

Guernsey Sanctuary

FOREST STEWARDSHIP PLAN 2014



PREPARED FOR THE

Wellesley Conservation Council

BY

JOHN F. ROBBINS, CONSULTING FORESTER
59 WILSON RD., CONCORD, MA 01742

GUENSEY SANCTUARY FOREST STEWARDSHIP PLAN

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The Property Overview, Regional Significance, and Management Summary



INTRODUCTION

The 27.5 acre Guernsey Sanctuary on Sabrina Lake in Wellesley and Needham was established following a donation of land by Mr. & Mrs. William G. Guernsey beginning in 1961. The land was formerly part of the famous 800 acre Baker Estate in the late 1800s when man-made Sabrina Lake was created and became a popular recreational attraction. The Sanctuary, now surrounded by residential development serves as a valuable open space and wildlife corridor along the west side of the lake with trails used for passive recreation.

The lakefront trail extends almost a third of a mile from Oak Island at the north end of the property along the lake's 15 foot high embankment to the south end in Needham. The trail continues through the woods to the west of the lake forming a loop back to the lake. A parking area on Winding River Road provides access to the Sanctuary trails.

The forest of Guernsey Sanctuary is composed of a mixture of upland and wetland forest types. A mature white pine stand with impressive towering trees occupies most of the upland portion of the property. The wetland portions are predominantly composed of red maple and wetland shrubs. Several very old, majestic oak trees are growing on the lake embankment, which date back to the late 1800s.

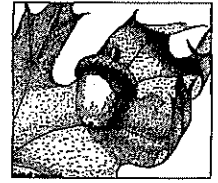
The forest now occupying the Sanctuary grew up on abandoned farmland more than a century ago. The old stone walls, stone bridges, and drainage ditches that were built when the land was still open can still be seen. Since its establishment the forest has grown relatively undisturbed for many decades.

The purpose of this forest stewardship plan is to document the Guernsey Sanctuary forest, assess its condition, and make recommendations for meeting the goals of the Council to protect and sustain the natural state of the Sanctuary. Actively engaging residents in its stewardship will be very beneficial in preserving and enhancing this valuable asset.



FOREST MANAGEMENT PLAN

Submitted to: Massachusetts Department of Conservation and Recreation
For enrollment in CH61/61A/61B and/or Forest Stewardship Program



CHECK-OFFS

CH61	CH61A	CH61B	STWSHP	C-S
cert. <input type="checkbox"/>	cert. <input type="checkbox"/>	cert. <input type="checkbox"/>	new <input checked="" type="checkbox"/>	EEA <input type="checkbox"/>
recert. <input type="checkbox"/>	recert. <input type="checkbox"/>	recert. <input type="checkbox"/>	renew <input type="checkbox"/>	Other <input type="checkbox"/>
amend <input type="checkbox"/>	amend <input type="checkbox"/>	amend <input type="checkbox"/>	Green Cert <input type="checkbox"/>	
Plan Change: _____ to _____			Conservation Rest. <input type="checkbox"/>	
			CR Holder _____	

Administrative Box

Case No. _____	Orig. Case No. _____
Owner ID _____	Add. Case No. _____
Date Rec'd _____	Ecoregion _____
Plan Period _____	Topo Name _____
Rare Spp. Hab. _____	River Basin _____

OWNER, PROPERTY, and PREPARER INFORMATION

Property Owner(s) Wellesley Conservation Council, Inc.
 Mailing Address P.O. Box 81129, Wellesley, MA 02481 Phone (781) 235-3090

Property Location: Town(s) Wellesley Road(s) Winding River Road

Plan Preparer John F. Robbins, Consulting Forester Mass. Forester License # 210
 Mailing Address 59 Wilson Road, Concord, MA 01742 Phone (978) 369-3128

RECORDS

Assessor's Map No.	Lot/Parcel No.	Deed Book	Deed Page	Total Acres	Ch61/61A 61B Excluded Acres	Ch61/61A 61B Certified Acres	Stewshp Excluded Acres	Stewshp Acres
Ws.116	6	4317	607	2.9			0	2.9
Ws.116	7	4788	154	2.2			0	2.2
Ws.128	6			13.3			0	13.3
TOTALS				18.4			0	18.4

Excluded Area Description(s) (if additional space needed, continue on separate paper)
 No exclusions

HISTORY Year acquired 1961 Year management began 1961

Are boundaries blazed/painted? Yes No Partially

What treatments have been prescribed, but not carried out (last 10 years if plan is a recert.)?

stand no. _____ treatment _____ reason _____
 (if additional space needed, continue on separate page)

Previous Management Practices (last 10 years)

Stand #	Cutting Plan #	Treatment	Yield	Value	Acres	Date
_____	_____	_____	_____	_____	_____	_____

Remarks: (if additional space needed, continue on separate page)
 See Page 4

RECORDS (continued)

Assessor's Map No.	Lot/Parcel No.	Deed Book	Deed Page	Total Acres	Ch. 61/61A 61B Excluded Acres	Ch61/61A 61B Certified Acres	Stewshp Excluded Acres	Stewshp Acres
Nd.223	10	3913	103	9.1			0	9.1
			TOTALS	9.1			0	9.1

EXCLUDED AREA DESCRIPTION (continued):

No exclusions

HISTORY (continued):

The Guernsey Sanctuary on Sabrina Lake in the towns of Wellesley and Needham was donated by Mr. & Mrs. William G. Guernsey in 1961. Their initial gift was 13 acres. Subsequently the Guernseys made an additional donation to make a total of 27.5 acres. The land has a fabled past. At the age of 40 in 1868, William Emerson Baker bought 11 farms totalling over 800 acres to create his grand vision for a recreational attraction which required the building of Sabrina Lake as its main attraction. The Baker Estate, also known as Ridge Hill Farms, continued as a popular destination until 1888 when Baker died. The Guernsey Sanctuary is now a mature pine and hardwood forest bordering on the west side of Sabrina Lake. A trail along the large embankment built to create the lake is one of the many attractions for visitors to the property. The Guernsey Sanctuary is now a conservation area which provides wildlife habitat and passive recreation for local residents.

