

# **Forest Stewardship Plan**

(10-Year Planning Period)

Town of Pelham  
Pelham Veteran Memorial Park  
Pelham, NH  
51.5 Acres  
October 26, 2006

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**Property Owners:** Town of Pelham  
6 Village Green  
Pelham, NH 03076

**Phone Number:** (603) 635-8233

**Location:** Route 128, Pelham, NH

**Total Acreage:** 51.5 +/-

**Houselot Acres:** 0.0

**Map/Lot Numbers:** Map 1, Lot 169

**Deed Book/Page:**

**Date Prepared:** October, 26 2006

### General Description of the Property

Pelham Veteran Memorial Park is located off of Rte. 128 in Pelham, just before you cross over the town and state line into Massachusetts. The property is approximately 51.5 acres in size and serves as an important open space area for the town. The property provides a variety of benefits for the residents of the town including recreation, wildlife and forestry. The park is mainly used by the residents for recreation purposes, but it also functions as important habitat for a variety of wildlife, such as the American woodcock *Scolopax minor*, and Pileated woodpecker *Dryocopus pileatus*, both of which were observed during the timber cruise. In terms of forestry use, the park is growing a variety of species of trees, and has the ability to produce sustainable crop of high quality trees indefinitely.

The park, like so many other properties in southern New Hampshire and indeed, in southern New England, was farm and or pasture land in colonial times. As these farms started to become abandoned they reverted back into forest. The main tree species that are commonly found in this area are white pine, red and black oak, and these are the species that we see dominating the park, specifically white pine. We also see a number of other species occurring in the park, such as white ash, and red maple. The tree species that appears to be most prevalent in the understory in the sapling stage is black birch. This is good news in that black birch is an economically valuable tree for sawtimber and veneer.

A timber harvesting operation occurred on the property approximately 11 years ago. This operation removed a lot of large low quality white pines that had been affected by the white pine weevil. This insect feeds on the terminal and leader portions of white pine branches. The resulting damage causes white pine trees to form multiple, crooked leaders, which reduce the overall value of the tree. These types of trees were removed from the property, causing openings to be made in the forest canopy. The sunlight had a chance to reach the forest floor and the result was a flush of hardwood regeneration that has now made its way into the sapling stage. (About 1-3" in diameter)

The property now contains nine different stands of trees, which are described in greater detail later in this plan. Overall the forest is healthy except for the white ash trees that were retained from the previous harvest. For some unknown reason they appear to be suffering severe dieback in their crowns, and will not live for much longer. It has also been reported that the hemlock woolly adelgid has been found in hemlock trees on the property. This insect is responsible for destroying hemlock stands in eastern Massachusetts, and in Connecticut. The New Hampshire department of Forest and Lands has been contacted and they will advise on how to deal with the problem.

Unfortunately when you have a piece of property located so closely to a populated area, you will inevitably find exotic invasive species located on the property. The seeds of these invasive species are carried by birds, small mammals and the wind. Examples that have been found on the property include bittersweet which was found climbing utility poles along the sides of the access road, burning bush, and multiflora rose. These species will out-compete native species and take over whole areas. The bittersweet climbing the utility poles was close to reaching the electrical wire, which can become a fire hazard. Chemical control with herbicides and mechanical control is recommended before these invasive species spread out of control.

The town is a member of the New Hampshire Tree Farm system. The Tree Farm program promotes conservation of wooded properties while managing for timber production, as well as wildlife habitat, water quality, and recreation. The park is an excellent example of this multiple use concept. It also sets an example of how a wooded property can be used heavily for recreation while also being managed for long term timber production, along with the other goals the Tree Farm system promotes.

## **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 southern most part of the property running from Long Pond to the east that need to be located and marked on the ground. This would have to be done by a licensed surveyor.

## **Access**

Access into the property is excellent, since the park is heavily used in the summer time by residents for recreation. There is a landing area for staging forestry equipment located in Stand 7. There has also been some dumping of garbage in this area and there is an old pop up camper that has been abandoned as well. There also seems to be some old park equipment left in this area that would have to be removed if a harvesting operation were to take place. Due to the heavy use of the park in the summer, it is suggested that any forestry operations that occurs should be conducted in the winter time, when the park is not used as regularly.

## **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 short 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.

## **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 within 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 crucial 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. Stand 7 is described as being an abandoned field with an open grassy area in the middle that would serve as a staging area for forestry equipment. This stand also provides excellent wildlife habitat for invertebrates, birds and small mammals. In order to maintain and enhance this habitat the landing area should be kept in a grassy state by periodic mowing. This habitat would be enhanced by increasing its size. To do this would require the edges of the field to be cut back about fifty feet around the perimeter of the whole field. This area would then need to be mowed about once every ten years to prevent trees from moving back into the field area. Also the trash and park refuse should be cleaned up and disposed of properly.

## **Timber Cruise**

A detailed timber cruise was completed on the property using a 300' by 300' spacing, which yielded 20 plots of tree data. 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 nine 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 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 is 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.

The town owns many of its properties in order to protect sensitive wetland sites and waterways by maintaining a forested buffer between the open water and built-up areas. Because Pelham is a town with a growing population, the municipal officials recognize 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.

