

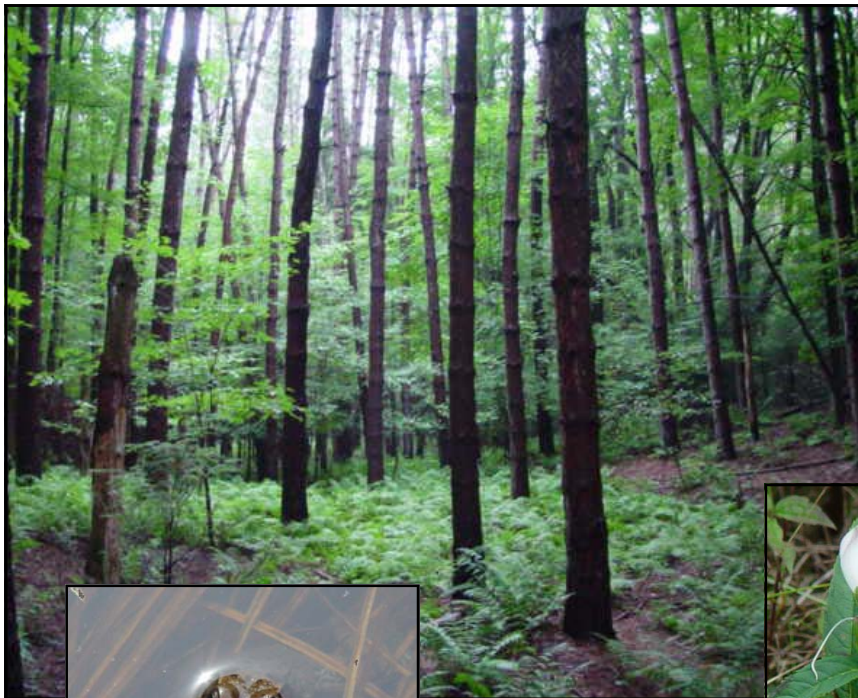


ERIE COUNTY FOREST MANAGEMENT PLAN

Erie County Department of Parks, Recreation and Forestry
Draft Plan, November 2003

Joel A. Giambra
Erie County Executive

Lawrence D. Jasinski
Commissioner of Parks, Recreation and Forestry



*Creating
Sustainable Forests
in Erie County
for the 21st Century*



Submitted by:
Brian Grassia, Erie County Forester
Cally Miklasz, Erie County Soil and Water Conservation District



ERIE COUNTY FOREST MANAGEMENT PLAN

Erie County Department of Parks, Recreation and Forestry Draft Plan, November 2003

PARTNERS



Erie County Department of Parks, Recreation and Forestry

95 Franklin Street, Buffalo, New York 14202

Phone: (716) 858-8352 • Fax: (716) 858-8931

www.erie.gov



Erie County Bureau of Forestry

Genesee Road, Concord, New York 14055

Phone: (716) 496-7410 • Fax: (716) 496-7410

www.erie.gov/parks/forestry.phtml



Erie County Soil and Water Conservation District

50 Commerce Way, East Aurora, New York 14052-2185

Phone: (716) 652-8480 • Fax: (716) 652-8506

www.ecswcd.org



Earth Spirit Educational Services, Inc.

PO Box 261, Orchard Park, New York 14127

Phone: (716) 941-6267 • Fax: (716) 649-0988

www.earthspiritedu.org



New York State Department of Environmental Conservation

270 Michigan Avenue, Buffalo, New York 14203-2999

Phone: (716) 851-7010 • Fax: (716) 851-7005

www.dec.state.ny.us



USDA Natural Resources Conservation Service

50 Commerce Way, East Aurora, New York 14052-2185

Phone: (716) 652-8480 • Fax: (716) 652-8506

www.ny.nrcs.usda.gov



University at Buffalo - Environmental Studies Program

203 Clemens Hall, Buffalo, New York 14260

Phone: (716) 645-2245 • Fax: (716) 645-3640

www.buffalo.edu

Table of Contents

i	Acknowledgements
iii	Preface

Section I — Introduction

1	..... Introduction
2	..... Forest Lot Acreage
4	..... Erie County Bureau of Forestry History
6	..... Mission / Goals / Objectives
7	..... Silviculture
8	..... Forest Recreation and Education
13	..... Unique Field Sightings
14	..... Physical Characteristics

Section II — Silvicultural Analysis and Management Recommendations

19	..... Introduction to Data Collection Processes
20	..... Development of Stewardship Recommendations
23	..... Lot 1 Field Worksheets and Recommendations
43	..... Lot 2 Field Worksheets and Recommendations
47	..... Lot 3 Field Worksheets and Recommendations
65	..... Lot 4 Field Worksheets and Recommendations
93	..... Lot 5 Field Worksheets and Recommendations
115	..... Lot 6 Field Worksheets and Recommendations
123	..... Lot 7 Field Worksheets and Recommendations
135	..... Lot 8 Field Worksheets and Recommendations
141	..... Lot 9 Field Worksheets and Recommendations
151	..... Lot 10 Field Worksheets and Recommendations
167	..... Lot 11 Field Worksheets and Recommendations
177	..... Lot 12 Field Worksheets and Recommendations
191	..... Lot 13 Field Worksheets and Recommendations

Section III —Forest Management Summary and Conclusions

209	..... Public Communication and Involvement
210	..... Wildfire Management and Maintenance
211	..... Phase II—Implementation of the Forest Management Plan
213	..... References
219	..... Appendix—1965 USDA Soil Conservation Service Recommendations

Acknowledgements

It is with great appreciation that I acknowledge the exceptional work performed by the contributing authors, mapping and layout experts. On behalf of Commissioner Lawrence Jasinski and the Department of Parks, Recreation and Forestry, we thank you for exceeding all expectations in submitting a superb work product. Without your professionalism and dedication, this report would not have been possible. In 76 years of Erie County Forest history, this is the first effort to establish a formal Forest Management Plan. The result of months of hard work is a plan which, when implemented, will have a positive impact on the future of Erie County Forests for generations to come.

Yours Truly,



Brian Grassia
County Forester

CONTRIBUTING AUTHORS:

Earth Spirit Educational Services, Inc. – Sanford Geffner, Herb Burgasser, Scott Lembitz, Erik Lema
Erie County Department of Parks, Recreation and Forestry – Lawrence D. Jasinski, Brian Grassia, Marty Neff, Dan Ciszak, David Sicignano
Erie County Soil and Water Conservation District – Cally Miklasz, Ellen Hahn, Megan Gollwitzer
New York State Department of Environmental Conservation – David P. Paradowski
University at Buffalo – Sanford Geffner and students
USDA Natural Resources Conservation Service – John R. Whitney

SPECIAL ASSISTANCE:

Erie County Deputy Executive Carl J. Calabrese
Erie County Attorney's Office – Fred Wolf, Greg Dudek
Erie County Legislator Jeanne Z. Chase
New York State Department of Environmental Conservation – Kenneth J. Kasprzyk
SUNY College of Environmental Science and Forestry – Dr. Hugh O. Canham, Dr. Douglas C. Allen

LAYOUT:

Erie County Soil and Water Conservation District – Ellen Hahn

MAPS:

Erie County Soil and Water Conservation District – Philip M. Mogavero

PHOTOGRAPHS:

Earth Spirit Educational Services, Inc.
Erie County Soil and Water Conservation District

Preface

The purpose of this report is to establish a framework for the process of developing and implementing a forest management plan – *Creating Sustainable Forests in Erie County for the 21st Century*.

The Plan and implementation will adhere to the highest standards and guiding principles governing proper forest management practices, and will issue recommendations based on sound biological, economic, recreational, educational, and public safety considerations.

Section I

Introduction



Introduction

Seventy-six years ago on November 15, 1927, the Bureau of Forestry was created. Since then, 3,153 acres have been acquired on thirteen lots in four Erie County Southtowns including Boston, Holland, Sardinia and Concord. Lot sizes range from 71 to 852 acre parcels. This acreage is an estimate, and accurate surveys are necessary to determine actual Forest Lot sizes. Most acreage was purchased between 1928 and 1938. Since much of the land came in the form of abandoned farmland, 7.5 million trees were planted in non-forested areas of these lots by the Civilian Conservation Corps (CCC) program during that period. High-density plantings of conifer seedlings were then targeted to provide future economic benefits to Erie County residents.

Due to the natural regeneration process, Erie County forests are now approximately 45% hardwoods and 49% conifers with the remaining acreage in wetlands or field/shrub cover types. This combination gives the County forests high value with regard to both hardwood and softwood timber potential as well as the benefits of recreation, wildlife, education and watershed protection.



Earth Spirit crew and Department of Environmental Conservation Forester conducting a Forest Lot assessment.

In 1965, the USDA Soil Conservation Service (now the Natural Resources Conservation Service) prepared a comprehensive study on growth rates in the Erie County forests. At that time, data were collected and maps were generated that show field lines, fire lanes and property boundary lines. The reports also recommended that pre-commercial thinning take place as soon as possible. The thinning was not performed, and as a result, slow tree growth rates and heavy fuel accumulations are the current conditions, characteristic of an unmanaged forest. The residents of Erie County should now expect healthier and sustainable forests with the creative, innovative and economically beneficial 2003 Erie County Forest Management Plan.

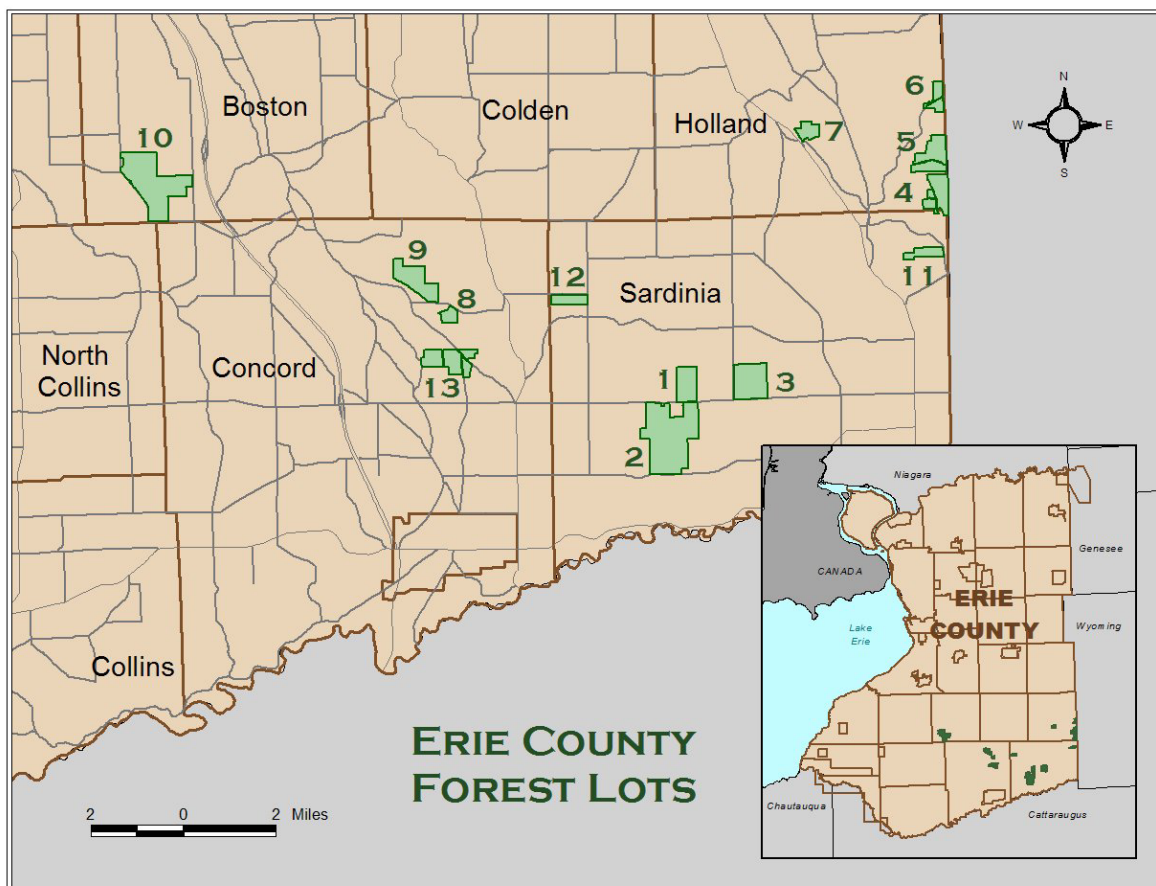
Erie County Bureau of Forestry

Forestry Lots

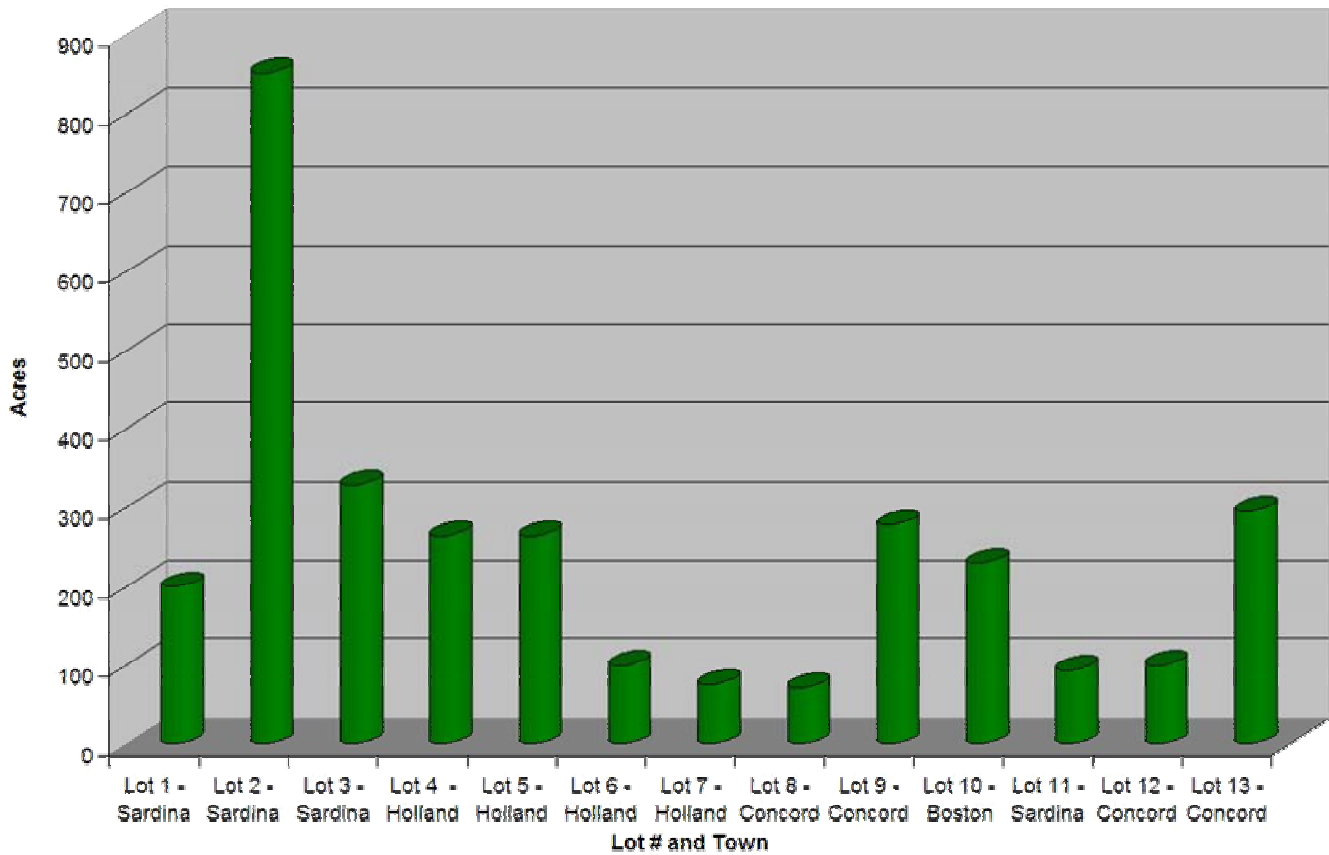
Lot #	Town	Acreage	Year Acquired
1	Sardinia	200	1928, 1964
2	Sardinia	852	1928, 1929, 1963
3	Sardinia	329	1931
4	Holland	264	1931
5	Holland	264	1928
6	Holland	100	1931
7	Holland	76	1931
8	Concord	71	1931
9	Concord	278	1929
10	Boston	230	1929
11	Sardinia	94	1937
12	Sardinia	100	1939
13	Concord	295	1949

Total Acreage for the Bureau of Forestry: 3,153

*** Additional acreage has been acquired since this reporting**



Erie County Forest Lot Sizes by Acreage



Lot Acreage by Cover Type

Lot Number	Hardwoods	Conifers	Wetlands	Field/ Shrublands	Total
1	112	71	0	17	200
2	398	412	25	17	852
3	136	193	0	0	329
4	166	91	7	0	264
5	99	126	40	0	264
6	38	62	0	0	100
7	26	50	0	0	76
8	20	51	0	0	71
9	130	148	0	0	278
10	78	152	0	0	230
11	59	28	7	0	94
12	58	42	0	0	100
13	110	134	51	0	295
Total	1439	1559	130	34	3153
% of Total	45.35	49.44	4.12	1.09	100

Erie County Bureau of Forestry History

796 MEETING NO. 40. BOARD OF SUPERVISORS. NOV. 15, 1927.

Mr. WHEELER from the Special Committee on Conservation, presented the following report, which was ordered received, filed, printed and laid on the table under the rules:

Buffalo, N. Y., Nov. 10, 1927.
To the Honorable, The Board of Supervisors,
Gentlemen:

Your Special Committee on Conservation, after holding many hearings and securing information pertaining to reforestation from conservation societies throughout the state as well as from the State conservation commission and County Forest Committees of other counties, herewith offers the following preambles and resolution and respectfully recommends the adoption of the resolution.

Whereas, Section 60 of the Conservation Law provides that a county may acquire by purchase, or gift, or take over lands in its possession within the boundaries thereof and use the same for forestry purposes and may appropriate money or issue bonds either for the purchase of such lands for said purpose, to establish forest plantations or for the care and management of forests and may undertake such work at regular or special meetings by majority vote of such board after two weeks public notice setting forth the fact that such plan is contemplated and that moneys are to be appropriated for such purpose, and that such Board shall have full power and authority to acquire, maintain, manage and operate such forests for the benefit of the inhabitants of this County, and that the net income from such lands shall be paid into the general fund of the County and used only upon order of this Board of Supervisors, and Whereas, Section 72a of the General Municipal Law also provides that the Board of Supervisors of this county may acquire for this County by purchase, gift, lease or condemnation, and hold as the property of this county tracts of land having forests or tree growths thereon, or suitable for the growth of trees, and may appropriate the necessary moneys of the county; said lands shall be under the management and control of this Board and shall be developed and used for the planting and rearing of trees thereon and for the cultivation thereof according to the principles of scientific forestry for the benefit and advantage of the county, and

Whereas, this Board has caused to be published in the newspapers in which the session laws and concurrent resolutions are required to be published, a notice setting forth the fact that this plan is contemplated and that moneys are to be appropriated for such pur-

pose, said notice having been so published more than two weeks prior to the date of this hearing, said Board giving a hearing to all persons appearing in support of or in opposition to such proposed resolution, and

Whereas, this Board believes it to be in the great interest of the people of this county to establish such communal forests, and acquire and develop such lands and appropriate moneys therefor, and

Whereas, the principal object to be considered in the maintenance of such lands shall be the sale of forest products in aid of the public revenues, and the protection of the water supplies of the people of this county, and prevent the damage to lands and property from storm, floods and erosions and to assist in re-establishing fertility of the soil and provide homes for game and fish and to encourage forest plantation under private ownership and,

Whereas, several thousands of acres of land in this county are adapted to forestry and are now waste lands and a loss to the whole community and our supply of wood and timber will soon be exhausted, and such wood and timber are of vital necessity to the people of this county and to their posterity not only in the immediate, but the near and distant future, now therefore be it

Resolved, that pursuant to the above mentioned statutes, and for the reasons and purposes hereinbefore set forth that this Board of Supervisors do establish a comprehensive system of forestry in this County of Erie and acquire and develop forest lands and establish communal forests and that such lands and forests be acquired, maintained, managed and operated for the benefit of the inhabitants of this county and not otherwise, and that the net income from such lands and forests shall be paid into the general fund of the County and used only upon orders of the Board of Supervisors, which said Board shall at all times keep and maintain absolute and complete control of said lands and forests and the avails therefrom, and that said lands and forests shall be cultivated in accordance with the best principles of scientific forestry, and be it further

Resolved, that a Forestry Committee of this Board shall have direct supervision of said lands and forests and shall investigate all matters in connection with the purchase or otherwise acquiring such lands and secure options for the purchase of such lands and in such places as they may deem wise and make full and complete reports to this Board with reference to all such matters at the regular session of this Board, and at any other time when requested by the Board so to do and when specifically

directed so to do shall acquire by purchase or otherwise lands, seedlings and trees for, in behalf of and in the name of the County of Erie and attend to the development of said lands by planting, cultivating and otherwise, and employ competent assistance, including a superintendent to prosecute and properly care for said work, lands, trees and forests, but in no event shall in any wise obligate this Board of Supervisors or the County of Erie for any amount without specific authority of this Board so to do, which authority at all times shall be exercised by this Board by resolution duly adopted at a regular or special meeting thereof. Such forestry committee shall make such rules and regulations with reference to said lands and forests and the use and care and protection thereof as they shall deem wise, but such rules and regulations shall at all times be subject to the approval of this Board. Such Committee shall, however, cause necessary and proper inspection of said lands and forests and trees whenever they shall deem it proper or necessary so to do, and be it further

Resolved, that there be and is hereby appropriated for the above mentioned purposes the sum of \$55,000.00, and be it further

Resolved, that of the said sum there be made available the sum of \$15,000 for the year 1928 to be levied and assessed against the taxable property of the County liable therefor, and be it further

Resolved, that of the remainder, or \$40,000.00, of the said sum there be levied and spread against the taxable property of the County of Erie, liable therefor, in each of the years 1929, 1930, 1931 and 1932, at the annual session of the Board of Supervisors, the sum or amount of \$10,000.00; all for the above mentioned purposes, and when such funds are collected the same shall be paid to the County Treasurer of this County and credited to the account of Forest Lands and Communal Forests.

Resolved, that such County Treasurer shall pay out said funds only after specific authorization of this Board upon the warrant of the Forestry Committee duly countersigned by the Chairman of the Board of Supervisors and for the purposes herein set forth, and be it further

Resolved, that this resolution shall take effect immediately.

E. M. WHEELER,

Chairman,

REGINALD P. LONG,
C. SEILHEIMER,
EDWARD J. ENDRES,
IRA H. VAIL,
WARD J. WILBER,
R. M. TILLOU.

ERIE COUNTY WILL HAVE OWN FORESTER

C. D. Kingsbury Employed.
Is Second County Forester
in United States.

By LEROY E. FESS.

With the employment of C. D. Kingsbury of 237 Tacoma avenue as forester for Erie county, Chautauqua loses its distinction of being the only county in the United States to have a forester. Mr. Kingsbury is the second county forester in the United States.

Coincident with Forester Kingsbury's new position, which has just been created for him, is being launched a big county-wide reforestation program. This will start immediately—in fact, it is already under way. Erie county, while not first to get into this work, intends to distinguish itself by doing the job in a big way.

Final organization arrangements were completed at a meeting held in Buffalo this week and to which representation was invited from various clubs and societies in the county. Twenty-six responded, including the county conservation society, various rod and gun and fish and game clubs scattered about the county, Boy Scout councils, the farm bureau, the grange, and various city clubs like Kiwanis.

Advisory Council Formed.

This initial representation has been organized into a forestry advisory council, and the following members were elected to comprise the executive, or actual working, committee:

E. M. Wheeler, supervisor of the township of Sardinia, president; Sanford Hubbard, East Aurora Fish and Game club, vice president; Arthur B. Clark, East Aurora, secretary; J. B. Hoyt, Orchard Park, representing the grange; O. F. Georgi, Buffalo Izaak Walton league; Thomas McKeary, Marilla, farm bureau; George J. Rennie,

Milgrove, county conservation society, and Supervisor Herbert P. Webster of Alden, representing the Dairymen's league.

The new council as a whole will function in an advisory way, as its name implies, and will assist in drawing up the program for educational and extension work that will accompany the campaign.

Idle Lands Purchased.

Erie county's new step in reforestation is a brain-child of the board of supervisors, which has purchased 400 acres of idle lands in the town of Sardinia and has appropriated \$25,000 for the carrying on of the work. It is expected that more lands will be purchased shortly.

First actual work of reforestation under the new regime will be done on the Sardinia land, where Forester Kingsbury promises trees will be planted as soon as the weather permits. One hundred acres or one-fourth of the purchase will be planted this year, according to Mr. Kingsbury. This will require the setting of approximately 120,000 trees.

The new county forest will be used largely for show and demonstration purposes, it being the plan of the reforestation project to have an object lesson right in front of the farmers, so that they will take more interest in their own woodlots and come to regard forests as crops, the same as they do their other agricultural ventures.

Will Reforest Land Near Roads.

To acquaint city folks with the advantages of reforestation the county intends to acquire small strips of land bordering on main traveled roads where demonstration forests will be started and maintained.

Forester Kingsbury will direct the planting of trees of all organizations that heretofore acted independently in this respect. It is expected also to carry on considerable work in the schools, by organizing boys' and girls' reforestation clubs. This is done in other counties under the 4-H or Junior Project club plan.

Erie county dropped its junior project work several years ago, but it is expected now that it will be reinstated to take care of this new need for forest clubs among the school children. Erie county, according to Forester Kingsbury, has 40,000 acres of land not suited for agricultural purposes and which is desirable for forests. There are 125 wood-using industries in the county, he said.

Is Son of Major Kingsbury.

Forester Kingsbury is a Buffalonian and the son of Major J. J. Kingsbury of the U. S. Veterans' bureau. He graduated from the New York State College of Forestry, Syracuse, in 1920, and for the last two years has been engaged in forestry work in Florida and Georgia.

Mission / Goals / Objectives

The Erie County Forest Management Plan has been constructed around **three basic principles**. The first principle is that any data collection or inventory planning adhere to the highest standards. The second is that the recommendations resulting from the analysis be based on sound biological, ecological, economical, recreational and educational considerations. And lastly, that relationships formed throughout the planning process will enhance and strengthen the benefits to residents and taxpayers in Erie County.

The mission was laid out on November 15, 1927, when the Erie County Board of Supervisors created the Erie County Bureau of Forestry. The primary function of the bureau was to increase the public revenues from the sale of forest products, as well as encourage the enhancement and protection of wildlife and water supplies for the people of this county.



Timber from Erie County Forest was used to rehabilitate the Ellicott Creek Park Casino.

The goal is to create healthier and sustainable County Forests for the 21st Century, using science, Best Management Practices (BMPs)*, and common sense. Managing Erie County's 13 Forest Lots has tremendous benefits for Erie County residents. The Bureau of Forestry will create/enhance multi-use opportunities with a unique blend of recreation, watershed protection, wildlife habitat enhancements, educational opportunities and sound economics (all working in unity toward the goal of sustainable forests). While much has been done in recent years, it will take another three to four years to rebuild the Forestry Bureau. Establishing good forestry principles through partnerships, and practicing proper stewardship of the County's forestry resources will have lasting benefits for generations to come.

The objectives of the Erie County Forest Management Plan include creating educational and economic opportunities for taxpayers, community groups, and educators; utilizing the Woodlands Environmental Educational Center and certain Lots for scientific experiments in ecology and forestry; putting forest products to good use in County parks, departments, and for public projects; reducing taxes through profits from sales of lumber products; providing for water resources protection, wildlife habitat enhancement and fire protection; and encouraging/enhancing recreational use.

* According to New York State's Soil and Water Conservation District Law, Section 3, a Best Management Practice "... means methods, measures or practices determined to be the most practical and effective in preventing or reducing the impact of pollutants generated by nonpoint sources to a level compatible with water quality standards established pursuant to section 17-0301 of the Environmental Conservation Law.

Silviculture:

The Society of American Foresters defines silviculture as “The science and art of cultivating forest crops...the theory and practice of controlling the establishment, composition, and growth of forests.” The silviculture prescriptions performed by Erie County should connect with our forest management objectives. In the final analysis, Erie County’s methods will promote rapid tree growth and respect other objectives such as watershed protection, wildlife habitat improvement, and urban interfacing (fire protection).

A silvicultural prescription is written direction for treatment. It should contain a rationale for tree improvements, timber harvest, watershed protection improvements, wildlife habitat enhancement and any other objectives, where appropriate. Elements of a silvicultural prescription include:

1. Site data:

- Geology
- Rock type
- Slope
- Climate and exposure
- Soils
- Watershed
- Snow storage and melt
- Potential vegetation
- Animal and plant biodiversity
- Archeological features (every forest is a possible archeological site)
- Drainage pattern
- Runoff and infiltration
- Topography
- Hydrologically sensitive areas

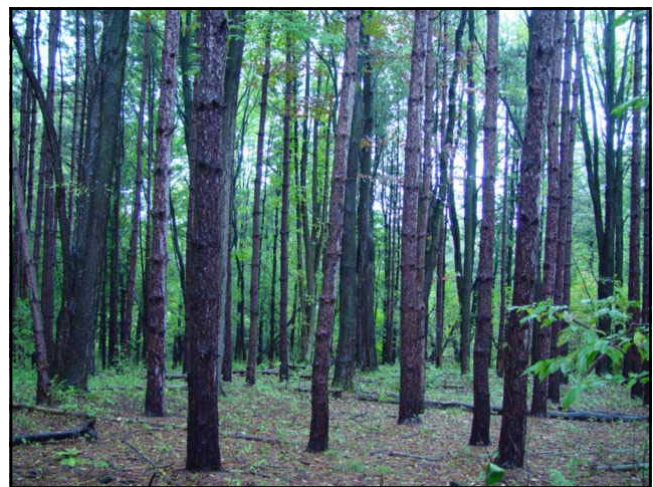
2. Stand data:

- Timber stand resources
- Species composition
- Age and vigor
- Growth rates
- Quality
- Stocking levels
- Protection from wildfire
- Insects and diseases
- Weather factors
- Wildlife habitat
- Cover types
- Water characteristics and access
- Water supply
- Visibility from travel corridors
- Recreational uses
- Even or uneven age arrangement

3. Data analysis and diagnosis: The collection of site data and stand data will be analyzed. From this, Erie County can develop:

- Stand tables
- Accurate stand maps
- Tree improvement and harvesting schedules
- Strategies for enhancing wildlife habitat

Finally, stewardship recommendations with silvicultural prescriptions for each Erie County Lot will follow, since each Lot has unique characteristics.



An even-aged conifer plantation with hardwood succession throughout the understory.

Forest Recreation and Education

The Erie County Forestry Management Plan was developed using a multi-use approach that is focused on wildlife habitat, soil and water resource protection, harvest potential, recreational pursuits and educational opportunities. The following information, based upon data collected by Earth Spirit Educational Services, Inc., seeks to highlight some of the



Covered bridge over Dresser Creek at Lot 1.

more unique educational opportunities that exist on selected Erie County Forest Lands.

Lot 1

Description: 200 acres of managed Hardwood Forests, Conifer Plantations, Shrublands, Dresser Creek and mowed Fields.

Unique Resources: Erie County Sugar Bush, Sugar Shanty, Saw Mill, Dining Area with Bathrooms, Warming Shelters and established Trail System.

Educational Opportunities: Erie County has been utilizing the resources of Lot #1 to conduct seasonal Maple Sugaring programs for local schools and the general public. During the past two years, Earth Spirit Educational Services, Inc. has joined with the County to offer these programs. These resources have also proven to be well used by the public for a variety of other educational experiences such as the Erie County Harvest Festival, Envirothon (high school ecology competition) and a series of Interpretive Nature Programs.

Recommendations: Maintain and manage resources to enhance the Maple Sugaring operation and expand upon year round educational opportunities for schools, community groups and the general public of Erie County and all of Western New York.

Lot 2

Description: 852 acres of Hardwood Forests, Conifer Plantations, Dresser and Hyler Creeks, a two acre Pond, Beaver Meadows, Marshlands and Old Fields.

Unique Resources: The Woodlands Environmental Education Center, formally established in the Spring of 2001, was developed as a joint partnership between Erie County, Earth Spirit Educational Services, Inc. and the University at Buffalo Environmental Studies Program. This property, along with the accompanying structures, was a former 4-H Camp (1965-1990) which had been in disuse for eleven years. The current structures, all requiring



At the Erie County Envirothon, students learn about forest management in the Sugar Bush at Lot 1.

Erie County Soil and Water Conservation District



Sugar Shanty and Visitor Center at Lot 1.

renovation and/or reconstruction, include a Caretaker's residence and offices, Dining Hall/Kitchen, Nurse's Cottage, Barn, Shelter, established Trail System and an internal Road System.

Educational Opportunities: To develop a year-round environmental education center for the schools, community groups and the general public of Erie County and all of Western New York. Programs will be offered on a half day, full day or residential basis and will be conducted by Earth Spirit Educational Services, Inc. and student interns from the University at Buffalo Environmental Studies Program.

Recommendations: To continue the development of the Woodlands Environmental Education Center and to eventually utilize this resource and its professional staff as a focal point from which to coordinate and implement a wide variety of environmental education programs at the Erie County Parks, Undeveloped Parks and Forest Lands.



Russell B. Fales Saw Mill at Lot 1. Russell served as Erie County Forester from 1938 to 1971.

Lot 3

Description: 329 acres of Hardwood Forests, Conifer Plantations and varied Wetlands.

Unique Resources: Established Trail System for Hiking and Cross Country Skiing along with an easy access Parking Area.

Educational Opportunities: This area provides excellent opportunities for year round environmental education programs. Established trails provide easy access into picturesque Hardwood and Conifer Forests.

Recommendations: To maintain the established Trail System and to include Lot #3 as a preferred Forest Land field site for a variety of ecology programs for the general public to be conducted by Earth Spirit Educational Services, Inc.



Erie County Soil and Water Conservation District

Students are given a demonstration at the Saw Mill.

Lots 5 and 11

Description: 265 acres (Lot 5) and 107 acres (Lot 11) of Hardwood Forests, Conifer Plantations and unique Wetlands.

Unique Resources: Lot 5 and 11 respectively, contain the Holland Bog and extensive Marsh/Pond Communities. Both possess Fire Breaks in good condition that provide effective access to these Wetland environments.

Educational Opportunities: These areas provide excellent opportunities for environmental education programs focused upon Wetland Ecology and Forest Management practices.

Recommendations: To include these Lots as preferred Forest Land field sites for a variety of ecology programs for the general public to be conducted by Earth Spirit Educational Services, Inc.



Earth Spirit Ecologist Herb Burgasser teaches students about forest ecology at The Woodlands.

Lot 13

Description: 300 acres of Hardwood Forests, Conifer Plantations, Creeks and numerous man-made Marshes and Ponds.

Unique Resources: Mature Hardwood Forests, diverse species of Conifer Plantations and a variety of secluded Wetlands in various stages of succession.

Educational Opportunities: This extensive area provides excellent opportunities for year round environmental

education programs. Main Roads and Fire Breaks provide good access throughout this site.

Recommendations: To preserve the diverse habitats of this Lot as a secondary field site for The Woodlands Environmental Education Center. This area, easily accessible from The Woodlands, offers pockets of mature Hardwoods, varied species of Conifer Plantations and unique and secluded Wetland Communities for a variety of environmental education programs. Selected sites that border hidden ponds would also be excellent areas to establish primitive campsites with Adirondack Style lean-tos. The development of these structures would encourage primitive camping opportunities for the general public as well as formal programs for schools and community groups available through Earth Spirit Educational Services, Inc.



Ecology Camp participants at The Woodlands built a rope crossing for a team-building exercise.



The pond at The Woodlands on Lot 2 provides an opportunity for students to learn about water quality and wildlife biology.

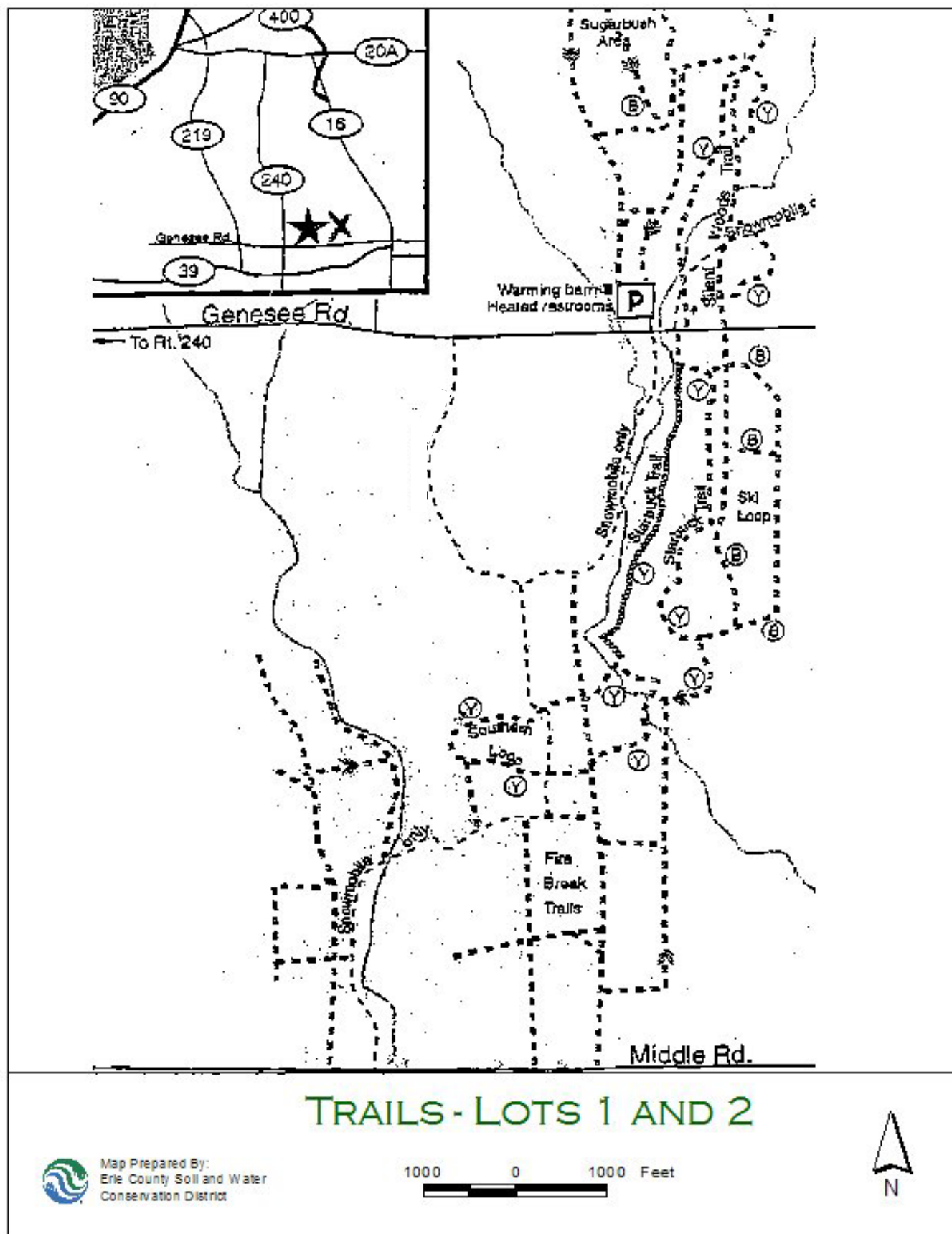
Recreation Activities:

Currently there are 1,385 acres (Lots 1, 2 and 3) of forest land available for recreation. Recreation on Lots 4-13 will be addressed in Phase II of the management plan. Recreation that is consistent in protecting the forest environment will be encouraged. Public use will be in balance with the forest's capacity to sustain these activities. Current multi-use recreational activities as well as activities prohibited by law are listed in the table below.

Activity	Season(s)	Allowed/ Prohibited	Comments
Hiking	All Year	Allowed	Over 7 miles of developed trails
Orienteering	When Season Permits	Allowed	Several events sponsored by local clubs take place annually (Boy Scouts, Buffalo Orienteering Club)
Cross Country Skiing	Winter	Allowed	Over 5 miles of trails maintained by Forestry Department
Snowmobiling	Winter	Allowed	Over 4 miles of trails maintained by local snowmobile clubs
Equestrian/Horseback Riding	When Season Permits	Allowed	Over 10 miles of trails maintained by equestrian clubs (trails were created from fire lanes)
Picnicking	All Year	Allowed	Picnic facilities at the Sugar Shanty and one-mile deep on Starbuck Trail
Bird Watching	All Year	Allowed	Abundant wildlife viewing opportunities exist
Education/Environmental Interpretation	All Year	Allowed	The Woodlands Environmental Education Center is located on Lot 2; many other opportunities exist for children and adults
Bow, Rifle, Trapping, and Shotgun Hunting	N/A	Strictly Prohibited	All types of hunting are forbidden by law
Fishing	N/A	Strictly Prohibited	Water use reserved for educational purposes
Motorized Vehicles	N/A	Strictly Prohibited	Not consistent with protecting forest environment
Camping	All Year	By Permit Only (for groups)	Expanded camping opportunities will be addressed in Phase II
Alcoholic Beverages	N/A	Prohibited	

Conclusion:

This Summary has focused upon some of the more unique Erie County Forest Lands with regard to their potential educational and recreational opportunities. These opportunities are currently being pursued as part of a Public Program Series offered through Earth Spirit Educational Services, Inc. during the Fall 2003 and Winter 2004. As a result of The Erie County Forestry Management Plan, new resources and enhanced educational and recreational opportunities are now being made available to the citizenry of Erie County and all of Western New York.



Unique Field Sightings

Earth Spirit Educational Services, Inc. was responsible for collecting field data for the Erie County Forest Management Plan during the period between August 4 and October 10, 2003. The following list represents a sampling of some of the more unique field sightings that were encountered during the analysis of thirteen Erie County Forest Lots.

- Old Sugar Maples in the County Sugar Bush
- Unique and extensive stand of Balsam Fir
- Numerous American Elms with a DBH (Diameter at Breast Height, measured at 4.5 feet) of up to 26 inches
- Black Bear spotted on two Erie County Forest Lands



Coyote track.

- The Holland Bog – an extremely unique community possessing a variety of unusual ferns, orchids and carnivorous plants
- Huge Black Cherry tree with a DBH of 54 inches
- Animal “graveyard” near a coyote den
- Secluded ponds and marshes, constructed for wildlife habitat, located with conifer plantations
- Porcupine den in American Beech tree
- American Ginseng plant hidden in a mature Hardwood Forest



Evidence of predation.

- The remnants of an early Maple Sugaring site
- Field stone wall marking an old homestead site deep in the forest
- Several Red Maples with a DBH approaching 53 inches
- Extensive beaver meadows transitioning into marsh communities
- Many unique fungi such as the Bear’s Head Tooth, Oyster Mushrooms, Dead Man’s fingers and Destroying Angel
- Some other unusual animal sightings included a Brown Snake, Northern Harrier, Red Fox, Wood Frogs, Pileated Woodpecker and Coyote



Wildlife habitat pond.

Physical Characteristics

Climate

Erie County experiences a fairly humid, continental-type climate, with moderate summers and cool winters. The climate is highly variable, and extreme or rapid weather changes can occur. Precipitation averages 40 inches per year and is strongly influenced by air masses moving over Lake Erie, producing “lake effect” snows in winter. Temperatures in the southern portion of the county, where most of the Erie County Forest properties lie, can often be as much as 10 degrees cooler than the northern urban areas. Summer humidity levels are moderate, and temperatures rise above 90° F usually only three times per year. Thunderstorms occur most often at night, and are more frequent in August. The mean annual temperature is 45.9° F, ranging from 23.2° F in February to 68.4° F in July.

Geology

The Niagara Region is located on a portion of a great plain which runs east to west from the northern Laurentian Highlands (Canadian Shield) approximately 100 miles north of Toronto, Ontario to the southern Allegheny Plateau, which forms the foothills of the Adirondack Mountains and Appalachian Mountains. The plain is a small part of the Great Lakes lowlands in which Lake Superior, Lake Michigan, Lake Huron, Lake Erie and Lake Ontario lie.

Continental glaciation played a modifying role in the development of New York's landscape in the recent geologic past. The Niagara Escarpment was covered with a sheet of ice, the Wisconsin glacier, 1 to 2 miles thick. On its advance south, the glacier removed and transported existing soils and eroded the surface of the bedrock. As the ice melted, this debris (mud, sand, gravel, and boulders) was left at new sites in a great variety of depositional landforms. Melting caused the glacier to retreat across New York State from south to north between 20,000 and 10,000 years ago. As the glacier retreated, the water levels slowly lowered, forming the predecessors to the Great Lakes, as the land began to rise in what is referred to as glacial rebound. During the period of glaciations and shortly afterward, the climate in Western New York was arctic. Vegetation was tundra and arctic fauna.



Wood products and limestone from Erie County Forest were used to construct this bridge to an island deep in the woods on Lot 2. Fifteen bridges were recently built to reconnect many miles of hiking trails.

Soils and Topography

The hilly uplands in the southern regions of Erie County are part of the Appalachian Plateau, carved into steep walled ravines and U-shaped glacial valleys by receding glacial melt water. Many of the meltwater rivers still exist, in the form of the many streams draining the southern hills of Erie County. In the low plains and valleys, bedrock is covered extensively by glacial till and by layers of sand, silt and clay deposited in meltwater lakes. Small areas of hydric soils can be found in the lowlands and on flattened hilltops. Bedrock in the county tilts slightly to the southwest. Southern Erie County is underlain by flat layers of siltstone, sandstone and shales, sedimentary rock of the Canadaway Group of the Upper Devonian, and is part of the Interior Lowlands, which extend westward to the Great Plains.

New York State Department of Environmental Conservation Priority Waterbodies List (1996)

The NYSDEC Division of Water periodically publishes a list describing the conditions, causes and sources of water quality problems for surface waters in New York State that cannot be used to their fullest potential as water resources. This list is often used as a basis for determining priority when natural resources planners are allocating financial and human resources to address environmental concerns.

The Priority Waterbodies List (PWL) contains documentation of the severity of impairment, listed as threatened, stressed, impaired or precluded (precluded being the most severe), and includes a listing of the types of pollutants and sources of pollutants. The PWL also suggests the resolution potential for each stream segment or waterbody as well as a brief summary of the concerns and any fish consumption advisories.

Each waterbody is assigned a Stream Class according to its best use. Class A and AA waterbodies are classified as drinking water sources. Class B waters are classified and regulated for swimming and contact recreation, but not as drinking water. Waters suitable only for fishing and non-contact activities are listed

as Class C. Waterbodies that support trout populations are given a further designation of (t), and trout spawning waters are designated (ts).

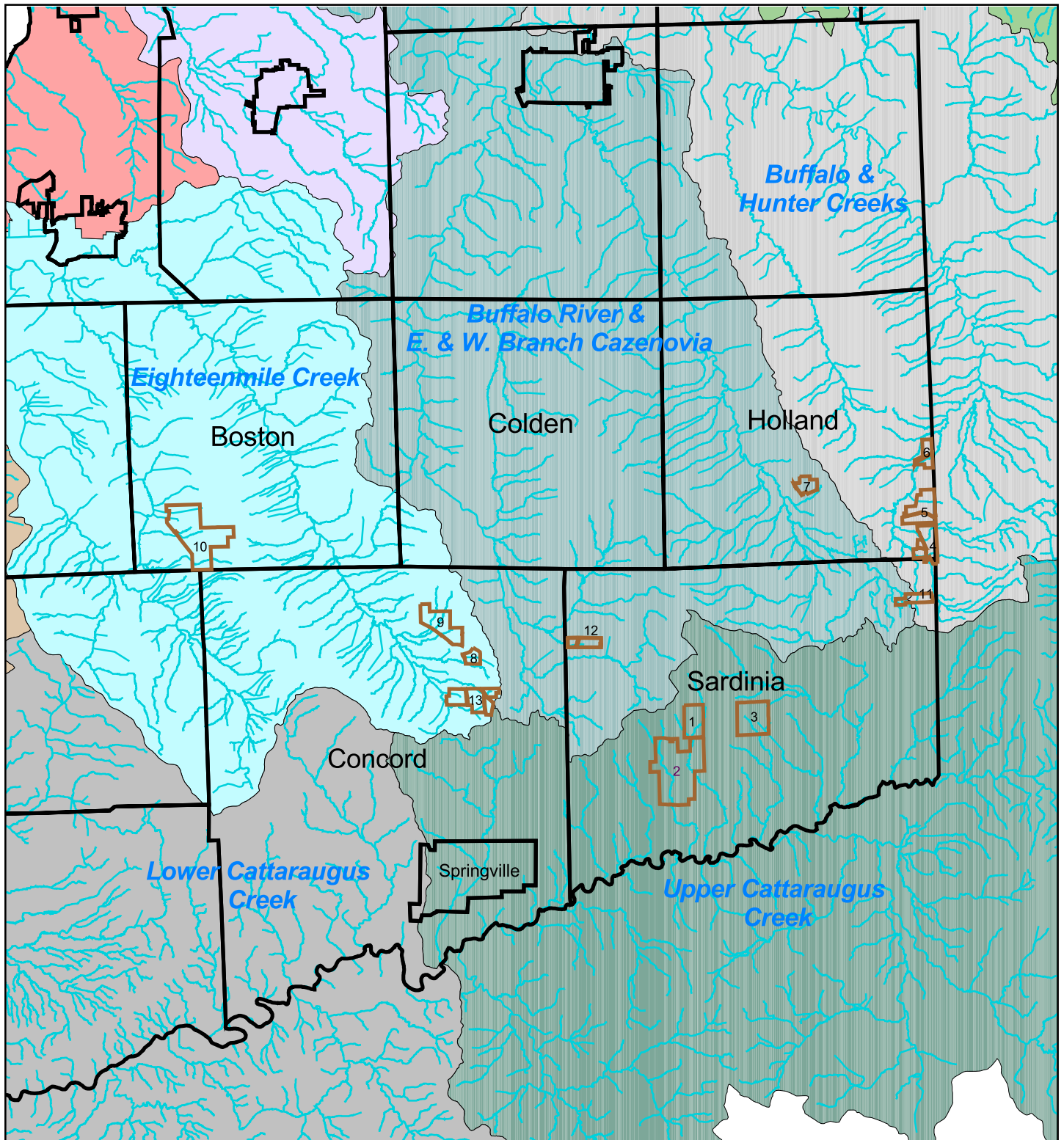
The Erie County Forest Lots lie within four watersheds as shown on the Watershed Map (following page 16). The use impairments and pollutants of concern for each Forest Lot are discussed in Section II—Forest Management Recommendations.

Soil Survey of Erie County, New York

The Erie County Soil Survey contains maps and descriptions of the soils and soil properties occurring throughout the county. The information can be used for land use planning, farming, forestry, construction, waste disposal, wildlife management, or any activity that affects the environment. The field work was conducted from 1967 to 1977 by the USDA Soil Conservation Service (now the Natural Resources Conservation Service) and Cornell University Agricultural Experiment Station. The soil descriptions are based on soil profiles of from many test pits dug and characterized countywide, and include soil texture, color, drainage, permeability, horizon depth, suitability and potential for specific uses and other characteristics. Field sampling is supplemented with laboratory analysis of soil properties. Soil areas mapped in the survey also include steepness, length and shape of slopes.

The soil types are named according to nationwide uniform procedures, called map units. Each map unit shown on the soil maps represents an area on the landscape consisting of the one or more soils for which the unit is named. The first two letters of a map unit name identify the soil name, and the third letter, when present, identifies the slope. For example, LfB is the Langford channery silt loam, 3-8% slopes, while LfC is the Langford channery silt loam, 8-15% slopes. Soil types that lack a slope identifier usually occur only in flat areas.

Soil descriptions have been included for each of the Erie County Forest Lots; complete descriptions and their suitability for specific uses may be found in the Soil Survey of Erie County, New York.



Erie County Forest Management Plan

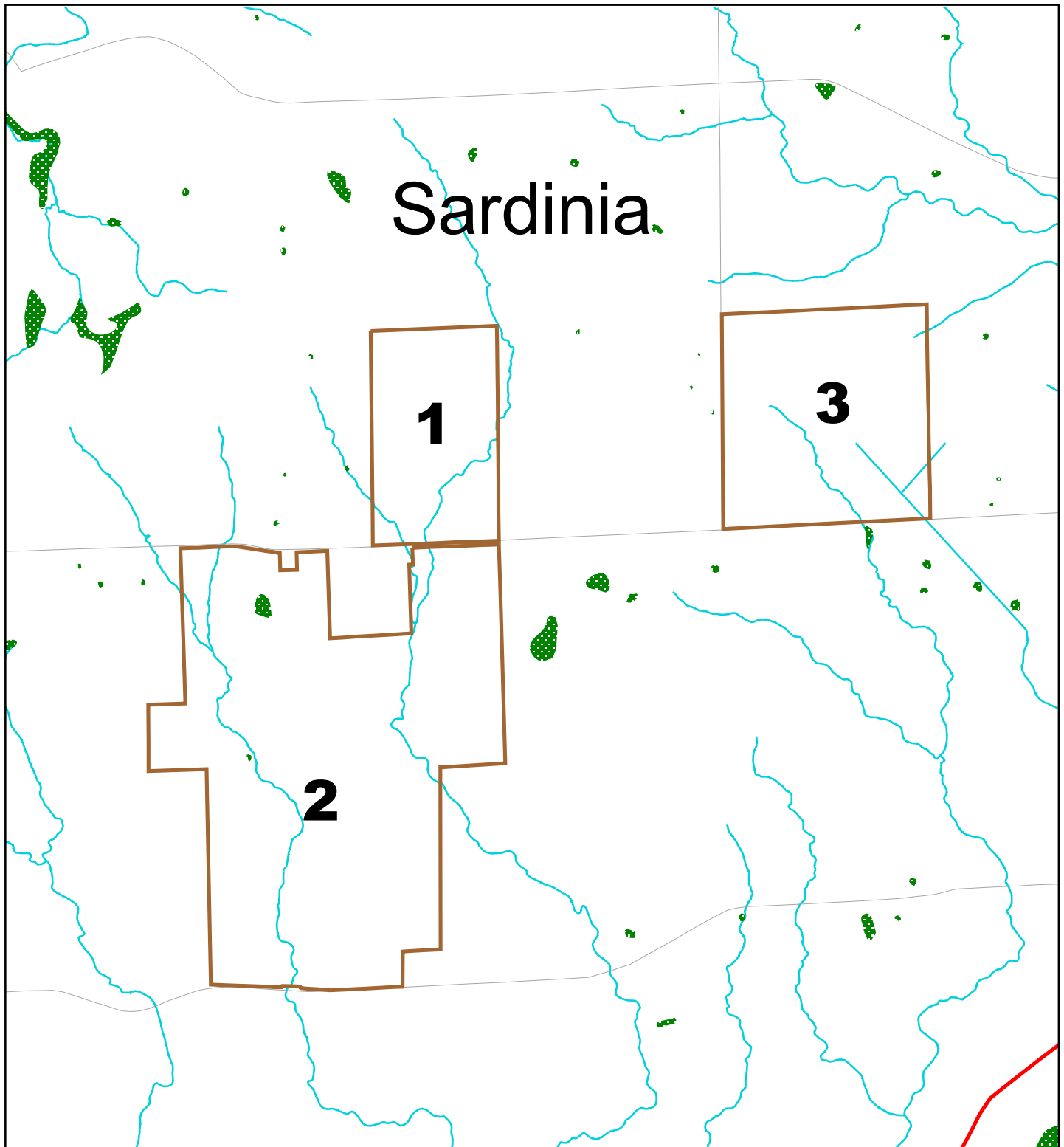
Watersheds



Map Prepared By:
Erie County Soil and Water
Conservation District



3 0 3 Miles










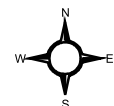
STATE AND NATIONAL WETLAND DESIGNATIONS

Erie County
Forest Management Plan



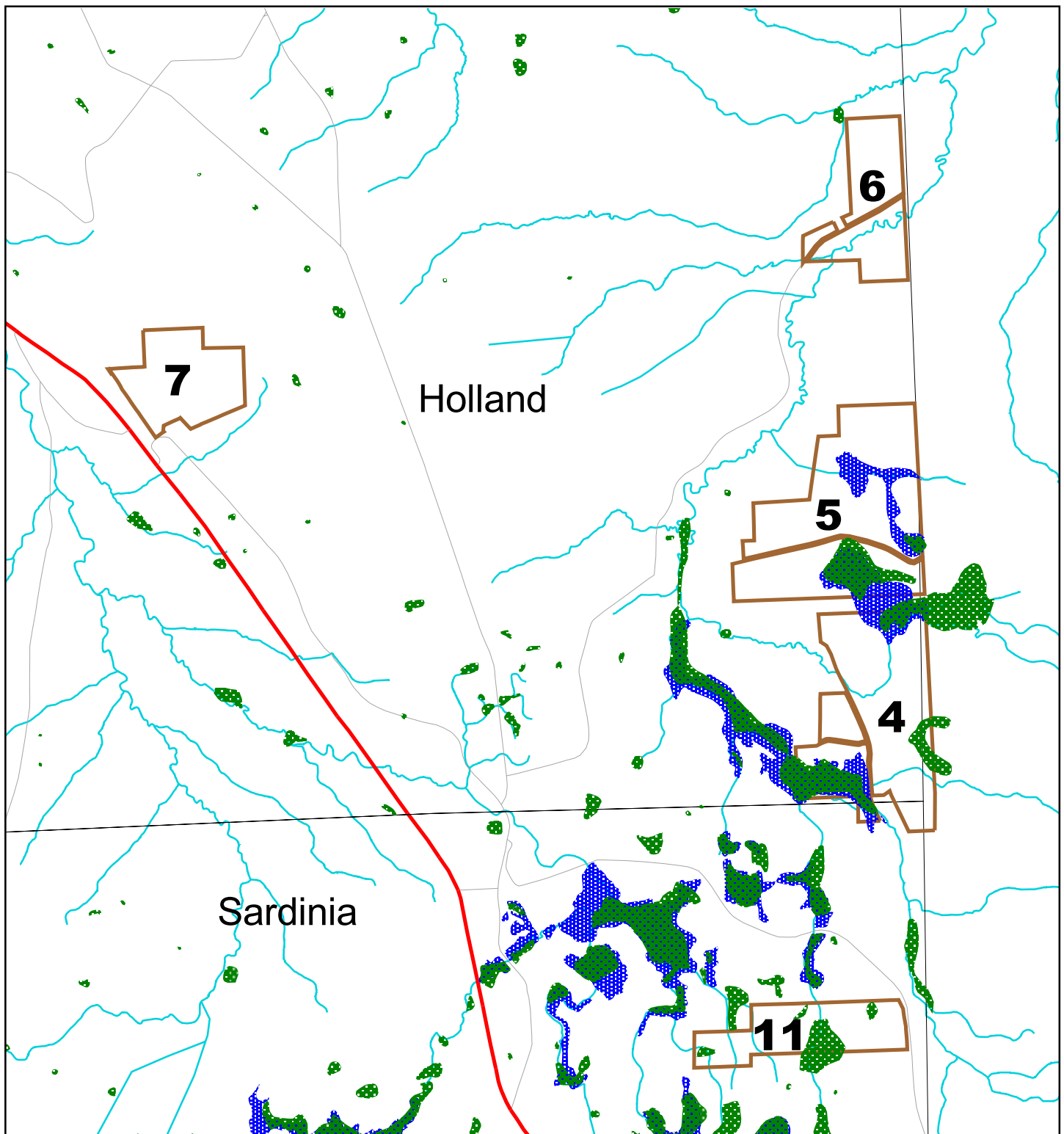
Map Prepared By:
Erie County Soil and Water
Conservation District

	Wetlands		Forestry Lots
	County Road		Interstate
	Federal Route		NY State Route
	National Wetlands Inventory		



300 0 300 600 Feet












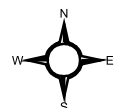
STATE AND NATIONAL WETLAND DESIGNATIONS

Erie County Forest Management Plan

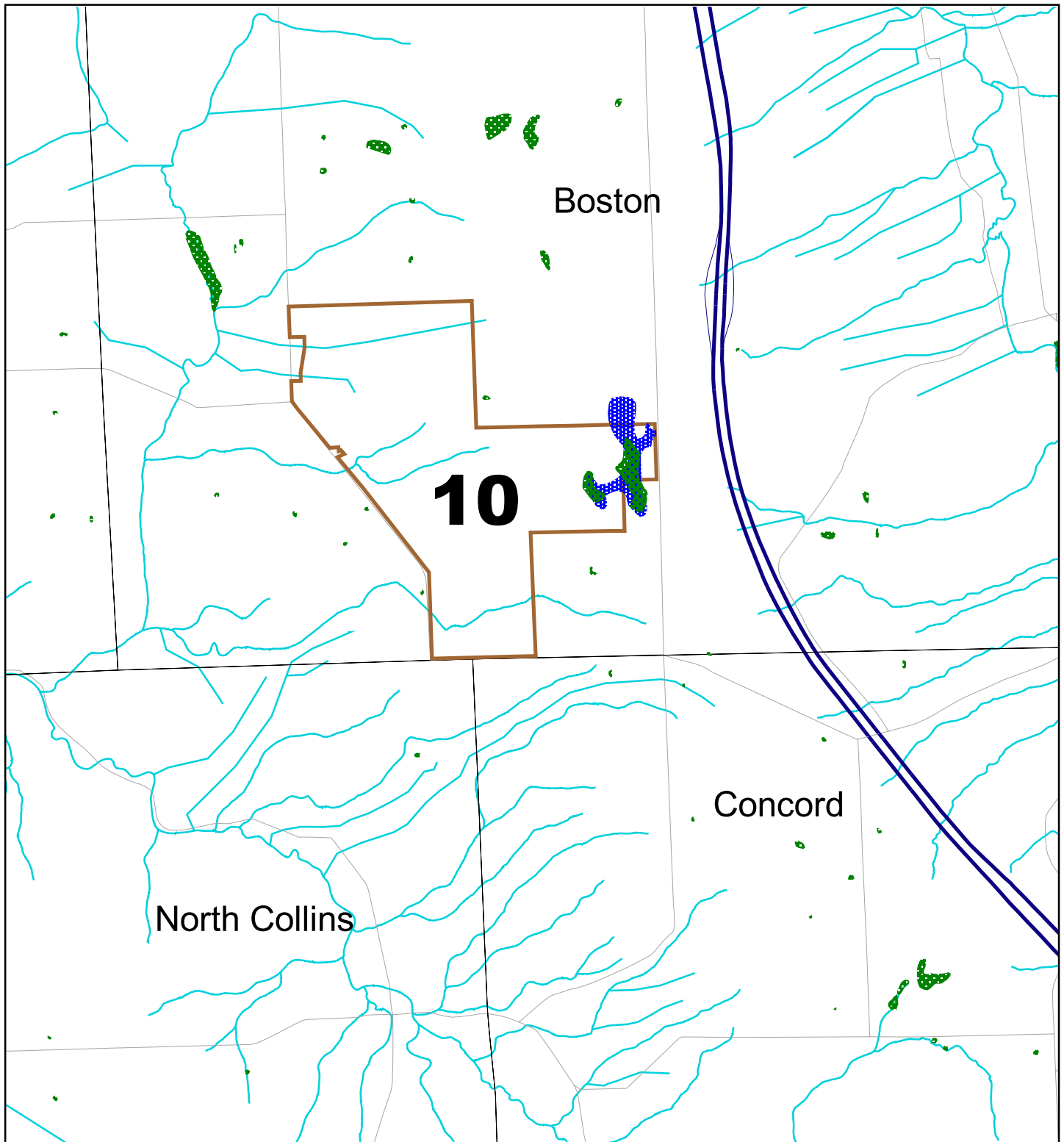


Map Prepared By:
Erie County Soil and Water
Conservation District

	Wetlands		Forestry Lots
	County Road		Interstate
	Federal Route		NY State Route
	National Wetlands Inventory		



400 0 400 800 Feet










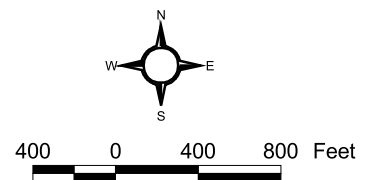
STATE AND NATIONAL WETLAND DESIGNATIONS

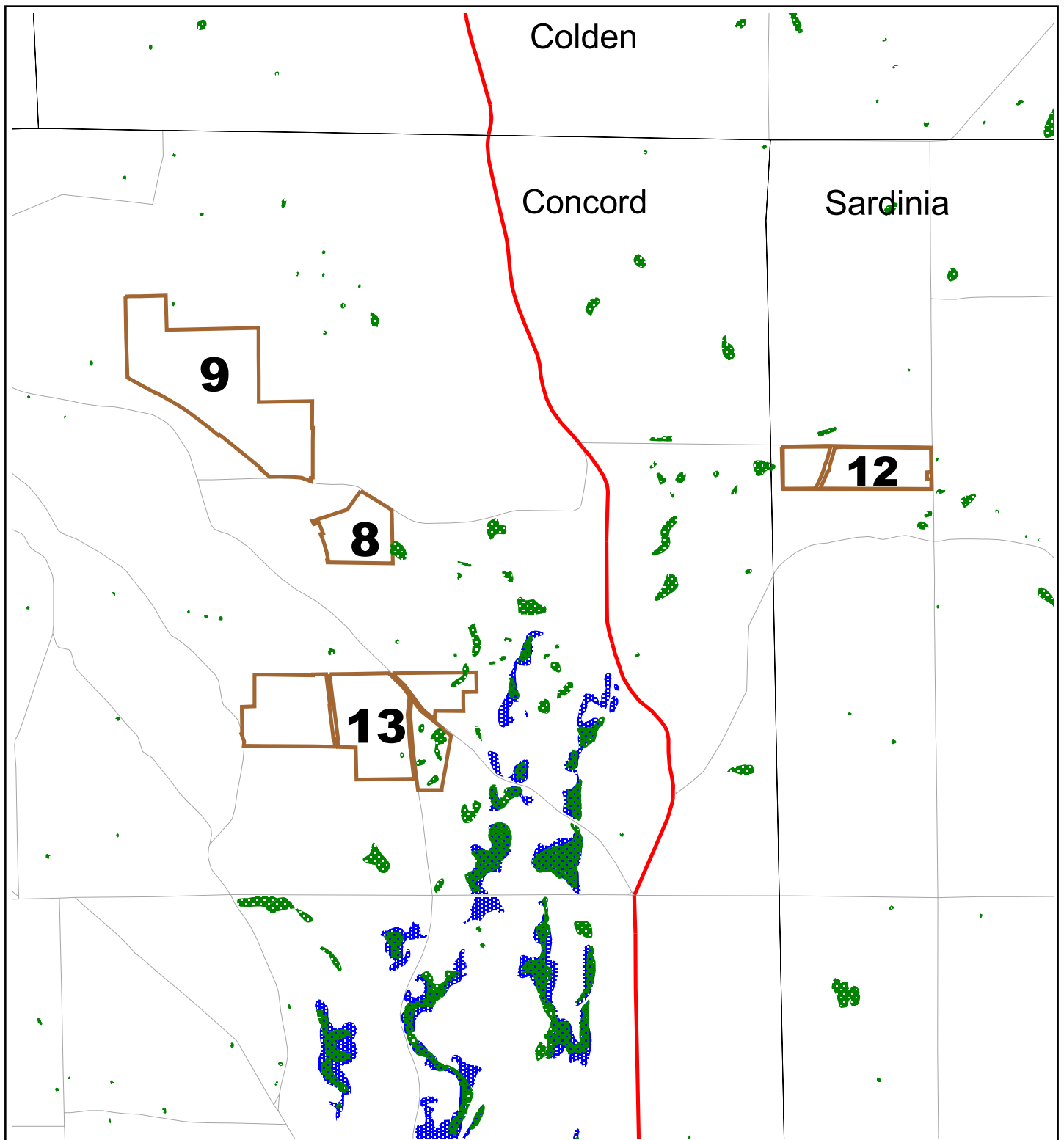
Erie County
Forest Management Plan



Map Prepared By:
Erie County Soil and Water
Conservation District

	Wetlands		Forestry Lots
	County Road		Interstate
	Federal Route		NY State Route
	National Wetlands Inventory		





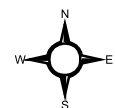
STATE AND NATIONAL WETLAND DESIGNATION

Erie County
Forest Management Plan



Map Prepared By:
Erie County Soil and Water
Conservation District

	Wetlands		Forestry Lots
	County Road		Interstate
	Federal Route		NY State Route
	National Wetlands Inventory		



600 0 600 Feet

Section II

Silvicultural Analysis and Management Recommendations



Introduction to Data Collection Processes

Earth Spirit Educational Services, Inc., a not-for-profit environmental organization, was contracted by Erie County Soil and Water Conservation District in conjunction with Erie County Bureau of Forestry to collect field data for the 2003 Erie County Forestry Management Plan. This plan, involving the analysis of thirteen County Forest Lands containing approximately 3,153 acres, seeks to update and expand upon information originally collected as part of the 1965 Erie County Forestry Management Plan. It is therefore, the goal of this project to determine the current status of these Forest Lands and to subsequently develop a responsible multi-use management plan for these forests.



An Earth Spirit crew member measures the diameter of a Red Maple that grew when the stand was an open field.

The information for this plan was collected and prepared by staff ecologists during an eleven week period between August 4 – October 17, 2003. Data sheets, developed in conjunction with the Erie County Forester, were focused in the areas of Forest Analysis, Ecological Overview and Wildlife Ecology. Following the analysis of this field data, general recommendations were provided relative to harvest potential, wildlife

habitat, soil/watershed protection and recreational/educational opportunity. And finally, these materials were forwarded to a Senior Forester with the New York State Department of Environmental Conservation in order to support his analysis and subsequent recommendations for the management of these Erie County Forest Lands.

In order to maximize the effectiveness of the field data collection, Earth Spirit staff worked in conjunction with a variety of County and State resources. For the purpose of standardizing the data collection information and procedures, Earth Spirit Ecologists joined with the Erie County Forester and representatives from both the Erie County Soil and Water Conservation District and the New York State Department of Environmental Conservation to conduct the fieldwork. These individuals, all responsible for different aspects of the Forest Management Plan, continued to meet and conduct fieldwork on a regular basis in order to ensure accuracy and consistency with regard to data collection. In addition to this team of professionals, support for the data collection process was also provided by student interns from the Environmental Studies Program at the University at Buffalo.

Upon completing the field data collection for the 2003 Erie County Forestry Management Plan, it is apparent to our staff that the County possesses valuable resources and unique opportunities. These thirteen Forest Lands (designated as Lots 1-13 in the Plan) represent a natural “treasure” that potentially enables Erie County to generate revenues through a selective harvest, protect unique and sensitive areas for wildlife and designate specific lands for recreational and educational activities. In this regard, a responsible Management Plan based on a multi-use approach and sound ecological analysis provides substantial benefits to both the natural communities and the citizens of Erie County.

Development of Stewardship Recommendations

New York State appreciates the opportunity to assist in the development of a forest management plan for Erie County Forestry. A plan for a well-managed forest starts with solid objectives, follows with descriptions of the resource and continues with recommendations and a schedule of management activities based on the objectives. The plan should help the County identify areas needing protection, areas suitable for recreation and educational study and areas which could be managed for income. Data can also be used to help the County maintain the infrastructure of roads, trails and fire lanes, critical for access and protection of public as well as private resources.

The County Forestry objectives must be clear and recorded to help guide all phases of management. Due to the location of the lands, they are subject to a large population of potential users, whether the users actually access them or only drive by them. Erie County residents obviously feel they have a right to access and utilize County lands in many ways. These uses can conflict with other uses and also with the management objectives of the County. The County must sort out which uses are consistent with the objectives, uses and capabilities of each unit of County land.

As with any management, one needs to know what is there in order to manage it properly. The field surveys just done by Earth Spirit have updated the 1965 USDA Soil Conservation Service inventory which recorded very general but still valuable data at that time. More specific data of sizes, species and density is now in place which provides a better base for decision making for all objectives. The Department of Environmental Conservation has used the Earth Spirit data and its own field checks to develop basic recommendations and priorities for forest management activities.



One of the conifer plantations nearing maturity.

The County Forestry parcels are identified as numbered Lots. Each County Lot had been broken down into 'Fields'. Some 'Fields' were indeed old pastures or agricultural fields in which were planted conifers. Other 'Fields' were originally hardwood stands. The new data collection by Earth Spirit has realigned these old 'Fields' into forest 'Stands' which have more meaning as management units. The recommendations are assigned to these new 'Stands'.



An uneven-aged hardwood stand containing high value Black Cherry and Sugar Maple.

Conifer Stands

The general recommendation given for the conifer plantations is to increase the rate of succession to indigenous species by considering a harvesting plan which would transform the conifer stand in small sections, releasing the understory hardwoods and leaving scattered mature hardwoods as seed sources to assist in regenerating these areas to hardwoods. While this decreases the non-native conifer population, it does increase species diversity, breaking up the large monotypic stands and creates more food and cover for wildlife at a low level. The sizes of these cuts should be small, only a few acres in size, with uncut areas between them and with uncut buffers left along sensitive areas needing protection from disturbance. The edges of these cuts will experience some unavoidable windthrow, but the visual impact should be minimal. The buffers would be along property boundaries, steep ravines, protected streams, protected wetlands, special educational/recreational areas and important wildlife corridors. Areas of white pines should be allowed to remain, because they are native and will typically outgrow hardwoods in the long term if grown on a suitable site. The patchwork of cut and uncut sections can be periodically revisited to transform additional sections as schedules permit.

Hardwood Stands

There are two major types of hardwood stands on County Forest land, even-aged and uneven-aged.

The even-aged stands are generally pole-sized trees (diameters 5-11") that have all grown together from an open field situation. Some of these stands are areas that were never planted with conifers. Others are areas that were planted with conifers, but either the planting failed or the conifers have rapidly declined and the ingrowth of hardwoods has come to dominate the site. The uneven-aged stands have been forested for many generations and have seen logging of some sort many times. These stands are a mix of many sizes and ages of trees that could be from one year old seedlings to tall trees hundreds of years old.

Even-aged stands in most cases should be managed for future crop trees and should have thinnings performed in them. This may be called timber stand improvement, and the material 'removed' may or may not be merchantable due to size or species. The future crop trees could have merit based on timber value, wildlife value, other values such as species diversity, aesthetics or any combination of these. Trees 'removed' during timber stand improvement may be either cut or killed. If they are pre-commercial, then they could be cut and left or killed with herbicides or by chainsaw girdling. If they are merchantable, they could be cut and removed for products such as firewood. Future crop trees in the pole stage will benefit from increased crown space and will increase their rate of radial growth and width of crown. This will shorten the time to reach sawtimber size or increase the size and development of the crown for seed production or survival. Some even-aged stands on low productivity sites would have a low priority for timber stand improvement. These stands may have adequate value by allowing them to grow naturally for wildlife, protection or educational objectives.

Another form of timber stand improvement needed in some stands is wild grapevine control. While wild grapes are a valuable food for many birds and animals, excessive growth of vines in the middle of a stand can destroy many good trees. Some stands with heavy growths of vines have recommendations to remove some vines by herbicide treatments about 2 years before any

cutting of trees is done. This will help prevent regrowth of vines after a thinning or regeneration cut. If vines are not controlled before a cut, they may then completely dominate an opening in the canopy created by tree removal, presenting severe competition for tree seedling establishment.

When even-aged stands mature and become sawtimber-size (+12" diameter), thinning is generally not recommended. However some timber stand improvement can still be done to 'remove' unwanted trees which may have low value. The low value may be due to disease, poor form, storm damage, low food value or large cull percentage. A growth response of residuals is not to be expected in these cases. But rather these trees should not be left alive after a harvest cut to interfere with natural regeneration by occupying or re-seeding the site.

There are many timber buyers in the marketplace that will be interested in the high quality maple and cherry that may become available from the County Forest land. However, not all timber will be high quality, in fact many of the first cuts should remove the worst, high risk, over-mature trees. Still, the County should have no problem finding a consultant to handle the work and the consultant should have no problem getting bids from buyers. The consultant will have a list of reputable buyers he usually sends bid prospectus sheets to that should help weed out the unscrupulous loggers. Still, it is always a good idea to have personnel periodically inspect the

harvesting to keep abreast of trail conditions and any possible problems.

The County should consider harvesting timber with a sustained yield schedule. This means that trees should be harvested on a particular schedule aimed at producing moderate income over a long period, as trees become financially mature. Such a schedule may involve a small timber sale every year or every other year in a different Lot or stand. Each Lot or stand may then experience another cut in 5-15 years. The DEC recommendations list high, medium or low priority activities, based on conditions at this time.

There are other ways of handling the harvesting of timber besides through a consultant and timber buyer. The County could consider doing the harvesting using County staff and equipment, skidding the topped trees to a landing and accepting bids from log buyers at that point. Doing this will gain a higher price for the logs than stumpage, because the woods work is already done and especially since the risk of culls or loss is being retained by the logger (the County). Veneer logs could also be identified at the landing and sold to the top bidder. Hardwood sawlogs could also be bucked and sawed at the County mill and the boards sold green. However attractive this method appears, the safety risk to County crews and the execution time, especially in winter may be prohibitive. The DEC strongly recommends that the previously suggested method be followed.

