

Forest Stewardship Plan

10-Year Planning Period

Blueberry Circle Woodlot
Blueberry Circle
Pelham, NH 19.6 +/- acres

PROPERTY OF
Town of Pelham
6 Village Green
Pelham, NH 03076

July 2012

Prepared by: Bay State Forestry Service

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GENERAL PROPERTY OVERVIEW

Property Owner	Town of Pelham	Mailing Address	6 Village Green
Phone Number	(603) 635 - 2040		Pelham, NH 03076

Property Location	Blueberry Circle Pelham, NH 03076	Map 11	Lot 36	Book	Page
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Total Land Area:	19.6 +/- ac
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Plan Prepared April 2012

PROPERTY DESCRIPTION

The Blueberry Circle lot, aptly named for its vast abundance of lowbush blueberry, is located in the town of Pelham, NH north of the intersection of Falcon Drive and Blueberry Circle. The property is owned by the town and overseen by the Pelham Forestry Committee. Pelham has a long, rich history of responsible forest management on town lands, and the current vigor of the Blueberry lot is a direct result of that elevated land ethic. The lot measures just less than 20 acres in size, and consists of a single stand of the White Pine/Oak forest type. The overstory trees growing here are well-formed, healthy individuals with a substantial understory of good quality advance regeneration.

The terrain across the parcel is fairly gently, with slopes ranging 5% up to 20% in some areas. Soils are deep and well drained for the most part, with two notable exceptions toward the north of the property. Three vernal pools can be found on the parcel – important habitat features for many amphibians, especially salamanders. Numerous other wildlife resources are present on the property, including snags and a few cavity trees, along with numerous hard-mast producing oaks and soft-mast producing blueberries, all providing valuable food resources to area wildlife. The property is in close proximity to several other commission-owned properties including Nature’s Way, Little Island and the Spring Street lot.

Numerous hiking trails meander throughout the properties interior, making it a pleasant spot to enjoy a summer afternoon. The property’s boundaries are entirely defined by stone walls – evidence of agricultural times long since passed. The area was likely once pasture for grazing animals and was probably abandoned around the mid-nineteenth century, a time when wide-spread farm abandonment swept across the northeast. Much of our New England forested landscape today is a direct result of agricultural practices of 150 years ago.

The Blueberry lot is an important and valuable component to the surrounding regional landscape. As land fragmentation and development continue to sweep throughout Southern New Hampshire contiguous forest blocks such as this one become an increasingly essential element for promoting area wildlife. Periodic, responsible timber harvests are a key consideration in wildlife habitat management as they allow for a cost effective means of ensuring structural complexity and biodiversity throughout the forest. By using an approach known as multiple-use forest management, numerous conservation objectives will be managed for concurrently on the Blueberry property, both contributing to local economies and protecting and promoting valuable wildlife

and timber resources. This plan will examine key strategies over a 10-year planning period to ensure that the Town of Pelham's legacy of responsible forest stewardship is carried on here at the Blueberry Circle woodlot.

BOUNDARIES

The entirety of the Blueberry Circle lot is defined by stone walls completely surrounding its perimeter with drill holes at each corner, making identifying the boundary lines very easy. In July of 2012 the boundaries were re-blazed and painted red – a practice that involves physically cutting a small notch in the side of numerous trees along the parcel boundaries and then covering over the notch with a coat of paint. This process aids in conducting management activities as it readily identifies the property line and remains in place for many years. Blazed boundaries also help to prevent the chance of timber trespass should harvest activities ever occur on neighboring properties.

ACCESS

For the purposes of timber harvesting, the Blueberry Circle lot is accessible via Blueberry circle. Numerous hiking trails provide excellent recreational access to the property. Care should be taken during active management activities to protect these trails. A map of the hiking trails present on the property can be found on page 10 of this plan.

FOREST TYPES & HARVEST HISTORY

Forests with varying composition in terms of species, age and density are believed to better mitigate the financial impacts of catastrophic disturbances than are monocultures. Oftentimes, trees in unmanaged forests must continually compete for much-needed nutrients, sunlight and water that are required to produce high quality forest products. Pre-stressed trees are more susceptible to disease than their healthy counterparts growing in a well-spaced, managed forest. Forests are broken down into management units called stands, which are areas of trees with similar species composition, size and frequency of occurrence. The Blueberry Circle property consists of one singular stand of the White Pine/Oak forest type. The property was last harvested in 1997. As a direct result of careful management over the last two decades the Blueberry Circle lot now boasts an impressive collection of large, well-formed pines and oaks of significant commercial value. In addition the forest is rich with advance oak and pine regeneration in areas where increased sunlight has been allowed to help new trees establish and grow; promising young growing stock that will one day become desirable saw timber.

