New England
Forestry Consultants, Inc.
www.cforesters.com

Forest Stewardship Plan

# Mendum Pines Woodlands

8/3/2018

Prepared by:

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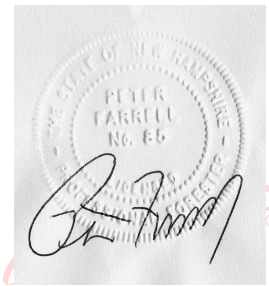
NH LF #85

# *FOREST INFORMATION SUMMARY*

***LAND OF*** Mendum's Landing Association
c/o Thomas Danilels
90 Mendums Landing Road
Barrington NH 03825

603 856 6099 thomasdaniels@comcast.net

***FOREST NAME*** Mendum Pines Woodlands

***TOWN*** Barrington town | Strafford County | NH

***ROAD*** Mendum's Landing Rd. off of NH Rt. 4

| | TOWN | TAX MAP | LOT N | ACRES | BOOK | PAGE | ACRES |
|---|---|---|---|---|---|---|---|
| ***PRIMARY PARCEL*** | Barrington | 260 | 53 | 38.69 | 2030 | 0085 | |

***NUMBER OF PARCELS*** 19 TOTAL ACRES FOR ALL PARCELS TAX MAP 114.7

***See Property Parcel List on next page*** DEED

***PARCEL NOTES*** Barrington Tax Map- Acreage from lots 02, 10, and 54 are included with lot 53.

***REFERENCE MAPS***

| | |
|---|---|
| USGS | GRANIT drg154 |
| SURVEY | Sub Plan Frost Lots. B:L Prohopeck 1986 |
| AERIAL PHOTO | GRANIT NH 2015 1-foot CIR |
| FOREST TYPE | NEFCo, Inc PF 2018 |
| SOILS | GRANIIT State layer Strafford /Rockingham |
| OTHER(S) | C Moreno 2003 |

***OTHER DATA***

FOREST CODE 3301700526053

# OF COMPARTMENTS TOTAL ACRES IN LB 127.9

## *MANAGEMENT OBJECTIVES: Mendum Pines Woodlands*

As stated in the originally 2003 Forest Management Plan, the management objectives for this property are;

1. Manage habitat fro a wide range of wildlife species.
2. Create recreational opportunities such as hiking and Nordic ski trails.
3. Manage timber to maintain wildlife habitat, recreational opportunities, and support Maintenance of Mendum's Landing Road, a private road managed by MLA.

Additionally, the management objectives include,

4. Conduct forest management activity in compliance with conditions of the conservation easements owned by the towns of Barrington and Nottingham.

## *FOREST DESCRIPTION*

The forestland which is the subject of this managemen plan is owned in common by the Mendum's Landing Association, Inc. (MLA). An intensive residental development was planned for the land in the 1980's, but never was completed. In 1999 and 2002, the MLA corporate members chose to permanently protect the remaining undevelopd land by transferring conservation easements to the towns of Nottingham and Barrington.

The land had been cleared for agriculture during the 1700 and 1800's, but reverted to forest in the 1900's. There is little recorded information about timber harvesting during the 1900's, but forest conditions - including species composition and signs of old roads - indicate that periodic harvests did occur into the 1980's. Since the formation of the MLA, two timber harvests occurred in 2003 and 2017.

This forest management plan has been funded in part with a grant from the USDA - NRCS under the EQIP program ( Contract #: EQIP 2014 7414281801D)

## *PROPERTY RESTRICTIONS*

| | | | |
|---|---|---|---|
| ☒ Conservation Easement | ☐ ROW to land | ☐ Collaboraters | ☐ Local Regulations |
| ☐ Deeded | ☐ ROW across land | ☐ Abuttor Courtesy | ☐ No Restrictions |

CE Rockingham County B3953 P2519 2003. Nottingham. Forestry according to “accepted management practices”.

CE Strafford County B 2030-0086 1998 Barrington. Forestry generally permitted, on condition that there is no reduction in “productivity of the land”.