Lot 1—Field 1

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 1 Total Acres: 200 Field Number(s): 1 Acres: 30 Date: 9/05/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Sugar Maple	P-20	Medium-Heavy	17	Multiple		75	36	Good
American Beech	P-22	Light	14	Multiple		65	20	Fair
Black Cherry	14-26	Light	14	Multiple		82	38	Good
White Ash	14-20	Light	9	Multiple		82	40	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a middle aged - mature Hardwood Forest dominated by Sugar Maple (*Acer saccharum*) that has seemingly been managed as part of the Erie County Sugar Bush.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

This field contains a southwesterly flowing intermittent stream that also crosses Field Numbers 2 and 3.

Fire Lane Status

The Fire Break in this field is approximately 15 feet wide, separates Field Numbers 1 and 3 and is in need of moderate clearing and widening as well as significant crown pruning.

Lot 1—Field 1

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is characterized by the dominant species of Sugar Maple (*Acer saccharum*) along with less dominant hardwoods such as Black Cherry (*Prunus serotina*), White Ash (*Fraxinus americana*) and American Beech (*Fagus grandifolia*).

Subcanopy

The subcanopy is of medium density and is represented by Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*).

Shrub Layer

The shrub layer is of light density and includes Dogwoods (*Cornus* spp.) and Brambles (*Rubus* spp.).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), Christmas fern (*Polystichum acrostichoides*), Silvery Spleenwort (*Athyrium thelypteroides*) Cinnamon fern (*Osmunda cinnamomea*), Spinulose Woodfern (*Dryopteris spinulosa*) and New York fern (*Thelypteris noveboracensis*). There also exists a variety of clubmosses including Tree Clubmoss (*Lycopodium obscurum*) and Staghorn Clubmoss (*Lycopodium clavatum*), herbaceous plants and a heavy density of seedling growth.

Successional Status

This field represents a middle aged - mature Hardwood Forest previously managed as a Sugar Bush and possessing a dense subcanopy of climax species. This system will continue to evolve into a mature Maple dominated Climax Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns and clubmosses listed under “Herbaceous Layer” as well as Red Trillium (*Trillium erectum*).

Lot 1—Field 2

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 1 Total Acres: 200 Field Number(s): 2 Acres: 30 Date: 8/05/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Sugar Maple	P-36	Heavy	15	Multiple		85	42	Good
White Ash	P-24	Light	24	Multiple		72	40	Good
Black Cherry	P-14	Light	18	Multiple		85	24	Fair
American Beech	S/P	Light		Multiple				
Basswood	P	Light		Multiple				
Hophornbeam	P	Light		Multiple				

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature Hardwood Forest dominated by Sugar Maple (*Acer saccharum*) that has seemingly been managed as part of the Erie County Sugar Bush.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

This field contains a southwesterly flowing intermittent stream that also crosses Field Numbers 1 and 3.

Fire Lane Status

The Fire Break in this field is approximately 20 feet wide and is in need of moderate clearing and widening as well as significant crown pruning. The two north-south Fire Breaks designated in the original Forestry Management Plan (1965) are no longer in existence.

Lot 1—Field 2

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is characterized by the dominant species of Sugar Maple (*Acer saccharum*) along with less dominant hardwoods such as Black Cherry (*Prunus serotina*) and White Ash (*Fraxinus americana*).

Subcanopy

The subcanopy is of light density and is represented by Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*).

Shrub Layer

The shrub layer is of light density and includes Dogwoods (*Cornus* spp.) and Brambles (*Rubus* spp.).

Herbaceous Layer

The herbaceous layer is of heavy density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), Christmas fern (*Polystichum acrostichoides*), New York fern (*Thelypteris noveboracensis*), Marsh fern (*Thelypteris palustris*) and Sensitive fern (*Onoclea sensibilis*). There also exists a variety of clubmosses including Tree Clubmoss (*Lycopodium obscurum*) and Staghorn Clubmoss (*Lycopodium clavatum*) and scattered herbaceous plants.

Successional Status

These fields represent a mature Hardwood Forest that has been previously managed as a Sugar Bush and will continue to evolve as a Maple dominated Climax Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns and clubmosses listed under “Herbaceous Layer” with the exception of Sensitive fern (*Onoclea sensibilis*). Helleborine (*Epipactis helleborine*), a forest Orchid, is also protected.

Lot 1—Field 3

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 1 Total Acres: 200 Field Number(s): 3 Acres: 50 Date: 8/05/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Red Maple	S-P	Heavy		Multiple		45 20	Poor
Scotch Pine	S/P	Medium		Even	33	35	Poor
Red Pine	S/P	Light		Even	33	35	Poor
Black Cherry	P-14	Light	17	Multiple		70 30	Fair
White Ash	P-14	Light	13	Multiple		64 20	Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents an Old Field/Shrubland transitioning into a young Secondary Hardwood Forest. There also exists scattered wildlife plantings of various conifers. The Black Cherry (*Prunus serotina*) and White Ash (*Fraxinus americana*) are generally concentrated along the stream boundaries.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

This field contains a southwesterly flowing intermittent stream that also crosses Field Numbers 1 and 2.

Fire Lane Status

The Fire Break in this field is approximately 20 feet wide and is in need of moderate clearing, widening, mowing and significant crown pruning.

Lot 1—Field 3

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of light density and is characterized by the dominant species of Red Maple (*Acer rubrum*) along with White Ash (*Fraxinus americana*) and Black Cherry (*Prunus serotina*).

Subcanopy

The subcanopy is of light density and is represented by Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*).

Shrub Layer

The shrub layer is of light density and includes Dogwoods (*Cornus* spp.) and Brambles (*Rubus* spp.).

Herbaceous Layer

The herbaceous layer is of heavy density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), Spinulose Woodfern (*Dryopteris spinulosa*), Sensitive fern (*Onoclea sensibilis*), Lady fern (*Athyrium Filix-femina*) and Interrupted fern (*Osmunda claytoniana*).

Successional Status

This field represents an Old Field/Shrubland transitioning into a young Secondary Hardwood Forest of Red Maple (*Acer rubrum*), White Ash (*Fraxinus americana*) and Black Cherry (*Prunus serotina*). In time, this system will gradually evolve into a Sugar Maple (*Acer saccharum*) dominated Climax Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*). Helleborine (*Epipactis helleborine*), a forest orchid and the clubmoss Ground Cedar (*Lycopodium tristachyum*) are also protected.

Lot 1—Fields 4, 5, 6 and 7

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 1 Total Acres: 200 Field Number(s): 4,5,6,&7 Acres: 48 Date: 8/05/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Norway Spruce	10-16	Heavy	20	Even	76	78	Good
Red Pine	10-16	Medium	30	Even	76	78	Good
White Pine	10-14	Light	24	Even	76	78	Fair
Black Cherry	12-16	Light		Multiple			
Sugar Maple	S/P	Light		Multiple			
White Ash	12-16	Light		Multiple			

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent Conifer Plantations of Norway Spruce (*Picea abies*), Red Pine (*Pinus resinosa*) and White Pine (*Pinus strobus*). Hardwood intrusions presently exist in all levels of the Conifer Forests.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
These fields contain Dresser Creek, a major four season stream of the area.

Fire Lane Status

The Fire Breaks in these fields are approximately 20-25 feet wide and are in need of significant edge and crown pruning.

Lot 1—Fields 4, 5, 6 and 7

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium - heavy density and is characterized by mature conifers such as Norway Spruce (*Picea abies*), Red Pine (*Pinus resinosa*) and White Pine (*Pinus strobus*) along with some mature hardwoods represented by Black Cherry (*Prunus serotina*) and White Ash (*Fraxinus americana*).

Subcanopy

The subcanopy is of light density and is represented primarily by Sugar Maple (*Acer saccharum*) and White Ash (*Fraxinus americana*).

Shrub Layer

The shrub layer is of very light density and includes Dogwoods (*Cornus* spp.) and Brambles (*Rubus* spp.).

Herbaceous Layer

The herbaceous layer is of light density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), Spinulose Woodfern (*Dryopteris spinulosa*) and New York fern (*Thelypteris noveboracensis*).

Successional Status

These fields represent mature Conifer Plantations in the mid - late stages of hardwood succession.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera tartarica*)

Protected: All ferns listed under “Herbaceous Layer”.

Lot 1—Fields 8, 9 and 11

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 1 Total Acres: 200 Field Number(s): 8,9,11 Acres: 14 Date: 8/05/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Red Pine	10-15	Heavy	31	Even	76	78	Good
Sugar Maple	S/P	Heavy		Multiple			Poor
White Ash	S	Medium		Multiple			Poor
White Pine	10-18	Light	20	Even	76	70	Fair
Black Cherry	18-22	Light		Multiple		75 34	Good
American Beech	S	Light		Multiple			Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature Conifer Plantations dominated by Red Pine (*Pinus resinosa*) along with a significant intrusion of mixed hardwoods in all forest levels.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
None

Fire Lane Status

The Fire Breaks in these fields are approximately 20-25 feet wide and are in need of moderate clearing and edge/crown pruning.

Lot 1—Fields 8, 9 and 11

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is characterized by Red Pine (*Pinus resinosa*) and White Pine (*Pinus strobus*) along with a light intrusion of Black Cherry (*Prunus serotina*).

Subcanopy

The subcanopy is of heavy density and is represented primarily by Sugar Maple (*Acer saccharum*) along with other subdominant hardwoods.

Shrub Layer

The shrub layer is of light density and includes Dogwoods (*Cornus* spp.) and Brambles (*Rubus* spp.).

Herbaceous Layer

The herbaceous layer is of light density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), New York fern (*Thelypteris noveboracensis*) and Hayscented fern (*Dennstaedtia punctilobula*).

Successional Status

These fields represent mature Conifer Plantations of Red Pine (*Pinus resinosa*) in the mid stages of hardwood succession. Sugar Maple (*Acer saccharum*), the dominant species of the subcanopy, will gradually out compete the conifers as these systems further evolve into a Hardwood Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Hayscented fern (*Dennstaedtia punctilobula*).

Lot 1—Field 10

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 1 Total Acres: 200 Field Number(s): 10 Acres: 7 Date: 8/05/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Norway Spruce	10-18	Heavy	17	Even	76	78	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature Norway Spruce (*Picea abies*) Plantation generally absent of hardwood intrusion.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
None

Fire Lane Status

The primary Fire Break in this field is approximately 20 feet wide and is in need of moderate widening as well as edge/crown pruning while another north-south Fire Break borders an open field.

Lot 1—Field 10

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of heavy density and is dominated by Norway Spruce (*Picea abies*).

Subcanopy

The subcanopy is not present.

Shrub Layer

The shrub layer is not present.

Herbaceous Layer

The herbaceous layer is of light density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*) and New York fern (*Thelypteris noveboracensis*).

Successional Status

This field represents a Norway Spruce (*Picea abies*) Plantation whose dense canopy has restricted hardwood intrusion.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer.”

Lot 1—Fields 12 and 13

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 1 Total Acres: 200 Field Number(s): 12 & 13 Acres: 17 Date: 8/05/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
(see below)							

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent areas of well maintained mowed lawns.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
These fields contain Dresser Creek, a major southerly flowing four season stream.

Fire Lane Status

The Fire Breaks in these fields meander through open terrain and are in good condition.

Lot 1—Fields 12 and 13

FIELD WORKSHEET #2 *ECOLOGICAL ANALYSIS*

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is not present.

Subcanopy

The subcanopy is not present.

Shrub Layer

The shrub layer is not present.

Herbaceous Layer

The herbaceous layer is of heavy density and is dominated by a variety of field grasses and herbs.

Successional Status

These fields represent well maintained mowed lawns. As active management continues in these fields, shrub and tree species will remain restricted.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: None

Lot 1—Field 14

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 1 Total Acres: 200 Field Number(s): 14 Acres: 2 Date: 8/06/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Austrian Pine	P-12	Heavy	16	Even	38	58	Poor
Black Cherry	P-14	Light		Multiple		72 22	Poor
Sugar Maple	S/P	Light		Multiple			Poor
American Beech	P	Light		Multiple			Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a middle aged Austrian Pine (*Pinus nigra*) Plantation that is generally overcrowded and is in the mid stages of hardwood succession.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

This field contains a southerly flowing intermittent stream.

Fire Lane Status

The Fire Break in this field is represented as a field border along Genesee Road.

Lot 1—Field 14**FIELD WORKSHEET #2
ECOLOGICAL ANALYSIS****Ecological Overview****Forest Physiognomy** (outer appearance)Canopy

The canopy is of medium density and is characterized by Austrian Pine (*Pinus nigra*) along with a light intrusion of Black Cherry (*Prunus serotina*).

Subcanopy

The subcanopy is of medium density and is represented by a variety of hardwood species such as Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*).

Shrub Layer

The shrub layer is of light density and is dominated by Northern Arrowwood (*Viburnum recognitum*).

Herbaceous Layer

The herbaceous layer is of light density and is dominated by Tree Clubmoss (*Lycopodium obscurum*), Ground Cedar (*Lycopodium tristachyum*), Sensitive fern (*Onoclea sensibilis*) and Interrupted fern (*Osmunda claytoniana*) along with a variety of herbs.

Successional Status

This field represents a middle aged Austrian Pine (*Pinus nigra*) Plantation in the mid stages of transitioning into a Hardwood Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns and clubmosses listed under “Herbaceous Layer” except for Sensitive fern (*Onoclea sensibilis*).

Lot 1 Summary and Recommendations

FIELD WORKSHEET #3 WILDLIFE SUMMARY

Lot # 1 offers an excellent variety of habitats for diverse populations of wildlife species. Field Numbers 1 and 2 represent middle aged and mature Hardwood Forests. Field Number 3 includes an extensive Old Field/Shrubland transitioning into a young forest. Field Numbers 4-11 and 14 all represent Conifer Plantations in various stages of hardwood intrusion and Field Numbers 12 and 13 are managed as mowed lawns. In addition to these varied environments, Lot # 1 also contains several intermittent streams as well as Dresser Creek, a major four season stream.

During a period of two days (one of which included extensive rain), staff ecologists recorded a variety of wildlife observations based upon actual sightings and other wildlife “signs”. The following list represents a brief overview of those encounters focused upon Mammals, Birds and Reptiles/Amphibians.

Mammals

Whitetail Deer (<i>Odocoileus virginianus</i>)	Red Fox (<i>Vulpes fulva</i>)
Gray Squirrel (<i>Sciurus carolinensis</i>)	Raccoon (<i>Procyon lotor</i>)
Red Squirrel (<i>Tamiasciurus hudsonicus</i>)	Woodchuck (<i>Marmota monax</i>)
Eastern Chipmunk (<i>Tamias striatus</i>)	Coyote (<i>Canis latrans</i>)
Eastern Cottontail (<i>Sylvilagus floridanus</i>)	Meadow Vole (<i>Microtus pennsylvanicus</i>)

Birds

Black-capped Chickadee (<i>Parus atricapillus</i>)	Hermit Thrush (<i>Catharus guttatus</i>)
Pileated Woodpecker (<i>Dryocopus pileatus</i>)	Broad-winged Hawk (<i>Buteo platypterus</i>)
Song Sparrow (<i>Melospiza melodia</i>)	Great Crested Flycatcher (<i>Myiarchus crinitus</i>)
Redtail Hawk (<i>Buteo jamaicensis</i>)	Dark-eyed Junco (<i>Junco hyemalis</i>)
Blue Jay (<i>Cyanocitta cristata</i>)	Hairy Woodpecker (<i>Dendrocopos villosus</i>)
Common Crow (<i>Corvus brachyrhynchos</i>)	

Reptiles/Amphibians

Dusky Salamander (<i>Desmognathus fuscus</i>)	Wood Frog (<i>Rana sylvatica</i>)
Red-spotted Newt (<i>Notophthalmus viridescens</i>)	American Toad (<i>Bufo americanus</i>)
Red-backed Salamander (<i>Plethodon cinereus</i>)	

FIELD WORKSHEET #4 RECOMMENDATIONS

The following recommendations for Lot #1 of the Erie County Forestry Management Plan are based upon field data collected by Earth Spirit Educational Services, Inc. in the areas of Forest Ecology, Wildlife Biology and general Ecology.

Field Number 1

Description - This field represents a middle aged - mature Hardwood Forest dominated by Sugar Maple (*Acer saccharum*) and managed as part of the Erie County Sugar Bush.

Recommendations - This field should be managed in order to maintain the integrity of the Sugar Bush. In this regard, subcanopy species should be thinned and selected hardwoods such as Black Cherry and White Ash should be harvested.

Field Number 2

Description - This field represents a mature Hardwood Forest dominated by Sugar Maple (*Acer saccharum*) and managed as part of the Erie County Sugar Bush.

Recommendations - see “Recommendation” for Field Number 1.

Field Number 3

Description - This field represents an Old Field/Shrubland transitioning into a young forest and also includes a moderately sized Conifer Plantation dominated by Scotch Pine (*Pinus sylvestris*).

Recommendations - This field should remain without treatment in order to enhance habitat diversity, control soil erosion and provide food and cover for wildlife.

Field Numbers 4 - 7

Description - These fields represent mature Conifer Plantations of Norway Spruce (*Picea abies*), Red Pine (*Pinus resinosa*) and White Pine (*Pinus strobus*).

Recommendations - These fields, as a result of hardwood intrusion and over competition, are experiencing slow growth and general decline. It is recommended then, that these Plantations be actively managed, especially those fields that border and shade out the two major Maple Sugaring trunk lines. These areas, in particular, should be cleared significantly (50 feet on both sides of the trunk lines) in order to enhance the production of the Sugar Bush. Field Number 6 however, due to its steep topography, should remain without treatment in order to control soil erosion and protect the watershed (Dresser Creek).

Field Numbers 8, 9 & 11

Description - These fields represent mature Conifer Plantations in the mid stages of hardwood succession.

Recommendations - These fields of mature Red Pine and White Pine Plantations currently serve as both important vegetative buffers for Genesee Road and significant environments for recreational use. As a result, these plantations should remain without treatment at this time.

Field Number 10

Description - This field represents a mature Norway Spruce (*Picea abies*) Plantation generally absent of hardwood intrusion.

Recommendations - This field of mature conifers should be actively managed.

Field Number 12 & 13

Description - These fields represent areas of well maintained mowed lawns.

Recommendations - These fields should be managed in their present state in order to preserve these areas for public use through potential recreational and/or educational activities.

Field Number 14

Description - This field represents a mature Austrian Pine (*Pinus nigra*) Plantation that is generally overcrowded.

Recommendations - This field should remain without treatment in order to allow this plantation to enhance habitat diversity, control soil erosion, provide food and cover for wildlife and act as a buffer along Genesee Road.

Lot 1

Soils, Waterways and Topography

Soils

Lot 1 contains predominately moderately well drained Mardin Channery Silt Loam soils (MdB, MdC and MdD), with 3-25% slopes, and moderate permeability above a fragipan at a depth of 16 to 50 inches. The steeper areas of these soils are highly erodible and the gentle sloping areas (MdB) are potentially highly erodible. A small rise of the somewhat poorly drained Volusia Channery Silt Loam (VpB), with 3-8% slopes and moderate permeability, bisects the Mardin soils. The southern portion of the lot contains linear areas of the well drained to poorly drained Fluvaquents and Udifluvents (Fu) soils, formed in recent stream deposits. These are hydric soils with variable permeability. A fan of Chenango Channery Silt Loam, Fan (CIB), with 3-8% slopes and moderate permeability, lies adjacent to the Fu soils. This highly erodible soil underlies the Forest's sugar house and sawmill.

Waterways and Topography

Dresser Creek flows through Lot 1 from the east toward the south border of the lot on Genesee Road and has formed a steep, forested gully, limiting forest maintenance on the steep slopes. An unnamed stream crosses the southwest corner of the lot, also flowing under Genesee Road. Generally, the lot slopes from north to south. Dresser Creek is a Class C stream, and a tributary of Cattaraugus Creek. Fish habitat in Cattaraugus Creek is stressed, primarily due to streambank erosion, with secondary pollutants of resource extraction, agriculture, road bank erosion and construction. Proper forest management practices should be utilized to prevent or minimize soil erosion and the introduction of sediment into streams and gullies.

Lot 1

Forest Stewardship Recommendations

Stand A (Fields 1, 2)

This is an uneven-aged stand of northern hardwoods containing mostly mature sugar maples, with a few white ash and black cherry. Some are part of the sugar bush. This stand should be thinned to a residual basal area of 70-80 square feet/acre which would maximize sap production and produce some sawlogs. Understory saplings of ironwood should be removed. Recheck in 10 years.

Stand B (Field 3)

This is an even-aged stand of large, pole-sized northern hardwoods, including clump red maples, white ash, black cherry, sugar maple and aspen. This pole stand is near the optimal size to thin, however the stand is currently adequately stocked. Since the diameter growth is about 2" in 15 years, recheck in 10 years.

Stand C (Fields 4 - 10)

These are mature conifer plantations including red, white and Scots pine, Norway spruce and larch with scattered hardwoods of cherry and ash. The mature pines, along with any hardwoods above 20" diameter or that are high risk, should be scheduled for harvesting to complete the transition to native hardwoods. Leave no-cut, buffer strips along creeks; especially wide on steep slopes.

Stand D (Fields 11, 14)

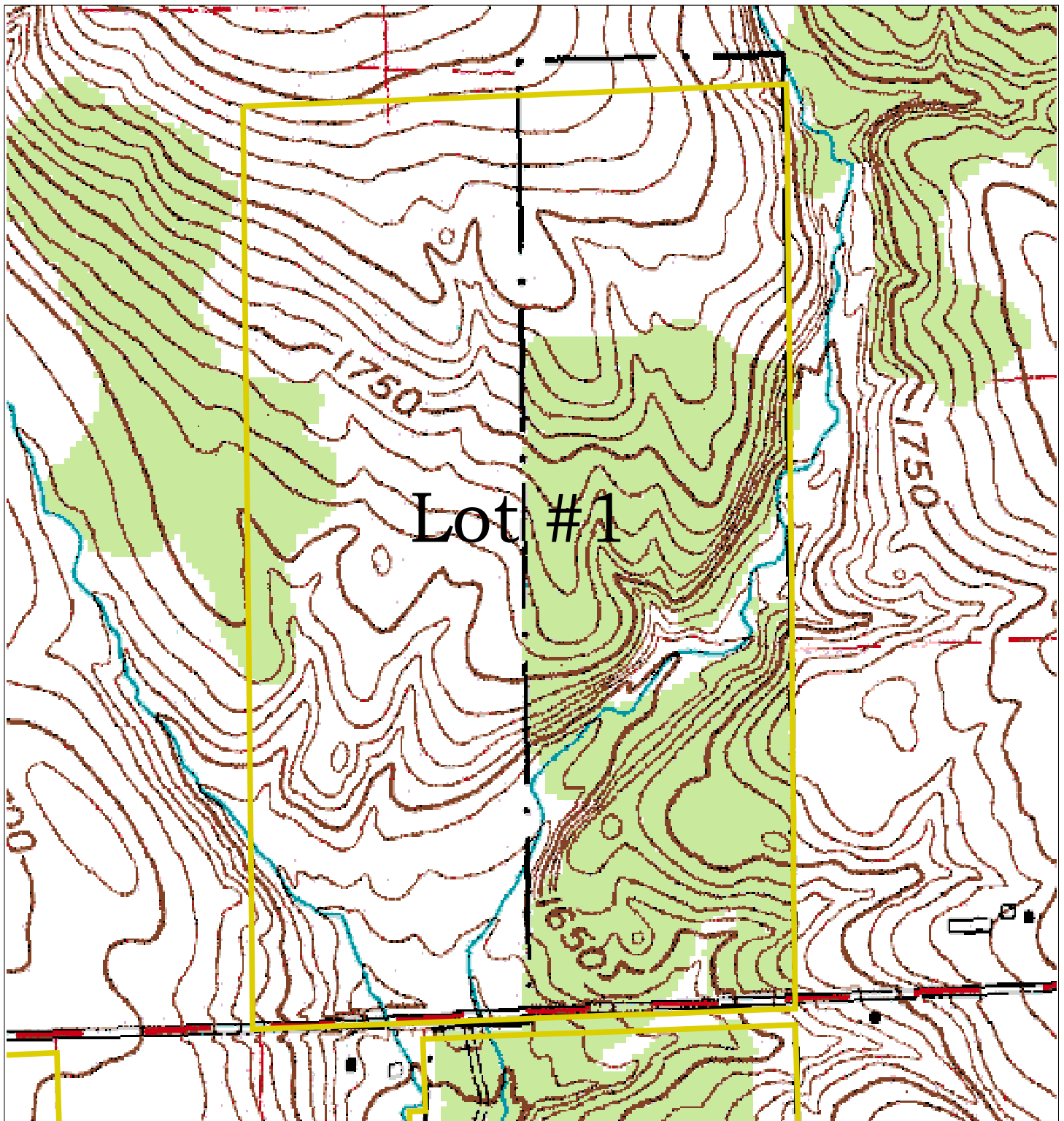
These are plantations of Austrian and red pine along the road with poor form on soils with poor internal drainage. Consider a low, non-commercial thinning to help develop the hardwood understory and to prevent overstory windthrow. Leave at least 100-200 feet of a no-cut buffer along the road. Recheck in 10 years.

Stand E (Fields 12, 13)

These are open fields with structures and parking lots. Continue current management.

General

Best Management Practices (BMPs) for erosion control should be followed on the fire lanes used as vehicle and horse trails. Some erosion is occurring on the long slopes.

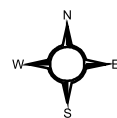


Erie County Forest Management Plan

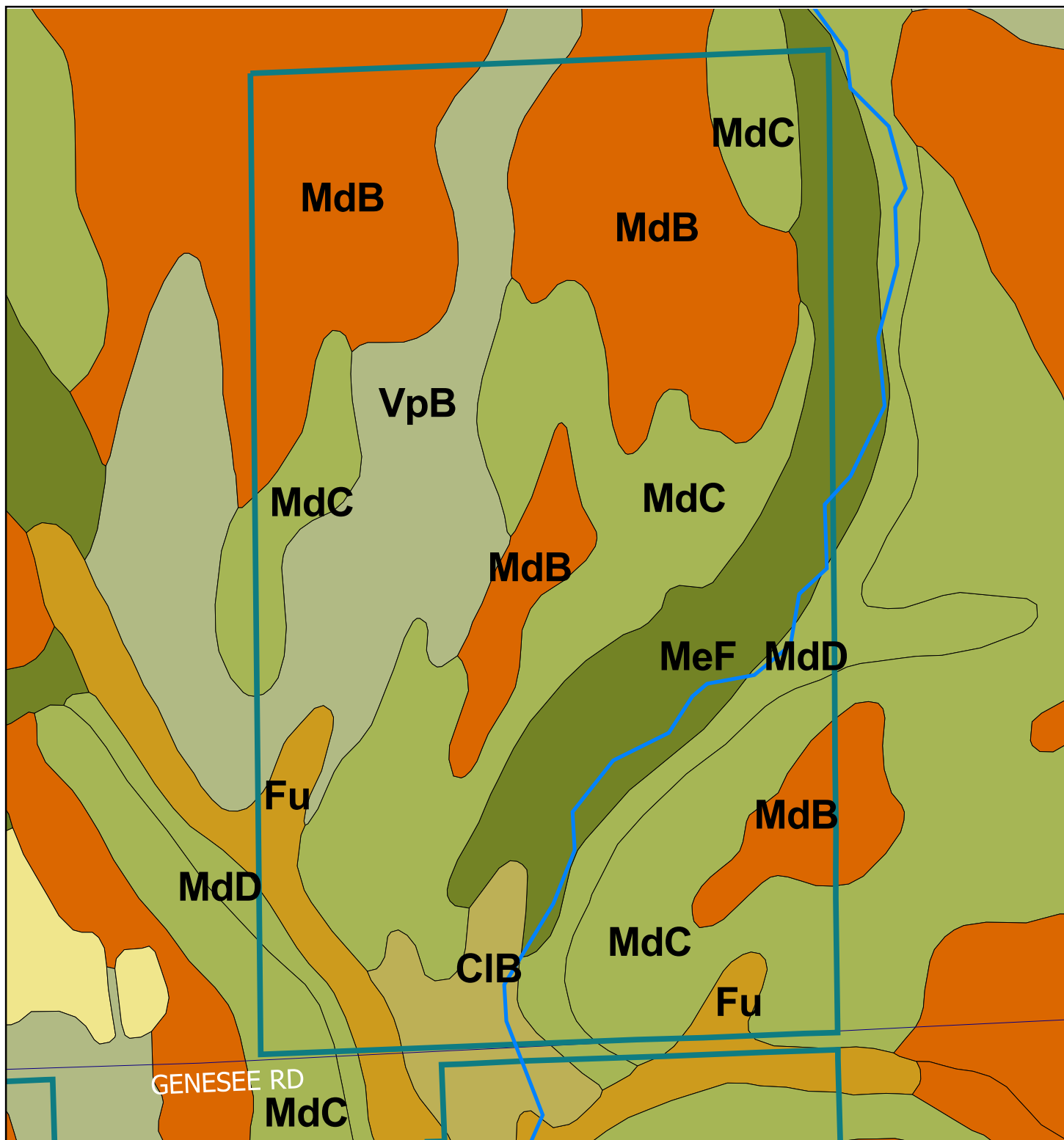
USGS TOPOGRAPHIC QUADRANGLE



Map Prepared By:
Erie County Soil and Water
Conservation District



500 0 500 Feet

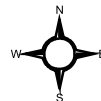


Erie County Forest Management Plan

LOT #1 - SOIL TYPES



Map Prepared By:
Erie County Soil and Water
Conservation District



200 0 200 400 600 Feet

Brief Soil Descriptions – Lot 1

For further information refer to the *Soil Survey of Erie County, New York*.

Symbol

Name / Description

CIB *Chenango Channery Silt Loam, Fan, 3 to 8 Percent Slopes*

Deep, nearly level to gently sloping, well-drained, low lime, channery silt loam soil formed in gravel and sand. The available water capacity is low. Permeability is moderate to rapid in the surface soil and subsoil and generally rapid or very rapid in the substratum. PRIME FARMLAND, POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIs, NYS SOIL GROUP-2b, K=.24, T=3

Fu *Fluvaquents and Udifluvents, Frequently Flooded*

Moderately deep to deep, nearly level, well drained to poorly drained, high to low lime, variable soils formed in recent stream deposits. The available water capacity and permeability are variable. No K or T values are assigned. HYDRIC SOIL, CAPABILITY CLASS-Vw, NYS SOIL GROUP-9

MdB *Mardin Channery Silt Loam, 3 to 8 Percent Slopes*

Deep, gently sloping, moderately well drained and well drained, low lime, channery silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIw, NYS SOIL GROUP-4b, K=.24, T=3

MdC *Mardin Channery Silt Loam, 8 to 15 Percent Slopes*

Deep, sloping, moderately well drained and well drained, low lime, channery silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-6b, K=.24, T=3

MdD Mardin Channery Silt Loam, 15 to 25 Percent Slopes

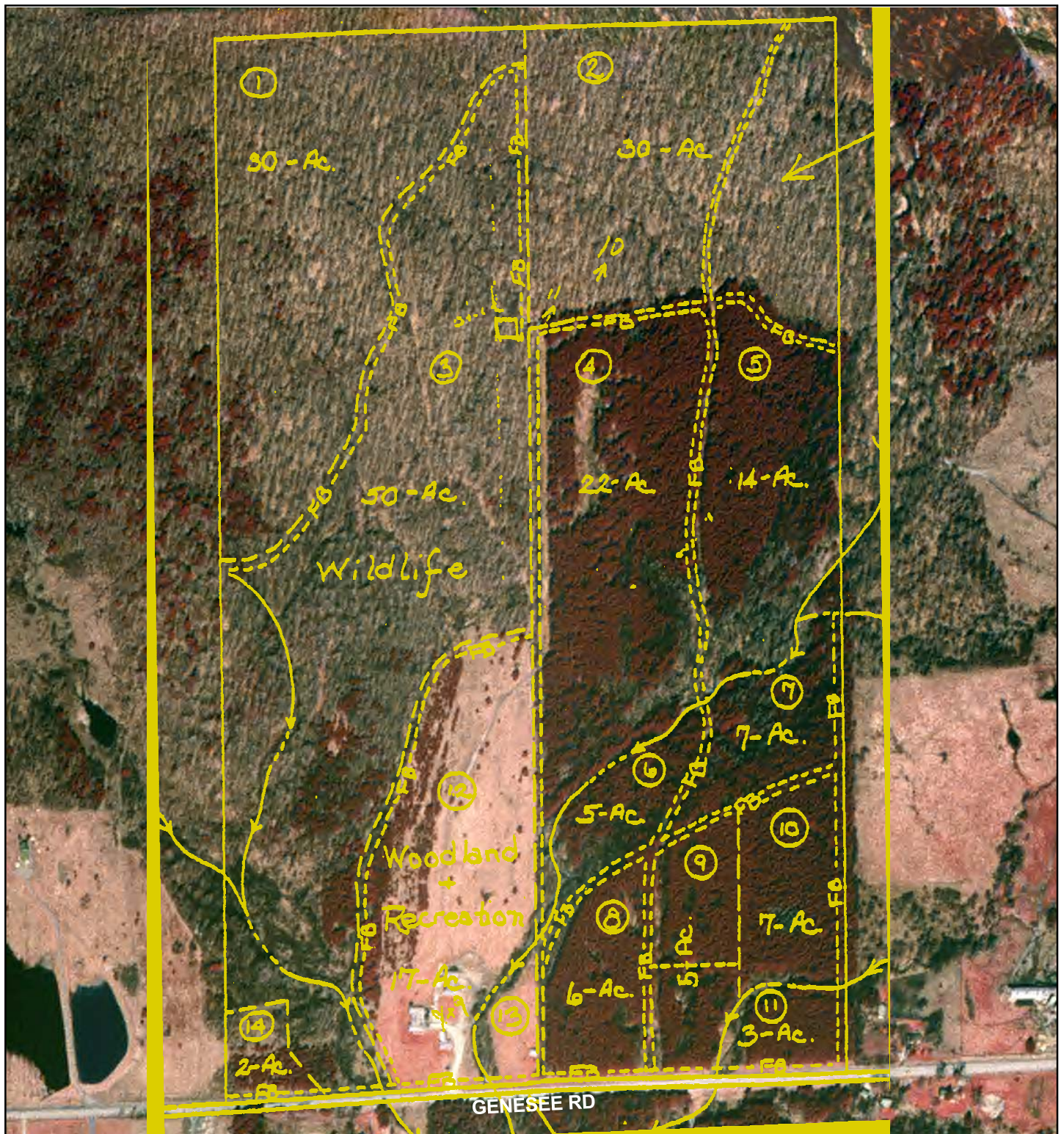
Deep, moderately steep, moderately well drained and well drained, low lime, channery silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-9b, K=.24, T=3

MeF Mardin-Valois Complex, 25 to 50 Percent Slopes

Deep, very steep, well-drained, low lime soil formed in coarse loamy glacial till. The Mardin soil has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability ranges from moderate to slow. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-VIIe, NYS SOIL GROUP-9b, K=.24, T=3

VpB Volusia Channery Silt Loam, 3 to 8 Percent Slopes

Deep, gently sloping, somewhat poorly drained, low lime, channery silt loam soil formed in fine loamy glacial till. It has a very firm fragipan at a depth of 15 to 50 inches. The available water capacity is moderate to low. Permeability is generally moderate above the fragipan and slow to very slow in the fragipan. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIW, NYS SOIL GROUP-6b, K=.24, T=3



1965 CONSERVATION PLAN MAP

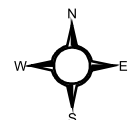
Erie County
Forest Management Plan

LOT # 1

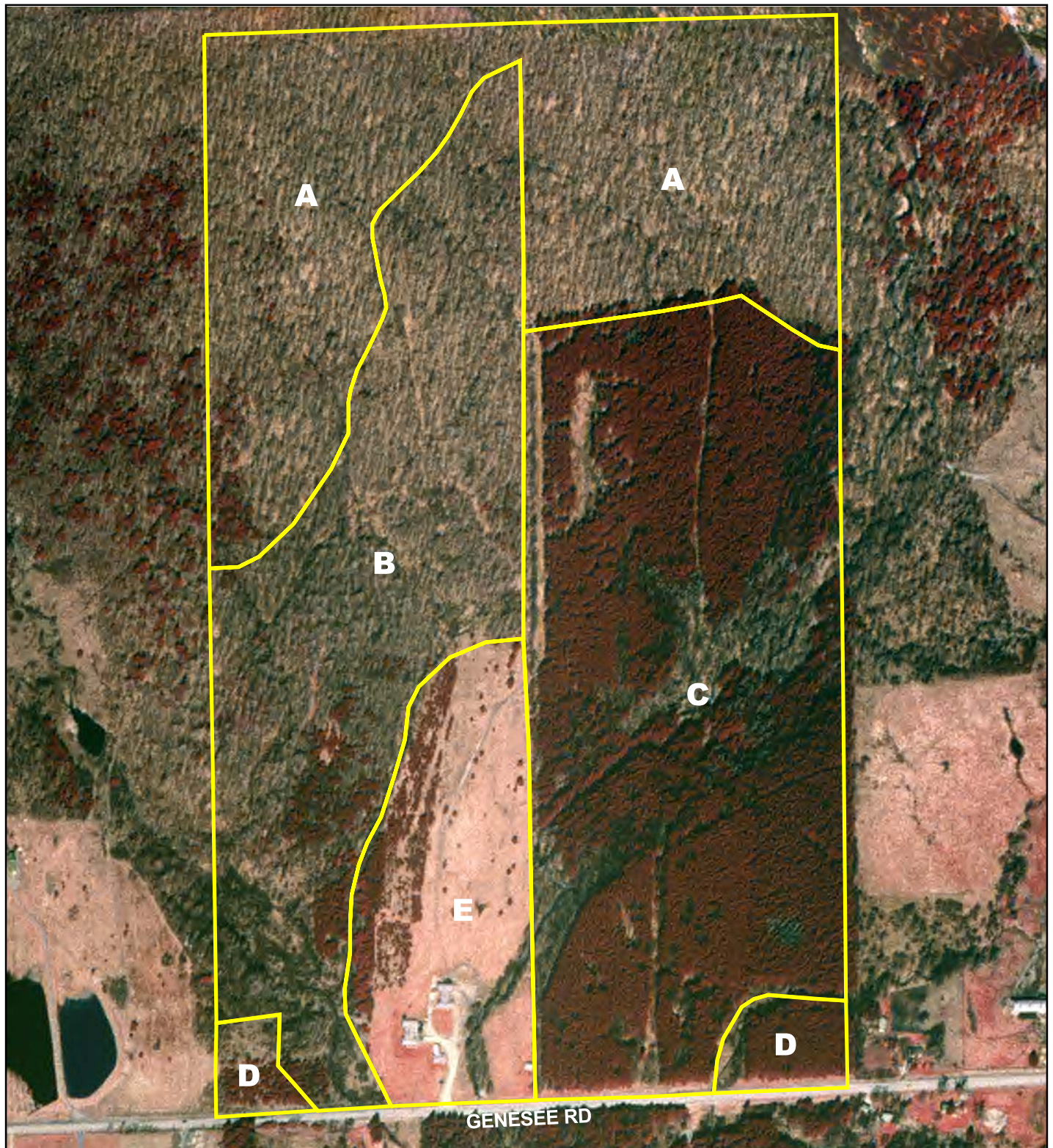


Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



400 0 400 Feet



2003 STEWARDSHIP RECOMMENDATION MAP

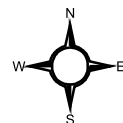
Erie County
Forest Management Plan

LOT # 1



Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



200 0 200 400 Feet



Lot 2 Analysis

In September 2001, Earth Spirit Educational Services Inc. completed a yearlong survey of Lot 2 for the purpose of developing these Forest Lands and a former 4H Camp contained within them as part of the new Woodlands Environmental Education Center. This extensive survey, including a detailed resource analysis and management plan, is focused specifically upon utilizing this 852-acre site for day-use and residential environmental education programming. As a result of this prior fieldwork and subsequent management recommendations, it was determined that Lot 2 be excluded from the data collection processes developed for the other Erie County Forest Lands.

For additional information regarding Lot 2, please refer to the publication entitled, “The Woodlands Environmental Education Center – Resource Analysis and Management Plan.” This Plan details analysis in the following general areas:

I. Resource Analysis

- A. History and Land Use Patterns
- B. Habitat Analysis
- C. Soil Survey
- D. Soil Conservation and Land Management

II. Management Plan

- A. Trail Design
- B. Demonstration Gardens
- C. Wildlife Projects

III. Appendix

- A. Land Acquisitions (1928-1963)
- B. Erie County Conservation Management Plan (1965)
- C. Glossary of Soil Management Terms
- D. Wildlife Projects – Supplemental Material

Recommendations

During the past three years, The Woodlands Environmental Education Center has experienced much progress in the areas of both site and program development (see following page). Since Lot 2 is being managed primarily for educational purposes, it is recommended that designated Conifer Plantations be managed using varied techniques (i.e. selective and patch harvests, release cuttings, etc.) in order to promote teaching concepts in the areas of Forest Succession and Management.

The Woodlands Environmental Education Center

General Information

The following information is designed to offer a general overview (present and projected) of The Woodlands Environmental Education Center with regard to the property, partnership and developmental status of the facility.

The Property

The Woodlands Environmental Education Center is comprised of 1000 acres of Erie County Forest lands on Genesee Road in the Town of Sardinia, New York. This property, along with its accompanying structures, was a former seasonal 4-H Camp (1965-1990) which has been in disuse for approximately ten years. The current structures, all requiring renovation and/or reconstruction, include a caretaker's residence and offices, dining hall, nurse's cottage, barn, open shelter and primitive cabins. The land itself is well represented by a variety of unique habitats including northern hardwood forests, conifer plantations, a two acre pond, two major creek systems, marshlands, beaver meadows and open fields.

The Partnership

The Woodlands Environmental Education Center, formally established in the Spring of 2001, was developed as a joint partnership between Erie County Bureau of Forestry (Department of Parks, Recreation and Forestry), Earth Spirit Educational Services, Inc. (a not-for-profit environmental education organization) and The State University of New York at Buffalo (Environmental Studies Program). This unique partnership will assume the following responsibilities:

Erie County Bureau of Forestry – owns, maintains and manages all buildings and grounds

and assists with the development and implementation of all infrastructure and resource management projects.

Earth Spirit Educational Services, Inc. – develops, implements and administers a day-use and residential environmental education program for schools, community groups and the general public of Erie County and all of Western New York.

University at Buffalo – develops a Field Campus for the Environmental Studies Program (and other Natural Science Departments) involving ongoing student internships, field studies coursework and environmental research projects.

Developmental Status

Phase 1: Fall 2000 – Summer 2001

The following tasks were completed during Phase 1 of this project:

- General site inventory and clean-up.
- A year-long series of Public Programs involving a wide range of Environmental Education field studies.
- Repair and reconstruction of the caretaker's residence utilizing existing Erie County resources.



The newly renovated caretaker's residence is one of many building improvements at The Woodlands.



The dining hall at The Woodlands under reconstruction.

- Completed the contractual arrangements between Erie County Department of Parks, Recreation and Forestry, Earth Spirit Educational Services, Inc. and the State University of New York at Buffalo.
- A Resource Analysis and Management Plan for the site was developed under the auspices of Earth Spirit Educational Services, Inc. and involved the year-long efforts of student interns from the University at Buffalo (Environmental Studies Program).
- Earth Spirit Educational Services, Inc. received a full-time AmeriCorps *VISTA volunteer for Summer 2001 to conduct programs and assist with the compilation of the Resource Analysis and Management Plan.
- Established a fundraising committee to implement the Management Plan.

Phase 2: Fall 2001-Summer 2003

The following tasks were completed during Phase 2 of this project:

- Conducted a Fundraiser (Nature Festival) in the Spring of 2002.
- Had a caretaker/naturalist move into the newly renovated caretaker's residence. This individual provides a "presence" on the site

and is also responsible for conducting ongoing programs for the general public.

- Received a grant from Waste Management, Inc. to conduct environmental programs in the Spring and Summer of 2003.
- Organized a volunteer work crew to assist on a variety of site development projects.
- Received a donation from Erie Community College (North Campus) of commercial kitchen equipment valued at approximately \$30,000.
- Continued an ongoing series of Public Programs at The Woodlands and other County Lands.
- Demolished and disposed of various unsafe structures at The Woodlands with the assistance of both volunteer and Erie County Department of Corrections work crews.
- Conducted selected residential school programs at The Woodlands.
- Earth Spirit Educational Services, Inc. presently has two full-time AmeriCorps *VISTA volunteers serving as Environmental Educators.
- Developed and implemented two University at Buffalo courses entitled Environmental Education Practicums I and II (SSC479/480). In conjunction with this course work, two one-week Ecology Camps were offered to middle/high school students from Erie County.

The Woodlands Environmental Education Center should be fully functional as a year-round residential facility by the Fall of 2004. At that time, the center will be staffed with Earth Spirit naturalists and University at Buffalo student interns and will, as a result, be the only Residential Center in Western New York that provides both the physical and educational resources for a comprehensive environmental program.

Lot 2

Soils, Waterways and Topography

Soils

The soils on Lot 2 are primarily moderately well drained Mardin Channery Silt Loam (MdB, MdC and MdD), 3-25% slopes, and somewhat poorly drained Volusia Channery Silt Loam (VpA and VpB), 0-8% slopes. These soils occur on the uplands, are potentially highly erodible and have moderate to slow permeability. The well drained, highly erodible Chenango Gravelly Loam (Ckb, CkC and CkD), and Chenango Channery Silt Loam (CiB), with 3-25% slopes, can be found in the floodplain areas, along with the poorly drained, hydric Fluvaquents and Udifluvents (Fu) soils. The well drained, potentially highly erodible Valois Gravelly Silt Loam (VaB), 3-8% slopes, and well drained, highly erodible Valois Gravelly Silt Loam (VaD), 15-25% slopes, are located adjacent to the stream channels. This lot contains many areas of erodible soils and should be maintained to minimize soil disturbance activity.

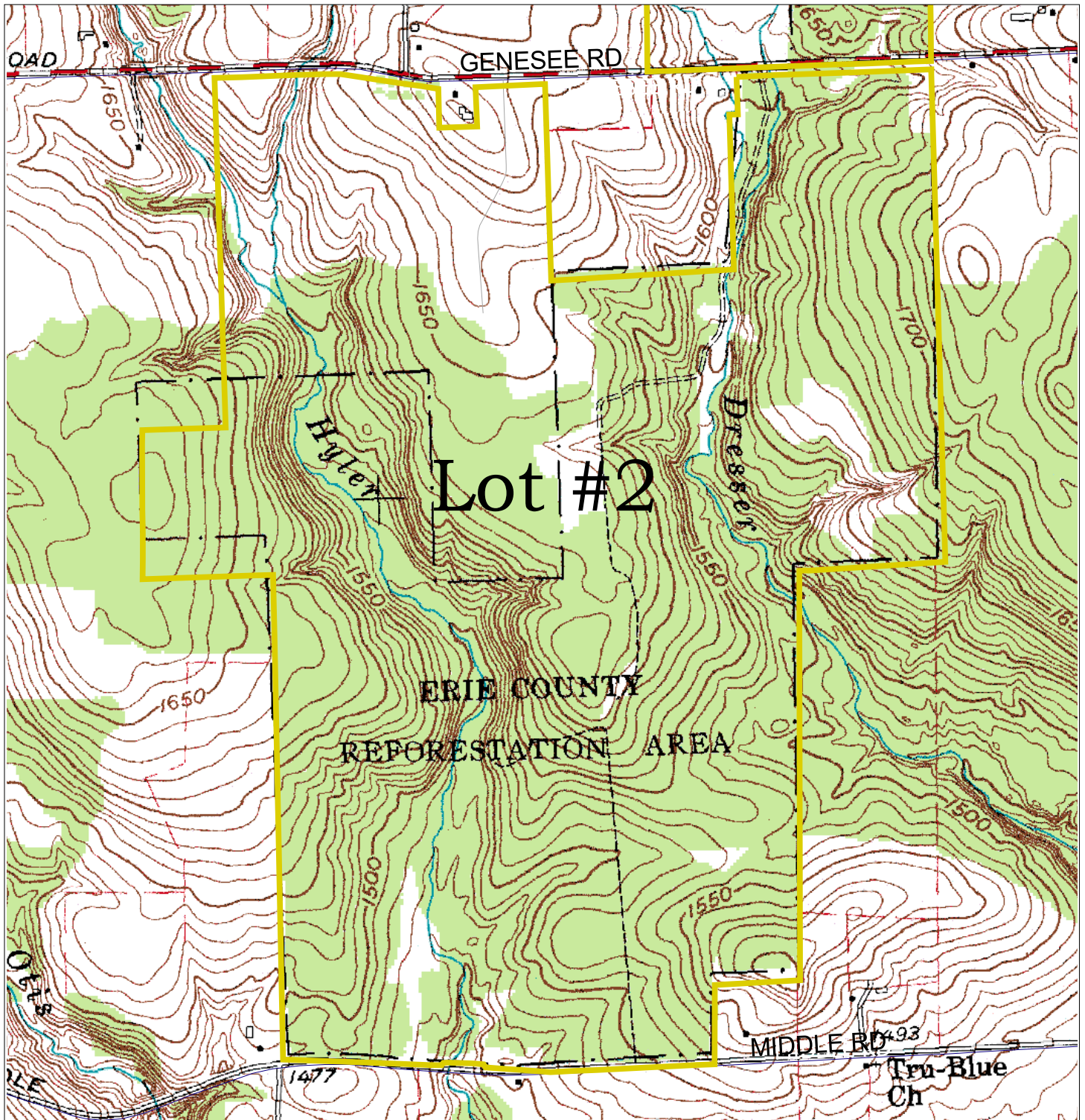
Waterways and Topography

Lot 2 lies south of Genesee Road across from Lot 1, and continues the general slope from north to south. The lot is divided by the south-flowing Dresser Creek and Hyler Creek. The stream channels are generally not restricted, although portions of Hyler Creek have steep banks. The center of the lot rises over 100 feet in elevation between the streams. Both are Class C streams, suitable for fishing and non-contact recreation, and are tributary to Cattaraugus Creek. The primary pollutant of concern in Cattaraugus Creek is streambank erosion, and riparian buffers should be maintained along both streams to minimize degradation of fish habitat.

Lot 2

Forest Stewardship Recommendations

This Lot contains the Woodlands Environmental Education Center facility and 760 acres of conifer plantations and hardwood stands. The DEC did not inspect stands on this Lot for determining recommendations. This Lot has considerable value in usage as demonstration areas for helping people study and understand various techniques of forest management within easy reach of the facilities. The well developed, internal road system allows good access with a variety of stands along the way. Here lies an opportunity to conduct and display small, but complete examples of practices being done or perhaps being considered throughout County Forest land. Such practices as single tree selection, group selection, patch cutting, timber stand improvement, crop tree thinning and grape vine control could be adjacent to areas without treatments for easy study and comparison. The effects of these treatments are sometimes immediate and sometimes long term, both in expression and in duration. Since forest management is a long term activity, these demonstration areas can be handily examined for many years.

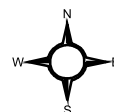


Erie County Forest Management Plan

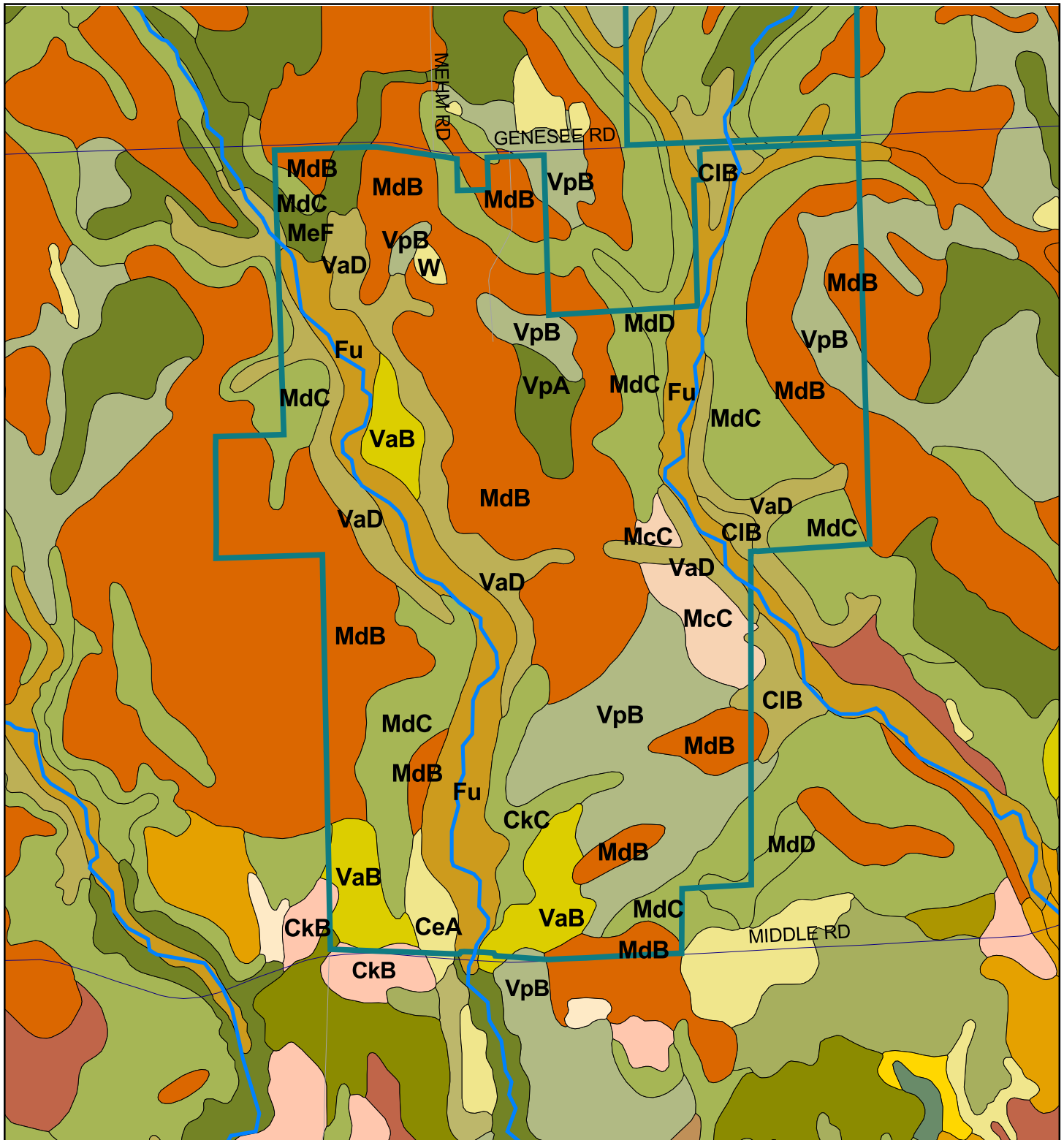
USGS TOPOGRAPHIC QUADRANGLE



Map Prepared By:
Erie County Soil and Water
Conservation District



1000 0 1000 Feet

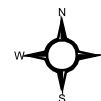


Erie County Forest Management Plan

LOT #2 - SOIL TYPES



Map Prepared By:
Erie County Soil and Water
Conservation District



900 0 900 1800 Feet

Brief Soil Descriptions – Lot 2

For further information refer to the *Soil Survey of Erie County, New York*.

Symbol

Name / Description

CeA *Castile Gravelly Loam, 0 to 3 Percent Slopes*

Deep, nearly level, moderately well drained, low lime, gravelly loam soil formed mainly in gravel and sand deposits. The available water capacity is low to moderate. Permeability is generally rapid. PRIME FARMLAND, CAPABILITY CLASS-IIw, NYS SOIL GROUP-2b, K=.24, T=3

CkB *Chenango Gravelly Loam, 3 to 8 Percent Slopes*

Deep, gently sloping, well drained, low lime, gravelly loam soil formed mainly in gravel and sand. The available water capacity is low. Permeability is moderate to rapid in the surface soil and subsoil and generally rapid or very rapid in the substratum. PRIME FARMLAND, POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIs, NYS SOIL GROUP-2B, K=.24, T=3

CkC *Chenango Gravelly Loam, 8 to 15 Percent Slopes*

Deep, sloping, well drained, low lime, gravelly loam soil formed mainly in gravel and sand. The available water capacity is low. Permeability is moderate to rapid in the surface soil and subsoil and generally rapid or very rapid in the substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-5b, K=.24, T=3

CIB *Chenango Channery Silt Loam, Fan, 3 to 8 Percent Slopes*

Deep, nearly level to gently sloping, well-drained, low lime, channery silt loam soil formed in gravel and sand. The available water capacity is low. Permeability is moderate to rapid in the surface soil and subsoil and generally rapid or very rapid in the substratum. PRIME FARMLAND, POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIs, NYS SOIL GROUP-2b, K=.24, T=3

Fu Fluvaquents and Udifluvents, Frequently Flooded

Moderately deep to deep, nearly level, well drained to poorly drained, high to low lime, variable soils formed in recent stream deposits. The available water capacity and permeability are variable. No K or T values are assigned. HYDRIC SOIL, CAPABILITY CLASS-Vw, NYS SOIL GROUP-9

McC Mardin Silt Loam, 8 to 15 Percent Slopes

Deep, sloping, moderately well drained and well drained, low lime, silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIie, NYS SOIL GROUP-6b, K=.32, T=3

MdB Mardin Channery Silt Loam, 3 to 8 Percent Slopes

Deep, gently sloping, moderately well drained and well drained, low lime, channery silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIw, NYS SOIL GROUP-4b, K=.24, T=3

MdC Mardin Channery Silt Loam, 8 to 15 Percent Slopes

Deep, sloping, moderately well drained and well drained, low lime, channery silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIie, NYS SOIL GROUP-6b, K=.24, T=3

MdD Mardin Channery Silt Loam, 15 to 25 Percent Slopes

Deep, moderately steep, moderately well drained and well drained, low lime, channery silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-9b, K=.24, T=3

MeF Mardin-Valois Complex, 25 to 50 Percent Slopes

Deep, very steep, well-drained, low lime soil formed in coarse loamy glacial till. The Mardin soil has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability ranges from moderate to slow. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-VIIe, NYS SOIL GROUP-9b, K=.24, T=3

VaB Valois Gravelly Silt Loam, 3 to 8 Percent Slopes

Deep, gently sloping, well drained, low lime, gravelly silt loam soil formed in coarse loamy glacial till. The available water capacity is low to moderate. Permeability is moderate to rapid. PRIME FARMLAND, POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIe, NYS SOIL GROUP-2b, K=.24, T=3

VaD Valois Gravelly Silt Loam, 15 to 25 Percent Slopes

Deep, moderately steep, well drained, low lime, gravelly silt loam soil formed in coarse loamy glacial till. The available water capacity is low to moderate. Permeability is moderate to rapid. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-6b, K=.24, T=3

VpA Volusia Channery Silt Loam, 0 to 3 Percent Slopes

Deep, nearly level, somewhat poorly drained, low lime, channery silt loam soil formed in fine loamy glacial till. It has a very firm fragipan at a depth of 15 to 50 inches. The available water capacity is moderate to low. Permeability is generally moderate above the fragipan and slow to very slow in the fragipan. CAPABILITY CLASS-IIIW, NYS SOIL GROUP-6b, K=.24, T=3

VpB Volusia Channery Silt Loam, 3 to 8 Percent Slopes

Deep, gently sloping, somewhat poorly drained, low lime, channery silt loam soil formed in fine loamy glacial till. It has a very firm fragipan at a depth of 15 to 50 inches. The available water capacity is moderate to low. Permeability is generally moderate above the fragipan and slow to very slow in the fragipan. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIW, NYS SOIL GROUP-6b, K=.24, T=3



1965 CONSERVATION PLAN MAP

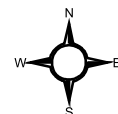
Erie County
Forest Management Plan

LOT #2

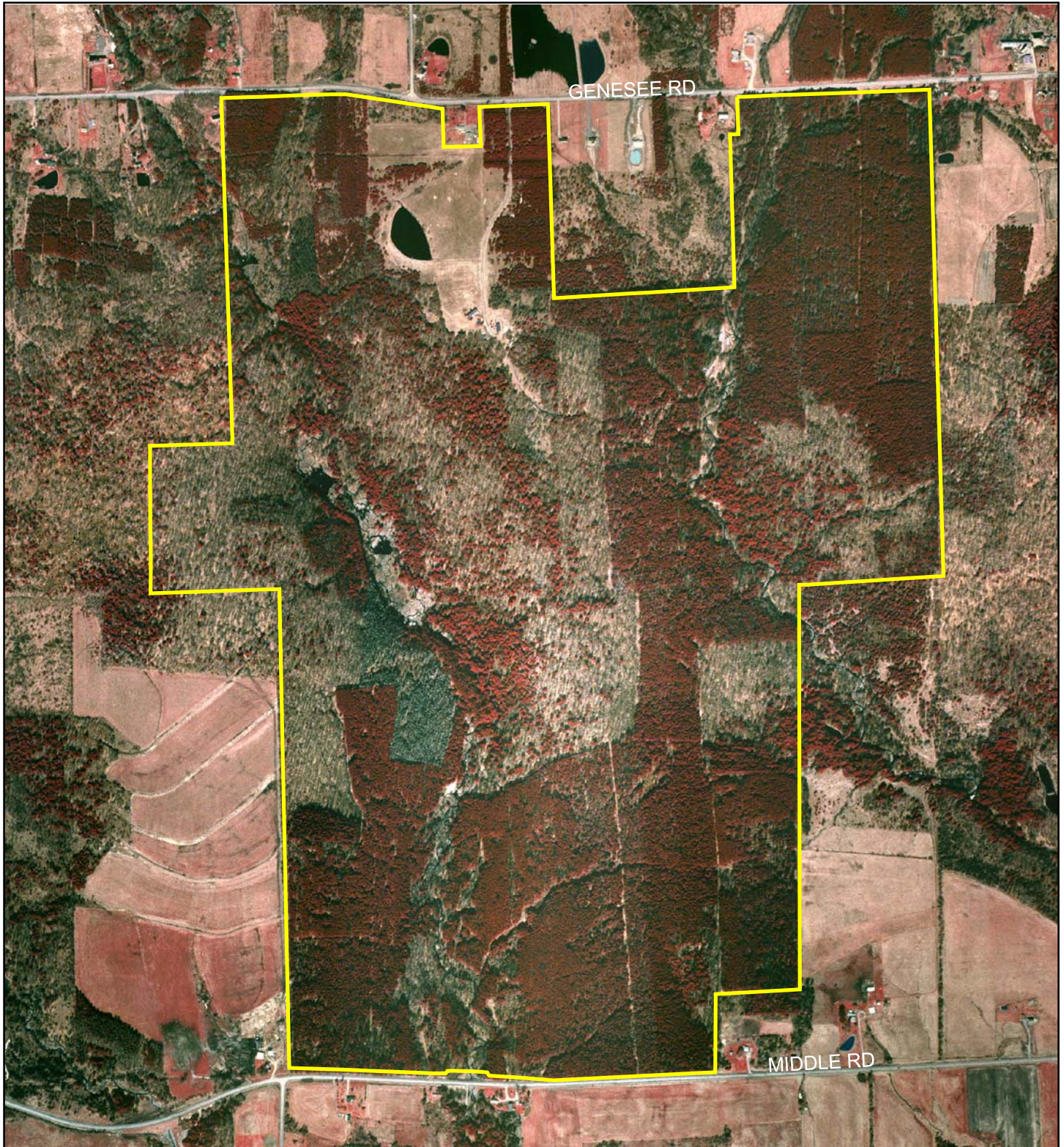


Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



900 0 900 Feet



2003 STEWARDSHIP RECOMMENDATION MAP

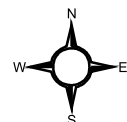
Erie County
Forest Management Plan

LOT #2



Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



300 0 300 600 900 Feet



Lot 3—Fields 1 and 2

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 3 Total Acres: 329 Field Number(s): 1,2 Acres: 125 Date: 8/05/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Sugar Maple	12-21	Medium - Heavy	20	Multiple		80	38	Good
American Beech	12-19.5	Medium - Heavy	19	Multiple		76	34	Good
Black Cherry	12-21	Medium - Heavy	21	Multiple		76	34	Good
White Ash	12-20	Medium	18	Multiple		80	35	Good
Eastern Hemlock	12-30	Medium	23	Multiple		105		Good
Yellow Birch	12-16.5	Light	18	Multiple		65	28	Fair
Basswood	12-16	Light	26	Multiple		72	36	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature mixed Hardwood Forests with a significant variety of hardwood species.

Aquatic Systems - includes both lentic (standing water) and lotic (flowing water) systems

None

Fire Lane Status

None

Lot 3—Fields 1 and 2

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium - heavy density and is characterized by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*), Yellow Birch (*Betula lutea*), Black Cherry (*Prunus serotina*), White Ash (*Fraxinus americana*), Eastern Hemlock (*Tsuga canadensis*) and American Basswood (*Tilia americana*).

Subcanopy

The subcanopy is of heavy density and is represented by a variety of hardwood species.

Shrub Layer

The shrub layer is of light density and includes a variety of Brambles (*Rubus* spp.).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns and clubmosses including Sensitive fern (*Onoclea sensibilis*), Lady fern (*Athyrium Filix-femina*), Evergreen Woodfern (*Dryopteris intermedia*), Interrupted fern (*Osmunda claytoniana*), New York fern (*Thelypteris noveboracensis*), Silvery Spleenwort (*Athyrium thelypteroides*), Christmas fern (*Polystichum acrostichoides*), Hayscented fern (*Dennstaedtia punctilobula*), Shining Clubmoss (*Lycopodium lucidulum*) and Tree Clubmoss (*Lycopodium obscurum*) and a variety of herbaceous plants.

Successional Status

These fields represent mature Hardwood Forests characterized by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*) and Yellow Birch (*Betula lutea*) along with Eastern Hemlock (*Tsuga canadensis*), a conifer associate. This system, designated as the climax vegetative community of this region, will continue to perpetuate itself barring natural disasters or man-made changes.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns and clubmosses listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*) and Hayscented fern (*Dennstaedtia punctilobula*).

Lot 3—Field 3

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 3 Total Acres: 326 Field Number(s): 3 Acres: 2 Date: 8/06/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
White Spruce	7-13	Heavy	18	Even	41	40	Poor
Sugar Maple	S/P	Light		Multiple			Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a White Spruce (*Picea glauca*) Plantation that is overcrowded, stunted and generally inaccessible. Sugar Maple (*Acer saccharum*) is sparsely scattered throughout the plantation and exists generally in “sapling” and “pole” size.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

None

Fire Lane Status

None

Lot 3—Field 3**FIELD WORKSHEET #2**
ECOLOGICAL ANALYSIS**Ecological Overview****Forest Physiognomy (outer appearance)**Canopy

The canopy is of heavy density and is characterized by an overcrowded and stunted plantation of White Spruce (*Picea glauca*) along with a light intrusion of Sugar Maple (*Acer saccharum*).

Subcanopy

The subcanopy is generally not present.

Shrub Layer

The shrub layer is generally not present.

Herbaceous Layer

The herbaceous layer is generally not present.

Successional Status

This field represents an overcrowded and stunted White Spruce (*Picea glauca*) Plantation with marginal hardwood intrusion into the canopy. This hardwood intrusion, coupled with the excessive competition for resources, will gradually cause the decline of this plantation and transition this system into a Hardwood Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: None

Lot 3—Field 4

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 3 Total Acres: 326 Field Number(s): 4 Acres: 8 Date: 8/06/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Quaking Aspen	7-13	Medium - Heavy	16	Multiple		68	N/A	Poor
Red Maple	8-20	Medium		Multiple		72	28	Fair
Sugar Maple	S/P	Medium		Multiple				Poor
American Beech	S/P	Light		Multiple				Poor
Hophornbeam	P	Light		Multiple				Poor

* "S" refers to saplings, "P" refers to pole size dimensions, "SL" refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents the remnants of a Pioneer Forest dominated by Quaking Aspen (*Populus tremuloides*). Secondary Hardwoods, in particular Red Maple (*Acer rubrum*), have become well established along with a moderate intrusion of young Climax species such as Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*).

Aquatic Systems

None

Fire Lane Status

None

Lot 3—Field 4

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of light - medium density and is characterized by Quaking Aspen (*Populus tremuloides*) and Red Maple (*Acer rubrum*).

Subcanopy

The subcanopy is of heavy density and is represented by Red Maple (*Acer rubrum*), Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*) and Hophornbeam (*Ostrya virginiana*).

Shrub Layer

The shrub layer is of light - medium density and is dominated by a variety of Brambles (*Rubus* spp.).

Herbaceous Layer

The herbaceous layer is of medium density **and is dominated by ferns and scattered herbs.**

Successional Status

This field represents a Pioneer Forest in the mid to late stages of transitioning into a Secondary Hardwood Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: Evergreen Woodfern (*Dryopteris intermedia*).

Lot 3—Field 5

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 3 Total Acres: 326 Field Number(s): 5 Acres: 38 Date: 8/06/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
White Pine	9-17	Medium	24	Even	69	65	Poor
White Ash	S/P/SL	Light - Medium		Multiple		72 30	Fair
Black Cherry	S/P/SL	Light - Medium		Multiple		70 28	Fair
Red Maple	S/P/SL	Light - Medium		Multiple		70 28	Fair
Sugar Maple	S/P	Light		Multiple			Poor
American Beech	S/P	Light		Multiple			Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature White Pine (*Pinus strobus*) Plantation with a moderate intrusion of hardwoods into the canopy. Plantation species are generally in poor condition due to wind and weevil damage, especially along the western border of the field. The subcanopy is well developed and is dominated by Secondary Hardwoods such as White Ash (*Fraxinus americana*), Black Cherry (*Prunus serotina*) and Red Maple (*Acer rubrum*).

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
This field contains a southeasterly flowing four season stream.

Fire Lane Status

The Fire Break in this field exists as a natural field border along Warner Gulf Road and is in need of periodic mowing in order to restrict shrub and tree growth.

Lot 3—Field 5

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is characterized by White Pine (*Pinus strobus*) along with White Ash (*Fraxinus americana*), Black Cherry (*Prunus serotina*) and Red Maple (*Acer rubrum*).

Subcanopy

The subcanopy is of medium density and is represented by a variety of hardwood species.

Shrub Layer

The shrub layer is of light density and includes Northern Arrowwood (*Viburnum recognitum*) and a variety of Brambles (*Rubus* spp.).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), Lady fern (*Athyrium Filix-femina*) and New York fern (*Thelypteris noveboracensis*).

Successional Status

This field represents a mature White Pine (*Pinus strobus*) Plantation that is in the mid - late stages of transitioning into a Secondary Hardwood Forest characterized by White Ash (*Fraxinus americana*), Black Cherry (*Prunus serotina*) and Red Maple (*Acer rubrum*). Eventually the Climax hardwood species of Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*) will out compete the Secondary Hardwoods and become dominant.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer”.

Lot 3—Fields 6, 7 and 8

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 3 Total Acres: 326 Field Number(s): 6,7,8 Acres: 132 Date: 08/07/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Red Pine	10-18	Heavy	20	Even	69	80		Good
Sugar Maple	S/P	Heavy		Multiple				Poor
White Ash	S/P	Medium		Multiple				Poor
Black Cherry	16-20	Medium		Multiple		78	36	Good
American Beech	S/P	Medium		Multiple				Poor
Red Oak	14-21	Light		Multiple		76	38	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature Red Pine (*Pinus resinosa*) Plantations with significant hardwood intrusions in all forest levels that have begun to diminish plantation species as a result of shading factors and resource competition.

Aquatic Systems - includes both lentic (standing water) and lotic (flowing water) systems

These fields contain two southeasterly flowing four season streams.

Fire Lane Status

The Fire Breaks in these fields range in width from approximately 16-20 feet and all require moderate widening, clearing and significant pruning.

Lot 3—Fields 6, 7 and 8

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is characterized by Red Pine (*Pinus resinosa*) along with Sugar Maple (*Acer saccharum*), White Ash (*Fraxinus americana*), Red Oak (*Quercus rubra*) and Black Cherry (*Prunus serotina*).

Subcanopy

The subcanopy is of medium - heavy density and is represented by a variety of hardwood species.

Shrub Layer

The shrub layer is of light density and includes various species of Dogwood (*Cornus* spp.), Red Elderberry (*Sambucus pubens*), Tartarian Honeysuckle (*Lonicera tartarica*) and Northern Arrowwood (*Viburnum recognitum*).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns such as Sensitive fern (*Onoclea sensibilis*), Lady fern (*Athyrium Filix-femina*), Evergreen Woodfern (*Dryopteris intermedia*), Interrupted fern (*Osmunda claytoniana*) and New York fern (*Thelypteris noveboracensis*).

Successional Status

These fields represent mature Conifer Plantations that are in the mid - late stages of hardwood succession.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera tartarica*)

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*).

Lot 3—Field 9

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 3 Total Acres: 326 Field Number(s): 9 Acres: 6 Date: 8/07/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Scotch Pine	8-14	Heavy	16	Even	69	73	Good
Sugar Maple	S/P	Medium		Multiple			Poor
American Beech	S/P	Medium		Multiple			Poor
White Ash	S/P	Medium		Multiple			Poor
Black Cherry	S/P	Medium		Multiple			Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature Scotch Pine (*Pinus sylvestris*) Plantation with significant hardwood intrusions throughout all forest levels. There also exists several acres of White Spruce (*Picea glauca*) and Larch (*Larix* spp.) along the northern border of this field with an average D.B.H. of 10-15 inches.

Aquatic Systems - includes both lentic (standing water) and lotic (flowing water) systems

None

Fire Lane Status

The Fire Breaks in this field range in width from approximately 16-25 feet and all require moderate to heavy widening, clearing, pruning and in some cases, mowing.

Lot 3—Field 9**FIELD WORKSHEET #2
ECOLOGICAL ANALYSIS****Ecological Overview****Forest Physiognomy (outer appearance)**Canopy

The canopy is of medium density and is characterized by Scotch Pine (*Pinus sylvestris*) along with a variety of mixed hardwoods.

Subcanopy

The subcanopy is of medium density and is represented by a variety of hardwood species.

Shrub Layer

The shrub layer is of light density and includes a variety of Brambles (*Rubus* spp.).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*) and Spinulose Woodfern (*Dryopteris spinulosa*).

Successional Status

This field represents a mature Scotch Pine (*Pinus sylvestris*) Plantation transitioning into a young Hardwood Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer”.

Lot 3—Field 10

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 3 Total Acres: 326 Field Number(s): 10 Acres: 15 Date: 8/07/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Red Pine	10-14	Heavy	15	Even	69	72	Good
White Pine	S/P	Medium		Even	69	70	Poor
White Ash	S/P	Medium		Multiple			Poor
American Beech	S/P	Medium		Multiple			Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature Red Pine (*Pinus resinosa*) Plantation that possesses an “open character” due to the available sunlight from Genesee Road, adjacent fields and fire breaks. As a result, the forest understory is generally dense and inaccessible.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

None

Fire Lane Status

The Fire Breaks in this field are shared in common with Field Number 9. Please see Field Number 9 for descriptions and recommendations.

Lot 3—Field 10

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of light - medium density and is characterized by Red Pine (*Pinus resinosa*) and White Pine (*Pinus strobus*).

Subcanopy

The subcanopy is of heavy density and is represented by Red Maple (*Acer rubrum*), White Ash (*Fraxinus americana*) and American Beech (*Fagus grandifolia*).

Shrub Layer

The shrub layer is of medium - heavy density and includes Choke Cherry (*Prunus virginiana*), Tartarian Honeysuckle (*Lonicera tartarica*) and Brambles (*Rubus* spp.). As a result of adjacent open terrain, “pockets” of field/shrub environments are scattered throughout this plantation.

Herbaceous Layer

The herbaceous layer is of medium - heavy density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), Lady fern (*Athyrium Filix-femina*), New York fern (*Thelypteris noveboracensis*) and Marsh fern (*Thelypteris palustris*) along with a variety of herbaceous field plants.

Successional Status

This field represents a mature Red Pine (*Pinus resinosa*) Plantation with a generally open canopy and well developed understory layers. Excessive sunlight continues to encourage hardwood growth that is presently in the early - mid stages of transitioning this plantation into a young Hardwood Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera tartarica*)

Protected: All ferns listed under “Herbaceous Layer”.

Lot 3 Summary and Recommendations

FIELD WORKSHEET #3 WILDLIFE SUMMARY

Lot #3 offers an excellent variety of habitats for diverse populations of wildlife species. Field Numbers 3 and 5-10 offer extensive Conifer Plantations in various stages of hardwood succession. Field Number 4 represents a Pioneer Forest transitioning into a mature Secondary Hardwood Forest while Field Numbers 1 and 2 include mature Hardwood Forests. In addition to these environments, there also exists open field and shrubland “pockets” throughout the Lot as well as two southeasterly flowing four season streams.

