

The Eliot Town Forest  
Woodlands Report  
and  
Management Plan

April 2009



Eliot Conservation Commission

This report and plan is provided for the Inhabitants of the Town of Eliot, Maine by the Eliot Conservation Commission as a source of information and guidance for the management of the Eliot Town Forest Woodlots located on Punkintown Road and Johnson Lane in Eliot. The study, report and plan were funded with Conservation Committee funds, donations, and grant funding from the Maine Forest Service Project Canopy program.

Project Canopy is funded by the USDA Forest Service Community Forestry Assistance Program. The USDA Forest Service Urban and Community Forestry Program was authorized by the Cooperative Forestry Assistance Act of 1978 (PL95-313) and revised by the 1990 Farm Bill (PL101-624) to promote natural resource management in populated areas and improve quality of life.

The Town of Eliot Conservation Commission applied for and received a Project Canopy Planning and Education Grant in 2008 for the purpose of paying for the professional services needed to prepare this report and plan. The Commission engaged the services of Parker Forestry Associates, LLC of North Berwick, Maine to provide the forestry services for the project. The Commission also provided time for preparing portions of the plan related to public use of the properties and other aspects of the land conservation efforts associated with the properties.

The expenses and donated time met the requirements of the Project Canopy Grant that the town pay for and/or provide donated services thus enabling the Town to receive the grant.

Map sketches presented in this plan were drawn at the office of Parker Forestry Associates, LLC by David C Parker, ACF unless otherwise noted. Maps are sketches unless otherwise noted and are not to scale unless a scale is indicated on a map sketch.

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Historical, cultural, and archaeological

Recreational opportunities information

Aesthetic quality information

Natural feature information

Environmental values protection information

Town of Eliot, Maine

1333 State Road

Eliot, ME 03903

207-439-1813

Acceptance of the Plan

This plan is accepted by the Eliot Conservation Commission this \_\_\_\_day of \_\_\_\_\_, \_\_\_\_  
by Members:

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\_\_\_\_\_

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\_\_\_\_\_

David C Parker, ACF

Maine Licensed Professional Forester # 218



The Town Forest Properties. . . . .	1
The Planning Process. . . . .	3
The landowner's long term goals . . . . .	3
Eliot Town Forest	
Lot Key Map. . . . .	4
The Record of Ownership. . . . .	5
Title Conflicts. . . . .	6
Plan Summary. . . . .	7
The Eliot Town Forest Property Information. . . . .	8
Interaction with Surrounding Properties. . . . .	11
Rare and Endangered Species in the Area of the Town Forest. . . . .	12
The Forest Report. . . . .	15
The Forest Soils. . . . .	17
Water Quality and Forestry Operations. . . . .	18
Woodlot Access. . . . .	19
Forest Laws. . . . .	19
Timber Stand Information Tables and Stand Prescriptions. . . . .	20
Stand 1. . . . .	21
Stands 2 & 3. . . . .	22
Stand #4 . . . . .	25
Stand # 5 . . . . .	29
Stand # 6. . . . .	32
Stand # 7 . . . . .	35
Stand # 8. . . . .	38
Stands # 9 & 10. . . . .	41
Stands # 11 & 12. . . . .	44
Stand 13. . . . .	47
Estimation of Forest Products Value on The Eliot Town Forest Woodlots – 2009. . . . .	50
Fish and Wildlife Habitat. . . . .	51
Permanent wildlife plantings. . . . .	51
Forest openings. . . . .	52
Travel corridors. . . . .	52
Wildlife water supplies. . . . .	52
Riparian zone management. . . . .	52
Snag trees and Den trees. . . . .	52
Woody debris. . . . .	53
Mast trees. . . . .	53
Soil Type Technical Descriptions. . . . .	54

## The Town Forest Properties

The Town of Eliot holds title to several parcels of land in the northern area of the town near York Pond. The lots are located on Punkintown Road and Johnson Lane which are private roads to the north of Brixham Road which in the past public roads the allowed travel between Brixham Road and the Town of South Berwick. The properties were used as homesteads, farmland and woodlots in the past where people lived by working the land to sustain themselves. History tells us the as times changed working the land became passe and the people moved on to other venues of life. The forest regrew on the abandoned homesteads, fields and pastures presenting us with the forested landscape of today. The inhabitants of Eliot saw fit that the properties were purchased by the Town to be held as a Town Forest during the 1990's at the recommendation of the Eliot Conservation Committee to conserve a portion of Eliot for all to enjoy.



Locus of the Eliot Town Forest

## Conservation Commission Objectives

### Short Range Objectives:

#### Access to Forests:

- Research Johnson Lane road maintenance agreement
- Research former legal opinions on access over Punkintown Rd
- Investigate right of way, easements, and public access to both forests

Determine feasibility and strategies of acquiring additional parcels to make the Johnson Lane properties contiguous and more accessible

Develop funding sources to pay for access costs

#### Cooperative efforts with neighboring landowners

Meet with Nature Conservancy and Great Works Regional Land Trust to discuss commonalities

Meet with private landowners in the area to discuss plans to increase use of the town forest lands and changes the use will have on the private landowners

Partner with a variety of groups whose interests are like-minded in order to prioritize a variety of short term and long term management ideas:

- |                               |                    |
|-------------------------------|--------------------|
| Board of Selectmen            | Boy Scouts         |
| Rod & Gun Clubs               | Girl Scouts        |
| Recreational Use Groups       | Rotary Club        |
| Garden Club                   | Historical Society |
| Community Service Requirement |                    |

## The Planning Process

The Eliot Conservation Committee determined that it would be to the benefit of the Inhabitants of the Town of Eliot to develop a plan for the guidance of the management of the Town Forest lands for a period of ten to thirty years in the future and embarked on preparation for the planning process during the years 2007 and 2008. The commission decided that a professional forester, other resource professionals and the Commission members would work as a team to gather data and prepare the plan. The forestry services needed were an inventory the forest resources on the Town Forest and preparation of a plan for the sustainable, long term growth and harvest of forest products . The other team members would work on the non-forestry portions of the plan gathering historical information and natural resource information necessary to prepare the plan for the recreational and non forestry aspects of the Town Forest plan.

The forestry planning process included locating the boundary lines of the properties sufficiently to allow data to be gathered from the trees on the Town Forest, mapping the lots delineating the upland, wetland, and water body features of the landscape, measuring trees at sample plots within the upland forested areas, and calculation of the volume of forest products in the trees growing on the lots. The data gathered served as the basis for determining stand stocking, species composition, and silvicultural needs to meet the goals of forest management.

Information for the management of recreation, wildlife habitat, and other land uses was gathered by the appropriate persons for the preparation of the relevant portions of the plan. This data was supplemented by a meeting March 16, 2009 held by the Eliot Conservation Committee and Selectmen to hear public input from townspeople that desired to contribute their ideas and concerns for the long term use and management of the Town Forest.

### The landowner's long term goals

The term of planned forest land ownership is never ending. The townspeople have voted to purchase and keep the lands forever more as publically accessible forest lands for all people to enjoy. The Eliot Conservation Committee has been entrusted with the duties of overseeing the care and management of the Town Forest on behalf of the inhabitants of Eliot to assure the goals set forth for the management of the land be attained for the inhabitants benefit. The goals are:

- Protection of the natural beauty and esthetic quality of the Town Forest
- Development of recreational opportunities for the townspeople
- Sustainable growth and harvest of commercial forest products to produce revenue to support town forest activities
- Protection of water quality on the properties and downstream
- Protection and enhancement of wildlife habitat for species known to inhabit and that may inhabit the land
- Expansion of the Town Forest thru acquisition of other properties
- Cooperative agreements with abutting landowners to expand the opportunity for people to enjoy the out-of-doors
- Update and improve the plan at five year intervals

Long Range Objectives:

Seek and obtain unlimited and/or limited public access to land and determine any associated improvements – (this goal resulted from the Open Space Committee public survey-Ref OSC Meeting notes dated Oct 21, 2009)

Acquire ownership of parcels of land adjacent to the town forest properties

Develop a network of low impact trails through the town forest parcels

Improve public access with inclusion of handicapped access

Encourage plant and wildlife diversity with low impact projects

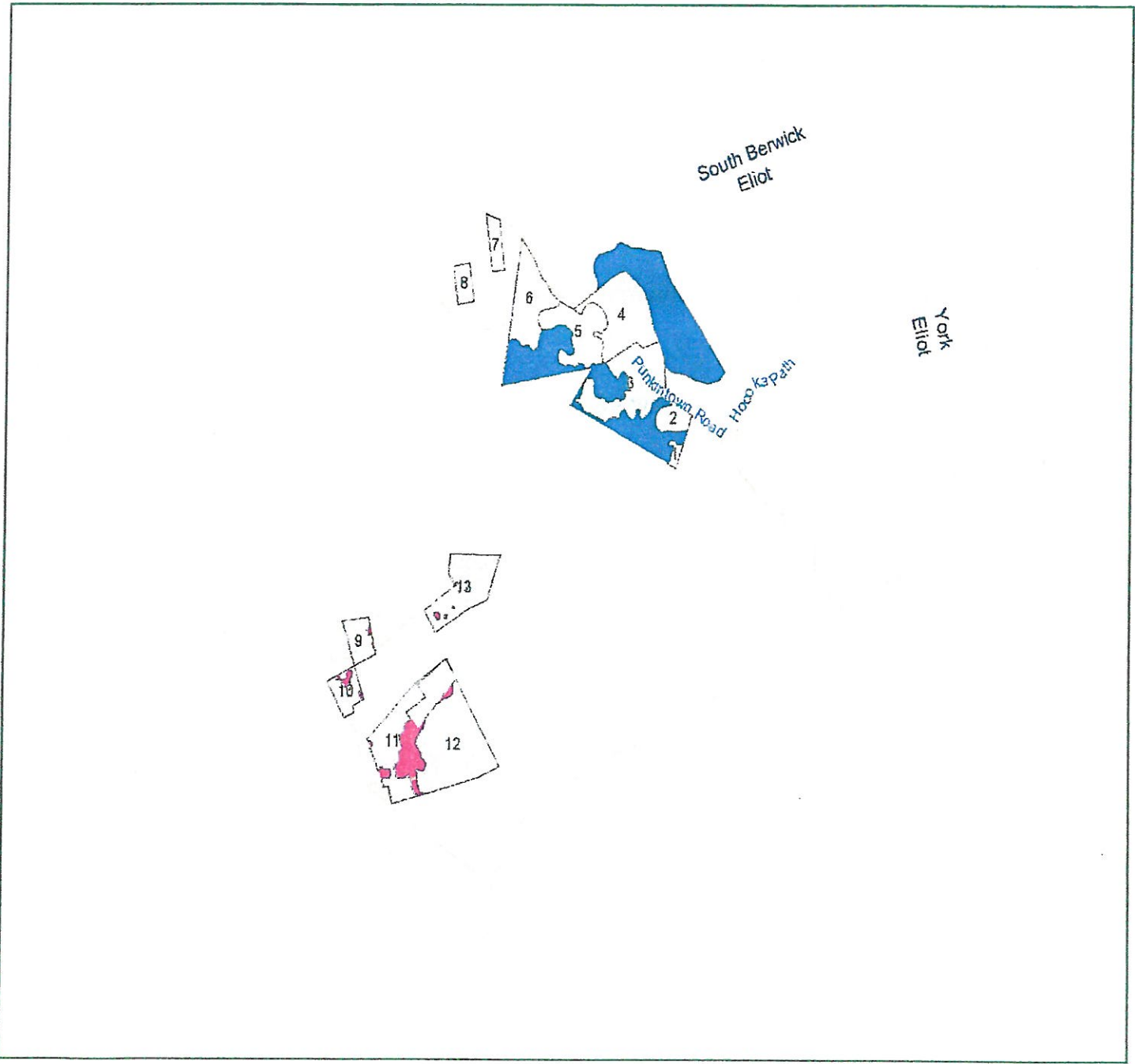
Utilize low impact harvesting alternatives to create more diverse wildlife and plant habitat

Utilize low impact timber harvests to accomplish other goals

Develop sustainable financial income from timber harvests to fund projects

Update the town forest plan annually to report accomplishments and revise goals

Eliot Town Forest  
Lot Key Map



## The Record of Ownership

The owner of record is The Inhabitants of the Town of Eliot, Maine. The purchases of the land are recorded at the York County Register of Deeds at the York County Superior Court Building located at 45 Kennebunk Road in Alfred, Maine. The properties have been surveyed by Maine Licensed Surveyors and plats of the survey work are available at the Eliot Town Hall. The properties are incorrectly mapped on the town tax maps as of the last edition.

Woodlot	Map & Lot	Deed Book/Page	These identifiers were taken from the tax map lots which are in the area of the Town Forest. Several of the smaller lots are not on the tax maps. South Berwick does not have any of the Town of Eliot Land in South Berwick on tax maps.
Johnson Lane lot # 1 (# 13)	96/4	909/493 & 443/10 & 868/248	
Johnson Lane lot # 2 (# 9 & 10)	96/2	6617/312	
Johnson Lane lot # 3 (#11 & 12)	89/5, 6 & 7	6617/348 & 7492/234 & 414/60 & 696/119	
Johnson Lane lot # 3	96/ 7	7070/49	
Punkintown Road #1 # 1 – 6)	110/1	7406/126,128, & 130	
Punkintown Road #2 (Part of #8)	Eliot Unassigned	7406/126,128, & 130	
Punkintown Road #3 (#7)	SB 2/4	7406/126,128, & 130	
Punkintown Road #4 ( Part of # 8)	SB Unassigned	7406/126,128, & 130	



## Title Conflicts

There are title conflicts among the surveys on two areas of land. It may be necessary to reach agreements with the conflicting parties to clarify title to the areas.

The Pirtle Lot in Johnson's Swamp is located within land that the Town of Eliot Survey gives title to the Town. The Pirtle lot has been surveyed and marked on the ground.

The Punkintown Survey gives the Town title to Punkintown Road to the apparent center line of the road along the portion of the land on south side of Punkintown Road from the Foley lot to the west side of the stream flowing from York Pond. The Chrapek deeds include the same area of land into the title for the Chrapek Lot.

The Town of South Berwick took title to land that is included in the Town of Eliot survey. The Town of South Berwick took Map 2 Lot 4 on a tax lien May 13, 1991 by the town records. The land area taken most likely was not included in the title the lien was placed on. The two towns need to meet and determine where the Town of Eliot land is located and place the Town of Eliot lots onto the South Berwick tax maps and property tax records.

## Plan Summary

The goals set forth in this plan will be met by developing a list of objectives that will be attained during the next ten years and predictably create a new set of goals for longer terms. Each objective will describe a concise, time specific, measurable result usable in reaching the described goals. The objectives will describe the resources needed, definition of steps needed to be taken, and assign responsibility to parties to do the work.

