permit ■ keep all rules and regulations set forth by the city of Rochester ■ use the St. Regis Canoe Area as a model from which to create an even wilder recreational resource ■ limit recreation consistent with the purposes of the State Forest vs. State Park ■ clarify what is meant that dogs must be “controlled” or on a leash ■ post signs prominently ■ make brochures available at kiosk ■ add kiosk at south boat launch ■ allow public to cut fallen trees for fire wood in managed and supervised cut zones ■ regulate all allowed human activity for absolute minimal impact ■ mark state land at intervals ■ put up a port-a-potty at boat launch and an outhouse on trail ■ establish and encourage an active nature education for area ■ establish an easier way to find and navigate Recreation section of the NYS DEC website to include downloadable .PDF file type maps.

Staff identified issues:

There is clearly a lot of interest in the recreation potential for this Unit. Balancing the desires of the different, and often conflicting, user groups with the requirements for clean public water, healthy ecosystems, habitats, and timber production will be challenging.

The City traditionally mowed the trails and roads two times each summer, lack of money and staff may limit NYSDEC’s ability to continue such frequent mowing. This mowing could be accomplished by partnering with groups under the Adopt-a-Natural-Resource Stewardship Program (AANR), or Temporary Revocable Permit (TRP), within the constraints of the rules and regulations for the Hemlock-Canadice State Forest. See also the Cooperative Agreements and Access sections.

Oil and Gas Leasing

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. Proposals to lease parcels of NYS DEC administered State lands for this purpose will be considered following public notice in the Environmental Notice Bulletin (ENB), and in local newspapers.

Oil and natural gas are valuable resources which can provide energy and revenue, as well as the opportunity for improvements to the existing infrastructure of the Unit (such as improving safe and restricted access through upgrading existing roads, culverts and gates) and creation of grassy openings to enhance habitat diversity. As with any other human activity on State lands, oil and natural gas exploration and development can impact the environment.

The following is a synopsis of public comments received related to oil and gas leasing:

Concerns and opposition to mineral extraction/drilling/hydrofracturing/gas leasing/transmission /bulldozers/oil or natural gas exploration /commercialization or resource development on state forest lands within the Finger Lakes region ■ degradation of wildlife and recreational resources and increase susceptibility to invasion by non-native species and diminish water quality and lead to fragmentation of the forest.

Staff identified issues:

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 listed in Appendix M: Maps. Any proposal for mineral development other than oil and gas would require additional SEQR review.

Cooperative Agreements

State funding to optimally maintain the Unit often falls short of what is desired. There is a need to identify additional funding and actively search out cooperative agreements and partnerships to maintain roads and trails and other facilities in the Hemlock Canadice Unit. NYSDECs formal cooperative program, called the Adopt-a-Natural-Resource Stewardship Program (AANR), encourages individuals and groups to undertake activities that meet management needs of state-owned natural resources. Multiple benefits of such partnerships have been identified; serving as a means to complete work that helps preserve, maintain and enhance natural resources at minimal cost to the New York State. It is also an opportunity for organizations, groups and individuals to show willing support for conservation efforts, large and small. Such efforts may involve the cleanup of vandalism, litter pick up, establishment or maintenance of nature trails, providing interpretive services for school groups and other citizens, management of fish and wildlife habitats and other positive benefits to the site and natural resources.

As of the writing of this plan there are currently two volunteer groups under Adopt-a-Natural-Resource agreements; The Nature Conservancy (TNC) – Rob’s Trail; and Hill and Valley Riders (aka HVR Snowmobile Club) – HVR-5 trail.

The following is a synopsis of public comments received related to cooperative agreements:

Connect the lakes and the villages of Springwater and Hemlock with trails ■ cooperate with the Town of Springwater for trail connection ■ explore alternative stewardship for wildlife monitoring, trail maintenance and citizen enforcement.

Staff identified issues:

Work with existing AANR groups, and encouraging other groups to sign up for AANR activities, within the constraints of the rules and regulations for the Hemlock-Canadice State Forest.

Open Space Conservation

New York State has been a leader in recognizing the value of open, undeveloped land and began a formal Open Space Conservation program in 1990. The comprehensive Open Space Plan has been revised every three years since 1992 to adapt to shifting conservation priorities. In June 2009, Governor Paterson approved a plan prepared by DEC and the Office of Parks Recreation and Historical Preservation, entitled, "2009 New York State Open Space Conservation Plan." It provides an integrated statewide strategy for land conservation by sustaining New York's ecological integrity and rich biodiversity. NYS DEC will consider the purchase of selected parcels from willing sellers when funding becomes available.

The following is a synopsis of public comments received related to open space conservation:

Acquire additional lands in the watersheds of Hemlock and Canadice Lakes as funding and opportunities permit, especially where holdings are sparse ■ expand this holding to include greater acreage from the lake edges and other watershed lands ■ expand the State Forest by an additional 5000-8000 acres ■ extend conservation practices to private lands on Bald Hill ■ DEC should have right of first refusal for purchase of private land ■ DEC should be funded to purchase selected properties of strategic importance that expand the State Forest, so it ultimately connects Canadice and Hemlock lakes ■ sign over property for a trade on a tax break ■ acquire more land or protecting bordering lands through conservation easements ■ purchase more land to the east side of Canadice Lake to protect the water quality and improve bird habitat ■ acquire additional land to connect Hemlock and the Bristol Hills' Reynolds Gully watershed ■ south and east side of Canadice Lake where City's ownership is narrow.

Continue to pay taxes to Livonia, Conesus, and other towns on the acreage now in the state's ownership ■ allow landowners contiguous to the Hemlock watershed and state forest to donate their land in exchange for a tax write off or some other form of tax relief ■ continue the "PILOT" [payment in lieu of taxes] program for tax payments ■ DEC should provide incentives to landowners to develop easements ■ buy out existing gas leases or purchase gas exploration easements ■ have a tax benefit for conservation practices (similar to 480a).

Staff identified issues:

Large areas of the Unit, such as along the west side of Hemlock Lake, have no direct access to a public road. Some land parcels were divided, with the City of Rochester purchasing only a required minimum distance of 200' from the lakeshore, but little acreage. Other parcels transferred more acreage, but access to the new City ownership was not obtained. Fortunately, some parcels purchased in their entirety provided access points along bordering state highways or town roads. The lack of continuous road frontage, or strategic points of access, is a limitation to property management.

Aesthetics

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

landscapes.

The following is a synopsis of public comments received related to aesthetics:

Hemlock and Candice must be protected from private development ■ protect the viewscape ■ do not allow industrial (cell towers, windmills, radio towers) or commercial development on watershed lands, water, or resources above, upon, or below these current NYS owned or regulated lands ■ post rustic-looking signs at Canadice Lake.

Staff identified issues:

Staff recommends that garbage pickup continue from state land, and encourage Pack it in, Pack it out and Leave no trace. At acquisition from the City of Rochester there were large numbers of boats that have been left on the shores of the two lakes for decades, this is no longer allowed under NYS regulations, and the boats were removed in 2011.

Overall Management

The Hemlock-Canadice Unit Management Plan is different than most Unit Management Plans, in that Hemlock-Canadice State Forest was acquired by NYS DEC in 2010, however the property had been in public management for over a century under the City of Rochester's control. As such, there is no history of management by NYS DEC, but the public has a history of expected use and overall management.

The following is a synopsis of public comments received related to overall management:

Use the Natural and Historic Preservation Area category as it well describes the unique nature of the Hemlock-Canadice lands ■ maintain a strong partnership with the City to protect the water ■ include a map that provides a better perspective of where in NY State the area is located ■ keep 6NYCRR and 190.26 parts A and B in their entirety ■ create a Conservation District to provide an integrated approach in managing the state forest and its contiguous lands with the focus on Hemlock Canadice watershed ■ form a Little Finger Lakes Management Committee to recommend management policy to regional DEC ■ create a comprehensive master plan for district with land use designation and zoning in two counties plus two more towns to include woodland, water, and wildlife and agriculture management ■ update the book "Hiking the "Little Finger Lakes" ■ keep it fee free ■ include a schedule and description of the specific improvements so projects could be completed as money becomes available ■ re-visit the plan every 2 to 5 years ■ the meeting was poorly timed because it was during hunting season ■ post notice of future meetings.

Staff identified issues:

This plan does not, and cannot, apply to private land beyond the borders of the Hemlock-Canadice State Forest. The changes in rules and regulations between the different ownership of the City of Rochester and NYS DEC have resulted in some confusion for users. As stated earlier, balancing the desires of the different, and often conflicting, user groups with the requirements for clean public water, healthy ecosystems, habitats, and timber production will be challenging.

Cultural Resources and Historic Preservation

A walk in the woods will often reveal objects from past users of the area. These artifacts, such as stone walls, glass bottles or flint arrowheads should be left where they are. The illegal removal or destruction of historic or archaeological resources is a continual problem.

The following is a synopsis of public comments received related to cultural resources and historic preservation:

No public comments were received related to cultural resources and historic preservation.

Staff identified issues:

Under City of Rochester ownership the settlement known as Dixon Hollow has been studied by archeology classes led by Prof Krumrine from St. John Fisher College. This has continued under NYS DEC, after the required permits from NYS DEC, New York State Museum and the Office of Parks, Recreation and Historic Preservation were attained.

Current Known Illegal Use

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

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

Whenever possible, fines or other punishments as the law allows are imposed. As money and other resources allow the damage is fixed, dumping is cleaned up and illegal plants are removed.

Policy Constraints

The laws, regulations, and policies listed below provide broad guidelines within which this plan is prepared. The Environmental Conservation Law of the State of New York is available to the public at local libraries, NYS DEC offices, from private vendors, and at www.dec.ny.gov/regulations/regulations.html on the internet.

Special Regulations for Hemlock-Canadice State Forest

Please remember that this is a very sensitive area because Hemlock and Canadice Lakes are a direct source of public water for the City of Rochester and other communities. As a result special regulations for this state forest were written. See Appendix K: Special Regulations for the 6 NYCRR §190.26, current as of the publication of this Unit Management Plan. They are also available on NYS DEC's web site at www.dec.ny.gov/regs/13943.html#13956 for the most current version.

Proposed changes to 6NYCRR 190.26 – Hemlock Lake, Canadice Lake and Canadice Outlet

To protect this unique water resource, human body contact has, historically, been kept to a minimum. This policy of minimal contact has been beneficial for the public water supply and, presumably, for other components of this resource. Water quality concerns, specifically contamination, dictate that human body contact with water in Hemlock and Canadice lakes, along with Canadice outlet, be held to an absolute minimum. We hope that all users consider their actions in light of this mandate.

It is understood, and accepted, that paddling a canoe or netting a fish may cause some incidental contact. Wading is an issue that was specifically omitted from the regulations for Hemlock Canadice State Forest due to the many people who step in the water to then get into a canoe, kayak or boat. Fisherman or hunters who are wearing waders in the water are not a large concern and has been an accepted practice. Other activities such as SCUBA diving, where there is body contact with the water, are not acceptable. A pet in the water is also not acceptable. However, use of dogs for hunting waterfowl is accepted since the control of waterfowl, especially geese, inhabiting the lakes benefits water quality.

See Appendix K: Special Regulations for the 6 NYCRR §190.26, current as of the publication of this Unit Management Plan. They are also available on NYS DEC's web site at www.dec.ny.gov/regs/13943.html#13956 for the most current version.

The following are proposed changes to 6NYCRR 190.26, a process that is separate from the Unit Management Planning process:

Subsection 4) add - SCUBA dive and float

Subsection 12) add - and kept out of the water except when lawfully hunting game

Subsection 15) Wade, except when accessing a boat/kayak/canoe or when wearing wader/hip boots.

State Laws

State Finance Law

State Historic Preservation Act (SHPA) - Article 14 PRHPL

State Public Health Law – Title 10 Section 125.1

Environmental Conservation Law (ECL)

ECL Article 8 - Environmental Quality Review

ECL Article 9 - Lands and Forests

ECL Article 11 - Fish and Wildlife
ECL Article 15 - Water Resources
ECL Article 23 - Mineral Resources
ECL Article 24 - Freshwater Wetlands
ECL Article 33 - Pesticides
ECL Article 51 - Implementation of Environmental Quality Bond Act of 1972
ECL Article 71 - Enforcement

New York Code Rules and Regulations (6NYCRR)

Title 6

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

NYS DEC Policies

Strategic Plan for State Forest Management
Public Use
Temporary Revocable Permits
Motor Vehicle Use
Timber Management
Unit Management Planning
Pesticides
Prescribed Burns
Inventory
Acquisition
Road Construction
Motor Vehicle Access for People with Disabilities Policy (CP-3)
Best Management Practices (Water quality)
General Freshwater Wetlands Permit for Wildlife Management Area Management Activities
Bureau of Fisheries Fish Stocking Policies
Archaeological Site Protection
Archaeological Research
Adopt a Natural Resource
Memorandum of Understanding with BLM for FYO 2004/2005 (leasing of gas wells)
Draft ATV Policy for Public ATV Access to Recreation Programs
Special Management Zones
Plantation Management on State Forests
Rutting Guidelines
Retention on State Forests
etc.

Federal Law

Americans with Disabilities Act

Federal Wetland Law 404 - Water quality

Federal Land Policy and Management Act of 1976 (FLPMA)

National Environmental Policy Act of 1969 (NEPA)

General Stormwater SPDES Permit.

etc.