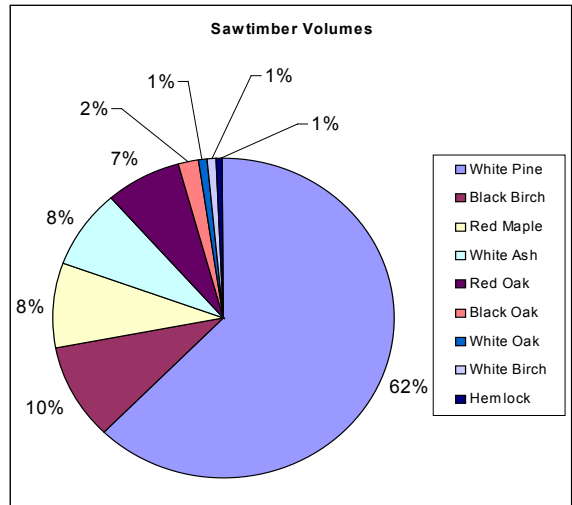
The Parks and Recreation Department would also like to see trees removed along the main road to create a wider road, for improved access.

**Forest Products Summary Table for Accessible Stands  
Town of Pelham – Pelham Veteran Memorial Park—Pelham, NH  
Total Acreage: 51.5+/- acres**

| <u>Species</u> | <u>Board Feet</u> |
|----------------|-------------------|
| White Pine     | 192,994           |
| Black Birch    | 30,188            |
| Red Maple      | 26,175            |
| White Ash      | 25,458            |
| Red Oak        | 21,996            |
| Black Oak      | 6,508             |
| White Oak      | 2,806             |
| White Birch    | 1,975             |
| Hemlock        | 1,975             |



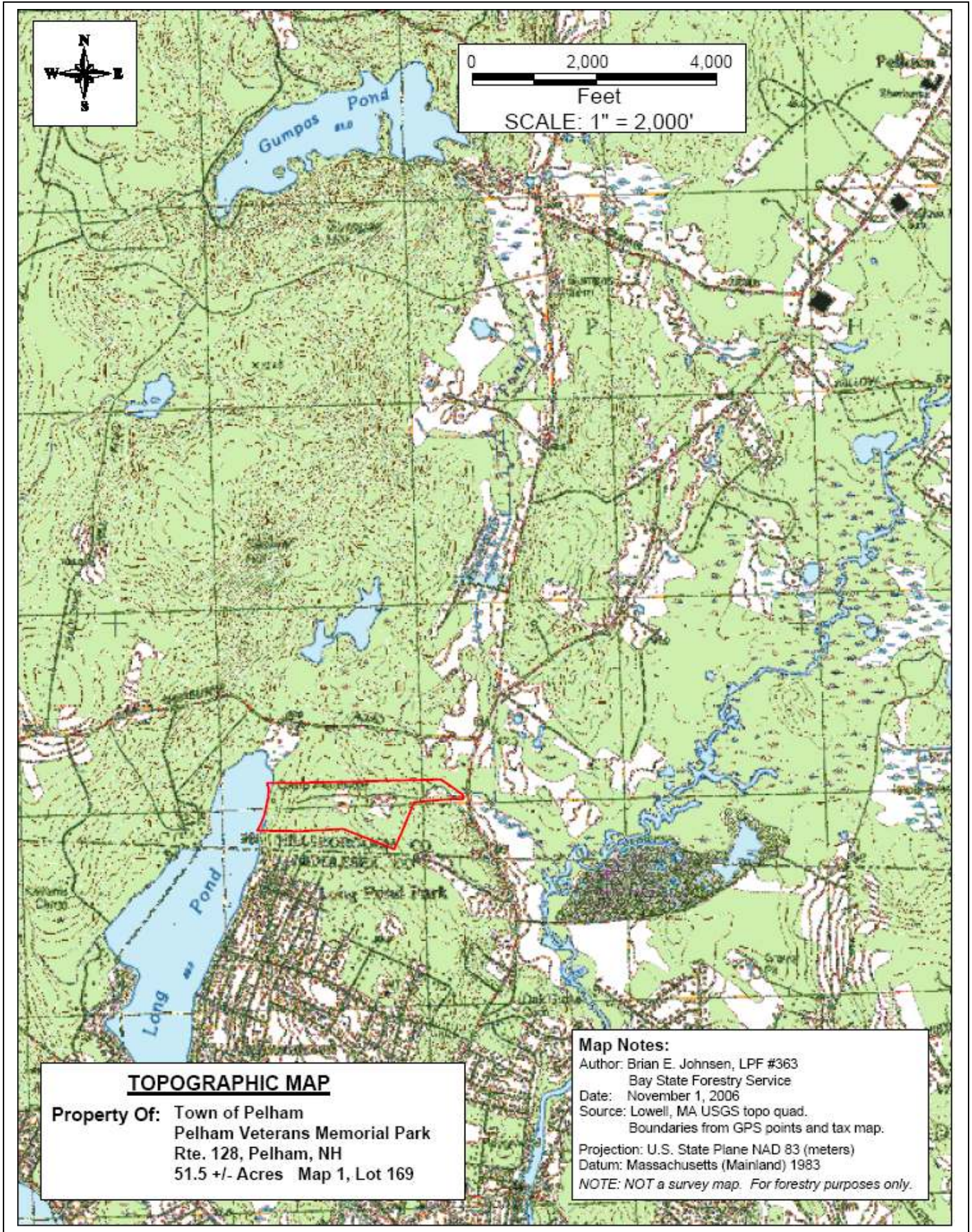
|                        |                               |
|------------------------|-------------------------------|
| <b>Total Sawtimber</b> | <b>310,075 Bf<sup>1</sup></b> |
| Hardwood Cordwood      | 239 Cords                     |
| Softwood Pulpwood      | 133 Cords                     |
| <b>Total Cordwood</b>  | <b>302 Cords<sup>2</sup></b>  |



A basal area factor 10 prism was used to conduct the inventory sample. A total of 20 plots, distributed across each forested stand, were taken to arrive at this cruise summary.