This document has three sections. The first is a report of the resources of the land including soils, timber, water bodies, wetlands, and wildlife habitat developed from the inventories taken on the properties. The presentation of the information includes maps, charts, tables and dissertations showing the location of and describing the quality, quantity, and extent of resources associated with the lots.

The second section contains recommendations for actions to be taken in the future to meet the described goals and objectives. The information provides the scope of needs, the time range of implementation, and description of future needs based on expected results of the primary actions taken to meet goals and objectives.

The third section as an appendices of information that is a quantity that it is best not included in the report of resources to avoid overloading the report with details not necessary for the understanding and acceptance of the report necessary to appreciate the recommendations in the second section.

Reading of the first two sections is expected to provide an understanding of what resources are available on the Town Forest lands, the steps needed to accomplished the ideals expressed as goals and objectives, and the time that will pass as the work is done to obtain the desired results of the planning process. The third section will describe in detail the quantities and the worth of the resources in dollars as well as other units of measurement that can be applied.

The recommendations for activities will be subject to variables of time, money, and persons needed to complete the activities. The timing of projects in this plan is based on the needs determined from the data collection and analysis process. Projects can be done when there is adequate time, funding and persons available to do the work. The recommended schedule can be adjusted if there is a shortfall in any of the categories.

The Eliot Town Forest Property Information

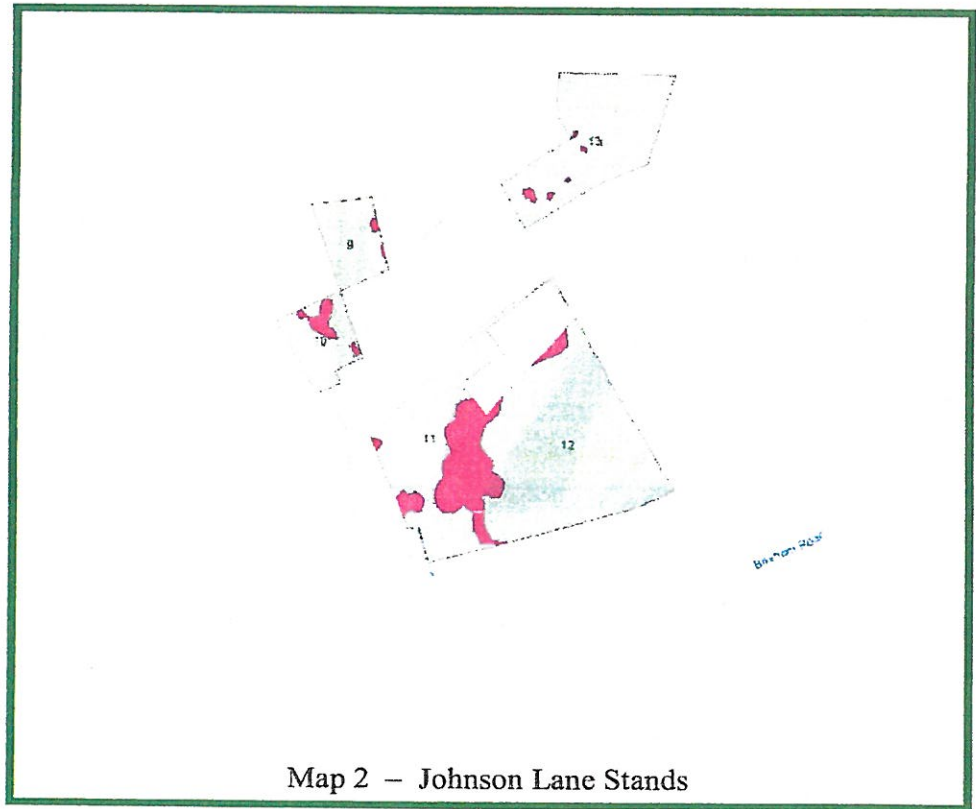
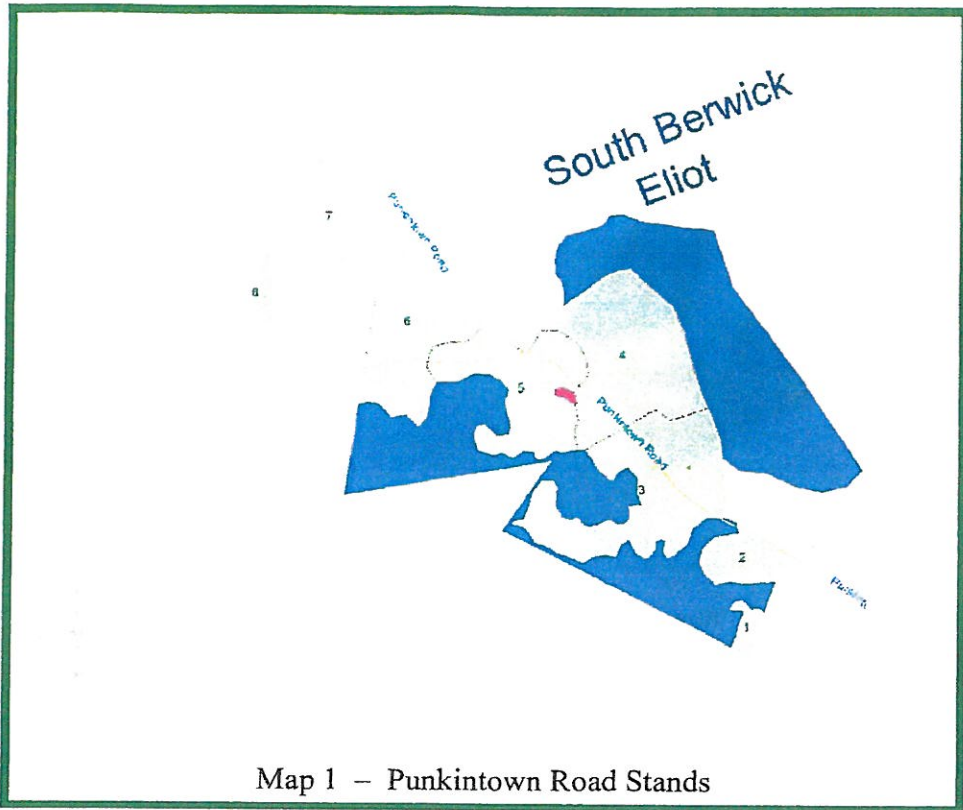
Table 1  
Eliot Town Forest Stand Information Table

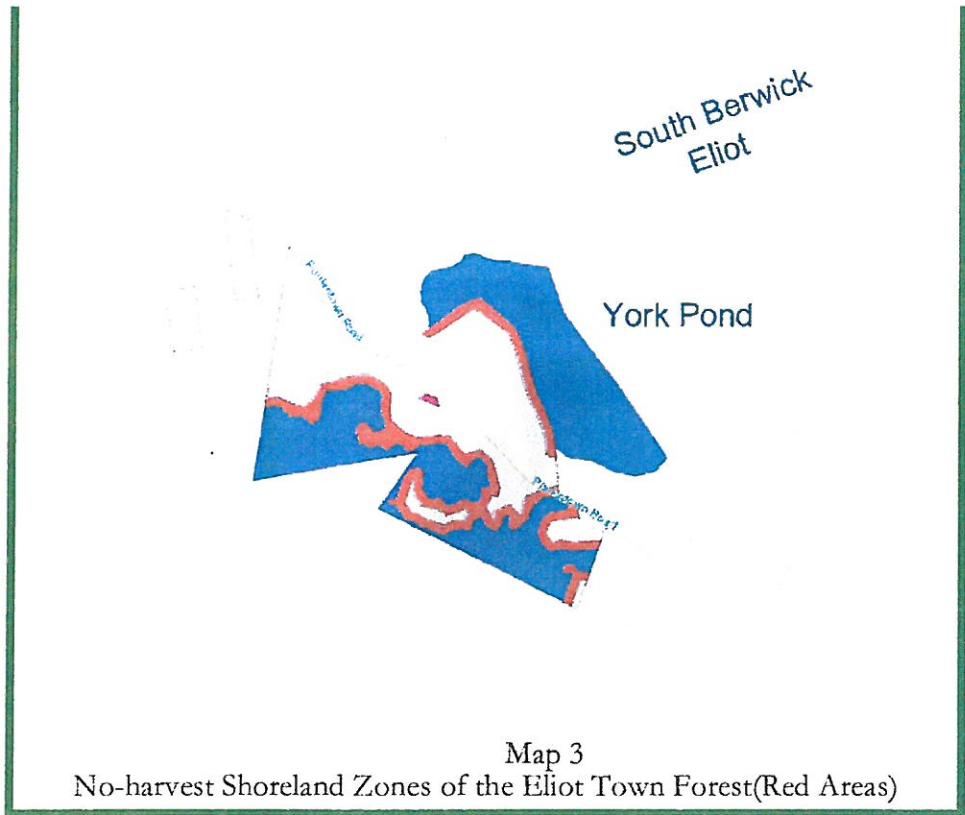
Stand Id No	Acres	Stand No	SAF Cover Type	Primary Tree Species	Timber Size Class	TGT L Type	Forestry Use
1	1.1	PT 1	20	WP-RO-HM	ST-PT	MX	Reserve
2	3.9	PT 2	20	WP-RO-HM	ST	MX	Timber Production
3	18.4	PT 3	20	WP-RO-HM	ST-PT	MX	Timber Production
4	18.0	PT 4	20	WP-RO-HM	ST-PT	MX	Timber Production
5	12.6	PT 5	21	WP	ST	SW	Timber Production
6	13.4	PT 6	55	RO	ST-PT	HW	Timber Production
7	3.3	PT 6	20	WP-RO-HM	ST-PT	MX	Timber Production
8	3.0	PT 7	20	WP-RO-HM	ST-PT	MX	Timber Production
9	4.8	JL 10	22	WP-HM	ST	SW	Timber Production
10	4.3	JL 9	22	WP-HM	ST	SW	Timber Production
11	12.7	JL 3	20	WP-RO-HM	ST-PT	MX	Timber Production
12	26.0	JL 4	20	WP-RO-HM	ST-PT	SW	Timber Production
13	14.2	JL 13	22	WP-HM	ST-PT	SW	Timber Production
	135.7						

There is a total of 136 acres of upland soils suitable for the growth of commercial forest products at the rate of or more than 20 cubic feet of wood per year. Interspersed in these stand are small wetlands 0.02 to 0.1 acres in size that do not significantly remove acreage from growing timber. There are five wetlands that range from 0.1 to 0.7 acres in size that hold water as vernal pools or un-forested wetlands and are distinctive in attributes such the areas will not grow commercial timber. The large wetland associated with Johnson's Swamp is not capable of growing timber and is partially brush covered. There are some trees growing in the swamp that cannot be harvested economically or without unwanted soil disturbance. This area is designated as wetland non-commercial forestland. There are no un-forested areas of barren ground in the lots.

State laws and town code prohibit harvesting trees within seventy-five feet of the upland edge against great ponds and associated wetlands such as York Pond and the Bartlett Mill Pond. The areas are located in Stands Number 1, 2, 3, 4, 5, & 6 as shown in the diagram titled "No-harvest Shoreland Zones of the Eliot Town Forest" The total area of the zone is 21.9 acres. The no-harvest zones considered at this time to be reserve stands where timber will not be harvested due to restriction by law and Stand 1 a reserve stand due to inaccessibility.

The property includes less than 1/4 acre of the wetlands associated with York Pond and approximately of 30 acres of land that is flooded by the Mill Pond flowage. There is no land developed or used as cropland in the lots.





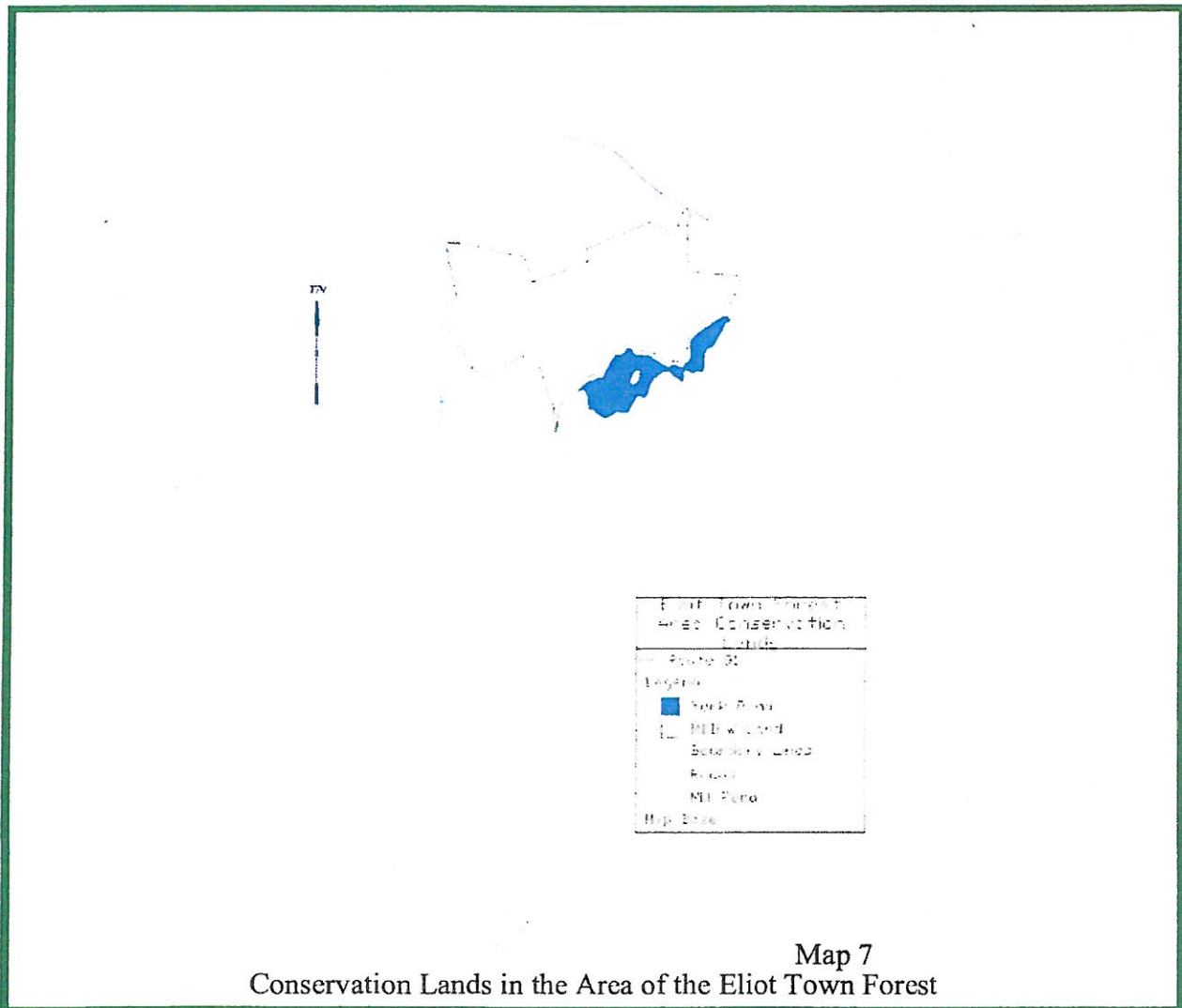
Eliot Town Forest Wetlands Map showing the wetlands shaded pink.



