

TOWN OF GLOCESTER, RHODE ISLAND
Glocester Land Trust

PROPERTY MANAGEMENT PLAN

Site Name: Burton Woodland, Robert G. Huckins Woodland and Sprague Farm including recent additions

Site Location: Chepachet, Rhode Island including frontage on Pine Orchard Road, Putnam Pike,
Joe Sweet Road, Chestnut Hill Road and Elbow Rock Road

Robert Hawksley, Chairperson
Glocester Land Trust

Date

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1.0 OVERVIEW

The property described herein consists of the following parcels belonging to the Gloucester Land Trust:

Sprague Farm, 247 acres, more or less, comprising portions of AP 7, Lot 11 & AP 10, Lot 32;
Burton Woodland, 108 acres, more or less, comprising portions of AP 11, Lots 1, 78 & 81;
Robert G. Huckins Woodland, 162 acres more or less, comprising all of AP 7, Lot 20;

together with the following parcels to be purchased in fee simple by the Gloucester Land Trust:

48 acres, more or less, comprising all of AP 7, Lot 147;
116 acres, more or less, comprising all of AP 8, Lot 9;
51 acres, more or less, comprising all of AP 8, Lot 15;
94 acres, more or less, comprising all of AP 8 Lot 11;

for a total of 826 acres, more or less.

This property (hereinafter called the "site" or the "property") is to be managed by the Gloucester Land Trust, a public body having the authority to acquire, hold and manage open space and agricultural land within the Town of Gloucester, RI. The funds for the purchase will be made available through a grant from the Rhode Island 1998 Open Space Bond (75%) and from The Gloucester Land Trust (25% in-kind donations of land.) Details pertaining to the site boundaries and location are provided in Appendix A (Property Map) and Appendix B (Topographical Map).

The property includes large tracts of mature second-growth woodland. The lower elevations enclose significant areas of wetlands, including a 24-acre cedar swamp, and a mixed evergreen/deciduous forest with several coexisting northern and southern species. The middle elevations include a large evergreen forest and a unique basin sedge fen. The upper elevations are primarily deciduous forest with substantial growth of Striped Maple, a species listed in the Rhode Island "List of Species of Concern". The property is a diverse wildlife habitat that, among a wide variety of wildlife, supports the Black-throated Blue Warbler, a species that formerly was considered extirpated in Rhode Island.

The sheer size of this property with its unusual diversity of forest types and its number of small streams and ponds makes its preservation as open space most significant for present and future generations. This document defines a formal management plan that is designed to ensure that the ecological and scenic value of this site is preserved in perpetuity.

2.0 MANAGEMENT RESPONSIBILITY

The Gloucester Land Trust (hereinafter called the Trust) is a municipal body organized in accordance with Rhode Island Public Laws, Chapter 87-548, with authority to acquire, hold, and manage real property situated in the Town of Gloucester. The responsibility for managing the Sprague Farm property will rest with the Gloucester Land Trust.

Specific management activities may be assigned by the Trust to one or more designated persons or organizations. The Trust shall also solicit the advisory assistance of various personnel or organizations with expertise in disciplines such as forestry, botany, wildlife management, soil science, etc.

3.0 PROPERTY USE

The property shall be used primarily for passive recreational and educational purposes. Access by the general public shall be allowed and encouraged. Hunting may be allowed on portions of the property at the sole discretion of The Trust

4.0 ACCESS

The site may be accessed from Pine Orchard Road, Putnam Pike, Joe Sweet Road, Chestnut Hill Road and Elbow Rock Road at marked entrances to primary access paths (See Appendix A.) Other than vehicles authorized by the Gloucester Land Trust, such as fire apparatus, police vehicles, and maintenance vehicles, no motorized or other vehicles are allowed anywhere on the site. The Gloucester Land Trust will establish the times during which the property will be open to public use, and may restrict access to certain areas of the property when necessary.

5.0 PROHIBITED ACTIVITIES

The following activities are specifically prohibited:

- Cycling
- Boating or canoeing
- Swimming
- Camping*
- Fires*
- Littering
- Use of sound-broadcasting devices
- Collecting plants, or plant parts, unless authorized by the Gloucester Land Trust
- Soil-grading, excavating or removal (except for trail-restoration and maintenance, or public-safety considerations)
- Soil-paving or oiling
- Fabricating or placing of structures of any kind (excepting the maintenance of stone bridges on trails)

*Camping or campfires may occasionally be permitted by the Chairperson of the Gloucester Land Trust or by an individual authorized by the Chairperson for individuals or for supervised, organized groups.