During a period of three days, staff ecologists recorded a variety of wildlife observations focused upon actual sightings and other wildlife “signs”. The following list represents a brief overview of those encounters focused upon Mammals, Birds and Reptiles/Amphibians.

Mammals

Whitetail Deer (<i>Odocoileus virginianus</i>)	Red Fox (<i>Vulpes fulva</i>)
Gray Squirrel (<i>Sciurus carolinensis</i>)	Raccoon (<i>Procyon lotor</i>)
Red Squirrel (<i>Tamiasciurus hudsonicus</i>)	Woodchuck (<i>Marmota monax</i>)
Eastern Chipmunk (<i>Tamias striatus</i>)	Deer Mouse (<i>Peromyscus maniculatus</i>)
Eastern Cottontail (<i>Sylvilagus floridanus</i>)	*Black Bear (<i>Ursus americanus</i>)

*Observed in the area prior to fieldwork.

Birds

Wild Turkey (<i>Meleagris gallopavo</i>)	Black-capped Chickadee (<i>Parus atricapillus</i>)
Ovenbird (<i>Seiurus aurocapillus</i>)	Pileated Woodpecker (<i>Dryocopus pileatus</i>)
Eastern Phoebe (<i>Sayornis phoebe</i>)	Great Crested Flycatcher (<i>Myiarchus crinitus</i>)
Redtail Hawk (<i>Buteo jamaicensis</i>)	Broad-winged Hawk (<i>Buteo platypterus</i>)
Red-eyed Vireo (<i>Vireo olivaceus</i>)	Indigo Bunting (<i>Passerina cyanea</i>)
House Wren (<i>Troglodytes aedon</i>)	Blue Jay (<i>Cyanocitta cristata</i>)
Turkey Vulture (<i>Cathartes aura</i>)	Gray Catbird (<i>Dumetella carolinensis</i>)
American Goldfinch (<i>Carduelis tristis</i>)	American Robin (<i>Turdus migratorius</i>)
Dark-eyed Junco (<i>Junco hyemalis</i>)	Hermit Thrush (<i>Catharus guttatus</i>)
Song Sparrow (<i>Melospiza melodia</i>)	Field Sparrow (<i>Spizella pusilla</i>)
Common Crow (<i>Corvus brachyrhynchos</i>)	

Reptiles/Amphibians

Spring Peeper (<i>Hyla crucifer</i>)	Wood Frog (<i>Rana sylvatica</i>)
Green Frog (<i>Rana clamitans melanota</i>)	American Toad (<i>Bufo americanus</i>)

FIELD WORKSHEET #4

RECOMMENDATIONS

The following recommendations for Lot #3 of the Erie County Forestry Management Plan are based upon field data collected by Earth Spirit Educational Services, Inc. in the areas of Forest Ecology, Wildlife Biology and general Ecology.

Field Numbers 1 and 2

Description - These fields represent mature mixed Hardwood Forests. At present, hiking/cross-country ski trails meander through these fields.

Recommendations - These fields represent extremely unique environments that enhance County Forest Lands in the areas of ecology, education and recreation and as such, should remain in their present state without treatment or long term management.

Field Number 3

Description - This field represents a White Spruce Plantation that is overcrowded, stunted and generally inaccessible.

Recommendations - This field should remain without treatment in order to allow this plantation to serve as food and cover for wildlife and as a dense buffer for adjacent fields.

Field Number 4

Description - This field represents a Pioneer Forest transitioning into a Secondary Hardwood Forest.

Recommendations - This field should remain without treatment in order to promote habitat diversity for wildlife, education and recreation.

Field Number 5

Description - This field represents a mature White Pine Plantation that is in the mid - late stages of hardwood succession.

Recommendations - This field should remain without treatment in order to serve as a windbreak and buffer area for adjacent fields as well as for erosion control and wildlife habitat.

Field Numbers 6, 7 and 8

Description - These fields represent mature Red Pine Plantations that are in the mid - late stages of hardwood succession.

Recommendations - These fields, as a result of hardwood intrusions and over competition, are experiencing extremely slow growth and general decline. It is recommended then, that these Red Pine Plantations (D.B.H. of 10-18 inches) be actively managed. These fields also contain mature Red Oak and Black Cherry that should remain without treatment in order to serve as “seed trees” for hardwood regeneration and to promote habitat diversity for wildlife.

Field Number 9

Description - This field represents a mature Scotch Pine Plantation presently transitioning into a Hardwood Forest.

Recommendations - This field should remain without treatment in order to allow this plantation to enhance habitat diversity, control soil erosion and provide food and cover for wildlife.

Field Number 10

Description - This field represents a mature Red Pine Plantation generally exhibiting an “open character” due to available light from adjacent environments.

Recommendations - This field should remain without treatment in order to allow this plantation to enhance habitat diversity, control soil erosion, provide food and cover for wildlife and act as a buffer along Genesee Road.

Lot 3

Soils, Waterways and Topography

Soils

Lot 3 is dominated by gently sloping, somewhat poorly drained Volusia Channery Silt Loam (VpB), 3-8% slopes, and poorly drained Chippewa Silt Loam (Cn). The potentially highly erodible Volusia soils are moderately permeable and have a fragipan at a depth of 15 to 50 inches. The Chippewa soils are hydric, moderately permeable and have a fragipan at a depth of 13 to 36 inches. Portions of Mardin Channery Silt Loam (MdB and MdC), 3-15% slopes are also present. These soils are highly erodible where steep, and moderately permeable. Small areas of highly erodible, moderately well drained Danley Silt Loam (DaC) and Langford Channery Silt Loam, Silty Substratum (LgC), 8-15% slopes, and potentially highly erodible, somewhat poorly drained Darien Silt Loam (DbB), 3-8% slopes, also occur on Lot 3 in low areas and along a small stream bed.

Waterways and Topography

Lot 3 is gently sloping for most of the acreage, with the exception of somewhat steep areas adjacent to an unnamed stream and two intermittent stream channels. Although access to these waterways is good, the channels are all tributary to Cattaraugus Creek and may potentially contribute sediment or other pollutants to the Creek if riparian forest buffers are not maintained along these waterways, and soil disturbing activities should be conducted after soils have frozen, especially in areas of wetter soils. Fish habitat in Cattaraugus Creek is stressed, primarily due to streambank erosion, with secondary pollutants of resource extraction, agriculture, road bank erosion and construction.

Lot 3

Forest Stewardship Recommendations

Stand A (Fields 1, 2)

This is an uneven-aged stand of northern hardwoods containing scattered mature sugar maples, beech, hemlock, yellow birch, white ash and black cherry. Many have considerable defects and disease and their growth rate is very slow. This stand should be managed for light, passive outdoor recreation. Hazardous trees near trails should be felled or the trail rerouted. Recheck in 10 years.

Stand B (Field 3)

This is a 40 year old white spruce plantation that has had no intermediate silvicultural treatments. This small stand should be left to slowly become an evergreen midstory under native hardwoods.

Stand C (Field 4)

This is an even-aged stand of pole-sized northern hardwoods, including maples, ash, cherry and aspen. There are small plantings of swamp white oak and northern white cedar. This pole stand is at the optimal age to thin to favor future crop trees for species diversity and to develop large crowned trees. Trees to remove should be diseased, high risk or multiple stemmed. No cutting should be done in the oaks or cedars. Recheck in 10 years.

Stand D (Field 5)

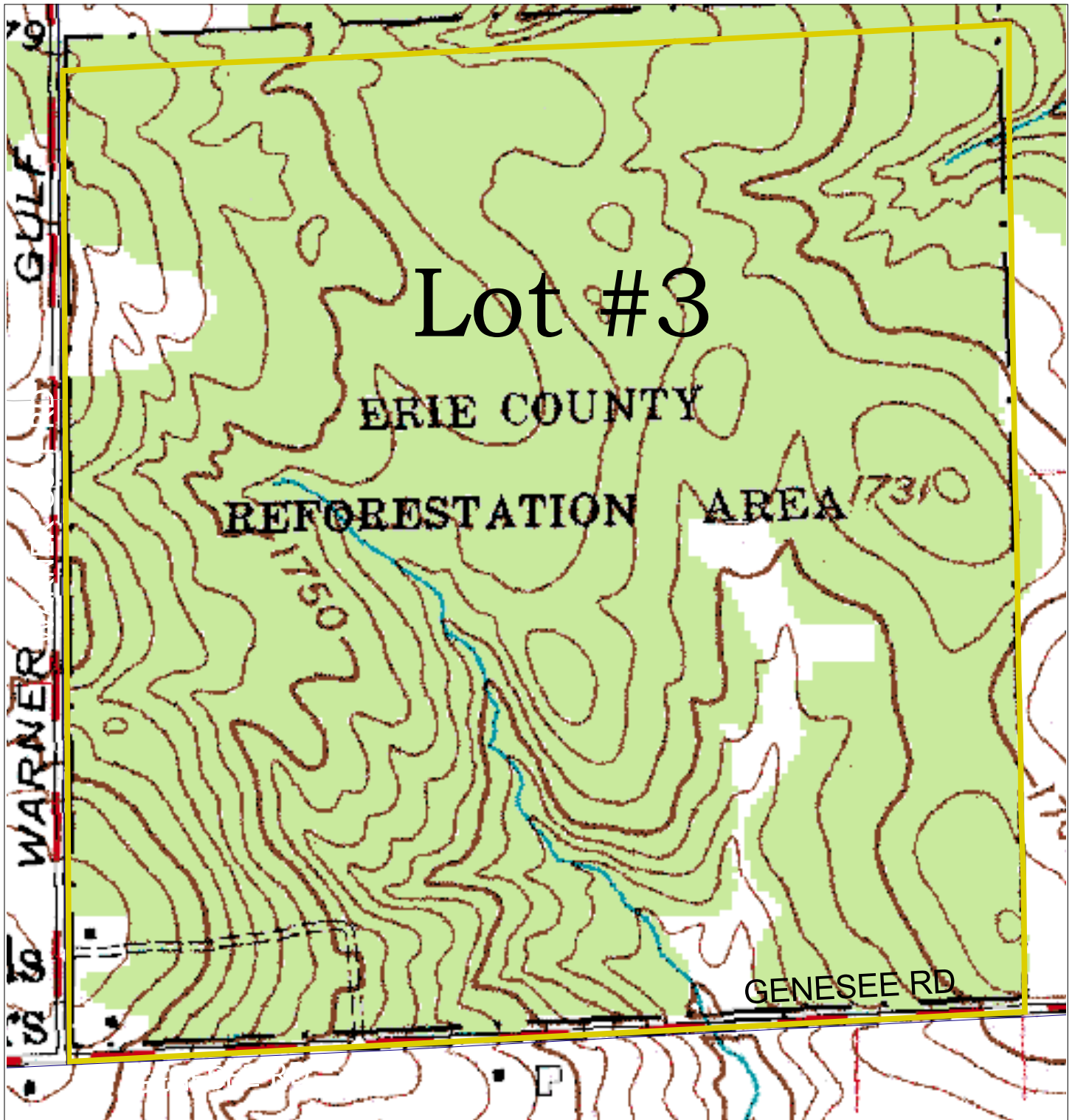
This is a mature plantation of white pine with poor form due to weeviling and poor soil drainage. If some pines are merchantable, deaden the worst formed pines to release hardwoods. Allow about 10 to 20% of the pines residual for wildlife and species diversity. Leave at least 100-200 feet of a no-cut buffer along the road. Recheck in 10 years.

Stand E (Fields 6-10)

This is a area of mature conifer plantations including red, white and Scots pine and larch with scattered hardwoods. The mature pines, along with any hardwoods above 20" diameter or that are high risk, should be scheduled for harvesting to complete the transition to native hardwoods. Quality small sawtimber and pole-sized hardwoods, especially red oak, should be residuals. Leave at least 100-200 feet of a no-cut buffer along the road and 50-100 feet along the property edge. Since honeysuckle shrubs can cause severe hardwood seedling competition, they should be removed or treated with herbicides. Recheck in 10 years.

General

Best Management Practices (BMPs) for erosion control should be followed on the fire lanes used as vehicle trails. Some erosion is occurring on the long slopes. Reference the BMP Field Guide pages 54 - 65.

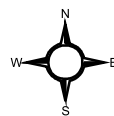


Erie County Forest Management Plan

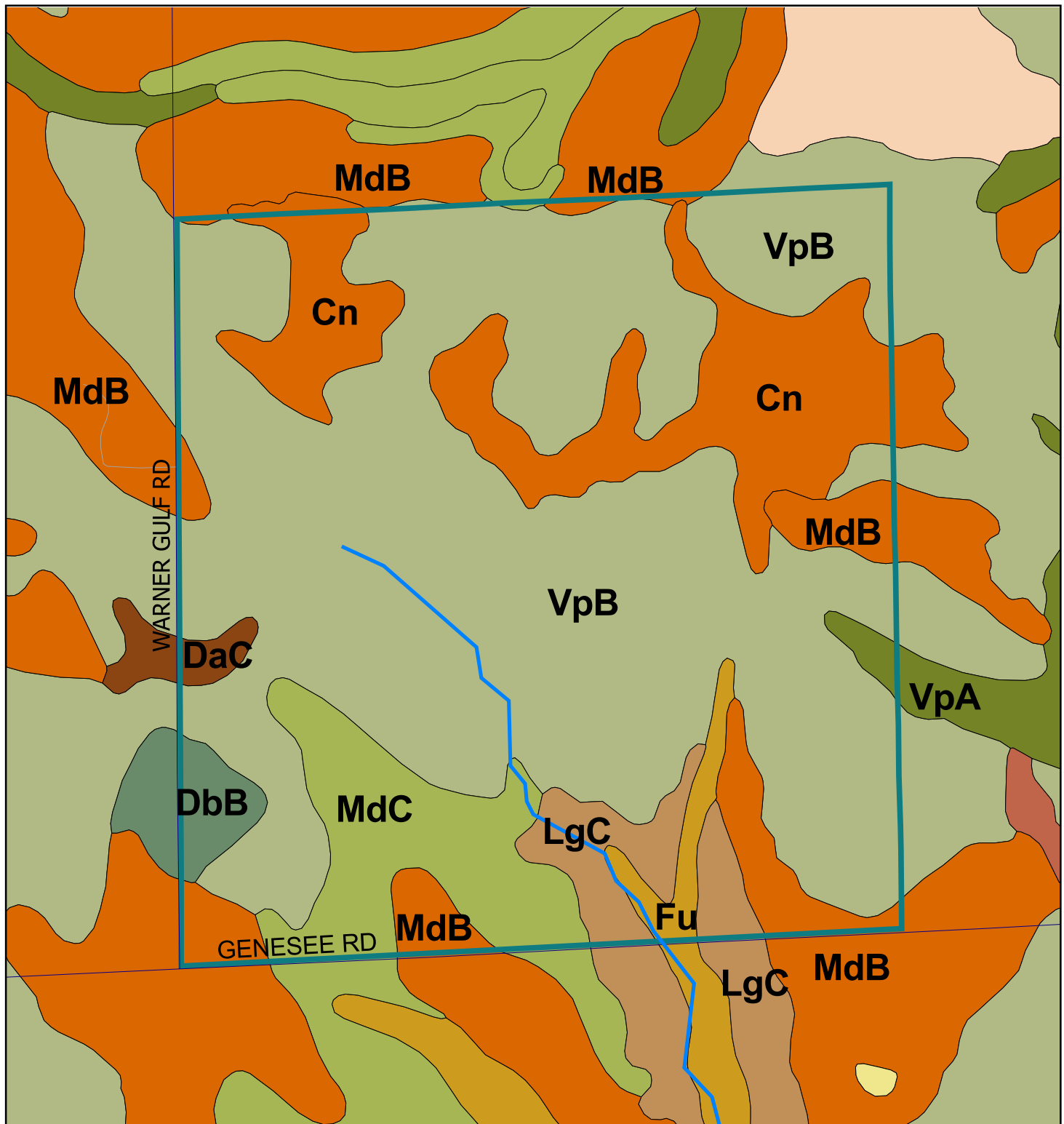
USGS TOPOGRAPHIC QUADRANGLE



Map Prepared By:
Erie County Soil and Water
Conservation District



500 0 500 Feet

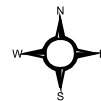


Erie County Forest Management Plan



Map Prepared By:
Erie County Soil and Water
Conservation District

LOT #3 - SOIL TYPES



300 0 300 600 Feet

A scale bar with markings for 300, 0, 300, and 600 feet.

Brief Soil Descriptions – Lot 3

For further information refer to the *Soil Survey of Erie County, New York*.

Symbol

Name / Description

Cn Chippewa Silt Loam

Deep, nearly level, poorly drained, medium lime, silt loam soil formed in fine loamy glacial till. It has a very firm fragipan at a depth of 13 to 36 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and very slow in the fragipan and below. HYDRIC SOIL, CAPABILITY CLASS-IVw, NYS SOIL GROUP-7b, K=.32, T=3

DaC Danley Silt Loam, 8 to 15 Percent Slopes

Deep, sloping, moderately well drained, high lime, silt loam soil formed in fine loamy glacial till. The available water capacity is moderate to high. Permeability is moderately slow in the subsoil and slow in the substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-5b, K=.37, T=3

DbB Darien Silt Loam, 3 to 8 Percent Slopes

Deep, gently sloping, somewhat poorly drained, high lime, silt loam soil formed in fine loamy glacial till. The available water capacity is moderate to high. Permeability is generally slow. PRIME FARMLAND (WHERE DRAINED), POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIW, NYS SOIL GROUP-5b, K=.37, T=3

Fu Fluvaquents and Udifluvents, Frequently Flooded

Moderately deep to deep, nearly level, well drained to poorly drained, high to low lime, variable soils formed in recent stream deposits. The available water capacity and permeability are variable. No K or T values are assigned. HYDRIC SOIL, CAPABILITY CLASS-Vw, NYS SOIL GROUP-9

LgC Langford Channery Silt Loam, Silty Substratum, 8 to 15 Percent Slopes

Deep, sloping, moderately well drained and well drained, medium lime, channery silt loam soil formed in glacial till deposits underlain by silty lake sediments. There is a firm, dense fragipan 15 to 20 inches deep which is approximately 24 inches thick. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow below the fragipan. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-6b, K=.20, T=3

MdB Mardin Channery Silt Loam, 3 to 8 Percent Slopes

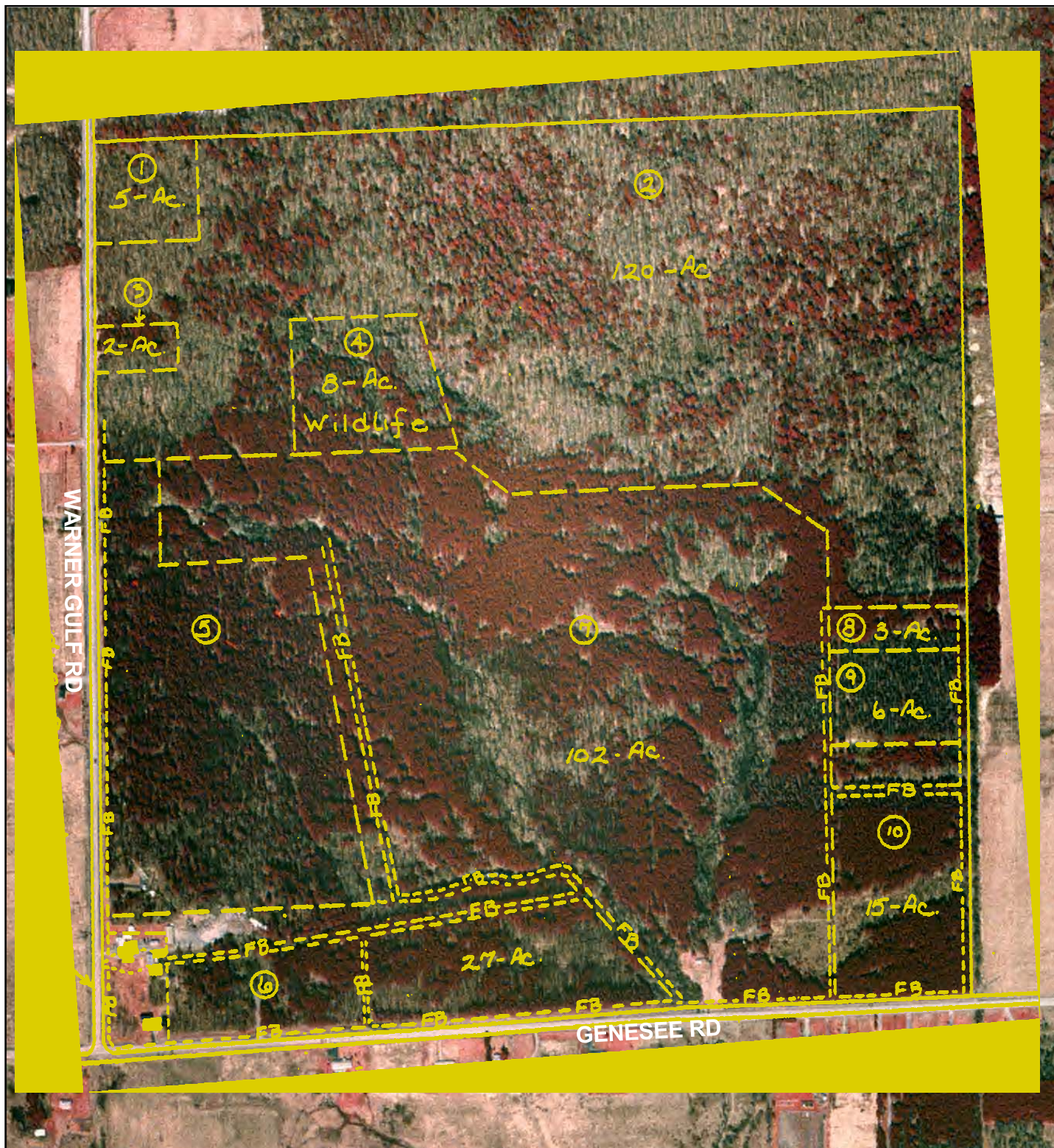
Deep, gently sloping, moderately well drained and well drained, low lime, channery silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIW, NYS SOIL GROUP-4b, K=.24, T=3

MdC Mardin Channery Silt Loam, 8 to 15 Percent Slopes

Deep, sloping, moderately well drained and well drained, low lime, channery silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-6b, K=.24, T=3

VpB Volusia Channery Silt Loam, 3 to 8 Percent Slopes

Deep, gently sloping, somewhat poorly drained, low lime, channery silt loam soil formed in fine loamy glacial till. It has a very firm fragipan at a depth of 15 to 50 inches. The available water capacity is moderate to low. Permeability is generally moderate above the fragipan and slow to very slow in the fragipan. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIW, NYS SOIL GROUP-6b, K=.24, T=3



1965 CONSERVATION PLAN MAP

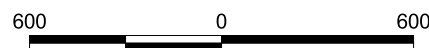
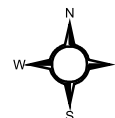
Erie County
Forest Management Plan

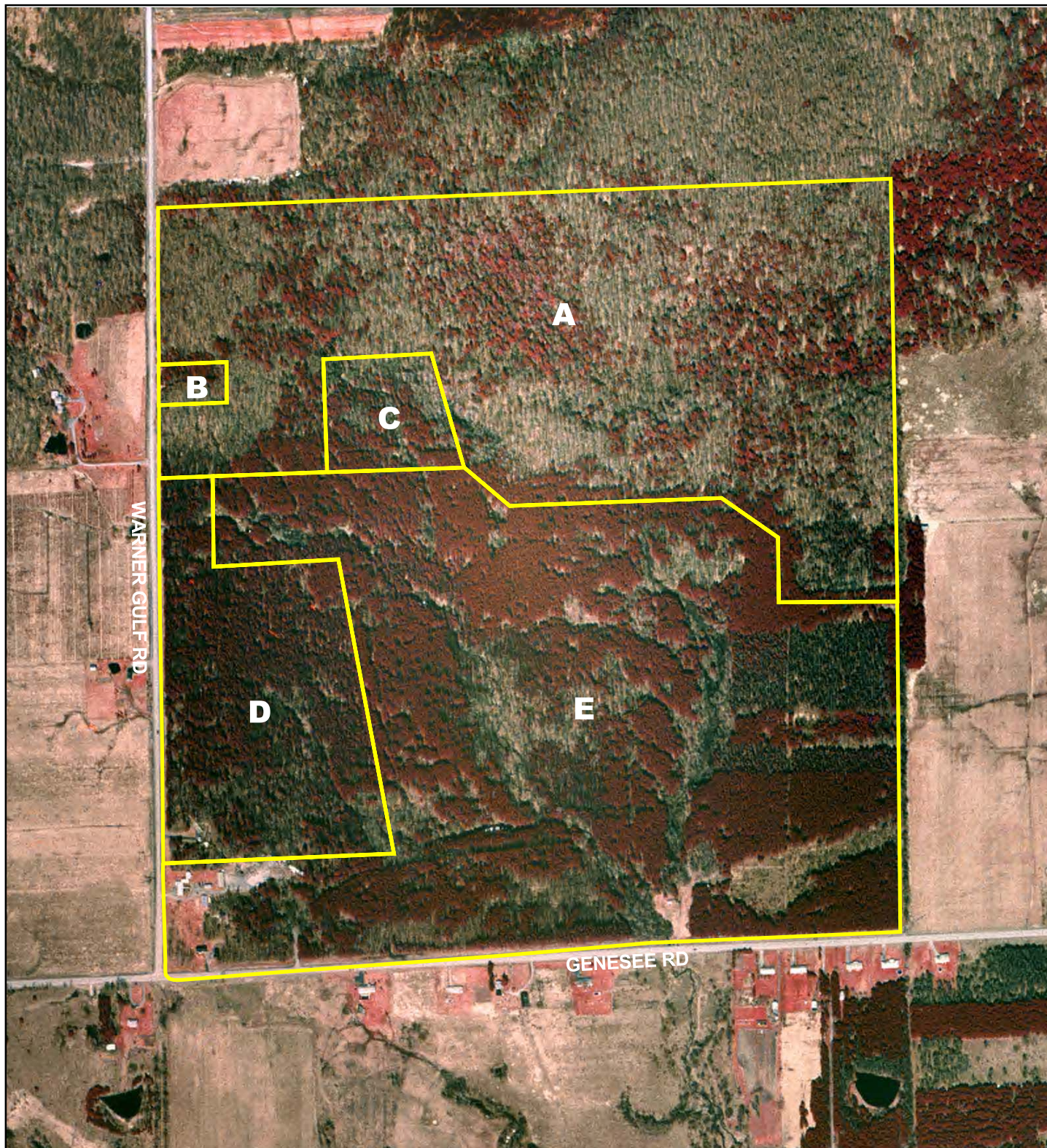
LOT #3



Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography





2003 STEWARDSHIP RECOMMENDATION MAP

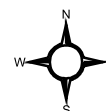
Erie County
Forest Management Plan

LOT #3



Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



300 0 300 600 Feet

Lot 4—Field 1

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 4 Total Acres: 264 Field Number(s): 1 Acres: 17 Date: 8/27/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Red Pine	10-18	Heavy	18	Even	73	78	Good
American Beech	S/P	Heavy	20	Multiple			Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature Red Pine (*Pinus resinosa*) Plantation in the mid stages of hardwood succession with significant intrusions of American Beech (*Fagus grandifolia*) extending into the subcanopy.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

This field contains a small marsh that is dominated by cattails (*Typha* spp.) and other emergent plants and is in the late stages of succession into a wet meadow. Note: This small wetland is surrounded by mature Norway Spruce (*Picea abies*) with a D.B.H. of up to 22 inches.

Fire Lane Status

The Fire Break in this field exists as an open field border along Wagner Road.

Lot 4—Field 1

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is dominated by Red Pine (*Pinus resinosa*).

Subcanopy

The subcanopy is of heavy density and is dominated by American Beech (*Fagus grandifolia*).

Shrub Layer

The shrub layer is of light - medium density and includes Brambles (*Rubus* spp.), Poison Ivy (*Rhus radicans*), Spicebush (*Lindera benzoin*) and Dogbane (*Apocynum* spp.).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), New York fern (*Thelypteris noveboracensis*), Lady fern (*Athyrium Filix-femina*), Marsh fern (*Thelypteris palustris*), Christmas fern (*Polystichum acrostichoides*) and Sensitive fern (*Onoclea sensibilis*) along with scattered herbaceous species.

Successional Status

This field represents a mature Conifer Plantation in the mid stages of hardwood succession. This forest will continue to evolve into a Beech/Maple dominated Climax Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: Garlic Mustard (*Alliaria officinalis*)

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*).

Lot 4—Field 2

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 4 Total Acres: 264 Field Number(s): 2 Acres: 2 Date: 8/27/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
(see below)							

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a two acre Marsh/Wet Thicket that lies within a low, wet area within a mixed Hardwood Forest. This environment is rich in herbaceous plants, especially Golden Ragwort (*Senecio aureus*) and Spotted Jewelweed (*Impatiens capensis*) and wetland shrubs dominated by Speckled Alder (*Alnus rugosa*).

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
(see above)

Fire Lane Status

None

Lot 4—Field 2

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is not present.

Subcanopy

The subcanopy is not present.

Shrub Layer

The shrub layer is of heavy density and consists primarily of Speckled Alder (*Alnus rugosa*).

Herbaceous Layer

The herbaceous layer is of heavy density and is dominated by a variety of emergent and wetland species along with a variety of ferns such as Lady fern (*Athyrium Filix-femina*), Evergreen Woodfern (*Dryopteris intermedia*), Sensitive fern (*Onoclea sensibilis*) and Cinnamon fern (*Osmunda cinnamomea*).

Successional Status

This field represents a Marsh/Wet Thicket that is evolving into a mesic Shrubland and Young Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*). Cardinal Flower (*Lobelia cardinalis*), an uncommon wetland herb, is also protected.

Lot 4—Fields 3 and 13

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 4 Total Acres: 264 Field Number(s): 3, 13 Acres: 108 Date: 8/27/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Sugar Maple	16-32	Heavy	11	Multiple		85	42	Good
American Beech	14-24	Heavy	17	Multiple		87	32	Good
Eastern Hemlock	P-30	Heavy	43	Multiple		88		Good
Black Cherry	12-24	Light - Medium	14	Multiple		87	36	Good
Yellow Birch	P-SL	Light		Multiple				Fair
White Ash	P-SL	Light		Multiple				Fair

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature Hardwood Forest that is dominated by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*) and Eastern Hemlock (*Tsuga canadensis*). In addition, some mature Black Cherry (*Prunus serotina*), Yellow Birch (*Betula lutea*) and White Ash (*Fraxinus americana*) can also be found scattered throughout this forest.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

Field Number 3 contains a southwesterly flowing four season stream that drains from the Marsh/Wet Thicket in Field Number 2. Field Number 13 contains a significant Marsh that is located south of the gas line.

Fire Lane Status

The Fire Breaks in these fields are approximately 15 feet wide and are in need of moderate widening, clearing and pruning. These Fire Breaks are currently being used by All Terrain Vehicles. This use is strictly prohibited on County Forest property, and violators will be prosecuted.

Lot 4—Fields 3 and 13

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium - heavy density and is characterized by the dominant species of Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*) and Eastern Hemlock (*Tsuga canadensis*) with light intrusions of mature Black Cherry (*Prunus serotina*), Yellow Birch (*Betula lutea*) and White Ash (*Fraxinus americana*).

Subcanopy

The subcanopy is of medium - heavy density and is represented by a variety of hardwood species along with Eastern Hemlock (*Tsuga canadensis*).

Shrub Layer

The shrub layer is of light density and includes various species of Brambles (*Rubus* spp.).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns such as Lady fern (*Athyrium Filix-femina*), Evergreen Woodfern (*Dryopteris intermedia*), Sensitive fern (*Onoclea sensibilis*), Cinnamon fern (*Osmunda cinnamomea*), Hayscented fern (*Dennstaedtia punctilobula*) and New York fern (*Thelypteris noveboracensis*) along with Tree Clubmoss (*Lycopodium obscurum*) and scattered herbaceous plants.

Successional Status

This field represents a mature mixed Hardwood Forest that is dominated by the Climax species of Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*) along with Eastern Hemlock (*Tsuga canadensis*), a conifer associate.

Botanical Concerns - includes both invasive and protected species

Invasive: Garlic Mustard (*Alliaria officinalis*) and Japanese Knotweed (*Polygonum cuspidatum*)

Protected: All ferns listed under “Herbaceous Layer” except Hayscented fern (*Dennstaedtia punctilobula*) and Sensitive fern (*Onoclea sensibilis*). Tree Clubmoss (*Lycopodium obscurum*) and Painted Trillium (*Trillium undulatum*) are also protected.

Lot 4—Fields 4 and 8

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 4 Total Acres: 264 Field Number(s): 4, 8 Acres: 30 Date: 8/28/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Red Pine	10-18	Heavy	21	Even	73	70	Good
American Beech	S/P	Medium		Multiple			Poor
Sugar Maple	S/P	Medium		Multiple			Poor
Black Cherry	S/P	Medium		Multiple			Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent Red Pine (*Pinus resinosa*) Plantations in the mid stages of hardwood succession. Between these fields and along the present Fire Break, exists mature Black Cherry (*Prunus serotina*) and Sugar Maple (*Acer saccharum*).

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
None

Fire Lane Status

The Fire Break between these two fields occupies a former road and is approximately 20 feet wide. This Fire Break is generally in good condition but is in need of moderate clearing and pruning.

Lot 4—Fields 4 and 8

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is dominated by Red Pine (*Pinus resinosa*).

Subcanopy

The subcanopy is of heavy density and is represented by American Beech (*Fagus grandifolia*), Sugar Maple (*Acer saccharum*) and Black Cherry (*Prunus serotina*).

Shrub Layer

The shrub layer is generally not present.

Herbaceous Layer

The herbaceous layer is of medium - heavy density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), Lady fern (*Athyrium Filix-femina*), Christmas fern (*Polystichum acrostichoides*) and Sensitive fern (*Onoclea sensibilis*).

Successional Status

These fields represent mature Red Pine (*Pinus resinosa*) Plantations in the mid stages of hardwood succession and will continue to evolve into a hardwood dominated Climax Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*).

Lot 4—Fields 5 and 9

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 4 Total Acres: 264 Field Number(s): 5, 9 Acres: 4 Date: 8/28/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
(see below)							

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent approximately four acres of Marsh/Wet Meadow environments characterized by a variety of emergent plant and wet thicket species.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

Field Number 9 contains a small, westerly flowing intermittent stream.

Fire Lane Status

The Fire Breaks in both fields serve as field buffers along Wagner Road. Field Number 9 also contains a Fire Break along its southern boundary that is approximately 20 feet wide and in need of moderate widening, clearing and pruning.

Lot 4—Fields 5 and 9

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is not present.

Subcanopy

The subcanopy is not present.

Shrub Layer

The shrub layer is of medium density and includes primarily Tartarian Honeysuckle (*Lonicera tartarica*).

Herbaceous Layer

The herbaceous layer is of heavy density and is dominated by Sensitive fern (*Onoclea sensibilis*), Common Cattail (*Typha latifolia*), Joe Pye Weed (*Eupatorium maculatum*) and Japanese Knotweed (*Polygonum cuspidatum*).

Successional Status

These fields represent Marsh environments transitioning into Wet Meadows. Terrestrial plants and subsequently mesic woody plants will continue to expand into these wetland margins as the systems further evolve.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera tartarica*), Japanese Knotweed (*Polygonum cuspidatum*) and Garlic Mustard (*Alliaria officinalis*)

Protected: None

Lot 4—Fields 6 and 12

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 4 Total Acres: 264 Field Number(s): 6, 12 Acres: 35 Date: 8/27/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Red Pine	10-18	Heavy	22	Even	73	76	Good
Sugar Maple	S-14	Medium		Multiple		78 45	Good
Black Cherry	P-24	Light		Multiple		78 40	Good
American Beech	S/P	Light		Multiple			Poor
White Ash	S/P	Light		Multiple			Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature Red Pine (*Pinus resinosa*) Plantations with significant hardwood intrusions of Sugar Maple (*Acer saccharum*) and Black Cherry (*Prunus serotina*).

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
None

Fire Lane Status

The Fire Breaks in these fields are approximately 15-20 feet wide and are in need of moderate widening, clearing and pruning.

Lot 4—Fields 6 and 12

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium - heavy density and is characterized by Red Pine (*Pinus resinosa*) along with Sugar Maple (*Acer saccharum*) and Black Cherry (*Prunus serotina*).

Subcanopy

The subcanopy is of medium - heavy density and is represented by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*) and White Ash (*Fraxinus americana*).

Shrub Layer

The shrub layer is of light density and includes scattered “pockets” of Brambles (*Rubus* spp.).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns such as Lady fern (*Athyrium Filix-femina*), Evergreen Woodfern (*Dryopteris intermedia*), Sensitive fern (*Onoclea sensibilis*), Christmas fern (*Polystichum acrostichoides*), New York fern (*Thelypteris noveboracensis*) and Hayscented fern (*Dennstaedtia punctilobula*) along with scattered herbaceous plants.

Successional Status

These fields represent mature Red Pine (*Pinus resinosa*) Plantations in the mid - late stages of hardwood succession. Mature hardwoods presently exist in the canopy and will gradually out compete the conifers as this field evolves into a Hardwood Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: Garlic Mustard (*Alliaria officinalis*)

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*) and Hayscented fern (*Dennstaedtia punctilobula*). Tree Clubmoss (*Lycopodium obscurum*) and White Baneberry (*Actaea pachypoda*) are also protected.

Lot 4—Field 7

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 4 Total Acres: 264 Field Number(s): 7 Acres: 1 Date: 8/28/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
(see below)							

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a Wet Thicket Community with standing water present throughout the year.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems (see above).

Fire Lane Status

The Fire Break in this field is an extension of the Fire Break in Field Number 4 (see Field Number 4 for more details).

Lot 4—Field 7

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is not present.

Subcanopy

The subcanopy is not present.

Shrub Layer

The shrub layer is of medium density and includes Common Elderberry (*Sambucus canadensis*) and Silky Dogwood (*Cornus amomum*).

Herbaceous Layer

The herbaceous layer is of heavy density and is dominated by a variety of ferns such as Lady fern (*Athyrium Filix-femina*), Evergreen Woodfern (*Dryopteris intermedia*) and Sensitive fern (*Onoclea sensibilis*) along with scattered herbs.

Successional Status

This field represents a Wet Thicket Community that will continue to fill in and evolve in to a more mesic Shrubland/Young Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*).

Lot 4—Field 10

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 4 Total Acres: 264 Field Number(s): 10 Acres: 30 Date: 8/25/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
White Ash	12-18	Light - Medium	17	Multiple		65	30	Fair
Red Maple	S-16	Light - Medium	16	Multiple		60	25	Fair

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a young, wet Secondary Hardwood Forest with a heavy density herbaceous layer. This area contains a four season stream that floods the adjacent forests seasonally.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
This field contains a westerly flowing four season stream.

Fire Lane Status

None

Lot 4—Field 10

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of light - medium density and is characterized by Red Maple (*Acer rubrum*) and White Ash (*Fraxinus americana*).

Subcanopy

The subcanopy is of light density and is represented by Musclewood (*Carpinus caroliniana*), American Basswood (*Tilia americana*) and Eastern Hemlock (*Tsuga canadensis*).

Shrub Layer

The shrub layer is generally not present except for some light patches of Tartarian Honeysuckle (*Lonicera tartarica*).

Herbaceous Layer

The herbaceous layer is of heavy density and is dominated by a variety of ferns such as Sensitive fern (*Onoclea sensibilis*) and Marsh fern (*Thelypteris palustris*) along with Meadow Horsetail (*Equisetum pratense*) and a variety of wetland herbs.

Successional Status

This field represents a young, wet Secondary Hardwood Forest that will gradually evolve into a drier more mesic Hardwood Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera tartarica*)

Protected: Marsh fern (*Thelypteris palustris*) and Meadow Horsetail (*Equisetum pratense*).

Lot 4—Field 11

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 4 Total Acres: 264 Field Number(s): 11 Acres: 3 Date: 8/27/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Norway Spruce	P-24	Heavy	10	Even	73	78	Good
Black Cherry	P-16	Light		Multiple		70 32	Good
White Ash	P	Light		Multiple			Fair
Red Maple	P	Light		Multiple			Fair

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature Norway Spruce (*Picea abies*) Plantation in the mid stages of Secondary Hardwood succession. This field also contains the remnants of a one acre wetland that is presently filling in and evolving into a Pioneer Forest of Quaking Aspen (*Populus tremuloides*) and Pin Cherry (*Prunus pennsylvanica*).

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

This field contains a westerly flowing four season stream.

Fire Lane Status

The Fire Breaks in this field are approximately 20 feet wide and are in need of widening, clearing and pruning.

Lot 4—Field 11**FIELD WORKSHEET #2
ECOLOGICAL ANALYSIS****Ecological Overview****Forest Physiognomy (outer appearance)**Canopy

The canopy is of heavy density and is characterized by the dominant species of Norway Spruce (*Picea abies*) along with light intrusions of Black Cherry (*Prunus serotina*) and White Ash (*Fraxinus americana*).

Subcanopy

The subcanopy is of light density and is represented by Black Cherry (*Prunus serotina*), White Ash (*Fraxinus americana*) and Red Maple (*Acer rubrum*).

Shrub Layer

The shrub layer is generally not present.

Herbaceous Layer

The herbaceous layer is of light density and is dominated by a variety of ferns such as Sensitive fern (*Onoclea sensibilis*), New York fern (*Thelypteris noveboracensis*) and Lady fern (*Athyrium Filix-femina*).

Successional Status

This field represents a mature Norway Spruce (*Picea abies*) Plantation in the mid stages of Secondary Hardwood succession characterized by intrusions of Black Cherry (*Prunus serotina*), White Ash (*Fraxinus americana*) and Red Maple (*Acer rubrum*).

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*).

Lot 4—Field 14

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 4 Total Acres: 264 Field Number(s): 14 Acres: 6 Date: 8/28/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Red Pine	P-16	Heavy	10	Even	73	78	Good
Norway Spruce	P-18	Medium - Heavy	11	Even	73	80	Good
Black Cherry	P-18	Light		Multiple		75 36	Good
White Ash	P-14	Light		Multiple		72 30	Fair
Sugar Maple	P-14	Light		Multiple		72 40	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature Conifer Plantation with a significant hardwood intrusion in all forest levels. The Norway Spruce (*Picea abies*) are found primarily along the western boundary of this field.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

This field contains a westerly flowing four season stream.

Fire Lane Status

The Fire Break in this field, approximately 20 feet wide, follows the stream and is in need of general widening, clearing and pruning.

Lot 4—Field 14

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium - heavy density and is characterized by the dominant species of Red Pine (*Pinus resinosa*) and Norway Spruce (*Picea abies*) along with a variety of hardwoods.

Subcanopy

The subcanopy is of medium - heavy density and is represented by a variety of hardwood species such as Black Cherry (*Prunus serotina*), White Ash (*Fraxinus americana*) and Sugar Maple (*Acer saccharum*).

Shrub Layer

The shrub layer is of light density and includes Brambles (*Rubus* spp.), especially along the stream and in open forest “pockets”.

Herbaceous Layer

The herbaceous layer is of light density and is dominated by a variety of ferns such as Lady fern (*Athyrium Filix-femina*), Evergreen Woodfern (*Dryopteris intermedia*), Sensitive fern (*Onoclea sensibilis*) and New York fern (*Thelypteris noveboracensis*) along with scattered herbs.

Successional Status

This field represents a mature Conifer Plantation in the mid - late stages of hardwood succession.

Botanical Concerns - includes both invasive and protected species

Invasive: Garlic Mustard (*Alliaria officinalis*)

Protected: All ferns listed under “Herbaceous Layer” except for Sensitive fern (*Onoclea sensibilis*).

Lot 4—Field 15

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 4 Total Acres: 264 Field Number(s): 15 Acres: 6 Date: 8/25/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Sugar Maple	S-20	Medium	22	Multiple		78	40	Good
Yellow Birch	P-16	Light	17	Multiple		70	30	Fair
Black Cherry	14-22	Light	14	Multiple		82	36	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a young, generally wet Hardwood Forest with some mature mixed hardwoods distributed throughout. It is also important to note that the eastern section of this field contains a variety of mature hardwoods.

**The 1965 USDA map does not correspond to the new GIS map created in 2003. Field Number 15 is actually approximately 6 acres instead of 28 acres as determined by surveys conducted by Messinger Woods. It is recommended then, that the south and west borders be surveyed by Erie County to verify these findings.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
This field contains a northwesterly flowing four season stream.

Fire Lane Status

This field contains a Fire Break that is approximately 18 feet wide and is in need of grading (very wet areas), widening, clearing and pruning.

Lot 4—Field 15**FIELD WORKSHEET #2
ECOLOGICAL ANALYSIS****Ecological Overview****Forest Physiognomy (outer appearance)**Canopy

The canopy is of medium density and is characterized by Sugar Maple (*Acer saccharum*), Yellow Birch (*Betula lutea*), Black Cherry (*Prunus serotina*) along with some Eastern Hemlock (*Tsuga canadensis*).

Subcanopy

The subcanopy is of medium density and is represented primarily by Sugar Maple (*Acer saccharum*).

Shrub Layer

The shrub layer is of light density and includes Brambles (*Rubus* spp.) and Common Spicebush (*Lindera benzoin*).

Herbaceous Layer

The herbaceous layer is of very light density with occasional ferns such as Sensitive fern (*Onoclea sensibilis*), Christmas fern (*Polystichum acrostichoides*), Evergreen Woodfern (*Dryopteris intermedia*) and Lady fern (*Athyrium Filix-femina*).

Successional Status

This field represents both young and mature Hardwood Forests. These systems will gradually evolve into Maple dominated Climax Forests.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except for Sensitive fern (*Onoclea sensibilis*).

Lot 4 Summary and Recommendations

FIELD WORKSHEET #3 WILDLIFE SUMMARY

Lot # 4 offers an excellent variety of habitats for diverse populations of wildlife species. Field Numbers 1, 4, 6, 8, 11, 12 and 14 represent mature Conifer Plantations in various stages of hardwood succession. Field Numbers 3, 10, 13 and 15 include young - mature Hardwood Forests and Field Numbers 2, 5, 7 and 9 represent Marsh/Wet Thicket Communities in various stages of succession.

During a period of three days, staff ecologists recorded a variety of wildlife observations focused upon actual sightings and other wildlife “signs”. The following list represents a brief overview of those encounters focused upon Mammals, Birds and Reptiles/Amphibians.

Mammals

Whitetail Deer (<i>Odocoileus virginianus</i>)	Red Fox (<i>Vulpes fulva</i>)
Gray Squirrel (<i>Sciurus carolinensis</i>)	Raccoon (<i>Procyon lotor</i>)
Red Squirrel (<i>Tamiasciurus hudsonicus</i>)	Coyote (<i>Canis latrans</i>)
Eastern Chipmunk (<i>Tamias striatus</i>)	

Birds

Wild Turkey (<i>Meleagris gallopavo</i>)	Black-capped Chickadee (<i>Parus atricapillus</i>)
Pileated Woodpecker (<i>Dryocopus pileatus</i>)	Blue Jay (<i>Cyanocitta cristata</i>)
White-breasted Nuthatch (<i>Sitta carolinensis</i>)	Great Crested Flycatcher (<i>Myiarchus crinitus</i>)
Redtail Hawk (<i>Buteo jamaicensis</i>)	Common Crow (<i>Corvus brachyrhynchos</i>)
House Wren (<i>Troglodytes adorn</i>)	Gray Catbird (<i>Dumetella carolinensis</i>)
Eastern Phoebe (<i>Sayornis phoebe</i>)	

Reptiles/Amphibians

Green Frog (<i>Rana clamitans melanota</i>)	American Toad (<i>Bufo americanus</i>)
Spotted Newt (<i>Notophthalmus viridescens</i>)	Spring Peeper (<i>Hyla crucifer</i>)

FIELD WORKSHEET #4 RECOMMENDATIONS

The following recommendations for Lot # 4 of the Erie County Forestry Management Plan are based upon field data collected by Earth Spirit Educational Services, Inc. in the areas of Forest Ecology, Wildlife Biology and general Ecology.

Field Number 1

Description - This field represents a mature Red Pine (*Pinus resinosa*) Plantation in the mid stages of hardwood succession with American Beech (*Fagus grandifolia*) presently existing in sapling - pole size and extending into the subcanopy.

Recommendations - This field should be actively managed for Red Pine.

Field Numbers 2, 5, 7 and 9

Description - These fields represent Marsh/Wet Thicket Communities in various stages of succession into a mesic Shrubland/Young Forest.

Recommendations - These fields should remain without treatment in order to promote habitat diversity for local wildlife.

Field Numbers 3 and 13

Description - These fields represent mature mixed Hardwood Forests dominated by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*) and Eastern Hemlock (*Tsuga canadensis*), a conifer associate.

Recommendations - These fields represent an excellent opportunity for a selective harvest of mature mixed hardwoods.

Field Numbers 4, 6, 8 and 12

Description - These fields represent mature Red Pine (*Pinus resinosa*) Plantations in the mid - late stages of hardwood succession.

Recommendations - These fields should be actively managed for Red Pine. The Sugar Maple in these fields should remain without treatment in order to serve as “seed trees” for hardwood regeneration.

Field Numbers 10 and 11

Description - These fields represent young, seasonally wet Hardwood Forests. Field Number 11 also contains a mature Norway Spruce Plantation in the mid stages of hardwood succession.

Recommendations - These fields should remain without treatment in order to enhance wildlife habitat, prevent soil erosion and protect the watershed.

Field Number 14

Description - This field represents a mature Red Pine (*Pinus resinosa*) and Norway Spruce (*Picea abies*) Plantation in the mid - late stages of hardwood succession.

Recommendations - This field should be actively managed for conifers. This field also contains mature Black Cherry, White Ash and Sugar Maple that should remain without treatment in order to serve as “seed trees” for hardwood regeneration.

Field Number 15

Description - This field represents a middle aged - mature mixed Hardwood Forest.

Recommendations - This field may be thinned on a selective basis for mature hardwoods.

Lot 4

Soils, Waterways and Topography

Soils

The soils on Lot 4 are predominately well drained Chenango Gravelly Loam (CkB, CkC and CkD), 3-25% slopes. These soils have moderate to rapid permeability and are potentially highly erodible, except for in the steeper areas, where they are highly erodible. There are also several areas of hydric soils, designated as New York State and Federal wetlands. These include the poorly drained, variably permeable Fluvaquents and Udifluvents (Fu), very poorly drained, moderately permeable Halsey Silt Loam (Ha) and the very poorly drained, moderately permeable Lyons Mucky Silt Loam (Lz). Along stream corridors lie areas of the somewhat poorly drained, moderately permeable Raynham Silt Loam (RaA) and Rhinebeck Gravelly Loam (RkA), and the moderately well drained, slowly permeable, highly erodible Williamson Silt Loam (WeC), with 8-15% slopes.

Waterways and Topography

A trout stream runs parallel to the Town boundary at the southern end of the lot, and another stream meanders through the north portion of the lot. These are both Class C tributaries to Buffalo Creek, a Class A stream, protected as a drinking water source. Thermal pollution is the primary impairment to Buffalo Creek, caused by removal of vegetation along streambanks. The primary pollutant source in the stream is agriculture; secondary pollutants include construction, urban runoff, on-site waste treatment systems, streambank erosion and road bank erosion, contributing to impairments to fish propagation and survival. The southern portion of the lot is generally flat and gentle slopes characterize the northern acreage. Soil disturbing activities should be minimized within riparian buffer areas to protect the water resource.

Lot 4

Forest Stewardship Recommendations

Stand A (Field 1)

MEDIUM PRIORITY

This area of mature conifer plantation of red pine has widely scattered small to medium sawtimber size hardwoods of black cherry and aspen. The pine understory has scattered saplings of beech and sugar maple, but few seedlings. The density is high; no thinning had been done. Red pine diameters average 11-13" with maximums around 17". Terrain is steep, well-drained knolls. The mature pines should be scheduled for patch harvesting to complete the transition to native hardwoods, but some control of the beech saplings should be done at the same time. The scattered sawlog hardwoods of cherry should be left for seed trees (5-10/ac), which then could be salvaged about 3-5 years after the conifers are cut. Recheck 3 years after conifer harvest.

Stand B (Fields 3, 13)

HIGH PRIORITY

This is an uneven-aged stand of northern hardwoods containing predominantly sugar maple, hemlock, beech, red maple and white ash with lower quantities of black cherry, yellow birch, bitternut hickory and basswood. Some sections have more hemlock than other species. The stand density is moderate with 70-120 sq ft/ac basal area. Maximum diameters are large sawtimber, up to 25-30"+. Beech is heavily diseased, but hemlock and maple are generally good quality. The understory is composed of hemlock, sugar maple and beech saplings, with a good quantity of maple seedlings. There are very old stumps of maple and beech, indications of a previous timber harvest in this stand. To address a timber objective, a light, selection harvest could be done in this stand, across many diameters, reducing the basal area by no more than 1/3. Light timber stand improvement should accompany the harvest to remove inferior trees and to promote adequate regeneration around residual trees. Insist upon no-cut buffers about 100 wide along property boundaries, the gravel-bottom streams and around significant wetlands. The terrain is rough and bumpy, but the upland soils have good internal drainage. There are no long slopes for erosion problems, but the hollows between uplands are very boggy. The stream in Old Field 13 is protected Class C(t), so buffers should be left, and crossing would need a permit. Old fire lanes are choked with growth, and it may be wiser to spend time doing TSI than maintaining seldom used fire lanes. Recheck in 15 years.

Stand C (Fields 4, 8)

HIGH PRIORITY (8)

This area of mature conifer plantations of red pine has widely scattered small sawtimber size hardwoods of black cherry. The pine understory has scattered saplings of beech and black cherry, but very few seedlings. Old Field 8 has severe dieback and breakage of red pine, with the ground littered with rotting trunks. The red pines of Old Field 4 do not appear to be dying as in Old Field 8. The stand density is moderate; no thinning had been done. Red pine diameters average 12" with maximums around 14-16". Terrain is steep, sandy knolls. The mature pines should be scheduled for patch harvesting to complete the transition to native hardwoods, but some control of the beech saplings should be done at the same time. Old Field 8 should be scheduled to harvest before Old Field 4. The scattered sawlog hardwoods of cherry should be left for seed trees (5-10/ac), which then could be salvaged about 3-5 years after the conifers are cut. Recheck 3 years after conifer harvest.

Stand D (Fields 2, 5, 7, 9)

These are small wetlands of scattered large shrubs and herbaceous plants. These areas have value as wildlife habitat, plant diversity and for outdoor education. Old Field 2 is part of a Class 1, protected NYS freshwater wetland and is also identified as having a peat bog environment. These wetlands should be left intact and protected from disturbance by a 100' surrounding buffer.

Stand E (Fields 6, 12)**MEDIUM PRIORITY**

This area of mature conifer plantations of red pine has widely scattered small sawtimber size hardwoods of black cherry and sugar maple. The pine understory has scattered saplings of sugar maple plus hemlock saplings along the edges of hemlock/hardwood stands. The stand density is moderate; no thinning had been done. Red pine diameters average 11-13" with maximums around 17". Terrain is undulating, sandy knolls. The mature pines should be scheduled for patch harvesting to complete the transition to native hardwoods. The scattered sawlog hardwoods should be left for seed trees (5-10/ac), which then could be salvaged about 3-5 years after the conifers are cut. Recheck 3 years after conifer harvest. 100' buffers should be left around the stream, which in Old Field 12 is protected as Class C(t).

Stand F (Field 10)

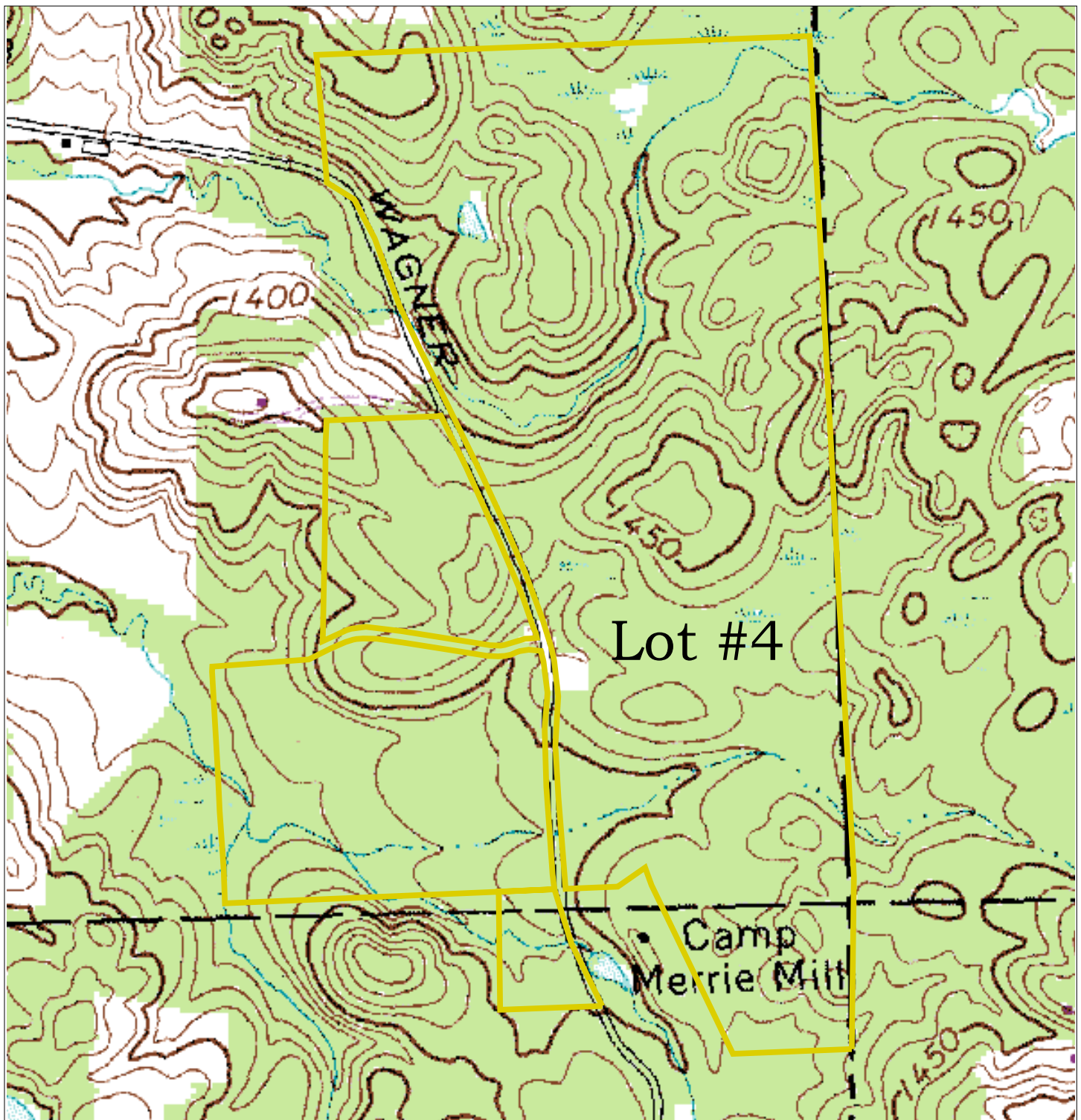
This area is a flat, poorly drained area with scattered saplings and poles of elm, red maple, wild apple, hawthorns and a few ash and sugar maples. Most of the area is in shrubs. This stand is identified as a Class 1, protected NYS freshwater wetland. Recreational access is prohibited by the wet conditions. This area should be managed primarily for wildlife and currently needs no activities scheduled.

Stand G (Fields 11, 14)**MEDIUM PRIORITY**

This area is mature plantations of red pine and Norway spruce. Neither plantation has been thinned, so the live crown ratios are around 20% and stand density is high, about 200 sq ft of basal area per acre. Diameters average about 14" in the red pine with maximums around 18". There are scattered small sawtimber black cherry and sugar maples in the pines. There are very sparse hardwood sawtimber trees and few saplings in the spruce sections. The mature conifers should be scheduled for patch harvesting to continue the transition to native hardwoods. The scattered sawlog hardwoods should be left for seed trees (5-10/ac if possible), which then could be salvaged about 5-8 years after the conifers are cut. Recheck 5 years after conifer harvest.

Stand H (Field 15)

This is a small area of uneven-aged hardwoods along the edge of Stand F and the south property boundary. There are sections of predominantly hemlock-sugar maple and others with sugar maple, yellow birch and black cherry. The stream is Class A to the west and C(t) upstream and the lower, wetter sections are included in the Class 1 NYS freshwater wetland so it has considerable State protection. This area should be managed as a buffer along the boundary and stream and thus should be left undisturbed for wildlife habitat.

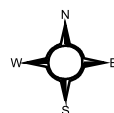


Erie County Forest Management Plan

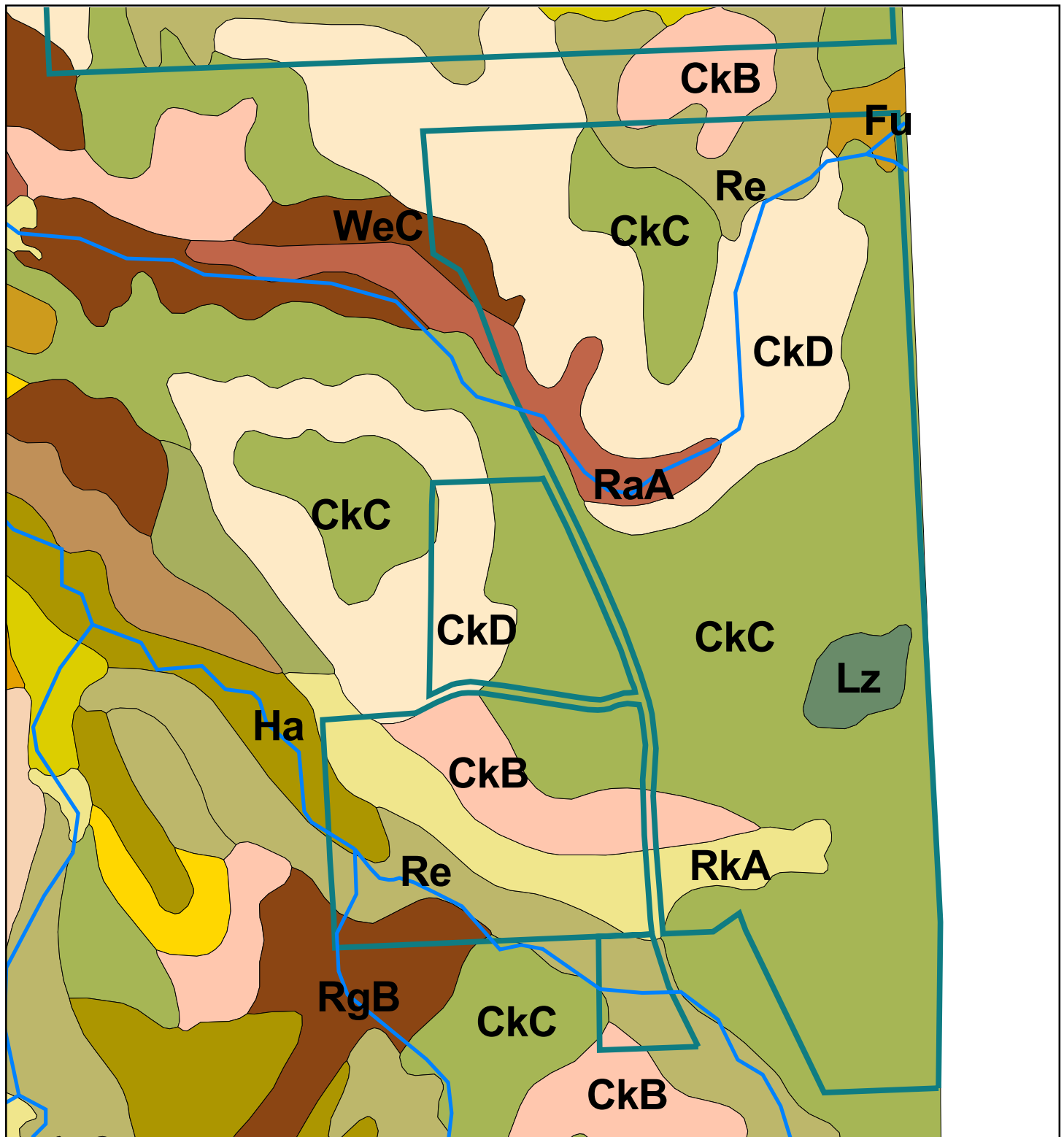
USGS TOPOGRAPHIC QUADRANGLE



Map Prepared By:
Erie County Soil and Water
Conservation District



600 0 600 Feet

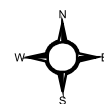


Erie County Forest Management Plan

LOT #4 - SOIL TYPES



Map Prepared By:
Erie County Soil and Water
Conservation District



300 0 300 600 Feet

Brief Soil Descriptions – Lot 4

For further information refer to the *Soil Survey of Erie County, New York*.

Symbol	Name / Description
--------	--------------------

CkB *Chenango Gravelly Loam, 3 to 8 Percent Slopes*

Deep, gently sloping, well drained, low lime, gravelly loam soil formed mainly in gravel and sand. The available water capacity is low. Permeability is moderate to rapid in the surface soil and subsoil and generally rapid or very rapid in the substratum. PRIME FARMLAND, POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIs, NYS SOIL GROUP-2B, K=.24, T=3

CkC *Chenango Gravelly Loam, 8 to 15 Percent Slopes*

Deep, sloping, well drained, low lime, gravelly loam soil formed mainly in gravel and sand. The available water capacity is low. Permeability is moderate to rapid in the surface soil and subsoil and generally rapid or very rapid in the substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-5b, K=.24, T=3

CkD *Chenango Gravelly Loam, 15 to 25 Percent Slopes*

Deep, moderately steep, well-drained, low lime, gravelly loam soil formed mainly in gravel and sand. The available water capacity is low. Permeability is moderate to rapid in the surface soil and subsoil and generally rapid or very rapid in the substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-6b, K=.24, T=3

Fu *Fluvaquents and Udifluvents, Frequently Flooded*

Moderately deep to deep, nearly level, well drained to poorly drained, high to low lime, variable soils formed in recent stream deposits. The available water capacity and permeability are variable. No K or T values are assigned. HYDRIC SOIL, CAPABILITY CLASS-Vw, NYS SOIL GROUP-9

Ha *Halsey Silt Loam*

Deep, nearly level, poorly drained and very poorly drained, medium lime, silt loam soil formed mainly in gravel and sand deposits. The available water capacity is moderate. Permeability is moderate or moderately slow in the subsoil and generally rapid in underlying layers. HYDRIC SOIL, CAPABILITY CLASS-IVw, NYS SOIL GROUP-7b, K=.24, T=5

Lz *Lyons Mucky Silt Loam*

Deep, nearly level, very poorly drained, high lime, silt loam soil formed in fine loamy glacial till. Typically, this soil has a surface layer of very dark brown mucky silt loam about 9 inches thick. The available water capacity is moderate to high. Permeability is moderate in the surface soil, moderately slow in the subsoil and slow or very slow in the substratum. HYDRIC SOIL, CAPABILITY CLASS-IVw, NYS SOIL GROUP-7b, K=.37, T=5

RaA *Raynham Silt Loam, 0 to 3 Percent Slopes*

Deep, nearly level, somewhat poorly drained, high lime, silt loam soil formed in silty lake sediments. The available water capacity is moderate to high. Permeability is generally moderate in the surface soil, moderately slow in the subsoil and slow in the substratum. PRIME FARMLAND (WHERE DRAINED), CAPABILITY CLASS-IIIW, NYS SOIL GROUP-5b, K=.49, T=3

Re *Red Hook Silt Loam*

Deep, nearly level, somewhat poorly drained, medium lime, silt loam soil formed in gravelly deposits. The available water capacity is generally low. Permeability is moderate. CAPABILITY CLASS-IIIW, NYS SOIL GROUP-5b, K=.39, T=3

RgB *Rhinebeck Silt Loam, 3 to 8 Percent Slopes*

Deep, gently sloping, somewhat poorly drained, medium to high lime, silt loam soil formed in clayey lake sediments. The available water capacity is moderate to high. Permeability is very slow. PRIME FARMLAND (WHERE DRAINED), POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIW, NYS SOIL GROUP-5b, K=.49, T=3

RkA Rhinebeck Gravelly Loam, 0 to 3 Percent Slopes

Deep, nearly level, somewhat poorly drained, medium to high lime, gravelly loam soil formed in water-sorted deposits and clayey lake sediments. The available water capacity is moderate to high. Permeability is rapid in the gravelly part and slow in the clayey part. PRIME FARMLAND (WHERE DRAINED), CAPABILITY CLASS-IIIW, NYS SOIL GROUP-5b, K=.37, T=3

WeC Williamson Silt Loam, 8 to 15 Percent Slopes

Deep, sloping, moderately well drained, low lime, silt loam soil formed in silt and very fine sand sediments. It has a very firm fragipan at a depth of 18 to 45 inches. The available water capacity is moderate. Permeability is slow or very slow in the fragipan. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-6b, K=.49, T=3



1965 CONSERVATION PLAN MAP

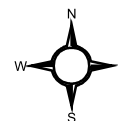
Erie County
Forest Management Plan

LOT #4

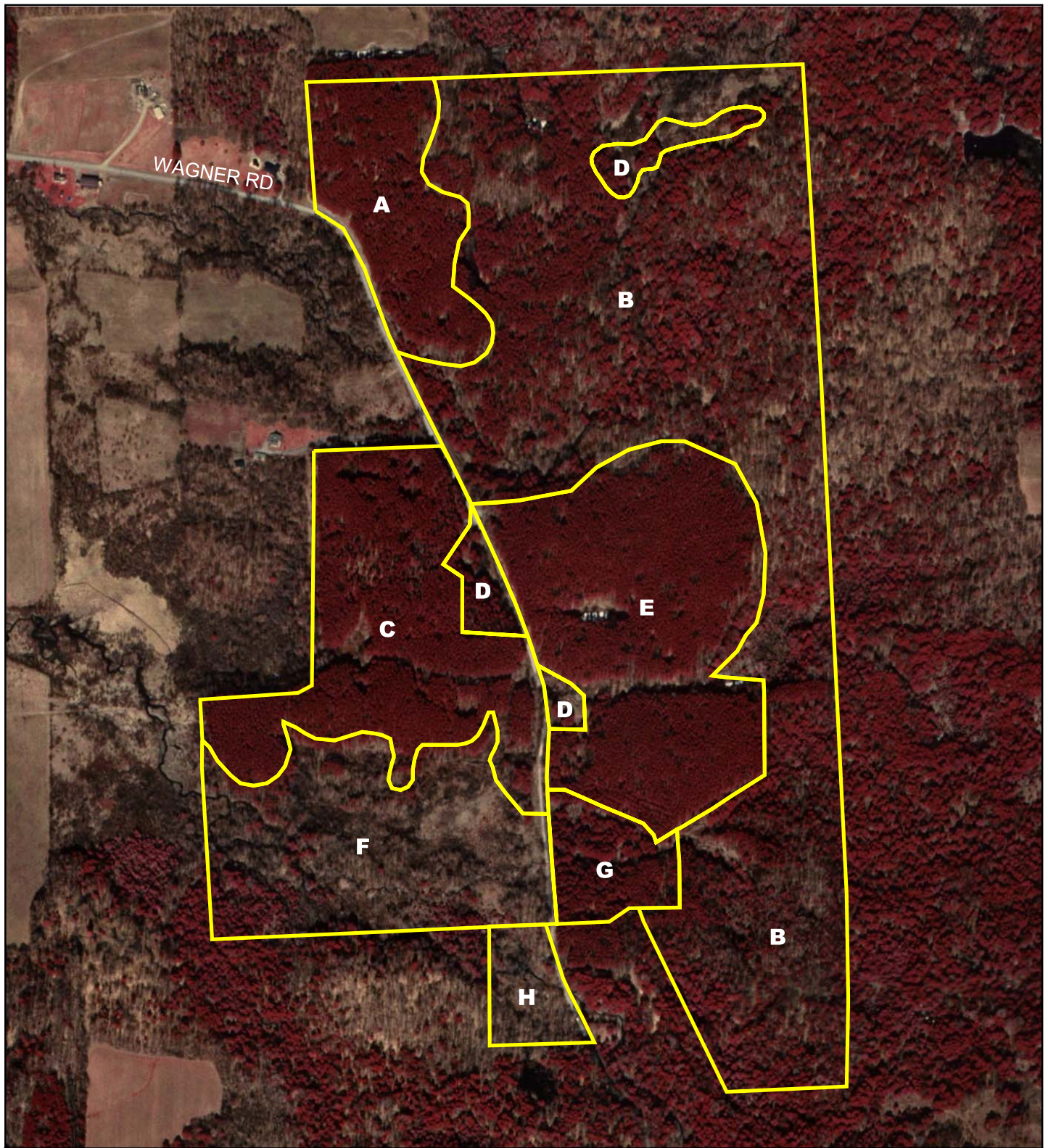


Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



500 0 500 Feet



2003 STEWARDSHIP RECOMMENDATION MAP

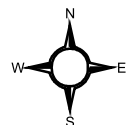
Erie County
Forest Management Plan

LOT #4



Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



300 0 300 600 Feet

A horizontal scale bar with markings at 300, 0, 300, and 600 feet.

Lot 5—Fields 1, 6, 7, 10, 13 and 14

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 5 Total Acres: 264 Field Number(s): 1,6,7,10,13 and 14 Acres: 75 Date: 8/25/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Red Pine	P-14	Heavy	17	Even	71	75	Good
Sugar Maple	S-22	Heavy	16	Multiple		70 36	Good
White Ash	P-20	Medium	13	Multiple		68 32	Good
Black Cherry	16-32	Medium	16	Multiple		67 34	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature Red Pine (*Pinus resinosa*) Plantations with significant hardwood intrusion in all forest levels represented by Sugar Maple (*Acer saccharum*), White Ash (*Fraxinus americana*) and Black Cherry (*Prunus serotina*).

Note: A field exists in the northwest portion of this Lot that is not represented in the USDA 1965 report and map but is shown in the 2003 GIS map. This field will be incorporated into Field Number 7.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
None

Fire Lane Status

The Fire Break in Field Number 14 that borders Wilkins Road is completely overgrown and has generally evolved into a field border. The Fire Break that borders Field Numbers 14 and 15 is generally in good condition, approximately 18 feet wide and is in need of general clearing and pruning. The Fire Break in Field Number 10 is approximately 18 feet wide and is in need of general clearing and pruning.

Lot 5—Fields 1, 6, 7, 10, 13 and 14

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is characterized by the following dominant species of Red Pine (*Pinus resinosa*) along with Sugar Maple (*Acer saccharum*), White Ash (*Fraxinus americana*) and Black Cherry (*Prunus serotina*).

Subcanopy

The subcanopy is of heavy density and is represented primarily by Sugar Maple (*Acer saccharum*).

Shrub Layer

The shrub layer is of light density and includes scattered Brambles (*Rubus* spp).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), Sensitive fern (*Onoclea sensibilis*), Christmas fern (*Polystichum acrostichoides*), Lady fern (*Athyrium Filix-femina*) and Crested fern (*Dryopteris cristata*).

Successional Status

These fields represent mature Red Pine (*Pinus resinosa*) Plantations in the mid - late stages of hardwood succession and will continue to evolve into a hardwood dominated Climax Forest. Hardwood intrusion is medium to heavy in the canopy and significant throughout the subcanopy.

Botanical Concerns - includes both invasive and protected species

Invasive: Garlic Mustard (*Alliaria officinalis*)

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*).

Lot 5—Field 2

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 5 Total Acres: 264 Field Number(s): 2 Acres: 70 Date: 8/25/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Sugar Maple	12-24	Heavy	16	Multiple		70	34	Good
American Beech	S-18	Heavy	14	Multiple		62	26	Fair
Bitternut Hickory	12-18	Medium	13	Multiple		72	42	Good
Basswood	14-28	Light	15	Multiple		72	36	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature Hardwood Forest dominated by Sugar Maple (*Acer saccharum*) and American Beech *Fagus grandifolia*).

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
None

Fire Lane Status

The Fire Break in this field borders Field Number 10 and is generally overgrown and in need of widening, clearing and pruning. All Terrain Vehicles have created trails throughout this field but no true Fire Breaks exist within the field. ATV use is strictly prohibited on County Forest Lots and violators will be prosecuted.

Lot 5—Field 2**FIELD WORKSHEET #2
ECOLOGICAL ANALYSIS****Ecological Overview****Forest Physiognomy (outer appearance)**Canopy

The canopy is of heavy density and is characterized by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*), Bitternut Hickory (*Carya cordiformis*) and American Basswood (*Tilia americana*).

Subcanopy

The subcanopy is of medium density and is represented by a variety of hardwood species such as Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*).

Shrub Layer

The shrub layer is generally not present.

Herbaceous Layer

The herbaceous layer is generally not present.