SOILS, TERRAIN & HYDROLOGY

The soil associates across the Blueberry Circle parcel range from predominantly well drained to isolated areas of very poorly drained soils. The vast majority of soils throughout the property fall into the Canton stony fine sandy loam series. These soils are generally well drained and are characteristically very deep and sandy, often occurring on glaciated plains, hills and ridges. A small swath of Leicester-Walpole stony complex can be found in the northern portion of the property. These soils are generally very deep and poorly drained, Leicester being more loamy and Walpole being more sandy.

Forests are essential for preventing erosion of existing soils and maintaining clean water. Riparian zones, as well as wetlands and vernal pools, are critical natural features and occur in abundance on this property. 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. Wetland 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 essential for filtering water as it travels from upland sites to the open water, keeping out many chemical impurities and removing silt. Vernal pools, or seasonal ponds, are unique in that they do not hold water year-round, making it impossible for fish to survive in them. Because there are no fish, many species of amphibians, notably salamanders, prefer these pools to lay their eggs in as they will be out of reach to hungry fish. Salamanders typically do not travel far from breeding pools, so conservation efforts immediately surrounding vernal pools are important for amphibian survival.

WILDLIFE CONCERNS

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. Specifically, biodiversity encompasses all levels of life, from genetic and molecular diversity all the way up to entire ecosystems, as well as the physical processes that maintain them (Lindenmayer & Franklin 2002). At present, the Blueberry Circle woodlot offers a significant level of biodiversity in terms of both tree species present on the property as well as shrub and ground cover diversity. During several field walks through the parcel evidence of deer and turkeys were observed, along with numerous small mammals. Because of the small size of the parcel, the Blueberry lot likely does not support charismatic mammalian populations on its own, but when combined with conserved forest properties nearby, the Blueberry Circle woodlot serves as a very important component of the larger regional landscape, thus providing important resources to area wildlife. Several wildlife food sources are present including hard mast producing oaks along with soft mast producing shrubs such as high and low bush blueberry and patches of winterberry holly. On a smaller scale, the presence of three vernal pools on the property makes for excellent amphibian habitat. Through a multiple-use forestry approach, management activities will maintain and promote these valuable wildlife resources.

TIMBER CRUISE

A timber cruise is best described as “a forest inventory conducted to estimate the quantity of timber on a given area according to species, size, quality, and other characteristics” (Avery & Burkhart 1994). In order to assess the current volumes of various forest products on the Blueberry Circle property, 9 sample points were inventoried during the summer of 2012 on a 300’ x 300’ grid across the parcel using the variable-radius plot sampling method with a basal area factor of 10. Data collected included tree species, diameter at breast height (4.5 feet above the ground – expressed as dbh), tree quality and merchantable height in 16-foot logs. Trees were tallied as being of either cordwood or sawtimber quality. Volumes for cordwood trees are expressed in terms of cords (1 cord being roughly equal to a stack of unsplit logs measuring 4’ x 4’ x 8’) and include all trees with a 6” – 11” dbh, or trees larger than 11” that are not suitable for sawtimber. Volumes for sawtimber trees are expressed in board feet (1 board foot being a sawn board measuring 12” x 12” x 1”) and include all trees with a dbh equal to or greater than 12” that could be sold and sawn into boards. Sawtimber volumes were calculated using the International ¼ Inch Rule.

Literature Cited

Avery, T. E., & Burkhart, H. E. (1994). *Forest measurements*. (Ed. 4)

Lindenmayer, D. B., & Franklin, J. F. (2002). *Conserving forest biodiversity: a comprehensive multiscaled approach*.

LANDOWNER GOALS & OBJECTIVES

The main goal for the town acquiring land is to protect it 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 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 long term forestry is to continually improve the overall health of the forest with each harvest entry, by removing low quality and mature trees.

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. 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.

REQUIRED MANAGEMENT ELEMENTS

TIMBER

One of the primary objectives for this property is sound timber management in order to produce quality forest products on a sustainable basis, contributing to local sawtimber and fuel wood markets. A list of management strategies designed to meet this goal are discussed on a stand-by-stand basis later in this plan.

FISH & WILDLIFE HABITAT

Forest management activities will provide browse for many species of wildlife. Areas that are opened up to sunlight will encourage young growth on the forest floor. Large snags, or standing dead trees, will be strategically retained as they are valuable wildlife trees that help to support local bird and mammal populations. Course woody material left on the forest floor promotes amphibian and small mammal habitat. Palatable mast producing species such as white oak should be left when feasible as a food source for area wildlife.

SOIL

Given the well-drained nature of many of the soils on this property, harvest activities will not necessarily be restricted to dry or frozen conditions. Care will be taken to monitor ground conditions throughout all management activities so as to minimize rutting and erosion resulting from management activities. Post-harvest, log landings will be seeded with a conservation mix and limed to stabilize the soil. Water bars will be installed on skid trails where necessary.

