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FOREST STEWARDSHIP PLAN

Property Owner(s): Town of Scituate, Conservation Commission

Mailing address:
195 Danielson Pike
North Scituate, RI 02857

Phone:
Property Location: George Washington Highway   Town (s): Scituate

RECORDS

Assessor's map No.	Lot/Parcel No.	Deed Book	Deed Page	Total acres	Excluded acres	Acres to be certified
51	102			33.2	33.2	0
51	104			27.2	2.0	25.2
			TOTALS	60.4	35.2	25.2

Excluded Area Description
Athletic fields

HISTORY   Year Acquired: Year Management began
Is subdivision plan on file with municipality?   No
Are boundaries blazed/painted? No
Previous management practices (last 10 years): None

PROPERTY OVERVIEW

1. LOCAL PATTERN OF LAND USE

The property is located in a rural area in western Scituate. Although many parcels with road frontage have been developed, large forested parcels still exist in the area. Low density and medium density residential use and scattered commercial use are in the general area, most of the development occurs near the intersection of George Washington Highway and Knight Hill Road.

There is limited agricultural use in the surrounding landscape with small parcels of tilled land about $^{2/10}$ of a mile to the northwest, $^{3/10}$ of a mile to the northeast, and $^{7/10}$ of a mile to the southeast of this property. One parcel used for pasture is approximately $^{3/10}$ of a mile to the northeast.

The portion of the property adjacent to George Washington Highway (lot 54) is developed and maintained as recreational fields.

2. WATERSHED ISSUES

The property is in the Pawtucket River watershed and lies about X mile southwest of the Westconnaug Branch of the Scituate Reservoir. Runoff from the property flows northeast into

The property borders a well head protection area which is located north of the property near the intersection of George Washington Highway and Knightville Road.

3. ADJACENT & NEARBY LANDS WITH LONG-TERM PROTECTION

The closest property protected from development is owned by the City of Providence,Water Supply Board and managed for municipal water production.

LANDOWNER GOALS AND OBJECTIVES

The purpose of a forest management plan is to guide the Conservation Commission in managing the property for multiple use purposes including passive recreation, wildlife habitat, forest health and the sustainable production of forest products.

LONG-TERM STEWARDSHIP CONSIDERATIONS. (How the integrity of the following forest values will be conserved in the future for the property as a whole)

1. THREATENED & ENDANGERED SPECIES
2. RIPARIAN & WETLANDS
3. SOIL & WATER QUALITY
4. FOREST HEALTH
5. FISH & WILDLIFE HABITAT
6. FOREST PRODUCTS
7. RECREATION & AESTHETICS

THREATENED & ENDANGERED SPECIES:

There are no known rare or endangered plant or animal species on the property. Prior to any harvests the Rhode Island Natural Heritage Program will be contacted regarding the status of the property as critical habitat for endangered species. If present, the recommendations of Natural Heritage Program to mitigate impact will be followed.

RIPARIAN & WETLANDS:

The proposed activities in this plan will protect riparian areas and wetlands by using best management practices (BMP's) such as:

- Limiting the amount of trees harvested in Stand 1 to reduce stress to the remaining trees and equipment use in this area.
- Scheduling harvesting in Stand 1 to the driest time of the year or when the ground is frozen to reduce soil compaction and rutting.
- Retaining an undisturbed buffer adjacent to Stand 2 to provide shade and filter nutrients and runoff.

SOIL & WATER QUALITY:

- Seeding exposed soil on trails in Stand 3 to stabilize the soil and prevent erosion into adjacent wetlands.
- Using additional guidelines published in *Best Management Practices for Rhode Island, Water Quality Protection and Forest Management Guidelines, 1996 to* minimize negative impacts associated with harvesting in wetlands.

FOREST HEALTH:

The recommended activities in this plan will enhance forest health by:

- Removing some trees in the harvests recommended for Stands 1 and 3 will reduce competition between the remaining trees for growing space, thereby improving their health and vigor.
- Retaining high tree density in Stand 1 (because of the high water table) will reduce stress to the trees and reduce the likelihood of windthrow.
- Planting conifers throughout the property will increase plant diversity, reducing the impact of an insect or disease that attacks one of the dominant tree species.