### Interaction with Surrounding Properties

The State of Maine Department of Inland Fisheries and Wildlife has 236 acres of land adjacent to the Eliot Town Forest which provides over 400 acres of contiguous parcels of land with public access. The State land has frontage on Route 91 allowing for recreational access from Punkintown Road through the woods to Route 91. There is no coordination of land uses at this time.

All other properties abutting and in the area of the Town Forest lots are privately owned and there is no planned interaction of uses among the lots.



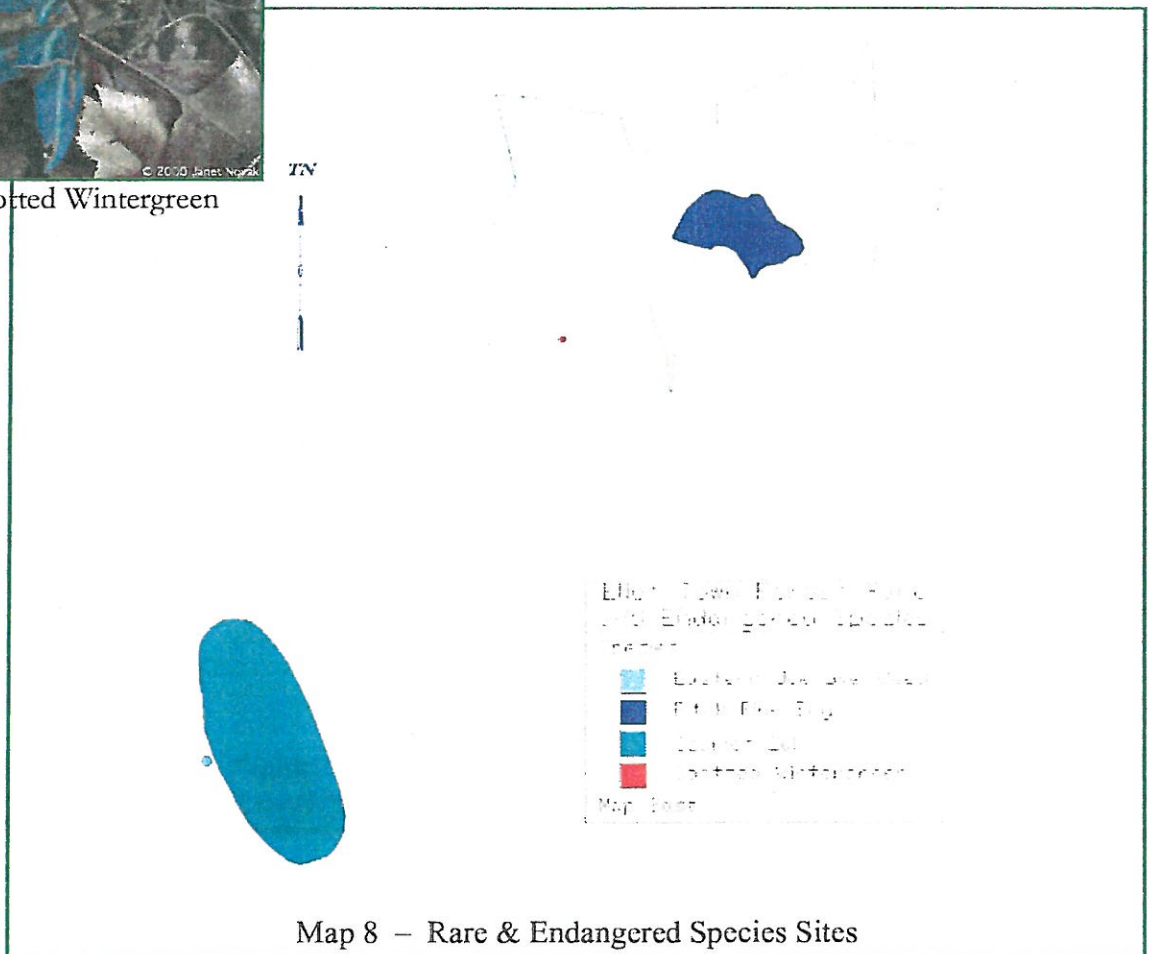


## Rare and Endangered Species in the Area of the Town Forest

The Maine Natural Areas program has designated species that are rare and endangered with the scope of the species existence in Maine as well as other geographical areas. The species may be common within the other geographical areas and rare in Maine at the northern extreme of the species range. There is one site within the bounds of the Punkintown Lot designated a located sample of Spotted Wintergreen.



Spotted Wintergreen



Map 8 - Rare & Endangered Species Sites





Maine Department of  
Conservation Natural Areas  
Program

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*Chimaphila maculata* (L.) Pursh

Spotted Wintergreen

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**Habitat:**

Dry woods. [Conifer forest (forest, upland);  
Hardwood to mixed forest (forest, upland)]

**Range:**

Southern Maine to southern Ontario, south  
to Georgia, and west to Alabama.

**Phenology:**

Flowers June - August.

**Family:**

Ericaceae

**Aids to Identification:** A perennial herb, 7-20 cm in height,  
with toothed, lanceolate, whorled leaves. The dark green leaves are  
mottled with white along the veins. Its nodding flowers are white  
or pinkish, 12-20mm wide.

the **Ecological characteristics:** In Maine, this species tends to  
with full to partial canopy on slight slopes. All Maine populations of spotted wintergreen are small and apparently  
vulnerable.



Illustration from Britton & Brown's Illustrated Flora of  
Northern United States and Canada, 2nd ed. inhabit mixed woods

**Synonyms:**

**Rarity of *Chimaphila maculata***

**State Rank:**

S2 Imperiled in Maine because of rarity or vulnerability to further  
decline.

None

**New England Rank:**

G5 Demonstrably widespread, abundant, and secure globally.

**Global Rank:**

**Status of *Chimaphila maculata***

**Federal Status:**

None

No Federal Status.

**State Status:**

Endangered

**Proposed State**

Endangered Rare and in danger of being lost from the state in the

foreseeable future; or federally listed as Endangered.  
Listing criteria met: Few individuals. At edge of range.  
Declining populations, Vulnerable to human activity

PDPYR01010

### Known Distribution in Maine:

This rare plant has been documented from a total of 13 town(s) in the following county(ies): Cumberland, Franklin, Oxford, Somerset, York.

**Dates of documented observations are:** 1975, 1976, 1977, 1984 (2), 1985, 1987 (2), 1989 (2), 1991, 1996 (2), 1999, 2000, 2001, 2002



⊞ Historical (before 1982)  
⊞ Recent (1982 - present)

### Reason(s) for rarity:

At northern limit of range.

### Conservation considerations:

This plant is restricted statewide to southern Maine, and known populations are vulnerable to conversion of their habitat to residential or commercial use. Effects of logging are unknown, but partial removal of the canopy would be less likely to adversely affect the plant than complete removal. Popular for terraria or shady wildflower gardens: Maine populations are all small, and digging any plants could lead to the disappearance of the natural population. Wild plants need to be left undisturbed. The information in this fact sheet was downloaded from the Natural Areas Program's Biological and Conservation Database on 07 MAY 2004. We are grateful to our Botanical Advisory Group for additional information on particular species, and in particular, to Arthur Haines for his assistance with identifying characteristics and taxonomic questions. Nomenclature follows Haines and Vining's *Flora of Maine* (V.F. Thomas Press, 1998); where older works refer to a plant by another name, it is given under "Synonyms". The Natural Areas Program, within the Department of Conservation, maintains the most comprehensive source of information on Maine's rare or endangered plants and rare or exemplary natural communities, and is a member of the Association for Biodiversity Information.

If you know of locations for this plant or would like more information on this species, please contact the Natural Areas Program State House Station 93, Augusta, Maine 04333; telephone (207) 287-8044.

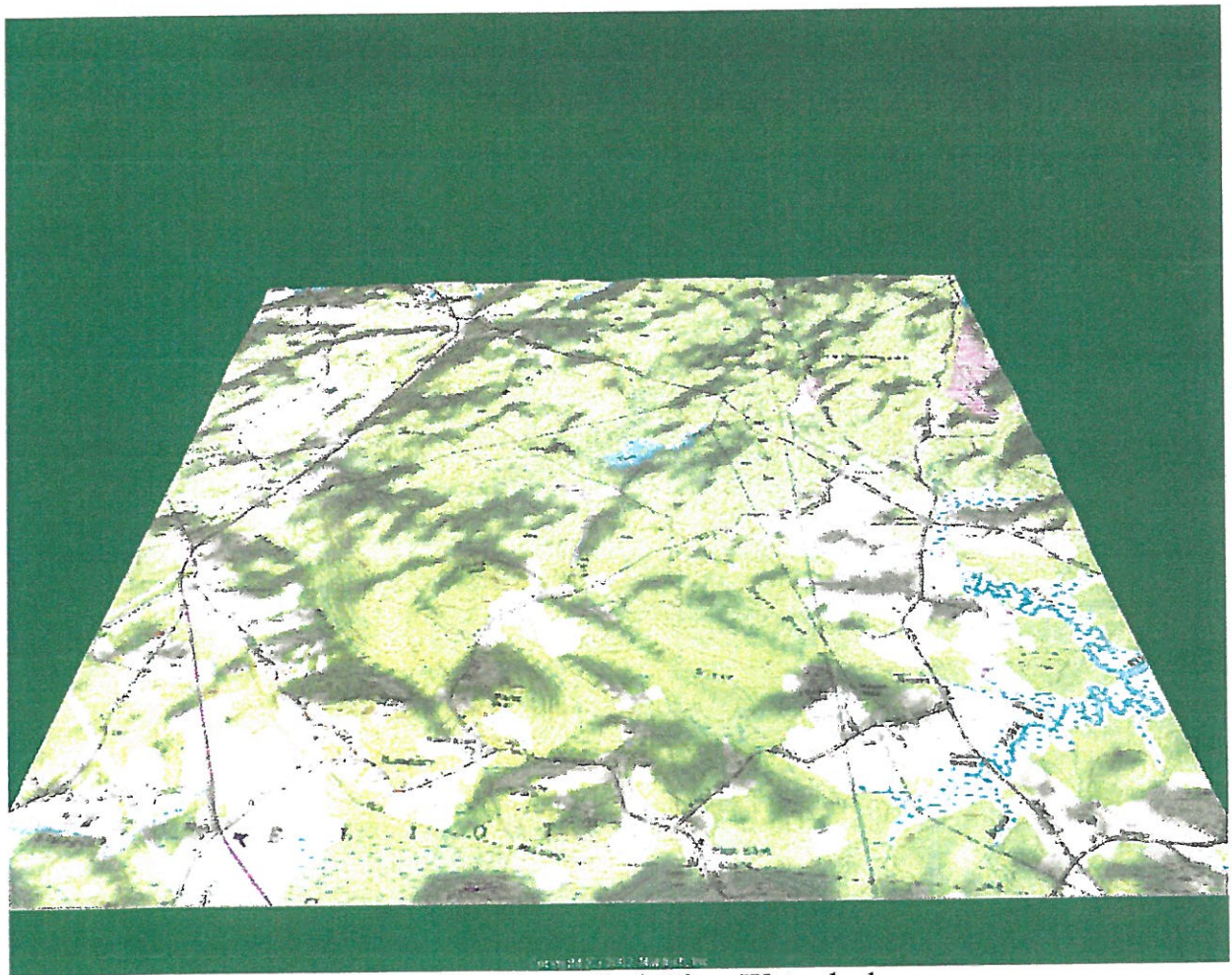


## The Forest Report

The Eliot Town Forest is located on an area of soils that support a forest composed of white pine, hemlock, red oak, white oak, and red maple as its major species. The landscape is one of gently rolling terrain with rock outcrops scattered throughout the area interspersed with vernal pools, grass swamps, forested wetlands, and interconnecting drainages. The forest growth on the Town Forest is typical to the area in age distribution, stand density, and quality.

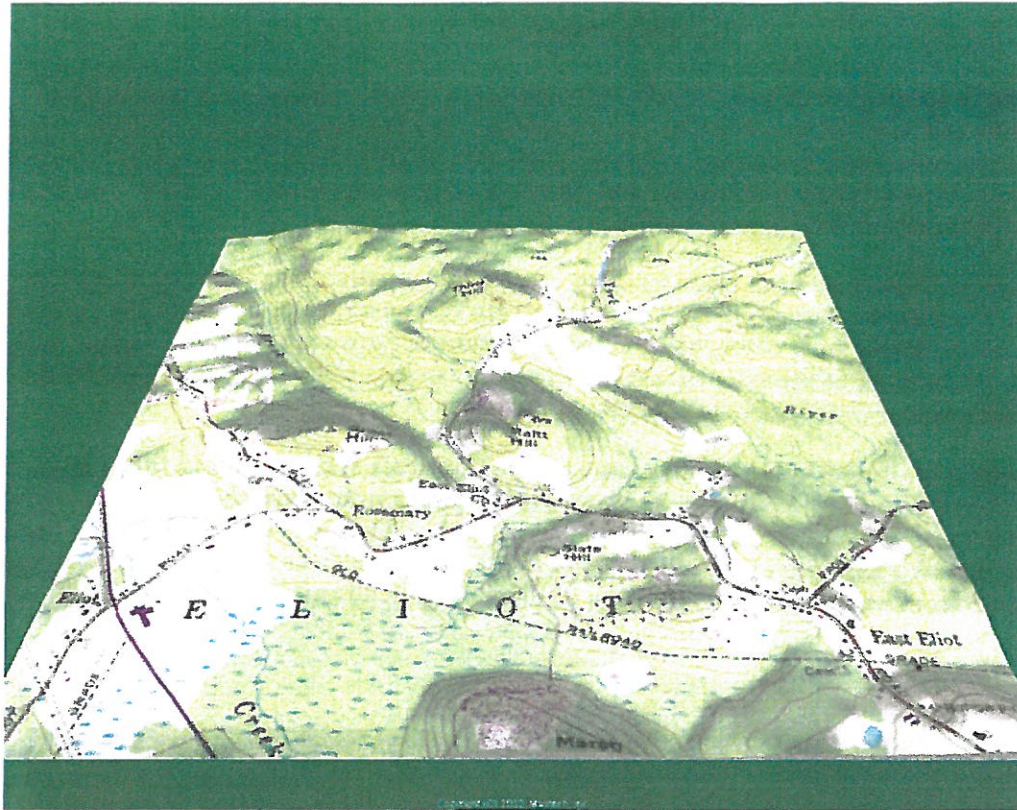
The land has been forested for many years since farming ceased to maintain open fields and pastures. Portions of the Town Forest were harvested within the past fifty years and are populated with younger trees and other parts of the forest have older, more mature sawtimber growing in denser stands. This pattern of growth has advantages of diversity of wildlife habitat as well as allowing for management of the timber growth with a better distribution of timber age classes.