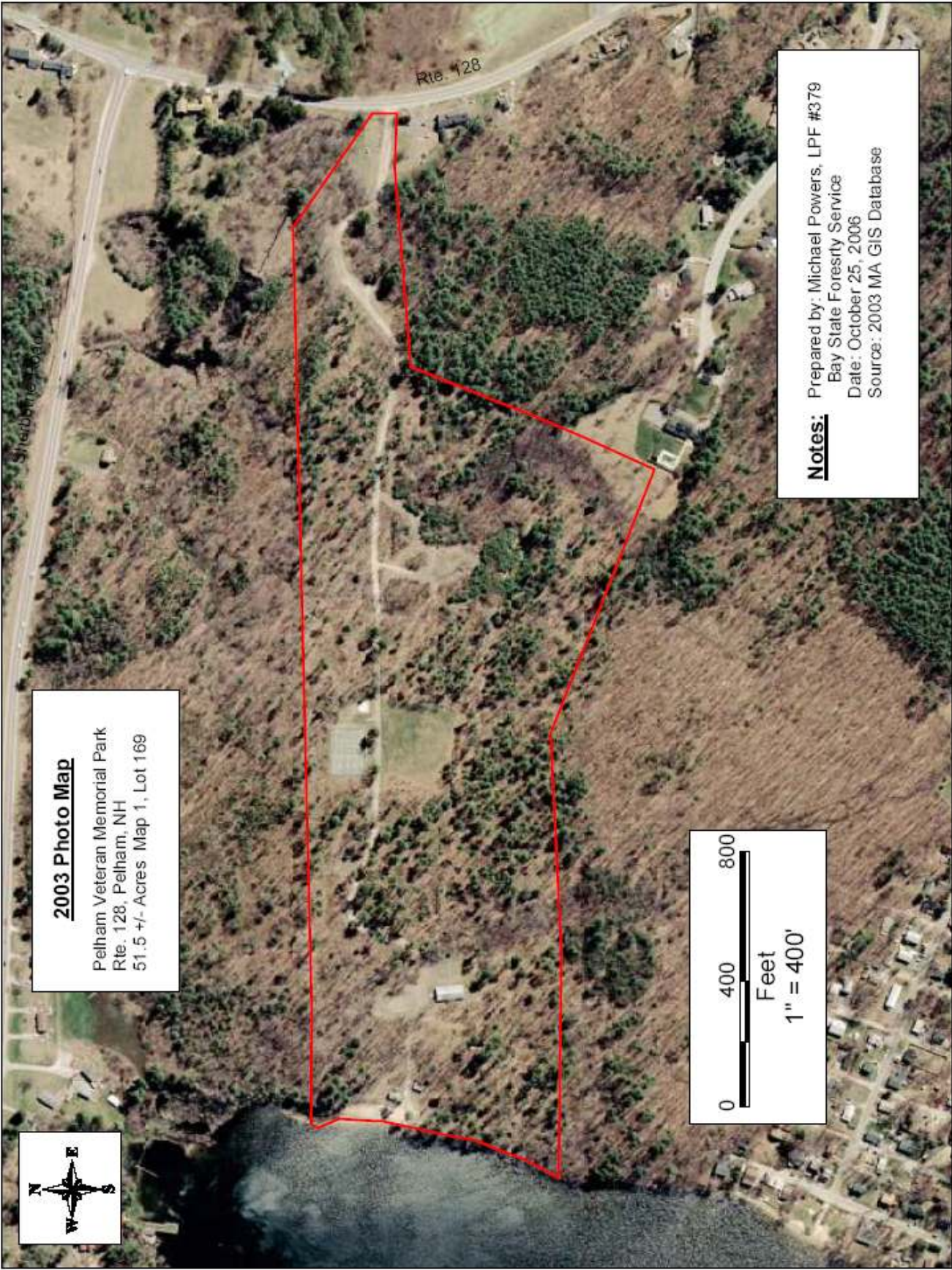
<sup>1</sup> This sawtimber total represents all the trees of sawtimber quality 12 inches and greater in diameter found in this block. In order to capture this total volume, all trees of this specification would have to be harvested.

<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.



**TOPOGRAPHIC MAP**  
**Property Of:** Town of Pelham  
 Pelham Veterans Memorial Park  
 Rte. 128, Pelham, NH  
 51.5 +/- Acres Map 1, Lot 169

**Map Notes:**  
 Author: Brian E. Johnsen, LPF #363  
 Bay State Forestry Service  
 Date: November 1, 2006  
 Source: Lowell, MA USGS topo quad.  
 Boundaries from GPS points and tax map.  
 Projection: U.S. State Plane NAD 83 (meters)  
 Datum: Massachusetts (Mainland) 1983  
 NOTE: NOT a survey map. For forestry purposes only.



**2003 Photo Map**

Pelham Veteran Memorial Park  
Rte. 128, Pelham, NH  
51.5 +/- Acres Map 1, Lot 169