FISH & WILDLIFE HABITAT:

The recommended activities will improve wildlife habitat by:

- Increasing production of acorns by favoring mast-producing trees (especially white oak), providing an important source of food for species of wildlife such as deer, turkey, grouse, squirrels, as well as many species of songbirds.
- Maintaining an undisturbed buffer adjacent to Stand 2 will maintain the integrity of this site and provide a travel corridor, allowing wildlife access through the riparian area that connects with adjacent properties.
- Planting conifers in small groups throughout the property to increase the diversity of plants found on the property as well as creating cover (from both predators and the elements), which is lacking in the vicinity.

FOREST PRODUCTS:

The activities recommended in this plan will enhance production of forest products by:

- Removing poor quality trees for fuelwood in harvests recommended for Stand 1 and 3, allowing the remaining higher quality trees to grow.
- By favoring red oak (which has the highest value of any local tree species for timber) when harvesting Stands 1.

RECREATION & AESTHETICS:

The recommended activities will enhance the recreation potential of the property as well as aesthetics by:

- Removing some trees when harvesting Stand 1 and 3 will leave large trees well spaced throughout and increase the viewing distance through the forest.
- Planting groups of conifers in Stand 2 and 3 to increase the diversity of plants on the property. The dense, low growing habit of the conifers will add an interesting visual feature to the forest.
- Creating trails in Stand 1 and 3 to improve access for activities such as hiking and nature viewing.
- Special management practices, such as leaving buffers adjacent to sensitive areas (such as adjacent to trails and the home site), and chopping slash so it lies close to the ground should be used to maintain aesthetics after harvesting activities. Additional recommendations in *A Guide To Logging Aesthetics. Practical Tips For Loggers, Foresters And Landowners* 1993 should be implemented whenever practical.

STAND DESCRIPTION								
GOAL	STAND	TYPE	ACRES	SIZE CLASS	BA ACRE	TREES ACRE	VOLUME ACRE	SITE INDEX
HAB, FP, S&W, HTH	1	OH	8.7	10.6	90	142	2.9 MBF 11.2 CDS	62 RO

This area has gently rolling topography with a slightly higher elevation than the adjacent wetlands. This is an oak- mixed hardwood forest type with oaks being the most common trees species; black and scarlet oak together comprise almost 24 percent of the basal area. White and red oak, tree species uncommon on the rest of the property, are well established here comprising 19 and three percent of the basal area. Black gum and red maple, a tree usually found in wetlands, make up 25 and 22 percent of the basal area. The presence of trees and shrubs most commonly found in wetlands is evidence the water table is near the surface at least for part of the year.

Sutton very stony fine sandy loam is the soil type here. This soil has more moisture available for tree growth and higher productivity than other areas of the property. This is evident in the diversity of tree species and large size and good form of the trees here. This soil is moderately well drained but the water table is less than two feet from the surface from late fall to mid spring.

Special care should be taken when managing this area to avoid soil compaction and rutting or damaging tree roots near the surface since the soil tends to be wet most of the year. Special precautions need to be taken to avoid erosion into adjacent wetlands. Best Management Practices (BMP's) appropriate for this site include: limiting harvesting to when the ground is frozen or the driest time of the year, leaving relatively high tree densities to limit equipment use and reduce the chance of windthrow, and seeding trails created by harvesting with Conservation Mix to insure vegetation is quickly established to stabilize soil and prevent erosion.

This area has moderate density, with stocking of about 77 percent. At his density there is only moderate competition between the trees for growing space. This is surprising, given the relatively high productivity of this site but is probably due to the abundance of black gum which prevents other species from getting established but has a small crown and doesn't take much growing space. For the most part the black gum growing here is being out-competed by other tree species and is small and stunted.