The Punkintown woodlot is located in the upper parts of the York River Watershed and flows from the outlet of York Pond through the Mill Flowage. The water draining from the area has over the years been used to power turbines to produce power for milling and electricity. The use of water power has since tapered to a small use or none allowing the water levels in the ponds to stay at spillway height making the Town Forest a waterfront woodlot having a variety of habitats directly and indirectly related to the water bodies.



Map 10 – Upper York River Watershed





The Johnson Lane lots drains to the south and west approximately three miles to tidewater in Sturgeon Creek near Cedar Road and Dow Highway after passing through an large area of wetlands. Johnson's Swamp had been dammed to form a pond in past years and presumably used in some capacity to produce power.

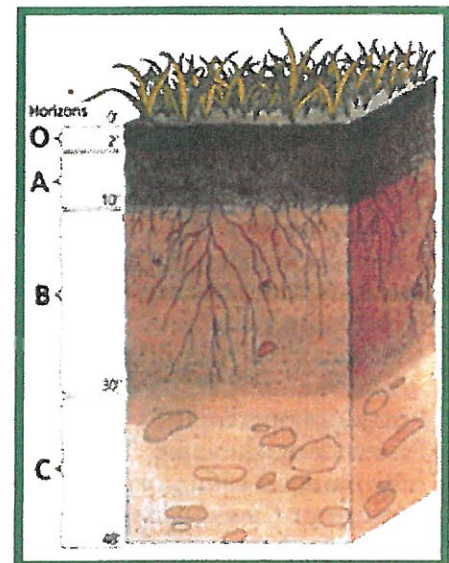
Map 11 – The Sturgeon Creek Watershed

## The Forest Soils

The Eliot Town Forest is located on a area of Hermon-Lyman Association soils which is a soils association that is composed of shallow and deep, gently sloping to very steep, well drained to somewhat excessively drained soils formed in friable glacial till. The association is 50 % Hermon soils, 25 % Lyman soils and 25 % other minor soils. The Hermon and Lyman soils are droughty during the growing season. The Hermon soils have a surface layer of fine sandy loam underlain by gravelly and sandy material. The Lyman soils have a surface layer of fine sandy loam underlain at a shallow depth by bedrock. The Hermon soils have rapid permeability, and the Lyman soils have moderately rapid permeability. The minor soils in this association include moderately well drained Skerry soils, somewhat poorly drained Westbury soils, somewhat poorly drained to poorly drained Brayton soils, and areas of exposed bedrock.

This association is used mainly for woodland, but some areas are used for pasture, hay and orchards. Droughtiness, rocks and stones on the surface, and the shallow depth to bedrock of the Lyman soils are the major limitations of these soils. Slope is also a limitation in the steeper areas of the association. Erosion on steeper areas and skid trails is a hazard in logging areas.

Soil disturbance has non-harmful and harmful consequences for the forest and water quality. Soil scarification which is a process of mechanical removal of competing vegetation or interfering debris or disturbance of a soil surface to enhance reforestation is a desirable level of soil disturbance. Harmful soil disturbance is disturbance of the soils below the "A" horizon of a soil that displaces the topsoil to lower layers of the soil profile or removes it from a site leaving expose sub soil layers. This is damage typically caused by deep rutting during harvesting operations on wet soils. There are definitions of the soil terminology in the appendix.



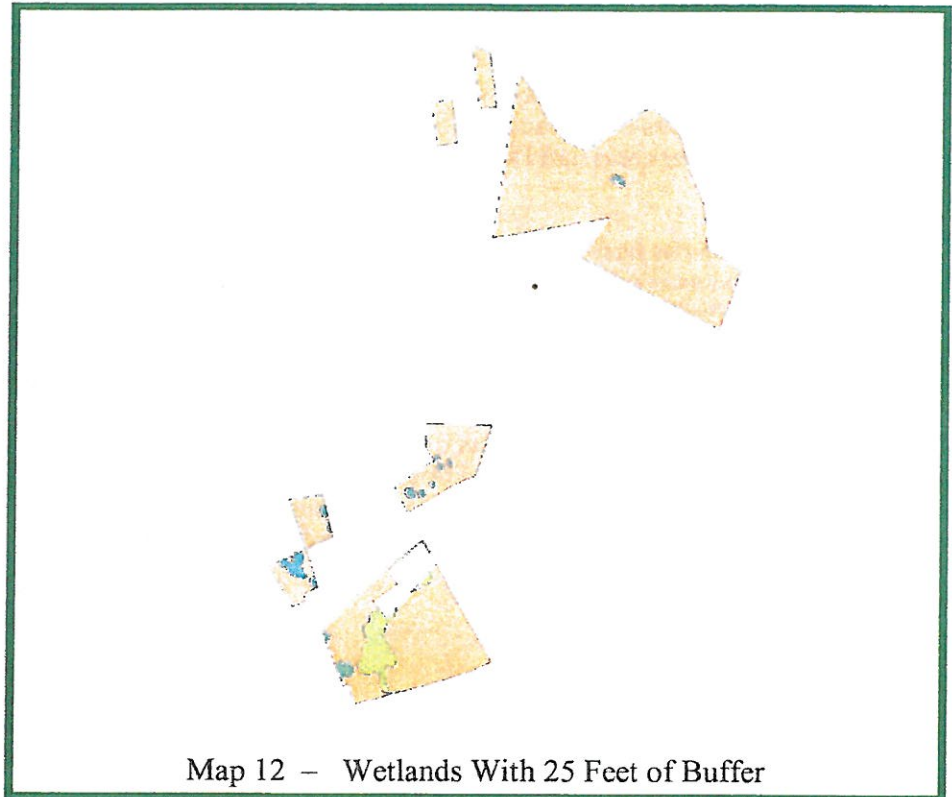
NRCS Soil Profile



## Water Quality and Forestry Operations

A large proportion of the Town Forest lots abut water features including vernal pools, swamps, streams, and ponds. Forestry operations need to be planned to avoid disturbing soil in a manner that could become sources of soil erosion that move soil to the water features lowering the water quality. The ponds are well buffered with the seventy-five foot no timber harvesting zone which will serve as a filter to remove eroded soil particles and suspended organic matter from water flowing through the zone. There are no mandatory buffer zones around the vernal pools and smaller wetlands imposed by Code or Law.

Water quality in the small water bodies is vital to many plants and creatures that make their homes in the small water bodies. The Town Forest as part of its function will serve as a demonstration area of harvesting techniques used to protect the riparian zones adjacent to the small water bodies and the drainages that interconnect them. Many of the drainages are seasonal in nature and flow short distances before discharging water into another small water feature. A buffer zone which excludes operation of forestry machinery is recommended within twenty-five feet of the upland edge abutting the smaller water features. This buffer will serve to protect the water quality during and after harvesting operations. It may be necessary to cross over the drainages with skid trail due to constraints of boundary lines and other natural land features such as steep slopes. The crossings should have a temporary pole crossing fill put in place before crossing the drainages and removed after with erosion controls placed where needed to assure the soil surface in the drainage will not erode after harvesting is completed. Harvesting operations can be timed to occur during the winter months or very dry summer season to minimize the soil disturbance during harvesting operation



## Woodlot Access

The lots are located on Punkintown Road and Johnson Lane which are private roads to the north of Brixham Road which in the were past public roads the allowed travel between Brixham Road and the Town of South Berwick. The roads presently are in fair to good condition being open to travel by pickup trucks and smaller off road vehicles without hindrance from trees or brush growing on the road beds. Both roads are available to the Inhabitants of the Town of Eliot for uses associated with the management of the forest resources on the lots. The availability of the roads for other uses such as recreational access for the general public will need to be determined through proper legal procedure such as agreements with titleholders of the land where the roads are located. It is unlikely that wood can be harvested from the lots until the issue of roads is settled with other parties.

The roads will need reconstruction to allow access for purposes of timber harvesting including gravel, culverts, and grading of ditches to allow controlled flow of water draining from the roads. Proper construction of the roads will require some excavation of existing road materials and replacement with gravel properly placed such that it will not erode from the roadways. A bridge will be needed on the Punkintown Road to allow trucks to pass over the York Pond outlet stream. A gate will be necessary at the bridge to allow control vehicular traffic into the Town Forest Lots.

The booklet titled "Erosion & Sediment Control Handbook for Maine Timber Harvesting Operations Best Management Practices – June 1991" is an acceptable standard to guide in the improvement of the roads.

There will be a need for a minor amount of land clearing for use as logging yards in the lots. Yarding areas will be approximately 1/4 acre in size located on area of level ground where machinery can be placed for cutting harvested trees into forest products and loaded onto trucks. The areas will need smoothing and seeding with conservation mix after use.

## Forest Laws

These woodlots are subject to Town of Eliot Codes and laws of Maine during timber harvesting operations. These laws include:

Eliot Town Code Section 44-35sectiioon (o)	Natural Resources Protection Act (DEP)
Endangered Species Act (MDIFW)	Mandatory Shoreland Zoning Act (DEP)
Water Quality Protection (DEP)	

There a laws and regulations additions and changes made by Town Code changes and Maine legal processes during each session of legislature. There is also a possibility of Federal Government laws becoming regulatory over activities such a timber harvesting in the future. A thorough check of laws and regulations should be made before a timber harvest is conducted.



## Timber Stand Information Tables and Stand Prescriptions

The following tables contain information about the quantity of forest products, stand density, and other information that is used to determine the goals of management in the stand summary tables and the recommendations for silvicultural treatments that will be applied to reach those goals. The overall policy of this process is orientated to maintaining forest stand integrity, proper stand conditions for maintaining good wood growth rates for the crop trees, allowing natural regeneration of tree species native to the area, and protecting other values of the forest. The landowner may elect to moderate the recommendations based on needs, time available for work, market conditions for forest products, requests from the public, and to satisfy new conditions as time progresses.

The recommendations do not apply to the area of forest within seventy-five feet of the high water mark of York Pond and Mill Pond or the wetlands associated with the water level of the ponds. This is mandated by Eliot Town Code and Maine law. The forests in those areas will be managed solely to maintain safety for the general public. The future of the forests in the strips on the waters edge is to become old and eventually through natural processes die and regenerate. These stands will become delineated from the portions of the woodlot where harvesting is done at the time of remapping of forest stands in the future.

The non harvested areas will become a stand type apart from the others types not only in terms of timber growth, but in terms of water quality protection and wildlife habitat. Future management planning will evaluate those values based on inventories that may be taken annually or periodically to determine what species are using the denser, older forest stand and how the stand of trees adjacent to them may be managed in the future.

The silvicultural recommendations are based on the desire to grow and harvest commercial forest products in a manner that is productive for the landowner, sustainable over long periods of time, and provides adequate protection for other values of the forest. Productivity is measured in terms of the volume and value of forest products grown on the forest land usually stated in cubic feet or other unit of volume measurement over a time period, typically a year, and having the value of the annual growth applied to the wood grown depending on what the products that have grown are. There are other values associated with the forest that are the result of harvesting. People tend to enjoy a diverse forest more than a single aged forest. Wildlife usage of a forest will increase tremendously after a harvest and be maintained at a high rate for several years after a harvest is done. More diverse stand conditions across a woodland landscape will attract and hold a far greater number of species than a single age forest over a large area. Small animals will thrive in recently harvested woodlands as they take advantage of new grow near the ground surface. Woodland operations can be planned and performed to avoid creating conditions that will lead to soil erosion thus protecting water quality which in turn protects the productivity of the forest soils.

The recommendations given will provide the results described. One must keep in mind that the forest is dynamic and is changing over time. Management practices that may seem harsh in the time frame of immediacy will result in greater productivity in the future and one must be patient for changes to occur over time.

Stand Information Table

Stand 1 -- 1.1 Acres

SAF Cover Type	20	White Pine-northern red oak-hemlock
Stand Composition	White pine and hemlock sawtimber with red maple and red oak pole timber mixed through in the co-dominant crown strata. There is an understory of brush and blueberry bushes.	
Stand Age & History	The stand is 40 to 80 years of age. It is isolated from the main body of the property by the flowage and appears to not have had any forestry activity since growing from regeneration.	
Stand health	The stand is in good health at this time.	
Stand volume	Not determined	
Stand growth rate	Not determined	
Stand stocking	Not determined	Not determined
Stand softwood/hardwood ratio	Not determined	
Tree Growth Tax Law Stand Classification	Mixed growth	
Stand Quality	The stand is a healthy, viable functioning forest stand. It abuts the open water of the flowage on most of its perimeter and has a high quality riparian zone function.	
Growth Rate	Not determined	
Long Range silvicultural objectives	The stand is designated as a reserve stand for wildlife habitat. Safety hazards will be felled and left on the ground as large woody debris.	

Stand Information Table

Stands 2 & 3 -- 22.3 Acres

SAF Cover Type	20	White pine-northern red oak-red maple
Stand Composition	Large white pine and red oak sawtimber dominate the overstory with hemlock, red maple and other hardwood pole timber in the co-dominant and understory strata.	
Stand Age & History	The older tree are upwards of one hundred years old with some what younger groups of trees that regenerated into openings in the stand. The stand has had no harvesting done since origination from seeding. The stand has lost trees over the years due to natural causes.	
Stand health	The stand is in fairly good health with no indicators of major insect or disease problems. There are a few individual trees showing symptoms of failure due to internal rot primarily in the form of woodpecker holes in the trees.	
Stand stocking	Good to over stocked	.
Stand softwood/hardwood ratio	44 / 56 percent by basal area	
Tree Growth Tax Law Stand Classification	Mixed Growth	
Stand Quality	The stand has some excellent quality red oak and white pine sawtimber intermixed in among predominantly lower quality white pine sawtimber and pulpwood. The site offers excellent soils conditions for growing high quality timber with timely applied silvicultural treatments.	
Growth Rate	Estimated at 3000 board feet of white pine, 1200 board feet of red oak and 3 tons of pulpwood per year	
Long Range silvicultural objectives	The stand has two areas of forestry use available. The first is the no-harvest zone (12.9 acres) along the waters edge which is to held a reserve forest area with emphasis on wildlife habitat in the riparian. The remainder of the stand is best managed for long term growth of high quality saw timber forest products.	