Owner(s) Wellesly Conservation Council, Inc.

Town(s) Wellesley, Needham

Landowner Goals

Please check the column that best reflects the importance of the following goals:

Goal	Importance to Me			
	High	Medium	Low	Don't Know
Enhance the Quality/Quantity of Timber Products*			✓	
Generate Immediate Income			✓	
Generate Long Term Income			✓	
Produce Firewood			✓	
Defer or Defray Taxes				✓
Promote Biological Diversity	✓			
Enhance Habitat for Birds	✓			
Enhance Habitat for Small Animals	✓			
Enhance Habitat for Large Animals	✓			
Improve Access for Walking/Skiing/Recreation	✓			
Maintain or Enhance Privacy			✓	
Improve Hunting or Fishing			✓	
Preserve or Improve Scenic Beauty	✓			
Protect Water Quality	✓			
Protect Unique/Special/ Cultural Areas	✓			
Attain Green Certification		✓		
Other:		✓		

*This goal must be checked "HIGH" if you are interested in classifying your land under Chapter 61/61A.

In your own words, describe your goals for the property:

The goal is to enhance the long term sustainability of the natural state of nature in the Guernsey Sanctuary.

Stewardship Purpose

By enrolling in the Forest Stewardship Program and following a Stewardship Plan, I understand that I will be joining with many other landowners across the state in a program that promotes ecologically responsible resource management through the following actions and values:

1. Managing sustainably for long-term forest health, productivity, diversity, and quality.
2. Conserving or enhancing water quality, wetlands, soil productivity, carbon sequestration, biodiversity, cultural, historical and aesthetic resources.
3. Following a strategy guided by well-founded silvicultural principles to improve timber quality and quantity when wood products are a goal.
4. Setting high standards for foresters, loggers and other operators as practices are implemented; and minimizing negative impacts.
5. Learning how woodlands benefit and affect surrounding communities, and cooperation with neighboring owners to accomplish mutual goals when practical.

Signature(s): Frederick V. Fortmiller, President

Date: 11/12/2014

Frederick V. Fortmiller, President

Owner(s) (print) Wellesley Conservation Council, Inc.