6.0 MANAGEMENT ACTIVITIES

6.1 Police Surveillance

Daily police surveillance along all road frontage shall be provided by the Gloucester Police Department.

6.2 General Surveillance

General surveillance of the site shall be provided at least monthly by a person or persons designated by the Trust. General surveillance includes, but is not necessarily limited to, the following:

- Inventory update of plant species, animal species, or other natural features
- Verification of the general health of plant and animal species
- Verification and reporting of fires
- Reporting damage or potential for damage to the property or its natural features
- Reporting violations of site regulations
- Identification and reporting of site-maintenance needs
- Identification of practices that would improve the management function

6.3 Scheduling of Activities

Organized activities at the site such as nature walks, botanical field studies, etc., shall be scheduled by the Chairperson of the Trust or by a person designated by the Chairperson.

6.4 Fire Control and Regulation

All fires on the site shall be **promptly extinguished** using methods that will minimize overall damage to vegetation. Fire-control and regulation are the responsibility of state and local fire-protection authorities.

6.5 Maintenance

The property shall be maintained as open space. Management and maintenance practices will be designed to insure the continued evolution of the site with emphasis on the protection and propagation of less common forest and wildlife species. Maintenance may include timber-harvesting subject to formal review by the Gloucester Land Trust of its ecological impact in accordance with the overall management plan. The existing fields and pastures may be restored and maintained where appropriate, if in accordance with the overall management plan. Specific maintenance activities are listed below:

6.5.1 Litter Removal

Litter is defined as material that does not naturally exist at the site. Naturally occurring materials such as fallen trees, stones, leaves, etc. shall not be included in litter removal activities. Litter removal shall be the responsibility of the Trust and shall be conducted at least once every month by one or more persons or agencies designated by the Trust.

6.5.2 Footpath and Trail Maintenance

Footpaths and trails shall be maintained by persons or agencies designated and supervised by the Trust in a manner consistent with the scenic character of the site, while providing safe public access.

7.0 PUBLIC AWARENESS

7.1 Informational Leaflet

An informational leaflet shall be published and periodically updated by the Trust. Copies of the leaflet shall be available at the Town Hall and other locations designated by the Trust. The leaflet shall describe the various natural features of the site and shall include a map illustrating the location of footpaths and noteworthy natural features. A list of prohibited activities shall be included in the leaflet.

7.2 Posting and Marking

Informational signs shall be posted at visible locations. These signs shall identify the site and acknowledge financial assistance provided by the State of Rhode Island for acquisition of the property. Public access shall also be acknowledged along with the hours that the site is open. Prohibited activities shall be listed. The site-access point, boundaries, and footpaths shall be clearly marked. The method, design, and materials for all signs and markings shall be compatible with the natural character of the site, shall be approved by the Trust, and shall comply with Rhode Island Department of Environmental Management requirements.

8.0 SPECIES INVENTORY

A breakdown of the general vegetation types is provided in Appendix B (Property Map). A detailed inventory of plant and animal species shall be completed progressively (See Section 9) and shall be continuously updated.

A number of animal species have been observed at the site. A more detailed inventory of these species shall be established. For bird species, this shall consist of surveillance during nesting periods for detection of audible and visible indications of the various species. Nesting areas shall be specifically identified (See Section 9.2). The animal-species inventory shall also be conducted coincidentally with other management activities. If evidence of bird or mammal species of special concern is noted, an attempt shall be made to identify habitat (e.g. nesting areas) requiring special protection.

Various resources shall be utilized for evaluation of wildlife and wildlife habitat. This shall include evaluation of existing soils and vegetation maps available from State and Federal agencies. The Trust shall also solicit the assistance of specialists in plant and wildlife in this effort. This includes, but is not limited to, personnel from the University of Rhode Island College of Natural Resources, naturalists, RI DEM foresters and wildlife specialists, representatives of the Rhode Island Natural Heritage Program, The Rhode Island Audubon Society, The Nature Conservancy, and The Rhode Island Wild Plant Society.