Stand Summary By Product  
 For Acres Where Timber Harvesting is Allowed  
 Eliot Town Forest – Punkintown Lot  
 Stands # 2 & 3

11.6 Acres

Product	Basal Area per acre sq ft.	Number of Trees per Acre	Board Feet per acre	Board Feet Total	Tons per Acre	Tons Total
White pine sawlogs	37.1	27.0	5,132.0	59,531		
Red oak veneer logs	1.4	0.5	114.2	1,325		
Red oak sawlogs	25.7	18.6	1,983.4	23,007		
White oak sawlogs	14.3	0.5	114.4	1,327		
Misc. hardwood sawlogs	1.4	0.9	109.7	1,273		
White pine pulpwood	45.7	108.0			45.0	522.0
Hardwood pulpwood	60.0	75.0			32.7	379.3
Total	185.7	230.5	7,453.7	86,463	77.7	901.3

Stand Summary By Product  
 Total Stand Including No-Harvest Areas  
 Eliot Town Forest – Punkintown Lot  
 Stands # 2 & 3

22.3 Acres

Product	Basal Area per acre sq ft.	Number of Trees per Acre	Board Feet per acre	Board Feet Total	Tons per Acre	Tons Total
White pine sawlogs	37.1	27.0	5,132.0	114,444		
Red oak veneer logs	1.4	0.5	114.2	2,547		
Red oak sawlogs	25.7	18.6	1,983.4	44,230		
White oak sawlogs	14.3	0.5	114.4	2,551		
Misc. hardwood sawlogs	1.4	0.9	109.7	2,446		
White pine pulpwood	45.7	108.0			45.0	1003.5
Hardwood pulpwood	60.0	75.0			32.7	729.2
Total	185.7	230.5	7,453.7	166,218	77.7	1732.7

Stand Prescription for Stands # 2 & 3

	Pre-treatment	Post treatment
Basal area per acre	185 Sq. Ft./Acre	107 Sq. Ft./Acre
Number of trees per acre	231 per acre	121 per acre
Volume per acre	7453 board feet and 78 tons of pulpwood	5880 board feet and 38 tons of pulpwood
Average tree spacing	14 Feet	19 Feet
Recommended silvicultural treatment	Remove 20% of the pine sawtimber, 5 % of the oak sawtimber and 45% of the pulpwood stems from the stand to lower the stand stocking to desirable levels. The thinning should be done as uniformly as possible across the stand to leave a well distributed stand of trees of a mixture to include all species in the stand.	
Non-commercial treatments	None are needed at this time	
Post harvest commercial treatments	None are needed in the near future. It may be necessary to weed regeneration in five to ten years.	
Planned time for the treatments		
Planned time for the next major harvest	Ten to fifteen years after the first harvest is completed. Criteria will be adequate stand volume growth to replace harvested volume and needs of regeneration release.	
Special considerations for this stand to protect environmental values	<p>The areas of the stand within 75 feet of the high water mark cannot be harvested per town code restrictions. The area forming the peninsula in Stand 3 including areas greater than 75 feet from the high water mark will be included in the no harvest area even though portions are further than 75 feet from the high water mark. This area will need review for safety hazards annually to lower the risk exposure for the town.</p> <p>Paths for walking through the area should have erosion control measures placed on them where needed and rerouted away from sensitive sites to minimize erosion problems.</p>	
Recommended WoodsWISE project(s) for this stand	<p>Pre-harvest preparation including timber marking.</p> <p>Installation of a bridge over the stream from York Pond.</p>	

Stand Information Table

Stand #4 -- 18.0 Acres

SAF Cover Type	20	White pine-northern red oak-hemlock
Stand Composition	White pine and red oak sawtimber dominate the overstory with hemlock, red maple and other hardwood pole timber in the co-dominant and understory strata.	
Stand Age & History	This stand is multi-aged with scattered large white pine and oak trees with a younger red oak, red maple, and white birch pole timber that is approximately 40 to 50 years old. The stand appears to have been subject of a timber harvest approximately 50 years ago with most of the sawtimber being harvested at that time. The scattered older trees are very large, limby pasture pine and red oak not cut at that time.	
Stand health	The trees in the stand are very healthy with the exception of the white birch which is showing symptoms of reaching maturity and failing due to old age and attack from fungi associated with the decline of white birch as it matures.	
Stand growth rate	Estimated at board feet of sawtimber and 50 tons of pulpwood per year	
Stand stocking	Good to moderately over stocked	Stocking is 110 square feet of basal area per acre. Hardwood pole timber grows best with the basal area between 60 and 100 square feet per acre.
Stand softwood/hardwood ratio	15 / 85	
Tree Growth Tax Law Stand Classification	Hardwood growth	
Stand Quality	This stand has excellent quality pole sized oak that will grow to produce high quality oak logs in approximately 40 more years.	
Long Range silvicultural objectives	<p>This stand should be managed to allow proper growing space for the red and white oak trees that will grow high value logs. Thinning the stand every ten to fifteen years is needed to maintain the desired growth.</p> <p>There is 3.6 acres of this stand in shoreland no harvest zone which is part of the riparian wildlife habitat.</p>	

Stand Summary By Product

Total Stand Area

Eliot Town Forest – Punkintown Lot

Stand # 4

18.0 Acres

Product	Basal Area per acre sq ft.	Number of Trees per Acre	Board Feet per acre	Board Feet Total	Tons per Acre	Tons Total
White pine sawlogs	10.0	5.0	1,865.0	33,570		
Red oak veneer logs	3.3	1.0	266.0	4,788		
Red oak sawlogs	11.7	7.9	744.6	13,403		
White oak sawlogs	1.7	2.1	118.8	2,138		
White pine pulpwood	15.0	17.9			15.1	271.8
Hemlock pulpwood	1.7	0.8			1.0	17.8
Hardwood pulpwood	66.7	172.0			53.0	954.0
Total	110.0	206.7	2,994.4	53,899	69.1	1243.6



Stand Summary By Product  
 For Acres Where Timber Harvesting is Allowed  
 Eliot Town Forest – Punkintown Lot  
 Stand # 4

14.4 Acres

Product	Basal Area per acre sq ft.	Number of Trees per Acre	Board Feet per acre	Board Feet Total	Tons per Acre	Tons Total
White pine sawlogs	10.0	5.0	1,865.0	26,856		
Red oak veneer logs	3.3	1.0	266.0	3,830		
Red oak sawlogs	11.7	7.9	744.6	10,722		
White oak sawlogs	1.7	2.1	118.8	1,711		
White pine pulpwood	15.0	17.9			15.1	217.4
Hemlock pulpwood	1.7	0.8			1.0	14.3
Hardwood pulpwood	66.7	172.0			53.0	763.2
Total	110.0	206.7	2,994.4	43,119	69.1	994.9

Stand Prescription for Stand # 4 – 17.9 acres

	Pre-treatment	Post treatment
Basal area per acre	110 Sq. Ft./Acre	60 Sq. Ft./Acre
Number of trees per acre	207 per acre	136 per acre
Volume per acre	2995 board feet of sawtimber and 69 tons of pulpwood	1523 board feet of sawtimber and 35 tons of pulpwood
Average tree spacing	15 Feet	18 Feet
Recommended silvicultural treatment	The stand should be thinned using small patch clearings to remove the lowest quality trees from the stand to allow the pine and oak to regenerate into the openings. Area with adequate stocking of desirable stems should be evenly thinned to space crop trees for good growth over the next ten to twenty years.	
Non-commercial treatments	None are needed at this time	
Post harvest commercial treatments	None are expected for ten years	
Planned time for the treatments	The stand should be thinned within the next five years. The desirable time of year is during the summer or fall when the ground is dry and skidding will thoroughly scarify the soil. Harvesting during the period when acorns are dropping may improve the success of oak regeneration because the acorns will be buried before turkeys can eat them. Tree may be planted in the openings in lieu of natural regeneration if it is desired to increase the number of other hardwood species in the stand.	
Planned time for the next major harvest	Ten to fifteen years after the first harvest. Indicators for the need of the next harvest will be suppression of regeneration and slowing of the growth rate of crop trees.	
Special considerations for this stand to protect environmental values	The areas of the stand within 75 feet of the high water mark cannot be harvested per town code restrictions. The slopes will need to be harvested avoiding travel with skidders directly up and down the slopes to avoid creating furrows with the dragged wood that will channel water directly downhill and erode the fine soil particles found in this stand. Buffer areas will be placed around all wetlands and flowages to filter water flowing across the soil surface.	
Recommended WoodsWISER project(s) for this stand	Pre-harvest preparation including timber marking. Installation of a bridge over the stream from York Pond	

Stand Information Table

Stand # 5 -- 12.6 Acres

SAF Cover Type	21	White pine
Stand Composition	Mature white pine sawtimber with mature red oak and red maple trees scattered through the stand	
Stand Age & History	The white pine are 80 to 100 years old and appear to have grown on the site from natural seeding. There has been no stand management work done in this stand.	
Stand health	The trees in this stand are in good health. There is some mortality due to the trees being crowded for space to grow because stand density is approximately double the level desirable for good stand health. There are no problems with disease or insects.	
Stand volume	The stand should be growing approximately one-half to one cord of wood per acre per year. Due to the extremely high stand volume the growth rate is lower than desired.	
Stand stocking	Over stocked	Basal area is 195 square feet per acre which is approximately double the desired level for good tree growth.
Stand softwood/hardwood ratio	71 / 29 percent by basal area	
Tree Growth Tax Law Stand Classification	Softwood growth	
Stand Quality	This stand is suffering from over crowded growing conditions with trees showing symptoms of being stressed for space to grow. The trees are of average timber quality for this area.	
Long Range silvicultural objectives	<p>The growth of high quality sawtimber over a long period of time is the objective of management of the stand. Thinning the present stand will be followed by regeneration and thinning again ten years to favor the highest quality stems in the stand.</p> <p>The no-harvest area will be reserved for wildlife preferring older, larger tree based habitat.</p>	

Stand Summary By Product

Total Stand

Eliot Town Forest – Punkintown Lot

Stand # 5

12.6 Acres

Product	Basal Area per acre sq ft.	Number of Trees per Acre	Board Feet per acre	Board Feet Total	Tons per Acre	Tons Total
White pine sawlogs	112.3	82.0	17,618.0	221,987		
Red oak sawlogs	23.1	20.6	1,999.6	25,195		
White oak sawlogs	1.5	1.7	111.8	1,409		
White pine pulpwood	27.7	57.0			22.4	282.2
Hardwood pulpwood	30.8	86.0		.	10.1	127.3
Total	195.4	247.3	19,729.4	248,590	32.5	409.5

Stand Summary By Product

For Acres Where Timber Harvesting is Allowed

Eliot Town Forest – Punkintown Lot

Stand # 5

9.3 Acres

Product	Basal Area per acre sq ft.	Number of Trees per Acre	Board Feet per acre	Board Feet Total	Tons per Acre	Tons Total
White pine sawlogs	112.3	82.0	17,618.0	163,847		
Red oak sawlogs	23.1	20.6	1,999.6	18,596		
White oak sawlogs	1.5	1.7	111.8	1,040		
White pine pulpwood	27.7	57.0			22.4	208.3
Hardwood pulpwood	30.8	86.0			10.1	93.9
Total	195.4	247.3	19,729.4	183,483	32.5	302.3

Stand Prescription for Stand # 5

	Pre-treatment	Post treatment
Basal area per acre	195.4 Sq. Ft./Acre	85 Sq. Ft./Acre
Number of trees per acre	248	81
Volume per acre	19718 board feet of sawtimber and 45 tons of pulpwood per acre	10318.8 board feet of sawtimber and 8 tons of pulpwood per acre
Average tree spacing	13 Feet	23 Feet
Recommended silvicultural treatment	Thin the stand removing most of the pulpwood quality trees and fifty percent of the sawtimber volume. The stand will regenerate with white pine and oak with the following five years.	
Non-commercial treatments	None needed at this time	
Post harvest commercial treatments	Weed the regeneration as needed.	
Planned time for the treatments	The initial harvest should be done in one or two steps. The one step harvest will remove all of the trees recommended for removal in one harvest. This will leave a fairly open stand that will have a lot of sunlight reaching the ground resulting in a rapid regeneration of trees and growth of other plants. The two step harvest will remove the understory trees in the first harvest followed by a period of time during which the regeneration should become established. The second step will be done after the regeneration is well established. This method will maintain stand density which may help to protect the stand from windthrow.	
Planned time for the next major harvest	Ten to twenty years after the completion of either method. The indicator to implement the harvest will be the progress of the growth of the regeneration.	
Special considerations for this stand to protect environmental values	The areas of the stand within 75 feet of the high water mark cannot be harvested per town code restrictions. This stand is believed to have the site of the spotted wintergreen. A buffer area for machinery exclusion and maintenance of adequate shade in that area will need to be established when the site is located.	
Recommended WoodsWISE project(s) for this stand	Pre-harvest preparation including timber marking. Installation of a bridge over the stream from York Pond	

Stand Information Table

Stand # 6 -- 13.4 Acres

SAF Cover Type	55	Norther red oak
Stand Composition	The stand has a majority component of red oak trees in the overstory and co-dominant strata. Trees range in size from pole timber to large sawlogs. There is white pine regeneration established in the stand with a mixture of broad leafed shrubs such as witch hazel.	
Stand Age & History	The trees in the appear to be 80 to 100 years old having grown from natural regeneration many years ago.	
Stand health	The stand is in good health with a few trees showing minor symptoms of disease or insect problems.	
Stand volume	The stand volume is approximately thirty percent higher than desirable levels.	
Stand growth rate	Growth is estimated at 3000 board feet of sawtimber and 24 tons of pulpwood per year.	
Stand stocking	Well stocked to somewhat overstocked	Present stand stocking is approximately twenty to thirty percent higher than is desirable for the good growth of oak timber.
Stand softwood/hardwood ratio	15 / 85 percent by basal area	
Tree Growth Tax Law Stand Classification	Hardwood growth	
Stand Quality	The stand has very high quality red oak veneer and saw timber logs growing at a very good rate. The soil is a very productive soil which contributes greatly to the quality of the wood. Stand structure is ideal for continued growth of the oak trees to veneer log size.	
Growth Rate	Estimated at 4500 board feet of saw logs and 30 tons of pulpwood per year	
Long Range silvicultural objectives	The stand should be used to grow the high quality oak stems to veneer size with carefully applied thinnings over a period of 40 years.	