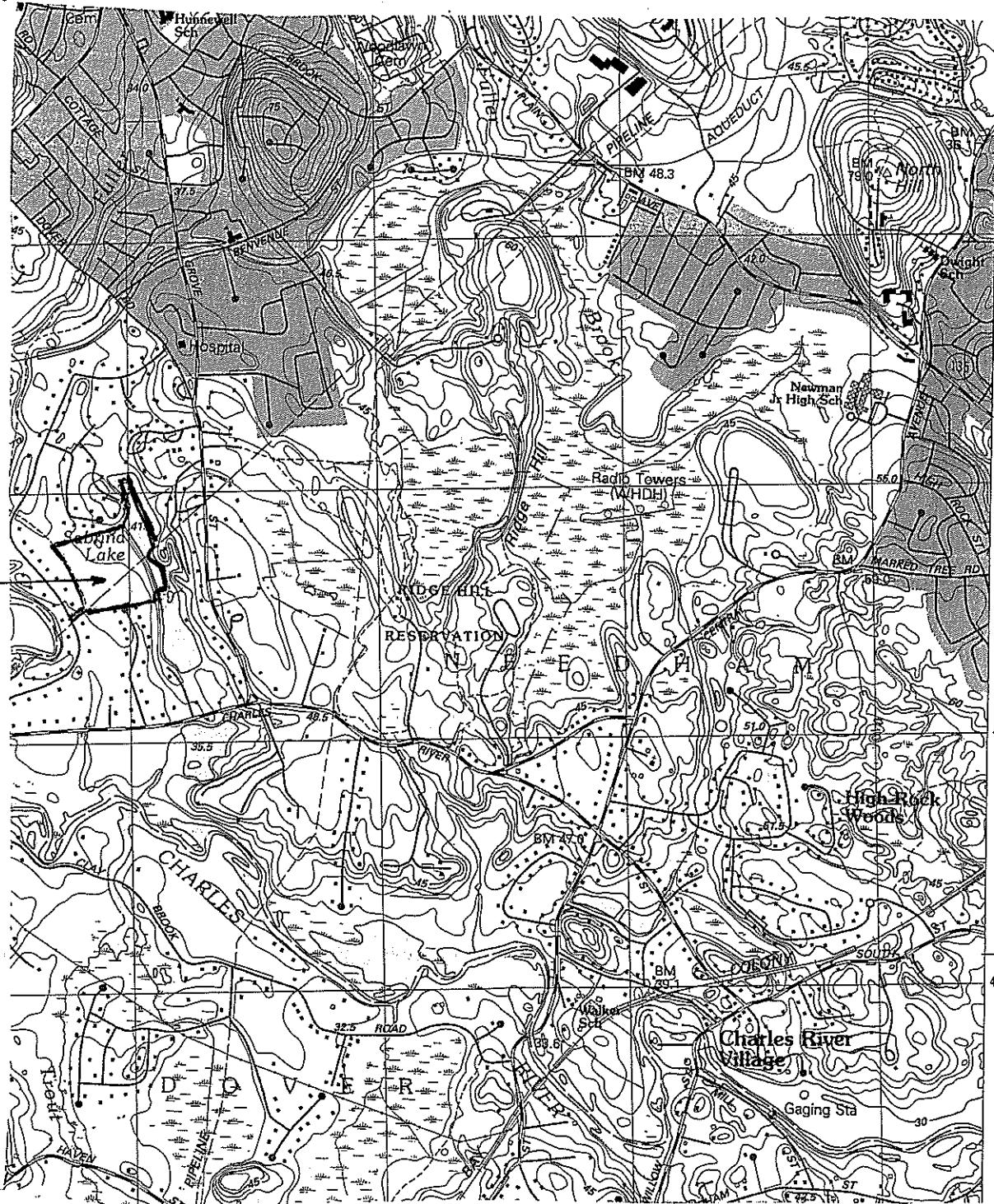
LOCUS MAP

GUERNSEY SANCTUARY

PROPERTY OF

WELLESLEY CONSERVATION COUNCIL

P.O. BOX 81129, WELLESLEY, MA 02481



FROM U.S.G.S. FRAMINGHAM QUADRANGLE

SCALE : 1" = APPROX. 2000 FT.

THE FOREST OF GUERNSEY SANCTUARY

The forest of Guernsey Sanctuary is composed of a mixture of mature upland pine, oak, and red maple forest, and wetland marsh occupied primarily by red maple and wetland shrubs. It is a diverse and interesting forest with many mature trees of enormous size that are well over 100 years old. The embankment along Sabrina Lake is lined by many huge specimen trees of pine and oak that were probably planted in the late 1800s when the lake was created. More recently, younger trees have become established beneath the towering older trees. The diversity of tree and shrub species, and the mixture of upland and wetland forest provides excellent habitat for a wide variety of wildlife.

For the purposes of this forest inventory, the forest has been divided into four forest stands according to tree species composition, size-class, density, and site conditions. The four stands include white pine, white pine/hardwoods, red maple, and white pine/oak forest types. The forest stand map on the next page shows the location of the stands. Stand characteristics are described on the following pages as well as some of the interesting features found in the various stands.

Some of the terms used to measure stand characteristics include:

BA (Basal Area) - cross section area of trees 4.5' above ground level (an indicator of density).

MSD (Mean Stand Diameter) - tree diameter at 4.5' above ground level.

VOL (Volume) - in board feet for sawtimber and cords for fuelwood or pulpwood.

Site Index - height of a particular tree species at 50 years of age (an indicator of growth potential).

