

# **Forest Stewardship Plan**

(10-Year Planning Period)

Merriam Town Forest  
Sherburne Road  
Pelham, NH  
174.5 +/- Acres  
August 28, 2007

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**Property Owners: Town of Pelham C/O The Pelham Forestry Committee**

**Phone Number: (603) 635-2721**

**Location: Sherburne Road, Pelham, NH**

**Total Acreage: 174.5 +/-**

**Map/Lot Numbers: Map 39 Lots, 1-159, 1-50, 1-51**

**Date Prepared: August 28, 2007**

**General Description of the Property**

The Merriam Town Forest is located in the southwest part of Pelham, along Sherburne Road. The forest is made up of three parcels. Starting from the west and moving east, the first and largest parcel is the Merriam property, which was bought by the Pelham Conservation Committee back in 2005. The next parcel is the Cronier property, which was donated to the town in 2000. The last parcel is the Nadeau property, which is the newest acquisition out of the three properties and was just acquired in 2007. Together the three separate parcels form one large contiguous property, which is approximately 174.5 acres in size.

The parcels are an excellent acquisition for the town, as the property is surrounded on all sides by single family developments. It is getting harder to find larger undeveloped properties in Pelham and surrounding towns that serve as open space for recreation, wildlife habitat and timber production. The property is also very special because it contains a large amount of open wetlands, which serve as very important wildlife habitat for a variety of species of birds, reptiles and invertebrates. There are even two small open field areas in the northeast part of the property, which also offers habitat for certain species that need this kind of open field area.

Like most of southern New England, our forests that are here now were once pasture and farm land during colonial times. The stone walls that surround, and intersect the property serve as evidence of a completely different land use 150 years ago than what we see today. The wetlands that we cherish and that this property has an abundance of were probably drained by these early settlers to create more pasture for sheep and cows. Again the stone walls serve as evidence of this theory by the way they enter into the wetlands, and disappear into the water, only to resurface on the other side. Another factor in the formation of these wetlands is beaver activity. Beaver in New England were trapped to near extinction when their fur was valued for hats and other clothing. The beaver populations have since rebounded, and these wetlands on the Merriam property have probably been enlarged greatly over the years due to beavers constructing dams. Beaver activity can be both good and bad. Beavers create wetlands which serve as important habitat for many wildlife species, but the flooding that results can kill valuable timber. We see this exact scenario being played out in Stand 10, where the beaver have

constructed dams which caused flooding that has killed almost two acres of valuable white pine timber. This mortality can be seen driving along Sherburne road.

The Merriam forest, with the exception of the beaver mortality in Stand 10, is a healthy thriving forest. After conducting an in depth timber cruise, the forest has been broken down into 15 separate stands, or forest types, which will be described in more detail, later in this plan. The cruise did reveal that the forest is somewhat overstocked, and that proper forest management activity could reduce the stocking levels down to a point which would significantly increase growth rates. Reducing stocking levels also means creating openings in the forest canopy which in turn allows sunlight to penetrate down to the forest floor. When this occurs, small seedling and sapling-sized trees will respond over the next few years with rigorous growth. This new growth is the forest of the future. Without this much needed sunlight the trees will stagnate and eventually die. Some evidence of tree mortality was seen during the cruise, especially with the white oaks.

The most dominant tree species, in terms of sawlog volumes, on the property is white pine. Other commonly seen tree species in the overstory are red and black oak, red maple, hickory, and white and yellow birch. Tree species found in the understory, really seems to depend on soil condition. On the higher, drier ground, there was more white pine, and red and black oak seedlings and saplings found. On the lower, wetter ground, and areas along brooks and wetlands, we see more red maple, birches, and alder.

An old road which appears to have since become a hiking trail is found in the western half of the property, and runs from Sherburne road to the north. A network of trails can be found through the property, marked with yellow arrows, but the trails are not brushed out and are somewhat difficult to follow.

The Pelham town forest as a whole is enrolled in the Tree Farm program. This program promotes a multiple use concept as a management strategy. The Merriam Town Forest is really a very diverse property and can serve as an example of how the tree farm concept of management can be applied to municipal owned land base.

### **Boundaries**

Since the property is old agriculture and pasture land most of the boundary lines consist of old stone walls. They have been located, blazed with axes and marked with red paint. There is, however, a section of boundary line in the northeastern part of the Merriam parcel that has been difficult to locate. This section of line would need to be located and marked on the ground by a licensed surveyor.

### **Access**

Two short roads and staging areas would have to be constructed off of Sherburne road to gain access into the property for forestry equipment. The first such access point would be located in Stand 7. This access point would service the western half of the property. It

has also been proposed that a small parking area be constructed in this stand, to give residents an access point into the property, for hiking and nature-watching. The other access point which would consist of another short road and staging area would be located in Stand 11. This access point would service the eastern part of the property.

### **Forest Types & Harvest History**

Forests with varying composition in terms of species, age, and density are able to respond with more resiliency to catastrophic events than monocultures. Most trees in unmanaged, overgrown forests are chronically deprived of much-needed nutrients, sunlight, and water, and are therefore constantly living in a stressed environment. Pre-stressed trees are much more susceptible to disease than their healthy counterparts growing in a well-spaced, healthy forest. Forests are broken down into management units called stands, which are areas of trees with similar species composition, size, and frequency of occurrence. It is hard to gage when this forest was last harvested. There is not much evidence of old stumps to be found. The forest is healthy, but overstocked. It is not realizing its full growing potential, due to over stocking. Harvesting trees will reduce the stocking level to a point which will optimize growth.

### **Soils, Terrain, & Hydrology**

Forests are essential for preventing erosion of existing soil and maintaining clean water. Riparian and wetland areas are the places that open water and upland sites meet. A riparian zone is the general term for the area where water and land meet, whereas a wetland is an area in a riparian zone that specifically has hydric, or wet, soils as well as vegetation that grows on that type of soil. Riparian areas are important for a number of reasons. They offer critical habitat for many wildlife species, providing shelter, food, water, and travel corridors. They are also very useful for flood control by acting as a sponge during times of high water volume, and then releasing that water slowly and consistently over time. Without wetlands, streams would fluctuate greatly between periods of high flow and dry streambeds. Finally, riparian areas are key for filtering water as it travels from upland sites to the open water, keeping out many chemical impurities and keeping water silt-free.

### **Wildlife**

Biological diversity can be described as the variety of plants and animals located in a given tract of land or landscape and the communities that are formed by that variety of species. Two of the biggest threats to biological diversity today are loss of habitat to non-forest uses and invasive species. Mixed and hardwood stands, wetlands, and open field can all be found on the Merriam property. A diverse landscape means more species diversity. Although there are a few acres of open field area, it is suggested to convert stands 7 and 14, which are typed as abandoned field, back to a field setting. In order to maintain and enhance this habitat the fields should be kept in a grassy state by periodic mowing. These areas would need to be mowed about once or twice every summer to prevent trees from encroaching, preferably later in the summer when birds are done nesting.

It has also been proposed to create some early successional forest types by clearing small areas, (1/2 acre to 1 acre in size) and allowing these areas to revert back to forest. These early successional forest types benefit a variety of habitat including woodcock and ruffed grouse as well as many small mammals.

### **Timber Cruise**

A detailed timber cruise was completed on the property using a 300' by 300' spacing on the Merriam and Cronier parcels, and a 200' by 200' spacing on the Nadeau parcel. There were a total of 74 inventory plots taken across the entire property. This data was used to tabulate the current tree growth on the property, and the field notes made during this cruise helped to create many of the maps in this management plan. A cruise is a statistical sample that is used to determine the volumes of various forest products growing on the property. This cruise generates volumes in terms of cords (for all trees 6-11" in diameter, or trees larger than 11" that are not suitable for sawtimber) and board feet (for trees 12" and greater in diameter that could be sold and sawn into boards). The diameter of a tree is measured at 4.5' above the ground, which is an industry standard referred to as diameter at breast height (DBH). From this intensive cruise, a total of fifteen stands are shown for this property. Stands are areas of trees with similar species composition, size, and frequency of occurrence. These stands will be the basis for the methodical analysis of the forest management plan, and are depicted on the following Stand Map.

### **Landowner Goals & Objectives**

The main goals, or wishes for the Merriam family is for the property to be "maintained in perpetuity as forest land and open space without there being conducted thereon any private, industrial or commercial activities, except Forestry and certain outdoor recreation and education activities as provided herein." The Town of Pelham has been very proactive in protecting land around the town from development by keeping areas open for recreational use and maintaining areas of forestland for wildlife habitat. Many of these parcels are associated with wetland areas that benefit greatly from the forested buffer they have instead of having pavement and lawns in the riparian zones. Forests protect water quality by providing a type of filter that keeps non-point source pollution such as sediment from entering wetlands, ponds or lakes directly. The town continues to educate citizens and developers alike, explaining the benefits of forested lands around built-up areas.