Successional Status

This field represents a mature Hardwood Forest that continues to evolve into a Maple/Beech Climax forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: None

Lot 5—Fields 3 and 5

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 5 Total Acres: 264 Field Number(s): 3,5 Acres: 8 Date: 8/25/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Norway Spruce	P-20	Heavy	26	Even	71	68	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature Norway Spruce (*Picea abies*) Plantations generally absent of hardwood intrusion. Note: There are two active deer stands in Field Number 3. Hunting is strictly prohibited on County Forest property and violators will be prosecuted.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
None

Fire Lane Status

There are two Fire Breaks bordering the north and west boundaries of Field Number 3. Both Fire Breaks are 33 feet wide and are in need of significant clearing and pruning.

Lot 5—Fields 3 and 5

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of heavy density and is characterized by mature Norway Spruce (*Picea abies*).

Subcanopy

The subcanopy is not present.

Shrub Layer

The shrub layer is not present.

Herbaceous Layer

The herbaceous layer is not present.

Successional Status

These fields represent mature and densely planted Norway Spruce (*Picea abies*) Plantations. At present, a dense canopy has restricted hardwood intrusion.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: None

Lot 5—Fields 4 and 12

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 5 Total Acres: 264 Field Number(s): 4, 12 Acres: 28 Date: 8/26/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
White Pine	P-14	Medium	18	Even	71	68	Poor
Black Cherry	P-25	Medium	10	Multiple		67 36	Good
Sugar Maple	S/P	Light		Multiple			Poor
American Beech	S/P	Light		Multiple			Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature White Pine (*Pinus strobus*) Plantations with a significant intrusion of Black Cherry (*Prunus serotina*). Note: Field Number 12, as shown in the 1965 USDA map, is not included in the updated 2003 GIS map.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
Field Number 4 contains a northwesterly flowing intermittent stream.

Fire Lane Status

The Fire Break in Field Number 4 that forms its western boundary is a continuation of the Field Number 3 Fire Break. This portion of the Fire Break is in need of significant widening, clearing and pruning. The two interior Fire Breaks have become All Terrain Vehicle paths and are generally in need of moderate clearing and pruning. ATV use is strictly prohibited on County Forest property and violators will be prosecuted.

Lot 5—Fields 4 and 12

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is characterized by the dominant species of White Pine (*Pinus strobus*) along with a significant intrusion of Black Cherry (*Prunus serotina*).

Subcanopy

The subcanopy is of heavy density and is represented by a variety of hardwood species.

Shrub Layer

The shrub layer is of light density and includes Dogwoods (*Cornus* spp.) and Tartarian Honeysuckle (*Lonicera tartarica*).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns such as Sensitive fern (*Onoclea sensibilis*), Christmas fern (*Polystichum acrostichoides*), Crested fern (*Dryopteris cristata*) and Lady fern (*Athyrium Filix-femina*).

Successional Status

These fields represent mature White Pine (*Pinus strobus*) Plantations in the mid - late stages of hardwood succession.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera tartarica*)

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*).

Lot 5—Field 8

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 5 Total Acres: 264 Field Number(s): 8 Acres: 5 Date: 8/25/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Austrian Pine	P-18	Heavy	11	Even	71	68		Good
Black Cherry	S-20	Light - Medium		Multiple		70	32	Good
Red Maple	P-18	Light - Medium		Multiple		70	34	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature Austrian Pine (*Pinus nigra*) Plantation with hardwood intrusions of both Black Cherry (*Prunus serotina*) and Red Maple (*Acer rubrum*) in the canopy.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

This field contains a northeasterly flowing four season stream between Field Numbers 8 and 9.

Fire Lane Status

The Fire Break in this field is approximately 15-19 feet wide and is in need of moderate widening, clearing and pruning.

Lot 5—Field 8

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is characterized by Austrian Pine (*Pinus nigra*) along with hardwood intrusions of Black Cherry (*Prunus serotina*) and Red Maple (*Acer rubrum*).

Subcanopy

The subcanopy is of medium density and is represented by Sugar Maple (*Acer saccharum*), White Ash (*Fraxinus americana*) and Black Cherry (*Prunus serotina*).

Shrub Layer

The shrub layer is of medium - heavy density and includes Multiflora Rose (*Rosa multiflora*), Dogwoods (*Cornus* spp.), Tartarian Honeysuckle (*Lonicera tartarica*), Witch-Hazel (*Hamamelis virginiana*) and Brambles (*Rubus* spp.).

Herbaceous Layer

The herbaceous layer is of light - medium density and is dominated by a variety of ferns such as Crested fern (*Dryopteris cristata*), Sensitive fern (*Onoclea sensibilis*), New York fern (*Thelypteris noveboracensis*) and Evergreen Woodfern (*Dryopteris intermedia*).

Successional Status

This field represents a mature Austrian Pine (*Pinus nigra*) Plantation in the mid - late stages of hardwood succession.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera Tartarica*) and Multiflora Rose (*Rosa multiflora*)

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*).

Lot 5—Field 9

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 5 Total Acres: 264 Field Number(s): 9 Acres: 10 Date: 8/25/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Scotch Pine	P-12	Medium - Heavy	17	Even	54	68	Fair
Bigtooth Aspen	12-16	Light		Multiple			Poor
American Beech	S/P	Light		Multiple			Poor
Red Maple	P-14	Light		Multiple			Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature Scotch Pine (*Pinus sylvestris*) Plantation with light intrusions of Pioneer and Secondary Hardwoods such as Bigtooth Aspen (*Populus grandidentata*) and Red Maple (*Acer rubrum*). This field is generally wet as a result of drainage from the Marsh Community in Field Number 11.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

This field contains a northeasterly flowing four season stream that drains from the Marsh Community in Field Number 11.

Fire Lane Status

The Fire Break in this field is approximately 20 feet wide and is in need of significant clearing and pruning.

Lot 5—Field 9

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is represented by Scotch Pine (*Pinus sylvestris*) along with light intrusions of Bigtooth Aspen (*Populus grandidentata*) and Red Maple (*Acer rubrum*).

Subcanopy

The subcanopy is of medium density and is represented by a variety of hardwood species including Red Maple (*Acer rubrum*), Black Cherry (*Prunus serotina*) and American Beech (*Fagus grandifolia*).

Shrub Layer

The shrub layer is of medium - heavy density and includes Multiflora Rose (*Rosa Multiflora*), Dogwoods (*Cornus* spp.), Brambles (*Rubus* spp.) and Tartarian Honeysuckle (*Lonicera tartarica*).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), Sensitive fern (*Onoclea sensibilis*), Cinnamon fern (*Osmunda cinnamomea*) and Marsh fern (*Thelypteris palustris*) along with Meadow Horsetail (*Equisetum pratense*).

Successional Status

This field represents a mature Scotch Pine (*Pinus sylvestris*) Plantation in the mid stages of hardwood succession with light intrusions of Pioneer and Secondary Hardwoods present in the canopy.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera tartarica*) and Multiflora Rose (*Rosa multiflora*)

Protected: All ferns and horsetails under the “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*).

Lot 5—Field 11

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 5 Total Acres: 264 Field Number(s): 11 Acres: 6 Date: 8/25/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
(see below)							

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a Marsh/Wet Thicket Community characterized by a wide variety of emergent plants and wetland shrubs.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
(see above)

Fire Lane Status

The Fire Break in Field Number 11 borders Wilkins Road and has generally evolved into a field border.

Lot 5—Field 11

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is not present.

Subcanopy

The subcanopy is not present.

Shrub Layer

The shrub layer is of medium density and includes Common Elderberry (*Sambucus canadensis*) and Silky Dogwood (*Cornus amomum*).

Herbaceous Layer

The herbaceous layer is of heavy density and is dominated by a variety of ferns such as Lady fern (*Athyrium Filix-femina*), Cinnamon fern (*Osmunda cinnamomea*), Evergreen Woodfern (*Dryopteris intermedia*) and Sensitive fern (*Onoclea sensibilis*) along with a variety of emergent plants.

Successional Status

This field represents a Marsh/Wet Thicket Community that will gradually fill in and evolve into a more mesic Shrubland/Young Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*).

Lot 5—Field 15

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 5 Total Acres: 264 Field Number(s): 15 Acres: 54 Date: 8/28/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Sugar Maple	S-19	Heavy	25	Multiple		88	42	Good
Black Cherry	P-22	Heavy	16	Multiple		78	40	Good
White Ash	P-18	Medium	13	Multiple		80	37	Good
American Beech	P-14	Light	18	Multiple		85	47	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature mixed Hardwood Forest with the dominant species of Sugar Maple (*Acer saccharum*), Black Cherry (*Prunus serotina*), White Ash (*Fraxinus americana*) and American Beech (*Fagus grandifolia*) along with Eastern Hemlock (*Tsuga canadensis*), a conifer associate. The Hardwood Forests in this field drain directly into a sensitive Bog Ecosystem.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

This field contains the “Holland Bog,” an extremely unique and uncommon ecosystem in Western New York.

Fire Lane Status

The Fire Break in this field parallels Wilkins Road and has evolved into an edge border. The Fire Break that heads south from Wilkins Road is approximately 18 feet wide and is in need of widening, clearing and pruning.

Lot 5—Field 15

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of heavy density and is characterized by Sugar Maple (*Acer saccharum*), Black Cherry (*Prunus serotina*), White Ash (*Fraxinus americana*) and American Beech (*Fagus grandifolia*). The canopy is not present in the Bog portion of this field.

Subcanopy

The subcanopy is of light density and is represented by Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*). The subcanopy is not present in the Bog portion of this field.

Shrub Layer

The shrub layer is of light density and includes Brambles (*Rubus* spp.), Dogwoods (*Cornus* spp.) and Mapleleaf Viburnum (*Viburnum acerifolium*). The shrub layer is of heavy density in the Bog portion of this field and is dominated by Red Chokeberry (*Pyrus arbutifolia*) and other wetland shrubs.

Herbaceous Layer

The herbaceous layer is of light - medium density and is dominated by a variety of ferns such as Hayscented fern (*Dennstaedtia punctilobula*), New York fern (*Thelypteris noveboracensis*), Bracken fern (*Pteridium aquilinum*), Evergreen Woodfern (*Dryopteris intermedia*) and Cinnamon fern (*Osmunda cinnamomea*) along with Tree Clubmoss (*Lycopodium obscurum*) and a variety of scattered herbs. The herbaceous layer is of heavy density in the Bog portion of this field and is characterized by typical bog plants that thrive in acidic environments.

Successional Status

This field represents a mature mixed Hardwood Forest that is gradually evolving into a Maple dominated Climax Forest. The Bog portion of this field will eventually fill in and further evolve (barring shifts in drainage patterns) into a drier, more alkaline wetland environment.

Botanical Concerns - includes both invasive and protected species

Invasive: Garlic Mustard (*Alliaria officinalis*)

Protected: All ferns and clubmosses listed under “Herbaceous Layer” except Hayscented fern (*Dennstaedtia punctilobula*) and Bracken fern (*Pteridium aquilinum*). The “Holland Bog,” though not analyzed as part of this survey, undoubtedly possesses an abundance of protected plant species.

Lot 5 Summary and Recommendations

FIELD WORKSHEET #3 WILDLIFE SUMMARY

Lot # 5 offers an excellent variety of habitats for diverse populations of wildlife species. Field Numbers 1, 3-10 and 12-14 represent mature Conifer Plantations in various stages of hardwood succession. Field Numbers 2 and 15 represent mature mixed Hardwood Forests while Field Number 11 includes a Marsh/Wet Thicket Community. Note: Field Number 15 contains the “Holland Bog,” an extremely unique and uncommon ecosystem in Western New York.

During a period of three days, staff ecologists recorded a variety of wildlife observations focused upon actual sightings and other wildlife “signs”. The following list represents a brief overview of those encounters focused upon Mammals, Birds and Reptiles/Amphibians.

Mammals

Whitetail Deer (<i>Odocoileus virginianus</i>)	Red Fox (<i>Vulpes fulva</i>)
Gray Squirrel (<i>Sciurus carolinensis</i>)	Raccoon (<i>Procyon lotor</i>)
Red Squirrel (<i>Tamiasciurus hudsonicus</i>)	Eastern Chipmunk (<i>Tamias striatus</i>)

Birds

Wild Turkey (<i>Meleagris gallopavo</i>)	Black-capped Chickadee (<i>Parus atricapillus</i>)
Pileated Woodpecker (<i>Dryocopus pileatus</i>)	Dark-eyed Junco (<i>Junco hyemalis</i>)
Eastern Phoebe (<i>Sayornis phoebe</i>)	Great Crested Flycatcher (<i>Myiarchus crinitus</i>)
Redtail Hawk (<i>Buteo jamaicensis</i>)	Turkey Vulture (<i>Cathartes aura</i>)
Red-eyed Vireo (<i>Vireo olivaceus</i>)	Hermit Thrush (<i>Catharus guttatus</i>)
Blue Jay (<i>Cyanocitta cristata</i>)	Gray Catbird (<i>Dumetella carolinensis</i>)

Reptiles/Amphibians

Spring Peeper (<i>Hyla crucifer</i>)	Green Frog (<i>Rana clamitans melanota</i>)
American Toad (<i>Bufo americanus</i>)	

FIELD WORKSHEET #4 RECOMMENDATIONS

The following recommendations for Lot # 5 of the Erie County Forestry Management Plan are based upon field data collected by Earth Spirit Educational Services, Inc. in the areas of Forest Ecology, Wildlife Biology and general Ecology.

Field Numbers 1, 6, 7, 10, 13 and 14

Description - These fields represent mature Red Pine (*Pinus resinosa*) Plantations in the mid - late stages of hardwood succession.

Recommendations - These fields of mature Red Pine are currently experiencing significant hardwood intrusions resulting in general decline. As a result, these plantations should be actively managed. Selected hardwoods, especially Sugar Maple, Black Cherry and White Ash may also receive a selective thinning. The northern boundary of Field Numbers 6 and 7 and the western boundary of Field Number 4 should be surveyed in order to determine if illegal logging is presently taking place on Erie County property.

Field Number 2

Description - This field represents a mature Hardwood Forest dominated by Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*).

Recommendations – This field represents an excellent opportunity for the selective harvest of mature mixed hardwoods.

Field Numbers 3 and 5

Description - These fields represent mature Norway Spruce (*Picea abies*) Plantations generally absent of hardwood intrusion.

Recommendations - These fields of mature Norway Spruce are currently experiencing slow growth and general decline and as a result, these plantations should be actively managed.

Field Numbers 4 and 12

Description - These fields represent mature White Pine (*Pinus strobus*) Plantations with significant intrusions of Black Cherry (*Prunus serotina*).

Recommendations – These fields of mature White Pine are currently experiencing general decline and substantial weevil damage. As a result, these fields should remain without treatment in order to promote habitat diversity for local wildlife. The Black Cherry in these fields are in good condition and may receive a selective thinning.

Field Number 8

Description - This field represents a mature Austrian Pine (*Pinus nigra*) Plantation with hardwood intrusions of both Black Cherry (*Prunus serotina*) and Red Maple (*Acer rubrum*) in the canopy.

Recommendations - These fields of mature Austrian Pine should be actively managed. The hardwoods in this field should remain without treatment in order to provide ample “seed trees” for hardwood regeneration.

Field Number 9

Description - This field represents a mature Scotch Pine (*Pinus sylvestris*) Plantation with light intrusions of Pioneer and Secondary Hardwoods. This field is generally wet as a result of drainage from the Marsh Community in Field Number 11.

Recommendations - This field should remain without treatment in order to promote habitat diversity and prevent soil erosion.

Field Number 11

Description - This field represents a Marsh/Wet Thicket Community characterized by a wide variety of emergent plants and wetland shrubs.

Recommendations - This field should remain without treatment in order to promote habitat diversity for local wildlife.

Field Number 15

Description - This field represents a mature mixed Hardwood Forest with the dominant species of Sugar Maple (*Acer saccharum*), Black Cherry (*Prunus serotina*), White Ash (*Fraxinus americana*) and American Beech (*Fagus grandifolia*), along with Eastern Hemlock (*Tsuga canadensis*), a conifer associate. The Hardwood Forests in this field drain directly into a sensitive Bog Ecosystem.

Recommendations – This field contains the “Holland Bog,” an extremely unique and uncommon ecosystem in Western New York. As a result, this field should remain without treatment in order to preserve and protect this community for both ecological and educational purposes.

Lot 5

Soils, Waterways and Topography

Soils

The northern portion of the lot contains large areas of the well drained, moderately permeable, and highly erodible Hudson Silty Clay Loam (HvD), 15-25% slopes, the somewhat poorly drained, slowly permeable, potentially highly erodible Rhinebeck Silt Loam (RgB), 3-8% slopes, and the somewhat poorly drained, slowly permeable, and highly erodible Rhinebeck Silty Clay Loam (RhC3), with 8-15% slopes. Also included are fingers of the well drained, moderately permeable and highly erodible Chenango Gravelly Loam (CkC), 8-15% slopes, and moderately well drained, moderately slow permeating, and potentially highly erodible Collamer Silt Loam (CsB), 3-8% slopes, in the gullies. An east-west flowing stream cuts through the poorly drained Canadice Silt Loam (Ca), a hydric soil with moderately slow permeability and high clay content. South of Wilkins Road the lot contains a New York State wetland dominated by the hydric Palms Muck (Pa), a very poorly drained organic soil. Other soils include the well drained, moderate to rapidly permeable, and highly erodible Chenango Gravelly Loam (CkC and CkD) and Valois Gravelly Silt Loam (VaC), 8-25% slopes, and the somewhat poorly drained, moderately permeable Red Hook Silt Loam (Re). Forest management in this lot may be challenged by the wetness and erodibility of the soils.

Waterways and Topography

An unnamed Class C tributary to Buffalo Creek flows through the northern section of the lot. The stream has a fairly steep northern bank, rising to a small hill. South of the stream the rolling landscape rises toward Wilkins Road, which bisects the lot, and a forested New York State wetland dominates the lot south of Wilkins Road. Buffalo Creek is a Class A stream, protected as a drinking water source, and thermal pollution from opening up tree cover, especially adjacent to streams, is the primary pollutant.

Lot 5

Forest Stewardship Recommendations

General

This Lot needs to have boundary lines verified and marked, preferably with paint. There appears to be a few acre portion of the Lot in Wyoming County. There also has been considerable cutting to the north, some very fresh, some a few years old. Wilkins Rd. access is barely passable with a single lane of ruts and potholes.

Stand A (Old Fields 1, 6, 7, 10, 13, 14)

MEDIUM PRIORITY

This large stand was a red pine plantation that now has considerable hardwood ingrowth at all levels. The pines were not thinned, so the live crown ratio is 20% and less and the average diameters are relatively small and under 16". With such a developed hardwood component, release from the pines can be accomplished with patch cutting. Scattered sawlog-sized black cherry, sugar maple and white ash can provide valuable seed if retained when the pines are removed in patch cutting. If enough mature hardwoods are available, some may be able to be removed with the pines. The sections bordering wetlands of Stands G and H must have a no-cut buffer around the wetland of at least 100 feet. Due to the large size of this stand, conversion could be spread over several years, perhaps 5, and still allow development of an even-aged hardwood stand.

Stand B (Old Field 2)

MEDIUM PRIORITY

This uneven-aged hardwood stand has sugar maple, beech, bitternut hickory and basswood up to large sawlog sizes. The beech is diseased and poor quality. The understory is light beech and sugar maple saplings. The financially mature sawlogs and smaller poor quality trees should be removed in a selection harvest, but the priority is only medium. This means that a harvest need not be scheduled immediately since many trees are not yet prime. If time allows, timber stand improvement could precede the harvest to cull out many of the defective trees. Maintain a buffer around the wetland.

Stand C (Old Fields 3, 5)

MEDIUM PRIORITY

This Norway spruce plantation has the typical vacant understory of a closed canopy stand. It also has the typical wide variation in diameters. Because no hardwoods have coexisted with the spruces, there may be very little seed in the litter for advanced hardwood reproduction. Since part may be within the protected wetland, all the spruce cannot be removed. It may be wiser to perform a low thinning, removing small diameter spruces to allow some light to penetrate the canopy to stimulate whatever seed is available. The dominant spruce canopy can then be removed once an adequate hardwood understory is evident and compliant with wetland regulations. Field check 5 years after thinning.

Stand D (Old Fields 4, 12)

LOW PRIORITY

This stand is similar to a stand in Lot 2. The white pine is severely deformed, but has values other than timber. The worst pines should be removed with timber stand improvement in situations which would release adjacent or understory hardwoods of good quality. If possible, retain scattered, dominant pines of reasonable form.

Stand E (Old Field 8)

MEDIUM PRIORITY

This stand contains mature Austrian pine with codominants and understory of mixed hardwoods. Since the hardwood regeneration is reasonably developed, the stand should be converted to hardwoods with a patch system.

Stand F (Old Field 9)

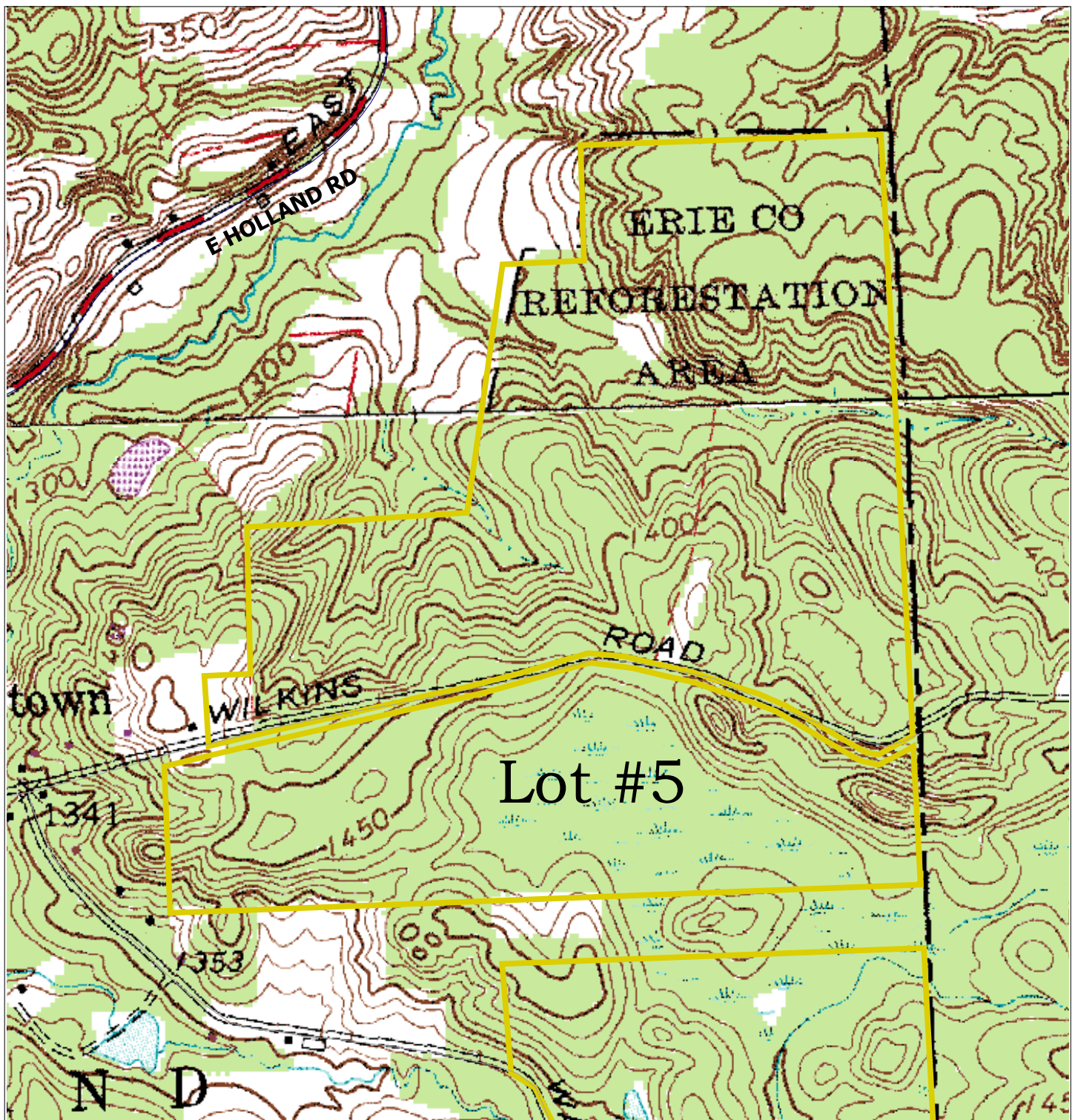
This stand is on a wet, low productivity site which is part of the Class 2 wetland. The mature Scotch pines and short lived aspens will be replaced by red maples and the beech will most likely succumb to beech bark disease. While the aspens, beech and red maple have fairly low timber value, they do have considerable value as wildlife food. No actions are recommended at this time since higher priority situations and sites are available.

Stand G (Old Field 11)

This Class 2 wetland contains a thick cover of shrubs and small trees on hummocks. Common are tamarack, red maple and red stemmed dogwood. There is no prospect of merchantable timber and the stand is best left undisturbed.

Stand H (Old Field 15)

This area is dominated by a sphagnum bog surrounded by sloped uplands, which is all within a Class 1 protected wetland. The bog contains typical vegetation, including white pine and tamarack. The upland slope is uneven-aged hardwoods, with diameters up to medium sawtimber size. This stand should remain undisturbed and protected to preserve the fragile environment and species diversity and to allow opportunities for controlled ecological study. While there is valuable cherry sawtimber here, the upland hardwoods on the slope should be retained as a buffer and not disturbed.

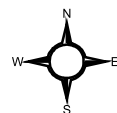


Erie County Forest Management Plan

USGS TOPOGRAPHIC QUADRANGLE

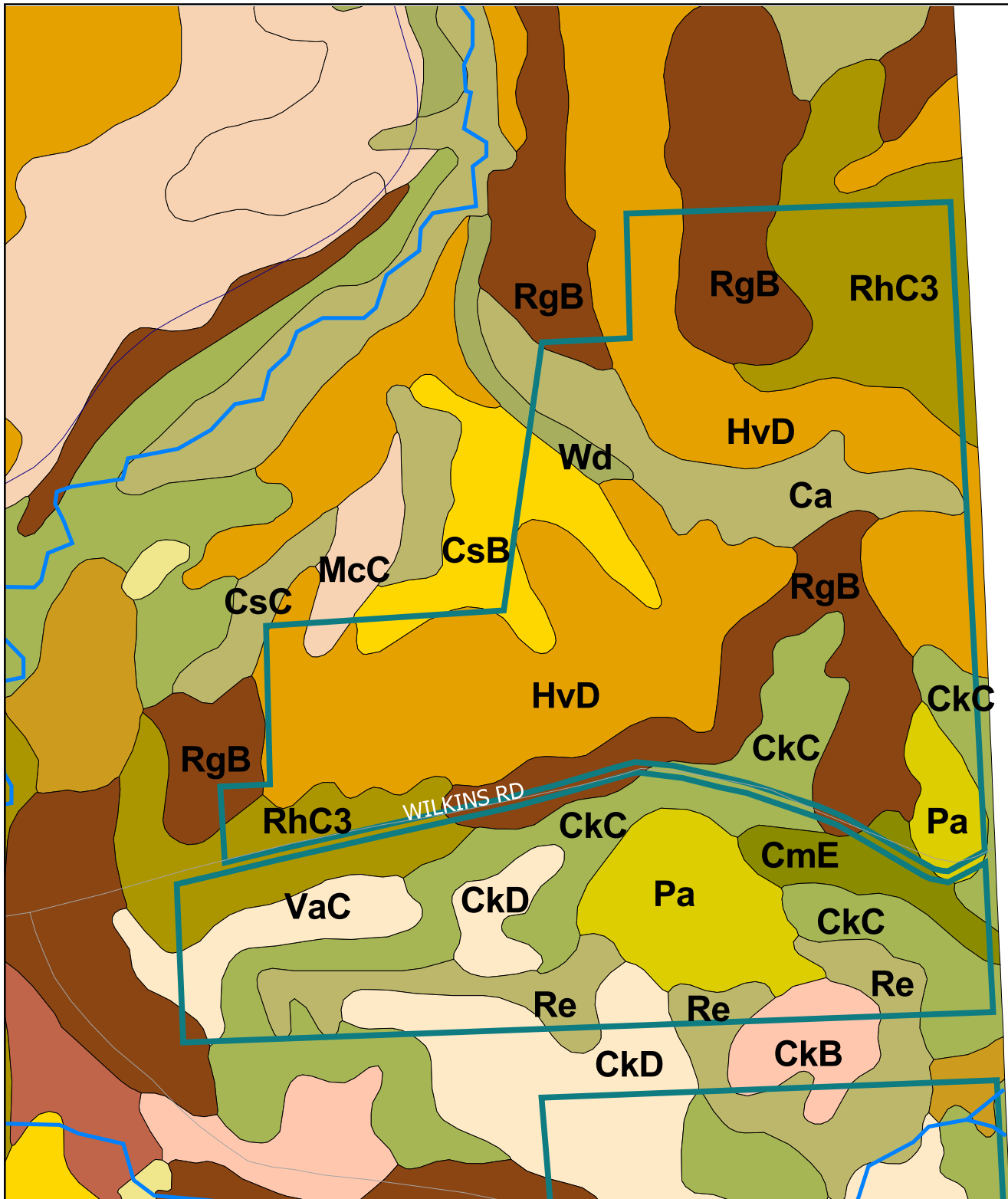


Map Prepared By:
Erie County Soil and Water
Conservation District



700 0 700 Feet



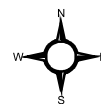


Erie County Forest Management Plan

LOT #5 - SOIL TYPES



Map Prepared By:
Erie County Soil and Water
Conservation District



300 0 300 600 Feet

Brief Soil Descriptions – Lot 5

For further information refer to the *Soil Survey of Erie County, New York*.

Symbol

Name / Description

Ca *Candice Silt Loam*

Deep, nearly level, poorly drained, low lime soil formed in slight depressions of old glacial lake basins. Parent material consists of lake sediments having a high clay content, underlain by calcareous, shaly glacial till. Available water capacity is moderate to high. Permeability is moderate to slow in the surface layer and very slow in the subsoil and substratum. HYDRIC SOIL, CAPABILITY CLASS-IVw, NYS SOIL GROUP-6b, K=.49, T=3

CkB *Chenango Gravelly Loam, 3 to 8 Percent Slopes*

Deep, gently sloping, well drained, low lime, gravelly loam soil formed mainly in gravel and sand. The available water capacity is low. Permeability is moderate to rapid in the surface soil and subsoil and generally rapid or very rapid in the substratum. PRIME FARMLAND, POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIs, NYS SOIL GROUP-2B, K=.24, T=3

CkC *Chenango Gravelly Loam, 8 to 15 Percent Slopes*

Deep, sloping, well drained, low lime, gravelly loam soil formed mainly in gravel and sand. The available water capacity is low. Permeability is moderate to rapid in the surface soil and subsoil and generally rapid or very rapid in the substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-5b, K=.24, T=3

CkD *Chenango Gravelly Loam, 15 to 25 Percent Slopes*

Deep, moderately steep, well-drained, low lime, gravelly loam soil formed mainly in gravel and sand. The available water capacity is low. Permeability is moderate to rapid in the surface soil and subsoil and generally rapid or very rapid in the substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-6b, K=.24, T=3

CmE Chenango and Palmyra Soils, 25 to 40 Percent Slopes

Deep, very steep, excessively well drained, low lime and high lime, gravelly loam soils formed in gravel and sand. The available water capacity is low to moderate. Permeability is moderate to rapid in the surface soil and subsoil and generally rapid or very rapid in the substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-VIe, NYS SOIL GROUP-9b, K=.24, T=3

CsB Collamer Silt Loam, 3 to 8 Percent Slopes

Deep, gently sloping, moderately well drained, high lime, silty soil formed mainly in silt and very fine sandy lake sediments. The available water capacity is high. Permeability is moderately slow. PRIME FARMLAND, POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIe, NYS SOIL GROUP-3b, K=.49, T=3

CsC Collamer Silt Loam, 8 to 15 Percent Slopes

Deep, sloping, moderately well drained, high lime, silty soil formed mainly in silt and very fine sandy lake sediments. The available water capacity is high. Permeability is moderately slow. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-5b, K=.49, T=3

HvD Hudson Silty Clay Loam, 15 to 25 Percent Slopes

Deep, moderately steep, well drained, high lime, silt loam soil formed in clayey glacial lake sediments. The available water capacity is moderate to high. Permeability is moderate to slow in the surface and subsoil layers and slow to very slow in the underlying layers. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-7b, K=.49, T=3

Pa Palms Muck

Deep, nearly level, very poorly drained, medium lime, muck soil formed in organic deposits and underlain by loamy mineral soil material at depths of 16 inches or more. The available water capacity is generally high. Permeability is moderately rapid in the organic layers and moderate in the loamy material. Subject to wind erosion and subsidence when drained. No K or T values are assigned. HYDRIC SOIL, CAPABILITY CLASS-Vw, NYS SOIL GROUP-10 (6b WHEN DRAINED)

Re *Red Hook Silt Loam*

Deep, nearly level, somewhat poorly drained, medium lime, silt loam soil formed in gravelly deposits. The available water capacity is generally low. Permeability is moderate. CAPABILITY CLASS-IIIW, NYS SOIL GROUP-5b, K=.39, T=3

RgB *Rhinebeck Silt Loam, 3 to 8 Percent Slopes*

Deep, gently sloping, somewhat poorly drained, medium to high lime, silt loam soil formed in clayey lake sediments. The available water capacity is moderate to high. Permeability is very slow. PRIME FARMLAND (WHERE DRAINED), POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIW, NYS SOIL GROUP-5b, K=.49, T=3

RhC3 *Rhinebeck Silty Clay Loam, 8 to 15 Percent Slopes, Severely Eroded*

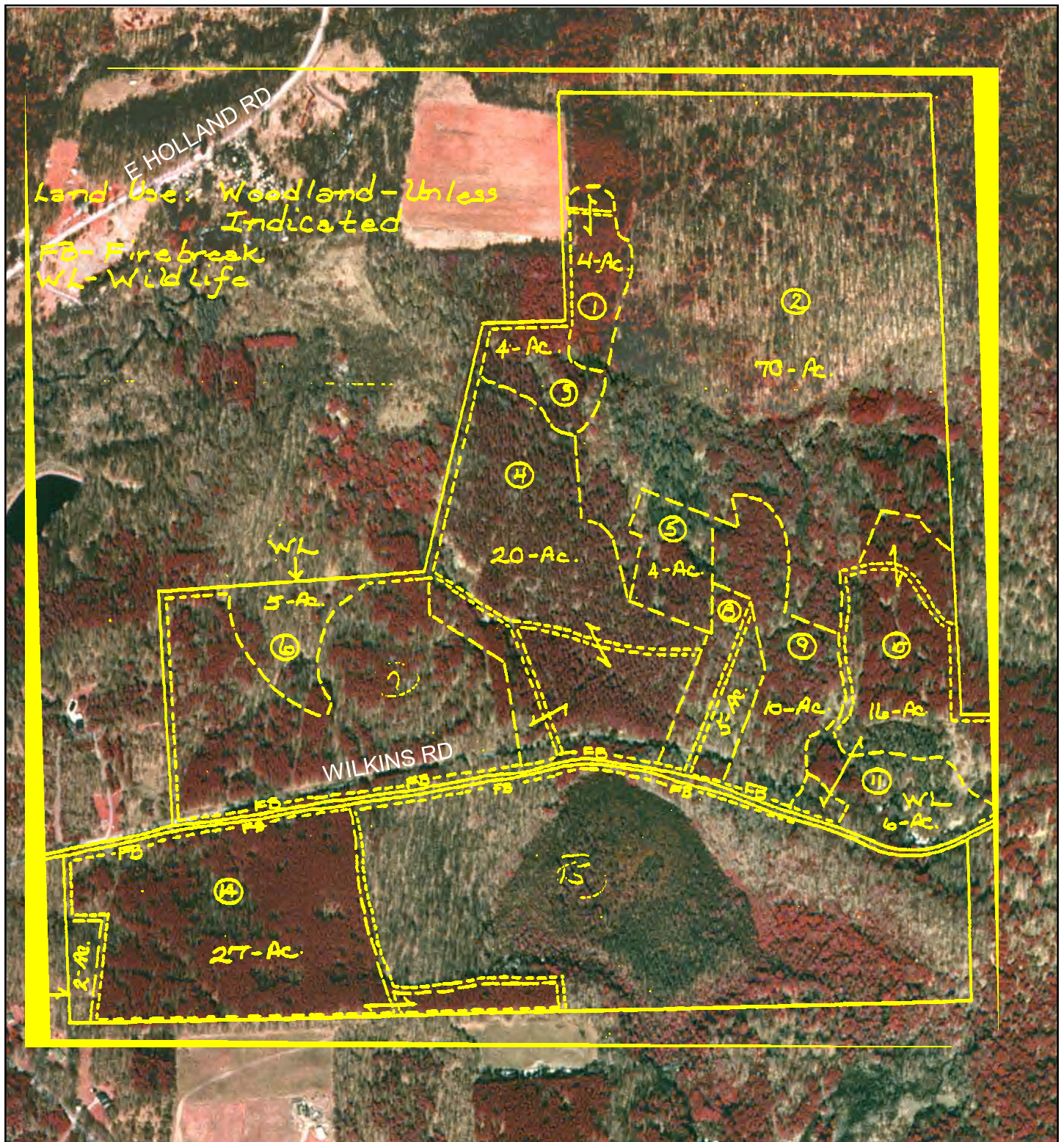
Deep, sloping, somewhat poorly drained, medium to high lime, silt loam soil formed in clayey lake sediments. The available water capacity is moderate to high. Permeability is very slow. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-7b, K=.49, T=3

VaC *Valois Gravelly Silt Loam, 8 to 15 Percent Slopes*

Deep, sloping, well drained, low lime, gravelly silt loam soil formed in coarse loamy glacial till. The available water capacity is low to moderate. Permeability is moderate to rapid. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-5b, K=.24, T=3

Wd *Wayland Silt Loam*

Deep, nearly level, poorly to very poorly drained, medium lime, silt loam soil formed in silty stream deposits. The available water capacity is high. Permeability is moderate to moderately slow in the surface soil and generally slow in the underlying layers. HYDRIC SOIL, CAPABILITY CLASS-Vw, NYS SOIL GROUP-8b, K=.43, T=3



1965 CONSERVATION PLAN MAP

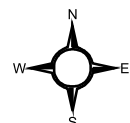
Erie County
Forest Management Plan

LOT #5

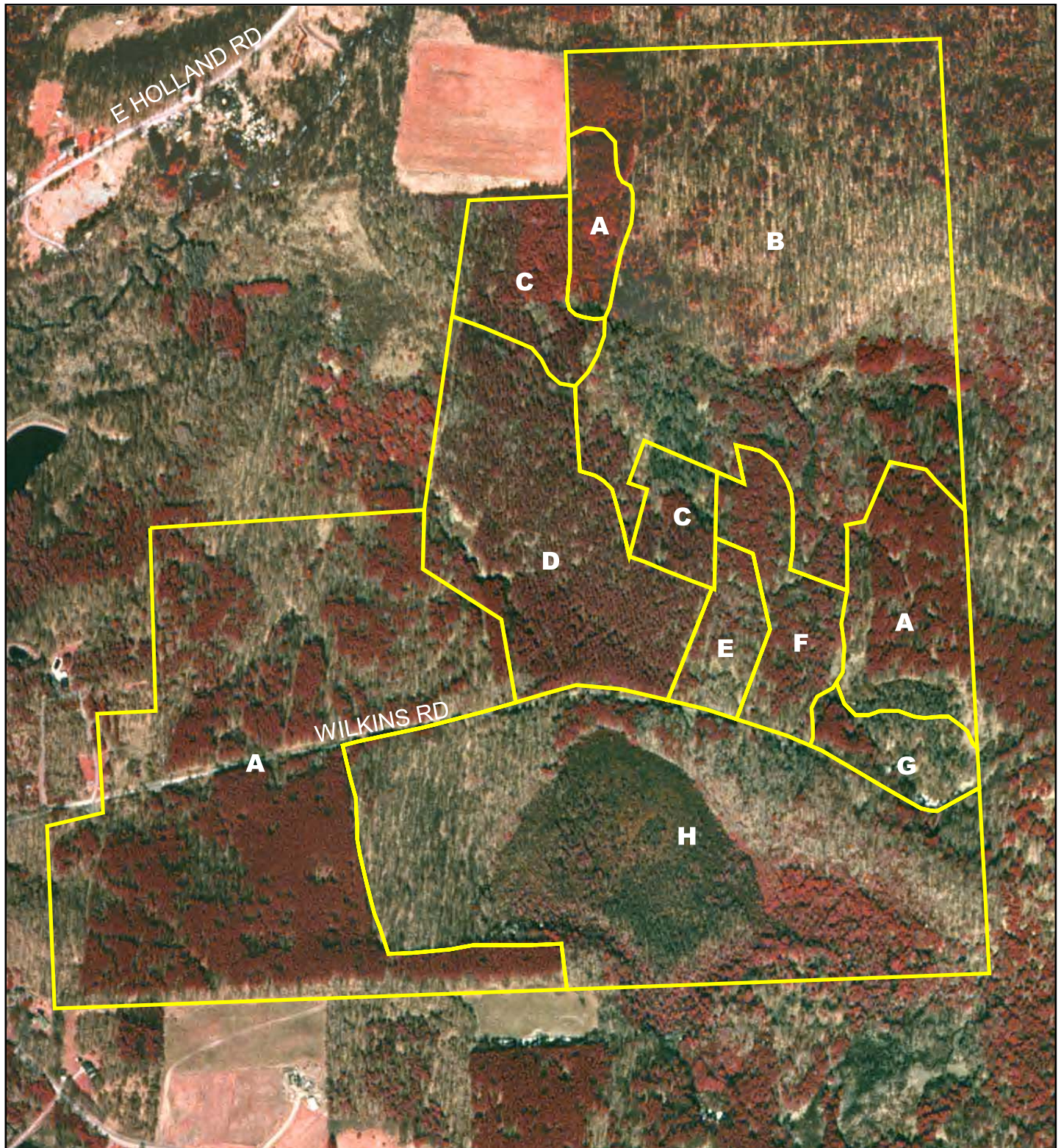


Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



0 600 Feet



2003 STEWARDSHIP RECOMMENDATION MAP

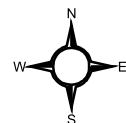
Erie County
Forest Management Plan

LOT #5



Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



200 0 200 400 600 Feet



Lot 6—Field 1

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 6 Total Acres: 100 Field Number(s): 1 Acres: 38 Date: 8/13/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Sugar Maple	P-18	Heavy	19	Multiple		75	36	Good
American Beech	P-16	Heavy	16	Multiple		68	32	Good
White Ash	P-13	Heavy	14	Multiple		72	38	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a middle age - mature mixed Hardwood Forest dominated by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*) and White Ash (*Fraxinus americana*). Additional hardwood species also include Black Cherry (*Prunus serotina*), Basswood (*Tilia americana*) and Bitternut Hickory (*Carya cordiformis*). Note: Hardwoods have been illegally harvested in past years and there is evidence of hunting on the property. Timber Trespass is prohibited by law and hunting is also prohibited on County Forest property; violators will be prosecuted.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
None

Fire Lane Status

The Fire Break in this field follows the property border and is generally in poor condition. Significant clearing, widening and pruning would be necessary to restore this Fire Break.

Lot 6—Field 1

FIELD WORKSHEET #2 *ECOLOGICAL ANALYSIS*

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is characterized by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*) and White Ash (*Fraxinus americana*).

Subcanopy

The subcanopy is of heavy density and is represented by a variety of hardwood species.

Shrub Layer

The shrub layer is of medium density and is generally dominated by a variety of Brambles (*Rubus* spp.)

Herbaceous Layer

The herbaceous layer is of heavy density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*) and Christmas fern (*Polystichum acrostichoides*) as well as scattered herbs.

Successional Status

This field represents a middle aged - mature mixed Hardwood Forest that will evolve into a mature Maple/Beech Climax Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: Evergreen Woodfern (*Dryopteris intermedia*) and Christmas fern (*Polystichum acrostichoides*).

Lot 6—Field 2

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 6 Total Acres: 100 Field Number(s): 2 Acres: 24 Date: 8/13/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Red Pine	P-14	Heavy	23	Even	73	70	Good
Sugar Maple	S/P	Medium - Heavy		Multiple			Poor
White Ash	S/P	Medium		Multiple			Poor
Black Cherry	S/P	Light		Multiple			Poor

* "S" refers to saplings, "P" refers to pole size dimensions, "SL" refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature Red Pine (*Pinus resinosa*) Plantation with significant hardwood intrusions that exist in all forest levels. Accessibility through this field is good and as a result of a moderate canopy and some mature hardwoods, seedling growth is heavy. The terrain is generally steep throughout this field.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
None

Fire Lane Status

The Fire Break in this field continues to follow the property border from Field Number 1 as it eventually connects to East Holland Road. Significant clearing, widening and pruning would be necessary to restore this Fire Break. The section of Fire Break from East Holland Road heading northward up a steep slope is in particularly poor condition.

Lot 6—Field 2

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is characterized by Red Pine (*Pinus resinosa*) along with a significant intrusion of hardwoods such as Sugar Maple (*Acer saccharum*), White Ash (*Fraxinus americana*) and Black Cherry (*Prunus serotina*).

Subcanopy

The subcanopy is of heavy density and is represented by a variety of hardwood species such as Sugar Maple (*Acer saccharum*), White Ash (*Fraxinus americana*), Black Cherry (*Prunus serotina*), American Beech (*Fagus americana*) and Witch Hazel (*Hamamelis virginiana*).

Shrub Layer

The shrub layer is of light density and includes Brambles (*Rubus* spp.), Hawthorns (*Crataegus* spp.) and Gooseberries (*Ribes* spp.).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*) and Christmas fern (*Polystichum acrostichoides*) along with scattered herbs.

Successional Status

This field represents a mature Red Pine (*Pinus resinosa*) Plantation in the mid - late stages of hardwood succession. In time, the Pines will continue to decline as the hardwoods become more dominant.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: Evergreen Woodfern (*Dryopteris intermedia*) and Christmas fern (*Polystichum acrostichoides*).

Lot 6—Field 3

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 6 Total Acres: 100 Field Number(s): 3 Acres: 38 Date: 8/13/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Red Pine	P-12	Heavy	26	Even	73	73	Good
Norway Spruce	P-20	Heavy	27	Even	73	78	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature Conifer Plantation of Red Pine (*Pinus resinosa*) and Norway Spruce (*Picea abies*) with a marginal intrusion of hardwoods. Accessibility through this field is generally poor and the terrain is steep. Edge communities along Buffalo Creek are “open” and are characterized by dense herbaceous growth, shrubs and pioneer species.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

This field contains Buffalo Creek, a major four season stream that crosses Wyoming and Erie Counties.

Fire Lane Status

None

Lot 6—Field 3

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of heavy density and is characterized by Red Pine (*Pinus resinosa*) and Norway Spruce (*Picea abies*) along with a light intrusion of hardwood species such as Sugar Maple (*Acer saccharum*) and American Elm (*Ulmus americana*).

Subcanopy

The subcanopy is of very light density and is represented by a variety of hardwood species such as Sugar Maple (*Acer saccharum*), Black Cherry (*Prunus serotina*) and White Ash (*Fraxinus americana*).

Shrub Layer

The shrub layer is generally not present except along edges that border Buffalo Creek and East Holland Road.

Herbaceous Layer

The herbaceous layer is of light density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), Ostrich fern (*Matteuccia struthiopteris*), Sensitive fern (*Onoclea sensibilis*) and Lady fern (*Athyrium Filix-femina*) as well as some scattered herbs.

Successional Status

This field represents a mature Conifer Plantation in the early stages of hardwood succession.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*). Helleborine (*Epipactis helleborine*), a forest Orchid, is also protected.

Lot 6 Summary and Recommendations

FIELD WORKSHEET #3 WILDLIFE SUMMARY

Lot # 6 offers a good variety of habitats for diverse populations of wildlife. Field Number 1 possesses a middle aged - mature Hardwood Forest that provides a wide range of food and cover for local wildlife. Field Numbers 2 and 3 represent mature Conifer Plantations in various stages of hardwood succession. Field Number 3 also contains Buffalo Creek, a major four season stream as well as “open” Field/Shrubland Communities that border the creek.

During a one day field analysis, staff ecologists recorded a variety of wildlife observations based upon actual sightings and other wildlife “signs”. The following list represents a brief overview of those encounters focused upon Mammals, Birds and Reptiles/Amphibians.

Mammals

Whitetail Deer (<i>Odocoileus virginianus</i>)	Red Fox (<i>Vulpes fulva</i>)
Gray Squirrel (<i>Sciurus carolinensis</i>)	Raccoon (<i>Procyon lotor</i>)
Red Squirrel (<i>Tamiasciurus hudsonicus</i>)	Eastern Chipmunk (<i>Tamias striatus</i>)

Birds

Black-capped Chickadee (<i>Parus atricapillus</i>)	White-breasted Nuthatch (<i>Sitta carolinensis</i>)
Common Crow (<i>Corvus brachyrhynchos</i>)	Red-eyed Vireo (<i>Vireo olivaceus</i>)
Eastern Phoebe (<i>Sayornis phoebe</i>)	American Goldfinch (<i>Carduelis tristis</i>)

Reptiles/Amphibians

Dusky Salamander (<i>Desmognathus fuscus</i>)	Wood Frog (<i>Rana sylvatica</i>)
Green Frog (<i>Rana clamitans melanota</i>)	American Toad (<i>Bufo americanus</i>)

FIELD WORKSHEET #4 RECOMMENDATIONS

The following recommendations for Lot #6 of the Erie County Forestry Management Plan are based upon field data collected by Earth Spirit Educational Services, Inc. in the areas of Forest Ecology, Wildlife Biology and general Ecology.

Field Number 1

Description - This field represents a middle aged - mature mixed Hardwood Forest characterized by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*) and White Ash (*Fraxinus americana*).

Recommendations – This field represents an excellent opportunity for the selective management of hardwood species.

Field Number 2 & 3

Description - These fields represent mature Conifer Plantations with medium hardwood intrusions. The terrain in these fields is generally steep with run-off draining directly into Buffalo Creek.

Recommendations – These fields should remain without treatment in order to provide erosion control, watershed protection and wildlife habitat.

Lot 6

Soils, Waterways and Topography

Soils

The predominate soil type on Lot 6 is the well drained, highly erodible Hudson Silty Clay Loam (HvE), with 25-40% slopes and moderate to slow permeability. Along Buffalo Creek, which flows northeasterly along East Holland Road, lie the poorly drained, hydric Canadice Silt Loam (Ca), somewhat poorly drained, potentially highly erodible Rhinebeck Silt Loam (RgB), 3-8% slopes, and moderate to somewhat poorly well drained Middlebury Silt Loam (Mg). These soils have slow to moderate permeability.

Waterways and Topography

Lot 6 is steeply sloped toward Buffalo Creek from both the north and south, culminating in a wide floodplain on both streambanks. Proper forest management practices should be utilized to prevent or minimize soil erosion and the introduction of sediment into Buffalo Creek, to protect the impaired Class A stream from further degradation. Pollutants in Buffalo Creek include thermal changes, nutrients, pathogens, pesticides, silt, chlorine and water level; from agriculture, on-site waste treatment, construction, streambank erosion, urban runoff and road bank erosion. A forested buffer along the streambanks and steep slopes should be maintained.

Lot 6

Forest Stewardship Recommendations

Stand A (Field 1)

MEDIUM PRIORITY

This is an uneven-aged stand of northern hardwoods containing mature sugar maples, beech and ash. This large pole / small sawtimber stand should be thinned to reduce the number of low value / high risk trees. Boundary lines should be surveyed, painted and posted to help identify County property for the execution of County management activities and for the prevention and/or prosecution of timber trespass. Recheck 10 years after treatment.

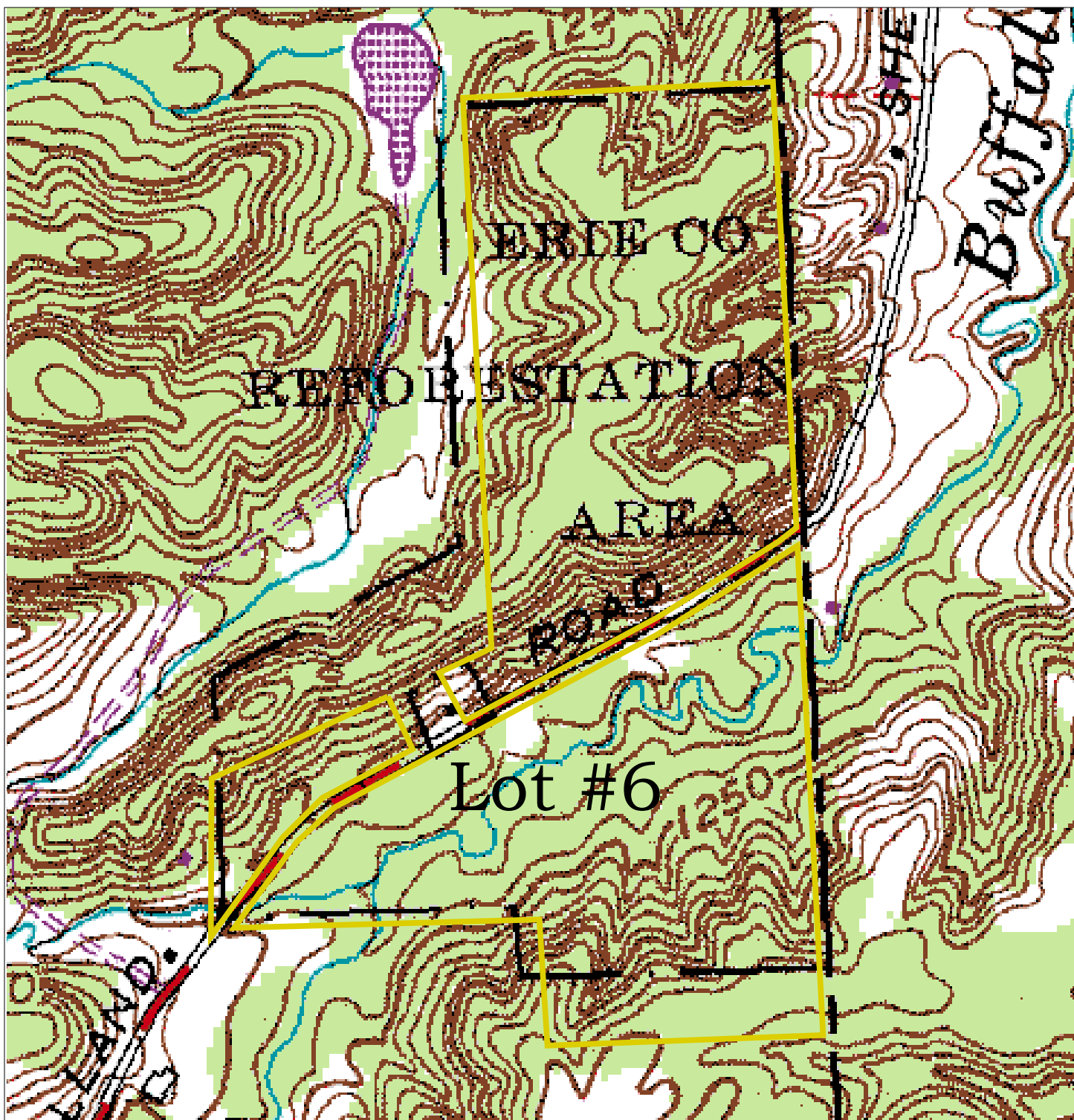
Stand B (Fields 2, 3)

LOW PRIORITY

This is an area of mature conifer plantations including red pine and Norway spruce. Because of the steep terrain and riparian location, typical harvest for conversion to hardwoods is not recommended. Consider only a low, non-commercial thin to develop the hardwood understory and to help prevent residual windthrow. Allow at least 100-200 feet of a no-cut buffer along the road and another buffer along Buffalo Creek. Recheck 10 years after treatment.

General

Best Management Practices (BMPs) for erosion control should be followed on the fire lanes used as trails. Some erosion can occur on the steeper slopes. Reference the BMP Field Guide pages 54 - 65. Buffalo Creek is a NYS Protected Stream with Classification 'A'. Under this classification, vehicles, especially logging equipment, must have a DEC permit for crossing. Tops and debris must not be left in the creek, and an adequate buffer must be left between skid trails and the stream.

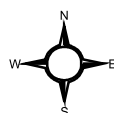


Erie County Forest Management Plan

USGS TOPOGRAPHIC QUADRANGLE

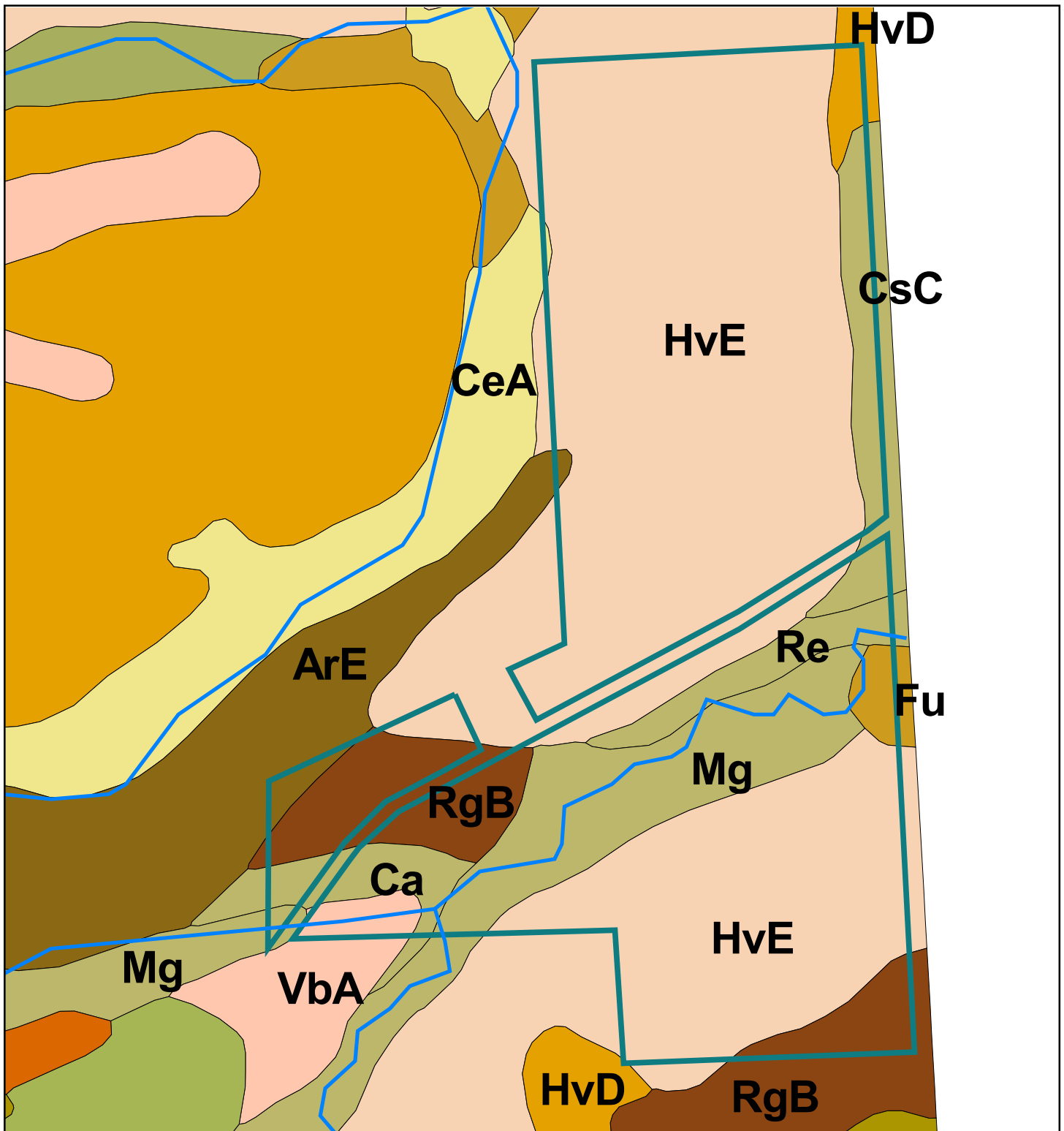


Map Prepared By:
Erie County Soil and Water
Conservation District



400 0 400 Feet



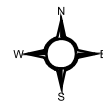


Erie County Forest Management Plan



Map Prepared By:
Erie County Soil and Water
Conservation District

LOT #6 - SOIL TYPES



200 0 200 400 Feet

Brief Soil Descriptions – Lot 6

For further information refer to the *Soil Survey of Erie County, New York*.

Symbol

Name / Description

ArE Arkport Very Fine Sandy Loam, 25 to 40 Percent Slopes

Deep, very steep, well drained, medium lime, sandy soil formed in coarse loamy deposits dominated by fine and very fine sand. The available water capacity is moderate. Permeability is moderately rapid. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-VIe, NYS SOIL GROUP-8b, K=.28, T=3

Ca Candice Silt Loam

Deep, nearly level, poorly drained, low lime soil formed in slight depressions of old glacial lake basins. Parent material consists of lake sediments having a high clay content, underlain by calcareous, shaly glacial till. Available water capacity is moderate to high. Permeability is moderate to slow in the surface layer and very slow in the subsoil and substratum. HYDRIC SOIL, CAPABILITY CLASS-IVw, NYS SOIL GROUP-6b, K=.49, T=3

CeA Castile Gravelly Loam, 0 to 3 Percent Slopes

Deep, nearly level, moderately well drained, low lime, gravelly loam soil formed mainly in gravel and sand deposits. The available water capacity is low to moderate. Permeability is generally rapid. PRIME FARMLAND, CAPABILITY CLASS-IIw, NYS SOIL GROUP-2b, K=.24, T=3

CsC Collamer Silt Loam, 8 to 15 Percent Slopes

Deep, sloping, moderately well drained, high lime, silty soil formed mainly in silt and very fine sandy lake sediments. The available water capacity is high. Permeability is moderately slow. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-5b, K=.49, T=3

Fu Fluvaquents and Udifluvents, Frequently Flooded

Moderately deep to deep, nearly level, well drained to poorly drained, high to low lime, variable soils formed in recent stream deposits. The available water capacity and permeability are variable. No K or T values are assigned. HYDRIC SOIL, CAPABILITY CLASS-Vw, NYS SOIL GROUP-9

HvD Hudson Silty Clay Loam, 15 to 25 Percent Slopes

Deep, moderately steep, well drained, high lime, silt loam soil formed in clayey glacial lake sediments. The available water capacity is moderate to high. Permeability is moderate to slow in the surface and subsoil layers and slow to very slow in the underlying layers. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-7b, K=.49, T=3

HvE Hudson Silty Clay Loam, 25 to 40 Percent Slopes

Deep, very steep, well drained, high lime, silt loam soil formed in clayey glacial lake sediments. The available water capacity is moderate to high. Permeability is moderate to slow in the surface and subsoil layers and slow to very slow in the underlying layers. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-VIe, NYS SOIL GROUP-9b, K=.49, T=3

Mg Middlebury Silt Loam

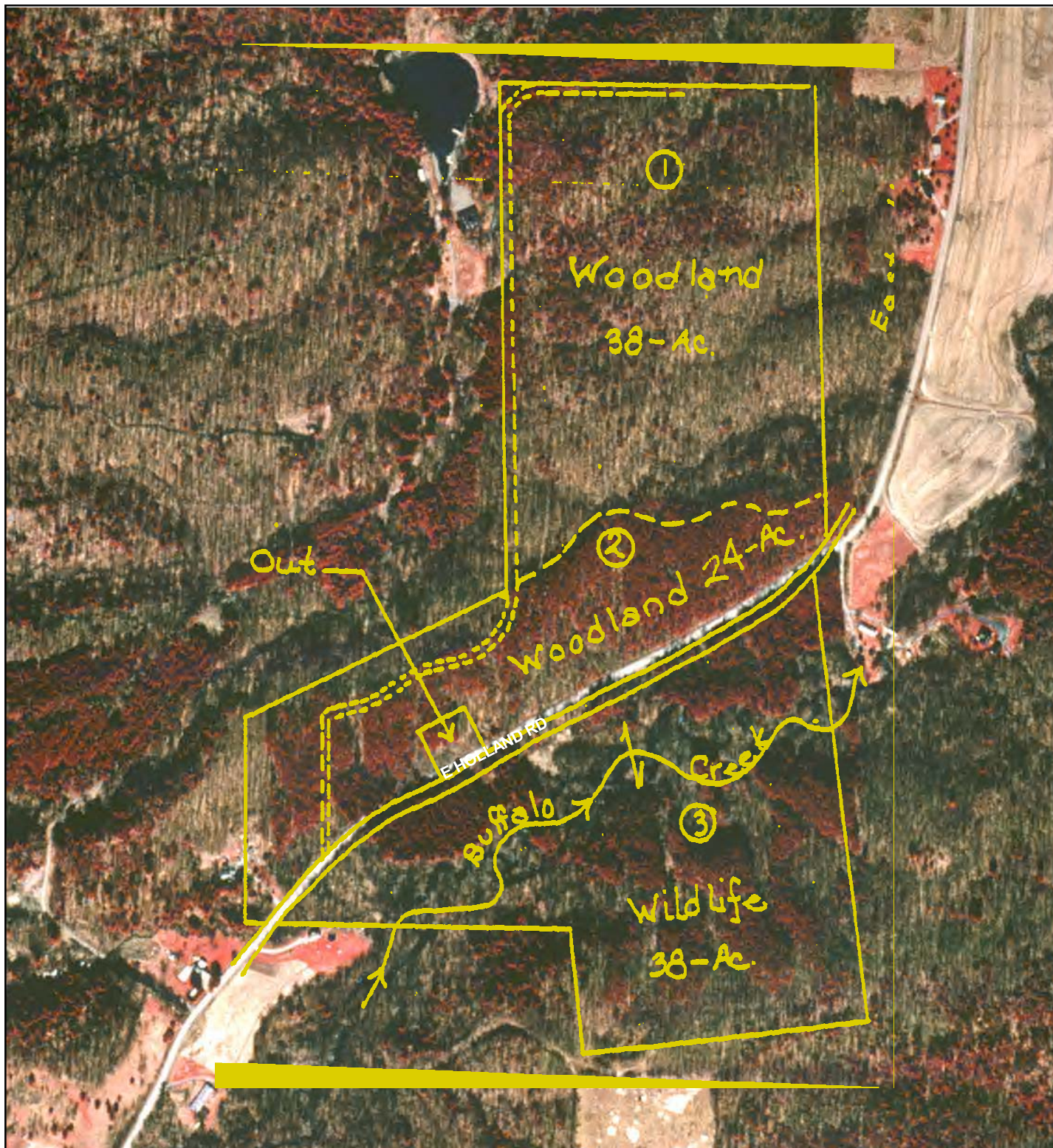
Deep, nearly level, moderately well drained to somewhat poorly drained, medium lime, silt loam soil formed in stream deposits. The available water capacity is high. Permeability is moderate. PRIME FARMLAND, CAPABILITY CLASS-IIw, NYS SOIL GROUP-2b, K=.49, T=3

RgB Rhinebeck Silt Loam, 3 to 8 Percent Slopes

Deep, gently sloping, somewhat poorly drained, medium to high lime, silt loam soil formed in clayey lake sediments. The available water capacity is moderate to high. Permeability is very slow. PRIME FARMLAND (WHERE DRAINED), POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIw, NYS SOIL GROUP-5b, K=.49, T=3

VpA Volusia Channery Silt Loam, 0 to 3 Percent Slopes

Deep, nearly level, somewhat poorly drained, low lime, channery silt loam soil formed in fine loamy glacial till. It has a very firm fragipan at a depth of 15 to 50 inches. The available water capacity is moderate to low. Permeability is generally moderate above the fragipan and slow to very slow in the fragipan. CAPABILITY CLASS-IIIw, NYS SOIL GROUP-6b, K=.24, T=3



1965 CONSERVATION PLAN MAP

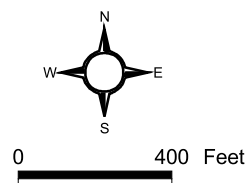
Erie County
Forest Management Plan

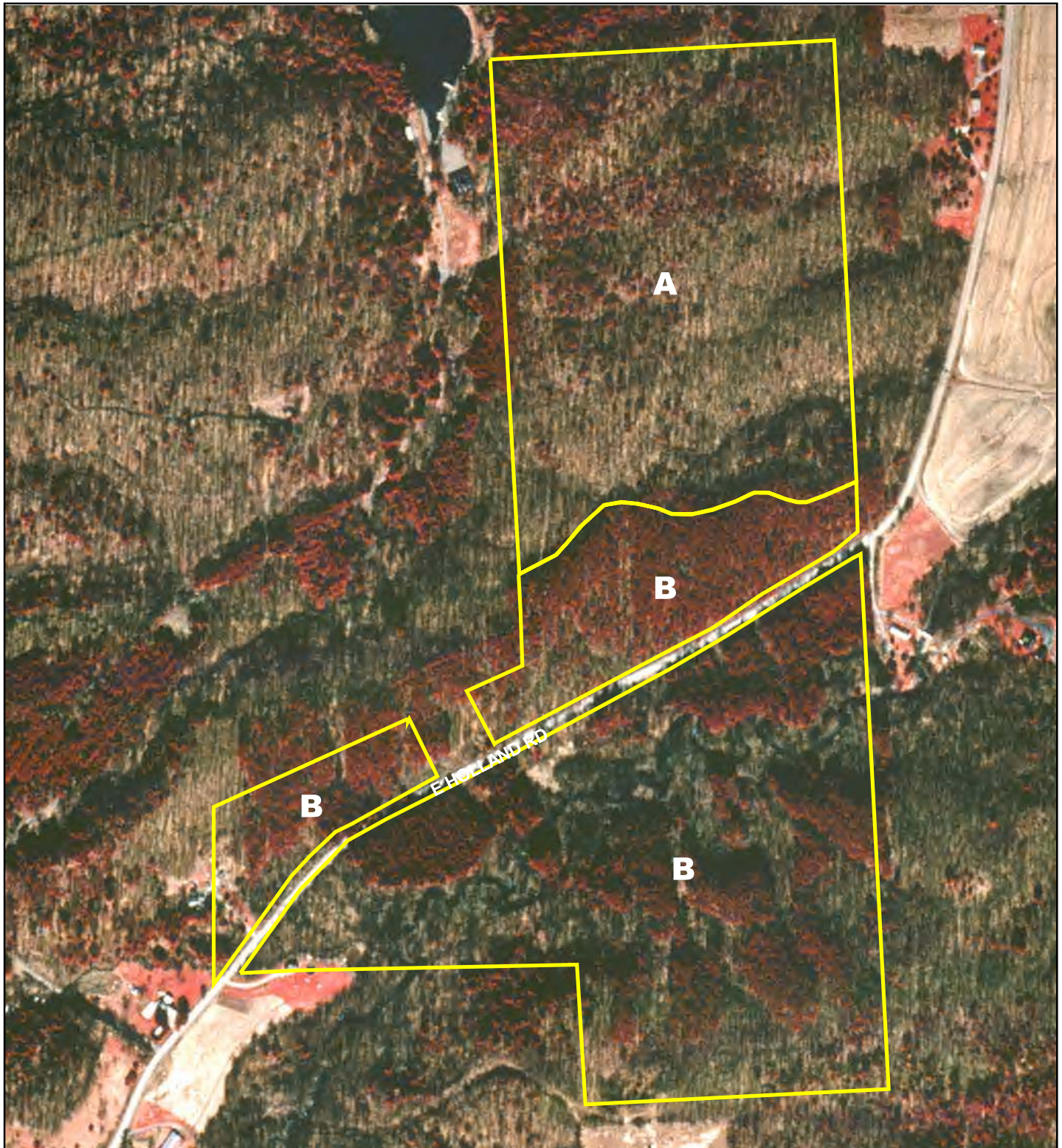
LOT #6



Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography





2003 STEWARDSHIP RECOMMENDATION MAP

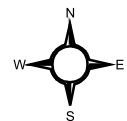
Erie County
Forest Management Plan

LOT #6



Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



200 0 200 400

Lot 7—Fields 1, 2

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 7 Total Acres: 76 Field Number(s): 1, 2 Acres: 23 Date: 9/5/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Sugar Maple	12-24	Heavy	18	Multiple		85	32	Good
American Beech	12-27	Heavy	18	Multiple		84	24	Fair

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

Field Number 1 represents a mature Hardwood Forest dominated by Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*). This forest, possessing an extremely high basal area, provides an excellent opportunity for selective hardwood management. Field Number 2 seems to be a natural extension to Field Number 1.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
This field contains a westerly flowing intermittent stream.

Fire Lane Status

The Fire Break in Field Number 1 is approximately 8 feet wide and is in need of widening, clearing and pruning. The Fire Break in Field Number 2 has recently been improved and is generally in good condition.

Lot 7—Fields 1, 2

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of heavy density and is characterized by the dominant species of Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*).

Subcanopy

The subcanopy is of medium - heavy density and is represented by a variety of hardwood species such as Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*) and Hophornbeam (*Ostrya virginiana*).

Shrub Layer

The shrub layer is of light density and includes Brambles (*Rubus* spp.) and Spicebush (*Lindera benzoin*).

Herbaceous Layer

The herbaceous layer is of medium density and includes a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), Christmas fern (*Polystichum acrostichoides*), Hayscented fern (*Dennstaedtia punctilobula*), Long Beech fern (*Thelypteris phegopteris*) and New York fern (*Thelypteris noveboracensis*) along with Tree Clubmoss (*Lycopodium obscurum*), scattered herbaceous plants and a very high seedling count.

Successional Status

These fields represent mature Hardwood Forests of Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*). These species will continue to dominate as they further evolve into a Climax Hardwood Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Hayscented fern (*Dennstaedtia punctilobula*). Other protected plants include American Ginseng (*Panax quinquefolius*), Painted Trillium (*Trillium undulatum*), White Baneberry (*Actaea pachypoda*) and Tree Clubmoss (*Lycopodium obscurum*).

Lot 7—Fields 3, 4, 5, 7 and 8

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 7 Total Acres: 76 Field Number(s): 3, 4, 5, 7 and 8 Acres: 28 Date: 9/3/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Norway Spruce	P-18	Medium - Heavy	26	Even	76	65	Good
Scotch Pine	P-18	Medium - Heavy	16	Even	76	75	Fair
White Pine	P-19	Medium - Heavy	20	Even	76	74	Fair
Larch	P-18	Light	28	Even	76	94	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

Field Number 3 represents a mature Conifer Plantation in the early stages of hardwood succession except for mature Black Cherry (*Prunus serotina*) along the eastern boundary.

Field Numbers 4 and 7 represent mature Conifer Plantations in the early - mid stages of hardwood succession.

Field Number 5 represents a mature Conifer Plantation in the mid - late stages of hardwood succession.

Field Number 8 represents a mature Conifer Plantation in the late stages of hardwood succession dominated by Black Cherry (*Prunus serotina*) with a D.B.H. of 13-26.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

These fields contain a westerly flowing intermittent stream that crosses Field Numbers 5 and 7.

Fire Lane Status

The Fire Break in these fields, approximately 18 feet wide, has recently been improved and is generally in good condition although canopy pruning would be recommended.

Lot 7—Fields 3, 4, 5, 7 and 8

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium - heavy density and is characterized by the dominant conifers of Norway Spruce (*Picea abies*), Scotch Pine (*Pinus sylvestris*) and White Pine (*Pinus strobus*) along with variable intrusions of Sugar Maple (*Acer saccharum*) and Black Cherry (*Prunus serotina*).

Subcanopy

The subcanopy is of light - heavy density and is represented by a variety of hardwood species.

Shrub Layer

The shrub layer is generally of light density and includes Brambles (*Rubus* spp.), Viburnums (spp.), Dogwoods (*Cornus* spp.), Tartarian Honeysuckle (*Lonicera tartarica*), Poison Ivy (*Rhus radicans*), Spicebush (*Lindera benzoin*) and Multiflora Rose (*Rosa multiflora*).

Herbaceous Layer

The herbaceous layer is of medium - heavy density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), Lady fern (*Athyrium filix-femina*), New York fern (*Thelypteris noveboracensis*), Hayscented fern (*Dennstaedtia punctilobula*) and Sensitive fern (*Onoclea sensibilis*) along with scattered herbs.

Successional Status

These fields represent mature Conifer Plantations in varying stages of hardwood succession.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera tartarica*) and Multiflora Rose (*Rosa multiflora*)

Protected: All ferns listed under “Herbaceous Layer” except Hayscented fern (*Dennstaedtia punctilobula*) and Sensitive fern (*Onoclea sensibilis*). White Baneberry (*Actaea pachypoda*) is also protected.

Lot 7—Fields 6, 9 and 10

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 7 Total Acres: 76 Field Number(s): 6, 9 and 10 Acres: 17 Date: 9/3/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Red Pine	P-16	Heavy	26	Even	66	80	Good
Norway Spruce	P-17	Heavy	11	Even	66	70	Good
Black Cherry	12-20	Medium	12	Multiple		72 36	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature Conifer Plantations of Red Pine (*Pinus resinosa*) and Norway Spruce (*Picea abies*) with significant intrusions of mature Black Cherry (*Prunus serotina*).