FOREST STANDS







OF THE
GUERNSEY SANCTUARY

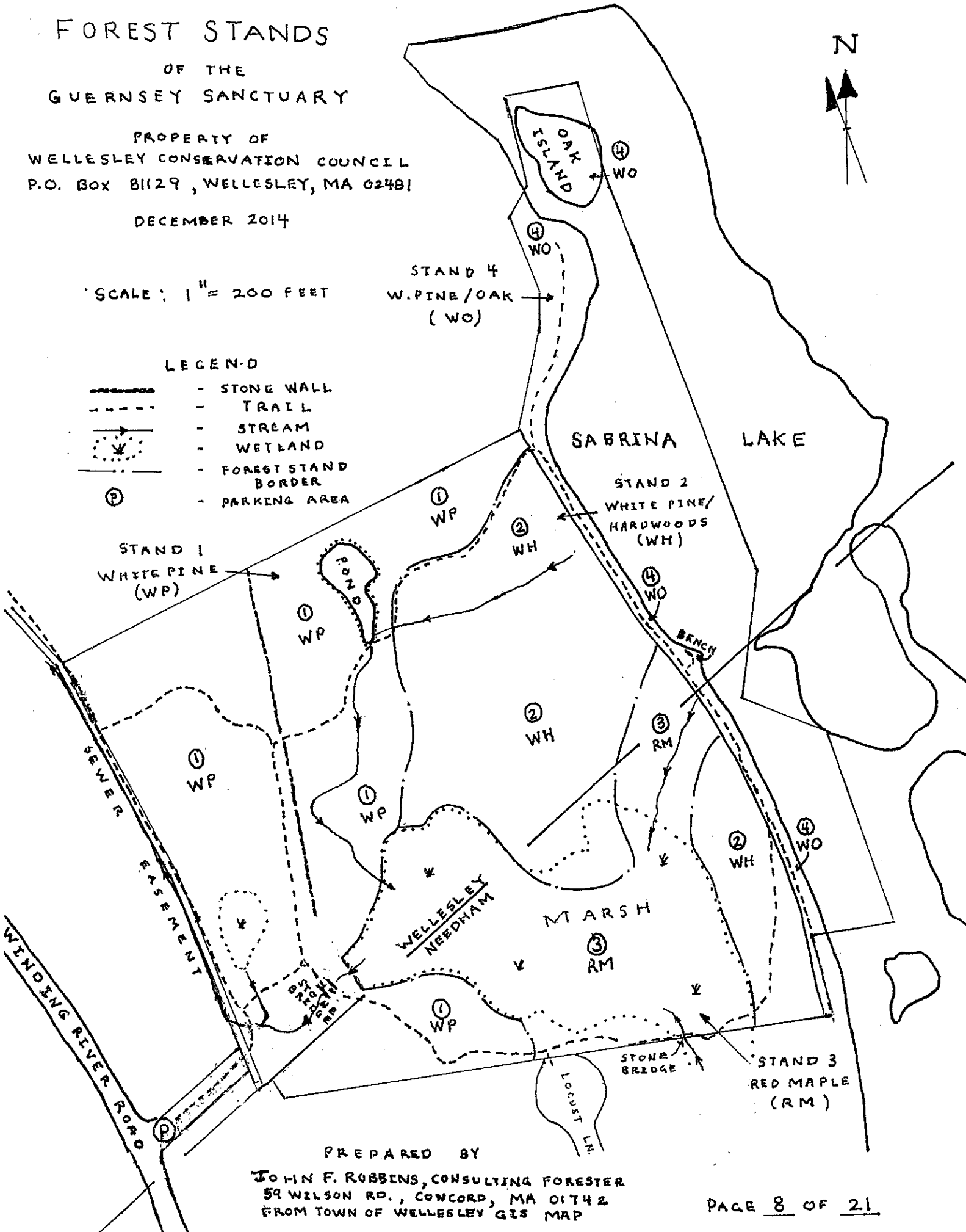
PROPERTY OF
WELLESLEY CONSERVATION COUNCIL
P.O. BOX 81129, WELLESLEY, MA 02481

DECEMBER 2014

SCALE: 1" = 200 FEET

LEGEND

-  - STONE WALL
-  - TRAIL
-  - STREAM
-  - WETLAND
-  - FOREST STAND BORDER
-  - PARKING AREA



PREPARED BY

JOHN F. ROBBINS, CONSULTING FORESTER
59 WILSON RD., CONCORD, MA 01742
FROM TOWN OF WELLESLEY GIS MAP

STAND DESCRIPTIONS

OBJ	STD NO	TYPE	AC	MSD OR SIZE-CLASS	BA/AC	VOL/AC	SITE INDEX
1	STEW	WP	9	16"	130	13 MBF & 39 CDS	65(W.PINE)

This upland forest stand of the Guernsey Sanctuary is composed predominantly of large, towering white pines, with some hardwoods mixed in. Hardwood species include red maple, black oak, white ash, elm, and a few sugar maple. This stand originally grew up more than a century ago on abandoned farmland. There are now many huge specimen "pasture pines" that dominate the stand. The stand is growing on soil classified as Sudbury fine, sandy loam, a moist site, very productive for the growth of both pine and hardwoods. There is some younger pine and hardwood regeneration growing beneath the older trees throughout the stand along with some yews and other evergreens that were probably planted long ago. Glossy buckthorn, a non-native invasive shrub has also become well-established in the understory, inhibiting the growth of native trees and shrubs.

The trail from the Winding River Road parking area first enters the stand beyond the sewer easement. The trail branches off shortly after, with the south branch crossing an old stone bridge on the way toward Locust Lane. The north branch passes through a stone wall, crosses a wooden bridge at the outlet of the small pond and continues on to Sabrina Lake.

There has been some storm-damage to the larger pines in recent years through breakage of tops and uprooting on the wet, shallow soil. The openings created by the fallen trees have become occupied by an abundance of tree seedlings and saplings, as well as glossy buckthorn. Removing the buckthorn and other invasive plants where they are competing with native plants by pulling them up or cutting is recommended. Promoting a resilient, multi-aged stand with a variety of tree, shrubs and herbaceous plants is the management goal for this stand.

2	STEW	WH	6.5	12"	125	2 MBF & 37 CDS	65(W.PINE)
---	------	----	-----	-----	-----	-------------------	------------

A mixed stand of white pine, Norway spruce, hemlock, and hardwoods occupies the area just west of the lake embankment. Hardwood species make up 70% of the stand and include red maple, black oak, white ash, elm, and swamp white oak. Several age-classes are growing in the stand. The Norway spruce trees growing throughout the stand were most likely planted long ago. Although the soil type is similar to the soil of Stand 1, Sudbury fine, sandy loam, this is a wetter site bordering the marsh. An intermittent stream flows west through the stand from the embankment to the small pond. Crabapple, blueberry, and winterberry which provide fruit for birds and other wildlife are growing beneath the larger trees, along with glossy buckthorn.

The variety of vegetation, diversity of tree age-classes and dense cover makes this stand very attractive for wildlife, including a herd of deer seen in the stand. As in Stand 1, the management goal is to sustain the diversity of trees and plants in the stand and provide good wildlife habitat. Removal of buckthorn and other invasive plants is recommended to allow the native plants to grow better.

Stand descriptions continued on next page

OBJECTIVE CODE: CH61 = stands classified under CH61/61A/61B STEW= stands not classified under CH61/61A/61B
 STD= stand AC= acre MSD= mean stand diameter MBF= thousand board feet BA= basal area VOL= volume

Owner(s) Wellesley Conservation Council, Inc.

Town(s) Wellesley, Needham

STAND DESCRIPTIONS

OBJ	STD NO	TYPE	AC	MSD OR SIZE-CLASS	BA/AC	VOL/AC	SITE INDEX
STEW	3	RM	5	10"	60	10 CDS	55(R.MAPLE)

The large marsh that covers the southern end of the Guernsey Sanctuary is occupied primarily by red maple, elm, and wetland shrubs. There are also some scattered pines growing on the drier perimeter areas. The stand serves to protect the marsh and provides a filter zone for water running through the marsh. The soil type is Swansea muck which stays wet through the year, and suited only for trees such as red maple that can withstand wet conditions. The trees in this area are younger in age than the other stands. Native berry-producing shrubs growing beneath the larger trees include blueberry, winterberry, viburnum, and dogwood. Invasive plants growing in the area include honeysuckle, multiflora rose, Japanese barberry, and bittersweet vine.

The stone foundation of an old dam at the outlet of the marsh indicates this area was once impounded to create a pond. The remains of the dam may be viewed from the stone bridge just downstream of the marsh. Continuing on the loop trail around the marsh by Locust Lane, another stone bridge built long ago crosses the stream entering the marsh from the south. Another intermittent stream feeds into the marsh from the base of the lake embankment.