The general goals of the town can best be summed up with the key words of the New Hampshire Tree Farm System, of which the town is a member: wood, water, wildlife, and recreation, meaning the town is interested in a multiple use concept for its forested properties. One of the many benefits that can be derived from long-term sustained yield forestry is the generation of periodic revenue from timber harvests. The benefits from a timber harvest are not only income production, but also the encouragement of quality wood growth on residual trees as well as the encouragement of regeneration of new trees; in order to grow tomorrow's forest beneath the forest of today. In short the main goal of

that the citizens of the town benefit from having wooded areas for walking and nature watching, as well as ball fields for playing sports. The town hopes to keep these areas open to responsible recreation without compromising the other three goals.

Finally, the town recognizes that the native wildlife species of New Hampshire need areas for food, water, shelter, and raising young. To that end, diversity is encouraged by utilizing proper forest management practices.

**Forest Products Summary Table for Accessible Stands**  
**Town of Pelham – Merriam Town Forest—Pelham, NH**  
**Total Acreage: 174.5+/- acres**

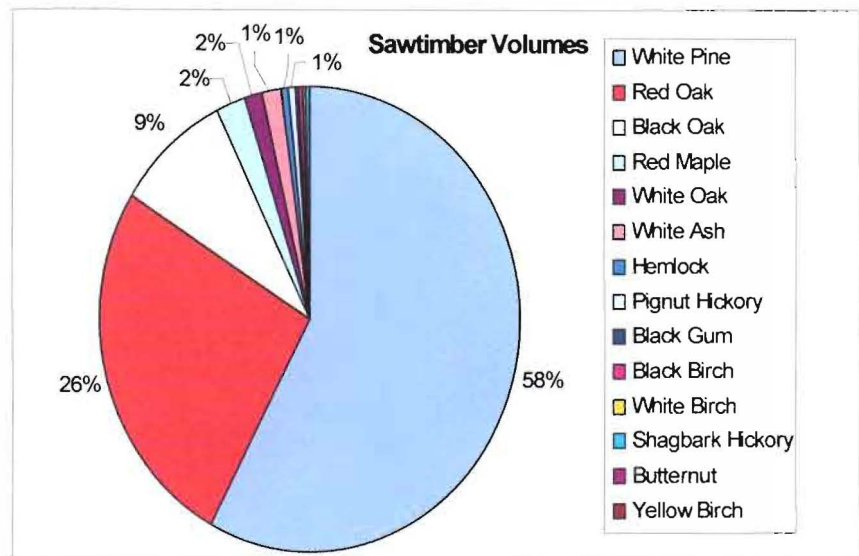
<b>Species</b>	<b>Board Feet</b>
White Pine	862,159
Red Oak	386,072
Black Oak	133,379
Red Maple	32,131
White Oak	23,171
White Ash	18,966
Hemlock	8,158
Pignut Hickory	7,883
Black Gum	5,250
Black Birch	4,011
White Birch	3,529
Shagbark	
Hickory	2,563
Butternut	1,575
Yellow Birch	161



**Total Sawtimber**                      **1,489,008 Bf<sup>1</sup>**

Hardwood                      770 cords  
 Cordwood  
 Softwood  
 Pulpwood                      424 cords

**Total Cordwood**                      **1194 Cords<sup>2</sup>**



<sup>1</sup> This sawtimber total represents all the trees of sawtimber quality 12 inches and greater in diameter found in this block. In order to capture this total volume, all trees of this specification would have to be harvested.

<sup>2</sup> These cordwood totals, both softwood and hardwood, represent all the standing trees with diameters of 6-11.9 inches found in this block, as well as trees of larger diameters that do not meet sawtimber quality specifications. In order to capture this total volume, all trees of this specification would have to be harvested



# Locus Map

Merriam Property

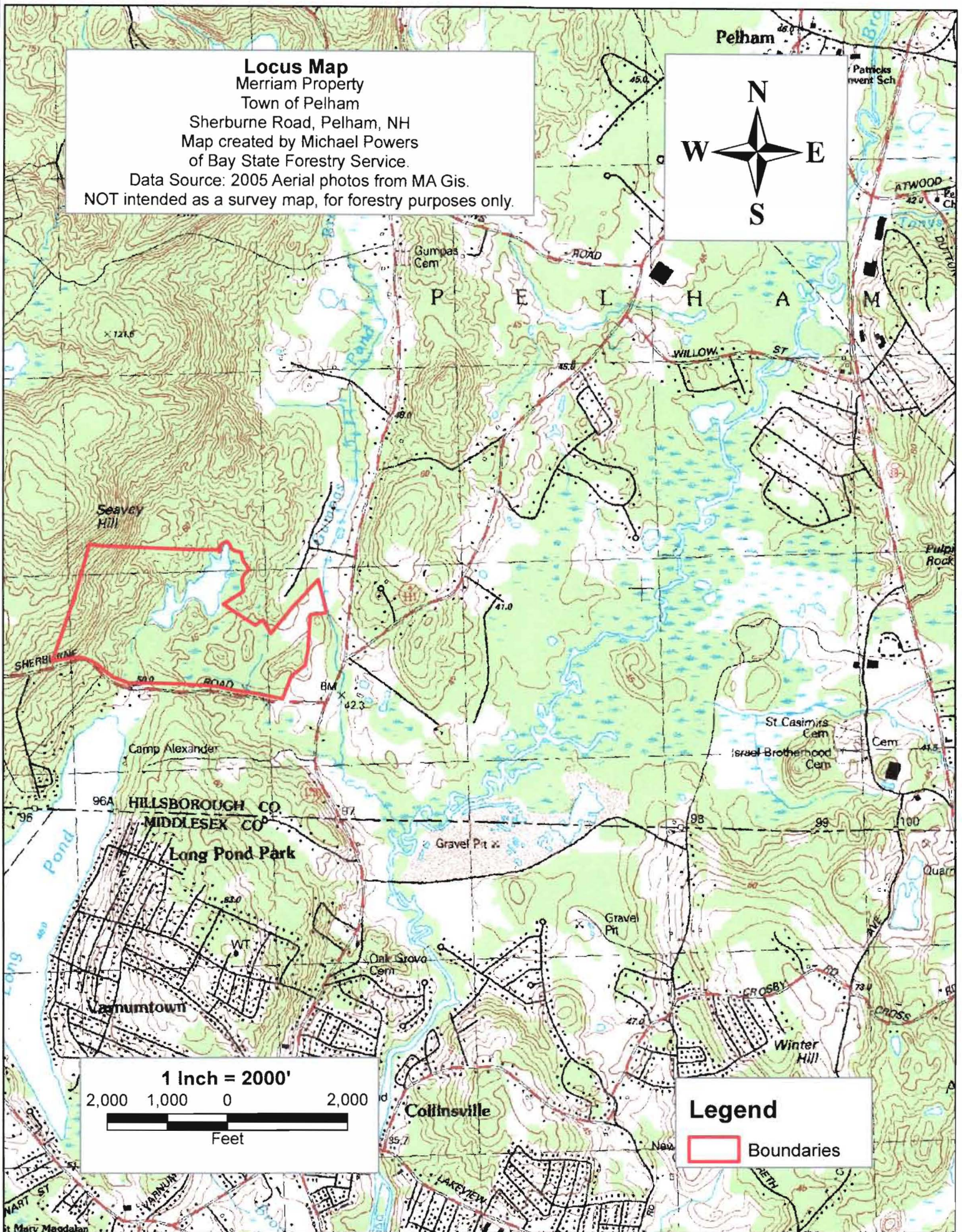
Town of Pelham

Sherburne Road, Pelham, NH

Map created by Michael Powers  
of Bay State Forestry Service.

Data Source: 2005 Aerial photos from MA Gis.

NOT intended as a survey map, for forestry purposes only.