9.0 SPECIAL SPECIES-PROTECTION CONSIDERATIONS

9.1 Plant Species

A number of plant species that are sensitive to human influence exist at the site. These include, several exemplary specimens of *Acer pennsylvanicum* (Striped Maple), which is listed as a Rhode Island "Species of Concern". The location and design of footpaths shall be considered in the results of the species inventory (see Section 8.0) so that rare plant species may be observed but not endangered.

9.2 Animal Species

The location of footpaths and vista points, as well as general site management practices, shall be such that their effect on wildlife habitat shall be minimized. Human traffic in the vicinity of known or potential feeding and drinking areas shall be minimized. Forest management activities such as cutting or trimming shall require formal review by the Land Trust such that adverse effects on existing wildlife habitat are minimized. Specific forest-management activities may be required in order to enhance habitat for certain species.

Particular management emphasis shall be placed on protection and enhancement of habitat for the Black-throated Blue Warbler (see Section 1.0). This shall include continuous observation and evaluation of this species in regard to numbers, nesting habits, types and height of nesting plants, density of forestation etc. Advice and assistance from various resources shall be solicited in this regard; this includes, but is not limited to RI DEM, RI Audubon Society, the Seatuck Research Foundation, National Fish and Wildlife Service, the Nature Conservancy and Cornell University Ornithological Laboratory.

10.0 MANAGEMENT PLAN SCHEDULE AND PERIODIC REVIEW

The Management Plan consists of a five-year schedule which includes informing the general public of the existence of the site, establishing a site-maintenance and surveillance routine, and completing the species inventory, footpaths, and marking/posting. The schedule is illustrated in Figure 1. Information pertaining to the site's biological status, management activities, and management plan schedule shall also be reported at regular meetings of the Trust. Reported items may or may not require resolution by the Trust.

At least once every calendar year, the Trust shall meet for a general review of the site's status. At minimum, the following shall be included in the annual review:

- Review of personnel or agencies involved in active management functions
- Update of plant and animal species inventories
- General overview of the natural evolution of the site
- Identification of problem areas which may require changes in management methods
- Review of the time line for management objectives and determination of new fifth-year objectives

Plan modification shall be only for improvement in protecting the natural evolution of the site.

FIGURE I - MANAGEMENT PLAN SCHEDULE

YEAR	2000	2001	2002	2003	2004
	Update brochure				
		Continue boundary marking-----			
		Complete roadside signs			
			Update plant species inventory		

APPENDIX A - PROPERTY MAP

APPENDIX B – TOPOGRAPHICAL MAP



APPENDIX C - FOREST MANAGEMENT PLAN
FOR THE GLOCESTER LAND TRUST
SPRAGUE FARM TRACT

This Management Plan has been developed to help manage forest land for multiple-use purposes. This Plan should serve only as a guide for development and should remain flexible to allow for changes in objectives and unforeseen changes in the land due to the effects of man or nature.

This Plan includes a map of the property showing the location and approximate acreage of each stand. Also included are a description of each stand and recommended forest management treatments.

A glossary of forestry terms is also included to aid in understanding some of the technical language used.

STAND ONE - MIXED HARDWOODS

This is a mixed hardwood stand which was cut over for fuelwood and sawlogs in the past 6 - 8 years. Many of the hardwoods that remained after this stand was harvested have since died. This stand is valuable for wildlife habitat because of the cover created by the dense understory and the food provided by the pioneer plant species which have invaded this area.

So many trees were removed in the past that large openings exist in the canopy and all the growing space isn't being fully utilized. This stand should not receive any management treatment at the present time but should be re-evaluated in 10 years.

The goal for this stand should be to manage it as a mixed hardwood/pine type. Without thinning, the trees in this stand will grow slowly but will be of good quality since dense growing conditions encourage the trees to grow straight, have fewer branches, and discourage attack of the white pine weevil. As this stand grows larger, periodic silvicultural treatments will be needed to favor desirable trees. The first treatment should occur when the white pines in this stand are about 20 feet tall. At this time, this stand should receive a weeding. In this operation the crowns of desirable pines and hardwoods should be released from competition by removing adjacent trees. The number of trees to be favored and the spacing between trees will depend on the stand-conditions at that time.