The challenge of managing this stand to preserve its natural character and importance as wildlife habitat will be to control the spread of invasive plants where possible. Protecting the marsh and the functions it serves is the most important role that this stand provides.

STEW	4	WO	1.5	16"	100	4 MBF & 30 CDS	65(W.PINE)
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The embankment along Sabrina Lake and lakeshore extending north to Oak Island is composed of white pine, Norway spruce, hemlock, red maple, sugar maple, black birch, elm, and sassafras. The soil type is Canton fine, sandy loam, a well-drained soil suitable for both pine and hardwood growth. This riparian area provides an important role in filtering and preventing sediment, chemicals and debris from reaching the lake. Many of the trees in this area are well over a century old, dating back to the time the embankment was built and the lake created. Several huge oaks, some 3-4 feet in diameter which were probably planted long ago, line the embankment. A view easement for a short distance along the lake north of the embankment is kept open. Oak Island, a small island just offshore with a makeshift pole bridge, is occupied by white pine, oak, red maple, and Norway spruce, with blueberry in the understory.

The part of the loop trail that passes along the lake embankment is one of the highlights of Guernsey Sanctuary. A bench commemorating William Guernsey is located halfway along the embankment and offers a relaxing place to sit and enjoy the lake. Efforts to preserve the character of this area should be made by clearing encroaching vegetation, controlling invasive plants and maintaining views of the lake and out over the marsh to the west. The scenic views and majestic old trees that line the embankment provide a memorable walking experience, and a glimpse of the grandeur of the 1800s Baker Estate.

LAKE 5.5 ACRES

OBJECTIVE CODE: CH61 = stands classified under CH61/61A/61B STEW= stands not classified under CH61/61A/61B
 STD= stand AC= acre MSD= mean stand diameter MBF= thousand board feet BA= basal area VOL= volume

Owner(s) Wellesley Conservation Council

Town(s) Wellesley, Needham

MANAGEMENT PRACTICES
to be done within next 10 years

OBJ	STD NO	TYPE	SILVICULTURAL PRESCRIPTION	AC	TO BE REMOVED		TIMING
					BA/AC	TOT VOL	

STEW	1	WP	INVASIVE PLANT CONTROL & TRAIL MAINTENANCE	2	-	-	2015-24
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STEW	2	WH	INVASIVE PLANT CONTROL & TRAIL MAINTENANCE	1	-	-	2015-24
------	---	----	---	---	---	---	---------

REMARKS: Begin to control the spread of invasive plants, particularly glossy buckthorn by pulling up young plants and cutting larger ones that are competing with native trees and shrubs.
Consider engaging volunteers to help with the work and demonstrate good forest stewardship to the public.
Post educational information on the board at the parking area about invasive plants and their identification.
Keep trails passable by clearing storm-damage and encroaching vegetation.

STEW	3	RM	INVASIVE PLANT CONTROL & TRAIL MAINTENANCE	1	-	-	2015-24
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REMARKS: Maintain a healthy natural forest stand to protect the marsh and the important functions it serves for floodwater storage, filtration, and wildlife habitat.
Control invasive plants where they are competing with more desirable native trees and shrubs.
Keep the trail around the marsh clear of storm-damage and encroaching vegetation.

STEW	4	WO	TRAIL AND VIEW MAINTENANCE & INVASIVE PLANT CONTROL	1	-	-	2015-24
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REMARKS: Keep the trail along the lakeshore and lake embankment clear of invasive plants and encroaching vegetation.
Maintain the scenic views from the lake embankment to the lake and over the marsh to the west.

OTHER RECOMMENDATIONS: To encourage neighbors, town residents and other interested groups in helping to take care of Guernsey Sanctuary, consider starting a "Friends of Guernsey Sanctuary" group that would monitor the property and organize activities and other events such as:

- holding a public walk to learn to identify invasive plants
- scheduling a day to remove invasives from a section of the Sanctuary
- scheduling a day to keep trails clear
- holding educational walks to learn about the Sanctuary including its history, the plants and forest ecology, and the wildlife found at the Sanctuary.

These recommendations are provided for consideration in managing the Guernsey Sanctuary with the goals of sustaining a healthy, native forest, promoting biodiversity, maintaining the property for passive recreation and aesthetic enjoyment, preserving and enhancing wildlife habitat, and protecting Sabrina Lake and the other wetlands within the Sanctuary. They are intended to demonstrate good forest stewardship to the public, and hopefully engage others in conserving and maintaining Guernsey Sanctuary. The "Stewardship Issues" section of the plan on the following pages provides general information about forest stewardship that may be of further interest and usefulness in managing this special property.

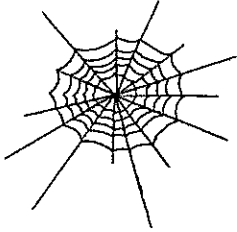
OBJECTIVE CODE: CH61 = Forest Products (for Ch. 61/61A/61B) STEW= Stewardship Program practices
STD= stand Type= Forest type AC= acre MBF= thousand board feet BA= basal area VOL= volume

Owner(s) Wellesley Conservation Council, Inc.

Town(s) Wellesley, Needham

Stewardship Issues

Massachusetts is a small state, but it contains a tremendous variety of ecosystems, plant and animal species, management challenges, and opportunities. This section of your plan will provide background information about the Massachusetts forest landscape as well as issues that might affect your land. **The Stand Descriptions and Management Practices sections of your plan will give more detailed property specific information on these subjects tailored to your management goals.**



Biodiversity: Biological diversity is, in part, a measure of the variety of plants and animals, the communities they form, and the ecological processes (such as water and nutrient cycling) that sustain them. With the recognition that each species has value, individually and as part of its natural community, maintaining biodiversity has become an important resource management goal.