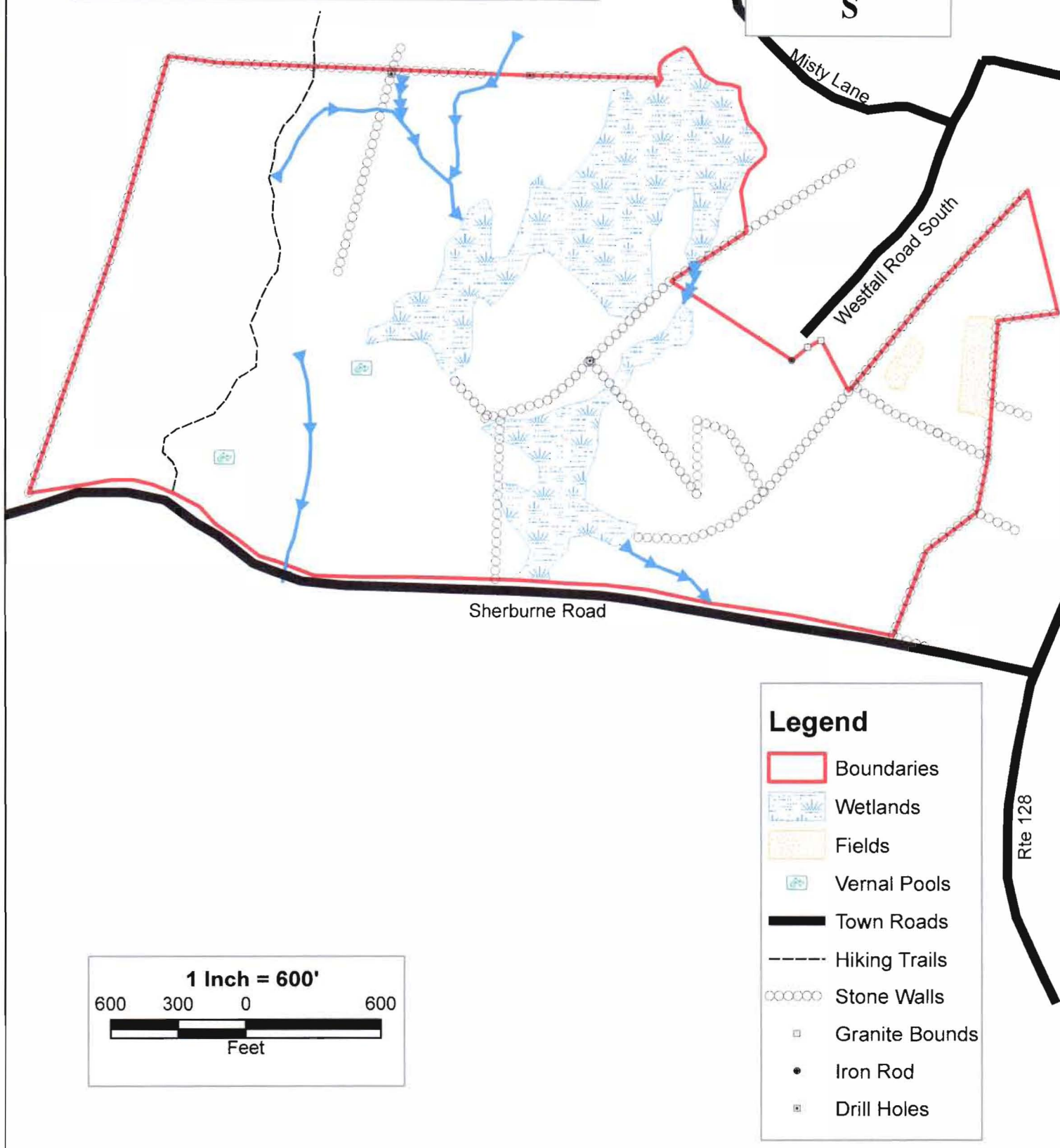




## Boundary Map

Property of the Town of Pelham  
Sherburne Road, Pelham, NH  
Map created by Michael Powers  
of Bay State Forestry Service.

Data Source: 2005 Aerial photos from MA Gis.  
NOT intended as a survey map, for forestry purposes only.

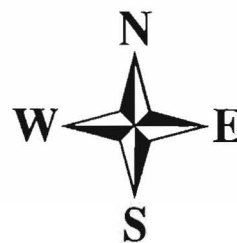




### Photo Map

Property of the Town of Pelham  
Sherburne Road, Pelham, NH  
Map created by Michael Powers  
of Bay State Forestry Service.

Data Source: 2005 Aerial photos from MA Gis.  
NOT intended as a survey map, for forestry purposes only.



1 Inch = 600'

600 300 0 600

Feet

### Legend

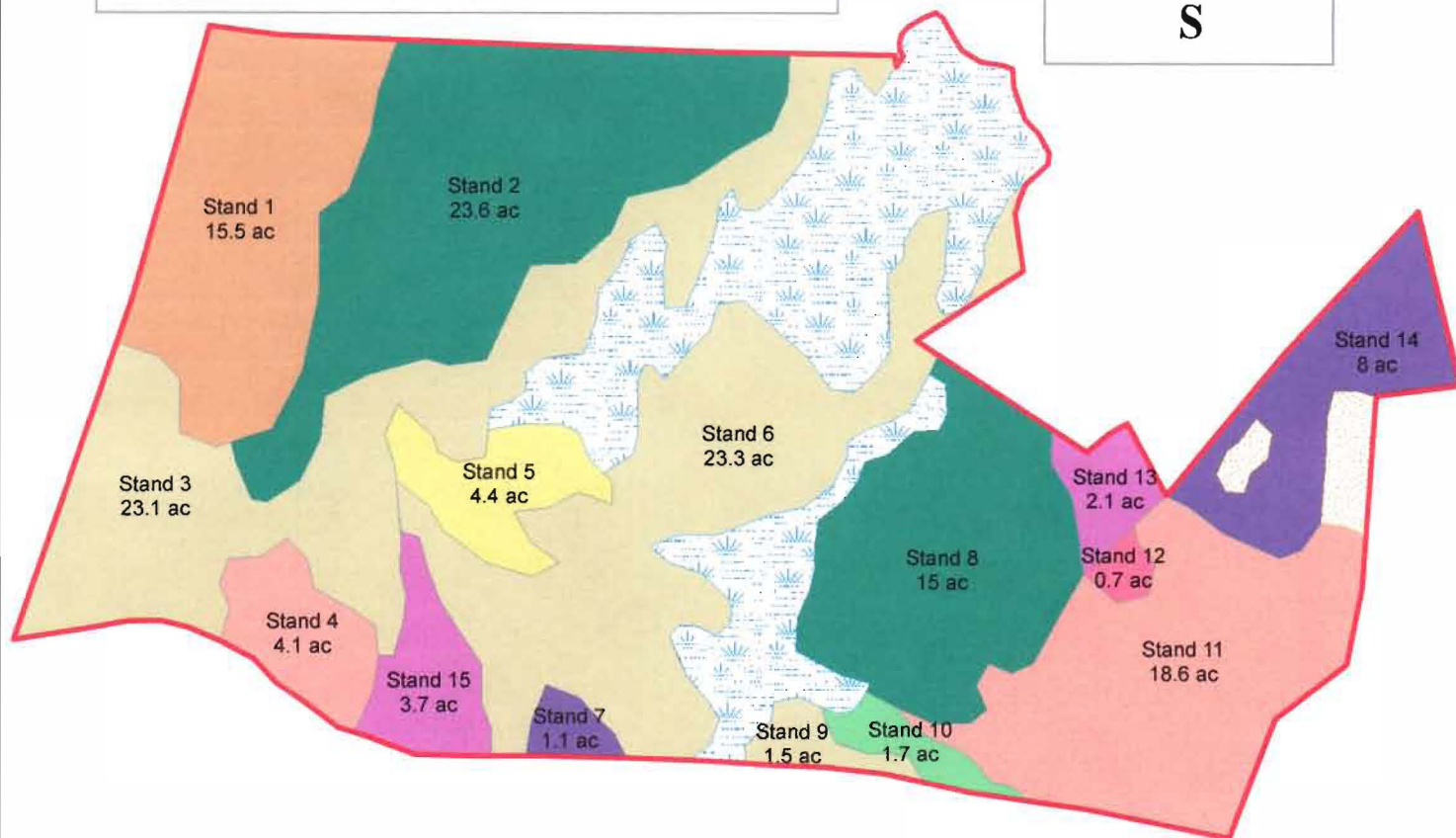
 Boundaries



## Stand Map

Property of the Town of Pelham  
Sherburne Road, Pelham, NH  
Map created by Michael Powers  
of Bay State Forestry Service.

Data Source: 2005 Aerial photos from MA Gis.  
NOT intended as a survey map, for forestry purposes only.

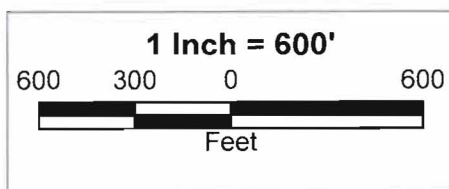


## Legend

- Boundaries
- Wetlands
- Fields

## Stands

- Abandoned Field
- Beaver/ Flood Mortality
- Mixed Oak
- Mixed Oak/Scattered White Pine
- Red Maple
- White Pine
- White Pine Oak
- White Pine/Hardwood
- White Pine/Hemlock



## **Required Elements**

**Timber** – One of the main goals for this property is sound timber management in order to produce a periodic income, and to improve the health and quality of the trees be retained. A list of management strategies on a stand-by-stand basis is discussed later in this plan.

**Fish/Wildlife Habitat** –Just having a larger open space property like this in the town of Pelham is important for wildlife habitat. Deer were seen on the eastern edge of the property, during the timber cruise. Keeping these large browsers in mind, after a timber harvest, there will be some areas that are opened up to sunlight to encourage young growth on the forest floor which will provide a food source for these animals. There will also be plenty of oak trees left which will provide hard mast for wildlife, such as deer, turkey and squirrels.