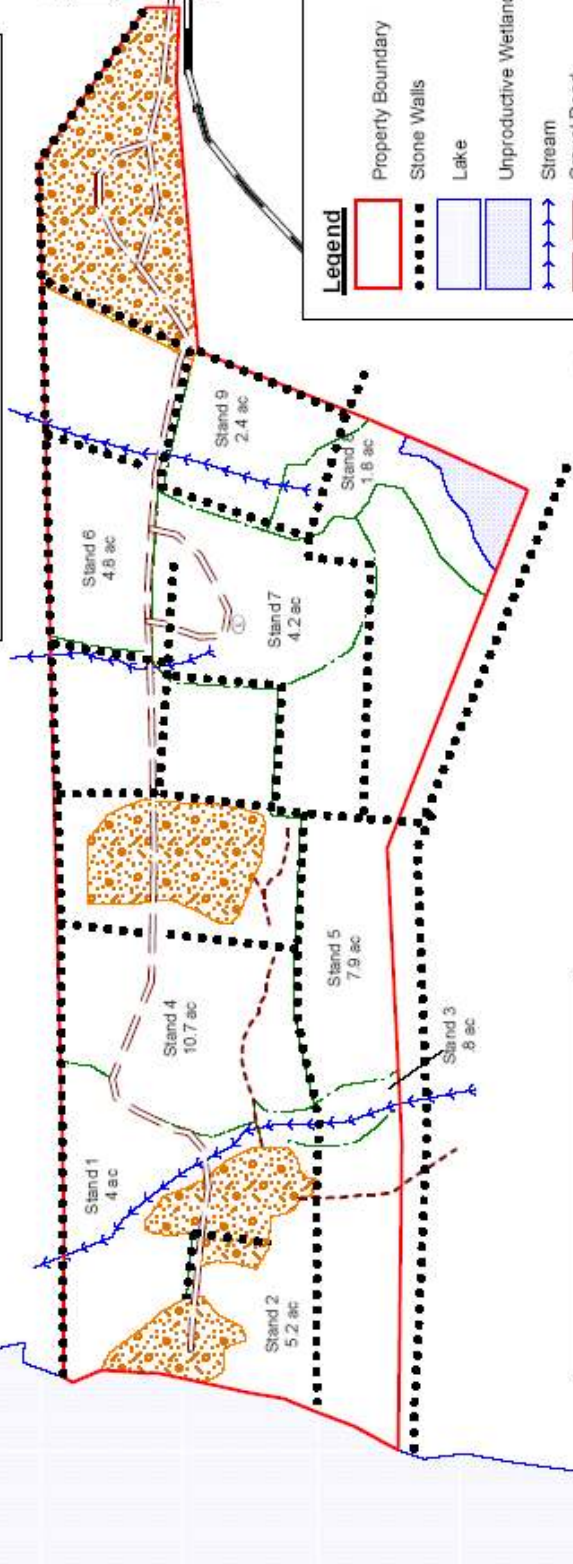
**Notes:** Prepared by: Michael Powers, LPF #379  
Bay State Forestry Service  
Date: October 25, 2006  
Source: 2003 MA GIS Database



# STAND MAP

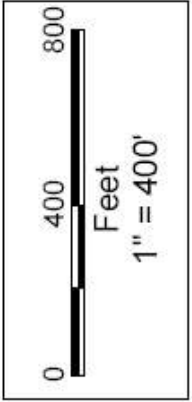
Pelham Veteran Memorial Park  
Rte. 128, Pelham, NH  
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**Notes:** Prepared by: Michael Powers, LPF #379  
Bay State Forestry Service  
Date: October 25, 2006  
Source: 2003 MA GIS Database



**Legend**

- Property Boundary
- Stone Walls
- Lake
- Unproductive Wetland
- Stream
- Gravel Road
- Hiking Trail
- Recreation Areas and Parking
- Stand Boundaries
- Proposed Landing



## General Management Strategies

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

**Fish/Wildlife Habitat** – Although some activities can manage for a specific plant or animal (species specialists), most forest management activity focuses on habitat generalists by managing for a diversity of species, protecting existing critical habitat, and enhancing existing habitat. The young hardwood forest that is thriving in much of the understory of the property provides excellent wildlife habitat opportunities for a variety of species, especially birds. Much of the property will revert into hardwood forest when the pine overstory is removed. The stands that are mainly composed of hardwood species should be managed for an un-evenaged stand structure in the future.

**Soil** – Care will be taken to not harvest in mud season, when the ground is too soft, 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 will be used when crossing smaller streams to further prevent siltation. Fueling of machines will not take place near the water's edge to prevent pollution.

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

**Recreational Resources** – The skid trails will provide a nice network of trails for recreational opportunities, both for walking and wildlife viewing. To this end, trails will be kept free of slash where possible.

**Aesthetic Values** – To maintain good aesthetics, logging operations will not rut up the soils and will cut up the tops so they lay 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.

**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.

**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 Hardwood (4 acres)

| Standing Volumes -- Stand 1 |                               |                           | 4 Acres                       |                        |
|-----------------------------|-------------------------------|---------------------------|-------------------------------|------------------------|
| Species                     | Average BA/acre (sq. ft./ac.) | Average Height (16' logs) | Volume per acre (bd. ft./ac.) | Total Volume (bd. ft.) |
| White Pine                  | 15                            | 2.8                       | 2,500                         | 10,000                 |
| Red Maple                   | 5                             | 1.0                       | 375                           | 1,500                  |
| White Ash                   | 15                            | 1.2                       | 1,250                         | 5,000                  |
| Black Birch                 | 15                            | 1.3                       | 1,375                         | 5,500                  |
| <b>Sawtimber Total:</b>     | <b>50</b>                     | <b>1.6</b>                | <b>5,500</b>                  | <b>22,000</b>          |
|                             |                               | <b>8' sticks</b>          | <b>Cords/ac.</b>              | <b>Total Cords</b>     |
| Cordwood                    | 25                            | 2.4                       | 4                             | 16                     |
| <b>Total BA/acre</b>        | <b>75</b>                     |                           |                               |                        |

#### Description:

This stand is located in the northwest corner of the property and borders Long Pond. It is described as being a mixed hardwood stand. It is made up primarily of an overstory of white ash, black birch and red maple. The diameters of these trees range from 14 to 26" in diameter. The understory is made up primarily of dense black birch saplings from 1 to 5" in diameter. This dense understory is prime habitat for many birds. There were also a few invasive species found in this stand, such as Japanese barberry. While cruising, a woodcock was flushed out, a rare sighting in southern New Hampshire.