GOALS AND OBJECTIVES

Vision

The vision of this plan is to ensure the biological integrity, improvement and protection of the Hemlock-Canadice Unit. This shall be done within the multiple use concept of management, which strives to serve the needs of the people of New York State by providing a broad based, biologically diverse ecosystem. Management will be considered over a broad geographical area, not only to ensure the biological diversity and protection of the ecosystem, but also to optimize the many benefits to the public that these lands provide, including the protection of the public drinking water for the City of Rochester and other communities.

The legal mandate enabling the Department of Environmental Conservation to manage state forests for multiple use is located in Article 9, Title 5, of the Environmental Conservation Law. Under this law, state forest lands shall be forever devoted to reforestation and the establishment and maintenance thereon of forests for watershed protection, the production of timber, and for recreation and kindred purposes”.

As stated earlier, it is the policy of NYS DEC to manage state forests for multiple use to serve the needs of the people of New York State. This management will be carried out not only to ensure the ecological enhancement and protection of the forest ecosystem, but also to optimize the many benefits to the public that forest land provides. Management of state forests will be directed toward those activities which will enhance the resources of the land. They will be carried out in a manner which reflects the land’s capability for these uses and strives to optimize the benefits of state forests to the public.

NYS DEC lands within Hemlock-Canadice Unit are unique compared with most private properties in the surrounding landscape. Private landowners have differing management objectives and property size is generally much smaller. State lands provide large expanses open to public recreation. State land management planning horizons extend over a very long time frame. This allows for a commitment to provide healthy and diverse ecosystems and to manage and enhance unique vegetative types.

To achieve the vision, this plan will provide specific management goals with measurable planning objectives. The objectives will be augmented and supported by a plan of action and a timetable. We have chosen, for planning purposes, to separate these into categories, while recognizing that they are interrelated.

Application of the Americans with Disabilities Act (ADA)

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

unless such modification would result in a fundamental alteration in the nature of the service, program or activity or an undue financial or administrative burden.

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

An assessment was conducted, in the development of the Hemlock-Canadice Unit Management Plan, to determine appropriate accessibility enhancements. NYS DEC is not required to make each of its existing facilities and assets accessible so long as the NYS DEC's programs, taken as a whole, are accessible.

New facilities, assets and accessibility improvements to existing facilities or assets proposed in this Unit are identified in several of the tables found in this GOALS AND OBJECTIVES chapter.

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

Management Objectives and Actions

For easier reading, the remainder of the GOALS AND OBJECTIVES chapter has been divided into sections by topic, although admittedly many objectives and/or actions are interrelated and could be found under more than one section.

Each topic includes a Management Objectives and Actions table, in which each action has been given a priority code and an estimated cost for the 10 year plan period.

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

Please remember that this is a very sensitive area because Hemlock and Canadice Lakes are a direct source of public water for the City of Rochester and other communities.

Estimated 10 yr Cost:

The figures for the 10-year costs are *estimates* for budgetary planning purposes. Actual costs are determined at the time the action takes place. As required by New York State Policy, lowest acceptable bid will be used for all state contracts. Budgeted amounts are not directly allocated to these individual action costs, and actual amount received is likely to be much less than the total amounts indicated in the table. See the Funding section on page 37 for further discussion on budgeting for this and other State lands under NYS DEC management.

Priority codes:

C=Critical, Necessary to ensure public health and safety; To stabilize structures so as to not lose the money and time invested in them; Mandated by legislation.

H=High, Necessary for public use, and/or to improve habitat or other natural resources. Often this will be for new projects.

L=Low, Important for the enhancement of public use, habitats or other natural resources.

Access

The management goal for access is to maintain an infrastructure system sufficient to manage the Unit's natural resources and provide for public use of the area. Access is a basic necessity for both public use and land management. The existing public road infrastructure provides adequate public access throughout most of the Unit.

In order to protect the water supply, the objective at the time of purchase by the City was to obtain continuous ownership of the shoreline of both lakes. Points of access to the property were apparently not considered essential with property purchase. As a result, large areas, such as along the west side of Hemlock Lake, have no direct access to a public road. Some land parcels were divided, with City purchasing only a required minimum distance of 200' from the lakeshore, but little acreage. Other divided parcels transferred more acreage, but access to the new City ownership was not obtained. Fortunately, some parcels purchased in their entirety provided access points along bordering state highways or town roads. The lack of continuous road frontage, or strategic points of access, is a limitation to property management.

Access is also limited by terrain. The narrow, lineal property on the sides of both lakes transects a large number of intermittent streams, many of which have created gullies of varying degrees. Some gullies cannot be crossed by a simple, conventional trail. Slope is also a factor as approximately one-third the property exceeds slopes of 25%.

Roads

Some portions of the town roads are seasonal and are not maintained for winter travel. Other roads have been officially abandoned; others have not been maintained in years. This lack of maintenance means large portions of this State Forest are not accessible, except by foot. Some have continued to have vehicle traffic, others have not. (When a road is officially abandoned it may revert to whoever owns the property it crosses, subject to any outstanding deed restrictions.).

Two fords are used for crossing streams within the Hemlock Canadice Unit, both on roads presumed to have been abandoned. The first is on the northern section of the North Hemlock Haul Road, south of the gate at the north boat launch. The second is on the South Hemlock Haul Road, north of the gate at the south launch. Traffic on both of these sections is light (in terms of vehicle numbers) and intermittent in nature. The fords are fully appropriate in these cases.

The southern end of Canadice Haul Road and its adjacent ditch/creek is not stable. The creek crosses under Canadice Lake Road, and then makes three right-angle turns in very short order. The water gains

speed, until the last turn where it flattens out, making a sharp left turn into the wetland and in the process deposits most of the gravel the water had been carrying. That gravel fills the ditch/creek and needs dug out on a regular basis or soon the water will be flowing across the haul road. This is especially a problem during storm events. As of the writing of this plan, the final solution has not been decided on, but changing the path and/or flow of the creek and/or hardening and/or raising the road level, will be needed to avoid constant maintenance and/or loosing the use of that section of Canadice Haul Road.

As previously noted in the right of way section, the DEC owns an administrative access right of way extending from Marrowback Road (a town highway) to the western boundary. Please see Rights of Way, Concurrent Use & Occupancy, and Deeded Exceptions, on page 29 for a full discussion of this right of way.

Parking

In some areas there is a need for additional parking to alleviate safety problems which occur when users park on existing road right-of-ways.

There are 21 parking areas on Hemlock-Canadice State Forest, ranging in size from one vehicle to 20 vehicles. See Appendix M: Maps for their location and names. Many of them could use a fresh layer of gravel or the addition of rock curbing. With the exception of the North Canadice Lot and the Canadice Overlook lot, all of the parking areas along Canadice Lake Rd should be evaluated for redesign to create additional safer space for parking.

Area Signs and Gates

As this is a new state forest, area signs are newly erected at the following areas:

- Mission Road – south of Blank Road intersection
- State Route 15A – south of the hamlet of Hemlock
- State Route 15A – north of the hamlet of Springwater
- Canadice Lake Road – south of the intersection with Canadice Haul Road.
- Purcell Hill Road – near intersection with Canadice Haul Road and Parking Lot.

As these are newly constructed signs, with very rugged standards, it is to be expected that they will last through this plan period.

Construction of gates restricting motor access to haul roads and access trails will continue. The costs to upgrade haul roads for public access are prohibitive. Access restrictions are needed to maintain the "backwoods character" of the land as well as protecting sensitive areas.

The City of Rochester had numerous "wire" gates across old access roads/skid trail entrances. Due to safety concerns these were all removed shortly after acquisition by NYS DEC, these locations will be monitored for damage, and NYS DEC reserves the right to limit access to state lands when public safety issues occur, or damage to the infrastructure or other resources is likely.

The City of Rochester's "farm" gates and some of the "wire" gates have been replaced with standard NYS DEC saloon style gates. This style has two sets of gates and hinges, each gate is smaller which reduces the weight on each post and minimizes the issues caused by the post shifting from the weight. On trails or roads with high recreational use a gap will be left between the two gates allowing for easier

access by users, but still limiting motor vehicle access.

Boat Launches

Four boat launches provide access to Hemlock and Canadice Lakes, two on each lake. For further information on these launches see Public Recreation and Use on page 83 and Recreation on page 30.

Boundary Line

There is approximately 80 miles of boundary line for this unit, including 22 miles of shoreline. In addition there is approximately 24 miles of road frontage on public roads. Road frontage on public roads is generally signed but not painted.

Current policy is to repaint the blazes and re-sign these boundaries every five to ten years to clearly delineate state forest lands. Given the amount of boundary to maintain, staff is suggesting that 20% of boundary be painted each year. Road frontage should be posted as needed. Signs along the roads tend to disappear more quickly than boundary signs out of the public eye. Hence, the road frontage signs will probably need more frequent replacement.

Staff identified several known issues with boundary line encroachment or trespass. A re-survey of boundaries in question will need to be done in these cases, and will serve as first priority for the survey crew's time.

Table 9: Management Objectives and Actions for Access

Management Objectives	Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
1 Identify need for additional access	1.0	Evaluate site(s)	As Needed	H	40 Work Days
	1.1	Receive public comments	On-Going	C	40 Work Days
	1.2	Solicit public comments	Every 10 yrs (as part of the UMP process)	C	14 Work Days
2 Maintain roads	2.0	Inspect culverts	Annually or after weather damage	L	50 Work Days
	2.1	Replace culverts on about a 25 year interval, or when failure occurs.	Average of 5 culverts per year or after weather damage	C	\$4,000 per culvert

Management Objectives		Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
		2.2	Public Forest Access Roads - grade and maintain surface.	Minimum of every 2 years, or after weather damage.	H	\$2,000 per mile
		2.3	Haul Roads - grade and maintain surface.	Minimum of every 5 yrs, or after weather damage.	H	\$2,000 per mile
		2.4	Mow road right of way	At least annually.	H	200 Work Days
		2.5	Canadice Haul Road – stabilize the creek adjacent to the south end of the road.	As soon as possible	C	Unable to predict costs.
3	Construct roads	3.0	None proposed	Not in this plan period	L	
4	Construct additional parking	4.0	Evaluate and redesign parking lots per above.	One per year	L	\$7-10,000 per lot
5	Maintain parking areas	5.0	Litter removal	At least annually.	C	60 Work Days
		5.1	Maintain all parking areas	Every 5 yrs	C	\$30,000
		5.3	Maintain informational signs	Annually	C	\$6,000
		5.4	Mow all parking areas	Annually	H	25 Work Days
6	Control access	6.0	Locate and construct gates per above.	Year 1 and 2	C	5 Work Days and \$6,000 per gate
		6.1	Maintain gates and signs	Annually	H	10 Work Days
		6.2	Enforce NYS DEC policies	On-Going	C	
7	Identify state property boundary lines.	7.0	Paint and post boundaries - 20% per year.	Annually	H	27 Work days and \$10,000
		7.1	Identify and resolve boundary encroachment issues.	ASAP	C	Unable to predict costs.

Management Objectives	Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
	7.2	Survey and blaze boundaries.	When encroachment issues are discovered, or line evidence disappears.	C	Contracted out - \$4,500 to \$5,500 per mile. NYS DEC surveyors – 12 to 15 work days per mile
	7.3	Repair and replace area signs as they are vandalized or fade.	On-Going	L	\$500 per sign

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

There may be additional work in this category that is not foreseen at this time. Development of new or additional facilities will only be under taken after due consideration in the Unit Management Planning process.

Timber and Vegetation Management

Plant communities are, by nature, dynamic and ever-changing. Young stands get older and species composition changes with time. Management of vegetation can accelerate or slow down these inevitable changes in vegetative types and stages. The Hemlock-Canadice Unit Management Plan strives to maintain a balance of vegetative types and vegetative stages, the purpose of which is to enhance species diversity and abundance. (See also Chapters 2 and 6 of the “Strategic Plan for State Forest Management”.)

Hemlock-Canadice State Forest surrounds Hemlock and Canadice Lakes, which are direct source of public drinking water for the City of Rochester and other communities. A healthy, diverse forest will provide long-term protection for the water supply, and resist disturbances that could impact water quality. It will be resilient from the disturbances that will inevitably occur.

Staff has identified management objectives which strive to maintain a balance of vegetative types and stages. This balance is intended to enhance biodiversity, produce healthy and sustainable forest resources and enhance wildlife habitat diversity.

The Hemlock-Canadice Unit is characterized by a variety of vegetative types. Northern hardwood forests predominate on the north facing slopes and oak-hickory forests occupy the south facing slopes. Past man-made disturbances have created even more diversity. Many of the formerly agricultural fields for example have reverted back to "pioneer" forest types comprised of aspen, red maple and white pine.

Commercial Timber Sales

The primary method used to influence the timber and vegetation on State Land is the commercial sale of timber. Table 7: Vegetative Types and Stages for the Hemlock-Canadice Unit, is located on page 21 in the Timber and Vegetation section.

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

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

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

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

The program is governed in part by a "Timber Management Handbook" (2011) which includes both policies and guidelines to insure that management is carried out in a deliberate and professional manner. The Timber Management Handbook directs and regulates the practice of timber management on NYS DEC lands. This handbook contains technical references, as well as direction on regulation, allowable cutting, silvicultural systems and procedures. For further discussion of Commercial Timber Sales, see Chapters 2, 3 and 6 in the "Strategic Plan for State Forest Management".