**Soil** – Care will be taken to not harvest in the Spring time, when the ground is saturated, or on excessive slopes, to minimize rutting and erosion during harvest operations. Landings will be seeded with a conservation mix and limed at the conclusion of the job to stabilize the soil, and waterbars will be installed on skid trails where necessary.

**Water Quality** – Buffers will be left along streams and the wetland edge to avoid removing too many trees at once; this will provide soil stabilization along waterways and adequate shade. This shade will decrease water temperature and therefore increase the water's oxygen-holding capacity. The wetlands and streams will be left intact to keep the water clean and silt-free. Poled fords and or skidder bridges will be used when crossing streams to further prevent siltation. Fueling of machines will not take place near the water's edge to prevent pollution.

**Recreational Resources** – The skid trails will provide a nice network of trails for recreational opportunities, after the completion of the timber harvest. These trails may be used and maintained for both for walking and wildlife viewing.

**Aesthetic Values** – To maintain good aesthetics, logging operations will not cause soil rutting and tops of harvested trees will be lopped close to the ground for rapid decay.

**Cultural Features** – Care will be taken to avoid breaching or breaking the stone walls during timber harvests unless no openings exist to allow the trees to be skidded to the landing. To accomplish this, loggers will use existing barways for skidding. No other cellar holes or cultural features have been found on this property. If cellar holes are found, buffers will be maintained around them to protect their structural integrity.

**Forest Protection** – The diversity of tree species does well to protect this property from a forest pest looking for a monoculture of timber. By keeping logging slash low to the ground, decay is speeded up; this prevents too much of a buildup of fuels as a fire hazard.

**Wetlands** – In order to preserve the integrity of more sensitive areas of this woodlot, wetlands will only be harvested under dry or frozen conditions if at all. In accordance



with the State of NH harvesting laws, at least 50 % of the basal area within 50' of wetlands and streams will be left intact.

**Threatened/Endangered Species and Unique Natural Communities** – During all the walks through this forestland, no species were identified as either threatened or endangered. If at some time any flora or fauna are identified on this property as such, appropriate measures will be taken to prevent disturbing that species.

## Forest Management Plan

### **Stand 1 – Mixed Oak (15.5 ac)**

<b>Standing Volumes -- Stand 1</b>			<b>15.5 Acres</b>	
<b>Species</b>	<b>Average BA/acre (sq. ft./ac.)</b>	<b>Average Height (16' sticks)</b>	<b>Volume per acre (bd. ft./ac.)</b>	<b>Total Volume (bd. ft.)</b>
White Pine	1	3.0	250	3,875
Red Oak	49	1.4	4,500	69,750
Black Oak	26	1.2	2,214	34,321
<b>Sawtimber Total:</b>	<b>76</b>	<b>1.9</b>	<b>6,964</b>	<b>107,946</b>
		<b>8' sticks</b>	<b>Cords/ac.</b>	<b>Total Cords</b>
Cordwood	36	3.4	8	120
Softwood Pulp	0	0.0	0	0
<b>Total BA/acre</b>	<b>111</b>			

#### Description:

This stand is located in the northwest corner of the property. It is a mixed oak stand containing mainly red, black and white oak in the overstory. The red oaks are of particularly good quality and range in size from 16 to 24 inches at dbh. The understory consists of a mix of hardwood species, mostly hickory from 5-15 feet tall. An abundance of fern can be found on the forest floor where the soils are more poorly drained, in the lower elevations of the stand. There are also scattered patches of white pine seedlings/saplings found throughout this stand, mostly on the higher, drier ground. These young pine, however, are not putting on much growth, due to the shady conditions caused by a closed tree canopy above them.

The terrain in this stand slopes to the south east with 3-10% grades. The steepness of grade seems to increase the further north you travel in the stand. The higher up the slope you travel, the better drained the soils become. The soils in the higher elevations tend to be moderately well drained, and the soils in the lower elevations tend to be somewhat poorly drained. The terrain is also very stony in places, especially in the northern part of the stand.

#### Recommendations:

This is a very nice stand, containing some excellent quality red oak trees. The quality of the black oak is not as good as the red oak. Since this is an uneven-aged mixed oak stand, the uneven-aged stand structure should be maintained by employing the single tree/group selection method of harvesting. The poor quality black oak should be targeted for removal, along with any larger mature red oaks. This will create growing space for the remaining trees and provide much needed sunlight to the white pine seedlings/saplings already established in the understory. Care would need to be taken when laying out trails for forestry equipment, since the soils in the lower elevations are

more poorly drained. The trails would have to be laid out in the higher, drier ground, unless the stand is operated in under very dry or frozen conditions.

## Stand 2 – Mixed Oak/Scattered White Pine (23.6 ac)

Standing Volumes -- Stand 2				23.6 Acres
Species	Average BA/acre (sq. ft./ac.)	Average Height (16' sticks)	Volume per acre (bd. ft./ac.)	Total Volume (bd. ft.)
Red Oak	44	1.3	3863.6	91181.8
White Pine	9	2.8	1500.0	35400.0
Black Oak	10	1.1	795.5	18772.7
White Ash	2	1.0	136.4	3218.2
Red Maple	2	1.0	136.4	3218.2
Pignut Hickory	1	1.5	90.9	2145.5
White Ash	1	1.0	68.2	1609.1
White Oak	1	1.0	68.2	1609.1
White Birch	1	1.0	68.2	1609.1
Yellow Birch	1	1.0	68.2	1609.1
<b>Sawtimber Total:</b>	<b>71</b>	<b>1.3</b>	<b>6,795</b>	<b>160,373</b>
		<b>8' sticks</b>	<b>Cords/ac.</b>	<b>Total Cords</b>
Cordwood	35	3.1	7.1	168.5
Softwood Pulp	5	3.4	1.0	23.3
<b>Total BA/acre</b>	<b>109</b>			

### Description:

This large stand is located in the western part of the property. The stand overstory is dominated by red and black oaks, but there is enough pine found throughout the stand to differentiate it from Stand 1, which is just a mixed oak stand. The red oaks range in size from 16 to 22 inches in diameter and are of very good quality. The pine found scattered throughout the stand are also very good quality, and range in size from 14 to 22 inches in diameter. Pine saplings also are found thriving in the understory of this stand. Pine seems to do very well growing underneath red and black oak. The oaks offer the young pine shelter to grow and develop, however the pine are now at a stage where they need to be released in order to continue to put on more height growth. Young pine in good growing conditions will put on 1-1/2 feet of height growth per year. These young pine seem to be only putting on about 6-7 inches of height growth per year. In the wetter parts of the stand, along the small brooks to the north, we see a little more variation in the overstory and understory composition. We find more red maple, and birches in both the overstory and understory. There is also quite a bit of fern and alder along these brooks in the understory. These subtle differences did not warrant a change in stand types, so these areas have been included into Stand 2.

The terrain in this stand can be described as rolling and rocky and gently sloping to the southeast towards the wetlands. In some areas the terrain drops quite drastically to the southeast, but for the most part it is a rolling type of terrain. To the north where two small brooks flow into one larger channel, the soils are more poorly drained. The western part of the stand where the hiking trail is located is also somewhat poorly



drained. The central part of the stand seems to be the highest, driest part, and the soils are more well drained, but rocky. A stone wall also runs north/south in the eastern part of the stand, but ends abruptly in a boulder field, before it reaches stand 3.

Recommendations:

This stand is an uneven-aged stand, and should be maintained as uneven-aged, by employing single tree/group selection harvesting. The black oak, and poorer quality hardwoods can be removed from the stand, while retaining the better quality red oak, for future sawtimber, and to also shelter the white pine regenerating in the stand. These young white pines will benefit greatly from the sunlight that will find its way to the forest floor by openings made from harvesting. It is also important to leave some larger diameter red and white oaks for mast production for wildlife. In the northern part of the stand, some of the larger red maples can be removed and utilized for sawtimber. Since the soils in this part of the stand are more poorly drained, care must be taken when harvesting here. Forestry equipment should only enter this part of the stand under dry or frozen conditions. Many of the larger white pines found throughout this stand can be removed and utilized for sawtimber. The stand is prone to growing more oak species, and the pine for the most part is mature. There is also an abundance of white pine regeneration already established in the understory in most parts of this stand. In areas where white pine regeneration is lacking, more of the larger white pines can be retained for seed sources.