## *FOREST CERTIFICATIONS*

*This forest is certified under the following program(s):*

NH 2972


Mendum Pines Woodlands

## *COMPARTMENT DESCRIPTION / MANAGEMENT*

COMPARTMENT LOCATION AND EXTENT

For planning purposes, this property is treated as a single compartment. This compartment is divided into three management areas, A, B, and C, as shown on the Forest Areas Map. These areas somewhat coincide with the compartment definitions used in the 2003 management plan.

BOUNDARIES

The boundaries of the property were intermittently observed during the 2018 inventory. They appear to be variously marked with plastic flagging, blazes with paint , and plastic conservation easement identification tags. For the purposes of property protection, ease of CE monitoring, and avoiding timber harvest errors, the lines should be uniformly painted and blazed by 2023.

ACCESS & FOREST PROTECTION

The land has access for timber harvesting, recreation, and forest fire protection primarily from Mendum's :Landing Road (ML Road), which is privately owned and maintained. The property also has frontage on NH Route 4, but does not have a developed entrance or forest road at that site.

The existing landings (log loading areas) off of the private ML Road are small and suitable for cable skidder and cut to length harvesting operations. Used in conjunction with the the cul-de-sac, as a place for trucks to turn around, they provide good access to most of the forest. Emanating from these landings are new and old logging trails, some of which have been improved for walking trails. A number of the trails are suitable for off highway fires fighting vehicles, providing a reasonable level of protection access for most of the forest.

Under current access conditions, and given the topography, there is limited access opportunity for a commercial whole tree chipping operation. This access constraint has implications for recreation and esthetic issues which will be considered further in this compartment description.

Area C has the poorest access for all forestry purposes. During the 2017 harvest, this area was served by the northerly most landing on ML Road, with wood hauling distances of over 2800 feet. Shorter hauling distances improve the economics of logging, which can improve opportunities for lower impact harvesting.

Lower impact harvesting has benefits for esthetic and recreational values, as well as allowing for more intensive silviculture. The evidence of this is that during the 2017 harvest, the further the distance the operation was from the landing the heavier was the cutting. This is just an economic fact, not a criticism.

Given this, we recommend that MLA reconsider the access recommendation first made in 2003. An entrance from NH Route 4, with a short woods road leading to a landing, would provide an opportunity to remove timber with much lower impact both in volume and acreage than if accessed only from ML Road. This recommendation will integrate well with the timber management strategy recommended herein.

**TIMBER MANAGEMENT & ALLOWABLE CUT**

Although timber management may not be your Association's highest priority objective, it is the one activity that has the greatest potential to affect all of the other objectives including esthetics, recreational use, and wildlife habitat. In addition, well managed timber will provide the economic benefits as desired to help with the maintenance of Mendum's Landing Road but also for investments in habitat improvement, recreational trails, and boundaries. Given this potential, timber management will be considered first in the planning overview.

A well planned timber management strategy will minimize the adverse impacts of harvesting, complement other objectives where possible, and achieve the goal of sustainably producing the highest value timber products. The key elements to a successful timber management strategy include:

1. Growing the best quality trees to produce the highest value products.

2. Harvesting the trees at a rate that is an optimum balance between conditions for growth, operational efficiency, and the productive capability of the forest site.

3. Insuring that as mature trees are removed they are replaced by young trees (regeneration) of desired species, and of adequate vigor to reach maturity.

We will review all three elements of timber management by first, reviewing the findings from the 2018 inventory; second, outlining alternatives for timber harvesting; and third, describing silvicultural steps to insure the regeneration and development of new stands.

***Element 1: Timber Inventory and Quality Assessment***

112 acres of the total 127.9 acres (88%) is suitable for timber management activity. Soil productivity and terrain on these acres are highly variable. The topography is consistently inconsistent, with sharp ridges, steep slopes, large rocks, and interspersed wetlands which present significant challenges for timber management. Despite the terrain, soil productivity is generally good over the majority of the property as evidenced by tree height and quality. The current average timber volumes are 10.2 thousand board feet and 19.4 cords per acre. These average volumes are very high for the region, and more typical of mature, pre-harvest, stands.