Other sources of direction for NYS DEC timber and vegetation management activities include Commissioner's policies, Division directives and the guidance and thresholds established in the State Forest Commercial Sales Program Environmental Impact Statement (EIS). All timber management activities that may be carried out on this unit will comply with these guidelines and directives, as authorized under the Environmental Conservation Law. Direction is also given in the NYS DEC publication Best Management Practices for Water Quality, and the Management Rules for Special Management Zones, Plantation Management on State Forests, Rutting Guidelines, and Retention on State Forests.

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

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

By law, any trees to be removed in a harvest must be designated, and paid for, prior to removal. Designation is made by NYS DEC forestry staff. After designation is completed, a fair market appraisal is conducted. No products may be sold at less than the fair market value. Forest stands are prioritized for treatment based on the criteria outlined above, and the desired future conditions identified by this Unit Management Plan. Prioritization is done by NYS DEC forestry staff, with input by wildlife staff.

The Environmental Conservation Law requires that different procedures are employed based on the appraised value of a timber sale. Sales that are appraised greater than \$10,000 are called revenue sales and sales that are appraised at less than \$10,000 are known as local sales. The New York State Comptroller must approve revenue sale contracts. The Regional Forester has the authority to execute local sale contracts. All sales valued at more than \$500 (and those less than \$500 which are thought to have substantial public interest) are publically advertised and competitively bid. Law requires that forest product sales can only be awarded to the highest responsible bidder. The Regional sub-office in Bath maintains a mailing list of prospective bidders for forest product sales. Those interested in receiving bid information should contact the Bath office or visit www.dec.ny.gov/lands/69749.html for a list of currently advertised and recently closed bids.

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

Green Certification

In 2000, New York State DEC-Bureau of State Land Management received Forest Stewardship Council® (FSC®) certification under an independent audit conducted by the National Wildlife Federation - SmartWood Program. This certification included 720,000 acres of State Forests in DEC Regions 3 through 9 managed for water quality protection, recreation, wildlife habitat, timber and mineral resources (multiple-use). To become certified, NYS DEC had to meet more than 75 rigorous

criteria established by FSC. Meeting these criteria established a benchmark for forests managed for long-term ecological, social and economic health. The original certification and contract was for five years.

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

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

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

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



Inventory

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

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

Hemlock-Canadice State Forest was inventoried by NYS DEC shortly after it was acquired from the City of Rochester, during the summer and winter of 2010. The data gathered was used to create the Table 7: Vegetative Types and Stages for the Hemlock-Canadice Unit, as well as several maps located in Appendix M: Maps, and the Appendix F: Timber Management for this Unit Management Plan.

During the inventory process notes are made and GPS data taken on areas that fall into Special Management Zones, protection forest, historic sites, waterfalls and other interesting natural features. (See Special Management Zones, Retention on State Forests, and Rutting Guidelines, Protection Forest, Archaeological and Historic Resources and Appendix G: Glossary)

Current and Future Vegetation Types and Stages

As noted above, the management objective is to strive to maintain a balance of vegetative types and stages. Presently, the Hemlock-Canadice State Forest does not have a balanced mix of vegetative stages, but does have an adequate mix of vegetative types.

In timber the different stages are divided into three size classes, seedling/sapling is up to 5 inches in diameter, pole timber is 6 to 11 inches and sawtimber is 12 inches and up. The most recent forest inventory data shows there is an over abundance of sawtimber size timber making up about 51% of the acreage: the next most common is in the pole timber size at about 40%, and the seedling/sapling size with only a small fraction of about 2%. About 3% is classed as grass or brushy openings; and less than 1% was in the small pond category. The wetland category makes up about 16% of the land acreage, but most of that is forested wetland and overlaps with the pole and sawtimber categories. See also page 21 - Table 7: Vegetative Types and Stages for the Hemlock-Canadice Unit, and Appendix M: Maps.

For a better distribution of stages, seedling/sapling acres should be created, primarily out of the stands currently of sawtimber size. It is to be expected that, at least some of the pole sized stands will move to the sawtimber size class as a result of tree growth.

There are opportunities to create some seedling/sapling acres by treating pole timber areas, but this must be done with discretion to avoid reducing the total number of pole timber acres by a significant amount. It is expected that some of the acreage listed as plantation sawtimber will be converted to "hardwood seedling - sapling" during this planning period, either through management actions or natural processes.

Stand composition and vegetative type are influenced by many things. For this forest the most important factors would be:

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

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

- 1) The significant role played by natural forces in the type and stage exhibited by any stand.
- 2) The fact that most tree species do not lend themselves to management over a 10 year period. In some cases it may require 40 - 50 years before the results of any given management action can be adequately assessed.

Success in this objective will be measured simply by an increase in seedling/sapling acres.

There is a low percent of grassy/brushy openings, about 3.1%. This is less than ideal, but the steep hillside or wetland terrain of the Unit does not lend itself well to adding additional acres of grassy/brushy openings. Over the 10 years of this plan that amount should be increased to 3.5%, or an additional 28 acres. Existing grassy/brushy fields should not be allowed to convert to seedling/sapling, which means they will need to be mowed, brush-hogged, or burned on a regular basis.

Old Growth Forest

The NYS DEC Bureau of State Land Management has adopted the following definition for Old Growth forests.

Old-Growth Forest - The definition of "Old-Growth Forest" involves a convergence of many different, yet interrelated criteria. Each of these criteria can occur individually in an area that is not old growth, however, it is the presence of all of these factors that combine to differentiate "Old-Growth Forest" from other forested ecosystems. These factors include:

An abundance of late successional tree species, at least 180 - 200 years of age in a contiguous forested landscape that has evolved and reproduced itself naturally, with the capacity for self perpetuation, arranged in a stratified forest structure consisting of multiple growth layers throughout the canopy and forest floor, featuring (1) canopy gaps formed by natural disturbances creating an uneven canopy, and (2) a conspicuous absence of multiple stemmed trees and coppices. Old growth forest sites typically (1) are characterized by an irregular forest floor containing an abundance of coarse woody materials which are often covered by mosses and lichens; (2) show limited signs of human disturbance since European settlement; and (3) have distinct soil horizons that include definite organic, mineral, illuvial accumulation, and unconsolidated layers. The understory displays well developed and diverse surface herbaceous layers.

NYS DEC staff have not found any sections of Hemlock-Canadice State Forest that meet the above criteria. It does have stands of big trees, stands with old trees, and stands with big old trees. The City of Rochester purchased land previously used for farming and cottages, and ample evidence of this still exists in the form of old stone walls, foundations and wire fence along the hill and lake side. From the water the hillside appears to be an unbroken canopy of trees, all about the same height, a classic sign of second growth of trees. In addition, many of the plantation trees qualify as old trees, in that a two year old seedling that that was planted by the City of Rochester in 1902 would be 112 years old in 2012.

NYS DEC is not implying that only Old Growth Forests are worthy of inclusion in State Forest Protection Areas, instead, the intent is to establish a consistent, science based approach to identify and classify old growth stands. NYS DEC staff will continue to protect areas other than old growth including sites where there are rare or endangered species, unique natural communities or areas where long term protection can promote greater biodiversity in the landscape. See Appendix F: Timber Management and Appendix M: Maps.

As time passes, and with no further human disturbance of the stand of trees, it is possible to gradually revert to a state similar to old-growth. This is a centuries long process; however there are areas of this Unit that this may eventually happen to.

Silviculture

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

Even-aged Management

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

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

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

Actions taken under even - aged management systems might include

- 1) thinnings of young stands (likely to be non - commercial)
- 2) intermediate cuts of middle aged stands (usually commercial)
- 3) actions aimed at regenerating stands (generally commercial)
 - a) shelterwood (either two cut or three cut)
 - b) seed tree
 - c) final harvest (clear cut)

All-aged Management

The all-aged management system differs from the even-aged system in several ways. Instead of maintaining one dominant age condition in the stand, this system establishes and maintains many age groups ranging from seedlings and saplings to very large, mature trees.

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

Single tree selection is used to maintain an unbroken forest canopy as desired in the all-aged forest areas. The single tree selection system removes individual trees throughout a forest stand, thereby minimizing disturbance to the forest canopy. The small openings created by single tree selection limit the amount of sunlight that can penetrate to the forest floor. As such, the single tree selection system encourages long-lived shade tolerant tree species such as sugar maple, and eastern hemlock.

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

Current and Future Management

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

- A variety of silvicultural techniques will be used to manage the forests within this unit, including:
- 1) converting even-age stands to all-aged stands (where site and species assemblages are favorable)
 - 2) thinning and regenerating, even-aged stands
 - 3) establishing protection areas to maintain and enhance diversity
 - 4) protecting ecologically sensitive areas such as stream banks, wetlands, and steep slopes from intensive management.

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

Difficulties with regenerating oak, conifer and other shade-intolerant and mid - tolerant species, have led to shade tolerant species such as Sugar and Red Maple becoming well-established. The presence of shade tolerant species will challenge the land managers' abilities to meet the overall vegetative goals of balancing forest types and stages.

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

See also the discussion under Even Aged Management, above.

See Appendix F: Timber Management for a stand by stand listing of commercial timber sales planned for the 10 years of this Hemlock-Canadice Unit Management Plan. Appendix M: Maps includes maps of the planned commercial treatments. Over the 10 years of this plan, 2.6% of the land area is scheduled for regeneration; this is less than the 10% that would ensure an even progression of age classes into the future. However, the acres of inadequate access, intensive recreational use, limited staff, steep hillsides, and/or wetland terrain of the Unit do not lend itself well to timber harvesting on all of the land area. Some of the shortfall will be made up on other state forests and private lands on a state wide basis, but not all, for many years now, the timber in New York State been growing faster than it is being cut down and utilized. Intermediate/thinning cuts have been scheduled on 7.2% of the Unit.

Appendix F: Timber Management does not include any pre-commercial treatments for any stands. Pre-commercial is a stand treatment when the trees are too small to sell for profit, requiring the payment

of someone to do the work. In addition, properly trained volunteers, or prison work crews, can also do the work. When prison work crews are available, or money to contract for work is available, the stands will be evaluated, starting with the ones in the seedling-sapling and pole timber sizes.

Special Management Zones, Retention on State Forests, and Rutting Guidelines

All silvicultural actions taken under this Unit Management Plan are also constrained by the policies for Special Management Zones, Forest Retention Guidelines, and Rutting Guidelines.

The Special Management Zones establishes zones around specific features (intermittent streams, vernal pools, wetlands, etc.) where management must be modified as compared to what is permissible in the general forest zone. The actual configuration of the zones can only be done during sale layout, following field reconnaissance, which is beyond the scope of this plan. See also the Fish and Wildlife Habitat and the Watershed and Wetlands Protection sections for further details. In 2006 a new forest inventory system was implemented, which allows identification of areas receiving special management considerations.

The Retention on State Forests is a strategy for conserving biodiversity in stands managed for timber production. Retention and recruitment of snags, cavity trees, coarse woody debris (CWD), fine woody material (FWM) and other features will advance the structural and compositional complexity necessary for conserving biodiversity and maintaining long term ecosystem productivity.

The Rutting Guidelines provide a tool to assist NYS DEC staff when conducting a timber harvest or Temporary Revocable Permit (TRP) on State Forests. A well planned and laid out access system, utilizing appropriate best management practices (BMPs), concentrates site disturbance, soil compaction, and rutting to these limited corridors while protecting water quality and overall site productivity of the general harvest area.

Protection Forest

Per the “Timber Management Handbook” protection areas receive special consideration whenever management activities, of any kind, are planned which may impact these areas. Examples include:

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

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

As part of the 2010 inventory process, the Hemlock-Canadice Unit had 3,147 acres designated as protection forest. This includes stands that are forested, forested wetland and wetland, and is about 47% of the land area. See Appendix M: Maps.

Plantation Management

Most of the conifer plantations on this unit were planted between 1902 and the start of World War II. Most of the existing plantations on the Unit are reaching their biological maturity. On most sites tree crowns are thinning and many stands are experiencing mortality. Natural succession within these maturing plantations is likely to follow one of two very different pathways.

The first would be characterized by slow decline of the existing softwood overstory and a gradual release of the current crop of young seedling/sapling hardwoods in the understory.

The second would be characterized by the existing softwood overstory being removed by a single catastrophic event (i.e. ice storm, heavy late season snow, unusual wind event, aggressive insect attack, etc.). This pathway would result in a much more rapid release of species in the understory.

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

In both scenarios there is also the possibility that, if site factors are favorable, some of the softwood species from the original plantation may participate in the new stand. Anecdotal evidence suggests that we should expect this, at least through the seedling - sapling stage. Long term persistence of these species on these sites may be somewhat less likely. We have not been following this type of situation long enough to have much information on the likely outcome. See also the discussion relating to desired conifer component for this management unit.

The objective for managing these plantations should be to try to mimic the first scenario. The stand is thinned to a density which will allow the establishment of desirable tree species in the understory of the stand. This thinning would later be followed by the removal of the rest of the softwood overstory, once the number of new, young, trees in the understory is sufficient to assure a new stand.

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

In all cases we will need to make efforts to comply with the recently issued forest retention standards regarding the type and number of trees to be retained when doing this type of work.

Legacy Plantations

This is a unique State Forest, in contrast to most State Forests; the CCC was not active during the planting process in this case. Tree planting is believed to have begun in about 1902 and been complete by 1940. This work was carried out by City of Rochester crews. In recognition of this unique legacy, the NYSDEC has designated several of the existing softwood plantations as "legacy plantations".