WATER QUALITY

Throughout all management activities, in accordance with New Hampshire Best Management Practices, filter strips of an appropriate width will be left along the border of all wetland resource areas, be it streams, wetlands or vernal pools, in which no more than 50 % of the basal area will be removed. Wetlands and streams will be left intact to keep water clean and silt-free. Stream and wetland crossings necessary to accomplish any management activities on this parcel will be kept to a minimum. Any fueling of machines will take place at an adequate distance from any water's edge to prevent the chance of point source pollution.

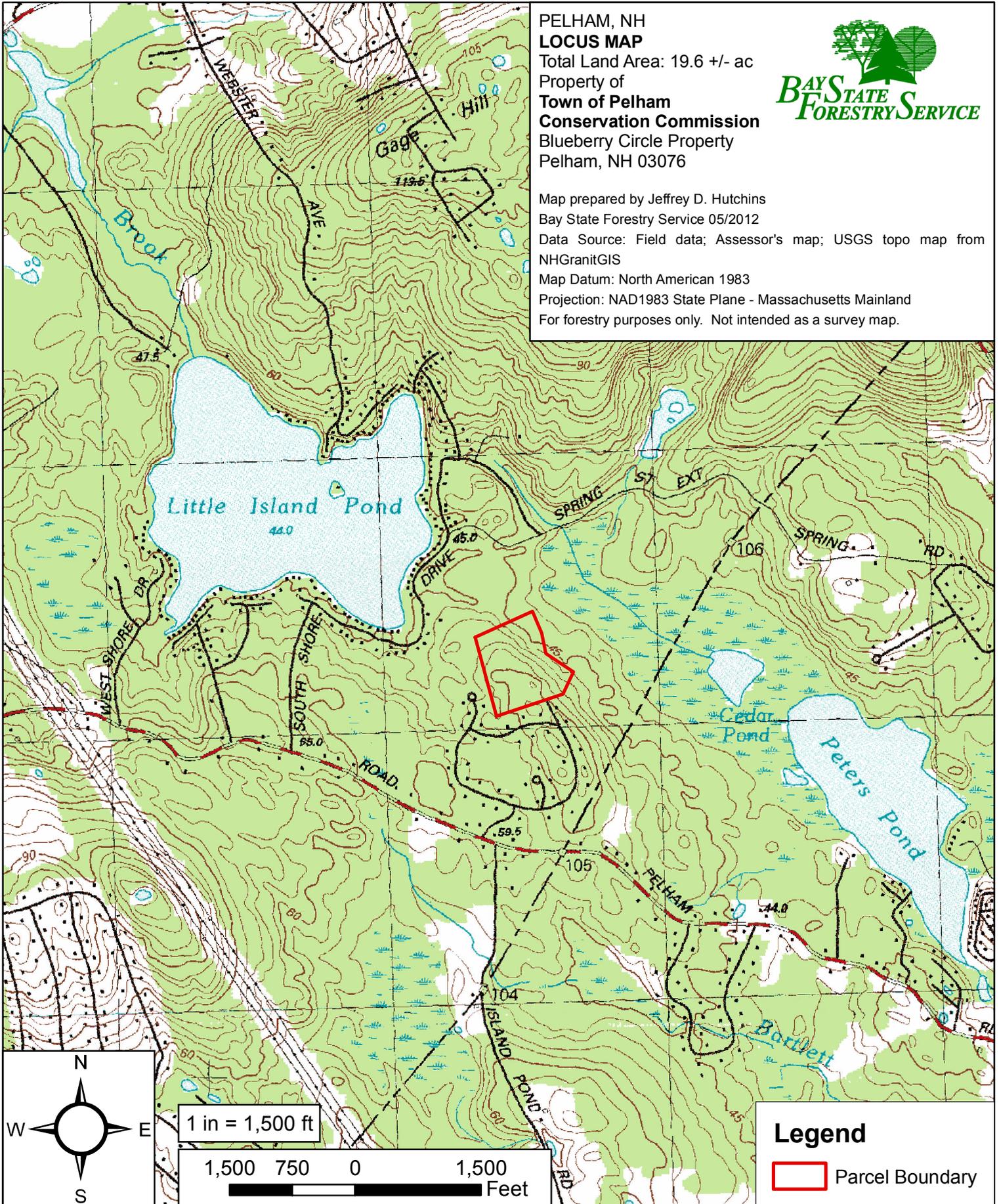
FOREST PROTECTION

As forest health is difficult to define, it is best examined within the context of a landowner's goals and objectives. In this case, because the Harris Center ranks wildlife habitat, recreational access, timber quality and biological diversity as being of high importance, a healthy forest can best be described as one that is composed of a variety of native plant and animal species; is absent of plant pathogens and nuisance forest insects that can cause growth deformities and tree defoliation; and is growing well formed, good quality timber stock that can provide to the local economy on a sustainable basis. By this definition, forest health throughout this parcel quite good. There was no observed presence of exotic-invasive plant species on the vast majority of the woodlot interior, though because there are numerous house lots that border the southern property line there exists potential for the introduction of non-native invasives. For this reason careful monitoring should be periodically conducted throughout the property in hopes of spotting any early establishment so as to prevent a large scale infestation. An invasives outbreak is far easier and less expensive to prevent than it is to control.