The 2018 timber volumes by species/product and their current standing timber market values are shown in the table: *Estimated Timber Inventory and Value.* It is important to note that the gross timber value shown in this table is the value if the timber were liquidated in a single harvest. Controlled, partial harvesting and reservation of trees for non-timber values, will result in different per unit values depending on the volumes and diameter classes harvested. The results of the 2018 inventory compare favorably with the inventory figures presented in the 2003 forest management plan. When projected forward by including a growth estimate (2.0 to 3.0 % compounded annually) and harvesting deductions (2003 and 2017), the 2018 results were higher by 10% for sawtimber and 41 % for pulpwood. Although these figures are considered with caution, they do concur with what we have seen on the ground here and on other properties, providing some indication that past management activity has met sustainable standards.

The timber volume and value table is followed by discussion of 4 inventory charts derived from the cruise data which illustrate the quality and condition of the timber resource.

# *ESTIMATED TIMBER INVENTORY AND VALUE*

Mendum Pines Woodlands

Compartment 1 of 1

| YEAR OF INVENTORY | END YEAR OF ESTIMATE | ESTIMATED GROWTH RATES % PER YEAR |
|---|---|---|
| 2018 | 2018 | SFTWD .025 HDWD .015 PULP .02 |

| SPECIES /PRODUCT | VOLUME | | $/UNIT | TOTAL $ |
|---|---|---|---|---|
| White Pine | 596.3 | MBF | 200.0 | 119,260.0 |
| Spruce /Fir | | | | |
| Hemlock | 287.9 | | 60.0 | 17,271.5 |
| Red Pine | | | | |
| Other softwood | | | | |
| Softwood Pal/Tie | 19.2 | | 30.0 | 575.6 |
| Red Oak | 192.2 | | 450.0 | 86,508.5 |
| Black Oak | | | | |
| White Oak | 27.3 | | 100.0 | 2,731.3 |
| Sugar Maple | | | | |
| White Ash | 1.8 | | 100.0 | 182.0 |
| White Birch | | | | |
| Yellow /Black Birch | 2.0 | | 100.0 | 203.0 |
| Black Cherry | | | | |
| Red Maple | 19.0 | | 80.0 | 1,518.5 |
| Beech | | | | |
| Other Hardwood | | | | |
| Hardwood Pallet | 75.8 | | 65.0 | 4,929.0 |
| Softwood Pulp | 396.0 | CORDS | 2.0 | 792.0 |
| Spruce/Fir pulp | | | | |
| Hemlock Pulp | 734.0 | | 5.0 | 3,670.0 |
| Hardwood Pulp | 1,192.0 | | 10.0 | 11,920.0 |
| Gr Stock: Softwood | | | | |
| Gr Stock: Hardwood | | | | |
| | | **ESTIMATED TIMBER VALUE** | | $249,561.34 |

NOTE: This table displays the estimated timber inventory at the “end” year. It is based on the following:

1. Starting inventory volumes are from the year of the cruise displayed.
2. Growth of the starting volume using the percentages displayed, compounded annually.
3. Less any harvest occurring in the interim years, and subsequent changes in compounded growth.

INVENTORY METHODS: Variable plot cruise, 20 BAF, completed in July 2018. Uniform grid of sample points, spaced at 5X5 chains Softwood sawtimber tallied to 10 “ min Dbh to an 8” top, hardwood sawtimber 12 min Dbh to 10 inch top, pulpwood 8 “ min to a 4 inch top. Forest pro cruiser tally. FC 78. Stumpage price estimates are gross prior to timber tax and forester supervision. 115 merchantable acres used.