Although no living creature lives forever, these plantations will be grown beyond economic maturity and maintained for as long as possible. Every effort will be made to not deliberately regenerate these stands, although thinning to improve the health of the trees will occasionally occur.

Conifer Component

Forest ecologists have identified conifers as an important component of the ecosystem. The establishment of conifers through planting has created a significant conifer component on these forests. About 20% of the Unit is in conifer plantations, and about 10% of the unit is in natural conifer stands.

Staff has not identified softwood plantations on this unit which serve as a habitat niche for native wildlife species. Most of the plantations do not occur on soil types which are conducive to success by plantation conifer species. Therefore, we are not proposing to replant any plantations. The better course is to allow these areas to succeed (either through management intervention or by natural forces) to native, natural, vegetation. This may, or may not, include a significant conifer component.

For the purposes of this plan a natural conifer stand is any stand where the conifer species compose more than 33% of the stand, and it was of natural origins, not planted. Care must be taken to assure that the natural conifer stands reproduce to type; no conversion of natural conifer stands should occur as a result of management actions. In many cases, particularly as regards stands dominated by Eastern Hemlock, this will amount to a modified all – aged treatment.

Stand regeneration efforts in these cases may stretch over a number of years. We have not attempted enough work in these kinds of situations to be able to state with assurance exactly how long this might take, but 30 years is probably a fair estimate.

Sugar Maple Sap

The tapping of hard (sugar) maple trees for the production of maple syrup and sugar is a long standing traditional forest product of the northern hardwood forest. Traditionally sap was collected in individual buckets at each tap, but modernized production uses a system of tubes connecting many trees to a centrally located collection tank.

The tapping of trees does no long term damage to the tree health, but does reduce the quality of the lumber produced due to discoloration of the wood. More sap is produced from a tree with many branches and leaves, but clean, knot-free wood is produced from trees with few lower branches, thus any one stand of hard maple can be managed for better maple syrup production or better lumber production, but not both.

Stands or collection of road side trees which do not have the potential for successful production of quality lumber or are reserved from harvesting could be considered for tapping. At this time the procedures for this process are under review, but portions of stands B-15, B-20 and A-35 are considered suitable for tapping.

Grass and Brush Management

There is a low percent of grassy/brushy openings, about 3.1%. Over the 10 years of this plan that amount should be increased to 3.5%, or an additional 28 acres. Any one grassy opening should be 4 acres, or more, in size. The timing on clearing to create these openings will depend on funding, because

of this, an exact year of action has not been picked.

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

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

Wetland and Ponds

There is a very large acreage of wetland on the Hemlock-Canadice Unit, about 13% is forested wetland and about 3% is open/shrub wetland. There is a much smaller acreage of small pond habitats, less than 1%. See the Fish and Wildlife Habitat and the Watershed and Wetlands Protection sections for further details.

Forest Health Threats

Exotic invasive species from other continents can cause serious forest health threats. One such threat currently causing concern is the Emerald Ash Borer (EAB) (*Agrilus planipennis*). A native of Asia, it was first detected as a well established infestation in Michigan, USA and Ontario, Canada in 2002. In 2009 it was detected in New York, and in 2010 found in northern Livingston County and central Steuben County. More EAB infestations were found in 2011, and unfortunately additional ones are expected in the future.

EAB infests all species of ash (*Fraxinus* spp.), and has devastated millions of ash trees in North America. Adult beetles leave distinctive D-shaped exit holes in the outer bark of the branches and the trunk. Adults are roughly 3/8 to 5/8 inch long with metallic green wing covers and a coppery red or purple abdomen. They may be present from late May through early September but are most common in June and July. Signs of infection include tree canopy dieback, yellowing, and browning of leaves.

Current efforts are pointed toward delineating the infestation area and slowing the insect's spread to other parts of the state. NYS DEC current planning is contained in a document called the [Emerald Ash Borer Management Response Plan](#) (2011), the goal of which is to keep as many ash trees alive as long as possible, in as much of New York State as possible, for as long as possible, aka The SLAM Document (SLOW Ash Mortality). Additional information can be found at: www.dec.ny.gov/animals/7253.html.

If (or when) EAB gets established in the area it will change the look of large sections of Hemlock-Canadice State Forest. White or green ash is the number one tree species in 17 stands, and the number two species in 31 additional stands, for a total of about 2,340 acres, or about 20% of the State Forest. Most of these acres are on the wetland areas of the state forest. Many of the hillside stands have a much smaller percentage of ash, but very few have no ash trees at all. Some of the lowland areas have so very

few other tree species that the primary tall vegetation left will be brush and standing dead ash snags.

Often, stands that are stressed by overcrowding become susceptible to forest health threats. One forest health threat in that category is the Sirex wood wasp (*Sirex Noctilio*). The Sirex wood wasp is a devastating pest of pine plantations. It is native to Europe and Asia and has destroyed millions of pines in Australia, South America and South Africa. In September of 2004, a Sirex wood wasp was discovered in a research trap in Fulton, New York. An expanded trapping effort in 2006 confirmed the presence of Sirex in most counties in western New York. Utilizing literature from around the world, NYS DEC has developed management direction in regard to dealing with the Sirex wood wasp. The literature suggests that dominant trees with a good crown ratio in managed/thinned stands experienced very little to no damage from Sirex. Unhealthy, suppressed and over-crowded trees in unmanaged stands, on the other hand, experienced mortality rates of up to 65% over a three year period in one study. As the infestation in New York is still young, we do not yet know what the impacts will be. Therefore, silvicultural management options, at this point in time, do not include consideration for liquidation cuts or work to convert stands to a non-pine species composition, unless this is a management objective for other valid silvicultural reasons. Periodic, judicious application of thinning operations to maintain stand densities at levels recommended in applicable stocking guides for optimum growth is currently NYS DEC's approach to silviculture in consideration of the potential threat of Sirex.

It should also be noted that there is at least one aggressive insect pest which preys on Eastern Hemlock (*Hemlock Woolly Adelgid*). If this insect becomes a serious pest in this unit, the earlier discussion on maintaining a 10% conifer component becomes a moot point, and all we will be able to do is to watch as the forest composition changes.

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

Some level of insect, disease and natural disaster are recognized as being a beneficial factor in shaping our vegetation. Various endemic and epidemic occurrences of insect, diseases, fires and storms periodically impact the vegetative communities of the Hemlock-Canadice Unit. Infestations of introduced insects such as Gypsy Moth and Hemlock Woolly Adelgid and the previously mentioned EAB and Sirex wood wasp are of present concern and require regular monitoring. Native insect species such as Forest Tent Caterpillar, Pear Thrips and Fall Cankerworms are cyclic in population and may be expected to impact vegetation at some time in the future as they have in the past. The professional foresters of NYS DEC will continue to observe the effects of these factors which influence the vegetation on the unit. By closely monitoring these outbreaks management actions may be able to lessen undesirable impacts.

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

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

Invasive plants are also crowding out native species. Current exotic invaders include Purple Loosestrife, Buckthorn, Honeysuckle, Garlic Mustard, Hogweed, Multiflora Rose, and Japanese Knotweed. Unfortunately, there are many more that are not listed here. As money and time allow, they will be monitored, and when found, management actions taken. Depending on the species and location, actions could include prescribed burns, pesticides, or mechanical removal.

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

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

1. Silvicultural Remedies
Changes in forest composition and structure may create conditions that are less favorable to some invasive species.
2. Hunting
Invasive and nuisance species can be kept in balance within the ecosystem by applying hunting as addressed within the Deer Management section of the “Strategic Plan for State Forest Management”.
3. Mechanical Control
Digging, pulling or cutting may be effective in altering site conditions to control invasives and directly controlling some plant species.
4. Grazing
Although many invasive plants may be resistant to applied scientific grazing, this method may be appropriate for some species. Grazing on State Forest lands would require the availability of an agricultural partner along with staff and funding resources.
5. Biological Control
Biological control is the science of reconnecting invasive plants with the specialized natural enemies that often limit their density in their native ranges. The U.S. Department of Agriculture’s Animal and Plant Health Inspection Service (APHIS) is responsible for controlling

introductions of species brought into the United States for biological control of plants, in accordance with the requirements of several plant quarantine laws, the National Environmental Policy Act, and the Endangered Species Act. Petitions for release of plant biological control agents are judged by a Technical Advisory Committee, which represents the interests of a diverse set of federal and other agencies. (Van Driesche, Lyon, Blossey, Hoddle, & Reardon, 2002)

6. Herbicide Treatment

All pesticide/herbicide use will conform to guidelines identified in the Active Forest Management section of the “Strategic Plan for State Forest Management”.

Table 10: Management Objectives and Actions for Vegetation

See page 158 - Appendix F: Timber Management for a schedule of stands and management actions, and on page 222- Appendix M: Maps and Table 7: Vegetative Types and Stages for the Hemlock-Canadice Unit is located on page 21.

Management Objectives	Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
1 Maintain knowledge of forest stands.	1.0	Perform State Forest inventories	Every 10 years	C	110 Work Day's
2 Maintain healthy vegetation	2.0	Practice Integrated Pest Management	On-Going	C	Unable to predict future pest problems. A new invasion could greatly increase the cost.
	2.1	Manage deer population to reduce damage to the low growing vegetation (understory).	Annually	H	Accomplished by hunting license sales, producing brochures, etc.
	2.2	If widespread damage occurs, evaluate the damaged stands for salvage cut, or other management action.	After damage occurs.	C	Unable to predict costs.

Management Objectives		Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
		2.3	Deal with invasive exotic plants or animals. Specific actions will be based on species and location, but include prescribed burn, pesticide and mechanical removal.	After invasive is found.	L	Unable to predict costs.
3	Protect water and soil quality	3.0	During Timber and Vegetation Management, follow Special Management Zones, Retention on State Forests, and Rutting Guidelines and other Best Management Practices (BMP's) per NYS DEC's "Timber Management Handbook"	On-Going	C	See 5.0, 6.0 and 6.1
		3.1	Designate stands into the Protection Forest category that have factors that require special considerations. 3,147 Acres on 35 stands designated as protection forest in 2010 inventory (47% of the land area)	On-Going	C	See 1.0
		3.2	See also "Watershed and Wetlands Protection" and/or "Fish and Wildlife Habitat"	On-Going	C	--
Strive to maintain a healthy balance of vegetative types and stages by developing the following vegetative balance:						
4	Grassy / Brushy Openings (206 current acres, plus 28 additional acres)	4.0	Create about 28 acres. (increase of 0.4% of land area)	By year 10	L	\$2,000 per acre
		4.1	Maintain 132 acres on 4 stands of grassy openings with at least a 3 year rotation of mowing. Or annual burn. (2.0% of land area)	Mow at Least every 3 yrs. After July 15 th (Or annually Burn March-May)	H	\$200 per acre to mow. \$100 per acre to burn.
		4.2	Maintain 74 acres located on 4 stands of brushy openings with a 5yr rotation of hydro-axing. (1.1% of land area)	Every 5 yrs.	H	\$300 per acre

Management Objectives		Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
5	All Age silviculture – about a 20 yr cutting rotation	5.0	Stand entry on 0 acres located on 0 stands (None for this plan period)	See schedule, Appendix F: Timber Management	L	--
6	Even Age silviculture, Natural hardwood at about a 100 yr rotation Plantation softwood at about a 75 yr rotation	6.0	Regenerate 177 acres located on 9 stands over 10 years (2.6% of land area)	See schedule, Appendix F: Timber Management	H	177 to 885 Work Days
		6.1	Thin/intermediate cut 481 acres located on 22 stands over 10 years (7.2% of land area)	See schedule, Appendix F: Timber Management	H	481 to 2,405 Work Days
7	No Access - For one or more reasons, some stands cannot be accessed with modern logging equipment, even though some of them could be treated.	7.0	If access improves through additional acres being purchased, or new types of logging equipment is developed, these stands will also be <u>evaluated</u> for silvicultural activities. 1,477 Acres on 16 stands (22.1% of the land area)	After access improves.	H	2 Work Days per 100 acres evaluated.
8	Pre-commercial thinning	8.0	If funding or staffing becomes available, the seedling/sapling and smaller pole size stands will be evaluated for pre-commercial thinning.	When funding and/or staffing are available.	L	1 Work Day per 100 acres evaluated
		8.1	Implement “pre-commercial thinning” or silvicultural activities in “no access” stands, After evaluation per 7.0 and 8.0, add to schedule, Appendix F: Timber Management.	After 7.0 or 8.0	L	

Management Objectives	Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
9 Roads, ponds, wetlands etc.	9.0	Maintain per “Maintenance and Facilities Management” and/or “Fish and Wildlife Habitat” and/or “Public Recreation and Use”	On-Going	H	--

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

Watershed and Wetlands Protection

The Reforestation Law of 1929 mandates watershed protection as one of the most basic goals of the state forest system, and the history of this unit has been one of active and comprehensive protection of its watershed. Various and assorted aquatic and wetland habitats exist including two major lakes, four State-protected freshwater wetlands, 40 Federally-protected wetlands, three trout streams, and numerous smaller streams, tributaries, ponds, and vernal pools. The lack of shoreline development on Canadice and Hemlock Lakes, coupled with past water protection efforts by the City of Rochester have contributed to the current high level of water quality, and a natural setting that is unique among the Finger Lakes. NYS DEC is committed to maintaining this distinction and will work cooperatively with the City to assure this. To facilitate this NYS DEC and City staff will communicate or meet on a regular basis. In the event of severe weather, or other events that pose an immediate threat to water quality in the opinion of the NYS DEC or City staff, NYS DEC and the City will work cooperatively to effectively remediate the situation, including the utilization of City repair crews, if needed.