While the biggest threat to biodiversity in Massachusetts is the loss of habitat to development, another threat is the introduction and spread of invasive non-native plants. Non-native invasives like European Buckthorn, Asiatic Bittersweet, and Japanese Honeysuckle spread quickly, crowding out or smothering native species and upsetting and dramatically altering ecosystem structure and function. Once established, invasives are difficult to control and even harder to eradicate. Therefore, vigilance and early intervention are paramount.

Another factor influencing biodiversity in Massachusetts concerns the amount and distribution of forest growth stages. Wildlife biologists have recommended that, for optimal wildlife habitat on a landscape scale, 5-15% of the forest should be in the seedling stage (less than 1" in diameter). Yet we currently have no more than 2-3% early successional stage seedling forest across the state. There is also a shortage of forest with large diameter trees (greater than 20"). See more about how you can manage your land with biodiversity in mind in the "Wildlife" section below. (Also refer to *Managing Forests to Enhance Wildlife Diversity in Massachusetts* and *A Guide to Invasive Plants in Massachusetts* in the binder pockets.)



Rare Species: Rare species include those that are **threatened** (abundant in parts of its range but declining in total numbers, those of **special concern** (any species that has suffered a decline

that could threaten the species if left unchecked), and **endangered** (at immediate risk of extinction and probably cannot survive without direct human intervention). Some species are threatened or endangered globally, while others are common globally but rare in Massachusetts.

Of the 2,040 plant and animal species (not including insects) in Massachusetts, 424 are considered rare. About 100 of these rare species are known to occur in woodlands. Most of these are found in wooded wetlands, especially vernal pools. These temporary shallow pools dry up by late summer, but provide crucial breeding habitat for rare salamanders and a host of other unusual forest dwelling invertebrates. Although many species in Massachusetts are adapted to and thrive in recently disturbed forests, rare species are often very sensitive to any changes in their habitat.

Indispensable to rare species protection is a set of maps maintained by the Division of Fisheries and Wildlife's Natural Heritage & Endangered Species Program (NHESP) that show current and historic locations of rare species and their habitats. The maps of your property will be compared to these rare species maps and the result indicated on the upper right corner of the front page of the plan. Prior to any regulated timber harvest, if an occurrence does show on the map, the NHESP will recommend protective measures. Possible measures include restricting logging operations to frozen periods of the year, or keeping logging equipment out of sensitive areas. You might also use information from NHESP to consider implementing management activities to improve the habitat for these special species.



Riparian and Wetlands Areas: Riparian and wetland areas are transition areas between open water features (lakes, ponds, streams, and rivers) and the drier terrestrial ecosystems. More specifically, a **wetland** is an area that has hydric (wet) soils and a unique community of plants that are adapted to live in these wet soils. Wetlands may be adjacent to streams or ponds, or a wetland may be found isolated in an otherwise drier landscape. A **riparian area** is the transition zone between an open water feature and the uplands (see Figure 1). A riparian zone may contain wetlands, but also includes areas with somewhat better drained soils. It is easiest to think of riparian areas as the places where land and water meet.

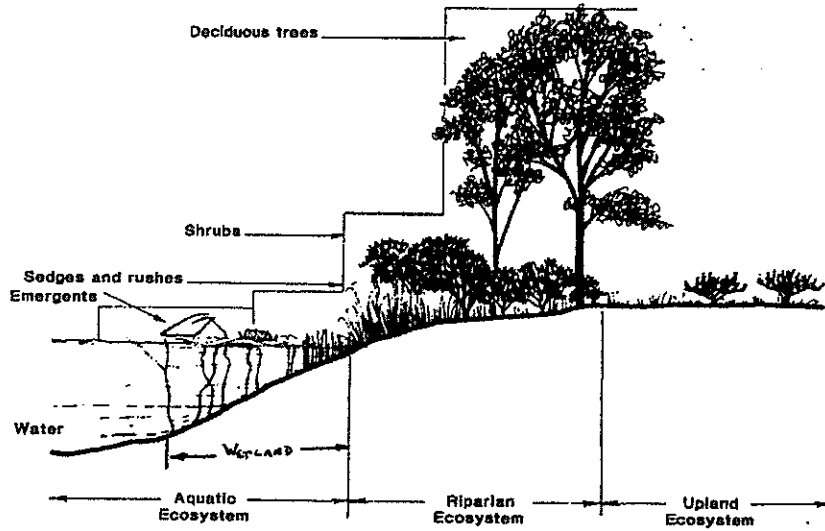


Figure 1: Example of a riparian zone

The presence of water in riparian and wetland areas make these special places very important. Some of the functions and values that these areas provide are described below:

Filtration: Riparian zones capture and filter out sediment, chemicals and debris before they reach streams, rivers, lakes and drinking water supplies. This helps to keep our drinking water cleaner, and saves communities money by making the need for costly filtration much less likely.

Flood control: By storing water after rainstorms, these areas reduce downstream flooding. Like a sponge, wetland and riparian areas absorb stormwater, then release it slowly over time instead of in one flush.

Critical wildlife habitat: Many birds and mammals need riparian and wetland areas for all or part of their life cycles. These areas provide food and water, cover, and travel corridors. They are often the most important habitat feature in Massachusetts' forests.

Recreational opportunities: Our lakes, rivers, streams, and ponds are often focal points for recreation. We enjoy them when we boat, fish, swim, or just sit and enjoy the view.