### Stand 3 – White Pine/Oak (23.1 ac)

Standing Volumes – Stand 3			23.1 Acres	
Species	Average BA/acre (sq. ft./ac.)	Average Height (16' sticks)	Volume per acre (bd. ft./ac.)	Total Volume (bd. ft.)
White Pine	43	2.7	6840.9	158025.0
Red Oak	24	1.3	2068.2	47775.0
Black Oak	15	1.1	1204.5	27825.0
White Oak	4	1.3	318.2	7350.0
Red Maple	2	1.0	136.4	3150.0
Pig Nut Hickory	2	1.5	181.8	4200.0
White Ash	2	1.0	136.4	3150.0
Butternut	1	1.0	68.2	1575.0
<b>Sawtimber Total:</b>	<b>92</b>	<b>1.3</b>	<b>10,955</b>	<b>253,050</b>
		<b>8' sticks</b>	<b>Cords/ac.</b>	<b>Total Cords</b>
Cordwood	24	3.2	4.8	111.5
Softwood Pulp	15	3.7	3.6	83.3
<b>Total BA/acre</b>	<b>131</b>			

#### Description:

This stand is a long and narrow. It starts at the southwestern most part of the property and runs to the northeast, bordering the main body of wetlands to the west. The stand contains numerous stems of mixed oak, but also has a lot more pine volume than Stand 2. Overall this stand contains almost double the amount of sawtimber volume in pine than oak. This is not to say that there are more pine stems per acre, only that the volume of pine sawtimber is larger, due to larger diameter trees, but mostly due to the fact that white pine grows much taller and has more product higher up in the stem than hardwood species. The understory, in terms of species composition, seems to be inconsistent throughout the stand, probably due to changing soil types. The southwest part of the stand contains a dense understory of white pine saplings approximately 1-2 inches in diameter. It would appear that some sort of disturbance happened in this part of the stand some years ago to make the young pine grow more vigorously in the understory. Moving to the central part of the stand, regeneration becomes patchy. The understory is very shady and little sunlight penetrates the canopy. Moving to the northeast, we seem to find more white pine regeneration. There would appear to be more natural openings made in the forest canopy from tree mortality, due to over crowding. These openings allow sunlight to reach the forest floor, and we find more patches of white pine regeneration ranging from 5-15 feet tall. The white oak seems to be falling out of the stand, succumbing to the competition from the red and black oak, as well as the larger white pine.

The western part of the stand slopes to the southeast, but for the most part the terrain can be described as rolling and rocky. The soils vary, but are typically moderately well

drained, until you move closer to the wetland areas to the north. As would be expected the soils become more poorly drained as you move closer to these lower lying wet areas.

Recommendations:

Like Stand 1 and 2, this stand is uneven-aged this stand structure should try to be maintained through single tree/group selection silviculture. Poor quality black oak and other hardwoods should be targeted for removal, while retaining the better quality red oak and white pine. Since a lot of the smaller white oak seems to be falling out of the stand, any larger good quality white oak should be retained, as mast producing trees for wildlife. A lot of the larger, mature white pine can be removed, but where we find those areas with little regeneration, some of the larger, healthy pine should be left for a seed source. It would be better to harvest these areas in the summer months, to try and encourage ground disturbance, since white pine requires, or at least seems to germinate much better on a seed bed of exposed soil.

#### Stand 4 – White Pine/Hardwood (4.1 ac)

Standing Volumes -- Stand 4				4.1 Acres
Species	Average BA/acre (sq. ft./ac.)	Average Height (16' sticks)	Volume per acre (bd. ft./ac.)	Total Volume (bd. ft.)
White Pine	25	3.3	4750.0	19475.0
Red Maple	20	1.0	1500.0	6150.0
White Ash	15	1.5	1500.0	6150.0
Shagbark Hickory	5	2.0	625.0	2562.5
Red Oak	5	1.0	375.0	1537.5
White Oak	5	1.0	375.0	1537.5
Pignut Hickory	5	1.0	375.0	1537.5
<b>Sawtimber Total:</b>	<b>80</b>	<b>1.5</b>	<b>9,500</b>	<b>38,950</b>
		<b>8' sticks</b>	<b>Cords/ac.</b>	<b>Total Cords</b>
Cordwood	15	3.0	2.9	12.1
Softwood Pulp	5	4.0	1.2	5.1
<b>Total BA/acre</b>	<b>100</b>			

#### Description:

This stand is located in the southwestern corner of the property, and has frontage along Sherburne road. It is a small stand, characterized as being a white pine/hardwood stand. Most of the sawtimber volume is white pine but there are numerous mixed hardwood species found in this stand such as red maple, white ash, and mixed oaks, ranging in size from 10-16 inches in diameter. The understory is a mix of hardwood species in the wetter parts of the stand and white pine in the drier parts.

The western part of the stand slopes to the south towards Sherburne Road. The eastern part of the stand slopes to the east towards Stand 15, which is a red maple swamp. The soils are somewhat poorly drained to moderately well-drained. There is also a vernal pool found in this stand, which serves as important breeding habitat for amphibians, such as frogs and salamanders.

#### Recommendations:

This stand is somewhat difficult to access, because the soils are somewhat poorly drained in areas. The best terrain is along the southern edge of the stand bordering Sherburne road. Forestry equipment may be limited to accessing this part of the stand. Poor quality hardwoods like the red maple and white ash should be removed from the stand, favoring the red oak and white pine. Over time, this stand could possibly be converted to a pine/oak stand. Care needs to be taken when harvesting around the vernal pool. A well distributed buffer of trees should be left around the pool, to provide shade, and forestry equipment should not be allowed to enter this buffer.



#### Stand 5 – White Pine (4.4 ac)

Standing Volumes -- Stand 5			4.4 Acres	
Species	Average BA/acre (sq. ft./ac.)	Average Height (16' sticks)	Volume per acre (bd. ft./ac.)	Total Volume (bd. ft.)
White Pine	155	1.8	24750.0	108900.0
Red Oak	5	1.0	375.0	1650.0
<b>Sawtimber Total:</b>	<b>160</b>	<b>1.4</b>	<b>25,125</b>	<b>110,550</b>
		<b>8' sticks</b>	<b>Cords/ac.</b>	<b>Total Cords</b>
Cordwood	5	4.0	1.2	5.5
Softwood Pulp	25	5.0	7.6	33.2
<b>Total BA/acre</b>	<b>190</b>			

#### Description:

This small stand is located in the central portion of the property just south of the main wetland area. It is a white pine stand, and next to Stand 11, contains the largest amount of white pine volume per acre. There are some very good quality pines to be found in this stand ranging in size from 12-24 inches in diameter. The understory is very shaded and is comprised of mixed hardwood species from 10-15 feet tall. Also scattered pine seedlings and saplings can be found in this stand from 3-5 feet tall.

The terrain is undulating and not as stony as a lot of the other stands. The soils are well drained, however there is a vernal pool located in one of the low lying areas in stand. The stand for the most part is very accessible to forestry equipment.

#### Recommendations:

This stand is an even-aged pine stand that contains a very high stocking of trees per acre. The stand should be managed and nurtured as an even aged stand through a series of thinnings in the coming years. The smaller suppressed pines with weak crown structures should be removed from the stand, along with some of the mature white pines. This will open up more growing space for the remaining trees, allowing them to put on more crown structure. The larger crowns means more diameter growth in the coming years. Although we are not as concerned about regeneration in this stand at this point, the openings made in the forest canopy will allow sunlight to enter the understory, and benefit any existing regeneration that is present. Care must be taken working around the vernal pool in this stand. A well distributed buffer of trees should be maintained to provide shade for the pool.

### Stand 6 – White Pine/Oak (23.3 ac)

Standing Volumes -- Stand 6			23.3	Acres
Species	Average BA/acre (sq. ft./ac.)	Average Height (16' sticks)	Volume per acre (bd. ft./ac.)	Total Volume (bd. ft.)
White Pine	68	2.3	9583.3	216583.3
Red Oak	31	1.1	2472.2	55872.2
Black Oak	14	1.1	1166.7	26366.7
Red Maple	3	1.0	250.0	5650.0
White Ash	1	1.0	83.3	1883.3
White Oak	1	1.0	83.3	1883.3
<b>Sawtimber Total:</b>	<b>119</b>	<b>1.3</b>	<b>13,639</b>	<b>308,239</b>
		<b>8' sticks</b>	<b>Cords/ac.</b>	<b>Total Cords</b>
Cordwood	20	2.9	3.8	85.9
Softwood Pulp	21	4.3	5.6	126.8
<b>Total BA/acre</b>	<b>160</b>			

#### Description:

This large stand is located in the central portion of the property, between the two main wetland areas. The stocking level in this stand is very high, and this stand contains the most total volume of all 15 stands making up the property. Only stand 11 contains a higher total volume of white pine, but only by 4mbf. The pine and oak ranges in size from small to large sawtimber quality. There are some very high quality stems found in this stand. There were also a few "legacy" oak trees found. These are trees that were probably here when the land was still pasture. They are usually very large with expansive crowns, because they did most of there growing in open pasture-like settings. They do not have much commercial value, but in terms of mast production for wildlife and a seed source for future forests, and also for their uniqueness, they are invaluable. In some areas of this stand we see heavy pine growth, in others we see more oak. None of these areas are really large enough or unique enough to call a different forest type. The understory species composition varies with soil conditions. Closer to the wetlands where the soils are more poorly drained; we find more red maple, alder and fern in the understory. The soils towards the interior of the stand are drier, and we find more oak and pine regeneration, varying in size.