No forest pathogens were found throughout the Blueberry lot, and there does not appear to be much presence of the white pine weevil. This small, native insect feeds on the terminal, or leading, shoots of young pines, causing permanent stem deformation and reduced tree growth, often increasing the tree's susceptibility to various plant pathogens and sometimes leading to mortality. Because the insect causes severe tree deformities, its presence can wreak havoc on the commercial viability of a woodlot.

WETLANDS

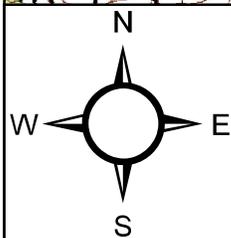
In order to maintain the integrity of the more sensitive sections of this property, management activities in wetland areas will be restricted to dry or frozen conditions. Appropriate filter strips and stream crossing will be utilized in accordance with the New Hampshire Best Management Practices Manual.



PELHAM, NH
LOCUS MAP
 Total Land Area: 19.6 +/- ac
 Property of
Town of Pelham
Conservation Commission
 Blueberry Circle Property
 Pelham, NH 03076



Map prepared by Jeffrey D. Hutchins
 Bay State Forestry Service 05/2012
 Data Source: Field data; Assessor's map; USGS topo map from NHGranitGIS
 Map Datum: North American 1983
 Projection: NAD1983 State Plane - Massachusetts Mainland
 For forestry purposes only. Not intended as a survey map.



Legend
 Parcel Boundary

Spring Street
West Lot

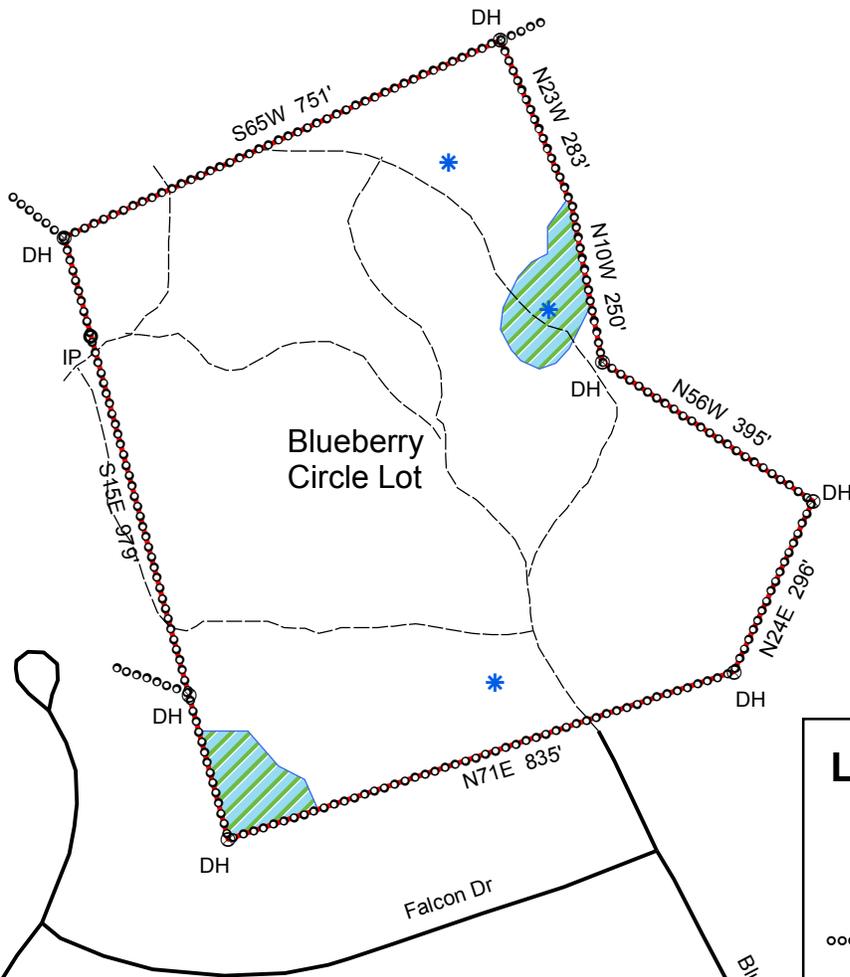
PELHAM, NH
PROPERTY MAP
Total Land Area: 19.6 +/- ac
Property of
Town of Pelham
Conservation Commission
Blueberry Circle Property
Pelham, NH 03076