The soils are somewhat to poorly drained and the terrain is relatively flat. There is a small brook running through the center of the stand, and because the stand is flat the soils are wettest 20 to 30' on either side of the brook.

#### Recommendations:

This stand is developing into young and vigorous hardwood stand. The overstory trees should be removed which would continue to encourage the understory and intermediate trees to grow. A few oak and hickory trees in this stand should be retained as hard mast producers for wildlife. Thought should also be given to try and keep the invasive species in this stand under control. Volunteers, such as boy scouts could be utilized to mechanically remove invasive plants using sheers.

Since the soils in this stand are wet during most of the year it is recommended that this stand only be operated in during dry summer conditions or frozen conditions in the winter.

**Stand 2 – Hardwood / Scattered White Pine (5.2 acres)**

| <b>Standing Volumes -- Stand 2</b> |                                      |                                  | <b>5.2 Acres</b>                     |                               |
|------------------------------------|--------------------------------------|----------------------------------|--------------------------------------|-------------------------------|
| <b>Species</b>                     | <b>Average BA/acre (sq. ft./ac.)</b> | <b>Average Height (16' logs)</b> | <b>Volume per acre (bd. ft./ac.)</b> | <b>Total Volume (bd. ft.)</b> |
| White Pine                         | 23                                   | 2.4                              | 3416.7                               | 17766.7                       |
| Red Maple                          | 7                                    | 2.0                              | 833.3                                | 4333.3                        |
| Black Birch                        | 37                                   | 1.1                              | 3000.0                               | 15600.0                       |
| White Ash                          | 17                                   | 1.4                              | 1583.3                               | 8233.3                        |
| <b>Sawtimber Total:</b>            | <b>83</b>                            | <b>1.7</b>                       | <b>8,833</b>                         | <b>45,933</b>                 |
|                                    |                                      | <b>8' sticks</b>                 | <b>Cords/ac.</b>                     | <b>Total Cords</b>            |
| Cordwood                           | 40                                   | 3.9                              | 9.8                                  | 50.9                          |
| <b>Total BA/acre</b>               | <b>123</b>                           |                                  |                                      |                               |

Description:

This stand is located in the western most part of the property, between the club house and the beach area, on the southern side of the main access road. The stand contains a mix of hardwood species such as red maple, white ash and black birch. The diameter of these trees range from 12 to 18". There are also scattered large white pine trees found in the overstory ranging from 18 to 26" in diameter. The understory is comprised of a mixture of species. Oak, pine and poplar are found throughout the understory approximately 10 to 20' tall. Invasive species such as multiflora rose and grape vine are found as well in this stand. These invasive species are competing with the oak and other mixed hardwood saplings. There is also a small patch of hemlock trees found in this stand. These trees have been identified by the New Hampshire Division of Forests and Lands to be infested with the hemlock woolly adelgid. This insect is responsible for the destruction of hemlock stands further south in Massachusetts and Connecticut.

The soils in this stand are somewhat well to somewhat poorly drained. The terrain is gently rolling with slopes of 3-5%. Access to the landing area is that was utilized in the previous harvest is excellent There is a trail running from the club house to the southern boundary of the property. There is also an area in which a small fire occurred, right along this trail, as can be seen by the fire scars on a few trees.

Recommendations:

The large overstory pine should be removed from this stand, as to allow the continued growth of the hardwood species that dominate this stand. Low quality hardwoods should also be removed. The crop trees that should remain are the high quality oaks, black birch and red maple. The stand should then be managed in the future as an uneven-aged hardwood stand. Care also needs to be taken when operating forestry equipment in this stand as to not disturb or damage the trees in the understory.

Inevitably some damage will occur to the trees in the understory during a logging operation, but it should be kept to a minimum. The fire scarred trees along the hiking trail should also be harvested. They will not live for much longer, and could pose a safety hazard to people hiking along the trail in the future.

Again we see invasive species in this stand competing with native species of trees in the understory. It is recommended that some action be taken to control these exotic invasive species on the property before they spread completely out of control.

The New Hampshire Division of Forest and Lands has made recommendations on how to deal with the hemlock woolly adelgid that has been found on hemlock trees in the park. They suggest felling all of the hemlock trees on the property, removing the limbs in the woods, and then drag any hemlock tree with commercial value out to the landing area to be utilized. This would rob the adelgid of its food source; the insect would then die off within three days, thus preventing further infestations to other nearby hemlock stands.

### Stand 3 – Red Maple (.8 acres)

| Standing Volumes -- Stand 3 |                               |                           | 0.8 Acres                     |                        |
|-----------------------------|-------------------------------|---------------------------|-------------------------------|------------------------|
| Species                     | Average BA/acre (sq. ft./ac.) | Average Height (16' logs) | Volume per acre (bd. ft./ac.) | Total Volume (bd. ft.) |
| Red Maple                   | 90                            | 1.3                       | 8250.0                        | 6600.0                 |
| White Ash                   | 20                            | 1.0                       | 1500.0                        | 1200.0                 |
| White Oak                   | 10                            | 1.5                       | 1000.0                        | 800.0                  |
| <b>Sawtimber Total:</b>     | <b>120</b>                    | <b>1.3</b>                | <b>10,750</b>                 | <b>8,600</b>           |
|                             |                               | <b>8' sticks</b>          | <b>Cords/ac.</b>              | <b>Total Cords</b>     |
| Cordwood                    | 110                           | 3.3                       | 23.2                          | 18.5                   |
| <b>Total BA/acre</b>        | <b>230</b>                    |                           |                               |                        |

#### Description:

This small stand is located in the western portion of the property in between Stand 2 and Stand 5. The stand is heavily stocked with red maple from 10 to 20" in diameter. There are a few scattered white ash and white oak trees along the edges of the stand. The understory is made up of a variety of hardwood species from 15 to 20' tall.