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

These fields contain a westerly flowing intermittent stream that crosses through Field Numbers 5,7 and 8.

Fire Lane Status

The Fire Break in these fields is generally 7-13 feet wide and is in need of significant widening, clearing and pruning.

Lot 7—Fields 6, 9 and 10

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium - heavy density and is characterized by the dominant species of Red Pine (*Pinus resinosa*) and Norway Spruce (*Picea abies*) along with Black Cherry (*Prunus serotina*).

Subcanopy

The subcanopy is of light density and is represented primarily by Black Cherry (*Prunus serotina*).

Shrub Layer

The shrub layer is of light density and includes Brambles (*Rubus* spp.), Northern Arrowwood (*Viburnum recognitum*), Spicebush (*Lindera benzoin*), Tartarian Honeysuckle (*Lonicera tartarica*) and Dogwoods (*Cornus* spp.).

Herbaceous Layer

The herbaceous layer is of light density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*) and Sensitive fern (*Onoclea sensibilis*) along with Tree Clubmoss (*Lycopodium obscurum*) and scattered herbs.

Successional Status

These fields represent mature Conifer Plantations in the mid - late stages of hardwood succession.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera tartarica*)

Protected: Evergreen Woodfern (*Dryopteris intermedia*) and Tree Clubmoss (*Lycopodium obscurum*).

Lot 7—Field 11

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 7 Total Acres: 76 Field Number(s): 11 Acres: 8 Date: 9/3/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
American Beech	S/P/SL	Heavy	16	Multiple		80	38	Fair

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a generally “open” and young Hardwood Forest dominated by American Beech (*Fagus grandifolia*) and a variety of subdominant hardwoods. Note: Discovered an American Elm with a D.B.H. of 22 inches and two deer stands. All Terrain Vehicles have been used in this area. These uses are strictly prohibited on County Forest property and violators will be prosecuted.

Aquatic Systems - includes both lentic (standing water) and lotic (flowing water) systems
None

Fire Lane Status

None - although the Fire Break that crosses Field Number 9 continues into Field Number 11 as a narrow hiking trail.

Lot 7—Field 11

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is characterized by the dominant species of American Beech (*Fagus grandifolia*) along with a variety of subdominant hardwoods such as Sugar Maple (*Acer saccharum*), White Ash (*Fraxinus americana*), Black Cherry (*Prunus serotina*), Bitternut Hickory (*Carya cordiformis*), American Basswood (*Tilia americana*) and Eastern Hemlock (*Tsuga canadensis*), a conifer associate.

Subcanopy

The subcanopy is of medium density and is represented by a variety of hardwood species.

Shrub Layer

The shrub layer is of light density and includes Brambles (*Rubus* spp.).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns such as Spinulose Woodfern (*Dryopteris spinulosa*), New York fern (*Thelypteris noveboracensis*), Lady fern (*Athyrium filix-femina*), Christmas fern (*Polystichum acrostichoides*) and Ostrich fern (*Matteuccia struthiopteris*) along with scattered herbs.

Successional Status

This field represents a generally “open” young - middle aged Hardwood Forest dominated by American Beech (*Fagus grandifolia*) and a variety of other hardwood species. This forest will continue to evolve into a mature Beech dominated Climax Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer”.

Lot 7 Summary and Recommendations

FIELD WORKSHEET #3 WILDLIFE SUMMARY

Lot # 7 offers a good variety of habitats for diverse populations of wildlife. Most fields in this Lot (Fields Numbers 3-10) represent mature Conifer Plantations in various stages of hardwood succession. Field Numbers 1 and 2 include a mature Maple/Beech Forest while Field Number 11 represents a young - middle aged mixed Hardwood Forest.

During a period of two days, staff ecologists recorded a variety of wildlife observations focused upon actual sightings and other wildlife “signs”. The following list represents a brief overview of those encounters focused upon Mammals, Birds and Reptiles/Amphibians.

Mammals

Whitetail Deer (<i>Odocoileus virginianus</i>)	Red Squirrel (<i>Tamiasciurus hudsonicus</i>)
Eastern Chipmunk (<i>Tamias striatus</i>)	Gray Squirrel (<i>Sciurus carolinensis</i>)

Birds

Wild Turkey (<i>Meleagris gallopavo</i>)	Black-capped Chickadee (<i>Parus atricapillus</i>)
Pileated Woodpecker (<i>Dryocopus pileatus</i>)	Blue Jay (<i>Cyanocitta cristata</i>)
White-breasted Nuthatch (<i>Sitta carolinensis</i>)	Great Crested Flycatcher (<i>Myiarchus crinitus</i>)
American Goldfinch (<i>Carduelis tristis</i>)	Hairy Woodpecker (<i>Picoides villosus</i>)

Reptiles/Amphibians

American Toad (<i>Bufo americanus</i>)	Spring Peeper (<i>Hyla crucifer</i>)
--	--

FIELD WORKSHEET #4 RECOMMENDATIONS

The following recommendations for Lot # 7 of the Erie County Forestry Management Plan are based upon field data collected by Earth Spirit Educational Services, Inc. in the areas of Forest Ecology, Wildlife Biology and general Ecology.

Field Numbers 1 and 2

Description - These fields represent mature Hardwood Forests dominated by Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*). Hardwood diameters (basal area) and densities are uniquely high in these fields.

Recommendations - These fields represent an excellent opportunity for a selective harvest of mature hardwoods.

Field Numbers 3, 4, 5, 7 and 8

Description - These fields represent mature Conifer Plantations of Norway Spruce (*Picea abies*), Scotch Pine (*Pinus sylvestris*) and White Pine (*Pinus strobus*) in various stages of hardwood succession.

Recommendations - These fields should be actively managed with particular emphasis on Norway Spruce. The Scotch Pine and White Pine (high weevil activity) are generally in fair condition and should be thinned as deemed appropriate. Mature hardwoods, especially Black Cherry, should remain untreated for their value as “seed trees”.

Field Numbers 6, 9 and 10

Description - These fields represent mature Conifer Plantations of Red Pine (*Pinus resinosa*) and Norway Spruce (*Picea abies*) with significant intrusions of mature Black Cherry (*Prunus serotina*).

Recommendations - These fields should be actively managed for both Red Pine and Norway Spruce. Emphasis should be placed on the Red Pine in these fields due to both their slow growth and the realization that future growth is negligible due to environmental restrictions (especially water availability). Black Cherry may also be selectively thinned in these fields as long as ample “seed trees” remain.

Field Number 11

Description - This field represents a young - middle aged Hardwood Forest dominated by American Beech (*Fagus grandifolia*) and a variety of subdominant hardwoods.

Recommendations - This field should remain without treatment in order to promote habitat diversity for local wildlife.

Lot 7

Soils, Waterways and Topography

Soils

Soils on Lot 7 lie in bands parallel to Olean Road, and include (from upslope) the moderately well drained, moderately permeable Marilla Channery Silt Loam (MfB), with 3-8% slopes, the Valois Gravelly Silt Loam (VaB and VaD), a well drained soil with moderate to rapid permeability and 8-25% slopes, and the well drained, rapidly permeable Varysburg Gravelly Loam (VbB and VbD), with 8-25% slopes. A small section of somewhat poorly drained Rhinebeck Silty Clay Loam (RhC3), 8-15% slopes, occurs at the western border of the lot, adjacent to a railroad. Soils on this lot are highly erodible and soil disturbing activities should be limited to dry seasons or after soil freeze to minimize gully and rill erosion.

Waterways and Topography

The lot slopes continually over 300 feet downward toward the railroad, with several linear gullies. No perennial waterways are located on Lot 7, however large storm events could cause soil erosion in the gullies if the soil is disturbed. Forested buffers should minimize erosive forces.

Lot 7

Forest Stewardship Recommendations

Stand A (Fields 1, 2)

HIGH PRIORITY

This is an uneven-aged stand of northern hardwoods containing predominantly sugar maples and beech with lower quantities of hemlock, black cherry and bitternut hickory. The stand density is moderately high, up to 120 sq ft/ac of basal area. Maximum diameters are large sawtimber, 20-30"+. Understory is composed of ironwood, sugar maple and beech saplings, with a very dense groundcover of sugar maple seedlings under 12" high. Because of the large diameters, advance seedling reproduction and stand density, a light, selection harvest could be done in this stand, across many diameters, reducing the basal area by no more than 1/3. Insist upon no-cut buffers along property boundaries and on all the short, steep sides of ravines crossing this stand. Recheck in 15 years.

Stand B (Fields 3, 4, 5, 7, 8)

MEDIUM PRIORITY

These are areas of mature conifer plantations including Norway spruce, Scots pine, white pine and larch, with scattered small to medium sawtimber size hardwoods of black cherry, ash and elm. The pine understory has scattered saplings of black cherry, white ash and beech. The spruce areas have little or no understory. Stand density is high, varying from 150 to 220, sq ft /ac with average diameters 11-14". The mature pines should be scheduled for patch harvesting to complete the transition to native hardwoods. However Field 3, with poor quality Scots pine, should be left alone to revert to the ash and cherry coming in there now. Before any harvesting occurs, the wild grapevines should be controlled either by cutting or treatment with herbicides. The scattered sawlog hardwoods of cherry, ash and elm plus the best looking white pine with at least 30% live crown ration should be left for seed trees (5-10/ac), which then could be salvaged (except the white pine) about 3-5 years after the conifers are cut. Recheck 3 years after conifer harvest.

Stand C (Fields 6, 9, 10)

MEDIUM PRIORITY

These are areas of mature conifer plantations including Norway spruce and red pine with scattered medium sawtimber size hardwoods of black cherry and aspen. The stand density is very high, from 190 to 230 sq ft/ac with average diameters 10-14" and a maximum of 20". The live crown ratios of red pine are very low at 15-20%, with Norway spruce at 20-30%. Windthrow is common in the Norway spruce areas. There is no understory in the pure spruce areas, with some hardwood saplings in the pine areas. Patch harvesting along the contours should be done in the conifers to convert to native hardwoods. Erosion and windthrow are definite hazards, so extra care must be taken on all roads and trails. The scattered sawtimber hardwoods should be left for seed trees (up to 5-10/ac) and if there are extras, they could be harvested along with the conifers. Recheck 3 years after harvesting.

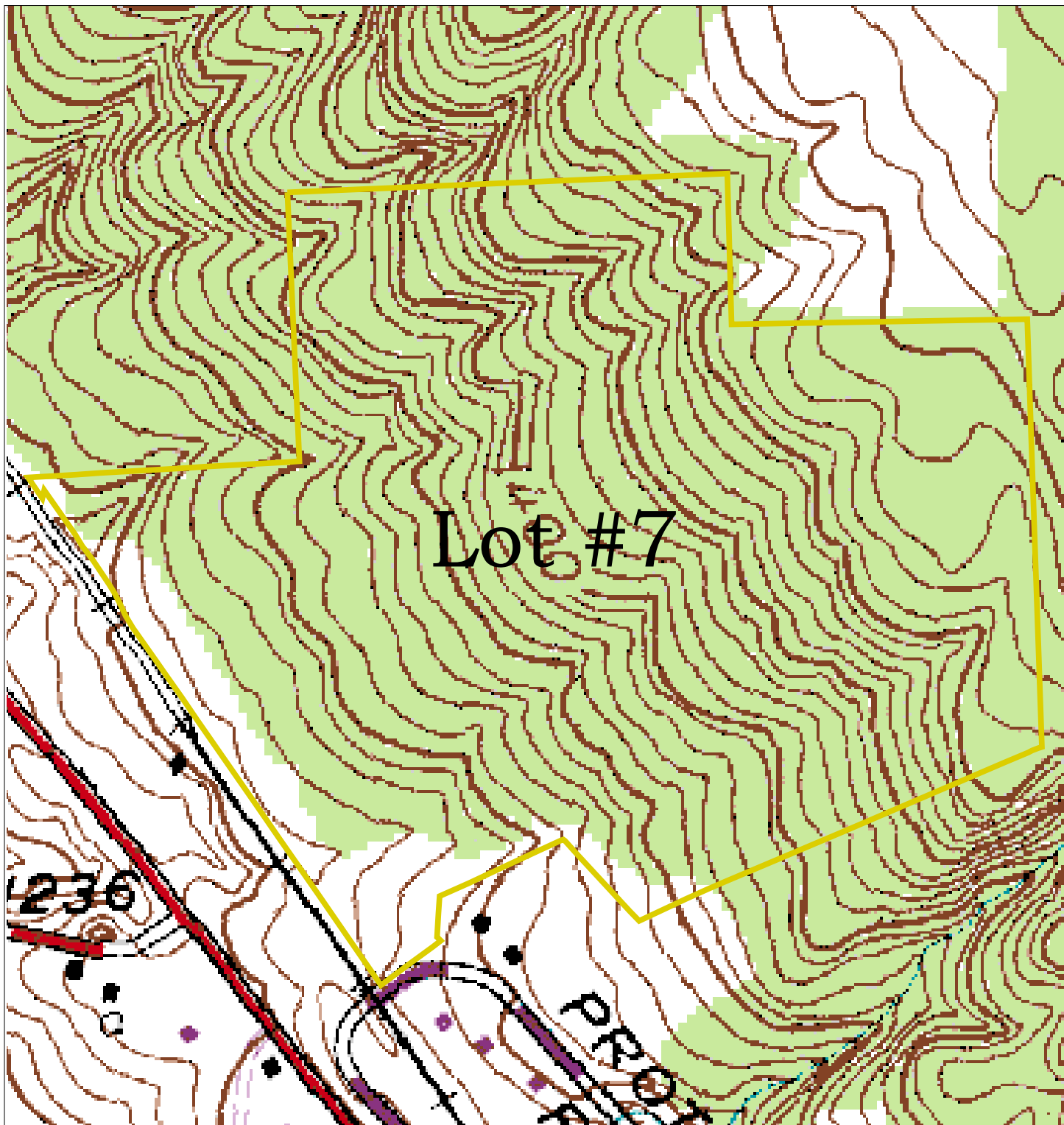
Stand D (Fields 11)

HIGH PRIORITY

This is an uneven-aged stand of northern hardwoods containing predominantly beech with lower quantities of hemlock, black cherry, white ash, sugar maple, bitternut hickory and cucumber. The stand density is moderately high, up to 120 sq ft/ac of basal area. Maximum diameters of some of the lesser species are medium sawtimber, but most trees of beech and maple are medium to large poles. Understory is composed of ash, maple, cherry and beech saplings; seedlings are scarce. This area should have timber stand improvement done to remove diseased beech, favoring healthy, good-crowned trees for seed production. Recheck in 15 years.

General

Best Management Practices (BMPs) for erosion control should be followed on the trails used by ATVs. This use is strictly prohibited on County Forest property and violators will be prosecuted.

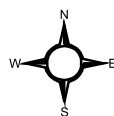


Erie County Forest Management Plan

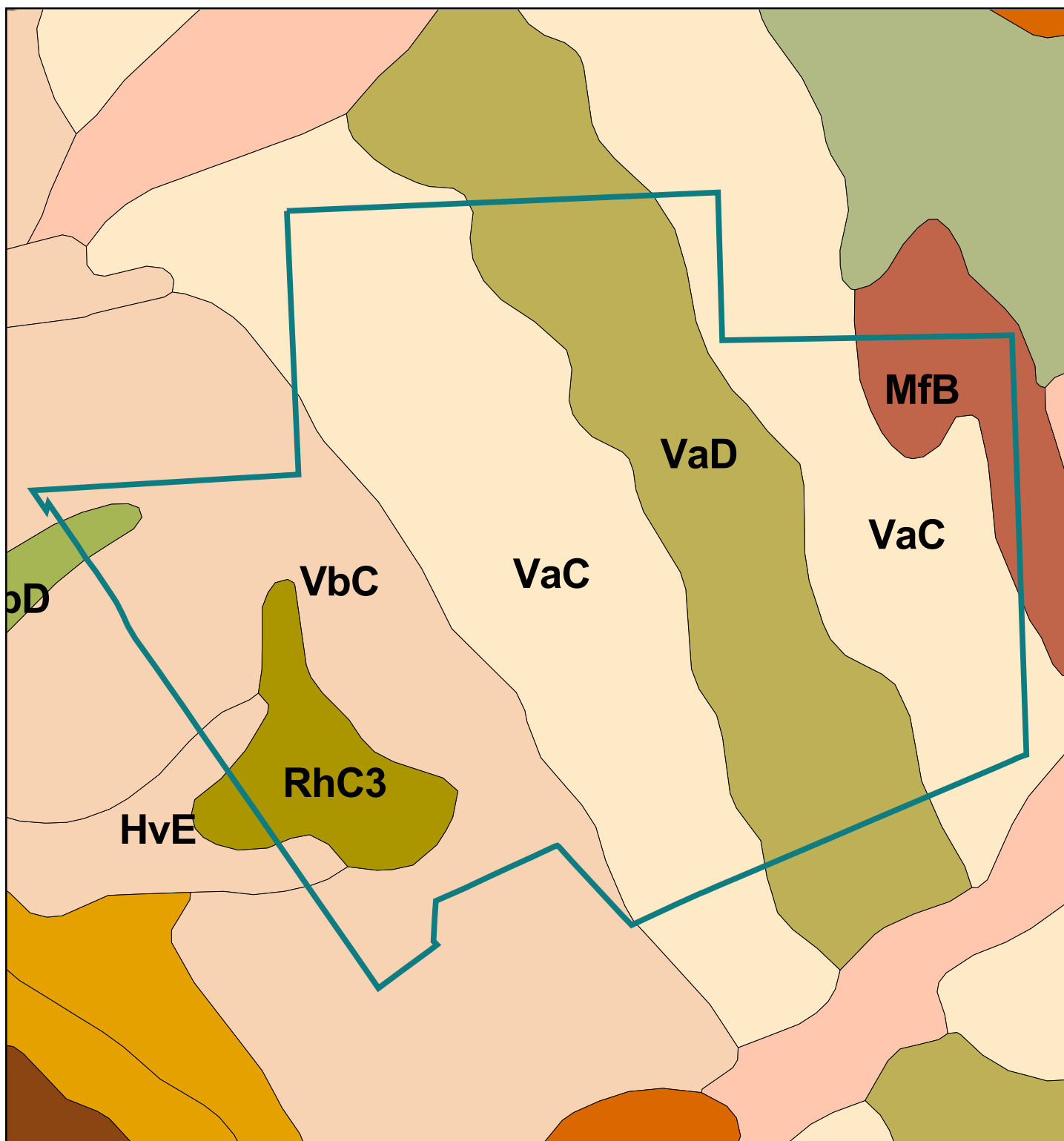
USGS TOPOGRAPHIC QUADRANGLE



Map Prepared By:
Erie County Soil and Water
Conservation District



400 0 400 Feet

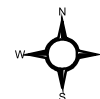


Erie County Forest Management Plan



Map Prepared By:
Erie County Soil and Water
Conservation District

LOT #7 - SOIL TYPES



200 0 200 400 Feet

Brief Soil Descriptions – Lot 7

For further information refer to the *Soil Survey of Erie County, New York*.

Symbol

Name / Description

HvE Hudson Silty Clay Loam, 25 to 40 Percent Slopes

Deep, very steep, well drained, high lime, silt loam soil formed in clayey glacial lake sediments. The available water capacity is moderate to high. Permeability is moderate to slow in the surface and subsoil layers and slow to very slow in the underlying layers. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-VIe, NYS SOIL GROUP-9b, K=.49, T=3

MfB Marilla Channery Silt Loam, 3 to 8 Percent Slopes

Deep, gently sloping, moderately well drained, low lime, shaly silt loam soil formed in very shaly glacial till. It has a very firm fragipan at a depth of 18 to 55 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIw, NYS SOIL GROUP-4b, K=.24, T=3

RhC3 Rhinebeck Silty Clay Loam, 8 to 15 Percent Slopes, Severely Eroded

Deep, sloping, somewhat poorly drained, medium to high lime, silt loam soil formed in clayey lake sediments. The available water capacity is moderate to high. Permeability is very slow. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-7b, K=.49, T=3

VaC Valois Gravelly Silt Loam, 8 to 15 Percent Slopes

Deep, sloping, well drained, low lime, gravelly silt loam soil formed in coarse loamy glacial till. The available water capacity is low to moderate. Permeability is moderate to rapid. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-5b, K=.24, T=3

VaD Valois Gravelly Silt Loam, 15 to 25 Percent Slopes

Deep, moderately steep, well drained, low lime, gravelly silt loam soil formed in coarse loamy glacial till. The available water capacity is low to moderate. Permeability is moderate to rapid. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-6b, K=.24, T=3

VbC Varysburg Gravelly Loam, 8 to 15 Percent Slopes

Deep, sloping, well drained and moderately well drained, medium lime, gravelly loam soil formed in gravelly material and underlying lake sediments. The available water capacity is generally low. Permeability is rapid in the gravelly part and generally slow or very slow in the underlying lake sediments. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-5b, K=.24, T=3



1965 CONSERVATION PLAN MAP

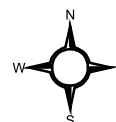
Erie County
Forest Management Plan

LOT #7



Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



0 400 Feet



2003 STEWARDSHIP RECOMMENDATION MAP

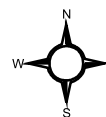
Erie County
Forest Management Plan

LOT #7



Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



200 0 200 400 Feet

Lot 8—Fields 1, 3

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 8 Total Acres: 71 Field Number(s): 1, 3 Acres: 51 Date: 9/9/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Norway Spruce	12-21	Heavy	12	Even	70	76	Good
Black Cherry	12-20	Light	9	Multiple		82 42	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature Norway Spruce (*Picea abies*) Plantations with light hardwood intrusions of mature Black Cherry (*Prunus serotina*).

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
None

Fire Lane Status

The east - west Fire Break in this field is approximately 8-10 feet wide, in need of general widening and is well used by All Terrain Vehicles. This use is strictly prohibited on County Forest property and violators will be prosecuted. The north - south Fire Break is approximately 8-10 feet wide and is in need of clearing and widening. The Fire Break along Morse Road is approximately 15 feet wide and is in need of significant clearing and pruning.

Note

There seems to be a discrepancy in Lot Number 8 regarding Field #4. The ECSWCD map of 2003 and the field work indicate that this 4 acre parcel does not exist as is indicated by the 1965 Management report. We therefore are excluding it from Lot Number 8.

Lot 8—Fields 1, 3

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of heavy density and is characterized by Norway Spruce (*Picea abies*) along with light hardwood intrusions of Black Cherry (*Prunus serotina*).

Subcanopy

The subcanopy is not present.

Shrub Layer

The shrub layer is not present.

Herbaceous Layer

The herbaceous layer is not present.

Successional Status

These fields represent mature Norway Spruce (*Picea abies*) Plantations in the mid – late stages of hardwood succession with light intrusions of mature Black Cherry (*Prunus serotina*) present in the canopy.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: None

Lot 8—Field 2

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 8 Total Acres: 71 Field Number(s): 2 Acres: 20 Date: 9/9/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Eastern Hemlock	12-32	Medium - Heavy	16	Multiple		82	Good
Sugar Maple	12-26	Medium - Heavy	11	Multiple		74 30	Fair
American Beech	12-28	Light	18	Multiple		77 29	Fair

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature Hardwood Forest dominated by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*) and Eastern Hemlock (*Tsuga canadensis*), a conifer associate. This field also contains a variety of mature mixed hardwoods such as Red Maple (*Acer rubrum*), White Ash (*Fraxinus americana*) and Basswood (*Tilia americana*). The terrain in this field is generally steep and serves as a drainage basin for Field Numbers 1 and 3. Note: A Red Maple (*Acer rubrum*) was measured at a D.B.H. of 53 inches.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
This field contains a westerly flowing four season stream.

Fire Lane Status

None

Lot 8—Field 2

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium - heavy density and is characterized by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*) and Eastern Hemlock (*Tsuga canadensis*), a conifer associate.

Subcanopy

The subcanopy is of light density and is represented primarily by Sugar Maple (*Acer saccharum*).

Shrub Layer

The shrub layer is not present.

Herbaceous Layer

The herbaceous layer is light, concentrated along the stream banks and includes a variety of ferns such as New York fern (*Thelypteris noveboracensis*), Christmas fern (*Polystichum acrostichoides*), Evergreen Woodfern (*Dryopteris intermedia*) and Hayscented fern (*Dennstaedtia punctilobula*) along with Wild Sarsaparilla (*Aralia nudicaulis*), White Baneberry (*Actaea pachypoda*), Turtlehead (*Chelone glabra*) and Tree Clubmoss (*Lycopodium obscurum*).

Successional Status

This field represents a mature Maple/Beech Hardwood Forest. These species will continue to dominate as they further evolve into a characteristic Climax Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Hayscented fern (*Dennstaedtia punctilobula*). White Baneberry (*Actaea pachypoda*), Turtlehead (*Chelone glabra*) and Tree Clubmoss (*Lycopodium obscurum*) are also protected.

Lot 8 Summary and Recommendations

FIELD WORKSHEET #3 WILDLIFE SUMMARY

Lot # 8 offers a good variety of habitats for diverse populations of wildlife. Field Numbers 1 and 3 represent mature Conifer Plantations with light hardwood intrusions, while Field Number 2 represents a mature Maple/Beech Hardwood Forest.

During a period of approximately one day, staff ecologists recorded a variety of wildlife observations focused upon actual sightings and other wildlife “signs”. The following list represents a brief overview of those encounters focused upon Mammals, Birds and Reptiles/Amphibians.

Mammals

Whitetail Deer (<i>Odocoileus virginianus</i>)	Red Squirrel (<i>Tamiasciurus hudsonicus</i>)
Eastern Chipmunk (<i>Tamias striatus</i>)	Gray Squirrel (<i>Sciurus carolinensis</i>)
Raccoon (<i>Procyon lotor</i>)	Coyote (<i>Canis latrans</i>)

Birds

Wild Turkey (<i>Meleagris gallopavo</i>)	Black-capped Chickadee (<i>Parus atricapillus</i>)
Pileated Woodpecker (<i>Dryocopus pileatus</i>)	Blue Jay (<i>Cyanocitta cristata</i>)
White-breasted Nuthatch (<i>Sitta carolinensis</i>)	Great Crested Flycatcher (<i>Myiarchus crinitus</i>)
American Goldfinch (<i>Carduelis tristis</i>)	Hairy Woodpecker (<i>Picoides villosus</i>)
Common Crow (<i>Corvus brachyrhynchos</i>)	

Reptiles/Amphibians

American Toad (<i>Bufo americanus</i>)	Spring Peeper (<i>Hyla crucifer</i>)
Wood Frog (<i>Rana sylvatica</i>)	

FIELD WORKSHEET #4 RECOMMENDATIONS

The following recommendations for Lot # 8 of the Erie County Forestry Management Plan are based upon field data collected by Earth Spirit Educational Services, Inc. in the areas of Forest Ecology, Wildlife Biology and general Ecology.

Field Numbers 1 and 3

Description - These fields represent mature Conifer Plantations of Norway Spruce (*Picea abies*) with hardwood intrusions of Black Cherry (*Prunus serotina*).

Recommendations – These fields of mature Norway Spruce should be actively managed, however a buffer zone of at least 100 feet should be considered along both ridges in order to prevent erosion and protect the watershed. The Black Cherry in these fields should remain without treatment in order to serve as “seed trees” for hardwood regeneration.

Field Number 2

Description – This field represents a mature, mixed Hardwood Forest dominated by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*) and Eastern Hemlock (*Tsuga canadensis*), a conifer associate. This field is generally inaccessible due to the steepness of the terrain and its proximity to the stream.

Recommendations – This field should remain without treatment in order to prevent erosion, protect the watershed and enhance wildlife habitat.

Lot 8

Soils, Waterways and Topography

Soils

The uplands on Lot 8 are primarily the moderately well drained Langford Channery Silt Loam (LfB and LfC), with 3-15% slopes, and the somewhat poorly drained Erie Channery Silt Loam (ErB), with 3-8% slopes. These soils have moderate permeability and are potentially highly erodible, and highly erodible on the steeper slopes. Toward the western portion of the lot, the upland soils are the moderately well drained Mardin Silt Loam (McC), with 8-15% slopes. These soils are highly erodible and have moderate permeability. The lot is underlain by a fragipan at a depth of 15 to 50 inches, and permeability is slow below the fragipan. Along the drainage gully the soils are of the well drained Mardin-Valois Complex (MeF), with 25-50% slopes, a highly erodible soil with moderate to slow permeability. A perennial cover should be maintained on this lot to minimize soil erosion.

Waterways and Topography

An east-west drainage channel bisects Lot 8, with steep, highly erodible side slopes. The drainage is identified as stream Class A, and is a tributary of Eighteenmile Creek, also a Class A stream, protected as a drinking water source. The primary pollutant threatening fish propagation and survival in Eighteenmile Creek is sediment from streambank erosion. A forested buffer should be maintained along all waterways in the watershed to minimize soil disturbance. Secondary pollutants include pesticides, nutrients, salts, thermal changes and pathogens, from agriculture, construction, urban runoff, resource extraction and on-site waste treatment.

Lot 8

Forest Stewardship Recommendations

Stand A (Old Fields 1, 3)

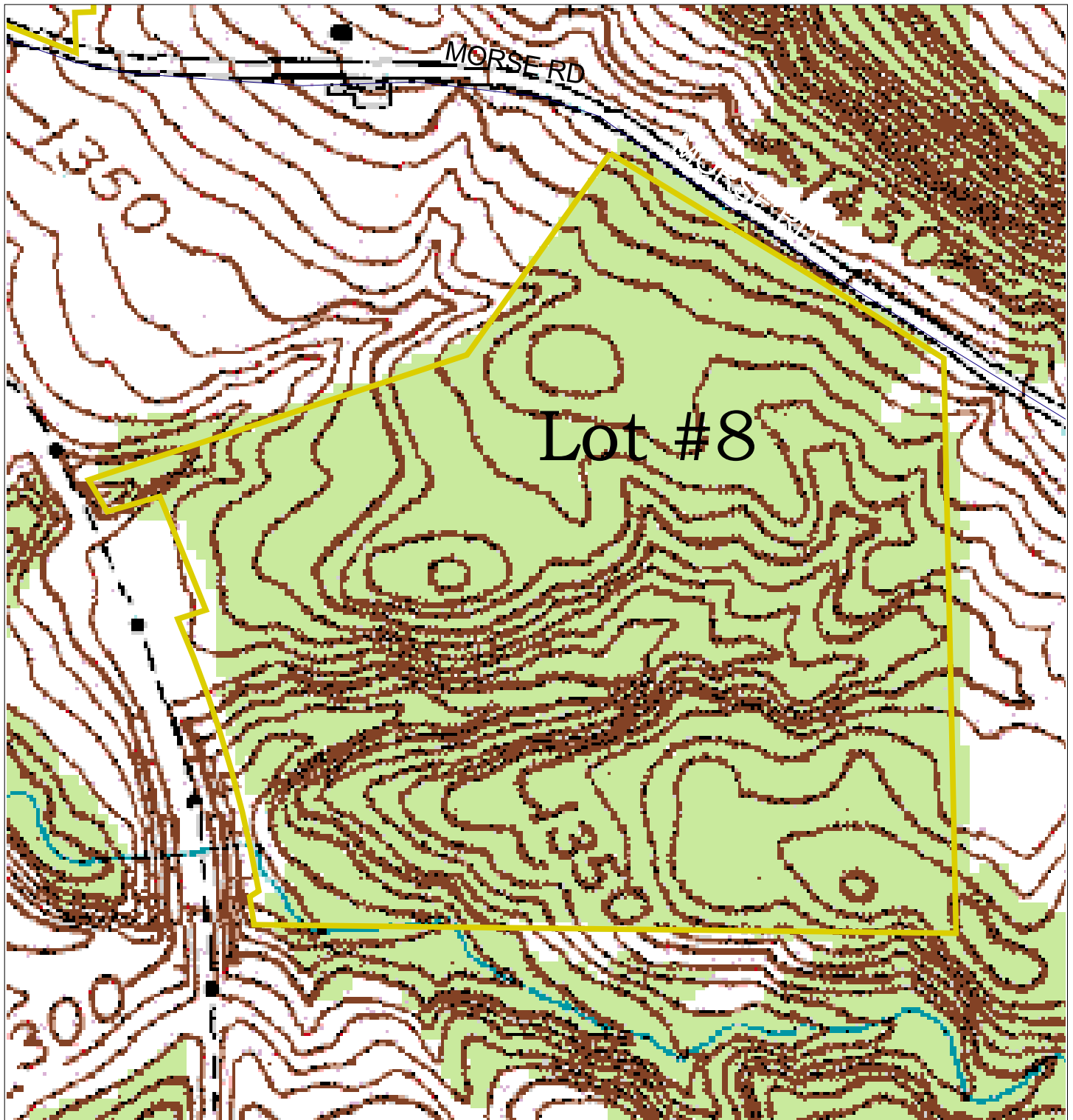
MEDIUM PRIORITY

This stand of mature Norway spruce is split by the hardwoods of Stand B. The dominants have enough live crown to support good radial growth, however no intermediate treatment of thinning is recommended to enhance residual crop trees. The scarcity of understory seedlings and saplings necessitates a low thinning to allow more light and heat to stimulate seedling growth before the spruce overstory is removed by patches. Scattered sawlog and pole black cherry should be left for seed with provisions for possible salvage after field checking natural regeneration. Buffers of uncut spruce with no skidder traffic should be left on the steep slopes of the ravine and along the road.

Stand B (Old Field 2)

LOW PRIORITY

This uneven-aged hardwood stand has low density and many low timber value trees. Potential management for timber production would necessitate timber stand improvement to remove large culls providing release for dense sapling growth. However, since this stand is quite narrow within steep slopes along a Class 'A' protected stream, a buffer should be maintained and this would make access difficult. Assign this stand a low priority for timber stand improvement work and reevaluate in 10 years.

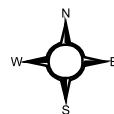


Erie County Forest Management Plan

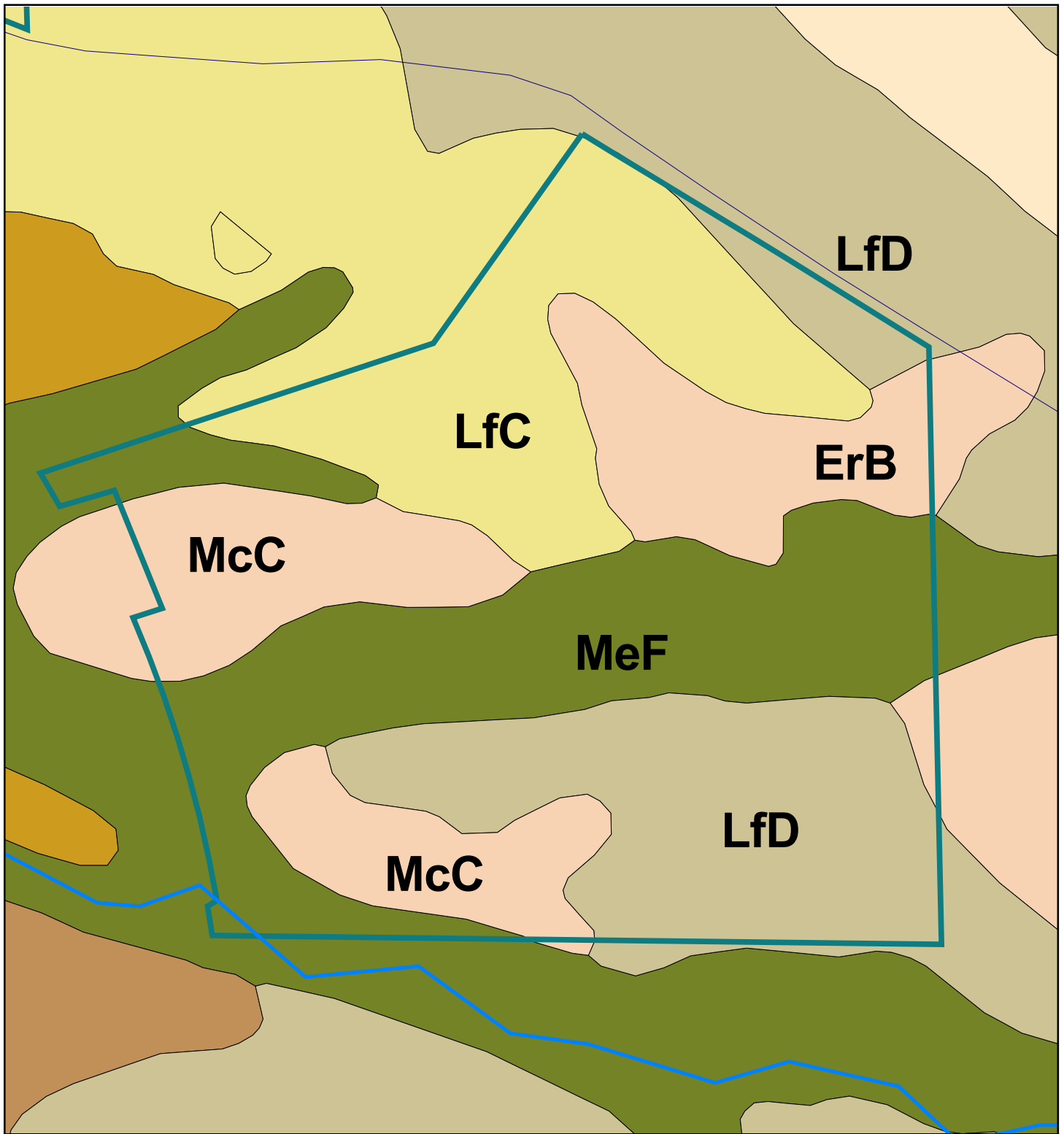
USGS TOPOGRAPHIC QUADRANGLE



Map Prepared By:
Erie County Soil and Water
Conservation District



300 0 300 Feet

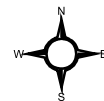


Erie County Forest Management Plan

LOT #8 - SOIL TYPES



Map Prepared By:
Erie County Soil and Water
Conservation District



200 0 200 400 Feet

Brief Soil Descriptions – Lot 8

For further information refer to the *Soil Survey of Erie County, New York*.

Symbol

Name / Description

ErB *Erie Channery Silt Loam, 3 to 8 Percent Slopes*

Deep, gently sloping, somewhat poorly drained, medium lime, channery silt loam formed in coarse loamy glacial till. It has a very firm fragipan at depth of 14 to 40 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and very slow in the fragipan. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIw, NYS SOIL GROUP-6b, K=.24, T=3

LfC *Langford Channery Silt Loam, 8 to 15 Percent Slopes*

Deep, sloping, moderately well drained and well drained, medium lime, channery silt loam soil formed in glacial till deposits derived mainly from limestone and shale. There is a firm, dense fragipan 15 to 20 inches deep which is approximately 24 inches thick. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow below the fragipan. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-6b, K=.20, T=3

LfD *Langford Channery Silt Loam, 15 to 25 Percent Slopes*

Deep, moderately steep, moderately well drained and well-drained, medium lime, channery silt loam soil formed in glacial till deposits derived mainly from limestone and shale. There is a firm, dense fragipan 15 to 20 inches deep which is approximately 24 inches thick. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow below the fragipan. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-7b, K=.20, T=3

McC Mardin Silt Loam, 8 to 15 Percent Slopes

Deep, sloping, moderately well drained and well drained, low lime, silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-6b, K=.32, T=3

MeF Mardin-Valois Complex, 25 to 50 Percent Slopes

Deep, very steep, well-drained, low lime soil formed in coarse loamy glacial till. The Mardin soil has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability ranges from moderate to slow. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-VIIIE, NYS SOIL GROUP-9b, K=.24, T=3



1965 CONSERVATION PLAN MAP

Erie County
Forest Management Plan

LOT #8



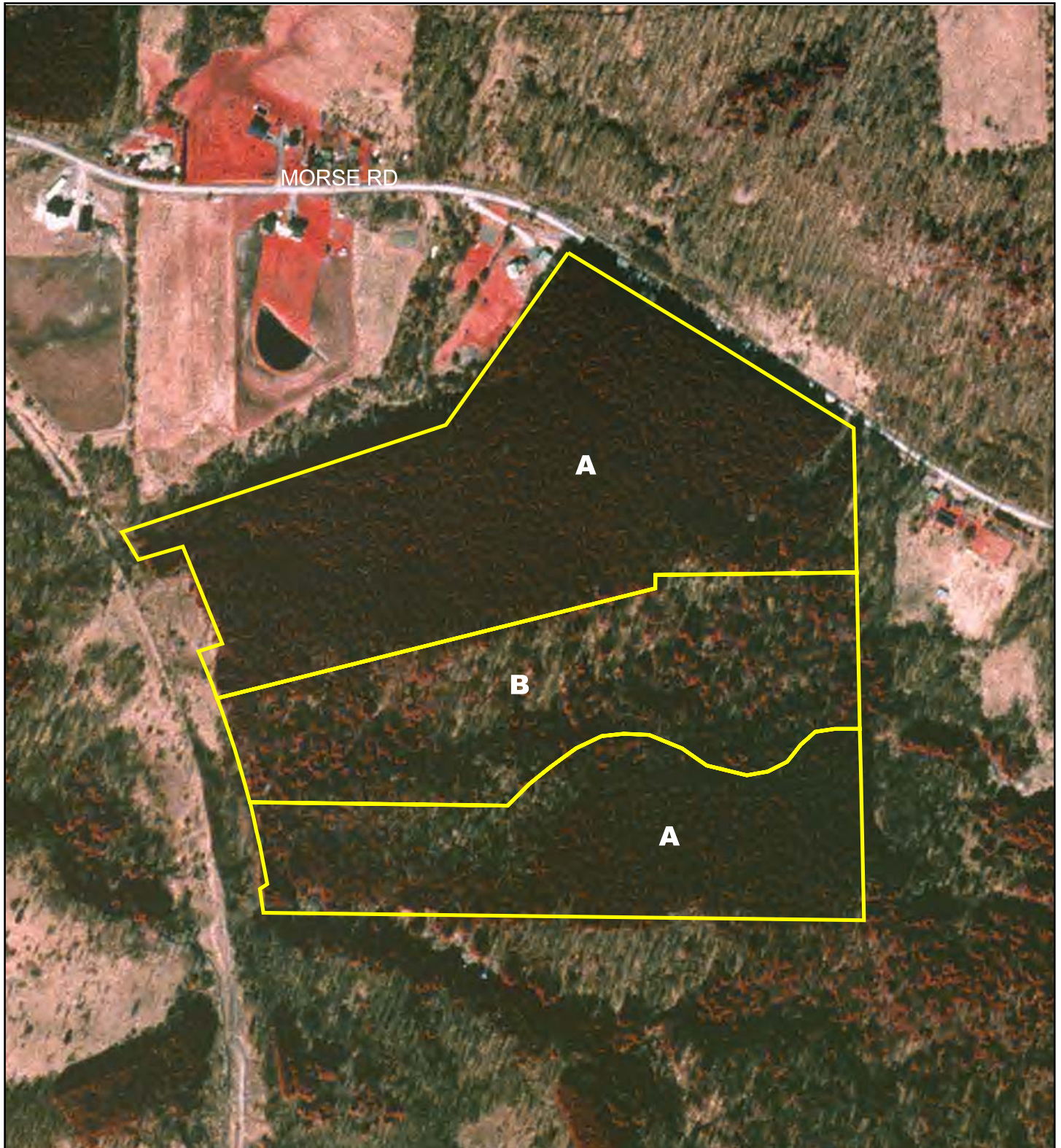
Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



300 0 300 Feet

A horizontal scale bar with three segments, each labeled '300' and '0' at the ends, with 'Feet' at the far right.



2003 STEWARDSHIP RECOMMENDATION MAP

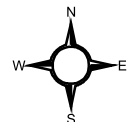
Erie County
Forest Management Plan

LOT #8



Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



200 0 200 Feet

A horizontal scale bar with three segments. The first segment is labeled '200', the second '0', and the third '200'. The word 'Feet' is at the end of the bar.

Lot 9—Fields 1, 3, 5, 6 and 9

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 9 Total Acres: 278 Field Number(s): 1, 3, 5, 6, & 9 Acres: 98 Date: 9/15/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Scotch Pine	P-14	Light - Medium	30	Even	73	68	Poor
Sugar Maple	12-20	Medium - Heavy	10	Multiple		79 32	Good
Black Cherry	14-25	Light	12	Multiple		82 45	Good
American Beech	12-20	Light	17	Multiple		78 36	Good
White Pine	12-16	Light	20	Even	73	78	Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature Scotch Pine (*Pinus sylvestris*) Plantations that have transitioned into Hardwood Forests dominated by Sugar Maple (*Acer saccharum*) and other mixed hardwoods. The Pines that remain in these fields are in various stages of decline. Note: Field Number 8 does not exist (compare the 1965 Conservation Plan Map with the 2003 GIS map).

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
These fields contain two southerly flowing intermittent streams.

Fire Lane Status

The Fire Break in these fields exists along the southwest border, is approximately 20 feet wide and in need of general crown pruning.

Lot 9—Fields 1, 3, 5, 6 and 9

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium - heavy density and is characterized by Sugar Maple (*Acer saccharum*), Black Cherry (*Prunus serotina*), American Beech (*Fagus grandifolia*) and varying densities of Pines (*Pinus* spp.).

Subcanopy

The subcanopy is of medium density and is represented primarily by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*) and Hophornbeam (*Ostrya virginiana*).

Shrub Layer

The shrub layer is of light density and includes Brambles (*Rubus* spp), Dogwoods (*Cornus* spp.) and Tartarian Honeysuckle (*Lonicera tartarica*).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), Christmas fern (*Polystichum acrostichoides*) and Sensitive fern (*Onoclea sensibilis*) along with a medium - heavy density of hardwood seedlings.

Successional Status

These fields represent mature Scotch Pine (*Pinus sylvestris*) Plantations that have transitioned into Hardwood Forests. The Pines (*Pinus* spp.) in these fields are presently experiencing significant decline.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera tartarica*)

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*).

Lot 9—Fields 2, 10

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 9 Total Acres: 278 Field Number(s): 2, 10 Acres: 43 Date: 09/15/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Norway Spruce	12-17	Heavy	17	Even	73	73	Good
Black Cherry	13-25	Light	13	Multiple		87 36	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature Norway Spruce (*Picea abies*) Plantations with a light intrusion of mature Black Cherry (*Prunus serotina*) in the canopy along with a very light subcanopy of Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*).

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
Field Number 10 contains two southerly flowing intermittent streams.

Fire Lane Status

The Fire Break in these fields exists along the southern border of Field Number 10, is approximately 18 feet wide and in need of general clearing and pruning.

Lot 9—Fields 2, 10

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium - heavy density and is characterized by Norway Spruce (*Picea abies*) and Black Cherry (*Prunus serotina*).

Subcanopy

The subcanopy is of very light density and is represented by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*) and Hophornbeam (*Ostrya virginiana*).

Shrub Layer

The shrub layer is generally not present.

Herbaceous Layer

The herbaceous layer is of light density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), Christmas fern (*Polystichum acrostichoides*) and New York fern (*Thelypteris noveboracensis*).

Successional Status

These fields represent mature Conifer Plantations in the early - mid stages of hardwood succession.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer”.

Lot 9—Fields 4, 7

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 9 Total Acres: 278 Field Number(s): 4, 7 Acres: 121 Date: 09/15/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Sugar Maple	12-43	Medium - Heavy	17	Multiple		78	42	Good
American Beech	12-26	Light	17	Multiple		86	31	Fair
Black Cherry	16-26	Light	14	Multiple		70	28	Fair
Eastern Hemlock	12-29	Light	25	Multiple		84		Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature Hardwood Forests dominated by Sugar Maple (*Acer saccharum*) and a variety of mixed hardwoods. Eastern Hemlock (*Tsuga canadensis*), generally of light density, is of significant concentration along the ravine edge in Field Number 4.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
Field Number 4 contains three southerly flowing four season streams.

Fire Lane Status

None

Lot 9—Fields 4, 7

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium - heavy density and is characterized by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*) and Black Cherry (*Prunus serotina*).

Subcanopy

The subcanopy is of medium density and is represented by a variety of hardwoods.

Shrub Layer

The shrub layer is of light density and includes Brambles (*Rubus* spp.) and Dogwoods (*Cornus* spp.).

Herbaceous Layer

The herbaceous layer is of light - medium density and is dominated by a variety of ferns and clubmosses such as Evergreen Woodfern (*Dryopteris intermedia*), New York fern (*Thelypteris noveboracensis*), Hayscented fern (*Dennstaedtia punctilobula*), Christmas fern (*Polystichum acrostichoides*), Tree Clubmoss (*Lycopodium obscurum*), Bristly Clubmoss (*Lycopodium annotinum*) and Running Pine (*Lycopodium complanatum*).

Successional Status

These fields represent mature Hardwood Forests dominated by Sugar Maple (*Acer saccharum*) and other subdominant hardwoods.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns and clubmosses listed under “Herbaceous Layer” except Hayscented fern (*Dennstaedtia punctilobula*).

Lot 9 Summary and Recommendations

FIELD WORKSHEET #3 WILDLIFE SUMMARY

Lot # 9 offers a good variety of habitats for diverse populations of wildlife species. Field Numbers 1-3, 5, 6 and 8-10 all represent Conifer Plantations in various stages of hardwood succession while Field Numbers 4 and 7 represent mature Hardwood Forests.

During a period of one day, staff ecologists recorded a variety of wildlife observations focused upon actual sightings and other wildlife “signs”. The following list represents a brief overview of those encounters focused upon Mammals, Birds and Reptiles/Amphibians.

Mammals

Whitetail Deer (<i>Odocoileus virginianus</i>)	Red Fox (<i>Vulpes fulva</i>)
Gray Squirrel (<i>Sciurus carolinensis</i>)	Eastern Chipmunk (<i>Tamias striatus</i>)
Red Squirrel (<i>Tamiasciurus hudsonicus</i>)	

Birds

Wild Turkey (<i>Meleagris gallopavo</i>)	Black-capped Chickadee (<i>Parus atricapillus</i>)
Dark-eyed Junco (<i>Junco hyemalis</i>)	Blue Jay (<i>Cyanocitta cristata</i>)
American Robin (<i>Turdus migratorius</i>)	White Breasted Nuthatch (<i>Sitta canadensis</i>)
Redtail Hawk (<i>Buteo jamaicensis</i>)	Turkey Vulture (<i>Cathartes aura</i>)

Reptiles/Amphibians

Spring Peeper (<i>Hyla crucifer</i>)	American Toad (<i>Bufo americanus</i>)
Red-spotted Newt (<i>Notophthalmus viridescens</i>)	

FIELD WORKSHEET #4 RECOMMENDATIONS

The following recommendations for Lot # 9 of the Erie County Forestry Management Plan are based upon field data collected by Earth Spirit Educational Services, Inc. in the areas of Forest Ecology, Wildlife Biology and general Ecology.

Field Numbers 1, 3, 5, 6 and 9

Description - These fields represent mature Scotch Pine (*Pinus sylvestris*) Plantations that have transitioned into Hardwood Forests dominated by Sugar Maple (*Acer saccharum*) and other mixed hardwoods. The Pine (*Pinus* spp.) that remain in this field are in various stages of decline.

Recommendations - These fields of mature Scotch Pine are currently experiencing significant hardwood intrusions, slow growth and decline. As a result of their general poor quality, these fields should remain without treatment. Selected hardwoods, especially Sugar Maple, may receive a selective thinning.

Field Numbers 2 and 10

Description - These fields represent Norway Spruce (*Picea abies*) Plantations with light intrusions of mature Black Cherry (*Prunus serotina*) in the canopy along with a very light subcanopy of Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*).

Recommendations - These fields of mature Norway Spruce Plantations should be actively managed. The Black Cherry should remain without treatment in order to provide an adequate “seed tree” population.

Field Numbers 4 and 7

Description - These fields represent mature Hardwood Forests dominated by Sugar Maple (*Acer saccharum*) and a variety of mixed hardwoods.

Recommendations – These fields, due to the steep topography and numerous streams, generally offer poor accessibility. The hardwoods present (except for Sugar Maple) are also of light density and generally fair quality. As a result, these fields should remain without treatment in order to prevent erosion, protect the watershed and provide wildlife habitat.

Lot 9

Soils, Waterways and Topography

Soils

The soils on Lot 9 are predominately moderately well drained Langford Channery Silt Loam (LfC and LfD), with 8-25% slopes, and a firm fragipan at a depth of 15 to 20 inches and slow to very slow permeability below the fragipan. These soils are highly erodible. Along the drainage gullies the soils are excessively well drained to well drained Manlius Very Channery Silt Loam (MbE), with slopes of 25-35%. These soils are highly erodible and have moderately rapid permeability. Soil disturbing activities should be conducted during dry seasons or after soil freeze to minimize soil loss.

Waterways and Topography

Lot 9 lies along the side of a typical U-shaped valley, and drops over 300 feet in elevation from northeast to southwest, containing several steep-walled ravines. In general, the topography is fairly steep, except for a gently sloping upland area in the northwestern corner. Access to the steep stream channels is difficult, and most likely precludes soil disturbing activities. A buffer should be maintained on each of the streams and gullies on the lot to protect the soil resource and water quality of the streams and Eighteenmile Creek, a Class A stream protected as a drinking water source. The primary pollutant degrading the Creek is sediment from poorly maintained streambanks. Other pollutant sources include agriculture, construction, urban runoff, resource extraction and on-site waste treatment.

Lot 9

Forest Stewardship Recommendations

Stand A (Fields 1, 3, 5, 6, 9)

LOW PRIORITY

These are areas of declining Scots pine plantations with ingrowth of native hardwoods. Hardwood species include sugar maple, black cherry, elm and yellow birch. The stand has low density with very branchy trees. Wild grapevines are very common. Dogwood and multiflora rose shrubs and black cherry seedlings are common. In some sections, the Scots pines are very scattered since many have died. Pine diameters are up to 12", and hardwood maximum diameters are in the large pole to small sawtimber range. Terrain is fairly steep (8-25% slope) with a southwestern exposure and somewhat poorly drained soils. Because of the low stand density and scarcity of quality merchantable trees it would be best to allow these areas to continue succession into northern hardwoods without further management activity. These areas can now be utilized as wildlife habitat, since the dense shrubs and grapes provide good cover and fruits for a variety of wildlife. Any future management for timber regeneration objectives should be preceded by removal of wolf trees and competing grapevines about 2-3 years prior to treatment. Recheck stand density in 10 years.

Stand B (Fields 2, 10)

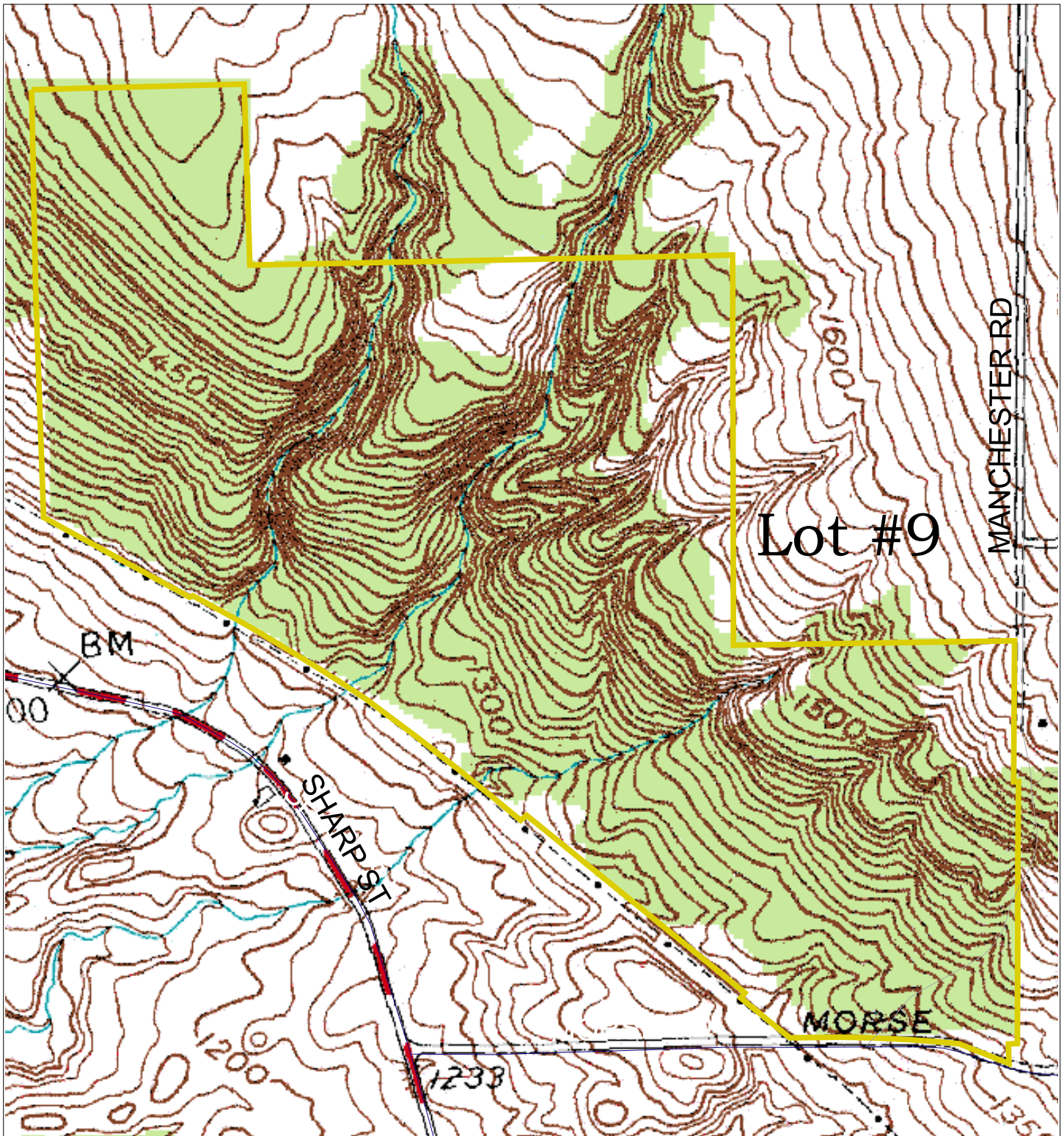
HIGH PRIORITY

These areas are mature plantations of Norway spruce. The plantations have not been thinned, so the stand density is high and live crown ratios are only around 20%. Diameters of dominant and codominant trees average about 13" with maximums around 17". There are very sparse medium to large black cherry sawtimber trees and very few saplings. The mature conifers should be scheduled for patch harvesting to continue the transition to native hardwoods. The scattered sawlog hardwoods should be left for seed trees (5-10/ac if possible), which then could be salvaged about 5-8 years after the conifers are cut. Recheck 5 years after conifer harvest.

Stand C (Fields 4, 7)

MEDIUM PRIORITY

This is an uneven-aged stand of northern hardwoods containing predominantly sugar maple, black cherry, beech, hemlock, with lower quantities of yellow birch, bitternut hickory and basswood. Some sections have heavy growth of wild grapevines. The understory is light, but there are sections with dense sugar maple seedlings under 6" tall. The stand density is moderate. Maximum diameters are large sawtimber, up to 25-30"+. It may be possible to conduct a light, selection harvest in this stand, across many diameters, reducing the basal area by no more than 1/4. Light timber stand improvement in the form of grapevine control should precede the harvest to remove this type of seedling competition. Insist upon no-cut buffers about 100-150' wide along property boundaries and especially, the steep-sided ravines should not be cut. These steep slopes have some spring seeps, and that wildlife environment should be preserved. Two of the ravines have Class A protected streams, so buffers should be left, and crossing or disturbance would need a permit. It may be best to cross only at the powerline trail at the bottom of the slope. Where the powerline trail crosses the northern-most Class A stream there is a severe washout of old concrete culverts. This erosion should be addressed and the banks protected. The long, forested slopes could also present erosion problems during logging, so there should be strict adherence to the Best Management Practices. Recheck 15 years after any logging.

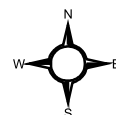


Erie County Forest Management Plan

USGS TOPOGRAPHIC QUADRANGLE

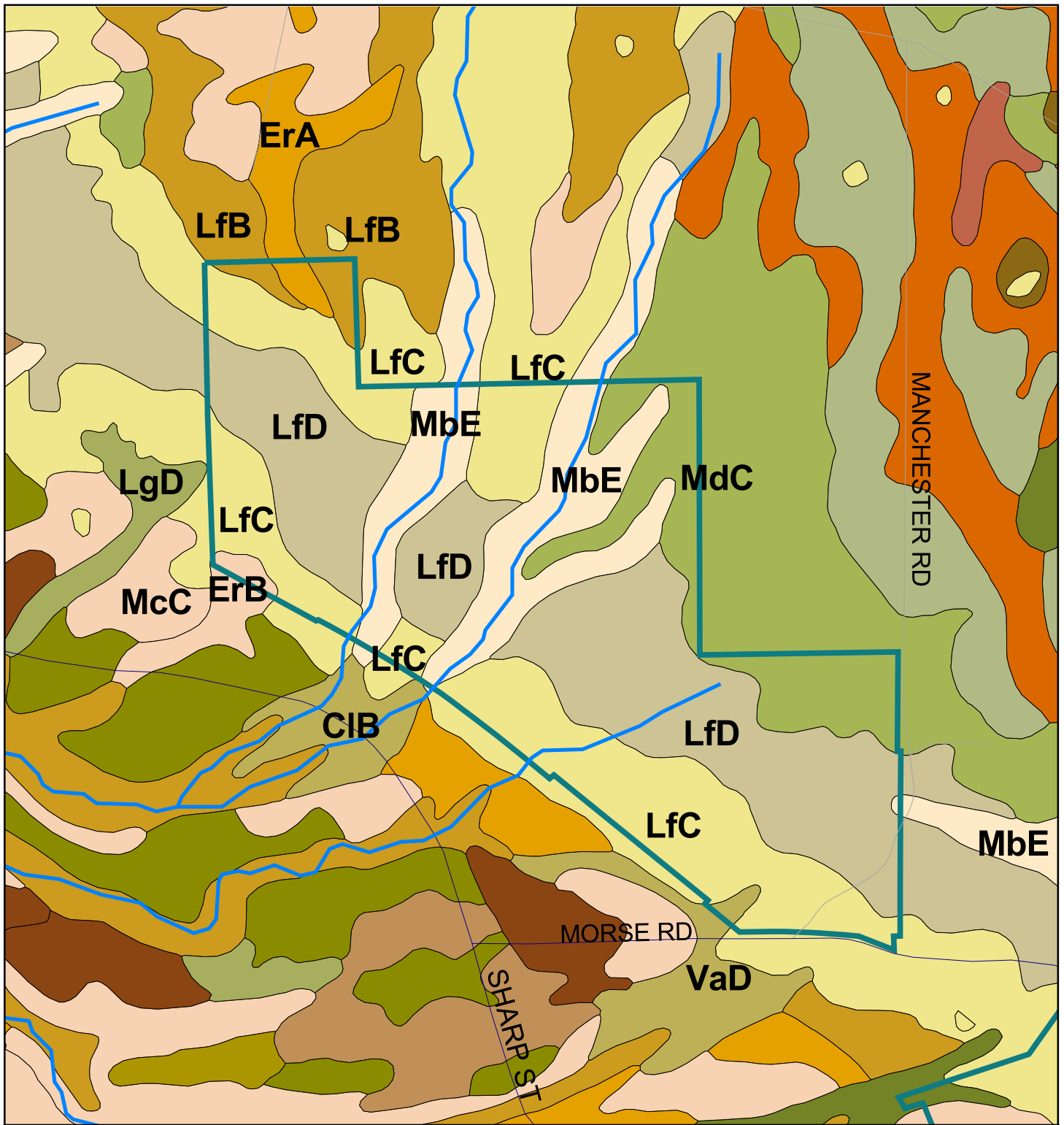


Map Prepared By:
Erie County Soil and Water
Conservation District



700 0 700 Feet





Erie County Forest Management Plan

LOT #9 - SOIL TYPES



Map Prepared By:
Erie County Soil and Water
Conservation District



500 0 500 1000 Feet

Brief Soil Descriptions – Lot 9

For further information refer to the *Soil Survey of Erie County, New York*.

Symbol

Name / Description

CIB Chenango Channery Silt Loam, Fan, 3 to 8 Percent Slopes

Deep, nearly level to gently sloping, well-drained, low lime, channery silt loam soil formed in gravel and sand. The available water capacity is low. Permeability is moderate to rapid in the surface soil and subsoil and generally rapid or very rapid in the substratum. PRIME FARMLAND, POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIs, NYS SOIL GROUP-2b, K=.24, T=3

ErA Erie Channery Silt Loam, 0 to 3 Percent Slopes

Deep, nearly level, somewhat poorly drained, medium lime, channery silt loam formed in coarse loamy glacial till. It has a very firm fragipan at depth of 14 to 40 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and very slow in the fragipan. CAPABILITY CLASS-IIIW, NYS SOIL GROUP-6b, K=.24, T=3

ErB Erie Channery Silt Loam, 3 to 8 Percent Slopes

Deep, gently sloping, somewhat poorly drained, medium lime, channery silt loam formed in coarse loamy glacial till. It has a very firm fragipan at depth of 14 to 40 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and very slow in the fragipan. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIW, NYS SOIL GROUP-6b, K=.24, T=3

LfB Langford Channery Silt Loam, 3 to 8 Percent Slopes

Deep, gently sloping, moderately well drained and well drained, medium lime, channery silt loam soil formed in glacial till deposits derived mainly from limestone and shale. There is a firm, dense fragipan 15 to 20 inches deep which is approximately 24 inches thick. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow below the fragipan. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIW, NYS SOIL GROUP-3b, K=.20, T=3

LfC Langford Channery Silt Loam, 8 to 15 Percent Slopes

Deep, sloping, moderately well drained and well drained, medium lime, channery silt loam soil formed in glacial till deposits derived mainly from limestone and shale. There is a firm, dense fragipan 15 to 20 inches deep which is approximately 24 inches thick. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow below the fragipan. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-6b, K=.20, T=3

LfD Langford Channery Silt Loam, 15 to 25 Percent Slopes

Deep, moderately steep, moderately well drained and well-drained, medium lime, channery silt loam soil formed in glacial till deposits derived mainly from limestone and shale. There is a firm, dense fragipan 15 to 20 inches deep which is approximately 24 inches thick. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow below the fragipan. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-7b, K=.20, T=3

LgD Langford Channery Silt, Silty Substratum, 15 to 25 Percent Slopes

Deep, moderately steep, moderately well drained and well-drained, medium lime, channery silt loam soil formed in glacial till deposits underlain by silty lake sediments. There is a firm, dense fragipan 15 to 20 inches deep which is approximately 24 inches thick. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow below the fragipan. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-7b, K=.20, T=3

MbE Manlius Very Channery Silt Loam, 25 to 35 Percent Slopes

Moderately deep, steep, excessively well drained to moderately well drained, low lime, shaley silt loam soil formed in very shaly glacial till 20 to 40 inches thick over shale bedrock. The available water capacity is low to moderate. Permeability is generally moderately rapid above the bedrock. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-VIe, NYS SOIL GROUP-8a, K=.28, T=2

McC Mardin Silt Loam, 8 to 15 Percent Slopes

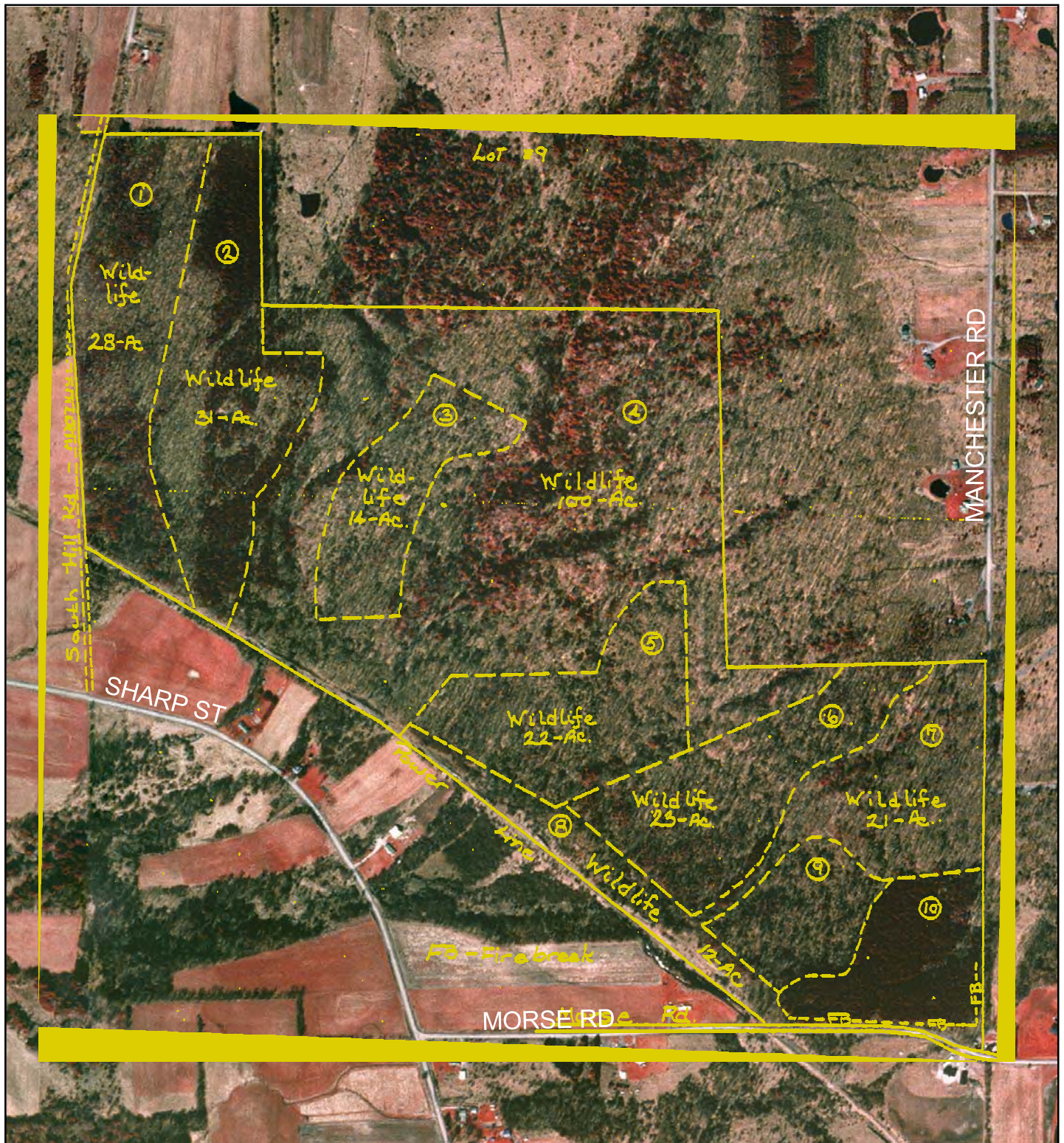
Deep, sloping, moderately well drained and well drained, low lime, silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-6b, K=.32, T=3

MdC Mardin Channery Silt Loam, 8 to 15 Percent Slopes

Deep, sloping, moderately well drained and well drained, low lime, channery silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-6b, K=.24, T=3

VaD Valois Gravelly Silt Loam, 15 to 25 Percent Slopes

Deep, moderately steep, well drained, low lime, gravelly silt loam soil formed in coarse loamy glacial till. The available water capacity is low to moderate. Permeability is moderate to rapid. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVE, NYS SOIL GROUP-6b, K=.24, T=3



1965 CONSERVATION PLAN MAP

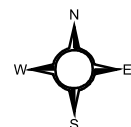
Erie County
Forest Management Plan

LOT #9

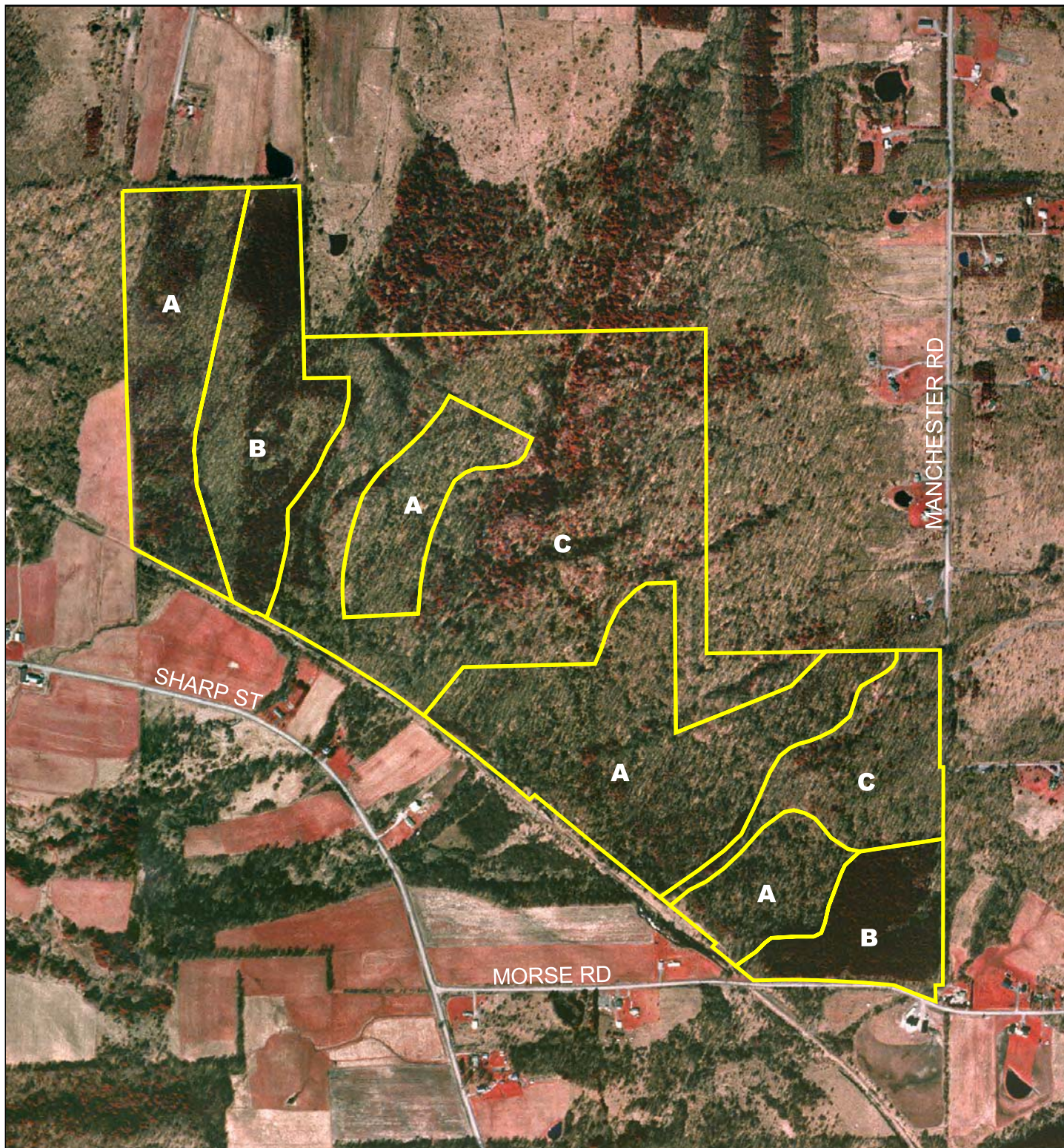


Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



0 800 Feet



2003 STEWARDSHIP RECOMMENDATION MAP

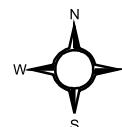
Erie County
Forest Management Plan

LOT #9



Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



400 0 400 Feet

Lot 10—Field 1

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 10 Total Acres: 230 Field Number(s): 1 Acres: 8 Date: 9/16/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Norway Spruce	12-20	Medium	17	Even	64	75	Good
Larch	12-15	Medium	19	Even	64	72	Good
Red Pine	12-15	Light	20	Even	64	68	Good
Scotch Pine	12-18	Light	19	Even	64	63	Fair

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature, mixed Conifer Plantation dominated by Norway Spruce (*Picea abies*) and Larch (*Larix* spp.).

Aquatic Systems - includes both lentic (standing water) and lotic (flowing water) systems
None

Fire Lane Status

The Fire Break on the northern edge of Field Number 1 exists as a buffer along Rice Road and is currently being used as an All Terrain Vehicle trail. This use is strictly prohibited on County Forest property and violators will be prosecuted. No maintenance is presently required for this Fire Break.

Lot 10—Field 1

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is dominated by Norway Spruce (*Picea abies*) and Larch (*Larix* spp.) along with a light density of Red Pine (*Pinus resinosa*) and Scotch Pine (*Pinus sylvestris*).

Subcanopy

The subcanopy is of light density and is represented by a variety of mixed hardwoods such as American Beech (*Fagus grandifolia*), Sugar Maple (*Acer saccharum*) and White Ash (*Fraxinus americana*).

Shrub Layer

The shrub layer is of light density and includes Brambles (*Rubus* spp.), Poison Ivy (*Rhus radicans*) and Tartarian Honeysuckle (*Lonicera tartarica*).

Herbaceous Layer

The herbaceous layer is of light density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*) and Sensitive fern (*Onoclea sensibilis*).