The terrain can be described as rolling, and not as rocky as some of the stands found in the western part of the property. There is a small wide-wet flowage in the south central portion of the stand, which flows to the east, probably only in the spring time or during times of heavy rains. There is more red maple and white ash found around this small area, but it was not a big enough area to call it a different forest type, therefore this area was included in Stand 6.

Recommendations:

This stand should be maintained as an uneven-aged white pine/oak stand. The low quality black oak, red maple and white ash should be removed from the stand, favoring the better quality red oak and white pine. The central-eastern portion of the property contains a small area of low quality white pine. There is also not much regenerating in this area. A group selection method of harvesting could be applied to this area, to remove a lot of the low quality pine, creating an opening in the forest canopy which would encourage sunlight to reach the forest floor, thereby regenerating the white pine. If possible this area should be harvested in the summer in order to get the proper ground disturbance necessary to regenerate white pine. There are also stone walls found in this stand. Care should be taken to locate and utilize existing barways, where possible.

### Stand 7 – Abandoned Field (1.1 ac)

Standing Volumes -- Stand 7				1.1 Acres
Species	Average BA/acre (sq. ft./ac.)	Average Height (16' sticks)	Volume per acre (bd. ft./ac.)	Total Volume (bd. ft.)
White Ash	20	1.0	1500.0	1650.0
White Pine	10	1.0	750.0	825.0
Red Oak	10	1.0	750.0	825.0
<b>Sawtimber Total:</b>	<b>40</b>	<b>1.0</b>	<b>3,000</b>	<b>3,300</b>
		<b>8' sticks</b>	<b>Cords/ac.</b>	<b>Total Cords</b>
Cordwood	30	2.7	5.4	5.9
Softwood Pulp	30	2.0	4.3	4.7
<b>Total BA/acre</b>	<b>100</b>			

#### Description:

This small stand is located to the south of Stand six, along Sherburne road. This stand is described as being an abandoned field that has since grown back to a mix of pine and hardwoods. Red maple, white ash, red oak, and white pine can all be found in this stand ranging in size from 6-14 inches in diameter. The quality of the trees is not very good. Not much evidence of exotic invasive species has been seen on this property; however, some oriental bittersweet was seen in this stand. There really is no understory, since the stand is really in a pole stage of development.

The terrain is flat except along the north edge, which slopes to the north at about 3-5% grades. The soils are well drained.

#### Recommendations:

Not much management activity really needs to take place in this stand, as it is a developing pole stand. A parking area for town residents to access for hiking and nature watching has been proposed for this stand. This would be a good central access point into the property. This stand would also serve as a good staging area for forestry operations, as the terrain is relatively flat and the soils are well-drained. In order to regain some field habitat, which is critical for some species of wildlife, the staging area would constructed larger than is actually needed for a forestry operation, with the intention of utilizing the area as field habitat when the operation is complete.



### Stand 8 – Mixed Oak/Scattered White Pine (15.0 ac)

Standing Volumes -- Stand 8				15 Acres
Species	Average BA/acre (sq. ft./ac.)	Average Height (16' sticks)	Volume per acre (bd. ft./ac.)	Total Volume (bd. ft.)
Red Oak	53	1.3	4750.0	71250.0
White Pine	25	3.1	4500.0	67500.0
Black Oak	8	1.4	791.7	11875.0
Red Maple	10	1.0	750.0	11250.0
White Oak	5	1.2	416.7	6250.0
<b>Sawtimber Total:</b>	<b>102</b>	<b>1.6</b>	<b>11,208</b>	<b>168,125</b>
		<b>8' sticks</b>	<b>Cords/ac.</b>	<b>Total Cords</b>
Cordwood	20	3.7	4.6	69.4
Softwood Pulp	2	6.0	0.6	8.9
<b>Total BA/acre</b>	<b>123</b>			

#### Description:

This stand is located just east of the main wetland areas in the middle of the property. This is a mixed oak/scattered pine stand, and contains some of the highest quality red oak on the property, ranging in size from 14-22 inches in diameter. The pine found scattered throughout the stand are also of very good quality and range in size from 14-24 inches in diameter. In terms of timber quality, this may be the nicest stand on the property.

Regeneration is patchy. The northwestern side of the stand does seem to contain some heavy white pine regeneration ranging in size from 3-10 feet tall. Other areas in the stand, where there is a lot of shade and the soils are more poorly drained, very little regeneration is found. The southwestern part of the stand contains a small area made up of mostly sawlog size white pine. The area is too small to call a different stand type, but does contain some very good quality pine. There is also another area in the eastern part of the stand in which the soils are more poorly drained and we find more red maple, and white ash growing. This area is also too small to break it out into its own forest stand.

Like most of the property, the terrain is rolling and slopes towards the wetland areas to the west and southwest. The soil conditions vary from being well drained in the central western part of the stand to poorly drained in the central eastern part of the stand. There are also large boulders scattered about, mostly in the southwestern part of the stand. Operating forestry equipment around the wet and rocky areas could prove to be difficult.

#### Recommendations:

This stand is an uneven-aged mixed oak/scattered pine stand and should be maintained as such. The poor quality black oak, red maple and white ash should be removed from the stand, leaving a healthy disbursement of red oak and white pine along with a few other species of mixed hardwood. Again some of the larger pine and oak can also be removed from the stand as long as the stocking levels are kept high enough to optimize growth, and provide a seed source for future regeneration, as well as shelter any already

and provide a seed source for future regeneration, as well as shelter any already established regeneration. The small pine section is really a even-aged pine stand and can be thinned as such, removing suppressed pine, and retaining the pine with the healthier crowns. Care needs to be taken harvesting around the wetland areas where the soils are more poorly drained. These areas should only be harvested under dry or frozen conditions.

### Stand 9 – White Pine/Oak (1.5 ac)

Standing Volumes -- Stand 9			1.5 Acres	
Species	Average BA/acre (sq. ft./ac.)	Average Height (16' sticks)	Volume per acre (bd. ft./ac.)	Total Volume (bd. ft.)
White Pine	157	1.6	16071.4	24107.1
Red Oak	53	1.6	5607.1	8410.7
Black Birch	7	1.2	607.1	910.7
White Birch	3	1.5	285.7	428.6
White Ash	3	1.3	250.0	375.0
Black Oak	1	2.0	178.6	267.9
White Oak	1	1.0	107.1	160.7
Yellow Birch	1	1.0	107.1	160.7
<b>Sawtimber Total:</b>	<b>227</b>	<b>1.4</b>	<b>23,214</b>	<b>34,821</b>
		<b>8' sticks</b>	<b>Cords/ac.</b>	<b>Total Cords</b>
Cordwood	40	3.1	8.0	12.0
Softwood Pulp	1	6.0	0.5	0.8
<b>Total BA/acre</b>	<b>269</b>			

#### Description:

This stand is located in the southeast portion of the property along Sherburne road. It is a small white pine/oak stand, but contains a lot of volume for such a small stand. Of all the stands found on the property, it has the highest per acre volume of red oak. The stand contains a lot of very good quality white pine and red oak in the overstory ranging in size from 14-22 inches in diameter. The understory consists of a mix of pine and hardwoods of various sizes.

The soils are moderately well drained as you move to the south towards Sherburne road. To the north is a large wetland area, and the soils become less well drained. The eastern edge of the stand contains numerous dead trees, a result of the flooding activity from beaver in Stand 10.

#### Recommendations:

This stand will be difficult to access with forestry equipment because it is bordered to the north and west by a wetland area, to the east by the Stand 10, which is a flooded beaver mortality area, and to the south by Sherburne Road. The stand certainly should only be accessed with forestry equipment during dry or frozen conditions. The larger white pine and red oak can be removed along with any poor quality trees. Some of the dead and dying trees along the eastern border of the stand could also be salvaged.

### **Stand 10 – Beaver Flood Mortality (1.7 ac)**

#### Description:

There were no cruise points taken in this stand due to how wet the soils were, and because the trees were all dead. It would appear beaver have constructed a dam at some point, which caused the flooding of this area, and resulted in most of the trees dying. This stand can be seen as you look into the wood from Sherburne Road.

#### Recommendations:

There's not much in the way of harvest activity that can be done in this stand due to the poorly drained soils, and flooding created by the beaver. Some of the dead and dying trees along the edge of the stand may be able to be salvaged. The hardwood trees could be utilized for firewood. The trees that cannot be salvaged can serve as snags for wildlife purposes.