This stand slopes slightly to the north, and there is a small stream running through it. Because the stand is nearly flat the soils near the stream are poorly drained, which is conducive to growing red maple.

#### Recommendations:

Because this stand is so poorly drained, very little harvest activity should occur in it, thereby minimizing soil disturbance and protecting the water quality of the small stream flowing through the stand. Some of the larger red maple, oak and ash can be harvested along the edge of the stand, without having forestry equipment actually enter the stand.

**Stand 4 – Hardwood / Scattered White Pine (10.7 acres)**

| <b>Standing Volumes -- Stand 4</b> |                                      |                                  | <b>10.7 Acres</b>                    |                               |
|------------------------------------|--------------------------------------|----------------------------------|--------------------------------------|-------------------------------|
| <b>Species</b>                     | <b>Average BA/acre (sq. ft./ac.)</b> | <b>Average Height (16' logs)</b> | <b>Volume per acre (bd. ft./ac.)</b> | <b>Total Volume (bd. ft.)</b> |
| White Pine                         | 18                                   | 1.9                              | 2062.5                               | 22068.8                       |
| Red Oak                            | 15                                   | 1.7                              | 1625.0                               | 17387.5                       |
| Black Oak                          | 3                                    | 1.5                              | 250.0                                | 2675.0                        |
| Red Maple                          | 3                                    | 1.5                              | 250.0                                | 2675.0                        |
| Black Birch                        | 8                                    | 1.2                              | 625.0                                | 6687.5                        |
| White Ash                          | 10                                   | 1.0                              | 750.0                                | 8025.0                        |
| White Oak                          | 3                                    | 1.0                              | 187.5                                | 2006.3                        |
| <b>Sawtimber Total:</b>            | <b>58</b>                            | <b>1.4</b>                       | <b>5,750</b>                         | <b>61,525</b>                 |
|                                    |                                      | <b>8' sticks</b>                 | <b>Cords/ac.</b>                     | <b>Total Cords</b>            |
| Cordwood                           | 23                                   | 3.0                              | 4.4                                  | 47.2                          |
| Softwood Pulp                      | 8                                    | 4.7                              | 2.1                                  | 22.8                          |
| <b>Total BA/acre</b>               | <b>88</b>                            |                                  |                                      |                               |

Description:

Located in the central portion of the property, this stand is described as being a hardwood stand, with scattered white pine. Like most of the other stands on the property, many of the larger, low quality white pines were removed during the last harvest. The remaining overstory is comprised of mixed hardwood species, such as red oak, black birch and red maple. The diameter of these trees ranges from 12 to 20". There are still a few scattered white pines also left in this stand. These trees are fairly large and range from 16 to 24" in diameter. The understory is comprised mainly of mixed hardwood saplings. The species composition consists of black birch, poplar and red oak about 20 to 25' tall.

The stand is somewhat well drained and flat. The tennis court area is located in the middle of the stand, and there are trees that are beginning to grow up and over the courts. Access to this stand is very good.

Recommendations:

The large overstory pine should be removed from the stand. Scattered intermediate sized white pine from 12 to 16" can be retained for stocking and shelter for the sapling- sized regeneration. The larger and poor quality hardwoods should also be removed from this stand. Overall residual basal area should not be of too much concern due to the abundance of hardwood advanced regeneration in the understory. If released these sapling sized trees should really start to put on diameter growth, and the basal area will increase significantly over the next 10 years.



It is recommended that the vegetation around the tennis courts be cut back as well to prevent any damage to the fencing around the courts and to prevent leaves and dead branches from falling into the court area.

**Stand 5 – White Pine / Hardwood (7.9 acres)**

| <b>Standing Volumes -- Stand 5</b> |                                      |                                  | <b>7.9 Acres</b>                     |                               |
|------------------------------------|--------------------------------------|----------------------------------|--------------------------------------|-------------------------------|
| <b>Species</b>                     | <b>Average BA/acre (sq. ft./ac.)</b> | <b>Average Height (16' logs)</b> | <b>Volume per acre (bd. ft./ac.)</b> | <b>Total Volume (bd. ft.)</b> |
| White Pine                         | 77                                   | 2.8                              | 12833.3                              | 101383.3                      |
| Red Oak                            | 7                                    | 1.3                              | 583.3                                | 4608.3                        |
| Black Oak                          | 3                                    | 1.5                              | 333.3                                | 2633.3                        |
| Hemlock                            | 3                                    | 1.0                              | 250.0                                | 1975.0                        |
| Red Maple                          | 10                                   | 1.3                              | 916.7                                | 7241.7                        |
| White Birch                        | 3                                    | 1.0                              | 250.0                                | 1975.0                        |
| <b>Sawtimber Total:</b>            | <b>103</b>                           | <b>1.5</b>                       | <b>15,167</b>                        | <b>119,817</b>                |
|                                    |                                      | <b>8' sticks</b>                 | <b>Cords/ac.</b>                     | <b>Total Cords</b>            |
| Cordwood                           | 3                                    | 4.0                              | 0.8                                  | 6.6                           |
| Softwood Pulp                      | 13                                   | 4.5                              | 3.7                                  | 29.0                          |
| <b>Total BA/acre</b>               | <b>120</b>                           |                                  |                                      |                               |

Description:

This stand is located in the central and eastern part of the property, south of the main access road. The stand contains a number of large white pine stems in the overstory, ranging from 12 to 26” in diameter. There are also a few scattered hardwoods found in the overstory throughout the stand. These include black and red oak, red maple and white birch. The diameters of these trees are not as large as the pine. They range from 14 to 18” in diameter. Like the other stands on the property the understory is dominated by advanced hardwood regeneration. The dominant species in the understory is black birch. An American chestnut tree was also spotted in this stand. These trees used to be common in southern New England until the chestnut blight almost completely obliterated the species. This particular tree was about 4 or 5” in diameter and still had good crown structure.