Map prepared by Jeffrey D. Hutchins
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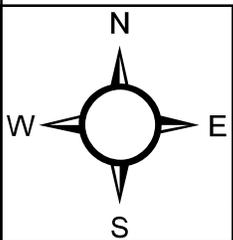
Private

Nature's
Way Lot

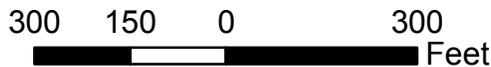


Legend

- ⊗ Drill Hole
- Iron Pipe
- Stone Wall
- Hiking Trail
- Town Road
- * Vernal Pool
- ▨ Wetland
- ▭ Parcel Boundary



1 in = 300 ft

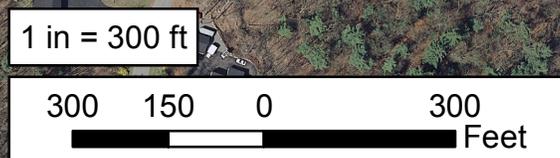
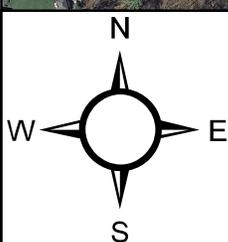




PELHAM, NH
AERIAL PHOTO MAP
Total Land Area: 19.6 +/- ac
Property of
Town of Pelham
Conservation Commission
Blueberry Circle Property
Pelham, NH 03076



Map prepared by Jeffrey D. Hutchins
Bay State Forestry Service 05/2012
Data Source: Field data; Assessor's map; 2008 15-cm aerial orthophoto from NHGranitGIS
Map Datum: North American 1983
Projection: NAD1983 State Plane - Massachusetts Mainland
For forestry purposes only. Not intended as a survey map.



Legend

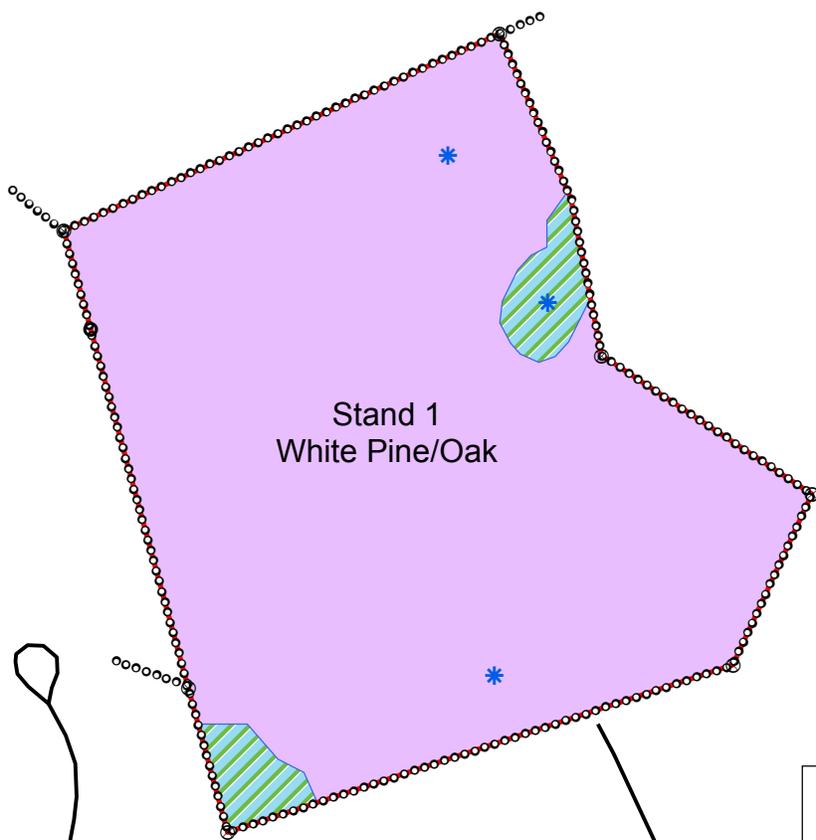
 Parcel Boundary

Private

PELHAM, NH
STAND MAP
Total Land Area: 19.6 +/- ac
Property of
Town of Pelham
Conservation Commission
Blueberry Circle Property
Pelham, NH 03076