Stand One	Age: 60	Site index: 59	
<u>Species</u>	<u>Trees/acre</u>	<u>Basal area</u>	<u>Avg. DBH</u>
White pine	155	32.1	5.6
Hemlock	48	11.8	5.9
Red maple	36	8.3	5.7
Black birch	7	1.7	6.4
Grey birch	19	1.7	4.0
Black cherry	19	1.7	4.0
White oak	12	5.9	9.5
<u>Red oak</u>	<u>1</u>	<u>1.6</u>	<u>16.5</u>
Total	297	64.7 ft ²	5.7

<u>Species</u>	<u>Board feet/acre</u>	<u>Cords/acre</u>
White pine	1361	2.2
Hemlock	468	0.6
Red maple	200	1.0
Black birch	0	0.3
Grey birch	0	0.0
Cherry	0	0.0
White oak	187	0.9
<u>Red oak</u>	<u>202</u>	<u>0.0</u>
Total	2419	5.1

STAND TWO – HEMLOCK/HARDWOODS

This is a mixed hemlock/hardwood type 65 - 70 feet tall, located in the northern part of the property. The Canton - Charlton series is the dominant soil type in this stand; these soils have low potential productivity for growing trees. This forest type is found on low-lying areas and level slopes which are poorly drained. This stand is also very rocky in places, making it difficult to use for recreation or intensive timber management. This stand is unevenly aged with mature hardwoods and hemlock forming the overstory, while hemlock is the dominant species in intermediate and understory positions.

The diverse nature of this stand contributes to its value for wildlife. Hemlock comprises about 55% of the basal area in stand; mast producing hardwoods (oaks) make up about 25%. Since the mixed species found growing here have different light requirements, areas of the stand should be managed at varying densities to provide a variety of stand conditions. Hemlock is shade-tolerant and capable of growing under very dense canopy conditions. Since it requires less growing space, without thinning it will begin to dominate this stand in the future. Hardwoods have larger crowns and the only mast-producing species found in this stand that will tolerate shade. The canopy of this stand will have to be opened up, through thinning, to enable the hardwoods in this stand to compete with hemlock and insure this remains a mixed species stand. This stand should be thinned heavily, using the group-selection method, to remove about 30% of the basal area. Individuals or groups of trees selected as potential mast-producers should be favored by removing trees from competition, improving the health and vigor of the trees, leading to increased mast-production and diameter growth. The creation of small openings adjacent to mature hardwoods will allow hardwood seedlings to develop in the understory and insure their presence in this stand in the future. Areas of the stand where hemlock dominates can be maintained at higher densities to provide winter cover for wildlife.

Stand Two. Age: 65 Site index: 59

<u>Species</u>	<u>Trees/acre</u>	<u>Basal area</u>	<u>Avg. DBH</u>
White pine	3	6.0	18.7
Hemlock	199	96.0	8.5
Red maple	92	22.0	5.7
Beech	27	8.1	6.4
Black cherry	23	2.0	4.0
White oak	3	4.0	14.7
<u>Red oak</u>	<u>29</u>	<u>9.8</u>	<u>6.4</u>
Total	376	147.9 ft ²	7.4

<u>Species</u>	<u>Board feet/acre</u>	<u>Cords/acre</u>
White pine	858	0.2
Hemlock	5482	3.9
Red maple	0	3.5
Beech	269	0.8
Black cherry	0	0.0
White oak	470	0.1
<u>Red oak</u>	<u>690</u>	<u>0.2</u>
Total	7769	8.7

STAND THREE - PINE /HARDWOODS

This is a sawtimber-size white pine mixed hardwood type located in several stands scattered throughout the property. About half of the trees in this type are over 16 inches diameter at breast height (DBH); 28% are between 10 and 16 inches DBH. The quality of the trees in this type is good (88% of the trees are acceptable growing stock). This stand shows evidence of selective removal of the best trees in the past but this should have little effect on the management of this stand in the future. The soils on this site are in the Hinckley series, which have low potential productivity for forest crops. Because of their sandy nature, these soils are excessively drained and infertile. Sites such as this are best suited to conifers, which can be grown and regenerated on this soil type with a minimum of hardwood competition.