In order to protect wetlands and riparian areas and to prevent soil erosion during timber harvesting activities, Massachusetts promotes the use of "Best Management Practices" or BMPs. Maintaining or reestablishing the protective vegetative layer and protecting critical areas are the two rules that underlie these common sense measures. DEM's Massachusetts Forestry Best Practices Manual (included with this plan) details both the legally required and voluntary specifications for log landings, skid trails, water bars, buffer strips, filter strips, harvest timing, and much more.

The two Massachusetts laws that regulate timber harvesting in and around wetlands and riparian areas are the Massachusetts Wetlands Protection Act (CH 131), and the Forest Cutting Practices Act (CH132). Among other things, CH132 requires the filing of a cutting plan and on-site inspection of a harvest operation by a DEM Service Forester to ensure that required BMPs are being followed when a commercial harvest exceeds 25,000 board feet or 50 cords (or combination thereof).



Soil and Water Quality: Forests provide a very effective natural buffer that holds soil in place and protects the purity of our water. The trees, understory vegetation, and the organic material on the forest floor reduce the impact of falling rain, and help to insure that soil will not be carried into our streams and waterways.

To maintain a supply of clean water, forests must be kept as healthy as possible. Forests with a diverse mixture of vigorous trees of different ages and species can better cope with periodic and unpredictable stress such as insect attacks or windstorms.

Timber harvesting must be conducted with the utmost care to ensure that erosion is minimized and that sediment does not enter streams or wetlands. Sediment causes turbidity which degrades water quality and can harm fish and other aquatic life. As long as Best Management Practices (BMPs) are implemented correctly, it is possible to undertake active forest management without harming water quality.



Forest Health: Like individual organisms, forests vary in their overall health. The health of a forest is affected by many factors including weather, soil, insects, diseases, air quality, and human activity. Forest owners do not usually focus on the health of a single tree, but are concerned about catastrophic events such as insect or disease outbreaks that affect so many individual trees that the whole forest community is impacted.

Like our own health, it is easier to prevent forest health problems than to cure them. This preventative approach usually involves two steps. First, it is desirable to maintain or encourage a wide diversity of tree species and age classes within the forest. This diversity makes a forest less susceptible to a single devastating health threat. Second, by thinning out weaker and less desirable trees, well-spaced healthy individual trees are assured enough water and light to thrive. These two steps will result in a forest of vigorously growing trees that is more resistant to environmental stress.



Fire: Most forests in Massachusetts are relatively resistant to catastrophic fire. Historically, Native Americans commonly burned certain forests to improve hunting grounds. In modern times, fires most often result from careless human actions.

The risk of an unintentional and damaging fire in your woods could increase as a result of logging activity if the slash (tree tops, branches, and debris) is not treated correctly. Adherence to the Massachusetts slash law minimizes this risk. Under the law, slash is to be removed from buffer areas near roads, boundaries, and critical areas and lopped close to the ground to speed decay. Well-maintained woods roads are always desirable to provide access should a fire occur.

Depending on the type of fire and the goals of the landowner, fire can also be considered as a management tool to favor certain species of plants and animals. Today the use of prescribed burning is largely restricted to the coast and islands, where it is used to maintain unique natural communities such as sandplain grasslands and pitch pine/scrub oak barrens. However, state land managers are also attempting to bring fire back to many of the fire-adapted communities found elsewhere around the state.



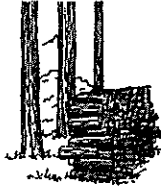
Wildlife Management: Enhancing the wildlife potential of a forested property is a common and important goal for many woodland owners. Sometimes actions can be taken to benefit a particular species of interest (e.g., put up Wood Duck nest boxes). In most cases, recommended management practices can benefit many species, and fall into one of three broad strategies. These are **managing for diversity, protecting existing habitat, and enhancing existing habitat.**

Managing for Diversity – Many species of wildlife need a variety of plant communities to meet their lifecycle requirements. In general, a property that contains a diversity of habitats will support a more varied wildlife population. A thick area of brush and young trees might provide food and cover for grouse and cedar waxwing; a mature stand of oaks provides acorns for foraging deer and turkey; while an open field provides the right food and cover for cottontail rabbits and red fox. It is often possible to create these different habitats on your property through active management. The appropriate mix of habitat types will primarily depend on the composition of the surrounding landscape and your objectives. It may be a good idea to create a brushy area where early successional habitats are rare, but the same practice may be inappropriate in the area's last block of mature forest.

Protecting Existing Habitat – This strategy is commonly associated with managing for rare species or those species that require unique habitat features. These habitat features include vernal pools, springs and seeps, forested wetlands, rock outcrops, snags, den trees, and large blocks of unbroken forest. Some of these features are rare, and they provide the right mix of food, water, and shelter for a particular species or specialized community of wildlife. It is important to recognize their value and protect their function. This usually means not altering the feature and buffering the resource area from potential impacts.

Enhancing Existing Habitat – This strategy falls somewhere between the previous two. One way the wildlife value of a forest can be enhanced is by modifying its structure (number of canopy layers, average tree size, density). Thinning out undesirable trees from around large crowned mast (nut and fruit) trees will allow these trees to grow faster and produce more food. The faster growth will also accelerate the development of a more mature forest structure, which is important for some species. Creating small gaps or forest openings generates groups of seedlings and saplings that provide an additional layer of cover, food, and perch sites.

Each of these three strategies can be applied on a single property. For example, a landowner might want to increase the habitat diversity by reclaiming an old abandoned field. Elsewhere on the property, a stand of young hardwoods might be thinned to reduce competition, while a “no cut” buffer is set up around a vernal pool or other habitat feature. The overview, stand description and management practice sections of this plan will help you understand your woodland within the context of the surrounding landscape and the potential to diversify, protect or enhance wildlife habitat.