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

Regulated activities within protected wetlands, streams and water bodies include such things as clear-cutting vegetation and construction of ponds or road crossings. Normal maintenance and repair of existing structures is generally exempt from permit requirements. Well-managed water resources have multiple benefits, including quality fish and wildlife habitats, aesthetically pleasing sites, groundwater protection, floodwater retention, and various recreational activities.

Since many of the water resources of the area are concentrated in the flatter portions of the unit, there is a need to identify areas that both have potential, and also need, additional water resources. Over time these new aquatic features will be integrated into the Units upland areas. This will mainly be accomplished by the construction of small dug out ponds, often as a result of or in conjunction with the harvest of forest products. See also Fish and Wildlife Habitat and Timber and Vegetation Management

Table 11: Management Objectives and Actions for Watershed and Wetlands

Management Objectives		Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
1	Protect water and wetland resources	1.0	Utilize Best Management Practices (BMP's) for water quality on timber sales, recreation facilities, and any other construction.	On-Going	C	Part of the planning and construction process.
		1.1	Control erosion through proper road and trail maintenance.	See Access and Maintenance and Facilities Management	C	--
		1.2	Comply with the Water Resources Law, Freshwater Wetlands Act, and Federal wetlands regulations	On-Going	C	--
		1.3	Identify areas with potential and need for additional water resources	On-Going	L	Part of other actions
		1.4	Construct new water features in upland areas	See Fish and Wildlife Habitat	L	Up to \$10,000 per each.
		1.5	Maintain communications with City of Rochester Water Supply staff	On-Going, but at least annually	C	Min. of 10 Work Day's

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

Fish and Wildlife Habitat

The fish and wildlife habitat goals for the unit are to maintain and enhance habitat for fish and wildlife species and to provide public access for activities including hunting, fishing, trapping, hiking, bird watching and other compatible outdoor recreational pursuits.

Management for birds and mammals will largely be driven by the age of the specific forest stand and its species composition. Most of the area is dominated by pioneer hardwoods which are largely in the sawtimber size/age class. Efforts toward achieving a balance of age classes should continue, so wildlife species diversity and abundance are maintained. This includes establishing new forests by regeneration methods such as shelterwood or clear cutting as well as maintaining and encouraging older age classes via thinning. All can be accomplished by continued attention to harvest of forest products. Natural conifer stands are an important component of the predominantly hardwood stands in the unit and should receive consideration to insure that they remain as a component in future stands.

A significant portion of the forest is conifer plantations. Though such stands are used by fewer wildlife species than more diverse forest stands, conifers do provide important habitat for many species. Vegetative management should encourage the conversion of plantations to naturally stocked stands of greater diversity. A white pine and hemlock component in natural hardwood stands greatly enhances wildlife habitat.

There is a robust diversity of amphibian and reptile species on Hemlock-Canadice State Forest. Management efforts include creation of dugouts for breeding and activity centers as well as protection of sensitive shallow pools in swamp and bog sites. Protection of all wetland environs should enhance these species as well as others.

Many species of wildlife, from turkeys to salamanders, require sufficient water resources. Although a number of seasonal streams and water holes can be found, a large portion of the forest is lacking water and wetland environs. Inventory of existing sources will help identify areas with the greatest need. Dugouts will be created as opportunity arises.

Grassland and open areas are relatively rare on the area and should be maintained whenever possible. Establishment of such habitat should occur when opportunities arise through timber management or other permitted activities.

Special attention to deer management is warranted given the ability of high deer populations to negatively impact vegetative species diversity and forest composition, and thus other wildlife numbers and diversity.

Hemlock and Canadice Lake both have a growing population of resident Canada geese. Canada geese are a valuable natural resource that provides recreation and enjoyment to many. However, resident Canada geese can cause problems including public health concerns for drinking water supplies, overgrazing grass areas, accumulations of dropping and feathers on lawn areas used by people, nutrient loading to water bodies, aggressive behavior by nesting and brood-rearing birds, and safety hazards near roads. Geese may also cause problems for nearby landowners when birds move off state land and onto other properties. To minimize the potential impact of geese on state and nearby private lands, efforts should be made to stabilize or reduce the resident goose population as necessary on the unit. To accomplish this, a multi-faceted approach will be necessary, including such measures as the posting of "No Feeding Waterfowl" signs near problem areas, the promotion of goose hunting (where legal) on the area, and reproductive inhibition via the treatment of nests to prevent hatching.

Wild ring-necked pheasant populations have been declining since the 1970's and pheasants currently exist in very low densities in Western NY, including the Hemlock-Canadice State Forest. In order to maintain the rich tradition and recreational value of pheasant hunting, statewide NYS DEC raises and releases approximately 30,000 adult pheasants annually, mostly on State-owned lands, but also on some private lands that allow public access for pheasant hunting. On Hemlock-Canadice State Forest there are currently about 115 acres of grassland habitat in nine fields at the north and south ends of Hemlock Lake that are stocked with adult pheasants just prior to and during the fall hunting season.

Threatened and Endangered Species

Threatened and endangered species exist on portions of the Hemlock-Canadice State Forest. Efforts

to identify, improve and/or create critical habitats need to continue. A threatened species whose history is closely tied to the Hemlock-Canadice watershed is the bald eagle, *Haliaeetus leucocephalus*. Hemlock-Canadice State Forest has played an important role in the bald eagle success story, in that at one point Hemlock Lake was the location of the last known pair of bald eagles nesting in New York. New York's Bald Eagle Restoration Project (1976-1988) undertook an unprecedented effort - to bring back a breeding population of eagles to New York by importing young birds from other states and hand rearing them to independence (a process known as hacking). During this project, nestling bald eagles were also brought to Hemlock Lake to enhance the production of the nest when the pair had difficulty successfully breeding.

Thanks to long standing cooperation between NYS DEC and the City of Rochester, descendants of that pair continue to nest here. Monitoring of eagle nesting at Hemlock is a continuing, long-term project with NYS DEC. Special management restrictions apply to the nesting areas chosen by bald eagles. Within the unit a floating sanctuary is established to define the perimeter of the nesting zone. It is the responsibility of NYS DEC Division of Fish, Wildlife and Marine Resources (NYS DEC DFWMR) to designate boundaries of any changed nesting location.

The bald eagle is protected by both state and federal laws. The Bald and Golden Eagle Act (Eagle Act) and the Migratory Bird Treaty Act (MBTA) protect bald eagles at the federal level, while the Endangered Species Act (ESA) (Article 11 of the Environmental Conservation Law) protects the bald eagle as a threatened species at the state level. New York State generally follows the National Bald Eagle Management Guidelines (U.S. Fish and Wildlife Service, May 2007) as minimum protection for nesting bald eagles. Any permanent impacts (i.e. clearing or road construction) are prohibited within 330 feet of the nest. Temporary impacts that include loud machinery or vehicles are prohibited within 660 feet of the nest tree during the breeding season including courtship, nest building, egg laying/incubation, hatching/rearing young, and fledging (December through August). At minimum, and to be compliant with federal laws, the federal guidelines will be followed including establishing the 330 and 660 foot buffers.

Although it goes beyond what is federally required, establishing a 1640 foot buffer (Natureserve) around the nest trees should be adequate for most activities and it is our goal to prevent negative impacts to the nesting eagles on the Hemlock-Canadice State Forest. NYS DEC shall maintain any existing forested or natural areas within the 1640 foot buffer around nest trees. In addition, in the case where nests are blown down or otherwise destroyed by the elements, NYS DEC will continue this protection around the nest site for up to three years to facilitate reoccupation of the territory. At the time of writing this plan, NYS DEC DFWMR is currently in the process of writing the New York State Bald Eagle Management Plan. Management of bald eagles on Hemlock Canadice State Forest will be consistent with recommendations and guidelines in the state plan.

Fish

Hemlock and Canadice Lakes contain shallow near shore waters as well as deeper off shore waters. Both lakes become thermally stratified during the summer and early fall, leading to a wide variety of water temperatures. Shallow waters will warm up while deeper waters will remain cold throughout the summer. The variety of water temperatures and depths in these lakes support cold and warm water fish species. Management of cold water species such as lake trout, rainbow trout, landlocked Atlantic salmon, and brown trout involve stocking, fishing regulations, and habitat improvement. Walleye utilize

both warm and cold water habitat. NYS DEC will continue to assess the suitability of these lakes for walleye stocking based on the condition of the rest of the fishery. Warm water species such as largemouth bass, smallmouth bass, black crappie, chain pickerel, yellow perch, bluegills, and pumpkinseeds are self sustaining and are managed primarily through fishing regulations. The fisheries of both these lakes depend on forage which should also be monitored regularly.

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

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

Management Objectives	Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
1 Manage habitats for endemic wildlife species and public use Manage habitats for endemic wildlife species and public use (cont.)	1.0	Conduct all forms of woody vegetation management to achieve balance forest structure.	On-Going	H	See Timber and Vegetation Management
	1.1	Develop and maintain up to 10 small ponds and dugouts to act as amphibian activity centers.	Average of 1 per year.	L	Up to \$10,000 per each.
	1.2	Manage conifers in natural forests	On-Going	L	See Timber and Vegetation Management
	1.3	Maintain and enhance grassland habitats by mowing and/or burning	At least every three years.	H	See Timber and Vegetation Management
	1.4	Protect and enhance rare plant and animal communities	Annually	C	30 Work Days
	1.5	Convert plantations to natural communities	On-Going	H	See Timber and Vegetation Management
	1.6	Identify, protect, and improve habitat for threatened/ endangered species	On-Going	C	Unable to predict costs.

Management Objectives	Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
	1.7	Survey for, identify, protect, and improve habitat for Species of Greatest Conservation Need (SGCN)	On-Going, or as funding is available	L	Unable to predict costs.
	1.8	Monitor invasive exotic plants or animals. Specific actions will be based on species and location, but include prescribed burn, pesticide and mechanical removal.	After invasive is found. (see Timber and Vegetation Management)	L	Unable to predict costs.
2 Encourage public use to enjoy wildlife resources	2.0	Assist local groups in utilizing and protecting wildlife resources	Annually	L	Unable to predict costs.
	2.1	Work with local and governmental groups to enjoy wildlife habitat under the Adopt-a-Natural-Resource Program	See Public Recreation and Use	H	Unable to predict costs.
	2.2	Stock pheasants for public hunting in suitable field habitat.	Annually (Depending on State Game Farm production schedules and bird availability.)	L	10 Work Days and \$30,000
3 Manage fish populations to conserve native species as well as provide public use through angling.	3.0	Survey cold water fish population to evaluate stocking program and natural reproduction.	At least every five years.	H	30 Work Days
	3.1	Survey warm water fish population to evaluate current fishing regulations and assess current fishing opportunities.	At least every 10 years.	H	20 Work Days
	3.2	Continue angler diary program to evaluate angling success.	Annually	L	100 Work Days
	3.3	Survey forage fish population using hydroacoustics and/or netting.	At least every five years	H	15 Work Days

Management Objectives	Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
	3.4	Stock Hemlock and Canadice Lakes with fish, as needed per 3.0 and 3.1 above	Annually	H	50 Work Days and \$14,000
4	4.0	Post "No Feeding Waterfowl" signs	Year 1	C	5 Work Days
	4.1	Conduct goose population control as necessary.	Annually	C	20 Work Days
5	5.0	Monitoring of bald eagle nesting site(s).	Annually	C	
	5.1	Establishment of a floating sanctuary around the active nest site.	Annually	C	

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

Public Recreation and Use

One goal of the NYS DEC is to "Connect New Yorkers to Nature" by providing suitable opportunities for the public enjoyment of compatible recreational pursuits in a natural setting. Recreational use, especially fishing and hunting, is a dominant and important use of the state forest comprising the Hemlock-Canadice Unit. Dispersed recreation will continue to be encouraged over almost the entire Unit. See also Recreation page 30.

Hemlock and Canadice Lakes are a source of public drinking water for the City of Rochester and other communities. In order to protect this resource parts of Hemlock-Canadice State Forest and Hemlock and Canadice Lakes are restricted from public use. Activities in Hemlock-Canadice State Forest are subject to DEC's Rules and Regulations for the Use of State Lands, 6 NYCRR Part 190, as well as any other applicable state statutes, rules and regulations. In addition, specific regulations - §190.26 - have been developed by NYS DEC, mirroring those established by the City of Rochester, allowing many recreational activities on Hemlock-Canadice State Forest, but prohibiting uses that could threaten water quality.

See Appendix K: Special Regulations for the 6 NYCRR §190.26, current as of the publication of this Unit Management Plan. They are also available on NYS DEC's web site at www.dec.ny.gov/regs/13943.html#13956 for the most current version. Changes proposed to this special regulation are located in Policy Constraints on page 50.

Use is variable by season and location, but can be characterized as "intensive" at the four boat launch sites. Outside of the boat launches, recreation is "extensive" rather than "intensive" and many people

have voiced a strong desire for this to continue. Hemlock Lake and Canadice Lake have miles of unbroken forest along the shoreline, which provides a remote experience to those who desire some degree of solitude.