Stand Summary By Product  
 For Acres Where Timber Harvesting is Allowed  
 Eliot Town Forest – Punkintown Lot  
 Stand 6

13.4 Acres

Product	Basal Area per acre sq ft.	Number of Trees per Acre	Board Feet per acre	Board Feet Total	Cords per Acre	Cords Total
White pine sawlogs	8.0	5.0	897.0	12,020		
Red oak veneer logs	10.0	4.0	313.5	4,201		
Red oak sawlogs	44.0	53.0	5,451.9	73,055		
Hickory sawlogs	2.0	1.9	145.9	1,955		
White pine pulpwood	10.0	10.0		82	8.0	107.2
Hardwood pulpwood	42.0	80.1			37.1	497.1
Total	116.0	154.0	6,808.3	91,313	45.1	604.3

Stand Summary By Product  
 For Acres Where Timber Harvesting is Allowed  
 Eliot Town Forest – Punkintown Lot  
 Stand 6

12.0 Acres

Product	Basal Area per acre sq ft.	Number of Trees per Acre	Board Feet per acre	Board Feet Total	Cords per Acre	Cords Total
White pine sawlogs	8.0	5.0	897.0	10,764		
Red oak veneer logs	10.0	4.0	313.5	3,762		
Red oak sawlogs	44.0	53.0	5,451.9	65,423		
Hickory sawlogs	2.0	1.9	145.9	1,751		
White pine pulpwood	10.0	10.0		82	8.0	96.0
Hardwood pulpwood	42.0	80.1			37.1	445.2
Total	116.0	154.0	6,808.3	81,782	45.1	541.2

Stand Prescription for Stand # 6

	Pre-treatment	Post treatment
Basal area per acre	116 Sq. Ft./Acre	54 Sq. Ft./Acre
Number of trees per acre	136	48
Volume per acre	5364 board feet of sawtimber and 35 tons of pulpwood	2850 board feet of sawtimber and 21 tons of pulpwood
Average tree spacing	18 Feet	30 Feet
Recommended silvicultural treatment	Manage the stand for growing high value oak sawtimber, white pine sawtimber and other hardwood species as logs and pulpwood. The stand should be thinned in two harvests ten years apart. The first will remove understory and co-dominant trees to properly allow room the crop trees to grow. The second will harvest about one-half of the sawtimber from the stand and leave the rest to grow to large sized sawtimber.	
Non-commercial treatments	None needed at this time.	
Post harvest commercial treatments	Weed any regeneration to favor the oak seedlings as they grow.	
Planned time for the treatments	Within five years and ten years following the first	
Planned time for the next major harvest	At a time in the future when the largest trees in the stand become crowded.	
Special considerations for this stand to protect environmental values	The areas of the stand within 75 feet of the high water mark cannot be harvested per town code restrictions. There is a series of small drainages that feed into a small flowage through the stand. Soil must not be disturbed within twenty-five feet of the edge of the drainages except where it is necessary cross the flowages to remove harvested wood.	
Recommended WoodsWISE project(s) for this stand	Pre-harvest preparation including timber marking. Installation of a bridge over the stream from York Pond	



Stand Information Table

Stand # 7 -- 3.0 Acres

SAF Cover Type	20	White pine-northern red oak-hemlock
Stand Composition	The stand has a pole sized red oak and other hardwood species with scattered white pine sawtimber mixed through the stand. There is an understory of white pine regeneration and saplings in small clumps.	
Stand Age & History	The stand is a multi-aged mixture of age groups of trees. It appears as there was harvesting on part of the lot about forty to fifty years ago which may be related to harvesting on adjacent lots that was not done according to boundary lines. Trees range in age from thirty to one hundred year of age over the area of the stand.	
Stand health	The stand is generally healthy with some symptoms of past problems with insects and disease. The oak has the appearance that it was possibly subject to gypsy moth defoliation or something similar which adversely affected the oak.	
Stand volume	Total stand volume is higher than desired for the average tree diameter although given the age structure some areas are doing well while in other areas the trees are showing signs of being crowded.	
Stand growth rate	Estimated at 800 board feet of logs and 6 tons of pulpwood per year	
Stand stocking	143 square feet of basal area per acre average	The stocking is good in the areas with younger tree to slightly over stocked in the older groups of trees.
Stand softwood/hardwood ratio	48 / 52 percent by basal area	
Tree Growth Tax Law Stand Classification	Mixed growth	
Stand Quality	The stand has many stems which with proper silvicultural treatment will grow to be high quality sawtimber. The larger timber is of average quality for the area.	
Long Range silvicultural objectives	Growth of the younger trees to sawtimber over the period of forty years.	

Stand Summary By Product

Eliot Town Forest – Punkintown Lane Lot

Stand # 7

3.0 Acres

Product	Basal Area per acre sq ft.	Number of Trees per Acre	Board Feet per acre	Board Feet Total	Tons per Acre	Tons Total
White pine sawlogs	56.7	52.0	8,695.8	26,087		
Hemlock sawlogs	3.3	1.9	439.5	1,319		
Red oak sawlogs	13.3	14.2	972.2	2,917		
White pine pulpwood	10.0	22.8			8.4	25.2
Hardwood pulpwood	60.0	212.9		-	43.7	131.1
Total	143.3	303.8	10,107.5	30,323	52.1	156.3

Stand Prescription for Stand #7

	Pre-treatment	Post treatment
Basal area per acre	143 Sq. Ft./Acre	63 Sq. Ft./Acre
Number of trees per acre	304	207
Volume per acre	10108 board feet of sawtimber and 52 tons of pulpwood	4960 board feet of sawtimber and 21 tons of pulpwood
Average tree spacing	12 Feet	15 Feet
Recommended silvicultural treatment	Remove one-half of the sawlog and pulpwood stems from the stand properly spacing the residual trees for growth during the next ten to twenty years while the stand regenerates with white pine and red oak.	
Non-commercial treatments	None needed at this time	
Post harvest commercial treatments	Weed the regeneration as it grows over the next twenty years	
Planned time for the treatments	Harvest the stand within the next five years	
Planned time for the next major harvest	Fifteen to twenty years after the first harvest	
Special considerations for this stand to protect environmental values	Maintain machinery exclusion zones around all wetlands and surface water flow paths.	
Recommended WoodsWISE project(s) for this stand	Pre-harvest preparation including timber marking. Installation of a bridge over the stream from York Pond	

Stand Information Table

Stand # 8 -- 3.3 Acres

SAF Cover Type	20	White pine-northern red oak-hemlock
Stand Composition	The stand has a pole sized red oak and other hardwood species with scattered white pine sawtimber mixed through the stand. There is an understory of white pine regeneration and saplings in small clumps.	
Stand Age & History	The stand is a multi-aged mixture of age groups of trees. It appears as there was harvesting on part of the lot about forty to fifty years ago which may be related to harvesting on adjacent lots that was not done according to boundary lines. Trees range in age from thirty to one hundred year of age over the area of the stand.	
Stand health	The stand is generally healthy with some symptoms of past problems with insects and disease. The oak has the appearance that it was possibly subject to gypsy moth defoliation or something similar which adversely affected the oak.	
Stand volume	Total stand volume is higher than desired for the average tree diameter although given the age structure some areas are doing well while in other areas the trees are showing signs of being crowded.	
Stand growth rate	Estimated at 725 board feet of sawtimber and 7 tons of pulpwood per year.	
Stand stocking	122 square feet of basal area per year	The stand is well stocked at this time. Stocking will grow to overstocked conditions in 5 to 10 years.
Stand softwood/hardwood ratio	34 / 66 percent by basal area	
Tree Growth Tax Law Stand Classification	Mixed Growth	
Stand Quality	The trees in this stand are of average quality for the area. The stand has grown with less than a full complement of seedlings which has resulted in the trees having more limbs than is desired for good quality timber production.	
Long Range silvicultural objectives	Thinning the stand will release the best quality stems from any competition and open space for regeneration to grow. The long term objective will be to grow the best stems to sawlog size for harvest and the regeneration to repopulate the stand with high value trees over a fifty to eighty years period.	

Stand Summary By Product  
 Eliot Town Forest – Punkintown Lane Lot  
 Stand # 8

3.3 Acres

Product	Basal Area per acre sq ft.	Number of Trees per Acre	Board Feet per acre	Board Feet Total	Tons per Acre	Tons Total
White pine sawlogs	24.0	19.8	3,513.0	11,593		
Hemlock sawlogs	6.0	4.3	901.2	2,974		
Red oak sawlogs	12.0	12.5	982.1	3,241		
White oak sawlogs	2.0	2.2	145.4	480		
White pine pulpwood	4.0	8.9			2.9	9.6
Hemlock pulpwood	8.0	12.9			3.3	10.9
Hardwood pulpwood	66.0	198.9			48.3	159.4
Total	122.0	259.5	5,541.7	18,288	54.5	179.9

Stand Prescription for Stand #8

	Pre-treatment	Post treatment
Basal area per acre	122 Sq. Ft./Acre	56 Sq. Ft./Acre
Number of trees per acre	260	104
Volume per acre	5541 board feet of sawtimber and 54 tons of pulpwood	3608 board feet of sawtimber and 21 tons of pulpwood
Average tree spacing	13 Feet	20 Feet
Recommended silvicultural treatment	Remove one-third of the sawlog and three-fifths of the pulpwood stems from the stand properly spacing the residual trees for growth during the next ten to twenty years while the stand regenerates with white pine and red oak.	
Non-commercial treatments	None needed at this time	
Post harvest commercial treatments	Weed the regeneration as it grows over the next twenty years	
Planned time for the treatments	Harvest the stand within the next five years	
Planned time for the next major harvest	Fifteen to twenty years after the first harvest	
Special considerations for this stand to protect environmental values	Maintain machinery exclusion zones around all wetlands and surface water flow paths.	
Recommended WoodsWISE project(s) for this stand	Pre-harvest preparation including timber marking. Installation of a bridge over the stream from York Pond	

Stand Information Table

Stands # 9 & 10 -- 9.2 Acres

SAF Cover Type	22	White pine-hemlock
Stand Composition	The stand composition is dominated by large white pine and hemlock timber mixed with pole sized hardwood over an understory of stunted hardwood and hemlock growth. There is very little regeneration in the stand.	
Stand Age & History	The largest trees are sixty to over one hundred years old with younger trees growing in areas where openings were made by logging or natural events in the past. The logging may have been done by operations straying over boundary lines in the past. This area appears to have been woodlots for many years.	
Stand health	The stand is generally healthy with few trees showing signs of problems with insects or diseases.	
Stand volume	Present stand volume is approximately one-third higher than is desired for good tree growth. The trees in the stand are growing well despite the density of the stand by it would be desirable for the growth to be concentrated on the high quality trees in the stand.	
Stand growth rate	Estimated at 3900 board feet of sawlogs and 9 tons of pulpwood per year.	
Stand stocking	172 square feet of basal area per acre	The stand is presently overstocked
Stand softwood/hardwood ratio	69 / 31 percent by basal area	
Tree Growth Tax Law Stand Classification	Softwood	
Stand Quality	The stand has some trees of high quality and large size scattered through what is a stand of average quality timber for the area. The percent of large trees is high in the stand. There is very little regeneration present in the stand because of the dense overstory canopy cover.	
Long Range silvicultural objectives	The stand should be used to grow the present trees to be over two feet in diameter through a program of thinning out lower quality trees and leaving the better trees to grow. Regeneration should be encouraged and managed for future sawlog growth.	

Stand Summary By Product

Eliot Town Forest – Johnson Lane Lot

Stands # 9 & 10

9.2 Acres

Product	Basal Area per acre sq ft.	Number of Trees per Acre	Board Feet per acre	Board Feet Total	Tons per Acre	Tons Total
White pine sawlogs	41.7	24.2	7,884.0	72,533		
Hemlock sawlogs	38.3	28.0	5,592.0	51,446		
Red oak sawlogs	1.7	1.6	163.7	1,506		
White oak sawlogs	5.0	6.0	358.8	3,301		
Black oak sawlogs	1.7	2.1	118.8	1,093		
White pine pulpwood	10.0	12.8			8.9	81.9
Hemlock pulpwood	30.0	47.8			20.7	190.4
Hardwood pulpwood	43.3	130.3			3.8	35.0
Total	171.7	252.8	14,117.3	129,879	33.4	307.3



Stand Prescription for Johnson Lane Lot

Stands # 9 & 10

	Pre-treatment	Post treatment
Basal area per acre	171.67 Sq. Ft./Acre	44.36 Sq. Ft./Acre
Number of trees per acre	253	51
Volume per acre	13717 board feet of sawlogs and 30 tons of pulpwood	5639 board feet of sawtimber and 5 tons of pulpwood
Average tree spacing	13 Feet	29 Feet
Recommended silvicultural treatment	The recommendation for harvesting is designed to prepare the stand for regeneration of white pine, hemlock, and red oak by opening the stand to expose most of the ground surface to sunlight which will result in a vigorously growing crop of regeneration. The stand will allowed to become a two aged stand with the older trees in the overstory and the younger trees in the understory. This stand will not require another commercial harvest until the regeneration has grown to small pole timber size.	
Non-commercial treatments	None needed at this time	
Post harvest commercial treatments	Weed the regeneration to favor the best growing trees as the regeneration grows. The goal is to have crop trees spaced properly when they have grown to pole timber size.	
Planned time for the treatments	Harvest the stand within five years	
Planned time for the next major harvest	Twenty or more years after the initial harvest. Weeding may result in harvesting small trees for firewood with a series of small volume harvests during the interim period.	
Special considerations for this stand to protect environmental values	This stand is a candidate for allowing the conversion to a so called "old growth forest" which is one of the desirable features discussed during the public hearing during the management planning process. The stand is ideal because it has not been significantly harvested from during the past fifty to seventy five years and has trees that are approximately one-half of the age associated with "old growth forests." The stand density is lower than that needed for good "old growth" conditions at this time. There are sufficient trees with defects such as woodpecker holes indicating hollow trees which will lead to failure of those trees creating the large woody debris associated with the older forest. The only other feature this stand lacks for "old growth" is a large continuous block of forest of similar nature. It would be desirable to acquire abutting properties to enlarge the stand as most of the abutting woodlots have similar growth of trees on them.	
Recommended WoodsWISE project(s) for this stand	Pre-harvest preparation including timber marking.	