OBJECTIVE CODE :

OBJECTIVE CODE: HAB= Habitat AES=Aesthetics REC= Recreation & Aesthetics S&W= Soil & Water Protection FP= Forest Products HTH= Forest health

MANAGEMENT RECOMMENDATIONS To be done within the next 10 years							
OBJECTIVE	STAND	TYPE	TREATMENT	ACRES	REMOVED		TIMING
					BA	VOL	
HAB,FP, HTH	1	OH	Crop tree release	8.7	10	3.0 CDS	2005-2008
REC	1	OH	Recreation trail	8.7	NA		2003

This area should receive a crop tree release harvest to reduce competition for growing space and promote the growth of the better trees. This will result in about 12 percent of the trees being removed, leaving crop trees spaced 19 feet apart. Select trees to favor based on their species and condition and remove adjacent trees so the crown of the crop tree receives sunlight on three or four sides so the tree crowns expand. Care should be taken not to damage crop trees (that includes driving on the roots). Since this area is only slightly overstocked, this treatment will have the greatest impact by focusing on removing trees competing with white oaks. White oak acorns are a preferred food source for wildlife and removing competing trees will allow their crowns to expand, thereby increasing acorn production. Red oak should also be favored since it has high value for timber and grows quickly. The few large white pines here should be retained to provide perch sites for hawks and owls and roost trees for turkeys.

A high management priority for the near future should be to create a trail into and through this area to allow easy entry for nature watching and recreation. The location of the trail is flexible since there are few obstacles, but the route should be planned and marked (with plastic flagging) ahead of time. This will speed up both the planning and the construction process. Once the final location is established, paint or trail markers can be used as permanent markers.

STAND DESCRIPTION								
GOAL	STAND	TYPE	ACRES	SIZE CLASS	BA ACRE	TREES ACRE	VOLUME ACRE	SITE INDEX
S&W, HAB	2	RM	7.5	9.9	53	98	0.2 MBF 9.0 CDS	57

This is a low lying area where runoff draining from the surrounding landscape collects. The water table is at or near the surface most of the year and this is reflected in the forest growing here. Red maple, a tree species that out-competes other tree species in wetlands, dominates here. There are few other tree species except for scattered oaks on drier spots and aspen and black cherry near the fields. Conditions are so wet here that tree growth is effected; trees are stunted and are widely spaced since it is difficult for seedlings to get established.

Ridgebury, Whitman and Leicester is the soil here. This soil is moderately productive for tree growth with severe limitations to management due to extreme wetness. The high water table and poor drainage make this area difficult to work due to problems with rutting caused by harvesting equipment and the chance of windthrow. Best management practices should always be used when harvesting in this area. These include: harvesting only when the ground is frozen or very dry, not harvesting too many trees at one time, and seeding disturbed soil on trails to prevent erosion. More detailed information on BMP's is available in *Best Management Practices for Rhode Island Water Quality Protection and Forest Management Guidelines.* This publication is available from DEM, Division of Forest Environment.

This area has lower density than expected given the age of the trees here. The stocking level here is about 40 percent; mature trees have ample room to grow without competition from adjacent trees. It appears the surface topography was changed, and drainage altered when the athletic fields were constructed since there are large boulders and mounds of earth where this stand borders the open areas. This could have affected drainage enough to have a negative impact on growing conditions for the forest here.

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MANAGEMENT RECOMMENDATIONS
To be done within the next 10 years

OBJECTIVE	STAND	TYPE	TREATMENT	ACRES	REMOVED BA	REMOVED VOL	TIMING
HAB	2	RM	BMP's (see below)	7.5	NA		2003-2013
HAB	2	RM	Plant groups of conifers	½-1.0	NA		2004-2008

The low value of most of the tree species found here, poor quality of the trees, and poor access make intensive management of this area unfeasible. Being a wetland, this area has high intrinsic value for wildlife and protecting it is a form of management. Cutting of trees should be limited here, a buffer should be retained between this wetland and harvested areas, and roads and trails in adjacent areas should be seeded to *Conservation Mix* to stabilize the soil and prevent erosion.

It is however possible to manage the drier edges of this stand and adjacent areas to enhance the value of the property as wildlife habitat. Plant conifers in groups of 100 trees planted with about ten feet between each seedling. This will result in about 1/4 acre being planted in each block. A total of four to five blocks should be planted in this manner. White pin, balsam fir, or western hemlocks are the best choices. Do not plant eastern hemlock since it will be attacked by the hemlock woolly adelgid.

These islands of cover are better habitat than widely spaced seedlings and will provide habitat for species of wildlife that use conifers (primarily songbirds) and cover from weather and predators for other species. This will also enhance aesthetics by increasing the diversity of tree species in this area.