The soils in this stand are generally well drained and the terrain is flat. The stand surrounds a ball field. There are also trails running through the stand to an exercise area which has apparently been vandalized recently.

Recommendations:

The larger white pine can be removed from this stand while retaining some of the intermediate sized pine for stocking and shelter. Any large cull logs that cannot be utilized can be placed in the openings of the stone walls at the end of the harvest in order to help curb ATV activity on the trails. Most of the hardwood species can be left as well unless they are of poor form, or in danger of dying within the next ten years. Again with such a heavy understory of hardwood saplings, residual basal area is not a concern. Care must be taken when harvesting timber in these stands as to minimize the amount of damage done to the sapling-sized trees in the understory.

**Stand 6 – White Pine / Hardwood (4.8 acres)**

| <b>Standing Volumes -- Stand 6</b> |                                      |                                  | <b>4.8 Acres</b>                     |                               |
|------------------------------------|--------------------------------------|----------------------------------|--------------------------------------|-------------------------------|
| <b>Species</b>                     | <b>Average BA/acre (sq. ft./ac.)</b> | <b>Average Height (16' logs)</b> | <b>Volume per acre (bd. ft./ac.)</b> | <b>Total Volume (bd. ft.)</b> |
| White Pine                         | 50                                   | 2.6                              | 7625.0                               | 36600.0                       |
| Black Birch                        | 5                                    | 1.5                              | 500.0                                | 2400.0                        |
| White Ash                          | 5                                    | 2.0                              | 625.0                                | 3000.0                        |
| <b>Sawtimber Total:</b>            | <b>60</b>                            | <b>2.0</b>                       | <b>8,750</b>                         | <b>42,000</b>                 |
|                                    |                                      | <b>8' sticks</b>                 | <b>Cords/ac.</b>                     | <b>Total Cords</b>            |
| Cordwood                           | 25                                   | 3.0                              | 4.9                                  | 23.5                          |
| <b>Total BA/acre</b>               | <b>85</b>                            |                                  |                                      |                               |

Description:

This stand is located in the eastern most section of the property, north of the main access road. It contains some large diameter white pine stems from 18 to 24” in diameter. There is also a mix of hardwood species found in this stand including white ash, and black birch. Like most of the other stands on the property, there is excellent hardwood regeneration in the understory. White ash, black birch and red oak saplings are found in abundance, and will certainly become the dominant tree species in the near future in this stand. There are also several invasive species found in this stand such as multiflora rose, burning bush, and grape vine.

The soils are somewhat well drained, and rocky, and the terrain slopes to the north about 3-5%. There is also a small intermittent stream intersecting the middle of the stand, flowing to the north.

Recommendations:

The intermediate sized hardwoods in this stand should be the target crop trees left to grow. The larger poorly formed pine should be removed from the stand to allow more sunshine availability to the understory saplings, while retaining a few overstory hardwood trees for some shelter. Some large, poorly formed oak should be left for producing hard mast and to be used as possible den trees for wildlife. In the future this stand will develop into an even-aged hardwood stand. The invasive species in this stand are competing with some of the hardwood understory trees. This will to continue to be a problem over time if measures are not taken to control these invasive species. Mechanical and chemical or a combination of both is the best way to control invasive species.

**Stand 7 – White Pine / Abandoned Field (4.2 acres)**

| <b>Standing Volumes -- Stand 7</b> |                                      |                                  | <b>4.2 Acres</b>                     |                               |
|------------------------------------|--------------------------------------|----------------------------------|--------------------------------------|-------------------------------|
| <b>Species</b>                     | <b>Average BA/acre (sq. ft./ac.)</b> | <b>Average Height (16' logs)</b> | <b>Volume per acre (bd. ft./ac.)</b> | <b>Total Volume (bd. ft.)</b> |
| White Pine                         | 0                                    |                                  |                                      |                               |
| Red Oak                            | 0                                    |                                  |                                      |                               |
| <b>Sawtimber Total:</b>            | <b>0</b>                             |                                  | <b>0</b>                             | <b>0</b>                      |
|                                    |                                      | <b>8' sticks</b>                 | <b>Cords/ac.</b>                     | <b>Total Cords</b>            |
| Softwood Pulp                      | 120                                  | 2.0                              | 17.2                                 | 72.1                          |
| <b>Total BA/acre</b>               | <b>120</b>                           |                                  |                                      |                               |

Description:

This stand is located in the eastern portion of the property, south of the main access road. This stand is a recently grown in abandoned field, with numerous white pines stems approximately 6 to 8” in diameter. There is also numerous low quality grey birch found in this stand from about 2 to 4” in diameter. This stand also contains a short loop road to a landing area, in which the last timber harvesting operation was staged. There has been quite a bit of trash dumped off of this short road, and there is an old pop up trailer that has also been abandoned. There also appears to be refuse left behind from the park as well, such as old trash barrels.

Recommendations:

There is not much in terms of silviculture that could be done in this stand, unless a pre commercial thinning is conducted. The trees are not large enough to be of commercial value. This stand should be left alone for now.