Stand Information Table

Stands # 11 & 12 -- 38.7 Acres

SAF Cover Type	20	White pine-northern red oak-hemlock
Stand Composition	White pine, red oak, and hemlock sawtimber and pole timber	
Stand Age & History	The trees in this stand are found in clumps of similar species and size. The stand was several different ownerships in the past which received harvest of differing types and intensities resulting in a patch work of even-aged groups of trees. The stand has grown in estimated forty years since the last harvesting was done.	
Stand health	The general health of the stand is good as the trees are in the average middle aged and growing vigorously. There is minor evidence of insect and disease problems affecting older trees damaged in the past harvesting operations.	
Stand volume	The stand volume is presently well suited to the age and size of trees in the stand. The stand has not more than twenty percent to volume for ideal tree growing.	
Stand growth rate	Estimated at 10,000 board feet of sawlogs and 86 tons of pulpwood per year	
Stand stocking	148 square feet of basal area	The stand is overstocked by approximately 25 percent
Stand softwood/hardwood ratio	43 / 57 percent by basal area	
Tree Growth Tax Law Stand Classification	Mixed growth	
Stand Quality	The stand has many younger trees that are well formed and will grow high quality sawtimber for future harvest. There are adequate trees for a fully stocked stand of sawtimber with properly applied thinning.	
Long Range silvicultural objectives	The stand will grow high value sawtimber after two thinning to remove the low quality stems from the stand.	

Stand Summary By Product  
 Eliot Town Forest – Johnson Lane Lot  
 Stands # 11 & 12

38.7 Acres

Product	Basal Area per acre sq ft.	Number of Trees per Acre	Board Feet per acre	Board Feet Total	Tons per Acre	Tons Total
White pine sawlogs	16.4	12.3	2,706.2	104,730		
Hemlock sawlogs	13.9	9.5	2,153.1	83,325		
Red oak sawlogs	19.4	18.3	1,605.4	62,129		
White pine pulpwood	8.5	17.4			6.7	259.3
Hemlock pulpwood	25.5	36.1			17.7	685.0
Hardwood pulpwood	63.6	160.4			50.0	1935.0
Aspen pulpwood	0.6	0.9			0.5	19.4
Total	147.9	254.9	6,464.7	250,184	74.9	2898.6

Stand Prescription for Johnson Lane Lot

Stands # 11 & 12

	Pre-treatment	Post treatment
Basal area per acre	148 Sq. Ft./Acre	54 Sq. Ft./Acre
Number of trees per acre	256	87
Volume per acre	6465 board feet of sawlogs and 80 tons of pulpwood	3912 board feet of sawlogs and 18 tons of pulpwood
Average tree spacing	13 Feet	22 Feet
Recommended silvicultural treatment	Thin the stand to leave a residual stand of crop trees that will grow to become high value sawtimber in the future. The harvest should be done in two stages spaced ten years apart. The first stage will remove the lowest quality trees from the stand leaving trees that will be sawlogs in ten years and the crop trees. The second harvest will properly space the crop trees after an additional ten years of growth. Regeneration will grow into the cut areas and will be treated as determined after the second harvest is done.	
Non-commercial treatments	None needed at this time.	
Post harvest commercial treatments	Prune any trees that will benefit the landowner by growing wood free of knots.	
Planned time for the treatments	Within five years and ten years following the first.	
Planned time for the next major harvest	Fifteen to twenty years after the second stage of thinning.	
Special considerations for this stand to protect environmental values	The area adjacent to Johnson's Swamp needs to be buffered with a machinery exclusion zone as well as harvesting within the standards of shoreland zones.	
Recommended WoodsWISE project(s) for this stand	Pre-harvest preparation including timber marking.	

Stand Information Table

Stand 13 -- 14.2 Acres

SAF Cover Type	22	White pine-hemlock
Stand Composition	The stand composition is dominated by large white pine and hemlock timber mixed with pole sized hardwoods over an understory of stunted hardwood and hemlock growth. There is very little regeneration in the stand.	
Stand Age & History	The largest trees are sixty to over one hundreds years old with younger trees growing in areas where openings were made by logging or natural events in the past. The logging may have been done by operations straying over boundary lines in the past. This area appears to have been woodlot for many years.	
Stand health	The stand is generally good health with few trees showing signs of problems with insects or disease damage.	
Stand volume	Present stand volume is approximately one-third higher than is desired for good tree growth. The trees in the stand are growing well despite the density of the stand but it would be desirable for the growth to be concentrated onto the higher quality trees in the stand.	
Stand growth rate	Estimated at 4100 board feet of sawtimber and 40 tons of pulpwood per year.	
Stand stocking	163 square feet of basal area per acre	The stand is overstocked by 30 percent of desired stocking levels.
Stand softwood/hardwood ratio	48 / 52 percent by basal area	
Tree Growth Tax Law Stand Classification	Mixed growth	
Stand Quality	The stand has many good quality sawlogs mixed among lower quality red maple and oak pole timber of pulpwood quality. The site will grow high quality timber with properly applied silvicultural practices.	
Long Range silvicultural objectives	The site will grow high value sawtimber on the trees no in the stand and in the future regeneration can be managed to grow sawtimber as the older trees are removed from the stand.	

Stand Summary By Product

Elliot Town Forest – Johnson Lane Lot

Stand # 13

14.2 Acres

Product	Basal Area per acre sq ft.	Number of Trees per Acre	Board Feet per acre	Board Feet Total	Tons per Acre	Tons Total
White pine sawlogs	21.2	14.8	3,558.8	50,535		
White pine pallet logs	1.2	0.5	121.2	1,721		
Hemlock sawlogs	7.1	7.0	919.7	13,060		
Red oak sawlogs	30.6	24.3	2,636.7	37,441		
White oak sawlogs	1.2	1.5	83.9	1,191		
White pine pulpwood	14.1	38.1			12.7	180.3
Hemlock pulpwood	35.3	78.6			20.0	284.0
Hardwood pulpwood	52.9	126.0			43.0	610.6
Total	163.5	290.8	7,320.3	103,948	75.7	1074.9

Stand Prescription for Johnson Lane Lot

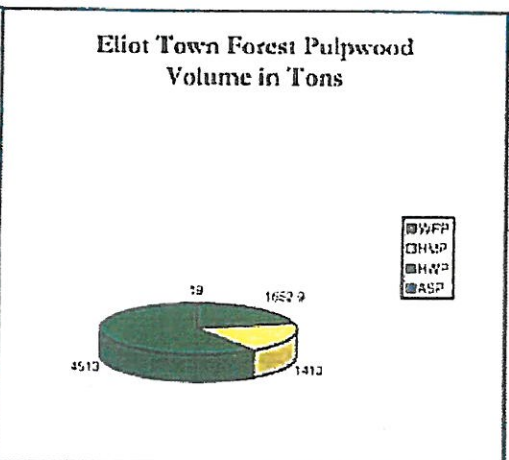
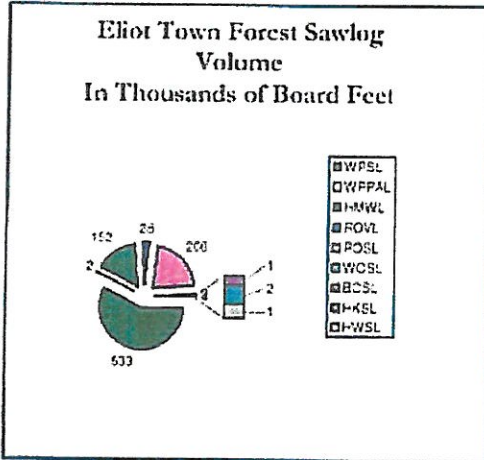
Stand # 13

	Pre-treatment	Post treatment
Basal area per acre	164 Sq. Ft./Acre	65 Sq. Ft./Acre
Number of trees per acre	291	113
Volume per acre	7315	360
Average tree spacing	12 Feet	20 Feet
Recommended silvicultural treatment	Thin the lower quality trees from the stand leaving the stand ready to grow for ten years.	
Non-commercial treatments	None are needed at this time	
Post harvest commercial treatments	None are needed at this time.	
Planned time for the treatments	The harvest needs to be done within five years.	
Planned time for the next major harvest	Ten years after the first.	
Special considerations for this stand to protect environmental values	Maintain machinery exclusion zones within twenty-five feet of the edges of all wetlands and water flow routes between the wetlands. Crossings of the water flow routes should be minimized if not avoidable.	
Recommended WoodsWISE project(s) for this stand	Pre-harvest preparation including timber marking.	



Estimation of Forest Products Value  
on The Eliot Town Forest Woodlots -- 2009

Estimation of Total Forest Products on The Eliot Town Forest Woodlots -- 2009												
Stand Number	2 & 3	4	5	6	7	8	9 & 10	11 & 12	13	Totals	Value per unit	Total Value
										Board Feet	MBF	
White pine sawlogs	59,581	31,384	163,847	10,764	26,087	11,593	72,531	104,730	59,535	531,004	\$31	\$16,467,124
White pine pole/s logs								1,721	1,721	1,721	\$500.00	\$860,500
Hemlock sawlogs				1,119	2,791	51,446	83,325	19,660		156,341	\$500.00	\$78,170,500
Red oak center logs	1,325	4,761	18,596	3,762						28,444	\$700.00	\$19,910,800
Red oak sawlogs	23,007	13,328	65,423	2,017	3,241	1,586	6,2129	3,441		205,992	\$200.00	\$41,198,400
White oak sawlogs	1,327	2,127	10,900							14,354	\$100.00	\$1,435,400
Black oak sawlogs							1,093			1,093	\$100.00	\$109,300
Hickory sawlogs				1,751						1,751	\$100.00	\$175,100
Misc. hardwood sawlogs	1,273									1,273	\$100.00	\$127,300
										Tons		
White pine pulpwood	522	2,703	20,833	96	25.2	9.6	81.9	259.3	180.3	165,229	\$5.00	\$826,145
Hemlock pulpwood		177	919		131.1	10.9	190.4	655	284	1,413	\$6.00	\$8,478
Hardwood pulpwood	373.3	918.7	445.2		15.4	35	1935	610.6		4513.2	\$5.00	\$22,566
Yeast pulpwood							19.4			19.4	\$5.00	\$97
										Grand Total		\$250,333



This estimation is based on data collected using standard timber inventory methods based on samples taken at points in the woodlot. Trees were selected for measurement using a 20' basal area factor point gauge. Data collected for each tree was species, primary product in the tree, diameter breast height, and length of the bole of the tree containing the products. The data was processed using 2 Days Brand software which produced the summary information used in this report.

The values applied to the stumpage are average values based on recent timber sales in the area conducted by Parker Forestry Associates, LLC. The values represent the total value as if the hardwood trees in the woodlot were all readily accessible with road access requiring minor improvements to allow the estimation of the forest products. The contour discount for these properties will average from 10 to 50% of the listed stumpage values based on the expense of harvesting from the individual lots. Stumpage prices will experience ranges of 75-100% in normal market conditions and normal weather events on the sale. Market price for forest products are volatile weekly at the time this report is written and the actual sale price of stumpage may vary as much as 25% from the listed values.

The Eliot Town Forest offers a variety of fish and wildlife habitat over the entire area of the lots. York Pond is known to have a variety of fish including bass within its waters. Many birds use the area of the Town Forest to live in and raise broods of young. Herons have nested in the millpond flowage in the past along with ducks and other waterfowl. The forest stands are home to many different species of song birds and birds of prey. The common game species such as deer, moose, turkeys, and squirrels frequent the woodlots along with many non-game animals such as weasels, chipmunks, and racoons. The general area has populations of rare turtles and salamanders which may inhabit the area even though there are no reported sightings of any on the Town Forest lots.

Improvement of the wildlife habitat on the property is part of the owner's desires to become good woodlot stewards. The property has several types of habitats that can be improved easily to increase the carrying capacity for many species. The improvement practices may be applied to enhance the wildlife habitat.

- Permanent wildlife plantings
- Creation of forest openings
- Wildlife travel corridors
- Wildlife water facilities
- Placement of nest boxes, roost poles
- Riparian zone improvement
- Creation of snags
- Woody debris piles
- Mast trees



Permanent wildlife plantings - Planting shrubs that produce fruit during various times of the year will attract many different species of birds. Preferred shrubs are serviceberry that bears fruit in early summer, blueberries, raspberries, blackberries and elderberry for mid summer to early fall fruit and mountain ash which bears fruit into late fall and early winter. These bushes should be placed in moist, open sites to do the best. The edges of wildlife clearings are an excellent choice for planting these shrubs. Making openings for this purpose may be necessary. Location of the openings should be planned regarding proximity of escape routes, bedding areas, water supply and approach routes people would use to view the wildlife.

Forest openings - Many activities of wildlife take place in open areas in the forest. The light reaches the forest floor in the openings and produces a diverse growth of plants that in turn attracts larger variety of wildlife. One-quarter acre and larger openings, generally exposed to the south, and planted with a variety of plant species provide the best habitat. Edges of openings should provide a transition of cover types from the open areas through bushes and shrubs into a closed forest canopy. Water and denning cavities should be within reasonable distances from the openings. The total area of the openings should equal about 10 percent of the area of the woodlot. Irregularly shaped openings are preferred by wildlife because they provide greater edge length, closer escape cover and appeal to people.

Openings can serve as log landing areas, woodpile sites, lawns, fields and other uses while wildlife habitat. The cover type of openings should be rotated annually so that the range of bare soil with new grasses to sites that have advanced to bushes and small trees are available.

New openings can be made by harvesting timber to replace older openings that have grown into young forest stands that are desirable to grow for timber products. The soil in a new opening should be scarified, limed to a Ph of 6.0 and fertilized with 400 to 800 pounds of 5-10-10 fertilizer per acre before seeding. A good choice for seeding a new opening is conservation mix that contains annual and perennial grasses, clover, vetch and fescue. This provides a variety of herbaceous foods for many animals and is readily available along with lime and fertilizer at many farm supply and hardware stores.

Travel corridors - Openings need to be connected by closed canopy forest to allow travel under cover. The corridors enable the wildlife to travel to water, bedding areas and snag or den trees. Trees in the travel areas may be growing high quality forest products while proving this important function.

Wildlife water supplies - All wildlife needs a year round source of drinkable water. This woodlot has several places that serve to supply the needed water. The swamps hold water and the streams flow year round. Open water surfaces in the wetland area is needed to attract the waterfowl to the property. The ponds should be designed to provide deep water (four feet or more of depth), shallow areas that will support vegetation such as cattails and sedge grass and direct connections to open areas and travel corridors. Obtaining special permits to modify these areas may be necessary. The general ideas presented here should be fully developed and documented if obtaining permits is necessary.

Nesting boxes for ducks and bird houses for songbirds should be placed around ponds and streams. Details for construction and placement are available in many publications. The owners may choose the birds they want to attract and place the appropriate houses.

The proper protection of the habitat for wildlife while growing valuable timber is possible. Planning for all types of habitat needs while getting ready for cutting trees will result in the harvest operations enhancing the habitat. The plan for growing timber leans toward tall, straight trees that are growing clear lumber. A large tree with plenty of limbs and cavities has to be left among the high value trees to provide the habitat needs. It must be made very clear to the people harvesting wood to leave habitat special features as they are.