STAND DESCRIPTION								
GOAL	STAND	TYPE	ACRES	SIZE CLASS	BA ACRE	TREES ACRE	VOLUME ACRE	SITE INDEX
HAB, FP	3	OM	9.0	10.5	107	170	3.0 MBF 16.5 CDS	52 BO

This is a mixed oak forest type on high terrain sloping to Stand 2. Black and scarlet oak are the dominant tree species comprising 66 percent of the basal area. Other species including white oak, chestnut oak and red maple are scattered through the area but are growing poorly. Most of the trees here are eight to 14 inches DBH, the smaller trees are stunted and being out-competed by the dominant trees. Although there are some trees here large enough to be used as sawtimber, the quality of the trees is low. White pine seedlings and saplings are well established in some places in the western part of this stand.

Canton and Charlton fine sandy loam is the dominant soil series in this area. This is actually two soil types that are usually found in association and are grouped together since they have similar characteristics. This soil has moderate productivity for tree growth with few limitations toward forest management although rockiness could hinder management in some places. The site index of this area is 52 for black oak, indicating that the area has moderate productivity for growing trees. Conifers, such as white pine, grow better on the sandy soil found here.

This area has dense growing conditions, with almost all the growing space taken up by the trees. The area is now 90 percent stocked. At this high stocking trees are competing intensely for growing space and the growth rate of the trees is slow. The trees are in a weakened condition and mortality will increase if the trees are subjected to another stress (like a prolonged drought or attack by insects or disease).

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MANAGEMENT RECOMMENDATIONS

To be done within the next 10 years

OBJECTIVE	STAND	TYPE	TREATMENT	ACRES	REMOVED BA	REMOVED VOL	TIMING
FP, HAB, HTH, REC	3	OM	Improvement	9.0	32	6.5 CDS	2003-2005
HAB, REC	3	OM	Plant groups of conifers	½-1.5	NA		2005-2008
REC	3	OM	Construct recreation trail	9.0	NA		2003-2005

This area should receive an improvement cut, removing about 30 percent of the trees, to reduce competition for growing space. Although the remaining trees would grow faster if this stand was harvested more heavily, removing more than 1/3 of the trees at one time could lead to windthrow or could stress the trees. This is an even aged stand, all the trees are about 60 years old, so smaller trees are weak trees that are obviously not growing well. A rule of thumb to use is to remove trees that are smaller than average, with small crowns, since they are likely to die. Favor oaks that have large, well-formed crowns since these trees are healthier and will grow to maturity as well as produce mast (acorns) for wildlife.

The soil here is best suited to growing conifers; efforts should be made to establish conifers here in the future. White pine, Norway spruce, and/or white spruce will all grow well on the conditions here although it may take seedlings five to ten years to get well established. Establishing groups of conifers, planting 100 trees (spaced about 10 feet apart) over a 1/4 acre, should be implemented in this area as well as Stand One. The objective of planting isn't to convert this area to a pine stand but to establish some conifers here since they will provide cover for wildlife, grow more quickly, be healthier, and have higher value for forest products than hardwoods on the soil conditions here.

Access through this area for recreation can be improved by constructing trails. These trails would be relatively narrow (4 to 6 feet wide) and connect to trails to be constructed in Stands One.

IMPLEMENTATION SCHEDULE To be done within the next 10 years						
STAND	TYPE	TREATMENT	ACRES	VOLUME REMOVED/ACRE BA	VOL	TIMING
1	OH	Crop tree release	8.7	10	3.0 CDS	2005-2008
1	OH	Recreation trail	8.7	NA		2003-2005
2	RM	Plant groups of conifers	½-1.0	NA		2004-2008
3	OM	Improvement	9.0	32	6.5 CDS	2003-2005
3	OM	Plant groups of conifers	½-1.5	NA		2005-2008
3	OM	Construct recreation trail	9.0	NA		2003-2005
All		Locate and mark property boundaries	25.2	NA		2003-2005

STEWARDSHIP PLEDGE & SIGNATURES. This Forest Stewardship Plan is compatible with the goals and objectives for our land, and we agree to abide by the management provisions of this plan for a period of at least ten (10) years.	
Owner(s)	Date
Plan Preparer: Gregg J. Cassidy *Consultant Forester* 420 East Avenue Harrisville, RI 02830	Date (401) 568-3247 forestguy@aol.com
Approved, Service Forester	Date