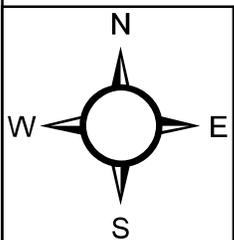
Map prepared by Jeffrey D. Hutchins
Bay State Forestry Service 05/2012
Data Source: Field data; Assessor's map
Map Datum: North American 1983
Projection: NAD1983 State Plane - Massachusetts Mainland
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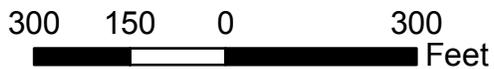
Stand 1
White Pine/Oak

Falcon Dr

Blueberry Cir



1 in = 300 ft



Legend

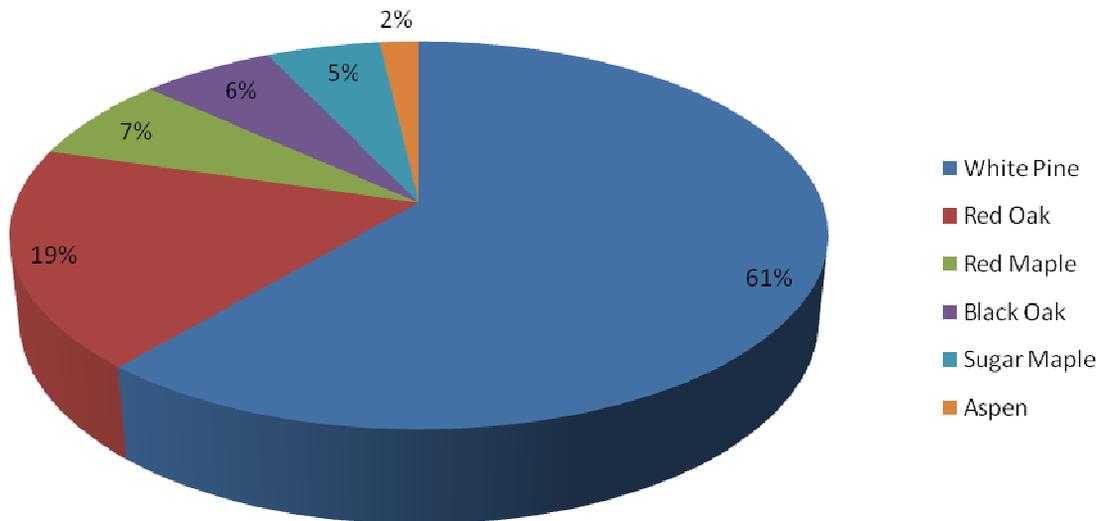
- ⊗ Drill Hole
- Iron Pipe
- Stone Wall
- Town Road
- * Vernal Pool
- Wetlands
- Parcel Boundary

FOREST PRODUCTS SUMMARY

TABLE 1: STANDING FOREST PRODUCT VOLUMES.¹
Blueberry Circle Lot, Blueberry Circle. Pelham, NH. Summer 2012.
TOTAL HARVESTABLE AREA: 19.6 +/- acres.

SPECIES	BOARD FEET	SPECIES	BOARD FEET
White Pine	83,227	Black Oak	8,427
Red Oak	24,931	Sugar Maple	7,231
Red Maple	9,648	Aspen	2,446
TOTAL SAWTIMBER VOLUME			135,908²
Hardwood Cordwood			99 cords
Softwood Pulpwood			25 cords
TOTAL CORDWOOD VOLUME			124 cords³

FIGURE 5: STANDING SAWTIMBER VOLUMES BY SPECIES. Blueberry Circle Lot, Blueberry Circle. Pelham, NH. Summer 2012.



1. All sawtimber and cordwood volumes were calculated via Cimplar forest inventory software.
2. 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.
3. 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.

FOREST MANAGEMENT PLAN

STAND 1 – White Pine / Oak

19.6 ACRES

TABLE 2: STANDING TIMBER VOLUMES - STAND 1. Blueberry Circle Lot, Blueberry Circle. Pelham, NH. Summer 2012.

SPECIES	AVE. BA/ACRE (ft ² /ac)	VOLUME/ACRE (bd ft/ac)	TOTAL VOLUME (bd ft)
White Pine	30	4,246.3	83,227
Red Oak	13	1,272.0	24,931
Red Maple	6	492.3	9,648
Black Oak	4	429.9	8,427
Sugar Maple	3	368.9	7,231
Aspen	1	124.8	2,446
SAWTIMBER TOTAL	57	6,934	135,908
Cordwood	29	5.1 cds	99 cds
Softwood Pulp	6	1.3 cds	25 cds
CORD/PULP TOTAL	35		
ALL PRODUCTS	92		