Development of new or additional facilities will only be undertaken after due consideration through the unit management planning process. Other than facilities specified in this Unit Management Plan, stewardship activities will be limited to maintenance and rehabilitation of existing facilities.

One goal is to provide suitable opportunities for public enjoyment of compatible recreational pursuits in a natural setting. Under Environmental Conservation Law, NYS DEC is charged with managing for a wide range of beneficial uses that can be attained without excessive environmental degradation or undesirable consequences. The public has a role in identifying both beneficial uses and undesirable consequences. Recreational opportunities will be planned from a perspective of possibilities available throughout Region 8. For a list of facilities available on the Hemlock-Canadice Unit see Appendix D: Facilities and Appendix M: Maps.

Wildlife-related recreation, including wildlife viewing, hunting, fishing and trapping, is a dominant and important use of the Unit. Users are encouraged to adhere to ethical standards and consideration for other recreationalists.

Under current State Forest policy, day use picnicking is an acceptable recreational use. No picnic tables are provided on Hemlock-Canadice State Forest. However, Hemlock Park, which is owned by the Town of Livonia, does have a picnic area and is located at the north end of Hemlock Lake. This plan does not cover any activities taking place at Hemlock Park.

Camping, charcoal and campfires are not allowed on Hemlock-Canadice State Forest.

No trash facilities are provided, please don't litter – if you carry it in, carry it out. Leave the State Forest as you would like to find it.

A geocache may be placed on state forest land, provided that it is labeled with the owner's name and address and installed in a manner that does not disturb the natural conditions of the site or injure a tree.

In the past the City of Rochester has received complaints about the occasional flying of radio controlled airplanes over the lakes. However, no one mentioned them during the initial comment period for this plan. (See Appendix A: Public Comment) At this time, no additional regulations or other changes are proposed, although the situation will be monitored and addressed if needed.

Many of the recreation facilities on this, and other state forests, started out as farm lanes, logging skid road, railroads, town roads, log landings, etc. After they were no longer used for the original purpose many were converted to recreational use. Occasionally, forest product sales may affect recreational facilities. Depending upon the sale, there may be an opportunity to enhance the recreational facility. Potential enhancements include: relocation of a trail, conversion of a skid trail to a recreational trail by grading and installing water control measures, creation of parking areas, installation of vehicle control barriers and other structures. An assessment of impacts and possible enhancements will be done with each and every sale. As part of the active timber management, sections of multiple use trail, roads, parking lots, etc may need to be temporarily closed to public use.

At the time of acquisition, the City of Rochester had one small kiosk on each lake, and a large sign in and kiosk near the filtration plant. The City removed the one near the filtration plant in 2011 and under contract with NYS DEC in 2012 will place larger kiosks at all four boat launches and two trail heads.

Fishing and Boating

Fishing and boating opportunities within the Unit are one of the main reasons for public use of the Hemlock-Canadice State Forest; consult the NYS DEC Fishing Regulations Guide for state wide seasons, hours, and creel limits. Hemlock and Canadice Lakes are both unique and important fishing resources.

It is unlawful to possess or operate a boat, to ice fish, to traverse the ice or water, or to fish from shore on: Hemlock Lake - north of the northerly boat launch, and between Boat Launch Road and Hemlock Lake; and on Canadice Lake - within the northernmost 500 feet of the lake.

Most streams are small and do not provide much of a fishing resource, but a few streams provide very significant fisheries. The most significant fishing resource streams within the Unit are Hemlock Outlet, Springwater Creek, Limekiln Creek, and Reynolds Gully Creek. Some of the small tributaries entering Hemlock and Canadice Lakes also provide a limited spring smelt dipping fishery.

Hemlock and Canadice Lakes are both unique resources because they provide much more shoreline access and small boat fishing opportunities compared to other Finger Lakes. During most winters these lakes also provide ice fishing conditions that allow anglers to fish. Both lakes are well known for above average sized lake trout.

Historically the City of Rochester allowed boats to be stored along the shorelines of both lakes. This storage of personal property is not allowed on State Forests, per 6 NYCRR §190.8, and in August 2011 all remaining boats were removed by NYS DEC.

To help stop invasive species from contaminating the lakes, please; do not launch boats at Hemlock and Canadice lakes within five days of boating on other waters, wash down your boats after removing them from other water, check your trailer and propellers, and do not “bring” any water from other lakes or streams.

In an effort to combat the introduction and spread of invasive aquatic species - Invasive Species Disposal Stations have been installed at many DEC boat launches and fishing access sites. Eventually disposal stations will be provided at all DEC boat launches on waters containing invasive species. The goal of these stations is to provide a dedicated location for anglers and boaters to dispose of invasive species clinging to their fishing and boating equipment. The stations also serve as a billboard encouraging users to carefully inspect their equipment and remove and properly dispose by hand of any invasives found. These simple actions are the most effective way to combat the spread of invasives from water to water.

Hemlock Lake Boat Launches

Hemlock Lake has two gravel boat launch sites, one at the north end of the lake and one at the south end of the lake. Both locations can be used to launch boats from trailers or car-top on a first-come, first-serve basis. Parking is not allowed at the actual launch site, but parking is available within a very short

walk.

The North Hemlock Boat launch is located at the end of a Livonia town road. The location is good, and no immediate maintenance needs have been discovered.

The South Hemlock boat launch is located at the end of a Public Forest Access Road, maintained by NYS DEC. It is also located in shallow water and in some years by late-summer the water level has dropped too low for boats to be launched from it. An obvious solution is to move the launch north to deeper water. The hillside into the lake is steep, and the haul road heading north from the existing boat launch is too narrow for regular two way traffic of vehicles, especially those towing boat trailers. It would require tree removal and earthmoving equipment to widen and improve the Haul Rd into a Public Forest Access Rd, and to flatten out an area to provide parking at a new boat launch location.

As of the writing of this plan a new location has not been picked. The first step is to scout and see if a better location is available. A good location needs to be far enough north that the water is deeper, has a reasonable grade from road to lake, and enough area of gentle slopes for parking lot(s) and turn around to be constructed. If a reasonable spot can be found, then funding must be secured before construction can begin. If it is moved the old boat launch will be blockaded and allowed to revert back to cattail or other natural vegetation. The adjacent parking lot will remain, but the port-a-john, gate and kiosk will be moved to the new location.

Several years ago the City of Rochester placed large boulders along the boat launch ramps, which both helped delineate the launching site and reduced the movement of the gravel. Maintenance primarily consists of grading and occasional additions of gravel to the road in and ramp.

Canadice Lake Boat Launches

Canadice Lake has two launches, a hand carry canoe launch near the south end, and near the mid-point a gravel boat launch. The gravel boat launch is not restricted to trailered boats only, car-top boats may also be launched from that location. Both locations have parking located road side, a short walk from the boat launch site.

The hand carry canoe launch has some minor amounts of erosion occurring on the trail down to the shore and the shoreline, this will be monitored for further degradation and if necessary erosion control structures built to stabilize it.

Several years ago the City of Rochester placed large boulders along the boat launch ramp, which both helped delineate the launching site and reduced the movement of the gravel. Maintenance primarily consists of grading and occasional additions of gravel to the road in and ramp.

During the initial public scoping meeting, held fall of 2010, many comments expressed a desire for Canadice Lake to be a motor-free lake, with use restricted to canoes, kayaks, rowboats and other non-motorized boats. However, at this time the regulations will not be changed to further restrict use of Canadice Lake. The primary purpose for such a restriction is noise aesthetics, but closing it would not result in a motor-free experience. Canadice Lake Road, a town road, runs very close to the eastern shore and provides a regular source of motor noise from passing vehicles. In addition, closing the lake would cut off use by a large contingent of traditional users. The lake is about 3 miles in length, long enough for small engines to be used.

Hunting and Trapping

Hunting and trapping are allowed during open seasons, with the correct license and tags; consult the NYS DEC Hunting and Trapping Guides for state wide regulations, seasons, hours, and bag limits. Available game varies depending on the habitat available; see the Timber and Vegetation Management and Fish and Wildlife Habitat sections for information on plans for maintaining and modifying the currently available habitats.

Wild ring-necked pheasant populations have been declining since the 1970's and currently exist in very low densities in Western NY, including the Hemlock-Canadice State Forest. In order to maintain the rich tradition and recreational value of pheasant hunting, NYSDEC raises and releases state wide approximately 30,000 adult pheasants annually, mostly on State-owned lands, but also on some private lands that allow public access for pheasant hunting. Currently the grassland habitat on Hemlock-Canadice State Forest located in the fields at the north and south ends of Hemlock Lake are stocked with adult pheasants just prior to and during the fall hunting season. As of the writing of this plan, pheasant season in WMU 8N runs from Mid October to the end of February. Both cocks and hens are legal targets, and the daily bag limit is two birds of either sex. In addition, pheasants are released on the area prior to the special statewide Youth Pheasant Hunt which in Western NY currently exists on a weekend in early October, before the start of the regular pheasant season. Junior hunters taking part must be between the ages of 12 and 15, and be accompanied by a licensed adult hunter, however only the licensed junior hunter may carry a firearm and take pheasants.

Permanent tree stands are prohibited. However, a tree stand or blind is allowed, provided that it does not injure any trees, is properly marked or tagged with the owner's name and address or valid hunting or fishing license number, and is placed and used during big game season, migratory game bird season, or turkey season, but no more than thirty days in one location per calendar year, per 6 NYCRR §190.8.

In addition, on Hemlock-Canadice State Forest all animal entrails must be disposed of more than 100 feet from any waterbody or water course.

Trails

Public Forest Access Roads, Haul Roads and Recreational Trails combined with existing logging skid roads and utility lines form an excellent network to access recreational opportunities. Parking areas, informational signs and maps help identify and promote public enjoyment and compatible uses. See also

Access, Appendix D: Facilities, and Appendix M: Maps.

All trails on Hemlock-Canadice State Forest can be used for hiking, biking, snowshoeing, and skiing, with two short sections also designated as snowmobile trail. As a multiple use trail, different users must follow some basic trail etiquette rules in order to minimize conflicts. Basic trail etiquette includes: respect other trail users, pass on the right, bikers yield to hikers, and stay on marked trail

(please do not cause damage by heedlessly trampling trailside vegetation).

On Hemlock-Canadice State Forest snowmobiles are only allowed on designated snowmobile trails - two short sections of the HVR-5 trail are located on the north end of the state forest. HVR-5 currently ends in Hemlock, snowmobilers out of the Livonia area have indirectly asked about connecting into HVR-5. This would involve mostly crossing private land, and getting permission to cross is the responsibility of the clubs. If necessary short sections could cross the northern most part of the Unit, however the City of Rochester's water pipeline ROW will not be used as a snowmobile trail.

Snowmobile trails in New York State open after big game season ends in each zone, as long as the ground is snow covered. Snowmobiles are also allowed to cross the Unit on town roads that the town has opened to use by snowmobiles. Please contact the individual towns to find out which roads are open to snowmobiles.

Some sections of trail are in poor repair, having either erosion issues, or are muddy. A systematic evaluation of the trail system needs to be undertaken to prioritize the needed repairs. The majority of the trails follow old farm lanes, town roads or skid trails, which is not always the best location for a dirt recreation trail. It is not uncommon for the resulting trail to be quite steep, which makes erosion control difficult, and travel uncomfortable for users.

The Nature Conservancy (TNC) (www.nature.org) owns property that connects across the top of Bald Hill, on this property is a trail called Rob's Trail, with a loop on the relative flat of the top and a spur trail down across Hemlock-Canadice State Forest to the Canadice Haul Road. This trail is maintained by TNC under an Adopt-a-Natural-Resource Agreement (AANR) with NYS DEC. Some sections of the trail down to Canadice Lake should be re-routed to a less-steep grade and the existing trail abandoned and stabilized against further erosion. Constructing a connecting a trail westward across more TNC and State Forest property down to Hemlock Lake would be a challenge to lay out and construct, but is a possibility.

In the 1800's Hemlock Lake had a road along its eastern shore, sections of which are still in use on the north and south ends of the lake, unfortunately much of the middle has eroded into the lake and no longer exists. Several people suggested re-open it as a trail, but the sections missing, plus the steep hillside terrain, results in a very challenging project. However, if the connecting trail is constructed it will likely run at least some of the way on this old road.

Springwater Parks and Trails have an interest in maintaining Pine Trail, Spruce Loop and Red Bud Trail, located off of Wheaton Hill Rd, under an AANR. They have also asked about connecting these trails to other trails within the Town of Springwater, which is a possibility.

The southern end of Walnut Trail currently ends at a steep ravine, plus has several other steep creek crossings which could be improved. It is a very nice walk already but could be improved by connecting to the parking on Mission Rd and/or extending it farther south along the shoreline of Hemlock Lake.

In all cases, trail construction and maintenance would need to be done under an amended AANR and/or Temporary Revocable Permit (TRP). Any trail would need to follow trail Best Management Practices to control erosion, with the exact location approved by the Regional Forester or his designee. NYS DEC does not have the authority to authorize trail construction across private land; the organization planning the trail is responsible for acquiring permission prior to constructing to the

boundary line.