### Stand 11 – White Pine/Hardwood (18.6 ac)

Standing Volumes -- Stand 11				18.6 Acres
Species	Average BA/acre (sq. ft./ac.)	Average Height (16' sticks)	Volume per acre (bd. ft./ac.)	Total Volume (bd. ft.)
White Pine	69	3.0	11866.7	220720.0
Red Oak	23	1.3	2033.3	37820.0
Black Oak	9	1.2	750.0	13950.0
Red Maple	3	1.3	300.0	5580.0
Hemlock	2	2.3	283.3	5270.0
White Oak	3	1.1	216.7	4030.0
White Birch	2	1.2	166.7	3100.0
Black Birch	2	1.2	166.7	3100.0
White Ash	1	1.0	50.0	930.0
<b>Sawtimber Total:</b>	<b>113</b>	<b>1.5</b>	<b>15,833</b>	<b>294,500</b>
		<b>8' sticks</b>	<b>Cords/ac.</b>	<b>Total Cords</b>
Cordwood	29	3.1	5.9	110.2
Softwood Pulp	15	4.4	4.2	77.6
<b>Total BA/acre</b>	<b>157</b>			

#### Description:

This large stand is located in the south eastern part of the property. It is a well stocked white pine/hardwood stand, containing some very good quality pines and oak, ranging in size from 14-24 inches in diameter. There is also a mix of other tree species to be found in this stand, such as red maple, black and white birch and white ash. The stand seems to be heavier to pine in the southern section and a little heavier to a mix of hardwood species in the northeast section. The understory consists of a mix of hardwood species varying greatly in height, and white pine which seems to range in size from 3-10 feet tall.

The terrain for the most part is flat. The soils range from somewhat poorly drained to somewhat well-drained. There are large boulders scattered throughout, but seem to be most prevalent around the north-central part of the stand.

#### Recommendations:

This is an uneven-aged stand, and this stand structure should try to be retained through single tree/group selection cutting methods. The poor quality and suppressed hardwoods and pine could be targeted for removal, while retaining the better quality trees for the residual stand. There are certainly quite a few larger mature white pine and oak trees to be found in this stand that could be harvested as well, creating growing space for the remaining trees, and allowing sunlight to penetrate the forest floor which would encourage more regeneration growth in the stand.

**Stand 12 – White Pine/Hemlock (.7 ac)**

<b>Standing Volumes -- Stand 12</b>				<b>0.7 Acres</b>
<b>Species</b>	<b>Average BA/acre (sq. ft./ac.)</b>	<b>Average Height (16' sticks)</b>	<b>Volume per acre (bd. ft./ac.)</b>	<b>Total Volume (bd. ft.)</b>
White Pine	120	3.5	23875.0	16712.5
Hemlock	35	1.9	4125.0	2887.5
Red Maple	20	1.1	1625.0	1137.5
White Oak	5	1.5	500.0	350.0
<b>Sawtimber Total:</b>	<b>180</b>	<b>2.0</b>	<b>30,125</b>	<b>21,088</b>
		<b>8' sticks</b>	<b>Cords/ac.</b>	<b>Total Cords</b>
Cordwood	40	3.0	7.8	5.5
Softwood Pulp	45	3.1	9.1	6.4
<b>Total BA/acre</b>	<b>265</b>			

**Description:**

This very small stand is located in the eastern part of the property. Although this is a very small stand, it was felt that it was necessary to break it out as its own forest type, because it is a fairly unique stand to this property. This stand contains about the only significant amount of hemlock on the property. The stand also contains some larger good quality white pine ranging in size from 14-24 inches in diameter. The size of the hemlock tends to be more around the 12-18 inch diameter range. Although hemlock is not thought of as being a commercial valuable species, it does provide cover and a food source for deer in the winter time, which is not quite as important in southern NH as it is in the northern part of the state.

The terrain this stand occupies is flat and the soils are somewhat poorly drained. It would appear that there is a man made drainage ditch that is very old on the north side of the stand.

**Recommendations:**

Although the hemlock in this stand is unique to the property, most of it should be cut, due to the presence of the hemlock wooly adelgid in town. The insect that feeds on the leaves of hemlock has been found on Pelham Veterans Memorial Park property. According to the NH division of forests and lands the hemlocks on the property are infested with the insect and since this small stand is less than a mile away from PVMP, it stands to reason that if these trees aren't infested, they soon will be. Harvesting will be limited by the soil conditions. This stand tends to be somewhat wet, and any harvesting that occurs should be during the dry summer months, or during the winter when the ground freezes. As much of the hemlock as possible should be removed. The pine should be favored to grow for the future.



**Stand 13 – Red Maple (2.1 ac)**

<b>Standing Volumes -- Stand 13</b>			<b>2.1 Acres</b>	
<b>Species</b>	<b>Average BA/acre (sq. ft./ac.)</b>	<b>Average Height (16' sticks)</b>	<b>Volume per acre (bd. ft./ac.)</b>	<b>Total Volume (bd. ft.)</b>
Black Gum	30	1.2	2500.0	5250.0
Red Maple	10	1.0	750.0	1575.0
<b>Sawtimber Total:</b>	<b>40</b>	<b>1.1</b>	<b>3,250</b>	<b>6,825</b>
		<b>8' sticks</b>	<b>Cords/ac.</b>	<b>Total Cords</b>
Cordwood	30	4.0	7.5	15.7
Softwood Pulp	10	4.0	2.5	5.2
<b>Total BA/acre</b>	<b>80</b>			

**Description:**

This small stand is located in the eastern half of the property, just south of Westfall road. The stand is located on very wet terrain and the soils are poorly drained. The tree species most commonly found in these types of conditions is red maple, and this stand is no exception. There are also black gum trees found in this stand. Black gum is a species which is also usually associated with wet soil conditions. Regeneration in the understory of commercially viable trees is sparse. There are a few birches and red maple, ranging in size from 15-25 feet. Mostly we see high bush blueberry occupying the understory here.

**Recommendations:**

Very little activity, in terms of timber harvesting should occur in this stand, due to the wet soil conditions. A few larger red maples could be harvested on the outskirts of the stand. The black gum trees should be retained just to offer a bit more tree species diversity on the property. For the most part this stand should be left the way it is.

#### Stand 14 – Abandoned Field (8 ac)

Standing Volumes -- Stand 14				8 Acres
Species	Average BA/acre (sq. ft./ac.)	Average Height (16' sticks)	Volume per acre (bd. ft./ac.)	Total Volume (bd. ft.)
White Pine	4	1.0	300.0	2400.0
<b>Sawtimber Total:</b>	<b>4</b>	<b>1.0</b>	<b>300</b>	<b>2,400</b>
		<b>8' sticks</b>	<b>Cords/ac.</b>	<b>Total Cords</b>
Cordwood	36	2.4	6.0	48.0
Softwood Pulp	38	2.3	6.1	48.6
<b>Total BA/acre</b>	<b>78</b>			

#### Description:

This stand is located in the northeast part of the property, behind a residential development off of Westfall Road. This is an abandoned field, starting to revert back to forest. The stand borders a wetland to the north, and the species composition in the northeast corner is primarily red maple pole-sized trees. Moving to the south and to west in the stand we find more poor quality pine, white ash and red maple, ranging in size from 6-14 inches in diameter. There are also two small open field areas in this stand which offer excellent habitat for birds, small mammals, and invertebrates.

The terrain is flat, and not very rocky. The soils in the northeast part of the stand are poorly drained. Moving to the south in the stand the soils become moderately well-drained.

#### Recommendations:

This stand is still in the pole-stage of development, and there is very little, if any commercial value to the trees, unless you were to conduct a chipping operation. There are two options for this stand. The first is to do nothing, and let the stand develop over time, until the trees are large enough to support a forestry operation. The other option is to add onto the already existing fields, and revert part, or all of this stand back into field. This option would truly give this property a diverse landscape. The property would contain mature hardwood, and mixed wood forests, an abundance of wetlands, and fields. The problem with creating and maintaining fields is cost. The fields would have to be cleared and stumped, and then mowed once or twice per year.

### **Stand 15 – Red Maple (3.7 ac)**

#### Description:

There were no cruise points taken in this stand, therefore there is no volume data available. The stand is a red maple swamp, with very poorly drained soils. The trees are all about pole-sized, ranging from 5-10 inches in diameter.

#### Recommendations:

No harvest activity should occur in this stand, as it is too wet, and the trees have no commercial value. The stand should be left intact, and will offer great benefits for wildlife.

## **Management Schedule**

### **2007**

- Prepare the forest management plan.
- Blaze and paint identifiable boundary lines.
- Discuss opportunities for creating more field area.
- Obtain a driveway permit from the State of NH.

### **2008-2010**

- Install a Tree Farm sign along Sherburne Road.
- Conduct a conventional or biomass timber harvest on the eastern side of the property.  
When this sale is complete, harvest the western side of the property.
- Clear abandoned field area in Stand 14 to create more field habitat for wildlife.
- Seed and lime the landing at the conclusion of the timber harvest.

### **2011-2017**

- Monitor the woodlot for wind damage, ice damage, fire, or disease and take appropriate corrective actions as needed to ensure the continued health of this forest ecosystem.
- Re-assess the woodlot in 10 years and write a new 10-year management plan, and conduct another timber harvest in the appropriate stands.
- (Recommended Item) Make this property available for Project Learning Tree excursions for the local schools.