*Chart 1: Trees per Acre by Class and Diameter*

This chart illustrates the distribution of acceptable (AGS), unacceptable (UGS), and wildlife quality trees sampled during the 2018 inventory. An AGS tree is, or has the potential to become, a higher value sawtimber tree. A UGS tree is a lower value tree as a result of its species, form, or defect has very little or no potential to become a sawtimber tree. The inventory indicates that 68% of the trees were acceptable quality, 31% were unacceptable, and 1% had wildlife habitat value. This is a very good quality distribution and well above average for the Central New Hampshire. When charted as shown below, the data also shows is that the proportion of acceptable quality trees is much higher in the larger diameter classes and about equal in the smaller classes. **To maintain the overall quality of the timber resource in the future it is critical that the lower quality trees in the smaller diameter classes are culled during harvesting and silvicultural practices.**

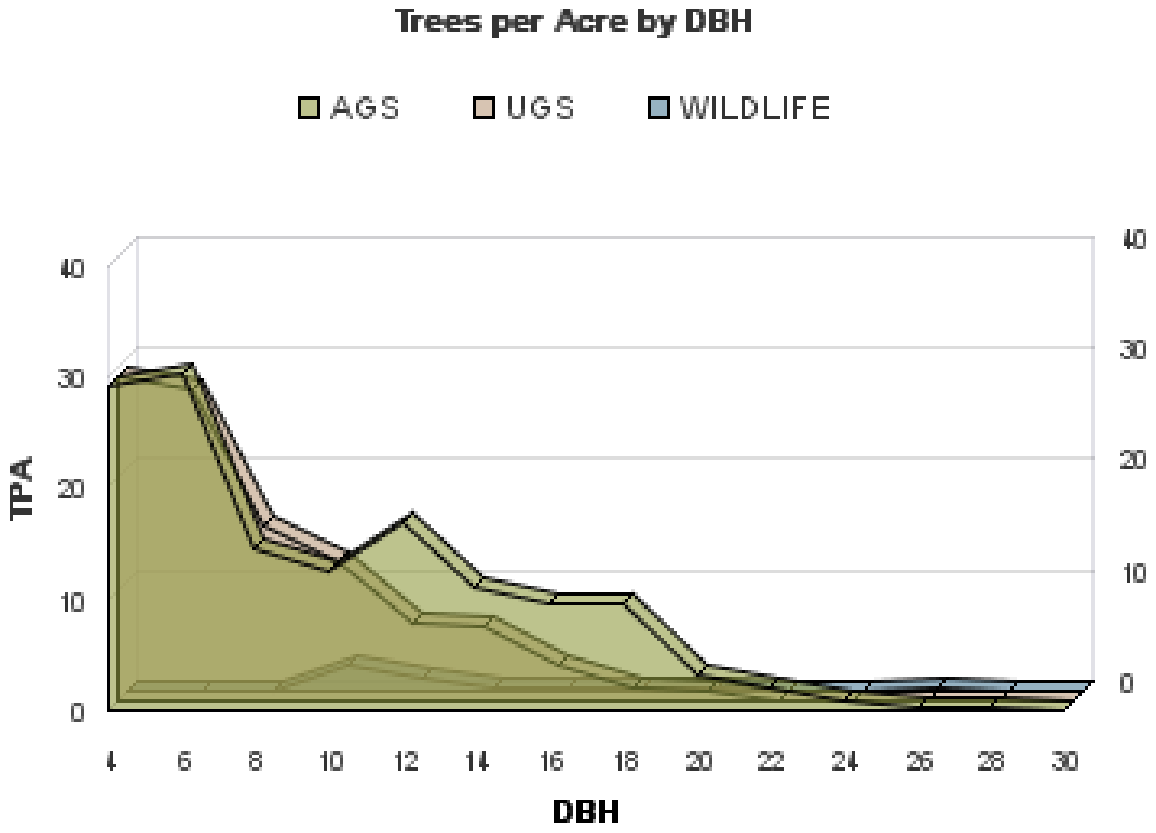
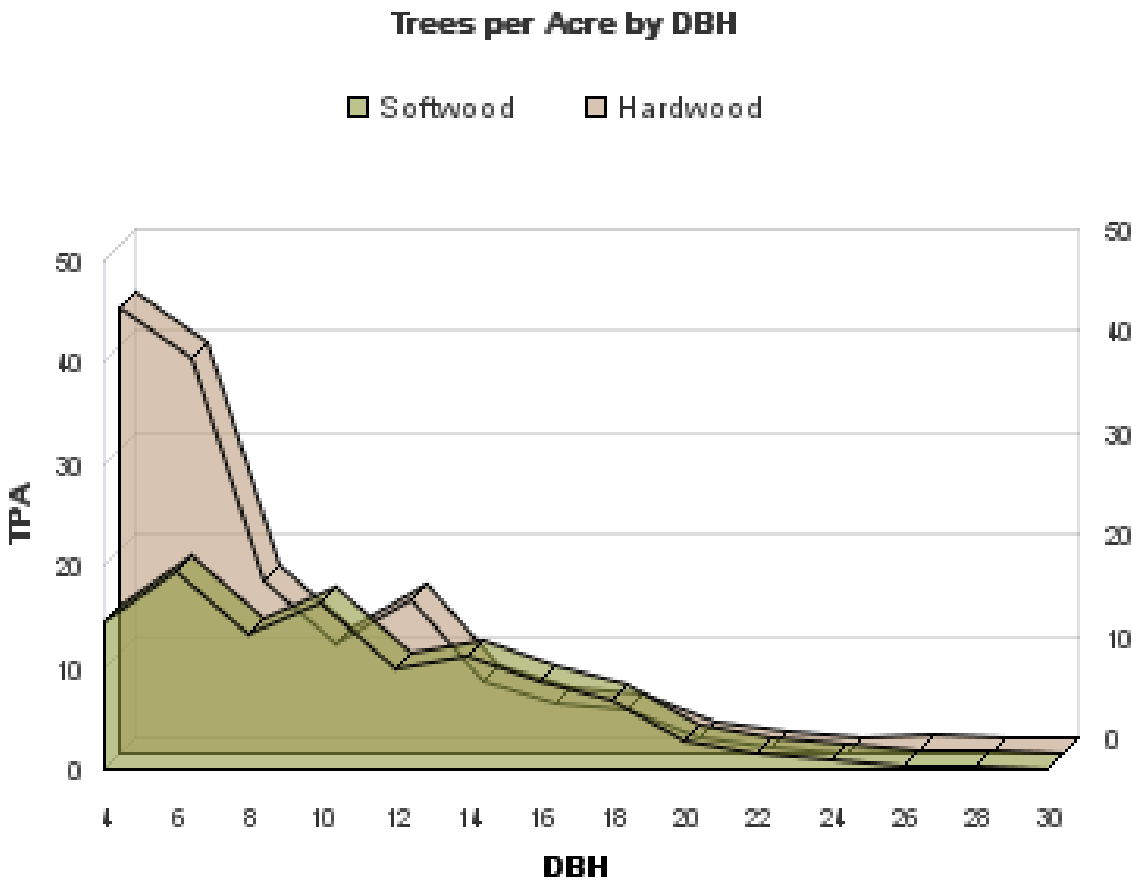