Successional Status

This field represents a mixed Conifer Plantation in the mid stages of hardwood succession that will gradually evolve into a young Hardwood Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera tartarica*)

Protected: Evergreen Woodfern (*Dryopteris intermedia*).

Lot 10—Field 2

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 10 Total Acres: 230 Field Number(s): 2 Acres: 3 Date: 9/16/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Red Oak	P-16	Medium	13	Even	64	54	26	Fair
White Ash	S/P	Light		Multiple				Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a young - middle aged Hardwood Forest dominated by a medium density Red Oak (*Quercus rubra*) Plantation. Note: There is a small parking area in Field Number 2 that can be entered from Rice Road.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
None

Fire Lane Status

The Fire Break in this field is extremely wet and heavily rutted and is in need of significant filling and grading.

Lot 10—Field 2

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of light density and is dominated by Red Oak (*Quercus rubra*).

Subcanopy

The subcanopy is of medium density and is represented by Red Oak (*Quercus rubra*) and White Ash (*Fraxinus americana*).

Shrub Layer

The shrub layer is of medium density and includes Multiflora Rose (*Rosa multiflora*), Tartarian Honeysuckle (*Lonicera tartarica*), Poison Ivy (*Rhus radicans*), Brambles (*Rubus* spp.) and Northern Arrowwood (*Viburnum recognitum*).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of scattered herbs.

Successional Status

This field represents a young - middle aged Hardwood Forest with a medium density Red Oak (*Quercus rubra*) Plantation that will continue to evolve into an Oak dominated Hardwood Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera tartarica*)

Protected: None

Lot 10—Field 3

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 10 Total Acres: 230 Field Number(s): 3 Acres: 22 Date: 9/16/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Silver Maple	14-24	Medium	15	Multiple		77 28	Fair
White Ash	12-21	Medium	14	Multiple		75 18	Poor
White Pine	12-16	Light	26	Even	64	64	Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a White Pine (*Pinus strobus*) Plantation, generally in poor condition due to weevil damage, that has transitioned into a young Hardwood Forest dominated by White Ash (*Fraxinus americana*) and Silver Maple (*Acer saccharinum*). Note: The Silver Maple (*Acer saccharinum*), although not recorded in the original 1965 Plan, was undoubtedly planted along with the Conifer Plantation.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
None

Fire Lane Status

The Fire Break between Field Numbers 3, 6 and 7 is heavily overgrown and is in need of significant clearing and pruning.

Lot 10—Field 3

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is characterized by White Ash (*Fraxinus americana*) and Silver Maple (*Acer saccharinum*) along with some scattered White Pine (*Pinus strobus*).

Subcanopy

The subcanopy is of medium density and is represented by a variety of hardwood species.

Shrub Layer

The shrub layer is of medium density and includes Brambles (*Rubus* spp.), Poison Ivy (*Rhus radicans*) and Red Elderberry (*Sambucus pubens*).

Herbaceous Layer

The herbaceous layer is of light density and is dominated by Evergreen Woodfern (*Dryopteris intermedia*).

Successional Status

This field represents a White Pine (*Pinus strobus*) Plantation that has transitioned into a young Hardwood Forest dominated by White Ash (*Fraxinus americana*) and Silver Maple (*Acer saccharinum*).

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: Evergreen Woodfern (*Dryopteris intermedia*).

Lot 10—Fields 4, 6, 8, 9 and 10

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 10 Total Acres: 230 Field Number(s): 4, 6, 8, 9, & 10 Acres: 113 Date: 9/16/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Red Pine	12-17	Heavy	28	Even	73	75	Good
Black Cherry	12-26	Light	16	Multiple		74 35	Good
White Pine	12-18	Light	32	Even	73	73	Fair

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature Pine (*Pinus* spp.) Plantations with light intrusions of mature Black Cherry (*Prunus serotina*). Field Numbers 6 and 8 are split in successional status with the central area of Field Number 6 and the northern area of Field Number 8 having transitioned from White Pine (*Pinus strobus*) and Scotch Pine (*Pinus sylvestris*) Plantations to young Hardwood Forests. The northern and southern areas of Field Numbers 6 and the southern area of Field Number 8 represents mature Red Pine (*Pinus resinosa*) Plantations with intrusions of mature Black Cherry (*Prunus serotina*). Field Numbers 4, 9 and 10 are mature Red Pine (*Pinus resinosa*) Plantations that contain light densities of White Pine (*Pinus strobus*) and Black Cherry (*Prunus serotina*).

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

Field Numbers 6 and 8 contain a southwesterly flowing intermittent stream. Field Numbers 9 and 10 contain two southwesterly flowing intermittent streams.

Fire Lane Status

The Fire Break that creates the southern boundary of Field Numbers 8, 9 and 10 is 20 feet wide, currently a marked snowmobile trail and is in need of significant filling and grading primarily along the eastern portion. The Fire Break between Field Numbers 6, 9 and 10 is 10 feet wide, extremely wet and heavily rutted and is also in need of significant filling, grading, widening and pruning.

Lot 10—Fields 4, 6, 8, 9 and 10

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is characterized by Red Pine (*Pinus resinosa*) along with light intrusions of Black Cherry (*Prunus serotina*).

Subcanopy

The subcanopy is of heavy density represented by mixed hardwoods including Black Cherry (*Prunus serotina*), Sugar Maple (*Acer saccharum*) and White Ash (*Fraxinus americana*).

Shrub Layer

The shrub layer is of light density and includes Brambles (*Rubus* spp.) and Alternate-leaf Dogwood (*Cornus alternifolia*).

Herbaceous Layer

The herbaceous layer is of light density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), New York fern (*Thelypteris noveboracensis*) and Sensitive fern (*Onoclea sensibilis*).

Successional Status

These fields represent mature Red Pine (*Pinus resinosa*) Plantations that are in the mid - late stages of hardwood succession.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*).

Lot 10—Fields 5, 11

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 10 Total Acres: 230 Field Number(s): 5, 11 Acres: 74 Date: 9/16/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Sugar Maple	12-20	Heavy	19	Multiple		87	43	Good
Black Cherry	12-24	Medium	13	Multiple		82	45	Good
White Ash	12-22	Medium	34	Multiple		77	45	Good
American Beech	12-26	Medium	28	Multiple		72	30	Fair

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature, mixed Hardwood Forests dominated by Sugar Maple (*Acer saccharum*). Field Number 5 also contains a ravine that is dominated primarily by mature Secondary Hardwoods.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

Field Number 11 contains two southwesterly flowing intermittent streams and one southwesterly flowing four season stream.

Fire Lane Status

See the description for this Fire Break under Field Numbers 9 and 10.

Lot 10—Fields 5, 11

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of heavy density and is characterized Sugar Maple (*Acer saccharum*) along with Black Cherry (*Prunus serotina*), White Ash (*Fraxinus americana*) and American Beech (*Fagus grandifolia*).

Subcanopy

The subcanopy is of medium density and is represented by a variety of hardwoods.

Shrub Layer

The shrub layer is of light density and includes Brambles (*Rubus* spp.), Multiflora Rose (*Rosa multiflora*) and Spicebush (*Lindera benzoin*).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), Christmas fern (*Polystichum acrostichoides*), Sensitive fern (*Onoclea sensibilis*), New York fern (*Thelypteris noveboracensis*), Lady fern (*Athyrium Filix-femina*) and Interrupted fern (*Osmunda claytoniana*).

Successional Status

These fields represent mixed, mature Hardwood Forests that gradually will evolve into Maple/Beech Climax Forests.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*).

Lot 10—Field 7

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 10 Total Acres: 230 Field Number(s): 7 Acres: 10 Date: 9/16/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Norway Spruce	P-16	Heavy	13	Even	43	52	Poor
White Ash	S/P	Light		Multiple			Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a Norway Spruce (*Picea abies*) Plantation with a light intrusion of White Ash (*Fraxinus americana*) in the subcanopy. A majority of the Norway Spruce (*Picea abies*) in this field have a D.B.H. of 4-11 inches.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
None

Fire Lane Status

The Fire Break in this field is 10 feet wide, extremely wet and heavily rutted and is in need of significant filling, grading and widening.

Lot 10—Field 7

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of heavy density and is characterized by Norway Spruce (*Picea abies*).

Subcanopy

The subcanopy is of light density and is represented by White Ash (*Fraxinus americana*).

Shrub Layer

The shrub layer is not present.

Herbaceous Layer

The herbaceous layer is not present.

Successional Status

This field represents a Norway Spruce (*Picea abies*) Plantation in the early stages of hardwood succession. As the Conifer Plantation gradually declines due to competition factors, additional sunlight will encourage the transition of this Community into a Hardwood Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: None

Lot 10 Summary and Recommendations

FIELD WORKSHEET #3 WILDLIFE SUMMARY

Lot # 10 offers a good variety of habitats for diverse populations of wildlife species. Field Numbers 1, 3, 4 and 6-10 represent Conifer Plantations in various stages of hardwood succession while Field Numbers 2, 5 and 11 include mature, mixed Hardwood Forests.

During a period of one day, staff ecologists recorded a variety of wildlife observations focused upon actual sightings and other wildlife “signs”. The following list represents a brief overview of those encounters focused upon Mammals, Birds and Reptiles/Amphibians.

Mammals

Whitetail Deer (<i>Odocoileus virginianus</i>)	Red Fox (<i>Vulpes fulva</i>)
Gray Squirrel (<i>Sciurus carolinensis</i>)	Raccoon (<i>Procyon lotor</i>)
Red Squirrel (<i>Tamiasciurus hudsonicus</i>)	Eastern Chipmunk (<i>Tamias striatus</i>)

Birds

Wild Turkey (<i>Meleagris gallopavo</i>)	Black-capped Chickadee (<i>Parus atricapillus</i>)
Pileated Woodpecker (<i>Dryocopus pileatus</i>)	Downy Woodpecker (<i>Picoides pubescens</i>)
Blue Jay (<i>Cyanocitta cristata</i>)	American Crow (<i>Corvus brachyrhynchos</i>)
White breasted Nuthatch (<i>Sitta carolinensis</i>)	

Reptiles/Amphibians

Spring Peeper (<i>Hyla crucifer</i>)	Red-backed Salamander (<i>Plethodon cinereus</i>)
Green Frog (<i>Rana clamitans melanota</i>)	Red-spotted Newt (<i>Notophthalmus viridescens</i>)
American Toad (<i>Bufo americanus</i>)	

FIELD WORKSHEET #4 RECOMMENDATIONS

The following recommendations for Lot # 10 of the Erie County Forestry Management Plan are based upon field data collected by Earth Spirit Educational Services, Inc. in the areas of Forest Ecology, Wildlife Biology and general Ecology.

Field Number 1

Description - This field represents a mature mixed Conifer Plantation dominated by Norway Spruce (*Picea abies*) and Larch (*Larix* spp.) in the mid stages of hardwood succession.

Recommendations - This field should be actively managed for conifers and will, as a result, encourage the natural regeneration of hardwoods.

Field Number 2

Description - This field represents a young - middle aged Hardwood Forest dominated by a medium density Red Oak (*Quercus rubra*) Plantation.

Recommendations - This field should remain without treatment due to the uncommon nature of Red Oak on Erie County Forest Lands. These Red Oaks should remain as “seed trees” for future hardwood regeneration and also to enhance wildlife habitat.

Field Number 3

Description – This field represents a White Pine (*Pinus strobus*) Plantation, generally in poor condition due to weevil damage, that has transitioned into a young Hardwood Forest dominated by White Ash (*Fraxinus americana*) and Silver Maple (*Acer saccharinum*).

Recommendations – This field should remain without treatment in order to promote habitat diversity and the natural regeneration of a Hardwood Forest.

Field Numbers 4, 6, 8, 9, and 10

Description - These fields represent mature Red Pine (*Pinus resinosa*) Plantations with light intrusions of mature Black Cherry (*Prunus serotina*).

Recommendations - The Red Pine Plantations should be actively managed. The White Pine that exists in Field Number 10 may also be managed. The Black Cherry, due to their light density, should remain as “seed trees” and for the purpose of enhancing wildlife habitat.

Field Number 7

Description - This field represents a Norway Spruce (*Picea abies*) Plantation with a light intrusion of White Ash (*Fraxinus americana*) in the subcanopy.

Recommendations - This field should remain without treatment in order to promote habitat diversity for local wildlife.

Field Numbers 5 and 11

Description - These fields represent mature, mixed Hardwood Forests.

Recommendations - These fields provide an excellent opportunity for selective hardwood management. Note: Buffer zones should be maintained in those areas adjacent to the southwesterly flowing four season stream in this Lot.

Lot 10

Soils, Waterways and Topography

Soils

The dominant soil types on Lot 10 are the moderately well drained Mardin Channery Silt Loam (MdB, MdC and MdD), with 3-25% slopes. Permeability in these soils is moderate above the fragipan, which occurs at a depth of 16 to 50 inches, and slow to very slow below the fragipan. These soils are potentially highly erodible, and highly erodible on the steeper slopes. Also commonly occurring are areas of somewhat poorly drained, moderately permeable Volusia Channery Silt Loam (VpA and VpB), 0-8% slopes. These soils are potentially highly erodible and are found on the hilltops and again along Feddick Road at lower elevations. The hilltops are also the location of small areas of the poorly drained, hydric Chippewa Silt Loam (Cn), with moderate permeability above a fragipan at a depth of 13 to 36 inches, and very slow permeability below the fragipan. Along the stream channels are the well drained, hydric Fluvaquents and Udifluvents (Fu), moderately well drained, highly erodible Mardin Silt Loam (McC), 8-15% slopes, and the well drained, highly erodible Mardin-Valois Complex (MeF), with slopes of 25-50% and moderate to slow permeability. Steep slopes along drainage channels may limit forest management activities.

Waterways and Topography

Several small tributaries to Eighteenmile Creek flow east-west through Lot 10. These are Class B streams, best used for fishing and non-contact recreation. Water quality in Eighteenmile Creek is threatened by sediment, pesticides, nutrients and water level, from streambank erosion, agriculture, construction and road bank erosion. The lot slopes gently from east to west, steeping to the north. The stream gullies are steep-walled and highly erodible; proper forest management should include maintaining a buffer along the drainage channels.

Lot 10

Forest Stewardship Recommendations

Stand A (Old Field 1)

LOW PRIORITY

These are mixed conifer plantations of white pine, Norway spruce, larch, Scotch pine, red pine and white spruce. Stand density is low and form is poor. Poles and small sawlogs of white ash and black cherry are scattered. Since the timber is small and of low quality, harvesting the conifers is not a priority in this stand. Since the density is low, hardwoods will continue to invade and occupy the site as the conifers decline.

Stand B (Old Field 2)

LOW PRIORITY

This is a red oak plantation. Basal area is 100 and average diameter is around 10" with maximums around 21". Due to the rarity of natural oaks in this part of the County, and the importance of oaks in wildlife management, the integrity of this stand should be maintained and competing species removed. As the stand matures, shade tolerant understory trees should be removed to promote oak regeneration. Remove non-oak species now and recheck in 10 years.

Stand C (Old Field 3)

LOW PRIORITY

This stand is a plantation of red and white pines and silver maples. The pines are uprooting, declining and dying. Their maximum diameter is around 16" with live crown ratio 15-20%. The maples are generally of poor form. There is some black cherry mixed in the stand. Wild grapevines are heavy. The understory is white ash, sugar maple and black cherry. Grapevines should be controlled now before any overstory cutting is done. Recheck in 10 years.

Stand D (Old Fields 6, 8, 9, 10)

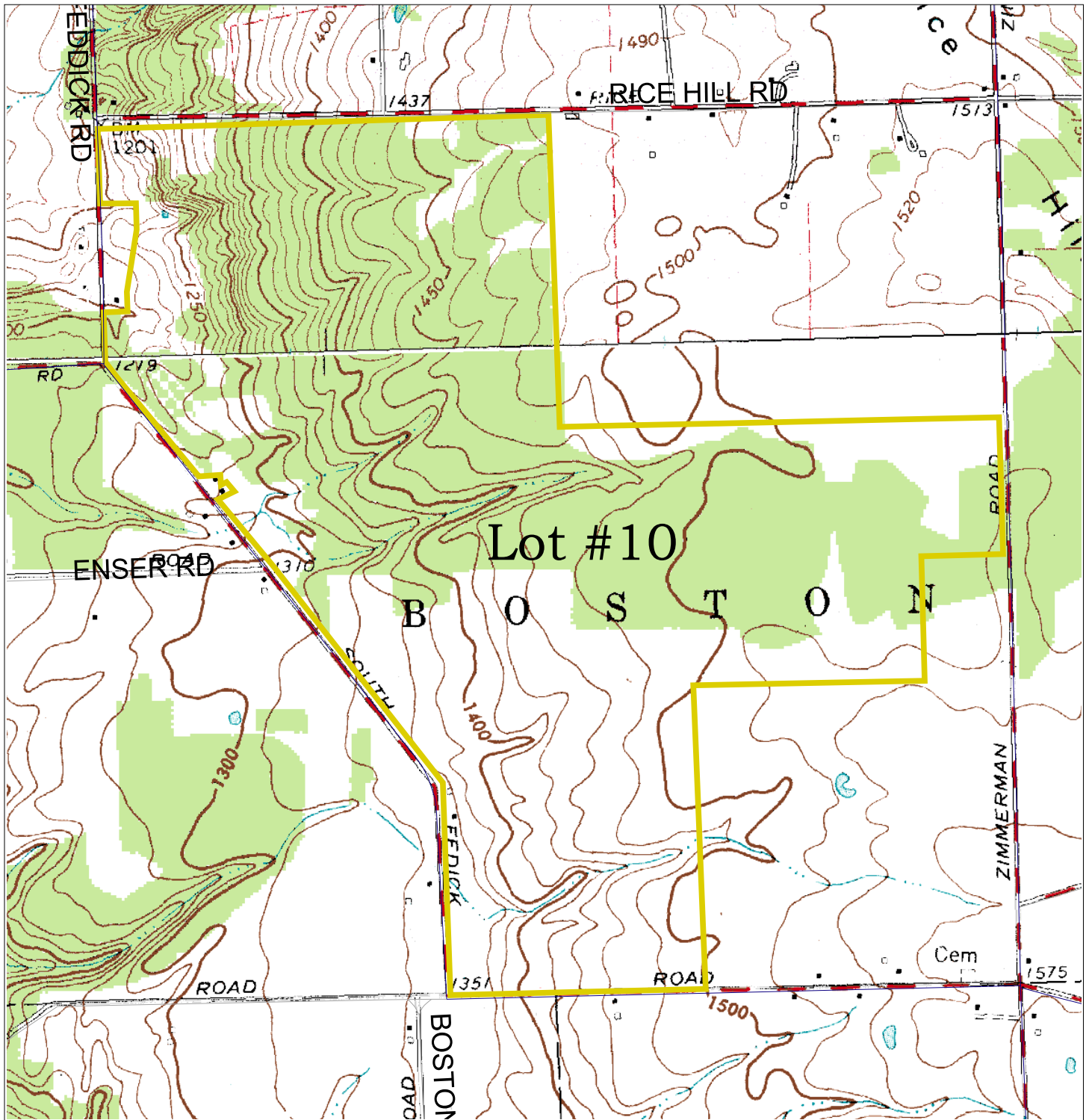
MEDIUM PRIORITY

These are areas of mostly red pine and some white pine plantations with ingrowth of native hardwoods. Hardwood species include small poles of black cherry and white ash with some seedlings and saplings of beech, cherry and red maple. In some sections to the northeast, most pines are dead and down and the hardwood saplings have dominated the site. Trails are badly eroded and need BMPs to keep the water off the roads. The pines should be patch cut to release the hardwood understory before they become irreversibly suppressed. Unfortunately, many pines may be too small to be merchantable. The patches of dense saplings should not be disturbed since they provide good wildlife cover and will grow trees of good form. Also, leave a buffer along the road and along the long east boundary line near the field. Recheck 10 years after harvesting.

Stand E (Old Fields 5, 11)

HIGH PRIORITY

This stand has uneven-aged native hardwoods including sugar maple, black cherry, cucumber, hemlock, yellow birch and some white pine. Dominant trees are large sawtimber; there are many quality pole trees of maple and cherry and the understory is beech and hemlock saplings and sugar maple seedlings. Two class B protected streams flow to the west through this stand so permits will be needed for equipment crossing and/or culvert maintenance. Timber stand improvement should be done to remove low value trees and to prepare the site for regeneration. A selection cut should then be scheduled to remove the merchantable trees and to open the canopy. Perform TSI within 5 years and then schedule harvesting in 5-10 years to reduce basal area by about 1/4. No-cut buffers should be left on the steep slopes along the streams. Recheck 15 years after harvesting.

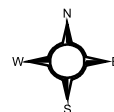


Erie County Forest Management Plan

USGS TOPOGRAPHIC QUADRANGLE



Map Prepared By:
Erie County Soil and Water
Conservation District



1000 0 1000 Feet



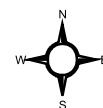


Erie County Forest Management Plan

LOT #10 - SOIL TYPES



Map Prepared By:
Erie County Soil and Water
Conservation District



600 0 600 1200 Feet

Brief Soil Descriptions – Lot 10

For further information refer to the *Soil Survey of Erie County, New York*.

Symbol

Name / Description

CIA *Chenango Channery Silt Loam, Fan, 0 to 3 Percent Slopes*

Deep, nearly level to gently sloping, well-drained, low lime, channery silt loam soil formed in gravel and sand. The available water capacity is low. Permeability is moderate to rapid in the surface soil and subsoil and generally rapid or very rapid in the substratum. PRIME FARMLAND, CAPABILITY CLASS-IIs, NYS SOIL GROUP-2b, K=.24, T=3

Cn *Chippewa Silt Loam*

Deep, nearly level, poorly drained, medium lime, silt loam soil formed in fine loamy glacial till. It has a very firm fragipan at a depth of 13 to 36 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and very slow in the fragipan and below. HYDRIC SOIL, CAPABILITY CLASS-IVw, NYS SOIL GROUP-7b, K=.32, T=3

DdB *Derb Silt Loam, 3 to 8 Percent Slopes*

Deep, sloping, somewhat poorly drained, low lime; silt loam soil formed in loamy glacial till. The available water capacity is moderate. Permeability is moderate or moderately slow in the subsoil and slow beneath. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIW, NYS SOIL GROUP-5b, K=.43, T=3

ErA *Erie Channery Silt Loam, 0 to 3 Percent Slopes*

Deep, nearly level, somewhat poorly drained, medium lime, channery silt loam formed in coarse loamy glacial till. It has a very firm fragipan at depth of 14 to 40 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and very slow in the fragipan. CAPABILITY CLASS-IIIW, NYS SOIL GROUP-6b, K=.24, T=3

ErC *Erie Channery Silt Loam, 8 to 15 Percent Slopes*

Deep, sloping, somewhat poorly drained, medium lime, channery silt loam formed in coarse loamy glacial till. It has a very firm fragipan at depth of 14 to 40 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and very slow in the fragipan. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIW, NYS SOIL GROUP-6b, K=.24, T=3

Fu *Fluvaquents and Udifluvents, Frequently Flooded*

Moderately deep to deep, nearly level, well drained to poorly drained, high to low lime, variable soils formed in recent stream deposits. The available water capacity and permeability are variable. No K or T values are assigned. HYDRIC SOIL, CAPABILITY CLASS-Vw, NYS SOIL GROUP-9

MbF *Manlius Very Channery Silt Loam, 25 to 35 Percent Slopes*

Moderately deep, steep, excessively well drained to moderately well drained, low lime, shaley silt loam soil formed in very shaly glacial till 20 to 40 inches thick over shale bedrock. The available water capacity is low to moderate. Permeability is generally moderately rapid above the bedrock. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-VIe, NYS SOIL GROUP-8a, K=.28, T=2

McB *Mardin Silt Loam, 3 to 8 Percent Slopes*

Deep, gently sloping, moderately well drained and well drained, low lime; silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIW, NYS SOIL GROUP-4b, K=.32, T=3

McC *Mardin Silt Loam, 8 to 15 Percent Slopes*

Deep, sloping, moderately well drained and well drained, low lime, silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-6b, K=.32, T=3

MdB Mardin Channery Silt Loam, 3 to 8 Percent Slopes

Deep, gently sloping, moderately well drained and well drained, low lime, channery silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIw, NYS SOIL GROUP-4b, K=.24, T=3

MdC Mardin Channery Silt Loam, 8 to 15 Percent Slopes

Deep, sloping, moderately well drained and well drained, low lime, channery silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIie, NYS SOIL GROUP-6b, K=.24, T=3

MdD Mardin Channery Silt Loam, 15 to 25 Percent Slopes

Deep, moderately steep, moderately well drained and well drained, low lime, channery silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-9b, K=.24, T=3

MeF Mardin-Valois Complex, 25 to 50 Percent Slopes

Deep, very steep, well-drained, low lime soil formed in coarse loamy glacial till. The Mardin soil has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability ranges from moderate to slow. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-VIIe, NYS SOIL GROUP-9b, K=.24, T=3

VaB Valois Gravelly Silt Loam, 3 to 8 Percent Slopes

Deep, gently sloping, well drained, low lime, gravelly silt loam soil formed in coarse loamy glacial till. The available water capacity is low to moderate. Permeability is moderate to rapid. PRIME FARMLAND, POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIe, NYS SOIL GROUP-2b, K=.24, T=3

VoA *Volusia Silt Loam, 0 to 3 Percent Slopes*

Deep, nearly level, somewhat poorly drained, low lime, silt loam soil formed in fine loamy glacial till. It has a very firm fragipan at a depth of 15 to 50 inches. The available water capacity is moderate. Permeability is generally moderate above the fragipan and slow to very slow in the fragipan. CAPABILITY CLASS-IIIw, NYS SOIL GROUP-6b, K=.37, T=3

VoB *Volusia Silt Loam, 3 to 8 Percent Slopes*

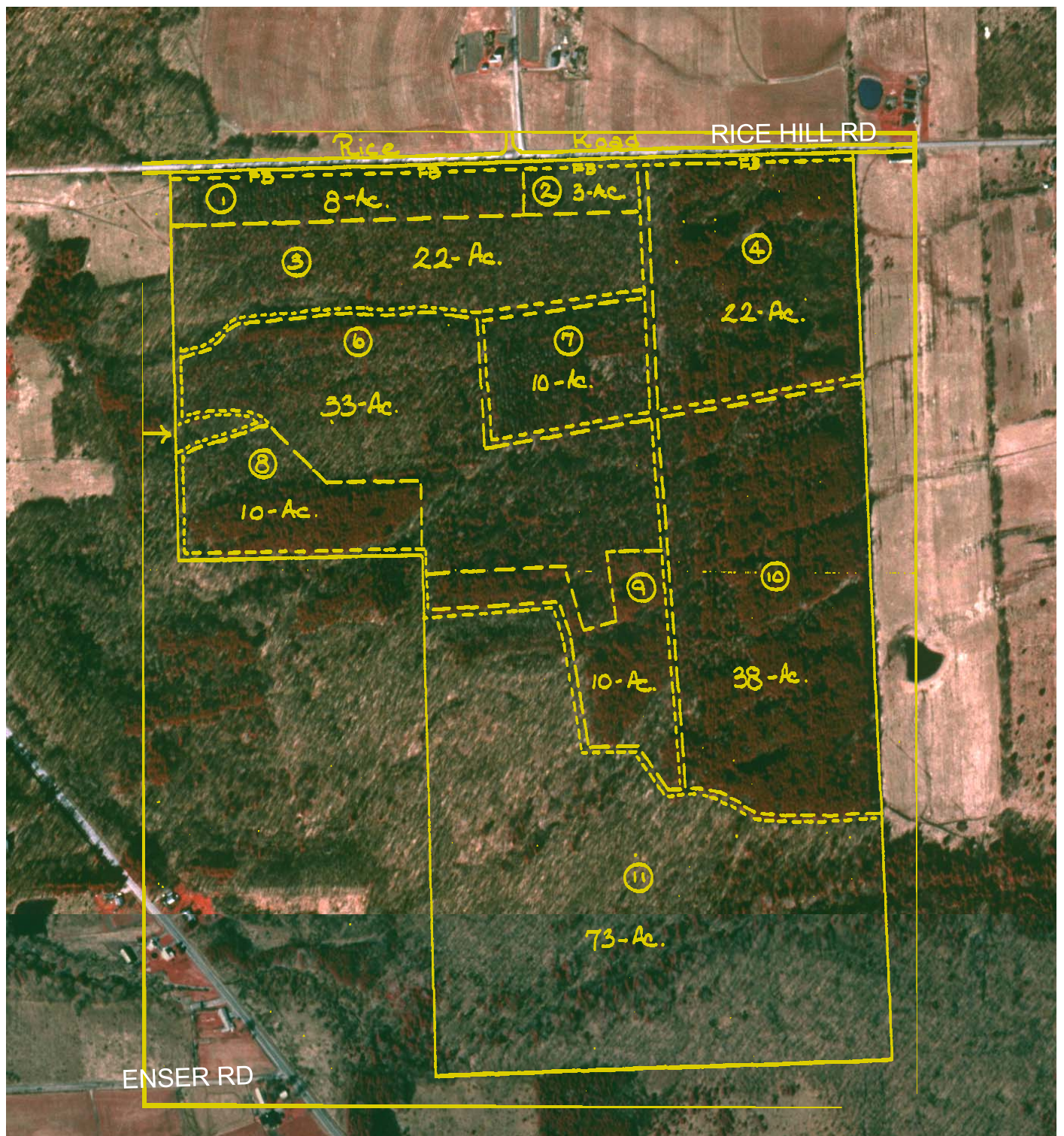
Deep, gently sloping, somewhat poorly drained, low lime, silt loam soil formed in fine loamy glacial till. It has a very firm fragipan at a depth of 15 to 50 inches. The available water capacity is moderate. Permeability is generally moderate above the fragipan and slow to very slow in the fragipan. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIw, NYS SOIL GROUP-6b, K=.37, T=3

VpA *Volusia Channery Silt Loam, 0 to 3 Percent Slopes*

Deep, nearly level, somewhat poorly drained, low lime, channery silt loam soil formed in fine loamy glacial till. It has a very firm fragipan at a depth of 15 to 50 inches. The available water capacity is moderate to low. Permeability is generally moderate above the fragipan and slow to very slow in the fragipan. CAPABILITY CLASS-IIIw, NYS SOIL GROUP-6b, K=.24, T=3

VbB *Varysburg Gravelly Loam, 3 to 8 Percent Slopes*

Deep, gently sloping, well drained and moderately well drained, medium lime, gravelly loam soil formed in gravelly material and underlying lake sediments. The available water capacity is generally low. Permeability is rapid in the gravelly part and generally slow or very slow in the underlying lake sediments. PRIME FARMLAND, POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIe, NYS SOIL GROUP-3b, K=.24, T=3



1965 CONSERVATION PLAN MAP

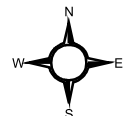
Erie County
Forest Management Plan

LOT #10

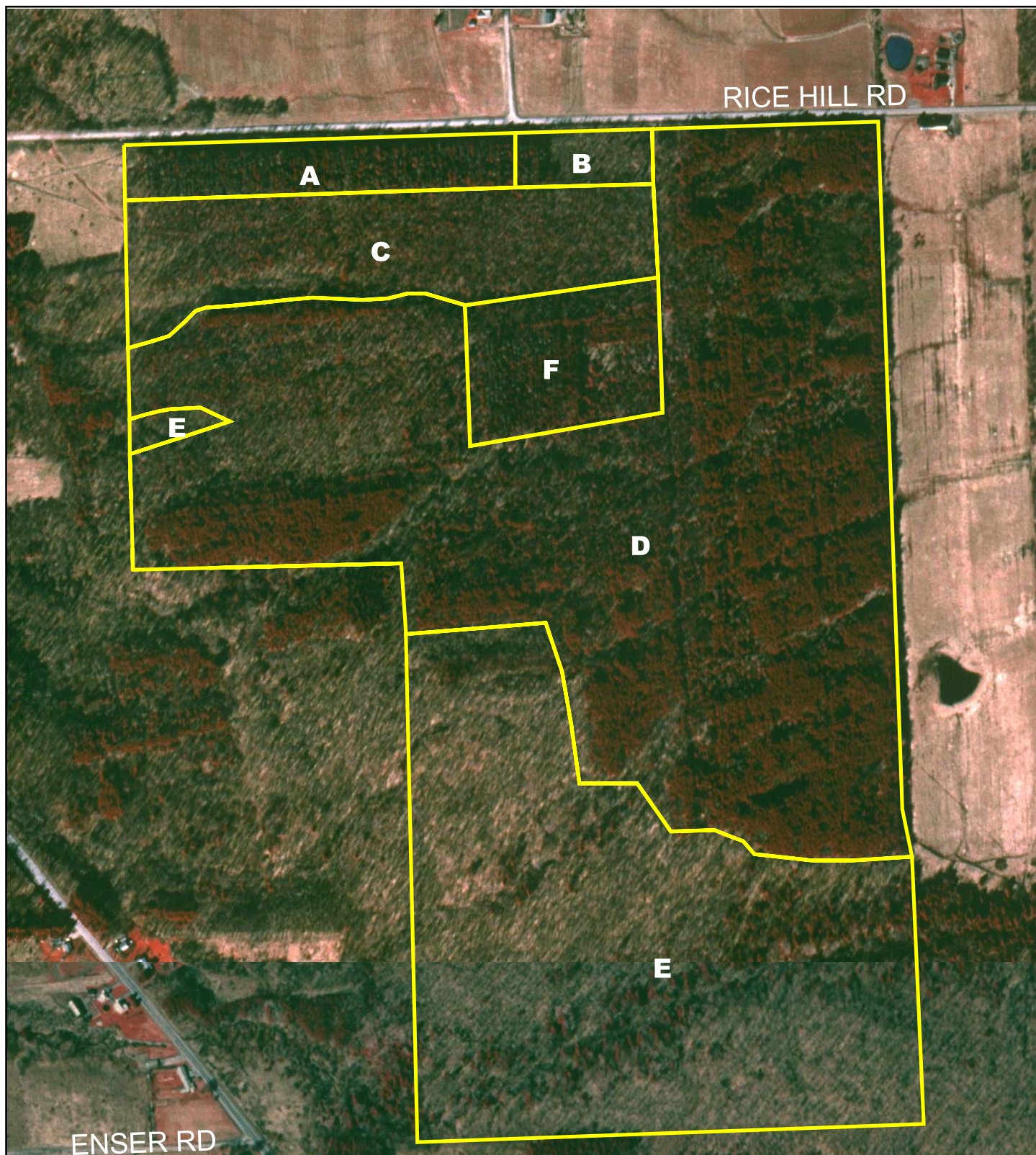


Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



500 0 500 Feet



2003 STEWARDSHIP RECOMMENDATION MAP

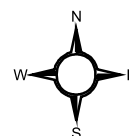
Erie County
Forest Management Plan

LOT #10



Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



200 0 200 400 Feet

Lot 11—Field 1

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 11 Total Acres: 94 Field Number(s): 1 Acres: 59 Date: 8/20/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Sugar Maple	P-32	Heavy	24	Multiple		85	45	Good
American Beech	P-22	Medium	10	Multiple		76	30	Fair
Eastern Hemlock	P-29	Medium	38	Multiple		82		Good
Black Cherry	15-22	Medium	16	Multiple		70	36	Good
Yellow Birch	P-17	Light - Medium	18	Multiple		70	30	Fair

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mature, mixed Hardwood Forest that includes and borders upon an extensive Marsh/Wet Meadow Community.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

This field contains an intermittent stream that drains northward from the Marsh/Wet Meadow Community. This extensive wetland community parallels the southern boundary of this field.

Fire Lane Status

The Fire Break in this field is approximately 6-8 feet wide and transverses some steep and wet areas adjacent to the wetland community. This Fire Break is in need of significant widening, clearing and pruning.

Lot 11—Field 1

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium - heavy density and is characterized by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*), Black Cherry (*Prunus serotina*), Eastern Hemlock (*Tsuga canadensis*) and Yellow Birch (*Betula lutea*).

Subcanopy

The subcanopy is of medium - heavy density and is represented by a variety of hardwood species.

Shrub Layer

The shrub layer is of light density and includes Brambles (*Rubus* spp.).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns such as Hayscented fern (*Dennstaedtia punctilobula*), Interrupted fern (*Osmunda claytoniana*), New York fern (*Thelypteris noveboracensis*), Evergreen Woodfern (*Dryopteris intermedia*), Cinnamon fern (*Osmunda cinnamomea*), Lady fern (*Athyrium filix-femina*) and Sensitive fern (*Onoclea sensibilis*). This field also contains Tree Clubmoss (*Lycopodium obscurum*) and scattered herbs.

Successional Status

This field represents a mature, mixed Hardwood Forest that continues to evolve into a Maple/Beech/Birch Climax Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns and clubmosses listed under “Herbaceous Layer” except Hayscented fern (*Dennstaedtia punctilobula*) and Sensitive fern (*Onoclea sensibilis*).

Lot 11—Fields 2, 3 and 5

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 11 Total Acres: 94 Field Number(s): 2, 3 & 5 Acres: 28 Date: 8/22/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Red Pine	10-20	Heavy	20	Even	61	76	Good
Scotch Pine	10-18	Medium	18	Even	61	74	Good
Black Cherry	S/P/SL	Medium		Multiple			
Sugar Maple	S/P	Medium		Multiple			
Red Maple	S/P/SL	Medium		Multiple			
American Beech	S/P	Light		Multiple			

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature Conifer Plantations in the mid - late stages of hardwood succession. These fields also contain significant numbers of mature hardwoods characterized by Black Cherry (*Prunus serotina*) and Red Maple (*Acer rubrum*). Note: The mature Black Cherry (*Prunus serotina*) are generally multi-trunked.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
None

Fire Lane Status

The east-west Fire Break in these fields is approximately 12 feet wide, generally in good condition and is in need of marginal widening, clearing and pruning.

Lot 11—Fields 2, 3 and 5

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is characterized by Red Pine (*Pinus resinosa*) and Scotch Pine (*Pinus sylvestris*) along with intrusions of mixed hardwoods, especially Black Cherry (*Prunus serotina*) and Red Maple (*Acer rubrum*).

Subcanopy

The subcanopy is of heavy density and is represented by a variety of hardwood species such as Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*).

Shrub Layer

The shrub layer is of light - medium density and includes Brambles (*Rubus* spp.), Tartarian Honeysuckle (*Lonicera tartarica*) and Poison Ivy (*Rhus radicans*).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns and clubmosses such as Evergreen Woodfern (*Dryopteris intermedia*), Crested fern (*Dryopteris cristata*), Hayscented fern (*Dennstaedtia punctilobula*), Cinnamon fern (*Osmunda cinnamomea*), Sensitive fern (*Onoclea sensibilis*), Tree Clubmoss (*Lycopodium obscurum*) and Running Pine (*Lycopodium complanatum*) along with scattered herbs.

Successional Status

These fields represent mature Conifer plantations in the mid - late stages of hardwood succession. At present, hardwoods exist in all forest levels and will continue to gradually out compete the conifers as the system evolves into a Hardwood Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera tartarica*)

Protected: All ferns and clubmosses listed under “Herbaceous Layer” except Hayscented fern (*Dennstaedtia punctilobula*) and Sensitive fern (*Onoclea sensibilis*).

Lot 11—Field 4

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 11 Total Acres: 94 Field Number(s): 4 Acres: 7 Date: 8/20/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
See Worksheet #2							

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a significant Wetland Community characterized by both open water and dense shrub thickets of Chokeberry (*Pyrus* spp.), Honeysuckle (*Lonicera* spp.), Dogwood (*Cornus* spp.) and Nannyberry (*Viburnum lentago*).

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems (see above)

Fire Lane Status

The Fire Break in this field involves a section of the same Fire Break described in Field Numbers 2, 3 and 5.

Lot 11—Field 4

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is not present.

Subcanopy

The subcanopy is not present.

Shrub Layer

The shrub layer is of heavy density and includes Chokeberry (*Pyrus* spp.), Alternate-leaf Dogwood (*Cornus alternifolia*), Tartarian Honeysuckle (*Lonicera tartarica*) and Nannyberry (*Viburnum lentago*).

Herbaceous Layer

The herbaceous layer is of heavy density and is dominated by a variety of ferns such as Marsh fern (*Thelypteris palustris*), Royal fern (*Osmunda regalis*), Cinnamon fern (*Osmunda cinnamomea*) and Sensitive fern (*Onoclea sensibilis*) along with Bur-reeds (*Sparganium* spp.) and diverse herbs.

Successional Status

This field represents a Wetland Community possessing both open water and significant wet thicket environments. Hardwoods along the edge of the wetlands, especially Red Maple (*Acer rubrum*) and White Ash (*Fraxinus americana*) are presently existing throughout the wet thicket along with the dominant shrubs. This community is in the mid stages of succession as it evolves from an open water pond to a young mesic forest environment.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera tartarica*)

Protected: All species of ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*).

Lot 11 Summary and Recommendations

FIELD WORKSHEET #3 WILDLIFE SUMMARY

Lot #11 offers an excellent variety of habitats for diverse populations of wildlife species. Field Number 1 represents an extensive mature, mixed Hardwood Forest. Field Numbers 2, 3 and 5 represent mature Conifer Plantations with significant intrusions of hardwoods and Field Number 4 includes a diverse Wetland Community that possesses both open water and dense shrub thickets. In addition to these environments, Lot #11 also contains an intermittent stream and is bordered along its southern boundary by an extensive Marsh environment.

During a period of one and one-half days, staff ecologists recorded a variety of wildlife observations focused upon actual sightings and other wildlife “signs”. The following list represents a brief overview of those encounters focused upon Mammals, Birds and Reptiles/Amphibians.

Mammals

Whitetail Deer (<i>Odocoileus virginianus</i>)	Red Fox (<i>Vulpes fulva</i>)
Gray Squirrel (<i>Sciurus carolinensis</i>)	Raccoon (<i>Procyon lotor</i>)
Red Squirrel (<i>Tamiasciurus hudsonicus</i>)	Coyote (<i>Canis latrans</i>)
Eastern Chipmunk (<i>Tamias striatus</i>)	Striped Skunk (<i>Mephitis mephitis</i>)

Birds

Wild Turkey (<i>Meleagris gallopavo</i>)	Black-capped Chickadee (<i>Parus atricapillus</i>)
Wood Duck (<i>Aix sponsa</i>)	Pileated Woodpecker (<i>Dryocopus pileatus</i>)
Mallard (<i>Anas platyrhynchos</i>)	Dark-eyed Junco (<i>Junco hyemalis</i>)
Redtail Hawk (<i>Buteo jamaicensis</i>)	Common Crow (<i>Corvus brachyrhynchos</i>)
Red-eyed Vireo (<i>Vireo olivaceus</i>)	Green-backed Heron (<i>Butorides striatus</i>)
Blue Jay (<i>Cyanocitta cristata</i>)	American Robin (<i>Turdus migratorius</i>)
Gray Catbird (<i>Dumetella carolinensis</i>)	American Goldfinch (<i>Carduelis tristis</i>)

Reptiles/Amphibians

Green Frog (<i>Rana clamitans melanota</i>)	American Toad (<i>Bufo americanus</i>)
Red-spotted Newt (<i>Notophthalmus viridescens</i>)	Dusky Salamander (<i>Desmognathus fuscus</i>)

FIELD WORKSHEET #4 RECOMMENDATIONS

The following recommendations for Lot #11 of the Erie County Forestry Management Plan are based upon field data collected by Earth Spirit Educational Services, Inc. in the areas of Forest Ecology, Wildlife Biology and general Ecology.

Field Number 1

Description - This field represents a mature, mixed Hardwood Forest that includes and borders upon an extensive Marsh/Wet Meadow Community.

Recommendations - This field may be managed for selective hardwoods though it is recommended that the more mature Sugar Maples and Eastern Hemlock (D.B.H. greater than 24 inches) remain unmanaged for both ecological and educational purposes. It is also recommended that if management is prescribed for this field, a significant buffer should be established along both wetland and stream environments.

Field Numbers 2, 3 and 5

Description - These fields represent mature Conifer Plantations in the mid - late stages of hardwood succession with some mature Secondary Hardwoods such as Black Cherry (*Prunus serotina*) and Red Maple (*Acer rubrum*) in the canopy.

Recommendations - These fields of mature Red Pine are currently experiencing significant hardwood intrusions, slow growth and general decline and as a result, these plantations should be actively managed. Selected hardwoods, especially Black Cherry, may also receive a selective thinning as long as ample “seed trees” remain in order to promote hardwood regeneration.

Field Number 4

Description - This field represents a significant Wetland Community characterized by both open water and dense shrub thickets.

Recommendations - This field should remain without treatment in order to enhance ecological diversity and wildlife habitat while also providing excellent opportunities for environmental education.

Lot 11

Soils, Waterways and Topography

Soils

The upland portions of Lot 11 are primarily the well drained Chenango Gravelly Silt Loam (CkB and CkC), with 3-15% slopes. These soils are potentially highly erodible, and highly erodible on steeper slopes. The downslope soils are predominately the well drained highly erodible Valois Gravelly Silt Loam (VaC), with 8-15% slopes, moderate to rapid permeability. The wetland acreage is comprised of the somewhat poorly drained, potentially highly erodible Volusia Silt Loam (VoB), with 3-8% slopes and moderate permeability, the poorly drained, hydric Halsey Silt Loam (Ha), with moderate to moderately slow permeability, and the very poorly drained, hydric Palms Muck (Pa), with moderately rapid permeability in the organic layer, and moderate permeability in the underlying loamy material.

Waterways and Topography

The landscape on Lot 11 is generally flat to rolling and contains several acres of New York State wetlands and several small streams draining into the Cazenovia Creek upper watershed (Class C(T) streams) on the western portion of the lot, and the Buffalo Creek watershed (Class A) to the east. Fish habitat in Cazenovia Creek is stressed by sediment, oxygen demand, pathogens and hydromodification, from streambank erosion, road bank erosion, urban runoff, construction and on-site waste treatment. The primary concern is sediment from unstable soils in the upper watershed. Fish habitat in the Buffalo Creek watershed is impaired by thermal changes, pesticides, chlorine, nutrients, sediment, water level and pathogens, from agriculture, construction, urban runoff, on-site waste treatment, streambank erosion and road bank erosion. Warm water temperatures are the primary concern as a result of deforestation and removal of streambank vegetation. Forest management activities should be confined to dry seasons and after soil freeze to minimize soil disturbance, and stream cover should be maintained to protect trout habitat.

Lot 11

Forest Stewardship Recommendations

Stand A (Field 1)

HIGH PRIORITY

This is an uneven-aged stand of northern hardwoods containing predominantly sugar maple, beech, black cherry and hemlock with lower quantities of red maple, yellow birch and basswood. The stand density is moderately high with 80-130 sq ft/ac basal area. Maximum diameters are large sawtimber, 25-30"+; black cherry is especially high quality. Understory is composed of widely scattered sugar maple, beech and hemlock saplings, with a rich diversity of wildflowers, but few tree seedlings. There is no indication of a previous timber harvest in this stand, for at least several decades. A light, selection harvest could be done in this stand, across many diameters, reducing the basal area by no more than 1/3. Some of the trees of low to moderate longevity, such as cherry will start to decline in the next few decades and could be salvaged with such a harvest. The largest hemlock, beech and sugar maple may already be too far degraded for quality timber and should be retained for regeneration, wildlife and recreational purposes. Insist upon no-cut buffers about 100-150' wide along property boundaries, road frontage and around significant wetlands. Cutting should also not interfere with small wetlands or vernal pools. The terrain is rough and bumpy, but the upland soils have good internal drainage and there are no long slopes for erosion problems. The uplands have high site index for most trees with well-drained, acid, gravelly loam soils. Property boundaries need to be verified and painted; old fence wire and posts cannot always be trusted. Recheck in 15 years.

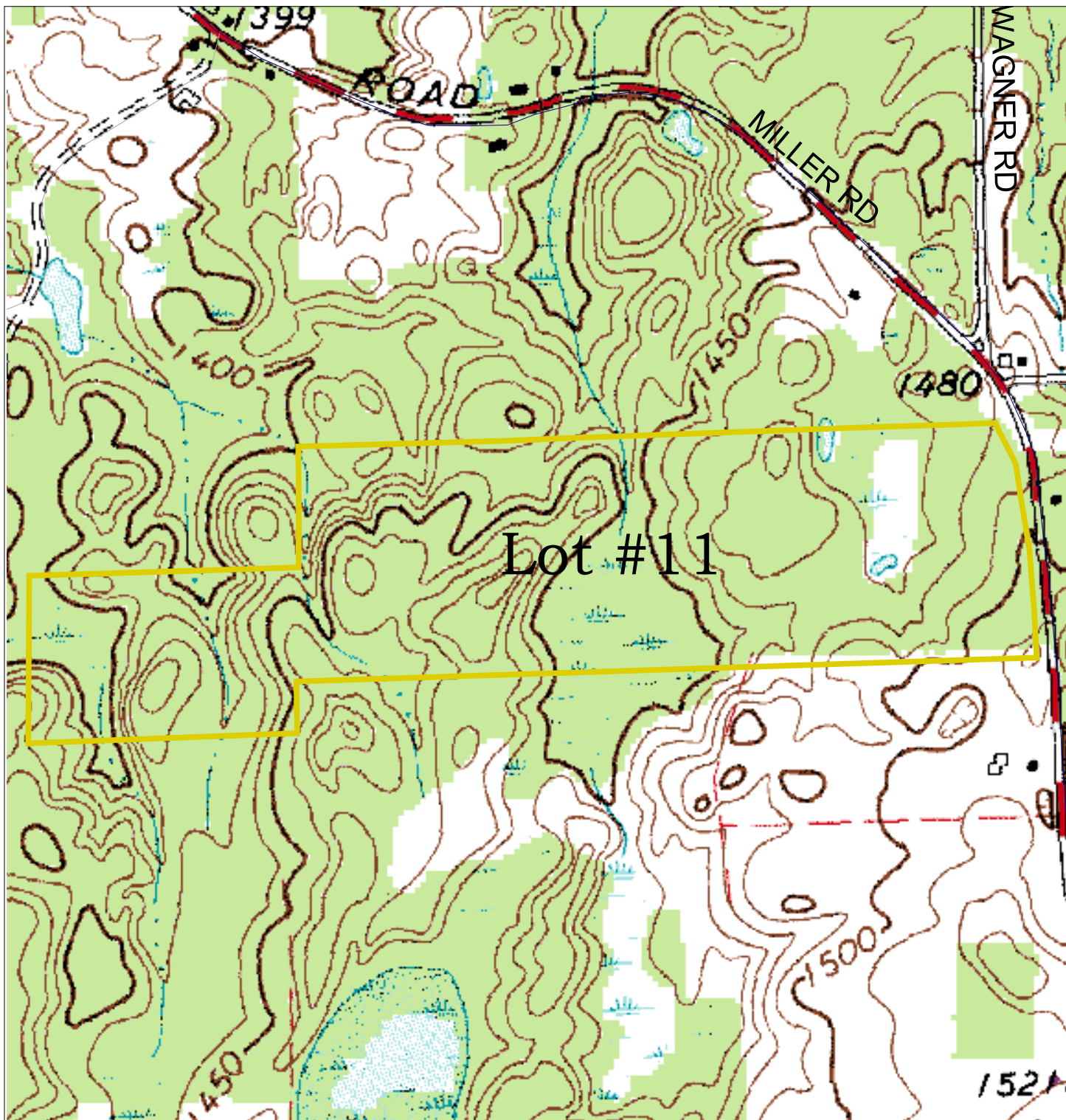
Stand B (Fields 2, 3, 5)

HIGH PRIORITY

These are areas of mature conifer plantations including red pine and Scots pine with widely scattered small to medium sawtimber size hardwoods of black cherry and red maple. The pine understory has scattered saplings of black cherry, red maple and white ash, but few seedlings. Some areas have evidence of stumps from thinning, but core samples did not show significant growth response. Stand density is high with diameters averaging 10-13" in the red pine and smaller in the Scots pine. Site index for hardwoods is also high on the gravelly loam soils. The mature pines should be scheduled for patch harvesting to complete the transition to native hardwoods. The scattered sawlog hardwoods of cherry and maple should be left for seed trees (5-10/ac), which then could be salvaged about 3-5 years after the conifers are cut. Recheck 3 years after conifer harvest.

Stand C (Field 4)

This is a wetland of scattered large shrubs, saplings and small pockets of open water, surrounded by short, steep sided wooded slopes and what appears to be a dike to the north. This appears on 1938 photos as a shrubby area with a large group of trees to the north totally surrounded by fields. This area has value as wildlife habitat and for outdoor education. Since the area has already been artificially diked, there may exist opportunities to adjust the water level to achieve various objectives.

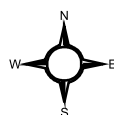


Erie County Forest Management Plan

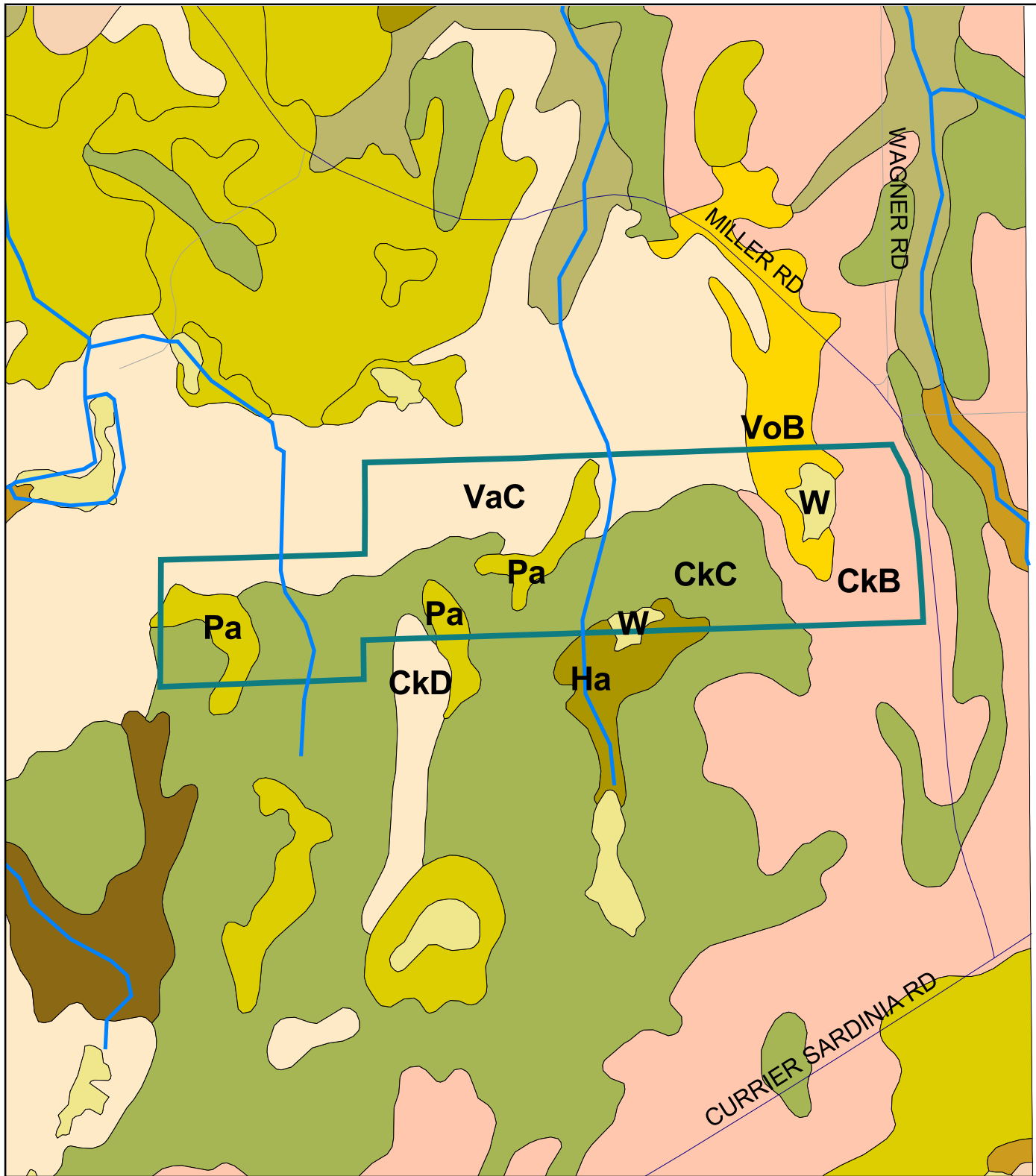
USGS TOPOGRAPHIC QUADRANGLE



Map Prepared By:
Erie County Soil and Water
Conservation District



600 0 600 Feet

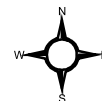


Erie County Forest Management Plan

LOT #11 - SOIL TYPES



Map Prepared By:
Erie County Soil and Water
Conservation District



300 0 300 600 900 Feet

Brief Soil Descriptions – Lot 11

For further information refer to the *Soil Survey of Erie County, New York*.

Symbol	Name / Description
--------	--------------------

CkB *Chenango Gravelly Loam, 3 to 8 Percent Slopes*

Deep, gently sloping, well drained, low lime, gravelly loam soil formed mainly in gravel and sand. The available water capacity is low. Permeability is moderate to rapid in the surface soil and subsoil and generally rapid or very rapid in the substratum. PRIME FARMLAND, POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIs, NYS SOIL GROUP-2B, K=.24, T=3

CkC *Chenango Gravelly Loam, 8 to 15 Percent Slopes*

Deep, sloping, well drained, low lime, gravelly loam soil formed mainly in gravel and sand. The available water capacity is low. Permeability is moderate to rapid in the surface soil and subsoil and generally rapid or very rapid in the substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-5b, K=.24, T=3

CkD *Chenango Gravelly Loam, 15 to 25 Percent Slopes*

Deep, moderately steep, well-drained, low lime, gravelly loam soil formed mainly in gravel and sand. The available water capacity is low. Permeability is moderate to rapid in the surface soil and subsoil and generally rapid or very rapid in the substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-6b, K=.24, T=3

Ha *Halsey Silt Loam*

Deep, nearly level, poorly drained and very poorly drained, medium lime, silt loam soil formed mainly in gravel and sand deposits. The available water capacity is moderate. Permeability is moderate or moderately slow in the subsoil and generally rapid in underlying layers. HYDRIC SOIL, CAPABILITY CLASS-IVw, NYS SOIL GROUP-7b, K=.24, T=5

Pa *Palms Muck*

Deep, nearly level, very poorly drained, medium lime, muck soil formed in organic deposits and underlain by loamy mineral soil material at depths of 16 inches or more. The available water capacity is generally high. Permeability is moderately rapid in the organic layers and moderate in the loamy material. Subject to wind erosion and subsidence when drained. No K or T values are assigned. HYDRIC SOIL, CAPABILITY CLASS-Vw, NYS SOIL GROUP-10 (6b WHEN DRAINED)

VaC *Valois Gravelly Silt Loam, 8 to 15 Percent Slopes*

Deep, sloping, well drained, low lime, gravelly silt loam soil formed in coarse loamy glacial till. The available water capacity is low to moderate. Permeability is moderate to rapid. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-5b, K=.24, T=3

VoB *Volusia Silt Loam, 3 to 8 Percent Slopes*

Deep, gently sloping, somewhat poorly drained, low lime, silt loam soil formed in fine loamy glacial till. It has a very firm fragipan at a depth of 15 to 50 inches. The available water capacity is moderate. Permeability is generally moderate above the fragipan and slow to very slow in the fragipan. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIW, NYS SOIL GROUP-6b, K=.37, T=3



1965 CONSERVATION PLAN MAP

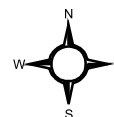
Erie County
Forest Management Plan

LOT # 1 1



Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



0 700 Feet



2003 STEWARDSHIP RECOMMENDATION MAP

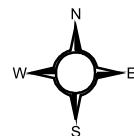
Erie County
Forest Management Plan

LOT # 1 1



Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



300 0 300 600 Feet



Lot 12—Fields 1, 8

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 12 Total Acres: 100 Field Number(s): 1, 8 Acres: 17 Date: 8/28/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
White Spruce	12-16	Heavy	20	Even	60	72	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

Field Number 1 represents a White Spruce (*Picea glauca*) Plantation with light intrusions of mature Black Cherry (*Prunus serotina*) in the canopy. There are significant numbers of Larch (*Larix* spp.) on the southern border of this field with a D.B.H. of 22-26 inches. Field Number 8 represents a mature White Spruce (*Picea glauca*) Plantation generally absent of hardwood intrusion.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

Field Number 8 contains numerous Marsh Communities in low-lying areas typified by a variety of emergent plant species.

Fire Lane Status

The Fire Break in Field Number 1 is present along the northern border of the Lot as a field buffer along Foote Rd. and is in need of significant clearing and pruning.

Lot 12—Fields 1, 8

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy in Field Number 1 is of heavy density and is characterized by White Spruce (*Picea glauca*) with light intrusions of Black Cherry (*Prunus serotina*). The canopy in Field Number 8 is also of heavy density and characterized by White Spruce (*Picea glauca*).

Subcanopy

The subcanopy is not present.

Shrub Layer

The shrub layer is not present.

Herbaceous Layer

The herbaceous layer is not present in Field Number 1. In Field Number 8, the herbaceous layer is generally not present in the White Spruce (*Picea glauca*) Plantation but is of heavy density throughout the Marsh Communities where it is dominated by a variety of ferns such as Lady fern (*Athyrium Filix-femina*), Cinnamon fern (*Osmunda cinnamomea*), Evergreen Woodfern (*Dryopteris intermedia*), Bracken fern (*Pteridium aquilinum*) and Sensitive fern (*Onoclea sensibilis*) along with a variety of emergent plant species.

Successional Status

Field Number 1 represents a White Spruce (*Picea glauca*) Plantation with light intrusions of mature Black Cherry (*Prunus serotina*). Field Number 8 represents a mature White Spruce (*Picea glauca*) Plantation generally absent of hardwood intrusion. As the White Spruce (*Picea glauca*) gradually decline due to competition factors, additional sunlight will encourage the transition of these communities into Hardwood Forests.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*) and Bracken fern (*Pteridium aquilinum*).

Lot 12—Fields 2, 3

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 12 Total Acres: 100 Field Number(s): 2, 3 Acres: 16 Date: 8/28/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Scotch Pine	12-16	Heavy	24	Even	60	73	Fair
Norway Spruce	P-19	Heavy	15	Even	60	76	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mixed Conifer Plantations of Norway Spruce (*Picea abies*) and Scotch Pine (*Pinus sylvestris*) along with very light intrusions of Black Cherry (*Prunus serotina*) and White Ash (*Fraxinus americana*) in the canopy.

Aquatic Systems - includes both lentic (standing water) and lotic (flowing water) systems
None

Fire Lane Status

The Fire Break in these fields is present on the northern border of the Lot as a field buffer along Foote Rd. and is in need of significant widening, clearing and pruning.

Lot 12—Fields 2, 3**FIELD WORKSHEET #2
ECOLOGICAL ANALYSIS****Ecological Overview****Forest Physiognomy (outer appearance)**Canopy

The canopy is of heavy density and is characterized by mixed Conifer Plantations of Norway Spruce (*Picea abies*) and Scotch Pine (*Pinus sylvestris*) along with very light intrusions of Black Cherry (*Prunus serotina*) and White Ash (*Fraxinus americana*).

Subcanopy

The subcanopy is not present.

Shrub Layer

The shrub layer is not present.

Herbaceous Layer

The herbaceous layer is not present.

Successional Status

These fields represent mixed Conifer Plantations of Norway Spruce (*Picea abies*) and Scotch Pine (*Pinus sylvestris*) with very light intrusions of Black Cherry (*Prunus serotina*) and White Ash (*Fraxinus americana*). As the Conifer Plantations gradually decline due to competition factors, additional sunlight will encourage the transition of this community into a Hardwood Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: None

Lot 12—Field 4

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 12 Total Acres: 100 Field Number(s): 4 Acres: 13 Date: 8/28/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Red Pine	12-15	Heavy	18	Even	60	63	Good
Larch	13-16	Heavy	12	Even	60	74	Good
Scotch Pine	11-14	Heavy	15	Even	60	61	Fair

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a mixed Conifer Plantation in the mid stages of hardwood succession characterized by a variety of hardwoods present in the subcanopy.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

This field contains “pockets” of Wet Thickets occurring in low-lying areas.

Fire Lane Status

The Fire Break in this field is present on the northern border of the Lot as a field buffer along Foote Rd. and is in need of significant widening, clearing and pruning.

Lot 12—Field 4

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium - heavy density and is characterized by Red Pine (*Pinus resinosa*), Larch (*Larix* spp.) and Scotch Pine (*Pinus sylvestris*).

Subcanopy

The subcanopy is of medium density and is represented by a variety of hardwoods including White Ash (*Fraxinus americana*), Black Cherry (*Prunus serotina*), Sugar Maple (*Acer saccharum*) and American Beech (*Fagus grandifolia*).

Shrub Layer

The shrub layer is of light density and includes Brambles (*Rubus* spp.).

Herbaceous Layer

The herbaceous layer is of heavy density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), Crested fern (*Dryopteris cristata*), Hayscented fern (*Dennstaedtia punctilobula*), Christmas fern (*Polystichum acrostichoides*), Bracken fern (*Pteridium aquilinum*), New York fern (*Thelypteris noveboracensis*) and Sensitive fern (*Onoclea sensibilis*).

Successional Status

This field represents a mixed Conifer Plantation in the mid stages of hardwood succession with a medium intrusion of mixed hardwoods presently existing into the subcanopy.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*), Hayscented fern (*Dennstaedtia punctilobula*) and Bracken fern (*Pteridium aquilinum*).

Lot 12—Fields 5, 6

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 12 Total Acres: 100 Field Number(s): 5, 6 Acres: 41 Date: 8/28/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Black Cherry	14-46	Heavy	15	Multiple		85 40	Good
Eastern Hemlock	P-24	Medium	17	Multiple		78	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature Secondary Hardwood Forests dominated by Black Cherry (*Prunus serotina*) and Eastern Hemlock (*Tsuga canadensis*) along with scattered Red Maple (*Acer rubrum*) and Yellow Birch (*Betula lutea*).

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

Field Number 6 contains an easterly flowing intermittent stream while Field Number 5 contains numerous wetland “pockets” in low-lying areas.

Fire Lane Status

None

Lot 12—Fields 5, 6

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is medium - heavy density and is characterized by Black Cherry (*Prunus serotina*) and Eastern Hemlock (*Tsuga canadensis*) along with Red Maple (*Acer rubrum*) and Yellow Birch (*Betula lutea*).

Subcanopy

The subcanopy is of light density and is dominated by Sugar Maple (*Acer saccharum*) and White Ash (*Fraxinus americana*).

Shrub Layer

The shrub layer is of light density and includes Brambles (*Rubus* spp.), Viburnums (*Viburnum* spp.) and Spicebush (*Lindera benzoin*).

Herbaceous Layer

The herbaceous layer is of heavy density and is dominated by a variety of ferns such as Lady fern (*Athyrium Filix-femina*), Bracken fern (*Pteridium aquilinum*), Evergreen Woodfern (*Dryopteris intermedia*), New York fern (*Thelypteris noveboracensis*) and Sensitive fern (*Onoclea sensibilis*).

Successional Status

These fields represent mature Secondary Hardwood Forests dominated by Black Cherry (*Prunus serotina*) and Eastern Hemlock (*Tsuga canadensis*) along with Red Maple (*Acer rubrum*) and Yellow Birch (*Betula lutea*).

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*) and Bracken fern (*Pteridium aquilinum*).

Lot 12—Field 7

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 12 Total Acres: 100 Field Number(s): 7 Acres: 13 Date: 8/28/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Red Maple	14-28	Medium	12	Multiple		72	25	Fair
Black Cherry	14-20	Light	14	Multiple		68	35	Good
Scotch Pine	P-15	Light	12	Even	60	72		Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

This field represents a former Scotch Pine (*Pinus sylvestris*) Plantation that has transitioned into a generally wet Secondary Hardwood Forest dominated by Red Maple (*Acer rubrum*) and Black Cherry (*Prunus serotina*).

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
This field contains numerous Wet Thickets in low-lying areas.

Fire Lane Status

The Fire Break in this field exists on the eastern border of the Lot as a field buffer along Pratham Rd. and is in need of significant clearing.

Lot 12—Field 7

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is characterized by Red Maple (*Acer rubrum*), Black Cherry (*Prunus serotina*) and declining Scotch Pine (*Pinus sylvestris*).

Subcanopy

The subcanopy is of medium density and is dominated by Sugar Maple (*Acer saccharum*).

Shrub Layer

The shrub layer is of light density and is represented by Northern Arrowwood (*Viburnum recognitum*) and Brambles (*Rubus* spp.).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns such as Lady fern (*Athyrium filix-femina*), Evergreen Woodfern (*Dryopteris intermedia*) and Sensitive fern (*Onoclea sensibilis*).

Successional Status

This field represents a former Scotch Pine (*Pinus sylvestris*) Plantation that has transitioned into a generally wet Secondary Hardwood Forest dominated by Red Maple (*Acer rubrum*) and Black Cherry (*Prunus serotina*). As this area gradually evolves into a mesic Hardwood Forest, the climax species of Sugar Maple (*Acer saccharum*) will eventually become more dominant.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*).

Lot 12 Summary and Recommendations

FIELD WORKSHEET #3 WILDLIFE SUMMARY

Lot # 12 offers an excellent variety of habitats for diverse populations of wildlife species. Field Numbers 1, 2, 3, 4, 7 and 8 represent mature Conifer Plantations in various stages of hardwood succession while Field Numbers 5 and 6 represent mature, mixed Hardwood Forests.

During a period of one and one half days, staff ecologists recorded a variety of wildlife observations focused upon actual sightings and other wildlife “signs”. The following list represents a brief overview of those encounters focused upon Mammals, Birds and Reptiles/Amphibians.

Mammals

Whitetail Deer (<i>Odocoileus virginianus</i>)	Red Fox (<i>Vulpes fulva</i>)
Gray Squirrel (<i>Sciurus carolinensis</i>)	Raccoon (<i>Procyon lotor</i>)
Red Squirrel (<i>Tamiasciurus hudsonicus</i>)	Eastern Chipmunk (<i>Tamias striatus</i>)

Birds

Wild Turkey (<i>Meleagris gallopavo</i>)	Black-capped Chickadee (<i>Parus atricapillus</i>)
Downy Woodpecker (<i>Picoides pubescens</i>)	Common Crow (<i>Corvus brachyrhynchos</i>)
Eastern Phoebe (<i>Sayornis phoebe</i>)	Great Crested Flycatcher (<i>Myiarchus crinitus</i>)
Redtail Hawk (<i>Buteo jamaicensis</i>)	Blue Jay (<i>Cyanocitta cristata</i>)
Red-eyed Vireo (<i>Vireo olivaceus</i>)	Hermit Thrush (<i>Catharus guttatus</i>)
Ruffed Grouse (<i>Bonasa umbellus</i>)	

Reptiles/Amphibians

Spring Peeper (<i>Hyla crucifer</i>)	Green Frog (<i>Rana clamitans melanota</i>)
American Toad (<i>Bufo americanus</i>)	

FIELD WORKSHEET #4 RECOMMENDATIONS

The following recommendations for Lot # 12 of the Erie County Forestry Management Plan are based upon field data collected by Earth Spirit Educational Services, Inc. in the areas of Forest Ecology, Wildlife Biology and general Ecology.

Field Numbers 1 and 8

Description - These fields represent mature White Spruce (*Picea glauca*) Plantations. Field Number 1 contains light intrusions of mature Black Cherry (*Prunus serotina*) while Field Number 8 is absent of hardwood intrusion.

Recommendations - The White Spruce Plantations should be actively managed. The Black Cherry should remain without treatment in order to serve as “seed trees” for hardwood regeneration.

Field Numbers 2 and 3

Description - These fields represent mixed Conifer Plantations of Norway Spruce (*Picea abies*) and Scotch Pine (*Pinus sylvestris*) with very light intrusions of Black Cherry (*Prunus serotina*) and White Ash (*Fraxinus americana*) in the canopy.

Recommendations - The Norway Spruce in these fields should be actively managed. The Scotch Pine should remain without treatment in order to promote habitat and wildlife diversity.

Field Number 4

Description - This field represents a mixed, mature Conifer Plantation in the mid stages of hardwood succession.

Recommendations -The Red Pine and Larch should be actively managed. The Scotch Pine should remain without treatment in order to promote habitat and wildlife diversity.

Field Numbers 5 and 6

Description - These fields represent mature Secondary Hardwood Forests dominated by Black Cherry (*Prunus serotina*) and Eastern Hemlock (*Tsuga canadensis*) along with scattered Red Maple (*Acer rubrum*) and Yellow Birch (*Betula lutea*).

Recommendations - These fields represent an excellent opportunity for the selective thinning of Black Cherry and Eastern Hemlock.

Field Number 7

Description - This Field represents a former Scotch Pine (*Pinus sylvestris*) Plantation that has transitioned into a generally wet Secondary Hardwood Forest dominated by Red Maple (*Acer rubrum*) and Black Cherry (*Prunus serotina*).

Recommendations - This field should remain without treatment in order to promote habitat and wildlife diversity.

Lot 12

Soils, Waterways and Topography

Soils

The upland areas of Lot 12 contain the well drained, potentially highly erodible Valois Gravelly Silt Loam (VaB) and highly erodible Valois Gravelly Silt Loam (VaC), with 3-15% slopes and moderate to rapid permeability, and the somewhat poorly drained, moderately permeable Volusia Channery Silt Loam (VpA and VpB), with 0-8% slopes. The drainage and stream channels lie in the moderately well drained, moderately permeable Mardin Channery Silt Loam (MdB), 3-8% slopes, and well drained, hydric Fluvaquents and Udifluvents (Fu). Hydric soils make up lowland areas, including the poorly drained Lyons Silt Loam (Ly), with moderately slow permeability, and the very poorly drained Palms Muck (Pa), with moderately rapid permeability in the organic layer, and moderate permeability in the underlying loamy material. The Palms soil is subject to wind erosion and subsidence when drained.

Waterways and Topography

A tributary of Sprague Brook, a Class B stream best used for fishing and contact recreation, in the West Branch Cazenovia Creek watershed, originates on Lot 12. The topography is gently rolling, and slightly higher in elevation at Pratham Road to the east. The pollutants of concern in Cazenovia Creek are sediment, oxygen demand, pathogens and hydromodification, from streambank erosion, construction, urban runoff, on-site waste treatment and road bank erosion. Unstable soils are the major cause of concern, especially for trout habitat in the Creek. A riparian buffer should be maintained to minimize soil loss.

Lot 12

Forest Stewardship Recommendations

Stand A (Old Fields 1, 8)

LOW PRIORITY

This is a conifer plantation of white spruce. Some areas have many suppressed in the understory beneath invading native hardwoods, while in other areas, the spruce are dominant. Poles and small sawlogs of black cherry are scattered. Since the timber is small and of low quality, harvesting the conifers is not a priority in this stand. Where the spruce are already in the understory, crop tree thinning of the hardwoods may be appropriate. Where the spruce is still dominant, it should be retained since mature, white spruce of good form is not common in western New York. Thinning in the closed canopy, dominant spruce is not recommended since it would only speed the transition to hardwoods. This stand may also provide evergreen cover to replace our native hemlock if hemlock woolly adelgids or other pests become a problem in the future. This stand will provide a good, highly visible example of white spruce due to its location along the road.

Stand B (Old Fields 2, 3)

LOW PRIORITY

This stand has plantations of Scotch pine and Norway spruce. The Scotch pine is declining faster than the spruce, however, the canopy is still closed enough to limit the establishment of hardwood seedlings. Conversion to hardwoods with patch cutting could be delayed here until more advance hardwood reproduction is established. This may take another 5-10 years. Alternatively, thinning from below by cutting out or killing the smaller diameter conifers would speed hardwood seedling establishment in the spruce without the risk of losing the merchantable conifer overstory to windthrow.

Stand C (Old Field 4)

MEDIUM PRIORITY

This stand is a plantation of red and Scotch pines and larch. These conifers have a well developed hardwood understory and are large enough to be merchantable, but more growth could be desirable on the red pine and larch. The understory is white ash, sugar maple, beech and black cherry. Conversion to hardwoods with patch cutting should be considered a medium priority in this stand, to allow time for additional growth.