There does exist an opportunity to create and enhance a unique habitat for wild life. After a timber harvesting operation has been conducted the lading area could be seeded with grasses beneficial to wildlife. It is also suggested to increase the size of the opening and reclaim some of the field that has grown in. Numerous species of birds, small mammals and invertebrates utilize this type of habitat. The 4 to 6” poplar and white pine around the edge of the landing area could be mowed approximately 50’ along the edges of the landing area. To maintain the field, this area would have to be mowed about once every ten years so that trees do not begin to take over again. There are programs and grants that the town could look into to help defer the cost of the mowing work, such as the Wildlife Habitat Improvement Program, and the Fish and Game small grants program.

**Stand 8 – Red Maple (1.8 acres)**

| <b>Standing Volumes -- Stand 8</b> |                                      |                                  |                                      | <b>1.8 Acres</b>              |
|------------------------------------|--------------------------------------|----------------------------------|--------------------------------------|-------------------------------|
| <b>Species</b>                     | <b>Average BA/acre (sq. ft./ac.)</b> | <b>Average Height (16' logs)</b> | <b>Volume per acre (bd. ft./ac.)</b> | <b>Total Volume (bd. ft.)</b> |
| White Pine                         | 15                                   | 2.7                              | 2375.0                               | 4275.0                        |
| Red Maple                          | 20                                   | 1.6                              | 2125.0                               | 3825.0                        |
| <b>Sawtimber Total:</b>            | <b>35</b>                            | <b>2.1</b>                       | <b>4,500</b>                         | <b>8,100</b>                  |
|                                    |                                      | <b>8' sticks</b>                 | <b>Cords/ac.</b>                     | <b>Total Cords</b>            |
| Cordwood                           | 190                                  | 2.6                              | 33.5                                 | 60.4                          |
| <b>Total BA/acre</b>               | <b>225</b>                           |                                  |                                      |                               |

Description:

This stand is located in the eastern most part of the property. The stand is dominated by red maple trees from 6 to 10” in diameter. There are a few scattered black oaks and white pine scattered about, mostly along the edge of the stand. There is not much for regeneration in the understory, since this is a younger pole stand. This stand provides excellent habitat for wildlife, since there are numerous berry producing bushes growing in the understory, such as highbush blueberry, and winterberry.

The terrain is flat, and the soils are somewhat to poorly drained. There is also a small stream flowing out of this stream to the north off of the property.

Recommendations:

Not much harvesting activity should occur in this stand, due to the poorly drained soils. If any harvesting takes place in this stand, it should occur on the outskirts of the stand. Some of the white pine and oak could be harvested without driving any forestry equipment into the stand, thus minimizing soil disturbance.

The stand is also a good stand to keep intact for wildlife purposes. The denseness of the stand offers good cover for deer, and the berry producing bushes provide a food source for birds and small mammals.

**Stand 9 – White Pine / Abandoned Field (2.4 acres)**

| <b>Standing Volumes -- Stand 9</b> |                                      |                                  | <b>2.4 Acres</b>                     |                               |
|------------------------------------|--------------------------------------|----------------------------------|--------------------------------------|-------------------------------|
| <b>Species</b>                     | <b>Average BA/acre (sq. ft./ac.)</b> | <b>Average Height (16' logs)</b> | <b>Volume per acre (bd. ft./ac.)</b> | <b>Total Volume (bd. ft.)</b> |
| White Pine                         | 5                                    | 1.0                              | 375.0                                | 900.0                         |
| Black Oak                          | 5                                    | 1.5                              | 500.0                                | 1200.0                        |
| <b>Sawtimber Total:</b>            | <b>10</b>                            | <b>1.3</b>                       | <b>875</b>                           | <b>2,100</b>                  |
|                                    |                                      | <b>8' sticks</b>                 | <b>Cords/ac.</b>                     | <b>Total Cords</b>            |
| Cordwood                           | 45                                   | 2.1                              | 6.7                                  | 16.1                          |
| Softwood Pulp                      | 25                                   | 2.0                              | 3.6                                  | 8.6                           |
| <b>Total BA/acre</b>               | <b>80</b>                            |                                  |                                      |                               |

Description:

This stand is located just north of Stand 7 and just south of the main access road into the property. This is an old field that is slowly being reclaimed by white pine, black oak, and red maple. There are still juniper bushes found in the understory of this stand, remnants of the old pasture that used to occupy this area. The trees that are now growing in this stand are in the pole stage and are about 6 to 12” in diameter. This stand like Stand 7 provides good habitat for wildlife, due to the abundance of berry producing bushes in the understory.

The soils in this stand for the most part are well drained. There is a small stream that originates from Stand 8 and flows north into Stand 9, and continues north across the main access road.

Recommendations:

Most of the trees in this stand are still in the pole stage, and are not really ready to harvest. There are some trees that could be harvested from the stand to increase the growing space for the residual trees, but for the most part, not much harvesting activity should occur in this stand.

## Management Schedule

### **2006-2007**

- Prepare the forest management plan.
- Blaze and paint identifiable boundary lines.
- Conduct a conventional timber harvest in harvestable areas.
- Seed and lime the landing at the conclusion of the timber harvest.
- Install a new Tree Farm sign.

### **2006-14**

- 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 block.
- Re-assess the woodlot in 10 years and write a new 10-year management plan.

### **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 practices and using best management practices (BMP's), mature, diseased, and defective trees will be harvested to allow residual trees to grow in their place. 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. These recommendations are silviculturally and operationally sound and should result in meeting the landowners' objectives for their property. Implementing these recommendations will help ensure that this forestland is being managed with long-term sustainability in mind.

Respectfully Submitted,

Michael Powers, Consulting Forester  
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