STAND DESCRIPTION

Overstory trees consist of generally well-formed pines ranging from 18 – 24 inches dbh with some pines ranging up to 26 inches dbh; oaks range in size from 16 – 22 inches dbh. Tree heights range from 1.5 – 3 merchantable logs (1 log = 16 feet in height). Oaks generally range from 1 – 2 logs in height, and pines 2 – 3.5 logs. Understory associates include red and sugar maple, black oak and scattered aspen. Understory trees generally range 6 – 12 inches dbh. The mean stand diameter is quite large, measuring 16.9 inches, and the basal area was measured at 92 ft² per acre. This means that there are large trees growing in a well-spaced stand throughout the parcel. This basal area is considered to be within the acceptable range for growing mixed white pine/oak stands, though could be reduced in order to promote growth and release of regeneration. Existing advance regeneration in the stand includes thick patches of white pine saplings up to 15 feet tall and patches of oak saplings up to 8 feet tall. These patches should be released soon to prevent the young trees from becoming suppressed and stagnated. Ground cover species include hobblebush, lowbush blueberry, witch hazel, winterberry holly and numerous species of ferns and other herbaceous plants.

The terrain and soils are explained at length earlier in the plan and so will not be elaborated upon in this section.

SILVICULTURAL RECOMMENDATIONS

Though the stand's basal area of 92 ft² per acre is an acceptable stocking for a white pine/oak stand, it would be prudent to encourage the stand to continue to progress and regenerate. Many of the overstory trees are ready for harvest and the valuable regeneration in the understory should be released and promoted. Oaks are a notoriously difficult species to regenerate and are an important wildlife species as they provide valuable food resources in the form of acorns, as well as an important and valuable timber species. The patches of oak regeneration present are promising signs for the future. In addition to providing increased amounts of food, encouraging a more diverse forest structure in this area will improve upon the stand's structural complexity. Young forest habitat is an important and ever decreasing forest type across the regional landscape of southern NH. By opening up gaps in the canopy of varying sizes, young patches of regeneration can be expected to establish, providing valuable browse and thermal cover for area wildlife.

To accomplish this, a conventional shelterwood cut should be planned in Stand 1. The stand's basal area should be reduced from 92 ft² per acre to between 60 – 70 ft² per acre by removing approximately 30 – 35 mbf of white pine, 6 – 8 mbf of red oak and an additional 8 – 10 mbf other assorted hardwood logs. Approximately 60 cords of firewood will also be removed. This will allow adequate sunlight into the stand to encourage seeding in of young oaks and pines and should release existing patches of valuable advance regeneration. Trees that should be targeted for removal will be selected financially mature stems along with low quality hardwoods and badly-formed pines. Residual trees should consist of well-formed oaks and pines ranging in size from 14 – 20 inches dbh that fall into the dominant/co-dominant crown classes. Well-formed sugar maples should also be retained where possible. Care should be taken to create patches around vigorous residual oaks to encourage further regeneration. Patch openings about two tree lengths in diameter have been shown to provide the most suitable conditions for establishing and growing oaks. In about 10 years options should be explored for systematically removing additional portions of the overstory in order to release the regeneration that will have taken hold as a result of these management activities.

MANAGEMENT SCHEDULE

2012 - 2014

- Blaze and paint identifiable boundary lines
- Conduct a conventional timber harvest operation to remove low-quality stems and promote continued growth of healthy, vigorous individuals
- Seed landings with conservation mix to stabilize soil and promote establishment of native grasses and sedges
- Continue monitoring for presence of invasive-exotic plant species

2014 - 2023

- Monitor the woodlot for wind damage, ice damage, fire or disease and take appropriate corrective actions as needed to ensure the continued productivity of this forest block
- Re-assess the woodlot in 10 years and write a new 10-year management plan, specifically examining timber stand improvement and overstory removal options for the purpose of releasing regeneration via possible subsequent harvests in the next 15 to 20 years during the course of the next management period
- Monitor the forest for signs of invasive-exotic plant species and, if detected, formulate a plan for appropriate mitigation practices

CONCLUDING REMARKS

The recommendations proposed in this 10-year stewardship plan should be implemented within the timeframe allotted for completion, although specific timing will depend on landowner priorities, market conditions and environmental factors such as pest outbreaks and weather. Through sound silvicultural methods and the use of best management practices (BMP's), financially mature, diseased and/or 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, in accordance with landowner goals and objectives, should be taken as needed over the next 10 years in response to any such occurrences. The recommendations presented herein are silviculturally and operationally sound and should result in meeting the Town of Pelham's goals for their forest properties. Implementing these recommendations will help ensure that this forestland is being managed with long-term sustainability in mind through a multiple-use approach to resource conservation.

Respectfully Submitted



Jeffrey D. Hutchins
Bay State Forestry Service

Michael F. Powers
NH Forester Lic # 379

GLOSSARY OF FORESTRY TERMS

Basal Area - Cross sectional area of a tree stem at a height of 4.5 feet (diameter at breast height) expressed in square feet per acre.