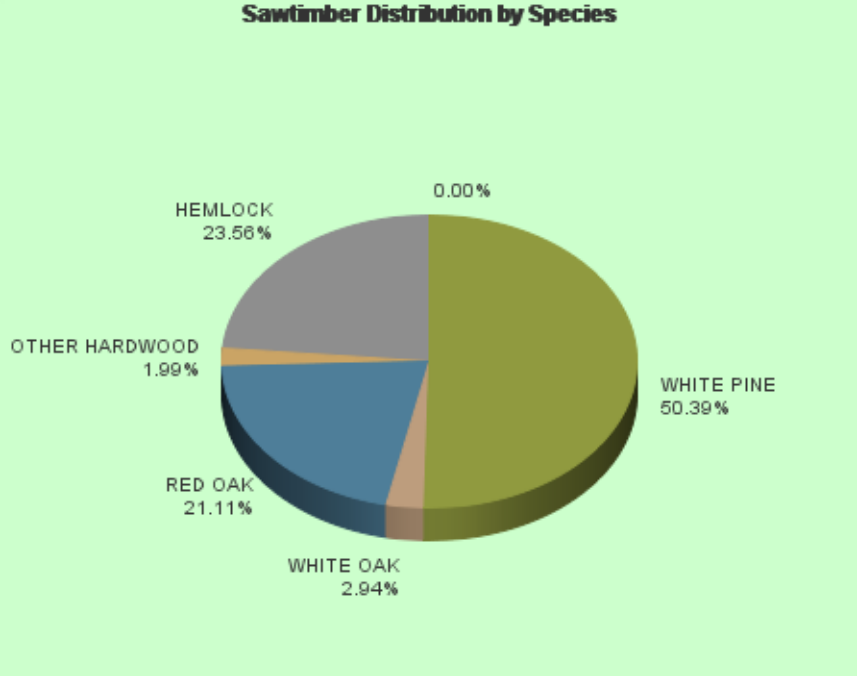
*Chart 2: Trees per Acre by Family and Diameter*