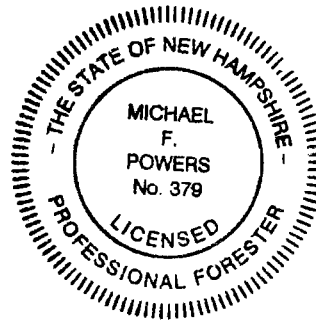
### **Concluding Remarks**

The recommendations proposed in this 10-year management plan should be implemented within the next 10 years, although timing will depend on landowner priorities, market conditions, and environmental conditions such as pest outbreaks and weather. Through sound silvicultural techniques and using best management practices (BMP's), mature, diseased and low quality trees will be harvested to allow better quality and more healthy trees to grow in their place. These recommendations if carried out, should result in a healthier, and more vigorous growing forest, and will also work to enhance wildlife habitat. This forest should be monitored for pest outbreaks and destructive weather events; corrective action should be taken as needed over the next 10 years in response to any such events. Implementing these recommendations will help ensure that the forestland is being managed with long-term sustainability in mind.

Respectfully Submitted,



Michael F. Powers, Consulting Forester  
N.H. License #379



## **Appendix A.**

### **SOILS INFORMATION**



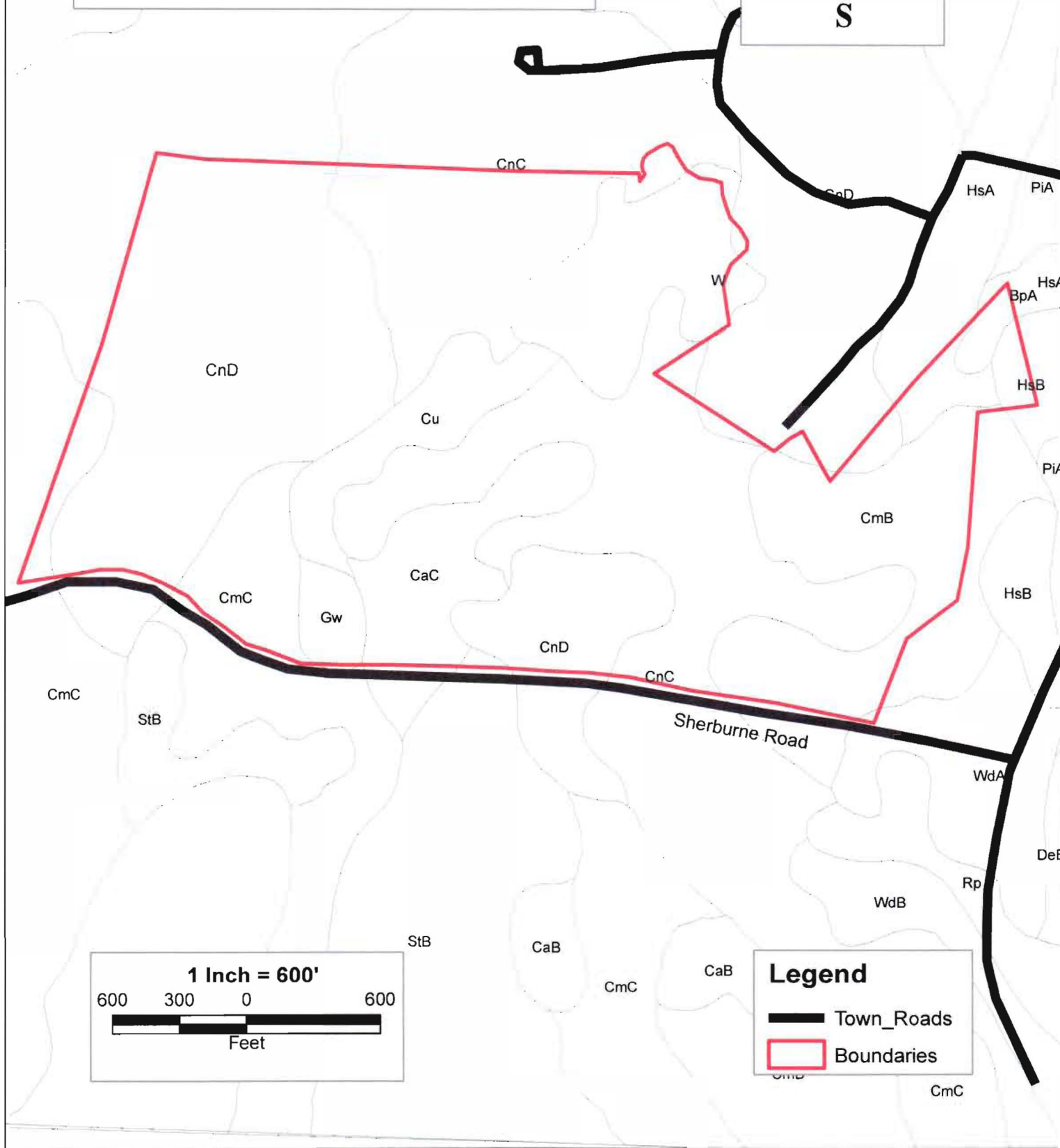
CaB

BoA

### Soils Map

Property of the Town of Pelham  
Sherburne Road, Pelham, NH  
Map created by Michael Powers  
of Bay State Forestry Service.

Data Source: 2005 Aerial photos from MA Gis.  
NOT intended as a survey map, for forestry purposes only.



## Hillsborough County Soils Profiles

### BpA – Borohemists, nearly level

Most areas of these soils are in sparsely wooded bogs. The high water table and organic material make these soils unsuitable for farming, woodland, or most other uses unless fill material is used.

### CaC – Canton fine sandy loam, 8-15%

Suitability for growing wetland plants for wildlife habitat – Poor.

Suitability for growing coniferous and hardwood trees – Good.

Suitability for area as habitat for wetland wildlife – Very poor.

Suitability for area as habitat for woodland wildlife – Good.

Suitability for area as habitat for openland wildlife – Good.

Suitable for trails & paths.

Has a good site index (greater than 60) for red pine.

Has only slight erosion hazard and slight windthrow hazard.

Well-drained, moderately rapid permeability, well-suited for cropland, low productivity as forestland.

### CmB – Canton stony fine sandy loam, 3-8% slopes

Suitability for growing wetland plants for wildlife habitat – Poor.

Suitability for growing coniferous and hardwood trees – Good.

Suitability for area as habitat for wetland wildlife – Very poor.

Suitability for area as habitat for woodland wildlife – Good.

Suitability for area as habitat for openland wildlife – Poor.

The soil is poorly suited to most tree species; productivity is low.

### CmC – Canton stony fine sandy loam, 8-15% slopes

Suitability for growing wetland plants for wildlife habitat – Very poor.

Suitability for growing coniferous and hardwood trees – Good.

Suitability for area as habitat for wetland wildlife – Very poor.

Suitability for area as habitat for woodland wildlife – Good.

Suitability for area as habitat for openland wildlife – Poor.

Has a good site index (greater than 60) for red pine.

Has only slight erosion hazard and slight windthrow hazard.

Well-drained, moderate permeability, low productivity as forestland, steep slopes can limit logging.

### CnC – Canton very stony fine sandy loam, 8 to 15% slopes

Suitability for growing wetland plants for wildlife habitat – Very Poor.

Suitability for growing coniferous and hardwood trees – Good.

Suitability for area as habitat for wetland wildlife – Very poor.

Suitability for area as habitat for woodland wildlife – Fair.

Suitability for area as habitat for openland wildlife – Poor.

The soil is poorly suited to most tree species, and productivity is low. The stones and boulders limit logging operations.

### CnD – Canton very stony fine sandy loam, 15 to 35% slopes

Suitability for growing wetland plants for wildlife habitat – Very Poor.

Suitability for growing coniferous and hardwood trees – Good.

Suitability for area as habitat for wetland wildlife – Very poor.

Suitability for area as habitat for woodland wildlife – Fair.

Suitability for area as habitat for openland wildlife – Poor.

The soil is poorly suited to most tree species, and productivity is low. The stones and boulders and slopes limit logging operations.

Cu – Chocorua mucky peat

Suitability for growing wetland plants for wildlife habitat – Good.

Suitability for growing coniferous and hardwood trees –Very poor.

Suitability for area as habitat for wetland wildlife – Good.

Suitability for area as habitat for woodland wildlife – Very poor.

Poor suitability for trails, high windthrow hazard.

Very poorly-drained, thick organic layer, moderately permeable, high water table, generally grows shrubs or red maple.

Gw – Greenwood mucky peat

Unless fill material is used, the high water table and instability make the soil unsuitable for most uses other than as wetland wildlife habitat.

HsB—Hinckley loamy sand, 3 to 8% slopes.

Suitability for growing wetland plants for wildlife habitat – Very poor.

Suitability for growing coniferous and hardwood trees –Poor.

Suitability for area as habitat for wetland wildlife – Very poor.

Suitability for area as habitat for woodland wildlife – Poor.

The soil is suited to drought- tolerant tree species, but productivity is low. Doughtiness causes a high rate of seedling mortality.