Stand D (Old Fields 5, 6)

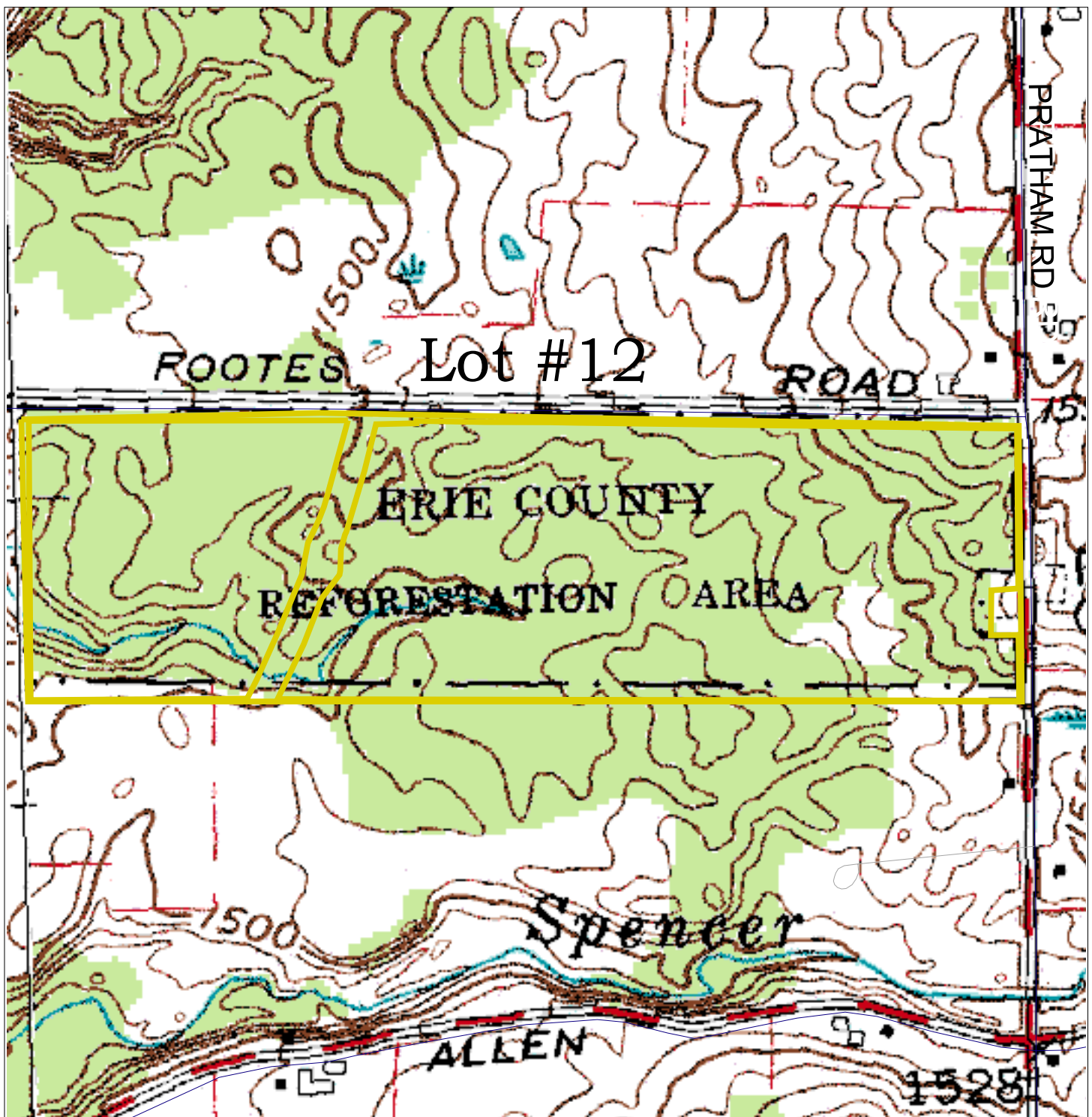
HIGH PRIORITY

This uneven-aged stand has black cherry and hemlock up to large sawtimber size. Also included are some red maple and yellow birch. The understory is mostly sugar maple and ash saplings. A class B protected stream flows to the west through the southwest corner of this stand and the balance of the stand is somewhat poorly drained. Timber stand improvement should be done to remove low value trees and trees that would interfere with regeneration, such as small hemlock saplings and poles. A group selection cut should then be scheduled to remove the merchantable trees and to open the canopy. Group selection will favor the establishment of black cherry seedlings due to the large, sunny canopy openings, the high concentration of cherry in the residual stand and the dormant seed in the forest litter. Because of their rapid early growth, these should perform well, even though sugar maple and white ash saplings are already there. Perform TSI and then schedule harvesting within 5 years to reduce basal area by about 1/4. No-cut buffers should be left on steep slopes along the streams. Because of the large stand size, two or three harvests should be required to cover this area. Field check each harvest area 10 years after cutting.

Stand E (Old Field 7)

LOW PRIORITY

This stand is a Scotch pine plantation in severe decline. Native hardwoods of black cherry and red maple had begun to dominate the somewhat poorly drained site. The pines are not worth salvaging or removing to release the hardwoods. This conifer stand failed quickly since the wet soils became nonconductive to pine longevity. The hardwoods can be scheduled for low priority selection harvest.

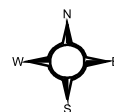


Erie County Forest Management Plan

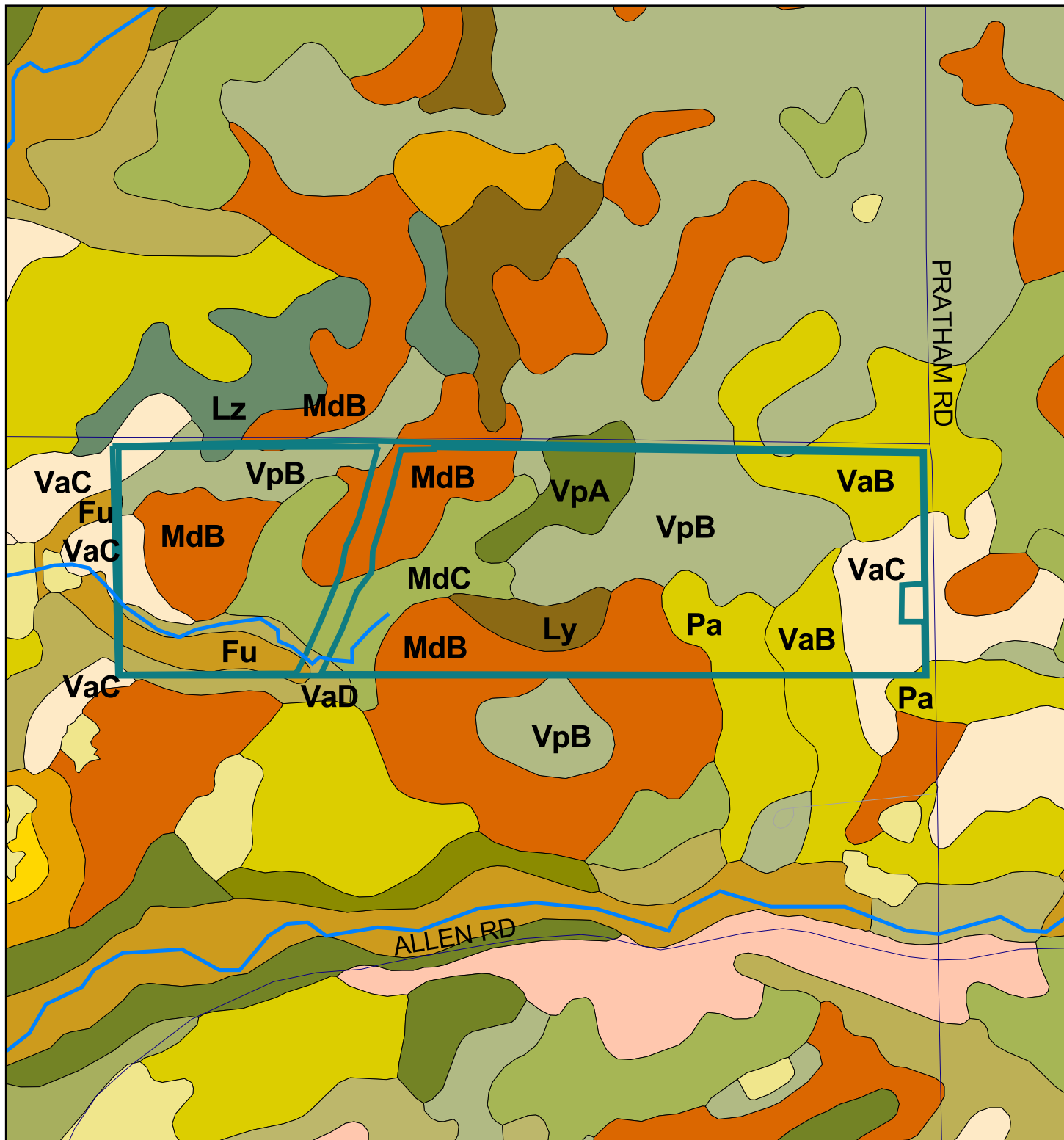
USGS TOPOGRAPHIC QUADRANGLE



Map Prepared By:
Erie County Soil and Water
Conservation District



500 0 500 Feet

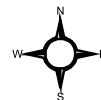


Erie County Forest Management Plan

LOT #12 - SOIL TYPES



Map Prepared By:
Erie County Soil and Water
Conservation District



300 0 300 600 Feet

Brief Soil Descriptions – Lot 12

For further information refer to the *Soil Survey of Erie County, New York*.

Symbol	Name / Description
--------	--------------------

Fu ***Fluvaquents and Udifluvents, Frequently Flooded***

Moderately deep to deep, nearly level, well drained to poorly drained, high to low lime, variable soils formed in recent stream deposits. The available water capacity and permeability are variable. No K or T values are assigned. HYDRIC SOIL, CAPABILITY CLASS-Vw, NYS SOIL GROUP-9

Ly ***Lyons Silt Loam***

Deep, nearly level, poorly drained and very poorly drained, high lime, silt loam soil formed in fine loamy glacial till. The available water capacity is moderate to high. Permeability is moderate in the surface soil, moderately slow in the subsoil and slow or very slow in the substratum. HYDRIC SOIL, CAPABILITY CLASS-IVw, NYS SOIL GROUP-7b, K=.37, T=5

Lz ***Lyons Mucky Silt Loam***

Deep, nearly level, very poorly drained, high lime, silt loam soil formed in fine loamy glacial till. Typically, this soil has a surface layer of very dark brown mucky silt loam about 9 inches thick. The available water capacity is moderate to high. Permeability is moderate in the surface soil, moderately slow in the subsoil and slow or very slow in the substratum. HYDRIC SOIL, CAPABILITY CLASS-IVw, NYS SOIL GROUP-7b, K=.37, T=5

MdB ***Mardin Channery Silt Loam, 3 to 8 Percent Slopes***

Deep, gently sloping, moderately well drained and well drained, low lime, channery silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIw, NYS SOIL GROUP-4b, K=.24, T=3

MdC Mardin Channery Silt Loam, 8 to 15 Percent Slopes

Deep, sloping, moderately well drained and well drained, low lime, channery silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-6b, K=.24, T=3

Pa Palms Muck

Deep, nearly level, very poorly drained, medium lime, muck soil formed in organic deposits and underlain by loamy mineral soil material at depths of 16 inches or more. The available water capacity is generally high. Permeability is moderately rapid in the organic layers and moderate in the loamy material. Subject to wind erosion and subsidence when drained. No K or T values are assigned. HYDRIC SOIL, CAPABILITY CLASS-Vw, NYS SOIL GROUP-10 (6b WHEN DRAINED)

VaB Valois Gravelly Silt Loam, 3 to 8 Percent Slopes

Deep, gently sloping, well drained, low lime, gravelly silt loam soil formed in coarse loamy glacial till. The available water capacity is low to moderate. Permeability is moderate to rapid. PRIME FARMLAND, POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIe, NYS SOIL GROUP-2b, K=.24, T=3

VaC Valois Gravelly Silt Loam, 8 to 15 Percent Slopes

Deep, sloping, well drained, low lime, gravelly silt loam soil formed in coarse loamy glacial till. The available water capacity is low to moderate. Permeability is moderate to rapid. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-5b, K=.24, T=3

VaD Valois Gravelly Silt Loam, 15 to 25 Percent Slopes

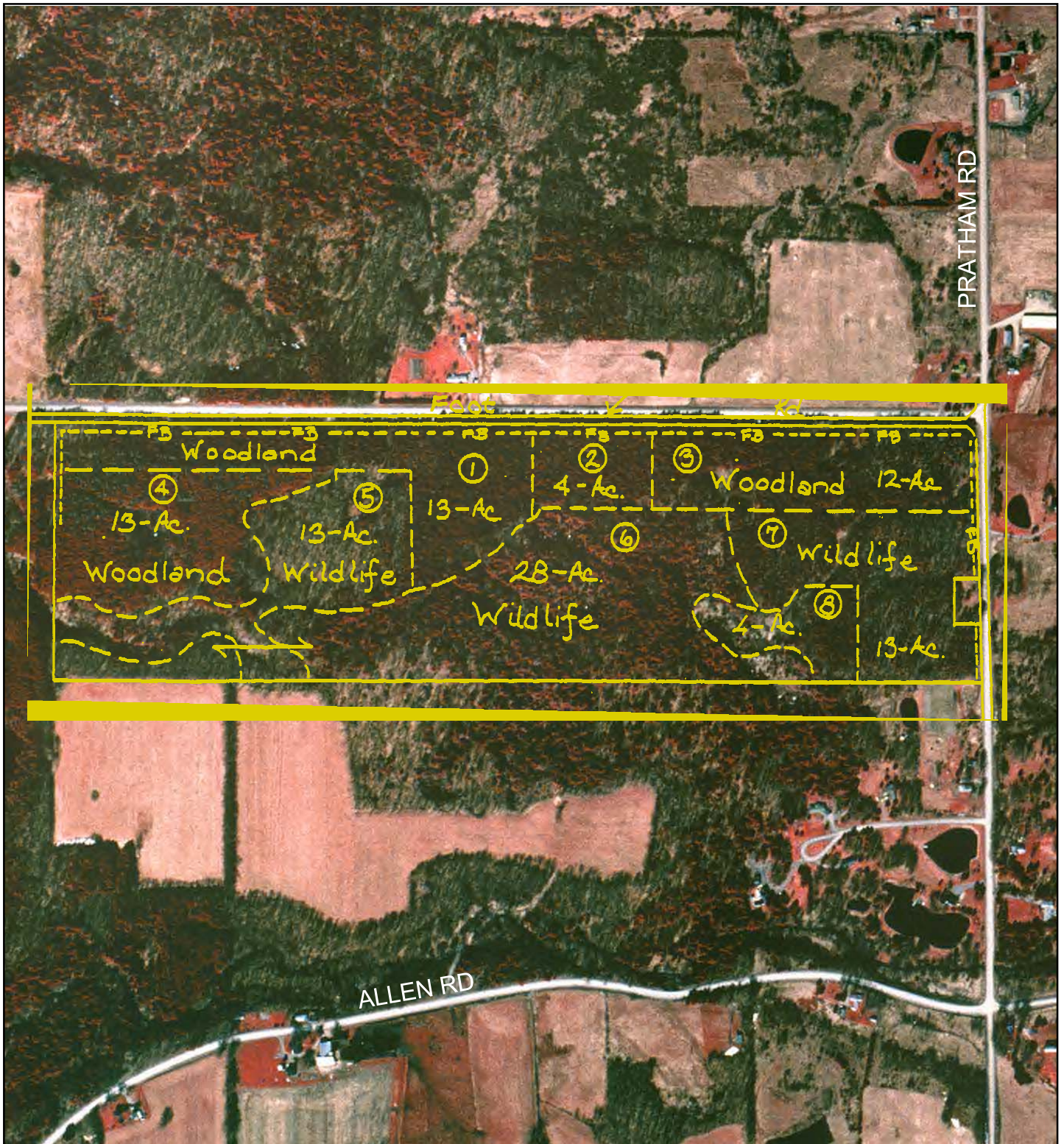
Deep, moderately steep, well drained, low lime, gravelly silt loam soil formed in coarse loamy glacial till. The available water capacity is low to moderate. Permeability is moderate to rapid. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-6b, K=.24, T=3

VpA *Volusia Channery Silt Loam, 0 to 3 Percent Slopes*

Deep, nearly level, somewhat poorly drained, low lime, channery silt loam soil formed in fine loamy glacial till. It has a very firm fragipan at a depth of 15 to 50 inches. The available water capacity is moderate to low. Permeability is generally moderate above the fragipan and slow to very slow in the fragipan. CAPABILITY CLASS-IIIw, NYS SOIL GROUP-6b, K=.24, T=3

VpB *Volusia Channery Silt Loam, 3 to 8 Percent Slopes*

Deep, gently sloping, somewhat poorly drained, low lime, channery silt loam soil formed in fine loamy glacial till. It has a very firm fragipan at a depth of 15 to 50 inches. The available water capacity is moderate to low. Permeability is generally moderate above the fragipan and slow to very slow in the fragipan. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIw, NYS SOIL GROUP-6b, K=.24, T=3



1965 CONSERVATION PLAN MAP

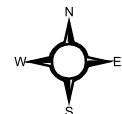
Erie County
Forest Management Plan

LOT #12

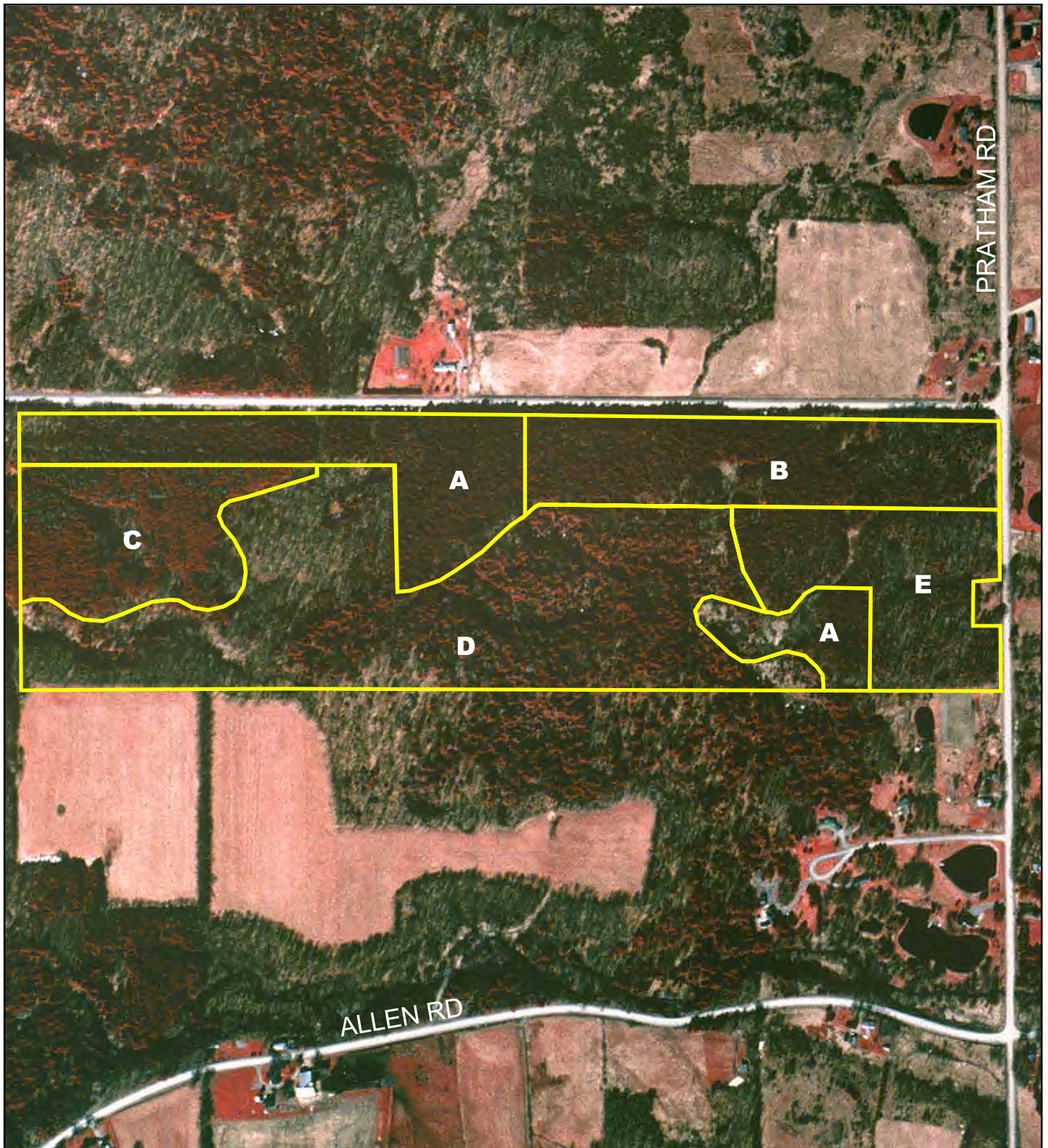


Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



500 0 500 Feet



2003 STEWARDSHIP RECOMMENDATION MAP

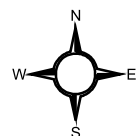
Erie County
Forest Management Plan

LOT #12



Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



200 0 200 400 Feet

Lot 13—Fields 1, 3-5, 8, 14-16, 19, 20-22, 24

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 13 Total Acres: 295 Field Number(s): 1,3-5,8, 4-16,19, 20-22, 24 Acres: 102 Date: 9/18/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Red Pine	P-13	Heavy	19	Even	52	58	Fair
Scotch Pine	P-15	Heavy	14	Even	52	61	Fair
White Pine	P-14	Heavy	17	Even	52	59	Fair
Austrian Pine	P-13	Heavy	14	Even	52	61	Fair

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature Conifer (*Pinus* spp.) Plantations in various stages of hardwood succession. The designation of “Fair,” relative to condition, is given due to the large percentage of trees under a DBH of 12 inches.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

These fields contain two northwesterly flowing intermittent streams located in Field Number 7 and Field Numbers 3 and 19. These fields also contain six man-made ponds located in Field Numbers 16, 20 and 22.

Fire Lane Status

The Fire Break in Field Numbers 21 and 22 is approximately 10 feet wide, is in need of widening and pruning and is currently being used as an All Terrain Vehicle trail. This use is strictly prohibited on County Forest property and violators will be prosecuted. The Fire Break between Field Numbers 15 and 16 is approximately 15 feet wide and is in need of widening and pruning. Field Number 2 contains a power company right-of-way, approximately 60 feet wide, that is in good condition and serves as a Fire Break.

Lot 13—Fields 1, 3-5, 8, 14-16, 19, 20-22, 24**FIELD WORKSHEET #2
ECOLOGICAL ANALYSIS****Ecological Overview****Forest Physiognomy (outer appearance)**Canopy

The canopy is of medium density and is characterized by various species of Pines (*Pinus* spp.) with light intrusions of Black Cherry (*Prunus serotina*).

Subcanopy

The subcanopy is of light density and represented primarily by Sugar Maple (*Acer saccharum*) and Black Cherry (*Prunus serotina*).

Shrub Layer

The shrub layer is of light density and includes Brambles (*Rubus* spp.), Tartarian Honeysuckle (*Lonicera tartarica*), Multiflora Rose (*Rosa multiflora*) and Highbush Blueberry (*Vaccinium corymbosum*).

Herbaceous Layer

The herbaceous layer is of light density and is dominated by a variety of ferns such as Sensitive fern (*Onoclea sensibilis*), Bracken fern (*Pteridium aquilinum*), Evergreen Woodfern (*Dryopteris intermedia*), Crested fern (*Dryopteris cristata*), Royal fern (*Osmunda regalis*), Cinnamon fern (*Osmunda cinnamomea*), Lady fern (*Athyrium Filix-femina*) and New York fern (*Thelypteris noveboracensis*).

Successional Status

These fields represent mature Pine Plantations (*Pinus* sp.) in the early - mid stages of hardwood succession.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera tartarica*) and Multiflora Rose (*Rosa multiflora*)

Protected: All ferns listed under “Herbaceous Layer” except Bracken fern (*Pteridium aquilinum*) and Sensitive fern (*Onoclea sensibilis*).

Lot 13—Fields 6, 9 and 18

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 13 Total Acres: 295 Field Number(s): 6, 9, 18 Acres: 28 Date: 9/18/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
White Spruce	S/P	Medium	24	Even	51	54	Poor
White Pine	12-20	Light	17	Even	51	57	Fair
Scotch Pine	12-18	Light	14	Even	51	55	Poor

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent White Spruce (*Picea glauca*) Plantations mixed with various Pines (*Pinus* spp.).

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems

These fields contain a southwesterly flowing intermittent stream between Field Numbers 9 and 18. Field Number 9 contains two small man-made ponds.

Fire Lane Status

None

Lot 13—Fields 6, 9 and 18

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is characterized by White Spruce (*Picea glauca*), White Pine (*Pinus strobus*), Scotch Pine (*Pinus sylvestris*) and Austrian Pine (*Pinus nigra*) along with light intrusions of mixed hardwoods.

Subcanopy

The subcanopy is of medium density and is represented primarily by Sugar Maple (*Acer saccharum*), Black Cherry (*Prunus serotina*) and White Ash (*Fraxinus americana*). The subcanopy was not present in Field Number 6.

Shrub Layer

The shrub layer is of light density and includes Brambles (*Rubus* spp.), Tartarian Honeysuckle (*Lonicera tartarica*), Alternate-Leaf Dogwood (*Cornus alternifolia*) and Multiflora Rose (*Rosa multiflora*). The shrub layer is not present in Field Number 6.

Herbaceous Layer

The herbaceous layer is of light density and is dominated by a variety of ferns such as Sensitive fern (*Onoclea sensibilis*), New York fern (*Thelypteris noveboracensis*), Lady fern (*Athyrium filix-femina*) and Evergreen Woodfern (*Dryopteris intermedia*). The herbaceous layer was not present in Field Number 6.

Successional Status

These fields represent White Spruce (*Picea glauca*) dominated Conifer Plantations in the early - mid stages of hardwood succession. Due to the dense planting of the White Spruce (*Picea glauca*) in Field Number 6, there is minimal hardwood intrusion.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera tartarica*) and Multiflora Rose (*Rosa multiflora*)

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*).

Lot 13—Fields 7, 10

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 13 Total Acres: 295 Field Number(s): 7, 10 Acres: 15 Date: 9/18/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Sugar Maple	P-26	Heavy	12	Multiple		78	21	Fair

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields, originally established as wildlife areas, include a generally young - middle aged Hardwood Forest (Field Number 7) dominated by Sugar Maple (*Acer saccharum*) as well as a Wet Meadow transitioning into a young, wet Secondary Hardwood Forest Community.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
These fields contain a westerly flowing intermittent stream.

Fire Lane Status

None

Lot 13—Fields 7, 10

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy in Field Number 7 is of heavy density and is dominated by Sugar Maple (*Acer saccharum*) while the canopy in Field Number 10 is of light density and is represented by Red Maple (*Acer rubrum*).

Subcanopy

The subcanopy in Field Number 7 is of light density and is dominated by Sugar Maple (*Acer saccharum*). The subcanopy in Field Number 10 is of light density and is represented by Slippery Elm (*Ulmus rubra*) and Black Willow (*Salix nigra*).

Shrub Layer

The shrub layer is not present in Field Number 7. The shrub layer in Field Number 10 is of medium density and includes Northern Arrowwood (*Viburnum recognitum*) and Dogwoods (*Cornus* spp.).

Herbaceous Layer

The herbaceous layer in Field Number 7 is of light density and includes Evergreen Woodfern (*Dryopteris intermedia*). The herbaceous layer in Field Number 10 is of medium density and includes a variety of ferns such as Cinnamon fern (*Osmunda cinnamomea*), Sensitive fern (*Onoclea sensibilis*) and New York fern (*Thelypteris noveboracensis*).

Successional Status

Field Number 7 is a middle-aged monoculture of Sugar Maple (*Acer saccharum*) that will eventually evolve into a Maple dominated Climax Forest. Field Number 10 represents a young, wet Secondary Hardwood Forest that will continue to evolve into a mesic Hardwood Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Sensitive fern (*Onoclea sensibilis*). White Baneberry (*Actaea pachypoda*), found in Field Number 7, is also protected.

Lot 13—Fields 11, 12

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 13 Total Acres: 295 Field Number(s): 11,12 Acres: 81 Date: 9/18/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable		Condition (Good, Fair, Poor)
Sugar Maple	14-36	Heavy	20	Multiple		86	30	Fair
Black Cherry	14-27	Light	16	Multiple		98	42	Good
White Ash	12-24	Light	9	Multiple		85	38	Good
American Beech	12-30	Light	17	Multiple		93	31	Fair

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature, mixed Hardwood Forests dominated by Sugar Maple (*Acer saccharum*) along with other subdominant hardwood species.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
Field Number 12 contains a northwesterly flowing intermittent stream.

Fire Lane Status

The Fire Break in these fields is approximately 16 feet wide and is in need of moderate widening and pruning.

Lot 13—Fields 11, 12**FIELD WORKSHEET #2
ECOLOGICAL ANALYSIS****Ecological Overview****Forest Physiognomy (outer appearance)**Canopy

The canopy is of heavy density and is characterized by Sugar Maple (*Acer saccharum*), Black Cherry (*Prunus serotina*), White Ash (*Fraxinus americana*) and American Beech (*Fagus grandifolia*).

Subcanopy

The subcanopy is of medium density and is represented by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*) and Eastern Hemlock (*Tsuga canadensis*).

Shrub Layer

The shrub layer is of light density and includes a variety of Brambles (*Rubus* spp.).

Herbaceous Layer

The herbaceous layer is of medium density and includes Evergreen Woodfern (*Dryopteris intermedia*), Silvery Spleenwort (*Athyrium thelypteroides*) and Hayscented fern (*Dennstaedtia punctilobula*).

Successional Status

These fields represent mature, mixed Hardwood Forests evolving into a Maple/Beech Climax Forest.

Botanical Concerns - includes both invasive and protected species

Invasive: None

Protected: All ferns listed under “Herbaceous Layer” except Hayscented fern (*Dennstaedtia punctilobula*).

Lot 13—Fields 13, 17, 23 and 25

FIELD WORKSHEET #1 GENERAL FORESTRY INFORMATION

Lot # 13 Total Acres: 295 Field Number(s): 13, 17, 23, 25 Acres: 10 Date: 9/17/03

Reported By: Earth Spirit Educational Services, Inc.

Principal Species	DBH* (inches)	Density (Heavy, Medium, Light)	Growth Rate**	Age Class (Even/Mult.)	Age	Heights (feet) Crown/Usable	Condition (Good, Fair, Poor)
Larch	12-16	Heavy	20	Even	52	64	Good

* “S” refers to saplings, “P” refers to pole size dimensions, “SL” refers to saw log dimensions

** Represents the most recent growth rings per inch from a core sample

Comments

These fields represent mature Larch (*Larix* spp.) Plantations along with Secondary Hardwoods in all forest levels. All fields contain significant debris build-up while Field Number 25 also contains significant blow-downs.

Aquatic Systems – includes both lentic (standing water) and lotic (flowing water) systems
Field Number 25 contains one man-made pond.

Fire Lane Status

The Fire Breaks in these fields exist as an edge buffer along Sharp Rd. and Sibley Rd. and are in need of general clearing.

Lot 13—Fields 13, 17, 23 and 25

FIELD WORKSHEET #2 ECOLOGICAL ANALYSIS

Ecological Overview

Forest Physiognomy (outer appearance)

Canopy

The canopy is of medium density and is characterized by Larch (*Larix* spp.) along with light intrusions of Black Cherry (*Prunus serotina*) and Sugar Maple (*Acer saccharum*).

Subcanopy

The subcanopy is of medium density and is represented by Secondary Hardwood species such as Black Cherry (*Prunus serotina*), Red Maple (*Acer rubrum*) and White Ash (*Fraxinus americana*).

Shrub Layer

The shrub layer is of medium density and includes a variety of Brambles (*Rubus* spp.), Poison Ivy (*Rhus radicans*) and Tartarian Honeysuckle (*Lonicera tartarica*).

Herbaceous Layer

The herbaceous layer is of medium density and is dominated by a variety of ferns such as Evergreen Woodfern (*Dryopteris intermedia*), Hayscented fern (*Dennstaedtia punctilobula*), New York fern (*Thelypteris noveboracensis*), Sensitive fern (*Onoclea sensibilis*), Interrupted fern (*Osmunda claytoniana*), Royal fern (*Osmunda regalis*) and Cinnamon fern (*Osmunda cinnamomea*).

Successional Status

These fields represent mature Larch (*Larix* spp.) Plantations in the mid stages of Secondary Hardwood succession.

Botanical Concerns - includes both invasive and protected species

Invasive: Tartarian Honeysuckle (*Lonicera tartarica*)

Protected: All ferns listed under “Herbaceous Layer” except Hayscented fern (*Dennstaedtia punctilobula*) and Sensitive fern (*Onoclea sensibilis*).

Lot 13 Summary and Recommendations

FIELD WORKSHEET #3 WILDLIFE SUMMARY

Lot # 13 offers an excellent variety of habitats for diverse populations of wildlife species. Field Numbers 7 and 10 represent a unique Sugar Maple (*Acer saccharum*) monoculture and a transitioning Wet Meadow while Field Numbers 11 and 12 represent mature Hardwood Forests. The remaining 21 fields represent mixed Conifer Plantations in various stages of hardwood succession.

During a period of one and one half days, staff ecologists recorded a variety of wildlife observations focused upon actual sightings and other wildlife “signs”. The following list represents a brief overview of those encounters focused upon Mammals, Birds and Reptiles/Amphibians.

Mammals

Whitetail Deer (<i>Odocoileus virginianus</i>)	Red Fox (<i>Vulpes fulva</i>)
Gray Squirrel (<i>Sciurus carolinensis</i>)	Raccoon (<i>Procyon lotor</i>)
Red Squirrel (<i>Tamiasciurus hudsonicus</i>)	Eastern Chipmunk (<i>Tamias striatus</i>)
Striped Skunk (<i>Mephitis mephitis</i>)	

Birds

Wild Turkey (<i>Meleagris gallopavo</i>)	Black-capped Chickadee (<i>Parus atricapillus</i>)
Pileated Woodpecker (<i>Dryocopus pileatus</i>)	Dark-eyed Junco (<i>Junco hyemalis</i>)
Redtail Hawk (<i>Buteo jamaicensis</i>)	Blue Jay (<i>Cyanocitta cristata</i>)
White Breasted Nuthatch (<i>Sitta carolinensis</i>)	Downy Woodpecker (<i>Picoides pubescens</i>)
American Crow (<i>Corvus brachyrhynchos</i>)	American Robin (<i>Turdus migratorius</i>)
Green Heron (<i>Butorides virescens</i>)	Hairy Woodpecker (<i>Picoides villosus</i>)

Reptiles/Amphibians

Spring Peeper (<i>Hyla crucifer</i>)	Pickerel Frog (<i>Rana palustris</i>)
Green Frog (<i>Rana clamitans melanota</i>)	American Toad (<i>Bufo americanus</i>)

FIELD WORKSHEET #4 RECOMMENDATIONS

The following recommendations for Lot #13 of the Erie County Forestry Management Plan are based upon field data collected by Earth Spirit Educational Services, Inc. in the areas of Forest Ecology, Wildlife Biology and general Ecology.

Field Numbers 1, 3-5, 8, 14-16, 19, 20-22, and 24

Description – These fields represent mature Conifer Plantations in various stages of hardwood succession and include Scotch Pine (*Pinus sylvestris*), White Pine (*Pinus strobus*), Red Pine (*Pinus resinosa*) and Austrian Pine (*Pinus nigra*). Three man-made ponds and a cattail marsh, constructed initially for wildlife habitat, also exist in these fields and continue to provide important habitat diversity for wildlife populations.

Field Numbers 6, 9 and 18

Description – These fields represent White Spruce (*Picea glauca*) Plantations along with mixed Pine (*Pinus* spp.) species. Field Number 9 contains two small man-made ponds constructed initially for wildlife habitat.

Field Numbers 13, 17, 23 and 25

Description – These fields represent mature Larch (*Larix* spp.) Plantations that serve as a buffer zone and windbreak for the southeastern boundaries of the property.

Field Numbers 11 and 12

Description – These fields represent mature, mixed Hardwood Forests dominated by Sugar Maple (*Acer saccharum*) and other subdominant hardwoods.

Field Numbers 7 and 10

Description – These fields, originally established as wildlife areas, include a young - middle aged Hardwood Forest (Field Number 7) dominated by Sugar Maple (*Acer saccharum*) as well as a Wet Meadow transitioning into a young, wet Secondary Hardwood Forest Community (Field Number 10).

Recommendations:

Note: Due to the unique character of Lot #13, one recommendation will be submitted for all Field Numbers 1-25.

Based upon the above field descriptions and ongoing ecological surveys, it has been determined that this Lot possesses the most significant habitat diversity of the thirteen Erie County Forest Lands analyzed in this project. As a result, this area should be protected and preserved for the following purposes:

Wildlife Diversity – Wildlife habitats are provided through mature Hardwood Forests, young - middle aged Secondary Hardwood Forests, Pioneer Forests, Field/Shrub Communities, varied species of Conifer Plantations, diverse Wetlands such as Ponds, Marshes and Wet Meadows as well as intermittent Streams situated in deep ravines.

Passive Recreation – Recreational opportunities may include hiking, backpacking, cross-country skiing, snowshoeing, bird watching, jogging, nature photography and wildlife viewing. In addition, this Lot also provides an excellent opportunity to develop minimum impact campsites (lean-to construction) in a variety of both Wetland and Hardwood Forest environments.

Environmental Education – This property offers an excellent opportunity as a secondary field site for programs developed at The Woodlands Environmental Educational Center for schools, community groups and the general public. These educational programs, focused upon topics in the areas of Field Ecology, Environmental Analysis and Conservation Biology (Forest and Wildlife Management), have the ability to enhance awareness and accessibility to this extremely unique Forest Land of Erie County.

Lot 13

Soils, Waterways and Topography

Soils

The eastern upland area of Lot 13 contains the somewhat poorly drained, potentially highly erodible Volusia Silt Loam (VoB), with 3-8% slopes and moderate permeability, the well drained, highly erodible Valois Gravelly Silt Loam (VaD), with 15-25% slopes and moderate to rapid permeability, the moderately well drained, potentially highly erodible and highly erodible Mardin Silt Loam (McB and McC), with 3-15% slopes and moderate permeability, the very poorly drained Palms Muck (Pa), with moderately rapid permeability in the organic layer, and moderate permeability in the underlying loamy material, and the moderately well drained, potentially highly erodible and highly erodible Williamson Silt Loam (WeB and WeC), with 3-15% slopes and slow to very slow permeability. These soils may contribute excess sediment to streams if disturbed during wet seasons; activities should be conducted after soil freeze to minimize soil loss. The downslope soils on the lot include the well drained, highly erodible Hudson Silty Clay Loam (HvD and HvE), with 15-40% slopes and moderate to slow permeability, the moderately well drained, highly erodible Langford Channery Silt Loam, Silty Substratum (LgC and LgD), with 8-25% slopes and moderate permeability, the somewhat poorly drained, potentially highly erodible Raynham Silt Loam (RaB), with 3-8% slopes and moderately slow permeability, the somewhat poorly drained, potentially highly erodible Rhinebeck Silt Loam (RgB), with 3-8% slopes and very slow permeability and the somewhat poorly drained, severely eroded Rhinebeck Silty Clay Loam (RhC3), with 8-15% slopes and very slow permeability. These soils are potentially highly unstable and proper management should include maintaining forest buffers along drainage channels, swales and streams to minimize soil loss.

Waterways and Topography

Several small tributaries to Eighteenmile Creek originate on Lot 13, and the eastern upland portion of the lot is sprinkled with small ponds and wetlands. The streams are identified as Class A, protected for drinking water supplies. Water quality in Eighteenmile Creek is threatened by sediment, pesticides, nutrients, salts, thermal changes and pathogens, from streambank erosion, agriculture, construction, urban runoff, resource extraction and on-site waste treatment. Fish habitat is primarily threatened by unstable soils, and buffers should be maintained along all streams and drainage channels to protect the water resource. Lot 13 slopes from Sharp Street on the east over 200 feet to Springville Boston Road.

Lot 13

Forest Stewardship Recommendations

Please reference attached map.

Stand A (Old Fields 13, 17, 23, 25)

MEDIUM PRIORITY

These are plantations of larch. Average diameter is approximately 14", with maximums near 18". Stand density is high, with basal area 150-200 sqft/ac. Some windthrow is evident. The understory contains saplings of black cherry, sugar maple and white ash with scattered poles of red maple and black cherry. The larch stand west of Sharp St. should be scheduled for conversion to hardwoods with patch cutting with minimum edges. Selection harvesting would subject the residual stand to considerable windthrow. The larch areas east of Sharp St. should be left to gradually convert to hardwoods due to their location near roads or around ponds.

Stand B (Old Fields 1, 3-5, 8, 11, 14-16, 19, 20-22, 24)

MEDIUM PRIORITY

These are plantations of various conifers, including red pine, white pine, Scotch pine, Austrian pine and some Norway spruce. The old Scotch pines are declining, with many dead or with flat-topped crowns or with crown dieback. The understory is heavily developed with black cherry and white ash saplings and poles. The Scotch pine diameters are mostly under 12". The Austrian pines have poor form, average 10-12" diameter with very scattered black cherry poles. Red pine areas have average diameters around 9", live crown ratios 15-20% (very short), basal area around 150 sqft/ac and an understory of white ash seedlings. There are few hardwood saplings in the red and Austrian pine areas and windthrow is occurring in the red pines. No evidence of prior stand management was seen. Recommend conversion to hardwoods for areas west of Sharp St. However, the Scotch pine areas should be left to naturally convert since the understory is quite developed and little merchantable wood could be harvested. Since there are very few hardwood seed trees scattered throughout, no return for their harvest would be necessary. The red and Austrian pine areas west of Sharp St. could be patch cut to speed and control conversion to more valuable hardwoods. For these areas, no-cut buffers of 1-2 tree lengths should be left around the ponds and along property boundaries. The entire area east of Sharp St. with the 5 ponds should be left to convert naturally since little space would be left after allowing buffers. Check regeneration areas 5 years after harvesting.

Stand C (Old Fields 2, 12)

HIGH PRIORITY

This stand has uneven-aged native hardwoods including black cherry, sugar maple, hemlock, basswood, red maple and white ash. Dominant trees are large sawtimber, with diameters up to 36". The northern-most section straddling the powerline is dominated by beech, with fewer hemlock, maples, ash, aspen, cherry and some yellow birch. The stand density is moderately low, the beech are largely culls and there are many wild grapevines. A Class A protected stream runs along the southern boundary and crosses into County land east of the powerline and just before it crosses Springville-Boston Rd. The powerline is periodically maintained and contains approximately 3 acres of non-forest land. This stand should be scheduled for a selection cut to harvest trees across the diameter range that are mature and of poor form or value and to prepare the site for regenerating native hardwoods. Schedule harvesting within 5 years to reduce basal area by about 1/4. Recheck 15 years after harvesting.

Stand D (Old Fields 6, 9, 18)

LOW PRIORITY

These are areas of declining White spruce, Scots and white pine plantations with ingrowth of native hardwoods. Hardwood species include seedlings, saplings and small poles of white ash with some wild apples. The spruce has not been thinned, but the pines have declined substantially and most of

the Scotch pines are flat-topped. Also under the pines are honeysuckles and some planted eastern white cedar and white spruce. Spruce and Scots pine diameters average under 12" and white pine diameters are between 12 and 18". Terrain is slightly rolling and soils are moderately well-drained. Because of the low stand density and scarcity of quality merchantable trees it would be best to allow these areas to continue succession into northern hardwoods without further management activity. These areas can now be utilized as wildlife habitat, since the dense shrubs provide good cover and fruits for a variety of wildlife. A Class A protected stream flows to the west through this stand and crosses Sibley Rd. and Sharp St. Recheck stand density in 10 years.

Stand E (Old Field 7)

This area is an even-aged pole stand of northern hardwoods, with principal species sugar maple and minor species aspen, beech and yellow birch. It is a ravine along the Class A protected stream flowing to the northwest parallel to Sharp St. While some larger, wolf-type hardwoods exist, most maples are young, vigorous and of good form. This stand could be improved with some crop tree thinning, however its proximity to the stream would prevent heavy logging in the future. Because of its mature aspen and location, it should be left as a buffer for wildlife habitat. Adjoining this stand at the intersection of Sibley and Sharp is a disturbed clearing that has seen addition of fill deposited in the ravine of the creek. While this spot can provide valuable parking, it should be investigated to determine compliance with State regulations.

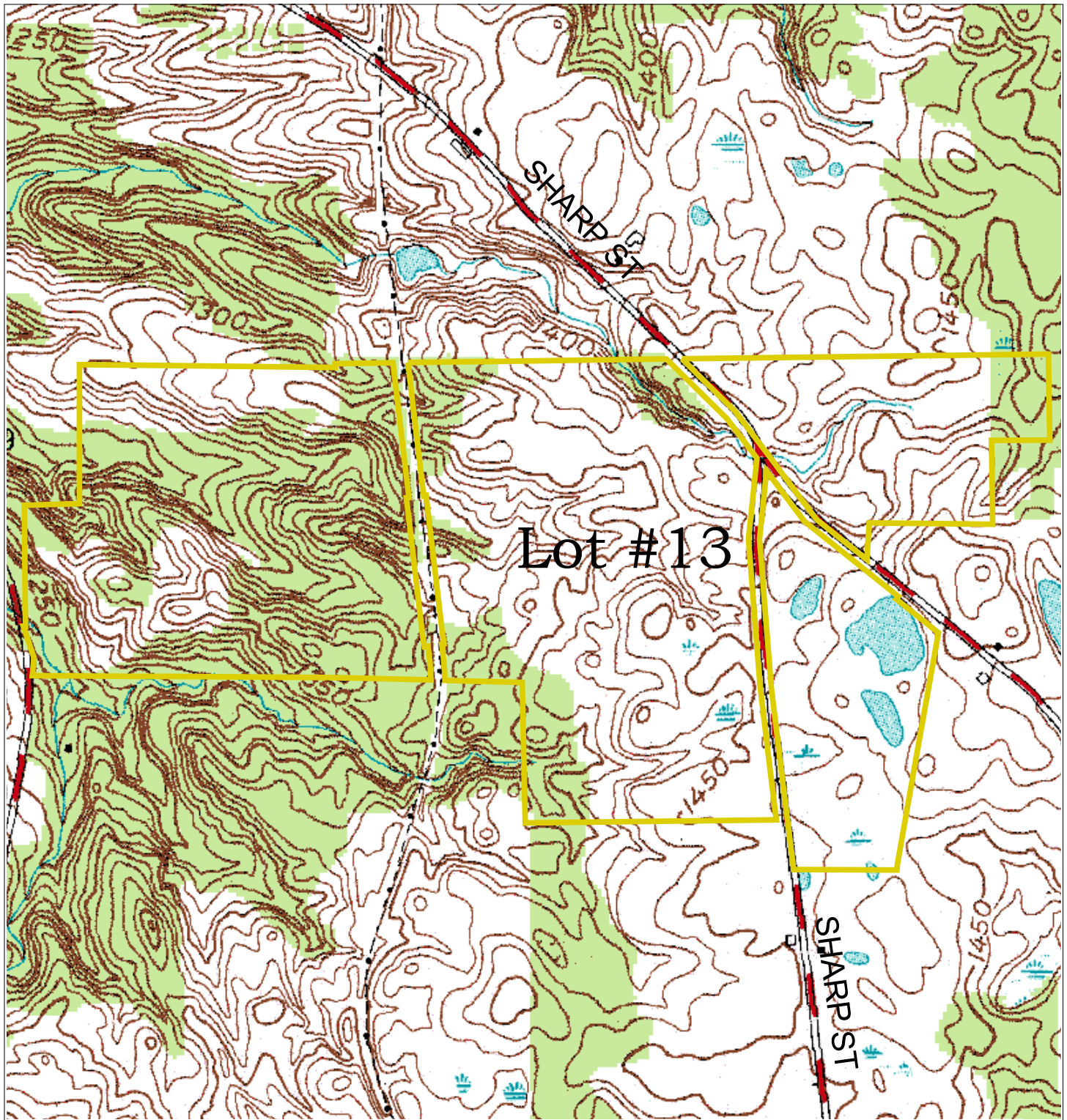
Stand F (Old Field 10)

This wetland of shrubs and saplings should be left to proceed through natural succession.

Stand G

MEDIUM PRIORITY

These are two small open areas comprising only a few acres. These should be maintained as open fields by periodic mowing, once every three years. Together with the powerline right-of-way, they will provide grassy, herbaceous habitat and valuable edge for wildlife.

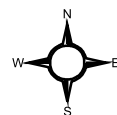


Erie County Forest Management Plan

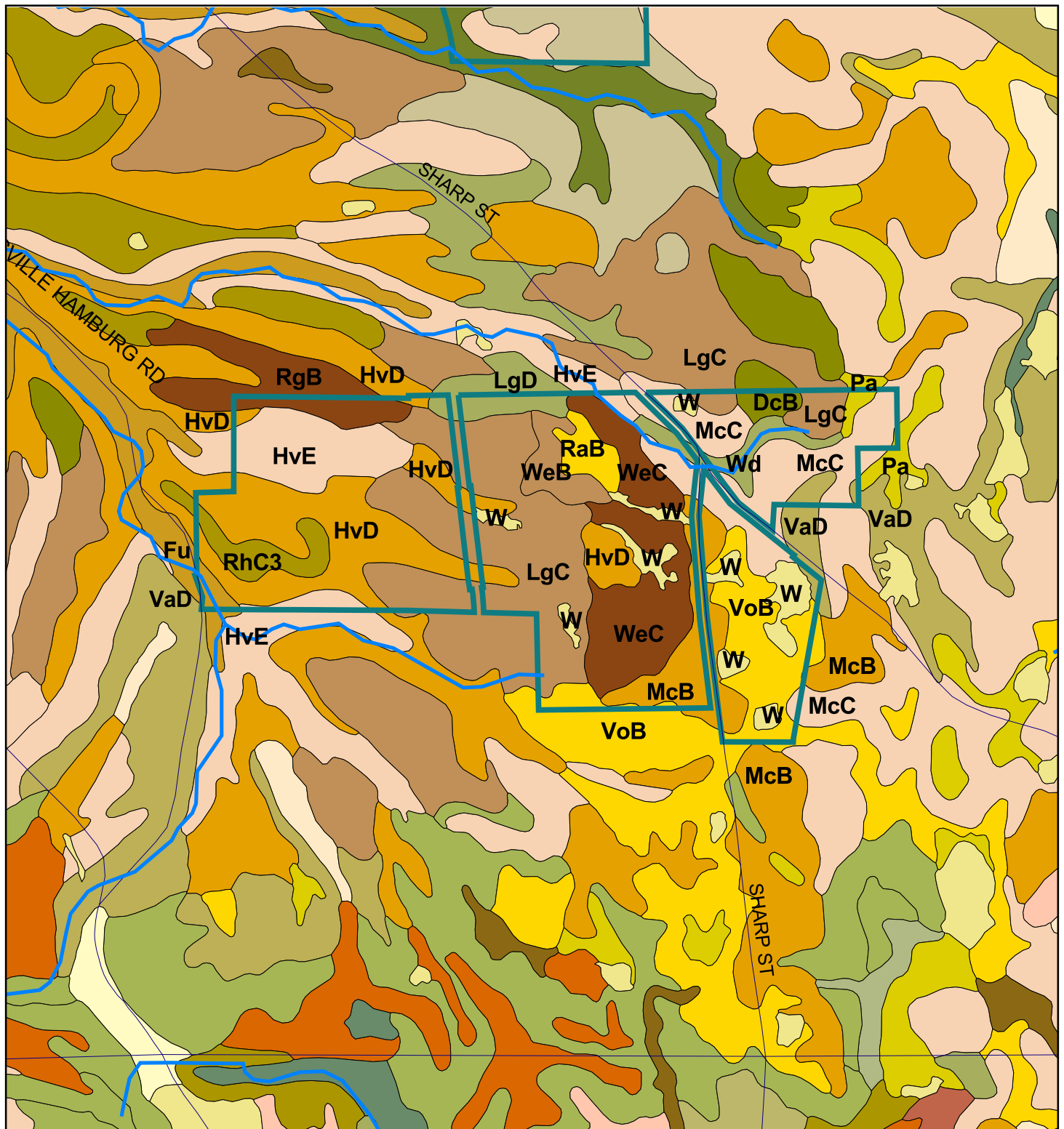
USGS TOPOGRAPHIC QUADRANGLE



Map Prepared By:
Erie County Soil and Water
Conservation District



800 0 800 Feet



Erie County Forest Management Plan

LOT #13 - SOIL TYPES



Map Prepared By:
Erie County Soil and Water
Conservation District



500 0 500 1000 Feet

Brief Soil Descriptions – Lot 13

For further information refer to the *Soil Survey of Erie County, New York*.

Symbol	Name / Description
--------	--------------------

DcB Darien Silt Loam, Silty Substratum, 3 to 8 Percent Slopes

Deep, gently sloping, somewhat poorly drained, high lime, silt loam soil formed in fine loamy glacial till and underlain by silty lake sediments. The available water capacity is moderate to high. Permeability is generally slow. PRIME FARMLAND (WHERE DRAINED), POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIw, NYS SOIL GROUP-5b, K=.37, T=3

Fu Fluvaquents and Udifluvents, Frequently Flooded

Moderately deep to deep, nearly level, well drained to poorly drained, high to low lime, variable soils formed in recent stream deposits. The available water capacity and permeability are variable. No K or T values are assigned. HYDRIC SOIL, CAPABILITY CLASS-Vw, NYS SOIL GROUP-9

HvD Hudson Silty Clay Loam, 15 to 25 Percent Slopes

Deep, moderately steep, well drained, high lime, silt loam soil formed in clayey glacial lake sediments. The available water capacity is moderate to high. Permeability is moderate to slow in the surface and subsoil layers and slow to very slow in the underlying layers. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-7b, K=.49, T=3

HvE Hudson Silty Clay Loam, 25 to 40 Percent Slopes

Deep, very steep, well drained, high lime, silt loam soil formed in clayey glacial lake sediments. The available water capacity is moderate to high. Permeability is moderate to slow in the surface and subsoil layers and slow to very slow in the underlying layers. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-VIe, NYS SOIL GROUP-9b, K=.49, T=3

LgC Langford Channery Silt Loam, Silty Substratum, 8 to 15 Percent Slopes

Deep, sloping, moderately well drained and well drained, medium lime, channery silt loam soil formed in glacial till deposits underlain by silty lake sediments. There is a firm, dense fragipan 15 to 20 inches deep which is approximately 24 inches thick. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow below the fragipan. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-6b, K=.20, T=3

LgD Langford Channery Silt, Silty Substratum, 15 to 25 Percent Slopes

Deep, moderately steep, moderately well drained and well-drained, medium lime, channery silt loam soil formed in glacial till deposits underlain by silty lake sediments. There is a firm, dense fragipan 15 to 20 inches deep which is approximately 24 inches thick. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow below the fragipan. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-7b, K=.20, T=3

McB Mardin Silt Loam, 3 to 8 Percent Slopes

Deep, gently sloping, moderately well drained and well drained, low lime; silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIw, NYS SOIL GROUP-4b, K=.32, T=3

McC Mardin Silt Loam, 8 to 15 Percent Slopes

Deep, sloping, moderately well drained and well drained, low lime, silt loam soil formed in coarse loamy glacial till. It has a very firm fragipan at a depth of 16 to 50 inches. The available water capacity is moderate. Permeability is moderate above the fragipan and slow or very slow in the fragipan and substratum. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-6b, K=.32, T=3

Pa *Palms Muck*

Deep, nearly level, very poorly drained, medium lime, muck soil formed in organic deposits and underlain by loamy mineral soil material at depths of 16 inches or more. The available water capacity is generally high. Permeability is moderately rapid in the organic layers and moderate in the loamy material. Subject to wind erosion and subsidence when drained. No K or T values are assigned. HYDRIC SOIL, CAPABILITY CLASS-Vw, NYS SOIL GROUP-10 (6b WHEN DRAINED)

RaB *Raynham Silt Loam, 3 to 8 Percent Slopes*

Deep, gently sloping, somewhat poorly drained, high lime silt loam soil formed in silty lake sediments. The available water capacity is moderate to high. Permeability is generally moderate in the surface soil, moderately slow in the subsoil and slow in the substratum. PRIME FARMLAND (WHERE DRAINED), POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIW, NYS SOIL GROUP-5b, K=.49, T=3

RgB *Rhinebeck Silt Loam, 3 to 8 Percent Slopes*

Deep, gently sloping, somewhat poorly drained, medium to high lime, silt loam soil formed in clayey lake sediments. The available water capacity is moderate to high. Permeability is very slow. PRIME FARMLAND (WHERE DRAINED), POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIW, NYS SOIL GROUP-5b, K=.49, T=3

RhC3 *Rhinebeck Silty Clay Loam, 8 to 15 Percent Slopes, Severely Eroded*

Deep, sloping, somewhat poorly drained, medium to high lime, silt loam soil formed in clayey lake sediments. The available water capacity is moderate to high. Permeability is very slow. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-7b, K=.49, T=3

VaD *Valois Gravelly Silt Loam, 15 to 25 Percent Slopes*

Deep, moderately steep, well drained, low lime, gravelly silt loam soil formed in coarse loamy glacial till. The available water capacity is low to moderate. Permeability is moderate to rapid. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IVe, NYS SOIL GROUP-6b, K=.24, T=3

VoB *Volusia Silt Loam, 3 to 8 Percent Slopes*

Deep, gently sloping, somewhat poorly drained, low lime, silt loam soil formed in fine loamy glacial till. It has a very firm fragipan at a depth of 15 to 50 inches. The available water capacity is moderate. Permeability is generally moderate above the fragipan and slow to very slow in the fragipan. POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIW, NYS SOIL GROUP-6b, K=.37, T=3

WeB *Williamson Silt Loam, 3 to 8 Percent Slopes*

Deep, gently sloping, moderately well-drained, low lime, silt loam soil formed in silt and very fine sand sediments. It has a very firm fragipan at a depth of 18 to 45 inches. The available water capacity is moderate. Permeability is slow or very slow in the fragipan. PRIME FARMLAND, POTENTIALLY HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIe, NYS SOIL GROUP-4b, K=.49, T=3

WeC *Williamson Silt Loam, 8 to 15 Percent Slopes*

Deep, sloping, moderately well drained, low lime, silt loam soil formed in silt and very fine sand sediments. It has a very firm fragipan at a depth of 18 to 45 inches. The available water capacity is moderate. Permeability is slow or very slow in the fragipan. HIGHLY ERODIBLE LAND, CAPABILITY CLASS-IIIE, NYS SOIL GROUP-6b, K=.49, T=3



1965 CONSERVATION PLAN MAP

Erie County
Forest Management Plan

LOT #13



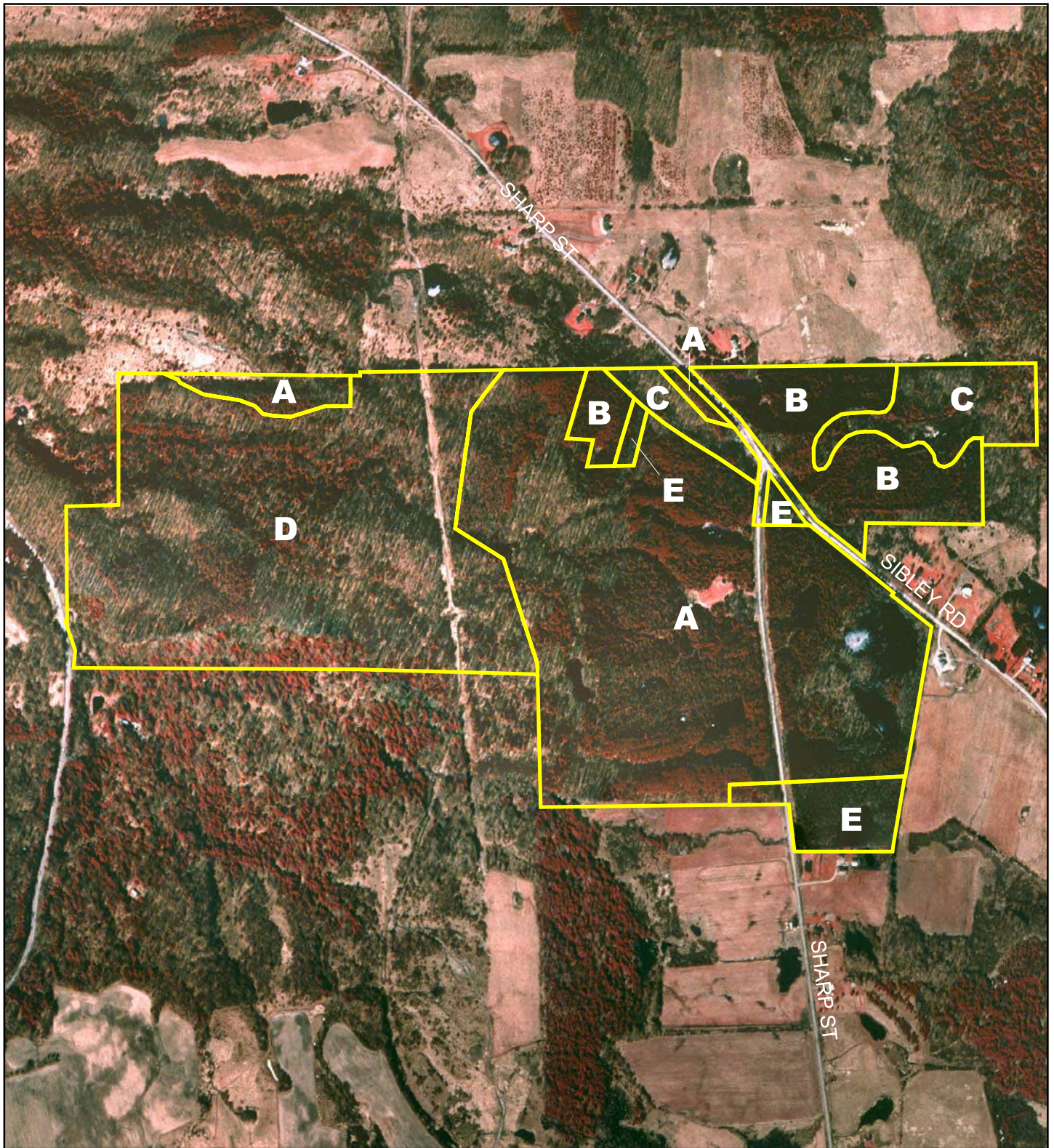
Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



400 0 400 800 Feet





2003 STEWARDSHIP RECOMMENDATION MAP

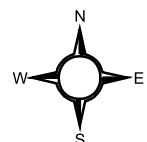
Erie County
Forest Management Plan

LOT #13



Map Prepared By:
Erie County Soil and Water
Conservation District

* Basemap Source: 1995 Color IR Orthophotography



400 0 400 800 Feet

Section III

Forest Management Summary and Conclusions



Public Involvement and Communication

Public support and understanding of the social, biological and economic benefits for Erie County is the critical component to successful implementation of any plan. Erie County's management objectives are clearly stated. Guiding principles and ensuring proper forest management practices give the public confidence to embrace the final forest management plan. In addition, partnerships with prestigious universities, well-informed environmental groups and highly respected forestry organizations will provide the basis to promote Erie County's vision for its forestry future.

People will respond positively to information they find interesting, enjoyable and useful. Properly communicating the forest resources and benefits to the residents from the beginning will ensure the support needed to approve the forest management plan.



Field discussions among Forest management partners are an effective way of developing and evaluating objectives.

Structuring the public process, organizing the way that Erie County will deliver the message and promotion of its valuable resource all work together. Presentation of simple concepts and clear objectives in a chronological order will not alienate the public. It is important to bring the public along in the process, and to show them how utilizing forest products and resources can beautify their parks and highways.

Wildfire Management and Maintenance

Presently, Erie County has upwards of 50 miles of fire lanes (fire breaks) on its 13 lots. We also have approximately 140 private properties (neighbors) directly adjacent to county forests. Good fire management is crucial in the protection of this urban interface (neighbors). Clearing fire lanes is a good forestry practice and helps prevent fires. Generally, there are two ways fires start -- lightening (natural) and human interaction. Current fire lanes in Erie County Forests are inaccessible in many areas. The width is only 10' to 15' with many blow downs, high vegetation and thick foliage. When tree crowns along fire lanes touch, as they do in Erie County Forests, it defeats the purpose of the lanes. When cleared and widened, fire lanes will also provide great access for recreation and forest management practices.

Fire plans generally have a military style design with a command center (incident command systems). Proper utilization of fire lanes can help starve the fire by using choke points to cut the fire off. Protecting the assets of Erie County's forest, neighbors' lives, and property must be foremost in Erie County's fire management.

While it is true that forest fires are rare in this area, Erie County must be prepared. A plan must be in place and properly trained forestry personnel to protect in case of fire will help our readiness. As trained, certified wildland fire fighters, we can develop a plan with anchor points and escape routes, as well as establish safety zones. In addition, the forestry crew received wildfire training at the Brookhaven National Lab in November 2002. It should also be said that on nearly a yearly basis, fires occur in the Adirondacks and Catskill regions. The two vulnerable times of the year are mid-summer (if dry) and late fall when the moisture content in trees is low.



Deadfall can increase the fire hazard in a forest stand.

With proper planning, Erie County can mobilize personnel and equipment quickly to maintain the upper hand on a potential disaster. The Erie County Southtowns also have inadequate water supplies to fight a fire, so planning for more ponds in the County Forest is in the future.

Phase II

Phase II of the Erie County Forest Management Plan will begin with a ten year schedule of activities recommended to address the goal of creating sustainable Erie County forests. Forest sustainability is defined by the USDA Forest Service as ‘the continued existence and use of forests to meet human physical, economic and social needs; the desire to preserve the health of forest ecosystems in perpetuity; and the ethical choice of preserving options for future generations while meeting the needs of the present.’ Earlier Erie County Forestry reports and studies from 1965, 1981, 1986 and 1987 recommended improving forest health through active management. The current goal will address multi-use considerations - recreation, fire lane management, education, environment, economic and productive uses.

The following suggested schedule proposes measures for good stewardship and sustainability of the Erie County Forests.

2004

- Address public use and access concerns by developing plans for specific Lots
 - Assess the public interests and concerns for Erie County Forests
 - Develop plans for long term family style camping such as log cabins, lean-tos and other types of sites within the Lots on Genesee Road
- Adjust staff levels as appropriate to perform necessary management duties, maintain recreation opportunities, create a safe environment for the public and assist educational visitors
- Develop a 10 year schedule of high priority silvicultural treatments including pre-harvest and intermediate stand treatments and hardwood timber harvesting
 - Perform conifer plantation harvests as markets permit

2004-2013

- Continue following the seven criteria for developing sustainable forests as outlined by

the USDA Forest Service (see <http://www.na.fs.fed.us/sustainability/sourcebook.htm>)

- Survey and mark property lines for all thirteen Lots. This is approximately 31 miles of boundaries. Priority resurveying and marking should start with those Lots identified with problems, such as Lots 4, 5, 6, 9, 10 and 13
- Strengthen relationships with Local, State and Federal partners
- Continue to develop The Woodlands
 - Plan the construction of a residential, environmental education and conference center using County forest products and ‘Early American’ design

2005-2007

- Increase outdoor educational opportunities for schools, community groups and the general public
 - Promote conservation and respect for the County Forests through proper use and education
 - Create self-guided, interpretive forest trails
 - Install trails in new areas and improve existing trails with signs and kiosks
 - Install and label small forest demonstration plots in Lot 2 with the silvicultural treatments expected to be used in stands throughout the Lots
- Develop a Forest Health Protection Plan with the components of fire, storms, insects, diseases and exotic species
 - Ensure that all silvicultural and property management activities are performed in accordance with applicable forestry and soil and water conservation best management practices
- Protect unique ecological features identified by the survey through signs, inspections and mapping. Utilize assistance from students of Earth Spirit Educational Services, Inc. and University of Buffalo - Environmental Studies Program, and other public or private groups

References

Empire State Forest Products Assoc., New York State Department of Environmental Conservation, Watershed Agricultural Council Forestry Program. New York State Forestry - Best Management Practices for Water Quality—BMP Field Guide. January 2000.

New York State Department of Environmental Conservation, Division of Water. The 1996 Priority Waterbodies List for the Niagara River—Lake Erie Basin. September 1996.

United States Department of Agriculture. Soil Conservation Service. Soil Survey of Erie County, New York. December 1986.

United States Geological Survey. 7.5-minute quadrangle. Arcade, NY. 1979.

United States Geological Survey. 7.5-minute quadrangle. Colden, NY. 1979.

United States Geological Survey. 7.5-minute quadrangle. Hamburg, NY. 1965.

United States Geological Survey. 7.5-minute quadrangle. Holland, NY. 1979.

United States Geological Survey. 7.5-minute quadrangle. Langford, NY. 1960.

United States Geological Survey. 7.5-minute quadrangle. Sardinia, NY. 1957.

United States Geological Survey. 7.5-minute quadrangle. Springville, NY. 1954.

United States Geological Survey. 7.5-minute quadrangle. Strykersville, NY. 1979.

References — Metadata

Aerial Photos (1995 Infrared)

Source: USDA-FSA-APFO – NYS Department of State, Division of Coastal Resources

Publication Date:

Projection: UTM (Zone17)

Datum: NAD 83

Units: Meter

Description: Data set contains reprocessed digital orthophotography based on Digital Ortho Quarter Quads (DOQQ) derived from the National Aerial Photography Program (NAPP). The original DOQQs were completed under the federal DOQQ program with state representation by NYS DEC. A digital orthophoto is a raster image of remotely sensed data in which displacement in the image due to sensor orientation and terrain relief have been removed. Digital orthophotos combine the image characteristics of a photograph with the geometric qualities of a map. The digital orthophotos in this series have a 1 meter pixel ground resolution. The data set presents information that represents current conditions for New York State from 1994 - 1998. The orthoimagery was radiometrically balanced (enhanced) to reduce the variability between the DOQQs characteristic of the DOQQ product, and also to improve the feature visibility within individual images. The image format was also changed to geotiff, and then to MrSID formats in a tiled grid structure based on UTM axes. This was done to facilitate internet delivery of the orthoimagery. The orthoimagery could serve a variety of purposes, from field references for spatial analysis to a tool for revision of vector based maps.

Parcels

Source: Erie County Departments of Environment and Planning and Real Property

Shapefile Name: cnty_parcels_10112003.shp

Publication Date: 101103

Update Frequency: Annual

Projection: NYS Plane Coordinate System

Datum: NAD 83

Units: Feet (US)

Description: GIS layer suitable for displaying parcels within Erie County. Data retrieved from municipal assessor's offices. Converted to UTM (Zone17), Meter.

Access Constraints: Access permissions to be granted by NYS DOT and Erie Co. DEP

Contact:

Dale J. Morris

Erie County Dept. of Environment & Planning

Edward A. Rath County Office Building, Rm 1053

95 Franklin St.

Buffalo, NY 14202

USA

Tele: 716 858-7422

Fax: 716 858-7248

E-Mail: morrisd@erie.gov

Major Roads

Source: New York State Department of Transportation

Shapefile Name: eriroads.shp

Active Layers: Interstate, Federal, and State roads

Publication Date: 199906

Projection: UTM (Zone 17)

Datum: NAD 83

Units: Meter

Description: Roads and other related features within the county represented by attributed lines, points and annotation. The original source of the file was produced as part of NYSDOT's Centralized Local Accident Surveillance System (CLASS) project, compiled during the late 1970's and early 1980's. All public roads were digitized from the most recent 1:24,000 scale NYSDOT quadrangle maps available at that time. Approximate locations of additional roads named on source maps were also added to the file. Linework features are attributed with: feature level; category; type; primary, secondary, and tertiary route numbers; name of the road.

SSURGO – Soil Survey

Source: USDA – NRCS

Publication Date: 08/07/03

Projection: UTM (Zone 17)

Datum: NAD 83

Units: Meter

Description: The map extent for a Soil Survey Geographic (SSURGO) data set is a soil survey area, which may consist of a county, multiple counties, or parts of multiple counties. A SSURGO data set consists of map data, attribute data, and metadata. SSURGO map data are available in modified Digital Line Graph (DLG-3) optional and Arc interchange file formats. Attribute data are distributed in ASCII format with DLG-3 map files and in Arc interchange format with Arc interchange map files.

Attribute Data: The source of the attribute data is the Natural Resources Conservation Service National Soil Information System (NASIS) database. The attribute data give the proportionate extent of the component soils and their properties. The data contain both estimated and measured physical and chemical soil properties and soil interpretations for engineering, water management, recreation, agronomic, woodland, range, and wildlife uses of the soil.

More info found at:

http://nasis.usda.gov/documents/metadata/ssurgo2_0/

Contact:

National Cartography and Geospatial Center

U.S. Department of Agriculture Natural Resources Conservation Service

P.O. Box 6567

Fort Worth, Texas 76115

(800) 672-5559

Topographic Quadrangles

Source: USGS

Active Layers: georeferenced tif imagery

Publication Date: various

Projection: UTM (Zone 17)

Datum: NAD 83

Units: Meter

Description: United States Department of the Interior Geological Survey 7.5 minute series topographic quadrangles in digital tif format with georeference.

Contact:

USGS National Center
12201 Sunrise Valley Drive
Reston, VA 20192, USA

www.usgs.gov

Appendix

1965 USDA Soil Conservation Service Recommendations



CONSERVATION PLAN MAP

Prepared by U.S. Department of Agriculture, Soil Conservation Service, cooperating with
ERIE COUNTY — Soil Conservation Unit

Owner: Erie County
 Operator: Russell B. Fales, For.
 Township: Sardinia
 Photo No.: ARF-7V-67

Address: Forestry Dept.
 Address: East Concord, N.Y.
 County: Erie
 Acres: 200

State: N.Y.
 Planner: A.D. Ward

Phone: Chaffee -
 Phone: 496-7410
 Plan No.: 2284
 Date Prepared: 1/20/65

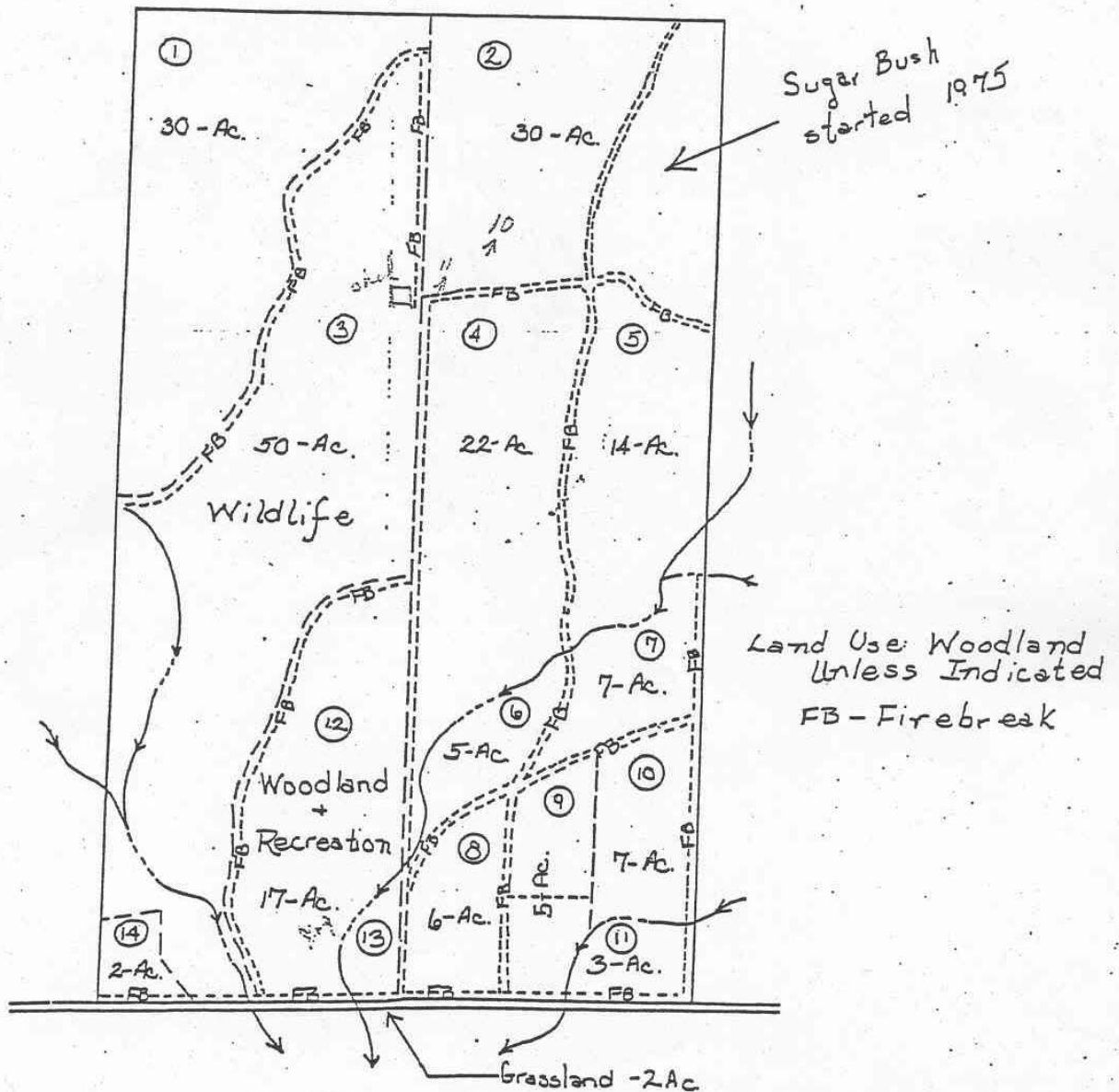
 = 1 Acre (Approx.)