This stand is slightly overstocked, at 65%, and should receive a light thinning/improvement cut. The density of this stand should be reduced to 125 square feet of basal area or about 180 trees/acre. The goal of this treatment is to free the crown of each crop tree on at least one side by removing one of the major competing trees. This treatment will create room in the canopy for the crowns of desirable trees to grow, increasing vigor and diameter growth. White pine is the preferred crop tree in this stand and should be favored in this treatment, while poor-quality hardwoods should be discriminated against.

One to five cavity trees per acre should be left for wildlife. Additional snags can be created by killing some of the unacceptable trees in place through girdling. Rotten culls in advanced stages of decay are not as valuable to wildlife as living cavity trees. Most of these trees do not contain dens and don't survive long enough for dens to form. If all unsalvageable dead trees in the stand are left standing this should provide all that are necessary.

In thinning this stand, the decision to harvest potential den trees should be based on the characteristics of each tree. Since it is desirable to promote species of wildlife which use cavities, trees with dens or nest homes should be retained whenever they occur. Cull-trees and trees with existing cavities should be harvested only when removing them will release a high quality crop tree.

Stand Three Age: 51 Site index: 63

<u>Species</u>	<u>Trees/acre</u>	<u>Basal area</u>	<u>Avg. DBH</u>
White pine	295	102.9	7.0
Hemlock	84	17.7	5.6
Pitch pine	3	2.2	11.3
Red maple	13	1.1	4.0
Hickory	10	4.4	8.6
Black birch	3	1.1	9.0
<u>Black oak</u>	<u>17</u>	<u>6.7</u>	<u>6.8</u>
Total	425	136.1 ft ²	6.7

<u>Species</u>	<u>Board feet/acre</u>	<u>Cords/acre</u>
White pine	6501 7.8	
Hemlock	277	0.6
Pitch pine	0	0.0
Red maple	0	0.0
Hickory	0	0.7
Black birch	0	0.2
<u>Black oak</u>	<u>39</u>	<u>0.6</u>
Total	7177	9.9

STAND FOUR

This is a well-drained site with 3 to 15% slopes. The dominant soils in this area are the Canton series, which have low potential productivity for growing trees.

This is a mixed-hardwood stand that was harvested in the late 1970's -early 1980's. The species composition was probably very similar to Stand One originally, but this area was cut very heavily and few trees are now present on the site. The understory is dominated by Mountain Laurel in various age and size classes from 3 feet to 12 feet high. It is unlikely that the trees presently in this stand will fully occupy the site since epicormic branches (an indication of stress) are present on many of the largest trees. Individual trees and groups of trees adjacent to the trail show evidence of having been killed by shoestring root rot.

This stand should receive site preparation and/or supplemental planting expeditiously to establish some form of vegetation other than mountain laurel on this site. The soils in this area are well-suited to growing conifers with minimal hardwood competition because of their excessively drained, sandy texture. If soils adjacent to existing conifers are scarified to encourage exposed mineral soil, natural regeneration should be adequate. It may be necessary to plant 400 - 600 conifer seedlings per acre in places in this stand distant from a natural source of seed. This site should be re-evaluated five years after planting to determine the survival rate of the seedlings and the amount of hardwood competition. The development of the conifer seedlings should be encouraged through removal of competing hardwoods. It is unlikely that frequent extensive removal of hardwoods will be needed since they will grow much slower than softwoods on this site.

STAND FIVE - ATLANTIC WHITE-CEDAR

This is a softwood swamp-forest type located in a poorly drained basin in the central part of the property. Atlantic White Cedar is a pioneer forest type which doesn't perpetuate itself without disturbance. This stand was almost exclusively cedar in the past, but more shade-tolerant hardwoods, such as red maple and black gum, are becoming more common as the stand ages.

To perpetuate this type, areas adjacent to existing cedar should be clearcut to encourage regeneration. White-cedar usually produces fair to excellent seed crops each year, but high light intensity is required for germination. This seed is released in the early fall and most of it falls directly under the stand or at a distance equal to the height of the stand. The seed can remain in the forest floor for three to four years and germinate when conditions become favorable. The clearcut areas should be narrow strips 50 - 75 feet wide. The goal of this treatment would be to secure regeneration which is dense enough to shade out most of the hardwood reproduction. Weeding treatments will most likely be needed to remove hardwoods which are interfering with the growth of the cedar.