The City of Rochester usually mowed the center of the trails in the spring, and again in summer. The City will continue to do this maintenance work under the current contract with NYS DEC. When possible, NYS DEC Operations staff will help with these maintenance responsibilities. Our intent is to mow the roads and trails at least annually. NYS DEC's Adopt-a-Natural-Resource(AANR) program will be used to partner with local groups or individuals to assist in the maintenance of trails and other recreation facilities on this and other state forests. (See also

Access and Maintenance and Facilities Management)

Several comments requested horse trails, or opening existing trails to horse use. This is currently forbidden under both the Public Health Law and 6 NYCRR §190.26. In addition the long linear layout of the state forest, steep hillsides, poor soils, and concentrated points of public use leave little room to fit in a horse trail system. Horseback riding is available on the Six Nations Trail System, located on Sugar Hill and Goundry Hill State Forests in Schuyler County. This will continue to be NYS DEC's primary horse trail system for Region 8, and horse trails will not be added to Hemlock-Canadice State Forest.

ATV/ORV Trails

Off-Road Vehicle (ORV) or All Terrain Vehicle (ATV) trails will not be developed on this Unit. A number of factors have contributed to this decision. As stated in NYS DEC's "Strategic Plan for State Forest Management", ATV riding is not a program offered on State Forests. The development of ATV access can be considered under this policy if it is necessary to provide access to programs and activities on the Unit. In addition, the special regulations for this unit, 6 NYCRR §190.26, forbid the use of ATV's. The large amount of current recreational use of many sections of the Hemlock-Canadice State Forest would result in conflict with ATV use. In addition, soil conditions, long linear layout, and steep slopes on this Unit are unsuitable for ATV use. Current illegal ATV activity has occasionally created management and maintenance challenges.

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

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

Any connector trails that are constructed or designated will be monitored to ensure that legal use

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

Trails for People with Disabilities

Wheelchairs are allowed anywhere pedestrians are allowed on state lands. The Federal/ADA definition of a wheelchair is:

Wheelchair - A manually-operated or power-driven device designed primarily for use by an individual with a mobility disability for the main purpose of indoor, or of both indoor and outdoor locomotion. This definition does not apply to Federal wilderness areas; wheelchairs in such areas are defined in section 508(c)(2) of the ADA, 42 U.S.C. 12207 (c)(2).”

Currently there are no trails or roads that meet universal access requirements on the Hemlock-Canadice Unit. In many cases the ground is not firm and stable enough, and/or the slope is too steep, and/or the path is too narrow. Too steep a slope can be difficult to change, but firm and stable conditions can be created in many locations. If money becomes available for upgrading, the existing trails and roads will be evaluated for improving universal accessibility.

While no general ATV trails currently exist on Hemlock-Canadice State Forest, on a statewide basis specific routes have been designated as a Motorized Access Program for People with Disabilities (MAPPWD) trail, pursuant to NYS DEC Commissioners Policy #3 (CP-3). Prior to use, individuals with qualifying disabilities must apply and receive a permit to operate an ATV, or other vehicle, on trails designated by the NYS DEC. Not all routes are open to all types of vehicle, and some are open only seasonally for MAPPWD use. For further information, visit www.dec.ny.gov/outdoor/2574.html or contact the NYS DEC at 7291 Coon Road, Bath, NY 14810. (See Appendix D: Facilities and Appendix M: Maps)

Currently no trails on the Hemlock-Canadice Unit are MAPPWD routes. Following the final approval of this UMP the North and South Hemlock Haul Roads will be designated as MAPPWD route and opened for truck/car, but not ATV use, by persons with a CP-3 permit. They will remain gated, but those with a current permit will be able to obtain a key.

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

Management Objectives	Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
1 Identify additional recreation needs.	1.0	Receive public input.	On-Going	C	250 Work Days
	1.1	Monitor use patterns	On-Going	L	150 Work Days
	1.2	Solicit public input.	Every 10 years	C	14 Work Days

Management Objectives	Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
	1.3	Evaluate user satisfaction from comments received.	On-Going	H	14 Work Days
2 Coordinate with volunteer groups, and other agencies/ municipalities through the use of Cooperative Agreements or Adopt-a-Natural-Resource Agreements, to construct and/or maintain existing and/or future recreational facilities	2.0	Identify resources and/or volunteer groups to form additional partnerships.	On-Going	L	10 Work Days
	2.1	Assist the various AANR adopting organizations and individuals in maintenance and enhancement of the trails and other recreation facilities on Hemlock-Canadice State Forest	On-Going	H	10-100 DEC Work Days
	2.2	Work with AANR sponsors' to locate and construct connecting trails to provide a more connected trail system.	As sponsors get organized	H	5-50 DEC Work Days
	2.3	Encourage rehabilitation of trail sections that are unsuitable for existing use.	On-Going	H	5 Work Days
	2.4	Provide resources or utilize opportunities as needed to maintain and enhance existing trail(s)	On-Going	C	10 Work Days
	2.5	Minimize conflicts between user groups	On-Going	H	40 Work Days
	2.6	Discourage illegal use of motorized vehicles.	On-Going	H	40 Work Days
3 Determine feasibility and/or compatibility of proposed additional recreational opportunities.	3.0	In house review of proposed projects	As Needed	L	40 Work Days
	3.1	Add proposed projects to the Hemlock-Canadice UMP by amendment. (This includes a 30 day public comment period.)	As Needed	L	30-300 Work Days
	3.2	Negotiate and enter into AANR agreements with sponsoring volunteer groups.	As Needed	H	5 Work Days per AANR agreement
4 Provide additional recreational opportunities.	4.0	Construct and maintain new facilities as supported by the UMP.	By year 10	H	See specific action.

Management Objectives	Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
Including maintaining and improving access for persons with disabilities.	4.1	Provide technical support for volunteer groups.	As Needed	L	Unable to predict costs.
	4.2	Construct barriers to discourage motorized use of skid trails and abandoned roads after logging operations.	If damage is anticipated or observed on the skid trail or road.	C	\$1- 4,000 per location. Usually will be part of a sale contract.
	4.3	North and South Hemlock Haul Roads will be added to the state wide list of MAPPWD trails - car/truck use only.	Year 1	H	1 Work Day
	4.4	Construct an Invasive Species Disposal Station at each boat launch.	Year 1	H	\$4,000
	4.5	Evaluate and improve some trails/roads to greater universal accessibility	On-Going	C	Highly variable
5 Advocate wildlife-based recreation	5.0	Encourage bird watching, hunting, fishing, trapping etc. according to New York State regulations.	On-Going	L	Unable to predict costs.
	5.1	Stock pheasants for public hunting in suitable field habitats.	Annually (Depending on State Game Farm production schedules and bird availability.)	L	10 Work Days and \$30,000
	5.2	See also Fish and Wildlife Habitat	On-Going	H	--
6 Maintain existing and future recreational facilities.	6.0	See also Maintenance and Facilities Management, and Access	On-Going	H	--
	6.1	Scout new location for South Hemlock Boat Launch.	Year 1	L	2 Work Days

Management Objectives	Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)	
	6.2	Procure funding and construct new South Hemlock Boat Launch, including closing the old one.	After 6.1 is successful	L	\$75,000	
	6.3	Monitor erosion of Canadice Canoe Launch (and other launches). Do any stabilization required.	Annually	L	15 Work Days	
	6.4	Mow and/or trim brush back on trails.	At least annually.	H	250 Work Days	
	6.5	Remove blowdown from trails	As needed	H	Part of 6.4	
	6.6	Stabilize or repair recreational trail issues such as mud or erosion using Best Management Practices.	After issues are discovered and when funds or volunteers are available	H	\$0-\$100,000 Cost will vary depending on issue.	
7	Increase awareness of public recreation opportunities	7.0	Provide brochures and maps for users at kiosks, NYS DEC offices, and NYS DEC web page.	Check at least monthly	H	25 Work Days
		7.1	Place and maintain kiosks or signs at high use parking areas and boat launches.	By year 10	H	\$5,000 and 15 Work Days per each
		7.2	Update maps and brochures to reflect new facilities/trails/acquisitions	As Needed (At least every 5 yrs)	H	10 Work Days
		7.3	Update kiosks	Annually or as needed	H	10 Work Days
8	Enhance visual appeal	8.0	Establish a litter-free environment by promoting carry in/carry out policy.	On-Going	H	Unable to predict costs.
		8.1	Remove litter from state land.	At least Annually	H	See Access
		8.2	Remove any additional boats or other personal property.	As needed.	C	30 Work Days
		8.3	Trim 2 scenic vistas of Canadice Lake on the Canadice Haul Road	Year 1 and 5	L	5 Work Days

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

Maintenance and Facilities Management

The goal is to maintain the facilities on the unit to ensure its integrity, character, safety and protect the public drinking water supply for the City of Rochester and other communities. This must be done with the limited money and staff resources that are available. It is the policy of the NYS DEC to use staff and money resources in the most efficient and effective way possible, and to encourage the use of volunteers to maintain facilities when possible. See also the

Access and Public Recreation and Use sections for additional facilities information.

This part of New York State has the potential for generating electricity with windmills or the construction of towers for radio, cell etc. transmission, in the area of the Hemlock-Canadice Unit. There are currently no windmills, or applications for windmills, for power generation on the Hemlock-Canadice Unit. NYS DEC does not have the legal authority to authorize the construction of windmills, or commercial towers, on the lands covered by this Unit Management Plan. Therefore, legislation would need to be passed authorizing such use before any tower construction could take place. This plan does not cover any actions, or construction, on any adjacent privately owned lands.

NYS DEC did **not** acquire all of the real property owned by the City of Rochester in the Hemlock-Canadice Watershed. The City retained control of the water filtration plant, intake pipes on Hemlock and Canadice Lakes, the dams on Canadice Lake and Outlet, associated maintenance facilities and Hemlock Park. In 2011 the city of Rochester sold off two additional parcels. The Town of Livonia acquired Hemlock Park, and the Hemlock Lake Union Agricultural Society, which runs the Hemlock Fair, acquired the field they had previously leased for parking for the Hemlock Fair. Facilities such as these are outside of NYS DEC's mandated program. As such, they were not included in the new Hemlock-Canadice State Forest and activities taking place on those grounds are not covered by this plan.

At the time of acquisition in 2010, NYS DEC and the City of Rochester entered in a two year maintenance contract with three one-year extensions possible. Under this contract, at NYS DEC direction, City staff continued most of the maintenance on Hemlock-Canadice State Forest. As of the writing of this plan it is anticipated that the contract will be extended until the allocated funds have been expended. Under this contract City staff changed out the boundary line signs, replaced gates, mowed the grass, built the new kiosks and maintained the roads.

Table 14: Management Objectives and Actions for Maintenance and Facilities Management

Management Objectives	Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
1 Maintain constructed ponds /	1.0	Inspect for problems.	Annually	C	10-20 Work Days

Management Objectives	Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
potholes (In consultation with the Division of Water, Dam Safety Unit)	1.1	Repair dikes, control boxes, etc	As Needed	C	Highly variable \$1,000 to \$10,000 per each
2 Solicit volunteer groups to help maintain facilities (see also Public Recreation and Use)	2.0	Promote Adopt a Natural Resource Program. (AANR)	On-Going	L	See Public Recreation and Use
	2.1	Enter into agreements with volunteer groups.	On-Going	L	See Public Recreation and Use
3 Maintain existing and future facilities. (see also Public Recreation and Use)	3.0	Identify needed maintenance	On-Going	C	10 Work Days
	3.1	Do the needed maintenance, as money allows.	On-Going	C	See Public Recreation and Use
	3.2	Enhance law enforcement efforts.	On-Going	C	Unable to predict costs.
	3.3	Continue current contract with the City of Rochester until allocated funds have been expended.	Annually	H	
4 Maintain existing and future roads. (see also Access)	4.0	Identify needed maintenance	On-Going	C	10 Work Days
	4.1	Do the needed maintenance, as money allows.	On-Going	C	See Access
	4.2	Enhance law enforcement efforts.	On-Going	C	Unable to predict costs.
	4.3	Continue current contract with the City of Rochester until allocated funds have been expended.	Annually	H	

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

Land Acquisition

New York State has been a leader in recognizing the value of open, undeveloped land. The Hemlock-Canadice Unit is one of the largest blocks of relatively undeveloped public land in the Finger Lakes Region and is an important wild land resource.

The acquisition of land by DEC in New York State is guided by the New York State Open Space Conservation Plan. The Open Space Conservation Plan serves as a blueprint that identifies the priority projects, policies and programs that will enhance land acquisition from willing sellers for the future. The plan, issued jointly by NYS DEC and the Office of Parks, Recreation and Historic Preservation, relies heavily upon the input of Regional Advisory Committees, local governments and the public. The Open Space Conservation Plan is updated every three years, as required by law. In 2009 NYS DEC and the NYS Office of Parks Recreation and Historical Preservation issued a plan, entitled, "New York State Open Space Conservation Plan". (www.dec.ny.gov/lands/317.html) The plan brings together: 1) an objective analysis of the State's resources; 2) the knowledge and insight of professionals inside state agencies; and most importantly, 3) the informed and valuable ideas of the public, local government and the private sector. The plan defines which open space priorities and guidelines for public land acquisition will be followed on the Hemlock-Canadice Unit.

New York State may acquire land by donation; fee title purchase; easement, purchase of some of the rights such as development and recreation; land swap by action of the New York State Legislature.

In the case of the Hemlock-Canadice Unit, one of the state's primary partners in land acquisition, The Nature Conservancy, has acquired significant acreages around the Hemlock-Canadice State Forest (see Appendix M: Maps). It seems reasonable to assume that, at least some, of this property might be offered to the state for acquisition at some point in this planning period.

Should the above situation occur, the priorities for acquisition from The Nature Conservancy are also outlined on the map in Appendix M: Maps.