Map Scale:
 Approx. 1" = 660'

0' 500' 1000'
 Scale (Approx.)



LOT NO. 1



ASSISTED BY Adelbert D. Ward DATE 1-20-65

[illegible]

Record of

CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #1 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 1-20-65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO/
			present trees average 6"-12" D.B.H.	3 Ac.	17
		1965- 1970	Thin this immature woodlot as planned for field #4.		
9	5-Ac.		This field is a plantation of Red and White Pine approximately 38-years old. It has received one 50% thinning and the present trees average 6"-12" D.B.H.		
		1965- 1970	<i>Final Thinning Winter of 1966</i> Thin this immature woodlot as planned for field #4.	3 Ac.	7
10	7-Ac.		This field is a plantation of Norway Spruce approximately 38-years old. It has received one 50% thinning and the present trees average 6"-12" D.B.H.		
		1965- 1970	Thin this immature woodlot as planned for field #4.		
11	3-Ac.		This field is a plantation of Red and White Pine Approximately 38 - years old. It has received one 50% thinning and the present trees average 6"-12" D.B.H.		
		1965- 1970	Thin this immature woodlot as planned for field #4.		
14	2-Ac.	1965 or 1966	Plant this field to trees as per Job Sheet NY - 12.	2 ac.	2/

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot # 1. SCD Erie County

ASSISTED BY Adelbert D. Ward DATE 1-20-65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO/
		1965- 1970	Thin this immature woodlot by removing approximately 50% of the stand to reduce density and thereby increase growth rate of remaining trees. See: Job Sheet No. 6 and Farmer's Bulletin No. 1989 for thinning and management information.	22 Ac.	
5	14-Ac.		This field is a plantation of White Pine and Norway Spruce approximately 38 - years old. It has received one 50% thinning and the present trees average 6"-12" D.B.H. <i>Final Thinning winter of 1966</i>		
		1965- 1970	Thin this immature woodlot as planned for field #4.		
6	5-Ac.		This field is a plantation of Red Pine, White Pine and Norway Spruce approximately 38-years old. It has received no management practices and none are planned due to steepness of topography. It will remain in its' present cover for soil erosion control and watershed protection.		
7	7-Ac.		This field is a plantation of Red Pine, White Pine and Norway Spruce approximately 38-years old. It has received one 50% thinning and the present trees average 6"-12" D.B.H.		
		1965- 1970	Thin this immature woodlot as planned for field # 4.		
8	6-Ac.		This field is a plantation of Red and White Pine approximately 38-years old. It has received one 50% thinning and the		

Record of

CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #1 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 1-20-65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO.
			<u>Woodland - Recreation</u>		
12	17-Ac.	1965-1970	Develop this field for recreation (camp sites and camping areas). Plant trees in appropriate areas to assist in developing the field for recreation, as per Job Sheet NY-12. See recreation information sheets: SCS-454, 455, 458, 460, 465, 470, 472, 477, 479, 486, 488 & 492.	17-Ac.	2
			<u>Wildlife</u>		
3	50-Ac.	1965-1970	Improve the food and cover in this field for wildlife habitat by planting clumps of trees and shrubs in the open areas.		
			Suitable tree species: Red Pine		
			White Pine	50	2/
			Norway Spruce		
			White Spruce		
			Suitable shrub species: Autumn olive		
			Tat. Honeysuckle		
			Silky Cornel		
			Hb. Cranberry		
			Tree spacing within the clumps: 8ft. x 8ft.		
			Shrub spacing within the clumps: 4ft. x 4ft.		

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot # 1 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 1-20-65

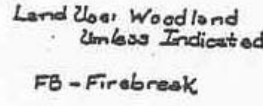
FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO/
			<u>Objective</u>		
			To manage woodland, under supervision of the Erie County Forester, for the production of timber and other forest products on an economically sound basis.		
			<u>Grassland</u>		
13	2-Ac.		Allow this field to remain in its present native grass cover indefinitely. Mow at least once each year (July) to help control noxious weeds and prevent the natural seeding of hardwoods.	2 Ac. Rec...	2/
			<u>Woodland</u>		
1	30-Ac.		These fields consist of a stand of mixed hardwoods. <i>Mature cutting</i>	30	2/
2	30-Ac.		Principal species are hard maple, ash, basswood, beech, oak and cherry.		
1		1965	Remove mature crop trees in a manner that will encourage		
2		1970	regeneration and normal development of a new stand.		
			See: Job Sheet No. 6. <i>Sugar Bush</i>		
4	22-Ac.		This field is a plantation of Red Pine, White Pine and Norway Spruce approximately 38-years old. It has received one 50% thinning and the present trees average 6"-12" D.B.H.		

Prepared by U.S. Department of Agriculture, Soil Conservation Service, cooperating with
ERIE COUNTY — Soil Conservation Unit

Phone: Chaffee -
Phone: 496-7410
Plan No.: 2289
Date Prepared: 3/24/65

Scale (Angstroms)

LOT #2



Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot # 2 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 3/24/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO/
35	5-Ac.		These fields are plantations of Red, Scotch and White Pines		
43	6-Ac.		and Norway Spruce either as mixtures or pure stands approx-		
			imately 35-years old. Because of low quality no treatment		
			is planned for these fields at the present time.		
		1965	These fields will remain in their present cover indefinitely		
			for soil erosion control, watershed protection and wildlife		
			habitat.		
38	6-Ac.		This field is a plantation of Red Pine and Norway Spruce		
			approximately 35-years old. It has received one 50%		
			thinning and the present trees average 10"-14" D.B.H. No		
			further treatment is planned for this field at the present		
			time.		
40	21-Ac.		This field is a plantation of White Pine approximately		
			35-years old. It has received one 50% thinning and the		
			present trees average 10"-14" D.B.H. No further treatment		
			is planned for this field at the present time.		
44	16-Ac.		These fields are White Pine plantations approximately 35 -		
46	6-Ac.		years old. They have received one 50% thinning and the		
			present trees average 10"-12" D.B.H.		

Record of

CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot # 2 SCD Erie County

ASSISTED BY Adelbert D. Ward DATE 3/24/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO.
29	5-Ac.		These fields are plantations of Norway Spruce and White Pine		
34	16-Ac.		approximately 35-years old. They have received one 50%		
47	9-Ac.		thinning and the present trees average 10"-14" D.B.H.		
			No further treatment planned for these fields at the		
			present time.		
32	18-Ac.		These fields are plantations of Red, Scotch and White Pine		
42	16-Ac.		approximately 35-years old. They have received one 50%		
			thinning and the present trees average 10"-12" D.B.H.		
		1980-1985	Thin the plantations by removing approximately 50% of the		
			stand to reduce density and thereby increase the growth		
			rate of the remaining trees. In the thinning process		
			eliminate the Scotch Pine and favor the White Pine as		
			ultimate crop trees.		
33	6-Ac.		This field is a plantation of Scotch and White Pine approx-		
			imately 35-years old. It has received one 50% thinning and		
			the present trees are 10"-14" D.B.H.		
		1980-1985	Thin the plantation by removing approximately 50% of the		
			stand to reduce density and thereby increase the growth rate		
			of the remaining trees. In the thinning process eliminate		
			the Scotch Pine and develop a pure stand of White Pine for		
			the ultimate crop.		

NY-103 (Rev. 11/21/63)

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot # 2 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 3/24/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MT
17	164-Ac.		These fields consist of a stand of mixed hardwoods 12"-24"		
30	14-Ac.		D.B.H. Principal species are hard maple, beech, ash, bass-		
45	7-Ac.		wood, cherry and hemlock. They received a cull thinning		
			in 1963 & 1964.		
		1965-			
		1970	Harvest mature trees in these fields on a selective basis,		
			as per Job Sheet No. 6. Preserve den trees in these fields		
			for wildlife habit as outlined in Information Sheet No. 2.		
			See: Farmer's Bulletin No. 1989.		
21	6-Ac.	1980-	These fields are plantations of Red Pine approximately		
		1985			
23	8-Ac.		35-years old. They have received one 50% thinning and		
27	17-Ac.	"	the present trees average 8"-12" D.B.H.		
36	10-Ac.	"	Thin the plantations by removing approximately 50% of the		
37	11-Ac.	"	stand to reduce density and thereby increase the growth		
41	15-Ac.	"	rate of the remaining trees.		
22	5-Ac.		These fields are plantations of European and Japanese Larch		
28	6-Ac.		approximately 35-years old. They have not been thinned and		
			the present trees average 10"-15" D.B.H.		
		1965-			
		1970	Thin the plantations by removing approximately 50%-60% of		
			the stand to reduce density and thereby increase the		
			growth rate of the remaining trees.		

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot # 2 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 3/24/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO
		1975- 1980	Thin the plantation by removing approximately 50% of the stand to reduce density and thereby increase the growth rate of the remaining trees, providing a market is available at the time.		
13	10-Ac.		These fields are plantations of mixed evergreens consisting		
20	15-Ac.		of White Pine and Norway Spruce. They have received one 50% thinning and the present trees average 6"-12" D.B.H.		
		1975- 1980	Thin these plantations by removing approximately 50% of the stand to reduce density and thereby increase the growth rate of the remaining trees, providing a market is available at the time.		
16	99-Ac.		These fields consist of a stand of mixed hardwoods 4"-10"		
19	42-Ac.		D.B.H. Principal species are hard maple, soft maple, beech, ash and elm. Because of low quality (inferior species) and small size (poles) no treatment is planned for these fields at the present time.		
		1965	These fields will remain in their present cover indefinitely for soil erosion control, watershed protection and wildlife habitat.		
			See: Information Sheets NY-36, 37, 38 and 42.		

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot # 2 SCD Erie County

ASSISTED BY Adelbert D. Ward DATE 3/24/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO/
6	22-Ac.		This field is a plantation of mixed evergreens planted in pure stand plots of 2-4 acres each. Trees are spaced 10'x10' and were planted in 1964.		
		1985	Prune and thin the plantation to improve its' value, reduce stand density and increase growth rate of the remaining trees.		
			See: Farmer's Bulletin No. 1989, pages 5 & 8.		
9	20-Ac.	1980-1985	These fields are plantations of mixed evergreens consisting		
10	16-Ac.	"	of Red, Scotch and White Pine approximately 35-years old.		
12	24-Ac.	"	They have received one 50% thinning, the present trees		
14	11-Ac.	"	average 6"-12" D.B.H. and the eventual crop trees have		
15	10-Ac.	"	been pruned. Thin the plantations by removing approximately		
18	18-Ac.	"	50% of the stand to reduce density and thereby increase		
24	9-Ac.	"	the growth rate of the remaining trees.		
25	20-Ac.	"			
26	6-Ac.	"			
11	7-Ac.		This field is a Norway Spruce plantation approximately 35-years old. It has received one 50% thinning and the present trees average 6"-12" D.B.H.		

COOPERATOR Erie County Forestry Dept. - Lot # 2 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 3/24/65

[illegible]

ASSISTED BY Adelbert D. Ward DATE 3/24/65

USDA-SCS-NYATTSVILLE. NO. 11

Record of

CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot # 2 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 3/24/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO
			<u>Objective</u>		
			To manage woodland, under supervision of the Erie County Forester, for the production of timber and other forest products on an economically sound basis.		
			<u>Woodland</u>		
1	18-Ac.		This field consists of a stand of mixed hardwoods with white spruce planted in the open areas in 1957. No treatment planned for this field at the present time.		
2	21-Ac.		This field consists of a stand of mixed hardwoods with larch planted in the open areas in 1963. No treatment planned for this field at the present time.		
3	7-Ac.	1965-1975	This field is a plantation of Scotch Pine planted in 1963. Manage for Christmas tree production. See: Cornell Extension Bulletin 1080.		
5	9-Ac.	1965	Plant this field to trees as per Job Sheet NY-12.		
		1985	Prune and thin the plantation to improve it's value, reduce stand density and increase growth rate of the remaining trees.		
			See: Farmer's Bulletin No. 1989, pages 5 & 8.		

USDA-SCS-NYATTSV1

CONSERVATION PLAN MAP

Prepared by U.S. Department of Agriculture, Soil Conservation Service, cooperating with
ERIE COUNTY — Soil Conservation Unit

Owner: Erie County

Address: Forestry Dept.

Phone: Chaffee -

Operator: Russell B. Fales, For.

Address: East Concord, N.Y.

Phone: 496-7410

Township: Sardinia

County: Erie

State: N.Y.


Plan No.: 2290

Photo No.: ARF-7V-67

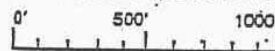
Acres: 329

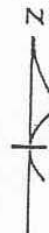
Planner: A.D. Ward

Date Prepared: 3/3/65

 = 1 Acre (Approx.)

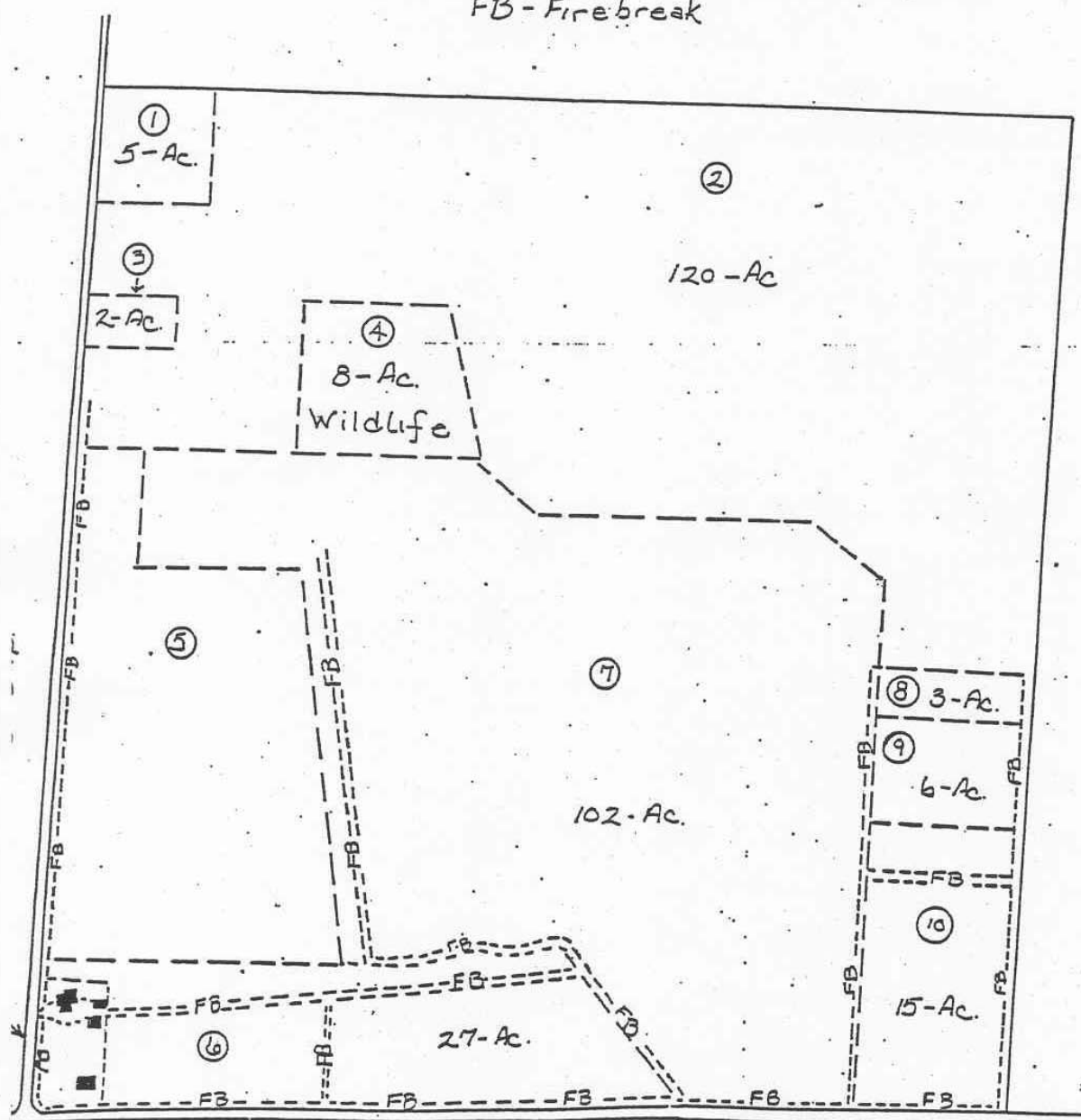
Map Scale:
Approx. 1" = 660'


Scale (Approx.)



LOT # 3

Land Use: Woodland - Unless Indicated
FB - Firebreak



Record of

ASSISTED BY Adelbert D. Ward DATE 3/3/65

235

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #3 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 3/3/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO/
5	38-Ac.		This field is a plantation of White Pine approximately 31-years old. It has not been thinned due to the low quality of the stand. It will be allowed to remain "as is" without further treatment and will serve as a windbreak and "buffer zone" for the protection of the plantations to the East, also for erosion control, watershed protection and cover for wildlife habitat.		
6	27-Ac.		This field is a plantation of Red and Scotch Pine approx- imately 31-years old. It has received one 50% thinning and the present trees average 6" - 10" D.B.H.	7A.	73
		1975-1980	Thin this immature woodlot by removing approximately 50% of the stand to reduce density and thereby increase the growth rate of the remaining trees. See: Job Sheet No. 6 and Farmer's Bulletin No. 1989 for thinning and management information.		
7	102-Ac.		These fields are plantations of Red Pine approximately 31-years old. They have received one 50% thinning and the present trees average 6"-10" D.B.H.	20	73
8	3-Ac.			1	73
10	15-Ac.				
		1975-1985	Thin these immature woodlots the same as planned for field # 6.	7	74

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #3 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 5/3/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO/
			<u>Objective</u>		
			To manage woodland, under supervision of the Erie County Forester, for the production of timber and other forest products on an economically sound basis.		
			<u>Woodland</u>		
1	5-Ac.		This field consists of a stand of mixed hardwoods and will be used as a 4-H demonstration plot. No long term management and treatment is planned for this woodlot.		
2	120-Ac.		This field consists of a stand of mixed hardwoods. Principal species are hard maple, beech, ash, basswood, cherry, soft maple and elm.		
		1990-2000	Remove crop trees in a manner that will encourage regeneration and normal development of a new stand.		
			See: Job Sheet No. 6.		
3	2-Ac.		This field is a plantation of White Spruce planted in 1962.		
		1975-1980	Thin the plantation by removing approximately 50% of the stand to reduce density and thereby increase the growth rate of the remaining trees.		

CONSERVATION PLAN MAP

Prepared by U.S. Department of Agriculture, Soil Conservation Service, cooperating with
ERIE COUNTY — Soil Conservation Unit

Owner: Erie County

Operator: Russell B. Fales, For.

Township: Holland

Photo No.: ARF-7V-60

Address: Forestry Dept.

Address: East Concord, N.Y.

County: Erie

Acres: 264

State: N.Y.


Planner: A.D. Ward

Phone: Chaffee -

Phone: 496-7410

Plan No.: H-4-16

Date Prepared: 3/26/65

 = 1 Acre (Approx.)

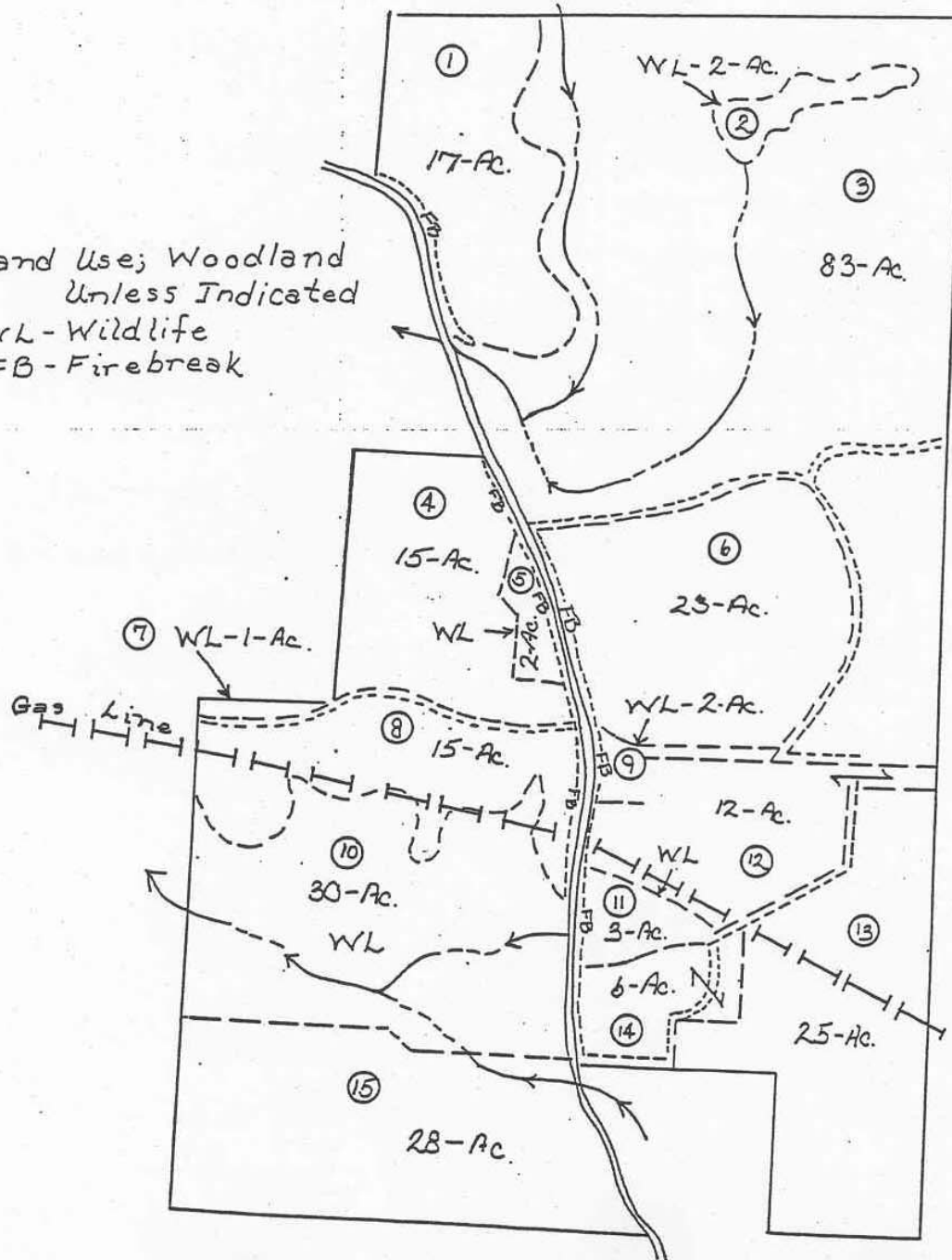
Map Scale:
 Approx. 1" = 660'

0' 500' 1000'
 Scale (Approx.)



LOT # 4

Land Use; Woodland
 Unless Indicated
 WL - Wildlife
 FB - Firebreak



Record of

COOPERATOR Erie County Forestry Dept. - Lot #4 SCD Erie County

ASSISTED BY Adelbert D. Ward DATE 3/26/65

[illegible]

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #4 SCD Erie County

ASSISTED BY Adelbert D. Ward DATE 3/26/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO.
			<u>Objective</u>		
			To manage woodland under supervision of the Erie County Forester, for the production of timber and other forest products on an economically sound basis.		
	<u>Ac.</u>		<u>Woodland</u>		
1	17		These fields are plantations of Red Pine approximately 35 - years old. They have received one 50% thinning, have been pruned and the present trees average 10"-14" D.B.H.		
4	15				
6	23				
8	15				
12	12				
14	6				
		1970-1975	Thin these immature plantations by removing approximately 50% of the stand to reduce density and thereby increase the growth rate of the remaining trees.		
			Fields # 4, 6, 8, semi thinned in 1968 & 1969		
3	83		These fields consist of a stand of mixed hardwoods 12"-20" D.B.H. Principal species are hard maple, beech, ash, cherry, basswood and hemlock.		
13	25				
		1975-1985	Harvest mature trees in these fields on a selective basis, as outlined in Job Sheet No. 6.		
			See: Farmer's Bulletin No. 1989.		
			See Bulletin No. 1972		

CONSERVATION PLAN MAP

Prepared by U.S. Department of Agriculture, Soil Conservation Service, cooperating with
ERIE COUNTY — Soil Conservation Unit


Owner: Erie County
 Operator: Russell B. Fales, For.
 Township: Holland
 Photo No.: ARF-6V-126

Address: Forestry Dept.
 Address: East Concord, N.Y.
 County: Erie
 Acres: 264
 State: N.Y.
 Planner: A.D. Ward

Phone: Chaffee -
 Phone: 496-7410
 Plan No.: H-4-17
 Date Prepared: 3/31/65

 = 1 Acre (Approx.)

Map Scale:
 Approx. 1" = 660'

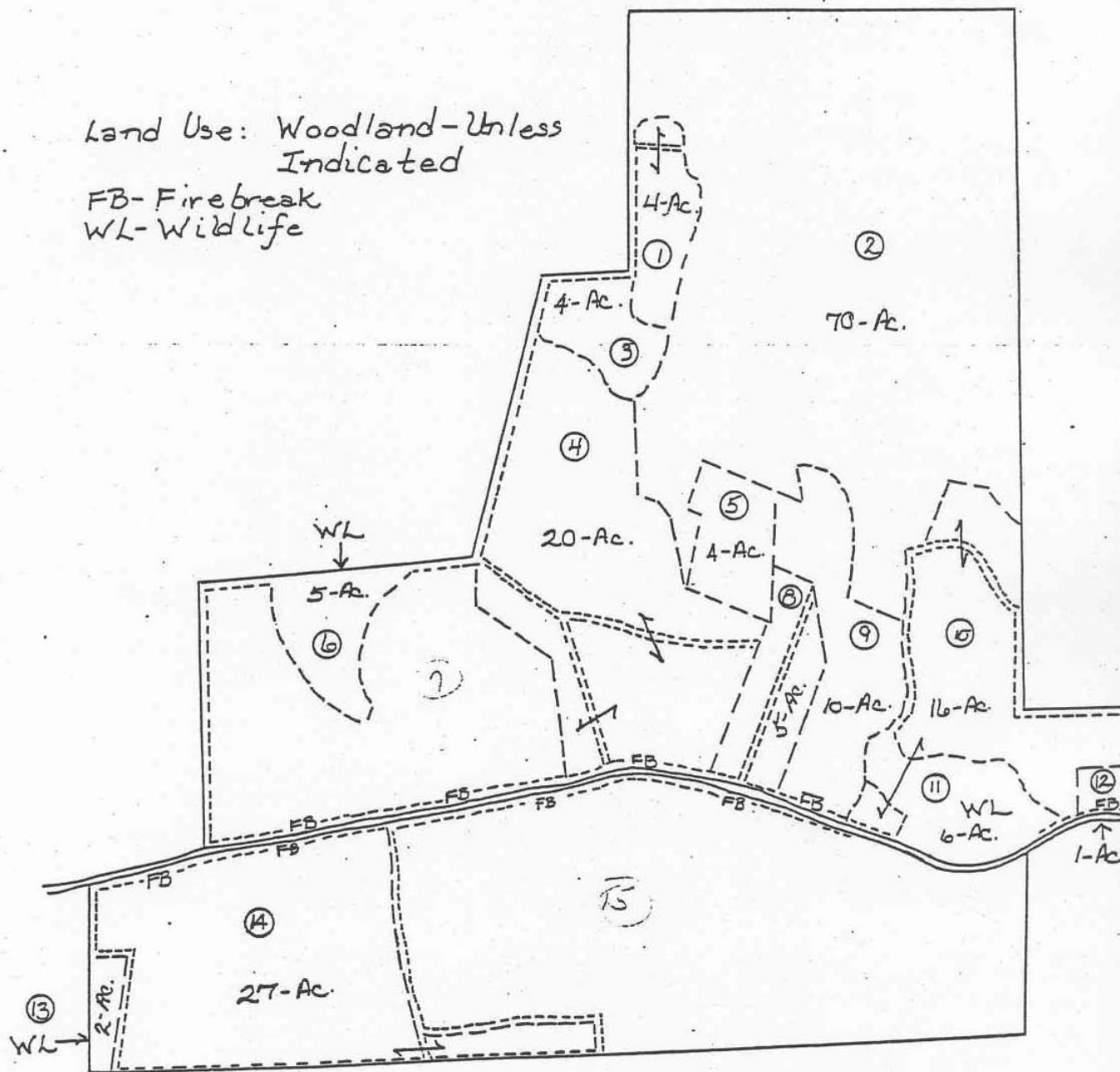

 Scale (Approx.)



LOT #5

Land Use: Woodland - Unless
 Indicated

FB - Firebreak
 WL - Wildlife



Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #5 SCD Erie County

ASSISTED BY Adelbert D. Ward DATE 3/31/65

[illegible]

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #5 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 3/31/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO/
3	<u>Ac.</u> 4		These fields are plantations of Norway Spruce approximately		
5	4		33-years old. The present trees average 4"-8" D.B.H.		
		1965 and on	These fields will remain in their present woodland cover		
			indefinitely, without further treatment, for soil erosion		
			control, watershed protection and wildlife habitat.		
			See: Information Sheets NY - 36,37,38 & 42.		
4	28		These fields are plantations of White Pine approximately		
12	1		33-years old. They have received one 50% thinning, eventual		
			crop trees have been pruned and the present trees average		
			6"-10" D.B.H.		
		1970- 1975	Thin these plantations by removing approximately 50% of the		
			stand to reduce density and thereby increase the growth		
			rate of the remaining trees.		
			See: Job Sheet No. 6 and Farmer's Bulletin No. 1989		
			for thinning and management information.		
8	5		This field is a plantation of Austrian Pine planted in		
			1957 (8-years old).		
		1965 and on	Manage the plantation for Christmas tree production.		
			See: Cornell Extension Bulletin 1080.		

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #5 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 3/31/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO
			<u>Objective</u>		
			To manage woodland, under supervision of the Erie County Forester, for the production of timber and other forest products on an economically sound basis.		
	Ac.		<u>Woodland</u>		
1	4		These fields are plantations of Red Pine approximately		
7	28		33-years old. They have received one 50% thinning,		
10	16		eventual crop trees have been pruned and the present		
14	27		trees average 6"-10" D.B.H. 13A. 1972- F. 11 14		
		1970-1975	Thin these plantations by removing approximately 50% of the stand to reduce density and thereby increase the growth rate of the remaining trees.		
			See: Job Sheet No. 6 and Farmer's Bulletin No. 1989 for thinning and management information.		
2	70		This field consists of a stand of mixed hardwoods and the present trees average 4"-12" D.B.H. Principal species are hard maple, beech, ash, basswood, soft maple and elm.		
			No treatment planned for this field at the present time.		

CONSERVATION PLAN MAP

Prepared by U.S. Department of Agriculture, Soil Conservation Service, cooperating with
ERIE COUNTY — Soil Conservation Unit

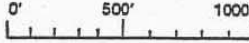
Owner: Erie County
Operator: Russell B. Fales, For.
Township: Holland
Photo No.: ARF-6V-126

Address: Forestry Dept.
Address: East Concord, N.Y.
County: Erie
Acres: 100
State: N.Y.
Planner: A.D. Ward

Phone: Chaffee -
Phone: 496-7410
Plan No.: H-4-18
Date Prepared: 4/7/65

 = 1 Acre (Approx.)

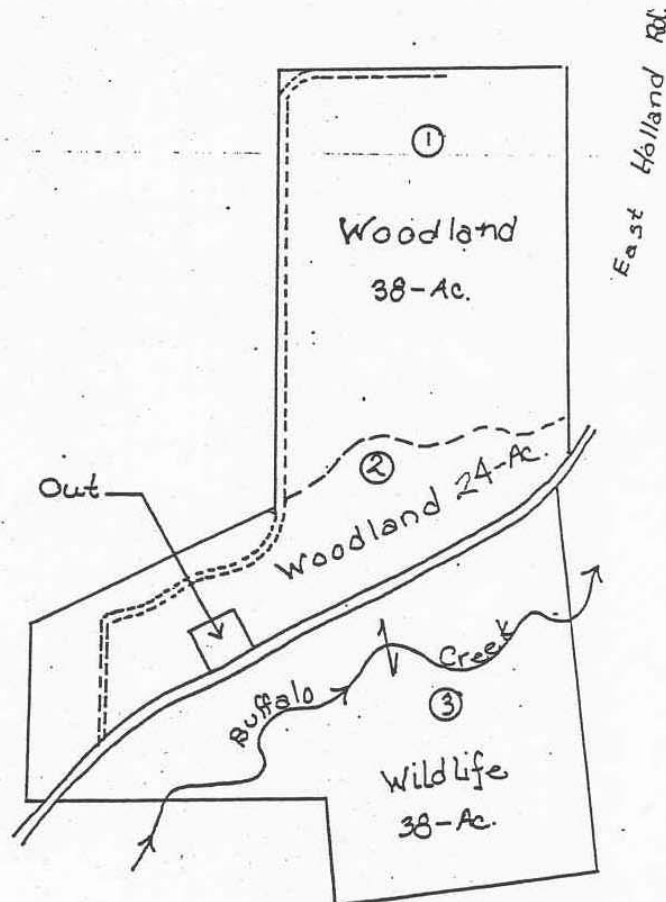
Map Scale:
Approx. 1" = 660'


Scale (Approx.)



LOT #6

Day Rd



COOPERATOR Erie County Forestry Dept. - Lot #6 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 4/7/65

246

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #6 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 4/7/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO/
	<u>Ac.</u>				
			<u>Objective</u>		
			To manage woodland, under supervision of the Erie County Forester, for the production of timber and other forest products on an economically sound basis.		
			<u>Woodland</u>		
1	38		This field consists of a stand of mixed hardwoods 4"-12" D.B.H. Principal species are hard maple, beech, ash, basswood, soft maple and elm. No silvicultural treatment is planned for this field at the present time.		
		1965 and on	It will remain in its present cover indefinitely for soil erosion control, watershed protection and wildlife habitat.		
2	24		<i>pruned Lot #2</i> This field is a plantation of Red Pine 6"-8" D.B.H. and Norway Spruce 4"-6" D.B.H. approximately 35-years old. This plantation has not been thinned but the eventual crop trees have been pruned. No further silvicultural treatment is planned for this field at the present time.		
		1965	It will remain in its' present cover indefinitely for soil erosion control, watershed protection and wildlife habitat.		

CONSERVATION PLAN MAP

Prepared by U.S. Department of Agriculture, Soil Conservation Service, cooperating with
ERIE COUNTY — Soil Conservation Unit

Owner: Erie County
Operator: Russell B. Fales, For.
Township: Holland
Photo No.: ARF-6V-58

Address: Forestry Dept.
Address: East Concord, N.Y.
County: Erie
Acres: 76
State: N.Y.
Planner: A.D. Ward

Phone: Chaffee -
Phone: 496-7410
Plan No.: H-4-19
Date Prepared: 4/22/65

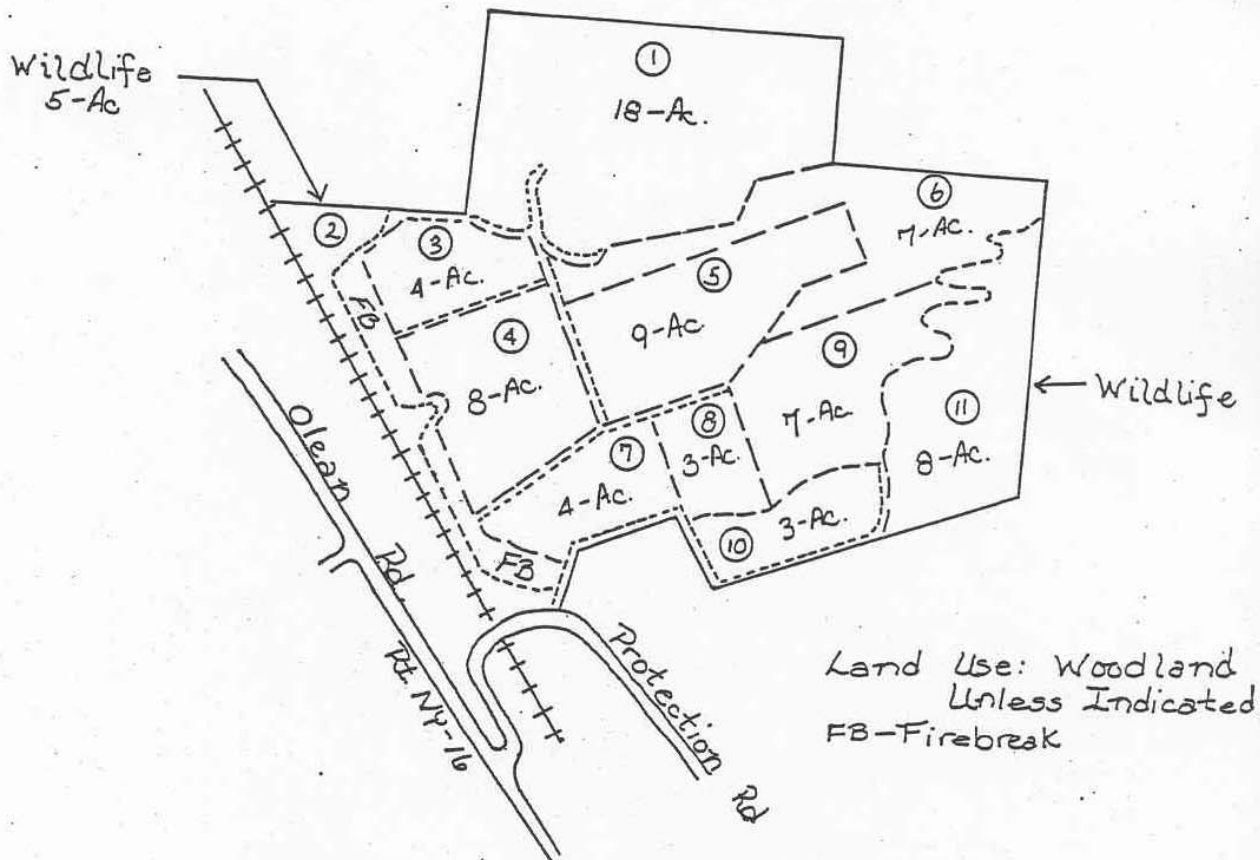
 = 1 Acre (Approx.)

Map Scale:
Approx. 1" = 660'

0' 500' 1000'
Scale (Approx.)



LOT #17



Record of

COOPERATOR Erie County Forestry Dept. - Lot #7

SCD Erie County

ASSISTED BY Adelbert D. Ward

DATE 4/22/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPL AMOUNT
	AMOUNT	YR		
10	3 Ac.		This field is a plantation of Red Pine planted in 1939. The present trees average 6"-10" D.B.H. They have received no silvicultural treatment up to the present time. 1970- 1975 Prune and thin this plantation to improve the quality, reduce stand density and increase growth rate of the remaining trees. See: Job Sheet No. 6 and Farmer's Bulletin No. 1989.	
			<u>Wildlife</u>	
2	5 Ac.	1965	These fields will remain in their present cover indefinitely	
11	8 Ac.	1965	for soil erosion control, watershed protection and wildlife habitat. See: Information Sheets NY-36, 37, 38 & 42.	
			<u>Structural Practices</u>	
2	1500ft.	1965 and on	Construct and maintain firebreaks in this field as indicated on the Conservation Plan Map.	

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #7

SCD Erie County

ASSISTED BY Adelbert D. Ward

DATE 4/22/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPI AMOUNT
	AMOUNT	YR		
7	4 Ac.		This field is a plantation of White Pine planted in 1927.	
			The present trees average 6"-10" D.B.H. They have received	
			no silvicultural treatment up to the present time.	
		1970-		
		1975	Prune and thin this plantation to improve the quality, .	
			reduce stand density and increase growth rate of the	
			remaining trees.	
			See: Farmer's Bulletin No. 1989, pages 5 & 8.	
8	3 Ac.		This field is a plantation of mixed White Pine and Norway	100.
			Spruce planted in 1927. The present trees average 6"-10"	
			D.B.H. No silvicultural treatment has been carried out and	
			none is planned at the present time.	
9	7 Ac.		This field is a plantation of mixed Red Pine and Norway	4
			Spruce planted in 1937. The present trees average 4"-8"	
			D.B.H. They have received no silvicultural treatment up to	
			the present time.	
		1970-		
		1975	Prune eventual Red Pine crop trees to improve their quality	
			and thin the plantation to reduce stand density and increase	
			growth rate of the remaining trees.	
			See: Job Sheet No. 6 and Farmer's Bulletin No. 1989.	

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #7 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 4/22/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPL AMOUNT
	AMOUNT	YR		
		1975- 1980	Thin this plantation by removing approximately 50% of the stand to reduce density and thereby increase the growth rate of the remaining trees. See: Job Sheet No. 6 and Farmer's Bulletin No. 1989.	
5	9 Ac.		This field is a plantation of White Pine planted in 1927. It has received one 50% thinning and the eventual crop trees have been pruned. The present trees average 8"-16" D.B.H.	
		1985	Thin this plantation by removing approximately 50% of the stand to reduce density and thereby increase the growth rate of the remaining trees.	
		1985	In the thinning operation, remove cull trees and make a harvest cutting of the large, sound trees. See: Job Sheet No. 6 and Farmer's Bulletin No. 1989.	
6	7 Ac.		This field is a plantation of Norway Spruce planted in 1937. The present trees average 4"-8" D.B.H. They have received no silvicultural treatment up to the present time.	
		1980- 1985	Thin this plantation by removing approximately 50% of the stand to reduce density and thereby increase the growth rate of the remaining trees.	

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #7 SCD Erie County

ASSISTED BY Adelbert D. Ward DATE 4/22/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIE	
	AMOUNT	YR		AMOUNT	M
			<u>Objective</u>		
			To manage woodland, under supervision of the Erie County Forester, for the production of timber and other forest products on an economically sound basis.		
			<u>Woodland</u>		
1	18 Ac.		This field consists of a stand of mixed hardwoods 20"-36" D.B.H. Principal species are hard maple, beech, ash, cherry and basswood.		
		1965-1966	Harvest mature trees on a selective basis, as outlined in Job Sheet No. 6.		
			See: Farmer's Bulletin No. 1989.		
3	4 Ac.		This field is a plantation of mixed Norway Spruce and Scotch Pine planted in 1927. The present trees average 6"-12" D.B.H. This plantation has not been thinned or pruned. Norway spruce will develop into crop trees. No silvicultural treatment is planned for this field at the present time.		
4	8 Ac.		This field is a plantation of Scotch Pine planted in 1927.		


CONSERVATION PLAN MAP

Prepared by U.S. Department of Agriculture, Soil Conservation Service, cooperating with
ERIE COUNTY — Soil Conservation Unit

Owner: Erie County
Operator: Russell B. Fales, For.
Township: Concord
Photo No.: ARF-4V-38

Address: Forestry Dept.
Address: East Concord, N.Y.
County: Erie
Acres: 75

Phone: Chaffee -
Phone: 496-7410
Plan No.: 2292
Planner: A.D. Ward
Date Prepared: 4/27/65

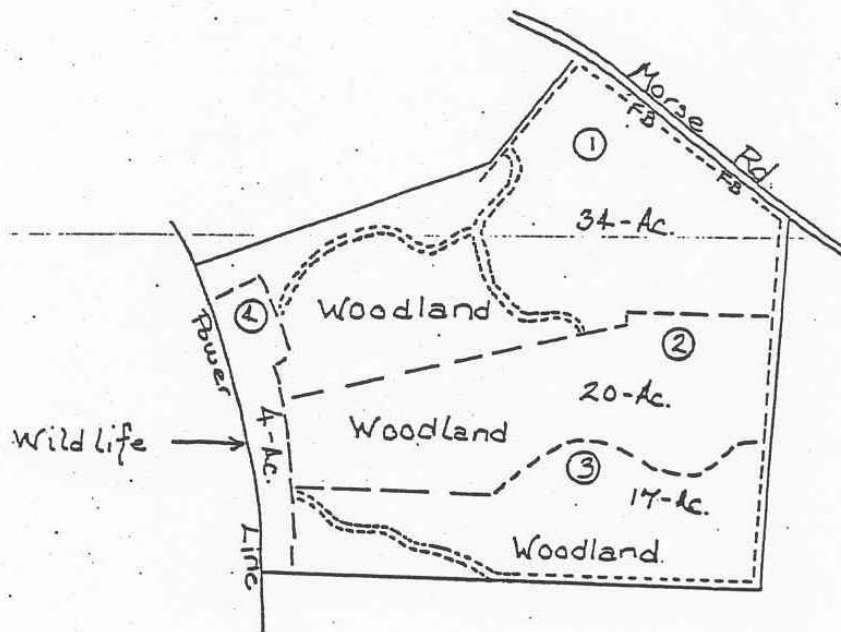
 = 1 Acre (Approx.)

Map Scale:
Approx. 1" = 660'

0' 500' 1000'
Scale (Approx.)



LOT #8



Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Department - Lot # 8 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 4/27/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	YR
			<u>Objective</u>		
			To manage woodland, under supervision of the Erie County Forester, for the production of timber and other forest products on an economically sound basis.		
	<u>Ac.</u>		<u>Woodland</u>		
1	34		These fields are plantations of Norway Spruce approximately		
3	17		33 - years old. The present trees average 6"-12" D.B.H. They have received no silvicultural treatment up to the present time.		
		1975- 1980	Thin these plantations by removing approximately 50% of the stand to reduce density and thereby increase the growth rate of the remaining trees.		
			See: Job Sheet No. 6 and Farmer's Bulletin No. 1989.		
2	20		This field consists of a stand of mixed hardwoods 12"-24" D.B.H. Principal species are hard maple, beech, ash, cherry, basswood and some hemlock.		
		1975- 1980	Harvest mature trees on a selective basis, as outlined in Job Sheet No. 6.		

Record of

COOPERATOR Erie County Forestry Department - Lot #8 SCD Erie County

ASSISTED BY Adelbert D. Ward DATE 4/27/65

[illegible]

CONSERVATION PLAN MAP

Prepared by U.S. Department of Agriculture, Soil Conservation Service, cooperating with
ERIE COUNTY — Soil Conservation Unit

Owner: Erie County

Operator: Russell B. Fales, For.

Township: Concord

Photo No.: ARF-4V-38

Address: Forestry Dept.

Address: East Concord, N.Y.

County: Erie

Acres: 278

State: N.Y.

Planner: A.D. Ward

Phone: Chaffee -

Phone: 496-7410


Plan No.: 2294

Date Prepared: 5/14/65

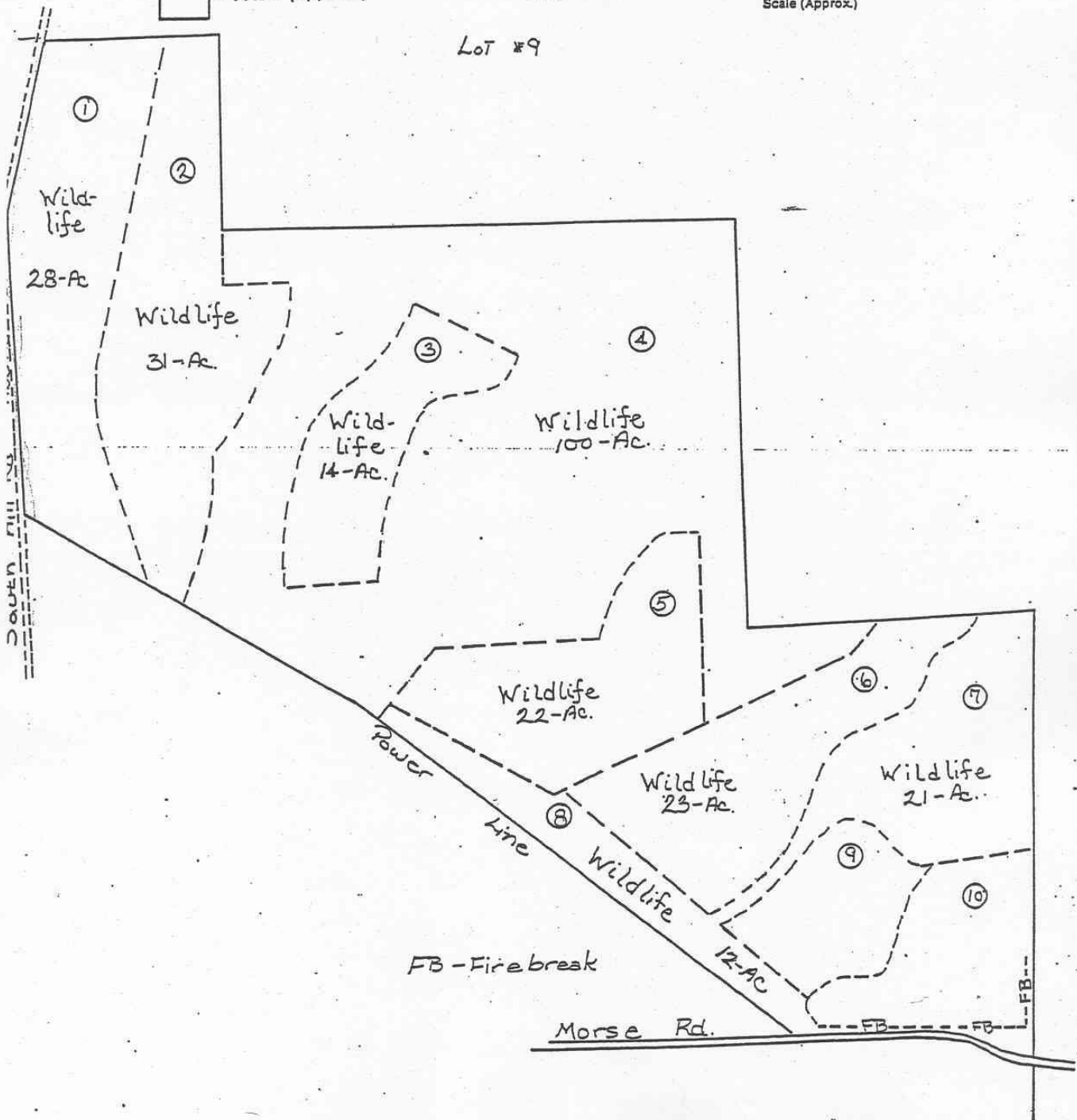
Map Scale:
 Approx. 1" = 660'

0' 500' 1000'
 Scale (Approx.)



 = 1 Acre (Approx.)

Lot #9



Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #9

SCD Erie County

ASSISTED BY Adelbert D. Ward

DATE 5/14/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO
	<u>Ac.</u>		<u>Objective</u>		
			To manage woodland, under supervision of the Erie County Forester, for the production of timber and other forest products on an economically sound basis.		
			<u>Woodland</u>		
10	16		This field is a plantation of Norway Spruce approximately 35-years old. The present trees average 8" - 12" D.B.H. They have received no silvicultural treatment up to the present time.		
		1975-1980	Thin this plantation by removing approximately 50% of the stand to reduce density and thereby increase the growth rate of the remaining trees. Prune eventual crop trees to improve the quality of the timber crop.		
			<u>Wildlife</u>		
1	28		These fields are plantations of Scotch Pine approximately 35-years old. The present trees average 8"-12" D.B.H. They have received no silvicultural treatment up to the present time and none is planned for the future.		
6	23				
9	11				
		1965	These fields will remain in their present cover indefinitely for soil erosion control, watershed protection and wildlife habitat.		

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #9

SCD Erie County

ASSISTED BY Adelbert D. Ward

DATE 5/14/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO.
2	Ac. 31		This field is a plantation of Norway Spruce approximately 35-years old mixed with natural hardwoods. The present trees average 6" - 10" D.B.H. They have received no silvicultural treatment up to the present time and none is planned for the future.		
		1965	This field will remain in its' present cover indefinitely for soil erosion control, watershed protection and wildlife habitat.		
3	14		These fields are plantations of Scotch Pine approximately		
5	22		35-years old mixed with natural hardwoods. The present trees average 8" - 12" D.B.H. They have received no silvicultural treatment up to the present time and none is planned for the future.		
		1965	These fields will remain in their present cover indefinitely for soil erosion control, watershed protection and wildlife habitat.		
4	100		These fields consist of a stand of mixed hardwoods 4"-12"		
7	21		D.B.H. They have received no silvicultural treatment up to the present time and none is planned for the future.		

COOPERATOR Erie County Forestry Dept. - Lot # 9 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 5/14/65

MEMPHIS-ATTSVILLE, MO. 19

CONSERVATION PLAN MAP

Prepared by U.S. Department of Agriculture, Soil Conservation Service, cooperating with
ERIE COUNTY — Soil Conservation Unit

Owner: Erie County

Operator: Russell B. Fales, For.

Township: Boston

Photo No.: ARF-3V-62

Address: Forestry Dept.

Address: East Concord, N.Y.

County: Erie

Acres: 230

State: N.Y.

Planner: A.D. Ward

Phone: Chaffee -

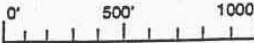
Phone: 496-7410

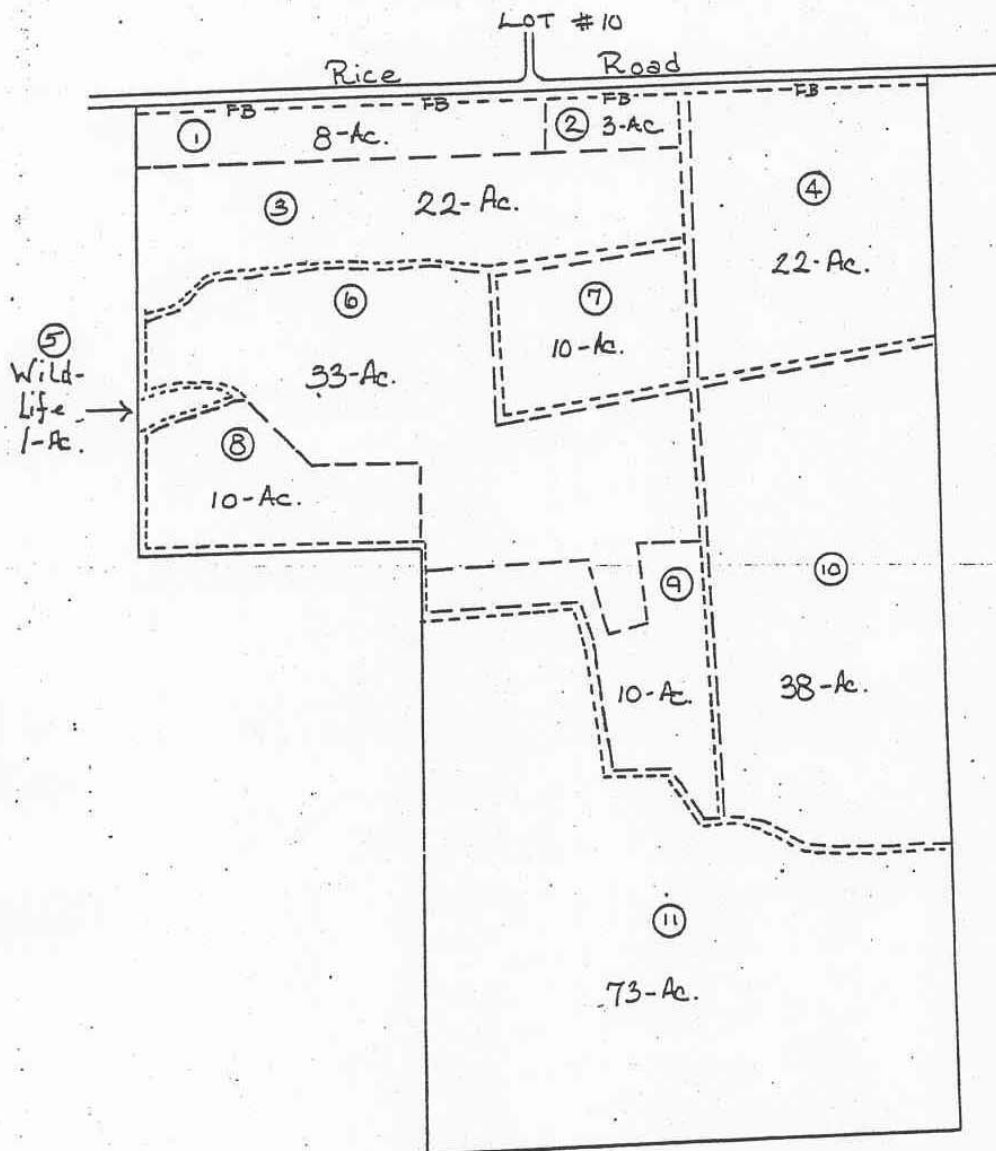
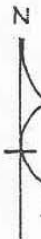
Plan No.: 2293

Date Prepared: 5/6/65

 = 1 Acre (Approx.)

Map Scale:
 Approx. 1" = 660'


 Scale (Approx.)



Land Use: Woodland - Unless Indicated

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot # 10 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 5/6/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO
	<u>Ac.</u>		<u>Objective</u>		
			To manage woodland under supervision of the Erie County Forester for the production of timber and other forest products on an economically sound basis.		
			<u>Woodland</u>		
1	8		This field is a mixed plantation of Red Pine, Scotch Pine, Larch and Norway Spruce 6" - 10" D.B.H. approximately 26 years old. It has received no silvicultural treatment up to the present time.		
		1975-1980	Thin this immature plantation by removing approximately 50% of the stand to reduce density and thereby increase the growth rate of the remaining trees. Remove trees of poor form and inferior species (Scotch Pine) to improve the growth of desirable trees.		
		1975-1980	Prune eventual crop trees consisting of Red Pine and Larch to improve the quality of the wood crop.		
2	3		This field is a plantation of Red Oak 4"-8" D.B.H. approximately 26-years old. It has received no silvicultural treatment up to the present time and none is planned.		

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot # 10 SCD Erie County

ASSISTED BY Adelbert D. Ward DATE 5/6/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO.
3	Ac. 22		This field is a plantation of White Pine mixed with a natural seeding of White Ash. The White Pine is approximately 26 years old and the trees average 4"-8" D.B.H. They have received no silvicultural treatment up to the present time and none is planned.		
4	22		These fields are a mixed plantation of Red and White Pine 6"-10" D.B.H. approximately 35 years old. They have received no silvicultural treatment up to the present time.		
10	38		received no silvicultural treatment up to the present time.		
		1975- 1980	Thin these plantations by removing approximately 50% of the stand to reduce density and thereby increase the growth rate of the remaining trees.		
		1975- 1980	Prune eventual crop trees to improve the quality of the wood crop.		
6	33		This field is a mixed plantation of Red, White and Scotch Pine 4"-10" D.B.H. approximately 35-years old. It has received no silvicultural treatment up to the present time.		
		1975- 1980	Thin the plantation by removing approximately 50% of the stand to reduce density and thereby increase the growth rate of the remaining trees. Remove trees of poor form and inferior species (Scotch Pine) to improve the growth of desirable trees.		

Record of

CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot # 10 SCD Erie County

ASSISTED BY Adelbert D. Ward DATE 5/6/68

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO
	Ac.	1975- 1980	Prune eventual crop trees to improve the quality of the wood crop.		
7	10		This field is a plantation of Norway Spruce planted in 1940 and 1959. It has received no silvicultural treatment and none is planned.		
8	10		This field is a mixed plantation of Red and Scotch Pine 4"-10" D.B.H. approximately 35 - years old. It has received no silvicultural treatment up to the present time.		
		1975- 1980	Thin the plantation by removing approximately 50% of the stand to reduce density and thereby increase the growth rate of the remaining trees. Remove trees of poor form and inferior species (Scotch Pine) to improve the growth of desirable trees.		
		1975- 1980	Prune eventual crop trees to improve the quality of the wood crop.		
9	10		This field is a plantation of Red Pine 6"-10" D.B.H. approx- imately 35-years old. It has received no silvicultural treatment up to the present time.		

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot # 10

SCD Erie County

ASSISTED BY Adelbert D. Ward

DATE 5/6/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO.
	<u>Ac.</u>	1975- 1980	Thin the plantation by removing approximately 50% of the stand to reduce density and thereby increase the growth rate of the remaining trees.		
		1975- 1980	Prune eventual crop trees to improve the quality of the wood crop.		
11	73		This field consists of a stand of mixed hardwoods 14"-30" D.B.H. Principal species are hard maple, beech, ash, cherry, basswood and hemlock.	73	7.
		1965- 1970	Harvest mature trees in this field on a selective basis as outlined in Job Sheet No. 6.		
			<u>Wildlife</u>		
5	1	1965 and on	This field will remain in it's present vegetative cover indefinitely for soil erosion control, watershed protection and wildlife habitat.		

CONSERVATION PLANNING DECISIONS AND PROGRESS IN APPLICATION

ASSISTED BY Adelbert D. Ward DATE 5/6/65

265

CONSERVATION PLAN MAP

Prepared by U.S. Department of Agriculture, Soil Conservation Service, cooperating with
ERIE COUNTY — Soil Conservation Unit

Owner: Erie County

Address: Forestry Dept.

Phone: Chaffee -

Operator: Russell B. Fales, For.

Address: East Concord, N.Y.

Phone: 496-7410

Township: Sardinia

County: Erie

State: N.Y.


Plan No.: H-4-21

Photo No.: ARF-7V-59

Acres: 94

Planner: A.D. Ward

Date Prepared: 5/21/65

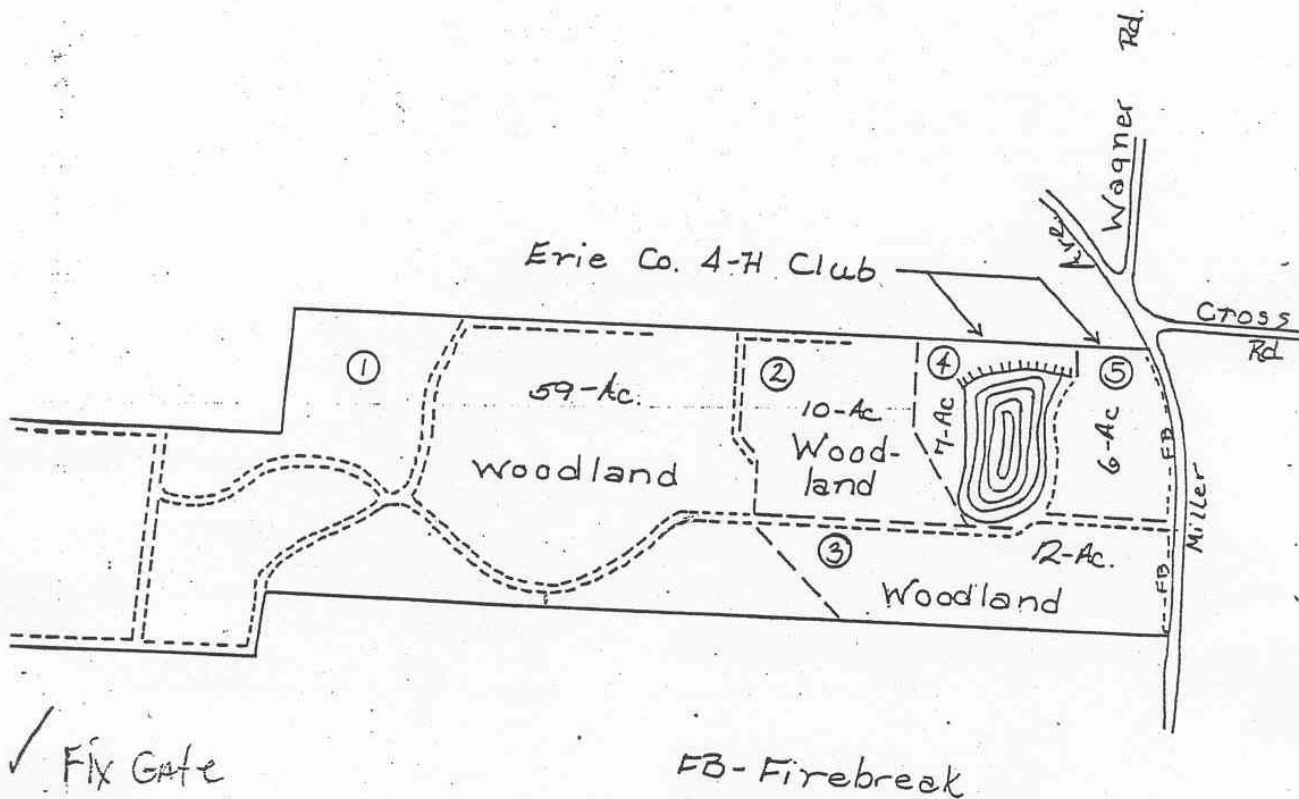
 = 1 Acre (Approx.)

Map Scale:
 Approx. 1" = 660'

0' 500' 1000'
 Scale (Approx.)



LOT #11



Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #11 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 5/21/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO.
	<u>Ac.</u>		<u>Objective</u>		
			To manage woodland, under supervision of the Erie County Forester, for the production of timber and other forest products on an economically sound basis.		
			<u>Woodland</u>		
1	59		This field consists of a stand of mixed hardwoods 12"-24" D.B.H. Principal species are hard maple, beech, ash, cherry, basswood and hemlock.		
		1975- 1985	Harvest mature trees in this field on a selective basis, as outlined in Job Sheet No. 6.		
2	10		These fields are a mixed plantation of Red and Scotch Pine 6"-10" D.B.H. planted in 1942. They have received no silvicultural treatment up to the present time.		
		1975- 1980	Thin these plantations by removing the Scotch Pine to reduce density and thereby increase the growth rate of the crop trees (Red Pine). Prune eventual crop trees of Red Pine to improve the quality of the wood crop.		
			See: Farmer's Bulletin # 1989.		
			<i>Pruned to 1470</i>		

Record of

ASSISTED BY Adelbert D. Ward DATE 5/21/65

268

CONSERVATION PLAN MAP

Prepared by U.S. Department of Agriculture, Soil Conservation Service, cooperating with
ERIE COUNTY — Soil Conservation Unit

Owner: Erie County
 Operator: Russell B. Fales, For.
 Township: Sardinia
 Photo No.: ARF-4V-132

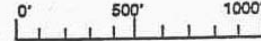
Address: Forestry Dept.
 Address: East Concord, N.Y.
 County: Erie
 Acres: 100

State: N.Y.
 Planner: A.D. Ward

Phone: Chaffee -
 Phone: 496-7410
 Plan No.: 2295
 Date Prepared: 6/4/65

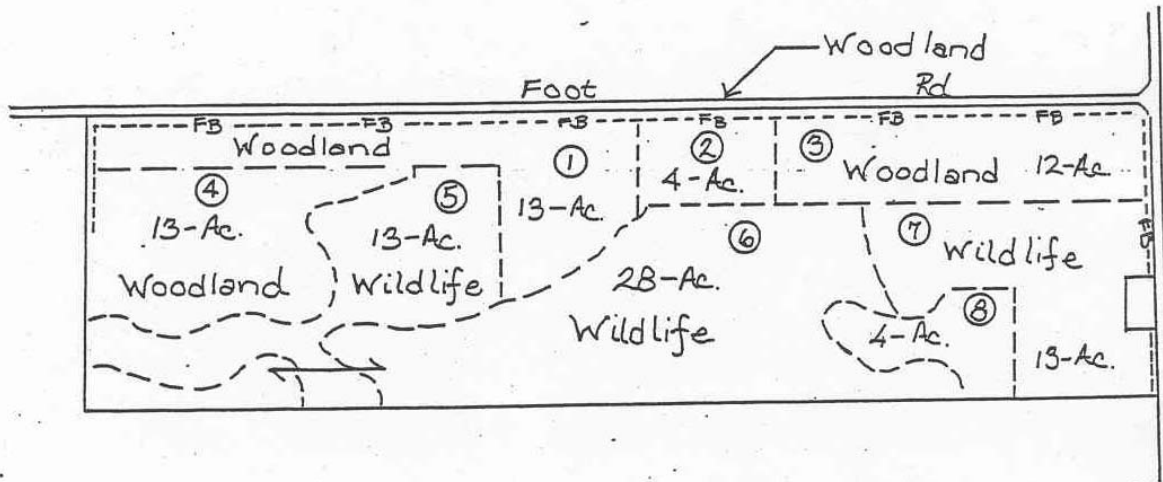
 = 1 Acre (Approx.)

Map Scale:
 Approx. 1" = 660'


 Scale (Approx.)



LOT #12



FB-Firebreak

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie Co. Forestry Dept. - Lot # 12 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 6/4/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO/
	<u>Ac.</u>		<u>Objective</u>		
			To manage woodland, under supervision of the Erie County Forester, for the production of timber and other forest products on an economically sound basis.		
			<u>Woodland</u>		
1	13		This field is a plantation of White Spruce approximately 22 - years old. The present trees average 4"-6" D.B.H. They have received one 50% thinning and no more silvicultural treatment is planned at the present time.		
2	4		This field is a plantation of Norway Spruce approximately 22 - years old. The present trees average 4"-6" D.B.H. They have received one 50% thinning and no more silvicultural treatment is planned at the present time.		
3	12		This field is a plantation of Scotch Pine and Norway Spruce approximately 22-years old. The present trees average 4"-6" D.B.H. The Norway Spruce have received one 50% thinning and no more silvicultural treatment is planned at the present time. The Scotch Pine have received no silvicultural treatment and none is planned for the future.		

COOPERATOR Erie County Forestry Dept. - Lot # 12 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 6/4/65

271

COOPERATOR	Erie County Forestry Dept. - Lot # 12	SCD	Erie County
------------	---------------------------------------	-----	-------------

ASSISTED BY Adelbert D. Ward DATE 6/4/65

272

CONSERVATION PLAN MAP

Prepared by U.S. Department of Agriculture, Soil Conservation Service, cooperating with
 ERIE COUNTY — Soil Conservation Unit

Owner: Erie County
 Operator: Russell B. Fales, For.
 Township: Concord
 Photo No.: ARF-4V-39

Address: Forestry Dept.
 Address: East Concord, N.Y.
 County: Erie
 Acres: 295

Phone: Chaffee -
 Phone: 496-7410
 Plan No.: 822
 Date Prepared: 6/15/65

State: N.Y.
 Planner: A.D. Ward

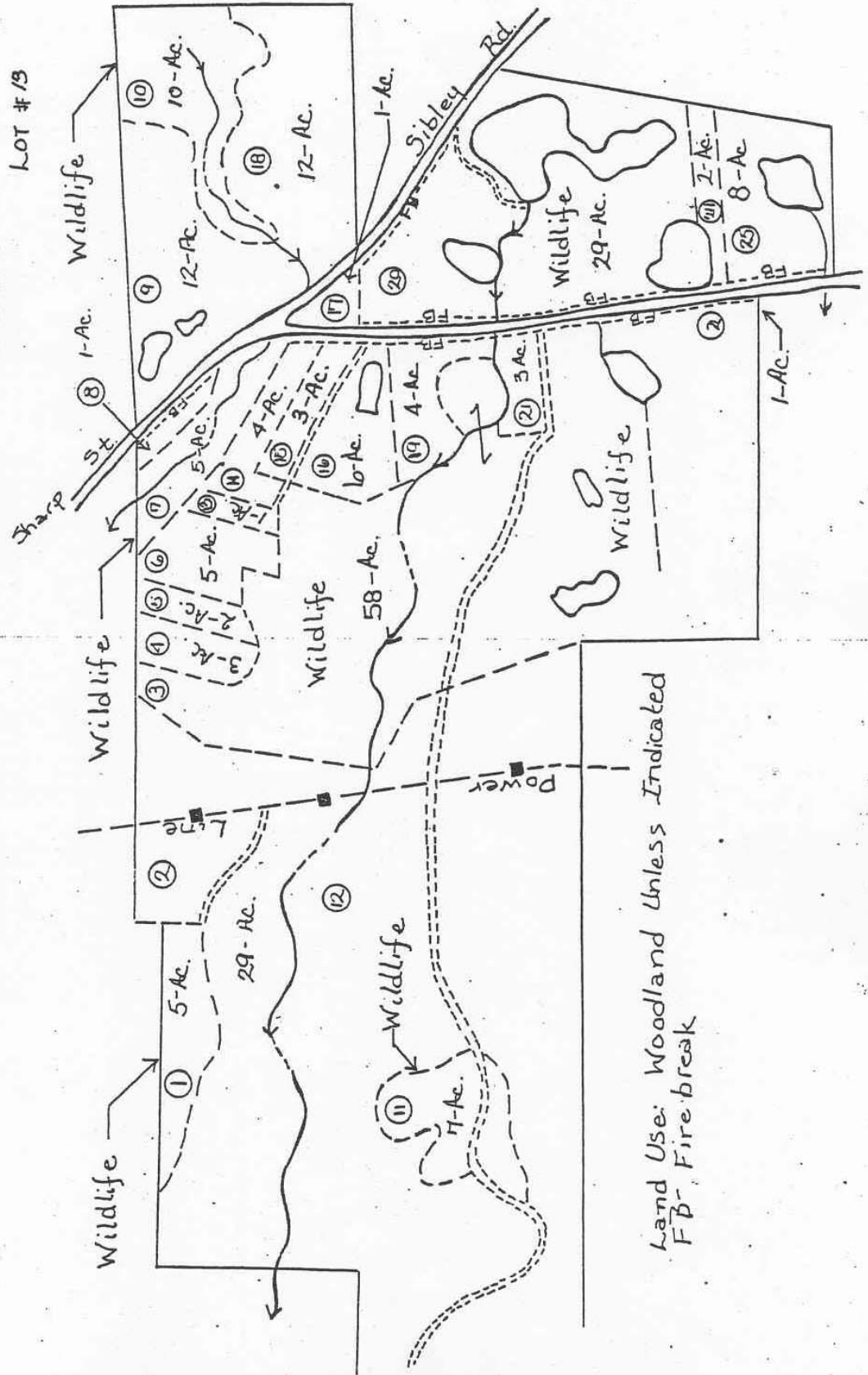
□ = 1 Acre (Approx.)

Map Scale:
 Approx. 1" = 660'

0' 500' 1000'
 Scale (Approx.)



LOT #13



Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #13 SCD Erie County

ASSISTED BY Adelbert D. Ward DATE 6/15/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO
	<u>Ac.</u>				
			<u>Objective</u>		
			To manage woodland, under supervision of the Erie County		
			Forester, for the production of timber and other forest		
			products on an economically sound basis.		
			<u>Woodland</u>		
2	29		These fields consist of a stand of mixed hardwoods 6"-18"		
12	74		D.B.H. Principal species are beech, hard maple, cherry,		
	103		ash, basswood and hemlock. 10 Ac. Thinned	10	70
	about 1995		Harvest mature trees in these fields on a selective basis,		
			as outlined in Job Sheet No. 6.		
			<u>Species</u>		
5	2		Austrian Pine		
6	5		Austrian Pine & White Spruce		
9	11		White Spruce & White Pine		
14	4		Austrian Pine		
18	12		Scotch Pine, White Pine & White Spruce		
			The fields listed above were planted between 1949-1952 to		
			the species indicated.		
		1955 and on	Manage for Christmas tree production as outlined in		
			Cornell Extension Bulletin 1080.		

Record of
CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #13 SCD Erie County
ASSISTED BY Adelbert D. Ward DATE 6/15/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT						APPLIED	
	AMOUNT	YR							AMOUNT	MO/
	Ac.		Species							
4	3		Red Pine							
8	1		White Pine							
13	1		Larch							
15	3		White Pine							
16	5		Red Pine							
17	1		Larch							
19	4		White Pine							
21	3		Red & White Pine							
22	9		Red Pine			Pruned			90%	65
23	1		Larch							
24	2		Red Pine							
25	7		Larch							
	40		The fields listed above were planted between 1949-1952 to							
			the species indicated. They range in size from 4"-6" D.B.H.							
4	3	1975-1985	Thin these plantations by removing approximately 50% of							
8	1		the stand to reduce density and thereby increase the							
15	3									
16	5									
19	4									
21	3	1975-1985	Prune eventual crop trees in these plantations to improve							
22	9		the quality of the wood crop.							
24	2									
	30		See: Farmer's Bulletin No. 1989.							

ASSISTED BY Adelbert D. Ward DATE 6/15/65

276

Record of

CONSERVATION PLANNING DECISIONS
AND PROGRESS IN APPLICATION

COOPERATOR Erie County Forestry Dept. - Lot #13 SCD Erie County

ASSISTED BY Adelbert D. Ward DATE 6/15/65

FIELD NUMBER	PLANNED		LAND USE AND TREATMENT	APPLIED	
	AMOUNT	YR		AMOUNT	MO
	<u>Ac.</u>	<u>1949- 1952</u>	Plant open areas in the fields listed below to trees as		
			indicated:		
1	5		Scotch Pine		
3	25		Scotch Pine & Jack Pine		
4	3		Red Pine		
5	2		Austrian Pine		
6	5		Austrian Pine & White Spruce		
8	1		White Pine		
9	11		White Spruce & White Pine		
11	7		Scotch Pine		
13	1		Larch		
14	4		Austrian Pine		
15	3		White Pine		
16	5		Red Pine		
17	1		Larch		
18	12		Scotch Pine, White Pine & White Spruce		
19	4		White Pine		
20	22		Scotch Pine, Red Pine & Larch		
21	3		Red Pine & White Pine		
22	9		Red Pine		
23	1		Larch		
24	2		Red Pine		