Riparian zone management - Riparian zones are areas adjacent to streams, ponds and wetlands that are usually occupied by vegetation dependent on soil with high moisture content, are periodically flooded and exhibit habitat distinct from upland areas. The vegetation in the zone may be unique on a property because of the wet soils and multi-layered with tall trees, bushes and ground covering vegetation. Wildlife uses the zones as travel corridors, nesting habitat and food sources. The vegetation serves a natural buffer against erosion, water filter and sediment trap. The smallest of aquatic organisms at the lower end of the food chain live among the plants at the edge of the open water and the riparian zone. Proper care and management of the zone will greatly enhance the use of the property by wildlife.

Disturbances within the riparian zone should be avoided whenever possible. Roads should be built elsewhere, wood harvesting activities should be limited to avoid upsetting the balance of diverse plant structure and soil disturbance avoided. Any disturbances should be repaired back to a natural state when possible.

Management practices that will enhance the use of the zone by wildlife include maintaining and improving the diversity of vegetation, installing nesting boxes and maintaining or providing snags and den trees.

Snag trees and Den trees - There are 58 species of wildlife in Maine that use hollowed out trees for nesting

and denning sites. A very important part of good stewardship of the resources of this woodlot is maintaining wildlife trees throughout the property.

Managing trees for wildlife use involves maintaining trees that have cavities available for present and future use. The recommended number of trees per acre is four to six useable trees and four to six trees that will become snags as the present trees pass beyond usability. The size of the wildlife trees should range from six inches to the largest trees in the stand.

Cavities are usually created by woodpeckers in trees that have decayed centers. They nest in the cavity for one year and abandon it. Secondary users such as squirrels, chipmunks and other birds use the cavities in following years. As the cavities grow larger over time larger animals such as porcupines will move in. The trees will eventually succumb to the decay and fall apart and use by wildlife will stop. It is at this point in time that having another wildlife tree available for the wildlife to start using is important.

The most desirable trees for wildlife use are those that are not typically chosen for timber production. The presence of rotten centers, broken limbs that have decayed leaving a natural entrance into the tree and woodpecker holes are indicators that a tree is a good candidate for selection. Spacing between trees should be such that territorial needs of the wildlife are met. Some wildlife species prefer cavities in hardwoods over softwood, some species prefer to be high up in the tree tops and others closer to the ground that allows for a few trees to accommodate many species.

This woodlot has many trees that are presently being used by wildlife and many that have potential for future use. The majority are oaks and beech that were left standing at the time of the last harvest. They have developed large limbs that have broken off and created ideal wildlife trees. The trees are well distributed throughout the woodlot. Priority is given to allowing these trees to stay and serve as wildlife hotels over using the space to grow high value timber.

Woody debris - The wildlife habitat on a woodlot is not complete without a collection of woody debris on the ground. Logs and brush piles serve as nesting sites, shelter from predators, a source of and place for food storage, preening sites, lookout positions and mating sites for many species. Some debris serves as bridges over stream and escape routes for animals.

Every acre of the woodlot should have some debris on it to serve for these purposes. One source of woody debris is the wildlife trees that have decayed beyond use and been cut down. The old logs should be in and around the wildlife clearings to be of best use to the wildlife. Another source of suitable large sized wood is rough, unmerchantable logs that cannot be sold to mills. Four to ten pieces per acre is sufficient. Brush piles should be near the clearings also. The brush piles should be renewed annually to maintain their size and effectiveness. Many animals will use the brush piles as an intermediate point in their travels to and from the clearings, nesting sites and forage sites. The presence of this woody debris will greatly enhance the use of the woodlot by wildlife.

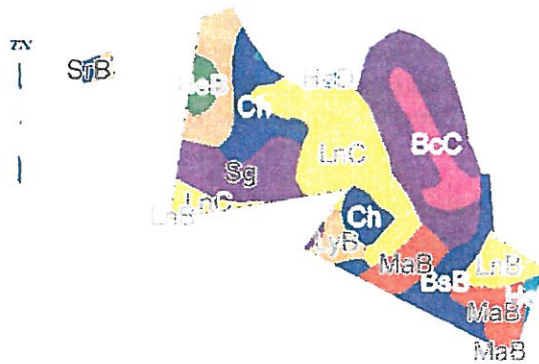
Mast trees - The large topped oaks and beeches on this woodlot will serve as an important source of food to many animals when they produce a crop of nuts. The largest of the trees are the most desired for this purpose. In harvests from the lot at least two trees per age group should be saved to serve as mast trees in future years. These trees should be dominant with a very large crown and allowed to grow to be up to thirty inches DBH before being cut. Animals that feed on these nuts include deer, turkey, raccoons, squirrels and wood ducks.

Wild apple trees should be left when the lot is thinned. The apples are an important fall food for many wildlife species. The apple trees should be provided with plenty of room to grow. It will take two to three thinnings to open the space around an apple tree. The trees will die if surrounding growth is removed too quickly. The trees will need to be pruned to maintain vigor and strength over the years.



## Soil Type Technical Descriptions

Forest soils – The forest soils determine the productivity of forest products and ease of harvesting trees from a woodlot. The factors that are taken into consideration include water handling characteristics, machinery travel capabilities, species of trees that grow well on the soils and the site index for the soils. Site index is a number that represents the average height of a tree at age fifty years on a soil. The range of site index in this area is from 54 to 75 for white pine for example. The larger number corresponds to the best soils for growth. Management decisions are made based on the ability of the soils to grow desired trees with a good return of investment. The soil will determine the time of year when work can be done, without damaging the site so the trees will be not be harmed and soil erosion will not occur.



Soils Punkintown Lot



Soils Johnson Lane Lot

### BcB, BcD

Becket fine sandy loam (BcB) 3 to 8% slopes and (BcD) 8 to 15% slopes are gently sloping, well drained, and deep soils that are located on ridge crests. Areas are from 5 to 20 acres in size and have stones 1 to 1-1/2 feet in diameter scattered on the surface. The soil has a dark brown fine sandy loam 6 inches thick over up to 60 inches of sandy loam subsoils. Included in the soil are small areas of Lyman soils at the top of crests and Skerry soils along the lower portions of slopes.

The soil is suitable for forest growth with a limitation of a compact substratum which will limit rooting depth for species such as red pine that have a tap root. The site index ratings for the soil are white pine - 69, red oak - 60 and red pine - 75 which rates it as a better site for growing trees. There are slight limitations to operating machinery in wet seasons and when the ground is thawing in the spring.

### BeD

The Becket very stony fine sandy loam - 15 to 25% slopes (BeD) soil is moderately steep, well drained and deep. Stones that are 1 to 1-1/2 feet in diameter cover the surface of the ground over as much as 3% of the surface. There are areas of Lyman soils on the crests of ridges and Brayton soils along the bases of slopes. The soil has moderate permeability in the surface layers and is a good site for white pine, red oak and red pine with site index ratings of 69, 60 & 75 respectively. There are some limitations of operating machinery due to steep slopes and during the wet seasons of the years.

BsP

The Brayton and Westbury very stony fine sandy loams with 0 to 8 percent slopes consist of nearly level to gently sloping, deep soil in hills and ridges with surface stones 1 to 1-1/2 feet in diameter scattered on the surface. Areas of this unit consist of poorly drained and somewhat poorly drained Brayton soils or somewhat poorly drained Westbury soils or both. The soils are mapped together because they have no major differences in use and management.

Typically the surface layer is dark brown fine sandy loam 7 inches thick over a subsoil of 4 to 16 inches of mottled, grayish brown fine sandy loam. The substratum runs to depths of 60 inches or more with very firm, mottled, olive and grayish brown sandy loam. Permeability is moderate to a depth of 23 inches and slow below that. Depth to bedrock generally is 5 feet or more. A perched water table is near the surface during the winter and early spring seasons. These soils are suitable for growing trees, but the high water table is a major management concern.

The site index for the white pine is 67, red oak 60 and red maple 65 on this soil type. Limitations include equipment movement, seedling mortality and windthrow.

Ch

The Chocorua soils are nearly level, deep peat soils that are very poorly drained and are usually identified as swamps. The normal forest growth on these soils is red maple and white pine that grow on hummocks that are above water level. Management of these stands is not considered due to the extreme difficulty of harvesting trees from the wet soils, slow growth and lack of quality products from the trees. Harvests are typically conducted when the water freezes very solidly and at that point part of or all the trees that are merchantable are harvested.

CoB

CoB - Colton gravelly loamy coarse sand, 0 - 8 percent slopes - The Colton soil is a deep, excessively drained nearly level to gently sloping sandy soil. Some small areas are suitable for gravel pits. The soil has very rapid permeability, slow surface runoff, low available water capacity and low natural fertility. Depth to bedrock and seasonal high water table generally is more than five feet. The soil is acidic and must be limed to achieve high rates of productivity. The site index rating for white pine on this soil is 62, for red oak 55.

HeB, Hec, HeD

The Hermon fine sandy loam soil is gently sloping, well drained and deep. It has rapid permeability, slow surface runoff and low available water availability. Unless limed the surface layer is extremely to strongly acid. The soil is suitable for trees, but is somewhat droughty during dry years. Site index for the soil is 70 for white pine and 65 for red oak.

LnB, LnC

Lyman fine sandy loams (LnB, LnC) are gently sloping somewhat excessively drained, shallow soils on the tops and crests of ridges and plains. Areas are 3 to 20 acres with intermingled areas of exposed bedrock. Scattered stones 1 to 1-1/2 feet in diameter are imbedded in the surface. Bedrock is at a depth of 18 inches. The soil is a fair site for growing trees with the major limitations being the shallow soils depths and droughtiness resulting in shallow root systems and slow growth rates. Site index rating for white pine and red oak are 54 and 55 because of the soils inability to stay wet through the summer which curtails growth.

LyB, LyC

Lyman-Rock outcrop complex, 3 to 8% slopes (LyB) & 8 to 15% slopes (LyC) This complex consists of undulating and gently sloping, to sloping and rolling, somewhat excessively drained and shallow soils mixed with areas of exposed bedrock. The complex is on the tops of ridges, hills and plains near the seacoast. The soils have a surface layer of dark brown and dark gray sandy loam with subsoil to 16 inches thick that is fine sandy loam with bedrock at 18 inches. Included in the complex are small areas of Hermon, Croghan, Scio and Skerry soils which are well drained soils and poorly drained Naumburg and Brayton soils.



Limitations to growing trees are shallow soils, droughty conditions with shallow rooting depths which causes a hazard of uprooting during windy period. Machinery operations when the soils are saturated with water will cause excessive rutting and root damage. Species suited to the soils are white pine, red oak and sugar maple. Site index rating for white pine on Lyman soils is 54 which is the lowest rated site in York County. Trees grow best in the areas of included soils and poorest on the tops of the ridges and hill where the soils is nonexistent to a few inches deep.

#### LyE

The Lyman-Rock outcrop soil (LyE) is typically composed of gently rolling and sloping shallow soils that are somewhat excessively drained with areas of exposed bedrock. The complex averages about 65% Lyman soils, 20% bedrock exposed to the surface and 15% other included soils. The topsoil is about two inches deep and composed of fine sandy loam. The subsoil range to 16 inches of depth and is composed of fine sandy loams also. The sandy loams account for the ability of the soils to quickly pass water and therefore be dry. Areas of this complex are suitable for sugar maple, white pine and northern red oak. The site index rating for white pine is 54 on Lyman soils which is a result of the poorer growing conditions that the soil presents. The shallow soil prohibits trees from rooting very deeply and cause uprooting during windy periods. Logging equipment is limited by sharp drops and mud in wet weather. The best time for logging is during the winter or summer although with care logging can be undertaken in wet seasons.

#### MaB

Madawaska fine sandy loam - MaB - Madawaska fine sandy loam, 0 to 8 percent slopes - This soil is nearly level to gently sloping, moderately well drained, and deep. Typically the soil is composed of up to sixty inches or more of fine sandy loams and sands with moderately rapid permeability to a depth of twenty three inches. Surface runoff is slow and the available water capacity is moderate. The soil is suitable for growing trees. The main management concern is uprooting of trees during windy periods. The site index for eastern white pine is 76 and for red oak is 65 which indicates this a fairly good soil for growing trees.

#### Ra

Ra - Raynham silt loam - This soil is nearly level, poorly drained and deep. The soil is composed of various layers of silt loams to a depth of sixty inches or more. The Raynham soils have moderate to moderately slow permeability with slow surface runoff and high available water capacity. There is a hazard of trees uprooting during windy periods as the wetness prevents deep rooting. The site index for white pine is 65.

#### RoE

Rock outcrop- Lyman complex (RoE) , 15 to 18 percent slopes consists of moderately steep to very steep areas of exposed bedrock and some Lyman soils. The soil is located on the sides of mountains, hills and ridges. The shallow soils and droughtiness make woodland productivity very poor. It has some value as wildlife habitat and trail sites.

#### Sg

The Sebago peat soils are deep, level, poorly drained soils in depressions. Typically the soil is black and dark brown organic material to depths of more than 51 inches. The most common appearance of the soil is as a red maple swamp with bogs of sphagnum moss, sedges and low-growing water-tolerant shrubs. It is generally not suitable for commercial forest products growth. Typical uses are wetland habitat for wildlife and plants.

#### SkB

The skerry soil (SkB) is a fine sandy loam that is nearly level with scattered stones up to 1½ feet in diameter. The surface layer is dark brown fine sandy loam 6 inches thick. The subsoil is yellowish red and brown gravelly sandy loam 27 inches deep on top of a substratum up to 60 inches deep. The soil has moderate permeability in the surface layer and slow in the lower layers. Surface runoff is medium and available water capacity is moderate. Depth to bedrock is generally five or more.

The soil is suited for growing most trees common to the area, but the substratum restricts root development. Site index is 70 for white pine and 65 for hemlock which indicates a good growing site in this area. Limitations of the soil are a slight erosion hazard, slight equipment damage potential especially in the spring and fall when the soil is very wet, slight seedling mortality and slight windthrow hazard due to the rooting limitation. The restrictions the soils present are limited machinery operating to seasons when the soil is dry or frozen and maintaining good stand density to protect against windthrow.

#### SrB

The Skerry very stony fine sandy loam (SrB) has slight ratings in the categories of erosion hazard, equipment limitation, seedling mortality and windthrow hazard. The site index for white pine is 75, sugar maple is 60 and eastern hemlock 65. The most desirable species of trees to grow are these and red oak. The soil has up to 3 inches of organic matter, 2 inches of gray sandy loam, and varieties of fine sandy loams which range to depths of 60 inches. The water table has a seasonal depth of 1 ½ to 3 feet of depth. Permeability is moderate to slow in the upper layers and water moves through the substratum well. The high water table limits rooting of tree species with deep growing roots and excavations. This soil rates as good to better for growing trees in this area.