Browse - The twigs and leaves of woody plants, that are edible to wildlife.

Butt - The base of a tree; the lower end of a log.

Canopy - The upper layer of branches and foliage, or tree crowns, in a forest.

Crop Tree - A tree identified to be grown to maturity and not removed from the forest before the final harvest cut. Usually selected on the basis of its quality and location with respect to other trees.

Cull - A tree or log of merchantable size but with little or no market value.

DBH - The diameter of a tree as measured at breast height which is taken at 4.5 feet from the ground surface.

Dominant - Trees with crowns able to receive full sunlight from above and partially from the side.

Form - The shape of a tree or log.

Habitat - The local environment in which a plant or animal lives.

Harvesting - In general use, removing all or portions of trees on an area.

Mast - Acorns or other fruits or nuts edible to wildlife.

Maturity - For a given species or stand, the approximate age beyond which growth falls off or decay begins to increase at a rate likely to reduce economic importance.

Merchantable - pertains to a log or tree with qualities that would permit an economically profitable harvest.

Mean Stand Diameter - The mean diameter of all trees within a stand or compartment.

Merchantable Mean Stand Diameter - The mean diameter of all trees considered as sawlog stocking within a compartment or stand.

Pole - A tree whose diameter at DBH ranges from 5.1 through 11 inches.

Pulpwood - Roundwood converted into specific lengths or chips for commercial use as in paper making or as a fuel.

Regeneration - New forest growth by artificial reproduction, by means of seeding or planting; or natural reproduction, from natural seeding or sprouting.

Sapling - A small tree, usually defined as being between 2 and 4 inches at DBH.

Sawtimber - Trees that will yield logs suitable in size and quality for the production of lumber; generally having a minimum diameter at DBH of 11.1inches.

Sawlog - That part of a tree which has economic value as sawed lumber.

Site - An area evaluated as to its capacity to produce a particular forest or other vegetation based on the combination of biological, climatic, and soil factors present.

Site Index - A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and co-dominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75 feet.

Silviculture - The science of producing and caring for a forest by applying the principals of forest management within a sound economic framework.

Snag - A standing dead tree; a portion of tree remaining standing.

Stand - A grouping of trees occupying a site and sufficiently uniform in composition, age, and condition so as to be distinguishable from the forest on adjoining areas.

Stand Density - An expression referring to the total stocking of a stand of trees, usually expressed in square feet of basal per area.

Stocking - The degree of occupancy of trees on land, by measurement and/or the number of trees in a stand.

Thinning - The reduction in density of stocking by harvesting trees to prevent overcrowding and stagnation of a stand of trees.

Water (less than 40 acres)

Canton stony fine sandy loam, 8 to 15 percent slopes
CmC

Leicester-Walpole complex stony, 0 to 3 percent slopes
LvA



PELHAM, NH
SOILS MAP
Total Land Area: 19.6 +/- ac
Property of
Town of Pelham
Conservation Commission
Blueberry Circle Property
Pelham, NH 03076

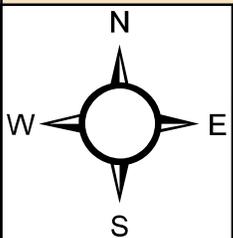
Map prepared by Jeffrey D. Hutchins
Bay State Forestry Service 05/2012
Data Source: Field data; Assessor's map; 2009 USDA soil survey
geographic from NHGranitGIS
Map Datum: North American 1983
Projection: NAD1983 State Plane - Massachusetts Mainland
For forestry purposes only. Not intended as a survey map.

Greenwood mucky peat
Gw

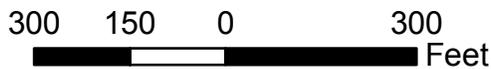
Canton stony fine sandy loam, 3 to 8 percent slopes
CmB

Canton stony fine sandy loam, 8 to 15 percent slopes CmC

LvA Leicester-Walpole complex stony, 0 to 3 percent slopes



1 in = 300 ft



Legend

 Parcel Boundary

APPENDIX I: NH SOIL ATTRIBUTE INDEX

Hillsborough County Soils Profiles

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

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.

LvA – Leicester-Walpole complex stony, 0-3% slopes

Suitability for growing wetland plants for wildlife habitat – Good.
Suitability for growing coniferous plants – Fair.
Suitability for area as habitat for wetland wildlife – Good.
Suitability for area as habitat for woodland wildlife – Fair.
Has a good site index (greater than 60) for eastern white pine and red maple.
Has only slight erosion hazard and severe windthrow hazard.
Often poorly drained, seasonal high water table limits tree species and operability.