NYS DEC will consider parcels if they; improve access, consolidate public ownership by eliminating in holdings, enhance recreational opportunity, contain significant ecological areas, or resolve other issues. It should be clearly understood that the NYS DEC intends to acquire these parcels only from willing sellers as funding becomes available.

Table 15: Management Objectives and Actions for Land Acquisition

Management Objectives	Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
1 Provide improved access to	1.0	Identify land acquisition needs that improve access to state forest.	On-Going	L	Unable to predict costs.

Management Objectives	Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
the Unit.	1.1	Acquire desired properties from willing sellers as funding permits.	On-Going	L	Unable to predict costs.
2 Consolidate public ownership by eliminating in holdings	2.0	Identify land acquisition needs, which simplify the NYS DEC's boundaries.	On-Going	L	Unable to predict costs.
	2.1	Acquire desired properties from willing sellers as funding permits.	On-Going	L	Unable to predict costs.
3 Enhance recreational opportunity.	3.0	Identify land acquisition needs, that improve recreational opportunities	On-Going	L	Unable to predict costs.
	3.1	Acquire desired properties from willing sellers as funding permits.	On-Going	L	Unable to predict costs.
4 Contain significant ecological areas.	4.0	Identify land acquisition with significant ecological areas.	On-Going	L	Unable to predict costs.
	4.1	Acquire by fee simple or easement desired properties from willing sellers as funding permits.	On-Going	L	Unable to predict costs.
5 Resolve other issues, such as split mineral estate.	5.0	Identify issues	On-Going	L	Unable to predict costs.
	5.1	Attempt to resolve such issues	On-Going	L	Unable to predict costs.

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

Mineral Resources

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

As of the writing of this plan, the Revised Draft Supplemental Generic Environmental Impact Statement (SGEIS) on the Oil, Gas and Solution Mining Regulatory Program and the proposed regulations for high-volume hydraulic fracturing (HVHF) are under review, but not yet finalized. When

finalized, the new regulations will be followed on this and other State Forests.

Any activity involving the procurement of oil and gas resources and/or storage of gas and liquids in the subsurface on state lands in this unit management plan are administered by the NYS DEC Division of Mineral Resources. The procurement of minerals and rocks (inorganic substances), including the solution mining of minerals (such as salt) on these same state lands are administered by the Office of General Services. All activity associated with mining minerals and rocks, solution mining of minerals and oil & gas drilling, including production, are regulated by the NYS DEC Division of Mineral Resources, including the issuance of mining permits and drilling permits.

The surface estate of these state lands is managed through the NYS DEC Division of Lands and Forests. In the event the surface estate is to be used in the evaluation and/or extraction of mineral resources from state lands, a Temporary Revocable Permit (TRP) must be obtained from the NYS DEC Division of Lands and Forests prior to conducting any operations. It should be noted that if the mineral estate is under a lease agreement, only the lessee, or entities authorized by the Lessee, will be issued a TRP for these purposes.

It is NYS DEC policy to recommend excluding operations in surface areas with sensitive habitats (stream banks, wetlands, steep slopes, rare communities etc.) or intensive recreational use. This tract assessment of Hemlock-Canadice State Forest has not been done as of the writing of this plan. Most of Hemlock-Canadice State Forest will fall under these exclusion zones, and as a result the Tract Assessment for the entire State Forest will probably be to recommend no surface-disturbance/entry leasing. Any proposal for mineral development other than oil and gas would require a full SEQR review.

Procedures for Oil & Gas Procurement

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

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

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

A public meeting will be held to provide information about natural gas development specific to the Unit and receive comments. A 30-day public comment period will follow. NYS DEC will consider all comments prior to making a decision.

If NYS DEC decides to pursue leasing, the site specific conditions for limiting impacts on natural resources will be drafted by the Division of Mineral Resources in coordination with the Division of Lands & Forests and/or Division of Fish, Wildlife and Marine(Wildlife) and incorporated into contract documents. These conditions will include but not be limited to criteria for site selection, mitigation of impacts and land reclamation upon completion of drilling. A number of factors are considered: riparian areas, steep slopes, significant recreation areas, presence of rare, threatened or endangered species or unique ecological communities, are all areas which may be excluded from surface disturbance. Certain land management strategies, such as reserves, where timber harvesting is precluded, which may be incompatible with oil and gas well development, may result in exclusion from surface disturbance. This determination is made as part of the tract assessment process on a case by case basis. Any parcel designated as a non-surface entry lease will no longer be subject to the process detailed above due to the prohibition of surface disturbance(s). Exceptions to these tract assessments are possible if additional analysis, protective measures, new technology, or other issues warrant a change in the compatibility status of an area.

If it is determined that oil and gas exploration and development can proceed on these State minerals, a lease sale is conducted. The DEC Division of Mineral Resources is the oil and gas leasing agent for these state lands. Lease sales are then conducted through a competitive bid process administered by the Division of Mineral Resources and in accordance with Article 23, Title 11 of the Environmental Conservation Law and State Finance Law.

Revenues from State Reforestation Areas and Multiple Use Areas (State Forests) are deposited into the General Fund while revenues from Wildlife Management Areas are deposited into the Conservation Fund.

In the event leases are granted and the drilling of a well is desired by the lessee on the leased property, an Application for Permit to Drill, Deepen, Plug Back or Convert a Well Subject to the Oil, Gas and Solution Mining Law (form 85-12-5) must be submitted to the Division of Mineral Resources. Site-specific impacts will then be identified by NYS DEC staff during review process and inspection of the proposed well site. The Strategic Plan for State Forest Management, and the Generic Environmental Impact Statement and Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program is used to guide NYS DEC in determining whether the proposal will have a significant impact on the environment. Conditions are then attached to the drilling permit as well as the Temporary Revocable Permit (TRP) which covers the mitigation and/or control of surface disturbances.

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

Pipeline Development

NYS DEC, pursuant to ECL § 9-0507, may lease State lands for the construction and placement of oil and gas pipelines only if a portion of the mineral resources to be transported was extracted from State

lands. Pipeline and road development must be in compliance with State Forest tract assessments, the Strategic Plan for State Forest Management, and the Generic Environmental Impact Statement and Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program.

Pipelines will be located immediately adjacent to Public Forest Access Roads, Haul Roads, or Town Roads. The location of the roads and pipelines will be in compliance with tract assessments. Pipelines may be located in stands managed for closed canopy conditions only along pre-existing roads that intersect such area. Additional surface disturbance associated with such construction will be considered only in areas other than stands which are managed for relatively unbroken canopy conditions. Areas managed for unbroken canopy conditions may be referred to using various terms such as “uneven-aged,” “uneven-aged variable retention,” “all aged,” “high canopy,” “closed canopy” or others.

Pipeline development on State land will not be permitted if NYS DEC determines that it creates a significant long-term conflict with any management activities or public use of the State Forests, or with other management objectives in this plan. All pipelines will be gated to restrict motorized access, and if necessary hardened crossings or bridges will be installed, to allow heavy equipment access across pipelines. These requirements will be satisfied by the Lessee.

Exceptions to the above guidance must be approved by the Division of Lands and Forests, in consultation with the Division of Mineral Resources. It should be noted that any pipelines greater than 1,000 feet in length and/or containing pressures greater than 125 pounds per square inch are regulated by the New York State Public Service Commission.

Procedures for Mineral and Rock Procurement

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

There are no mining contracts, permits, or operations on any areas in this unit management plan. Under Article 7 of the New York State Consolidated Laws, any citizen of the United States may apply for permission to explore and/or extract any mineral on State lands. However, current department policy is to decline any commercial mining application(s) pertaining to any lands covered by this unit management plan.

Surface Use for Evaluation of Mineral Resources

In the event a party desires to use the surface estate to conduct geophysical (such as a seismic survey), geochemical and/or surface sampling procedures on Department lands after leasing they must first obtain a Temporary Revocable Permit (TRP) for the access and use of state lands. Only the lessee, or parties authorized by the lessee, can be issued a TRP for these purposes. A TRP can be applied for

through the NYS DEC Division of Lands and Forests, 7291 Coon Road, Bath, New York 14810.

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

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

Table 16: Management Objectives and Actions for Mineral Resources

Management Objectives		Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
1	Decide to approve or not approve extraction of mineral resources.	1.0	Nominated properties are reviewed by Division of Mineral Resources(DMN) and Division of Lands and Forests(L&F) and Division of Fish, Wildlife and Marine(Wildlife) per above process. Office of General Services(OGS) makes approvals for minerals	As Needed	C	Unable to predict costs, which will vary greatly depending on how many properties are nominated
		1.1	A public meeting is held with a 30 day comment period after.	As Needed	C	14-140 Work Days
If extraction is permitted...						
2	Execute consent contracts.	2.0	DMN conducts lease sale through competitive bid process and executes contracts for oil and gas. OGS executes contracts for minerals.	As Needed	C	Unable to predict costs.
3	Regulate operations; and access surface estate to extract mineral	3.0	L&F reviews proposed operations and if approved, issues a Temporary Revocable Permit	Every Time	C	N/A to Hemlock-Canadice State Forest
		3.1	DMN reviews proposed operation and issues Drilling Permit or Mining Permit.	Every Time	C	N/A to Hemlock-Canadice State Forest

Management Objectives	Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
resources.	3.2	DMN inspects & regulates operations, production and administers royalty payments to State.	Every Time	C	N/A to Hemlock-Canadice State Forest
4 Monitor reclamation & well plugging	4.0	DMN enforces Rules and Regulations pertaining to plugging procedures.	Every Time	C	N/A to Hemlock-Canadice State Forest
	4.1	DMN and L&F monitors and enforces surface reclamation	Every Time	C	N/A to Hemlock-Canadice State Forest
5 Administer mineral estate	5.0	DMN monitors lease, production and royalty payments for oil and gas. OGS does same for minerals.	Every Time	C	Unable to predict costs.
6 Pipeline access and construction	6.0	Granted and directed by terms of lease agreement administered by DMN.	Every Time	C	Unable to predict costs.
	6.1	L&F and/or Wildlife reviews proposed operations and if approved, issues a Temporary Revocable Permit (TRP)	Every Time	C	Unable to predict costs.
	6.2	L&F and/or Wildlife enforce TRP provisions.	Every Time	C	Unable to predict costs.

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

Archaeological and Historic Resources

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

The archaeological sites located on this land unit as well as additional unrecorded sites that may exist on the property may be made available for appropriate research. All future archaeological research to be conducted on the property will be accomplished under the auspices of all appropriate permits. Research permits will be issued only after consultation with the New York State Museum and the Office of Parks, Recreation and Historic Preservation, and the Seneca Nation of Indians Tribal Historic Preservation Office at 716-945-9427.

Under City of Rochester ownership the settlement known as Dixon Hollow has been studied by archeology classes led by Professor Krumrine from St. John Fisher College. This has continued under NYS DEC, after the required permits from NYS DEC, New York State Museum and the Office of Parks, Recreation and Historic Preservation were attained.

Table 17: Management Objectives and Actions for Archaeological and Historic Resources

Management Objectives		Mgt. Action No.	Management Actions	Frequency of Action*	Priority Code (Pg. 56)	Estimated 10 yr Cost (Pg. 55)
1	Preservation of historical and archaeological resources	1.0	Avoid any activity which may disturb any historical and/or archaeological resources.	On-Going	C	Unable to predict costs.
		1.1	Comply with state historic preservation act.	On-Going	C	Unable to predict costs.
		1.2	Consultation with the Seneca Nation of Indians Historical Preservation Office.	On-Going	C	Unable to predict costs.

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

PUBLIC INVOLVEMENT

Initial Mailing

Hemlock-Canadice Unit Management Plan's citizen participation activities commenced with an initial mailing on September 27, 2010 and public meeting October 26, 2010, outlining management plan objectives.

The initial mailing's targeted audience consisted of previously identified:

- adjacent property owners;
- local town & county officials;
- local media;
- recreational groups;
- interested industry groups;
- first nations;
- wildlife groups, and;
- other general environmental groups;

Based on those returned and other public comments received, the mailing list was amended to add other interested parties and/or correct outdated names and addresses.

Public comments received from the initial mailing and meeting are listed in Appendix A: Public Comment, with a summary in the Summary of Identified Issues, page 38. They include: Access, Vegetation Management, Water Resources, Wildlife and Fish Management, Public Recreation and Use, Oil and Gas Leasing, Cooperative Agreements, Open Space Conservation, Aesthetics, Overall Management, and Cultural Resources and Historic Preservation.

Second Mailing

Upon completion of the draft Hemlock-Canadice Unit Management Plan, a second mailing will be sent to those on the updated mailing list, including the media, summarizing objectives of the draft plan, listing local document repositories and announcing a public meeting. Repositories will include local libraries, the Bath and Avon NYS DEC offices, and NYS DEC's web page. A notice will also be posted in the Environmental Notices Bulletin (ENB) two weeks prior to the meeting.

Public Meetings

The first preliminary public meeting for this Unit Management Plan was held October 26, 2010 at the Springwater Firehall. The second public meeting will be held near the Hemlock-Canadice Unit Management area to present the draft plan and receive comments on it. Following the end of a 30-day public comment period, any modifications based on public comment will be made and a responsiveness summary will be inserted in Appendix A: Public Comment of the final plan.

Final Notice

Commentators and those on the updated mailing list will receive a notice of availability of the final plan. Document repositories will again be identified and any significant modifications based on public comment will be noted.