Wood Products: If managed wisely, forests can produce a periodic flow of wood products on a sustained basis. Stewardship encompasses finding ways to meet your current needs while protecting the forest's ecological integrity. In this way, you can harvest timber and generate income without compromising the opportunities of future generations.

Massachusetts forests grow many highly valued species (white pine, red oak, sugar maple, white ash, and black cherry) whose lumber is sold throughout the world. Other lower valued species (hemlock, birch, beech, red maple) are marketed locally or regionally, and become products like pallets, pulpwood, firewood, and lumber. These products and their associated value-added industries contribute between 200 and 300 million dollars annually to the Massachusetts economy.

By growing and selling wood products in a responsible way you are helping to our society's demand for these goods. Harvesting from sustainably managed woodlands — rather than from unmanaged or poorly managed forest — benefits the public in a multitude of ways. The sale of timber, pulpwood, and firewood also provides periodic income that you can reinvest in the property, increasing its value and helping you meet your long-term goals. Producing wood products helps defray the costs of owning woodland, and helps private landowners keep their forestland undeveloped.



Cultural Resources: Cultural resources are the places containing evidence of people who once lived in the area. Whether a Native American village from 1,700 years ago, or the remains of a farmstead from the 1800's, these features all tell important and interesting stories about the landscape, and should be protected from damage or loss.

Massachusetts has a long and diverse history of human habitation and use. Native American tribes first took advantage of the natural bounty of this area over 10,000 years ago. Many of these villages were located along the coasts and rivers of the state. The interior woodlands were also used for hunting, traveling, and temporary camps. Signs of these activities are difficult to find in today's forests. They were obscured by the dramatic landscape impacts brought by European settlers as they swept over the area in the 17th and 18th centuries.

By the middle 1800's, more than 70% of the forests of Massachusetts had been cleared for crops and pastureland. Houses, barns, wells, fences, mills, and roads were all constructed as

woodlands were converted for agricultural production. But when the Erie Canal connected the Midwest with the eastern cities, New England farms were abandoned for the more productive land in the Ohio River valley, and the landscape began to revert to forest. Many of the abandoned buildings were disassembled and moved, but the supporting stonework and other changes to the landscape can be easily seen today.

One particularly ubiquitous legacy of this period is stone walls. Most were constructed between 1810 and 1840 as stone fences (wooden fence rails had become scarce) to enclose sheep within pastures, or to exclude them from croplands and hayfields. Clues to their purpose are found in their construction. Walls that surrounded pasture areas were comprised mostly of large stones, while walls abutting former cropland accumulated many small stones as farmers cleared rocks turned up by their plows. Other cultural features to look for include cellar holes, wells, old roads and even old trash dumps.



Recreation and Aesthetic Considerations: Recreational opportunities and aesthetic quality are the most important values for many forest landowners, and represent valid goals in and of themselves. Removing interfering vegetation can open a vista or highlight a beautiful tree, for example. When a landowner's goals include timber, thoughtful forest management can be used to accomplish silvicultural objectives while also reaching recreational and/or aesthetic objectives. For example, logging trails might be designed to provide a network of cross-country ski trails that lead through a variety of habitats and reveal points of interest.

If aesthetics is a concern and you are planning a timber harvest, obtain a copy of this excellent booklet: *A Guide to Logging Aesthetics: Practical Tips for Loggers, Foresters & Landowners*, by Geoffrey T. Jones, 1993. (Available from the Northeast Regional Agricultural Engineering Service, (607) 255-7654, for \$7). Work closely with your consultant to make sure the aesthetic standards you want are included in the contract and that the logger selected to do the job executes it properly. The time you take to plan ahead of the job will reward you and your family many times over with a fuller enjoyment of your forest, now and well into the future.

This is your Stewardship Plan. It is based on the goals that you have identified. The final success of your Stewardship Plan will be determined first, by how well you are able to identify and define your goals, and second, by the support you find and the resources you

commit to implement each step.

It can be helpful and enjoyable to visit other properties to sample the range of management activities and see the accomplishments of others. This may help you visualize the outcome of alternative management decisions and can either stimulate new ideas or confirm your own personal philosophies. Don't hesitate to express your thoughts, concerns, and ideas. Keep asking questions! Please be involved and enjoy the fact that you are the steward of a very special place.



Signature Page Please check each box that applies.

CH. 61/61A Management Plan I attest that I am familiar with and will be bound by all applicable Federal, State, and Local environmental laws and /or rules and regulations of the Department of Conservation and Recreation. I further understand that in the event that I convey all or any portion of this land during the period of classification, I am under obligation to notify the grantee(s) of all obligations of this plan which become his/hers to perform and will notify the Department of Conservation and Recreation of said change of ownership.

Forest Stewardship Plan. When undertaking management activities, I pledge to abide by the management provisions of this Stewardship Management Plan during the ten year period following approval. I understand that in the event that I convey all or a portion of the land described in this plan during the period of the plan, I will notify the Department of Conservation and Recreation of this change in ownership.

Signed under the pains of perjury:

Owner(s) Wellesley Conservation Council, Inc. Date 1/8/2015

Frederick R. Heston, Pres. Date 1/9/2015

I attest that I have prepared this plan in good faith to reflect the landowner's interest.

Plan Preparer John F. Rollins Date 1/8/15

I attest that the plan satisfactorily meets the requirements of CH61/61A and/or the Forest Stewardship Program.

Approved, Service Forester _____ Date _____

Approved, Regional Supervisor _____ Date _____

In the event of a change of ownership of all or part of the property, the new owner must file an amended Ch. 61/61A plan within 90 days from the transfer of title to insure continuation of Ch. 61/61A classification.

Owner(s) Wellesley Conservation Council, Inc.

Town(s) Wellesley, Needham