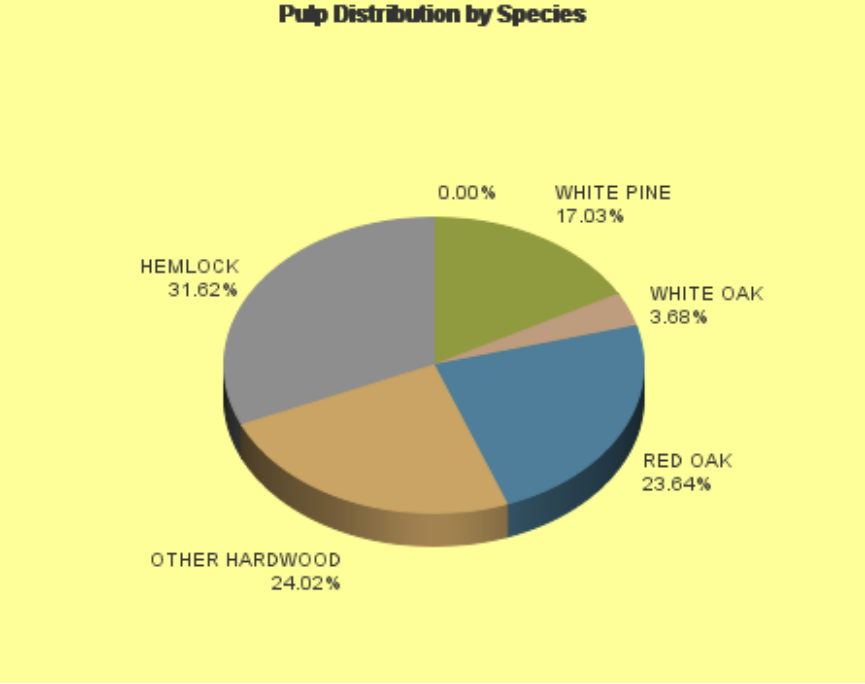
This chart illustrates the distribution of hardwood (deciduous) and softwood (coniferous) species by diameter class as sampled during the 2018 inventory. The distribution is very well balanced across the upper diameter classes with a steep increase in hardwoods less than 8". An equal representation of hardwoods and softwoods can be positive from both a timber management and wildlife habitat viewpoint**. To maintain the balance that is currently found in the larger diameter classes, effort must be made to protect and favor the established softwood trees in the smaller diameter classes, and to regenerate softwood on harvested sites.**



*Charts 3 & 4: Sawtimber and Pulpwood Distribution by Species*

These charts illustrate the distribution timber volume in the sawlog and pulp product categories. The charts are viewed together because the ratio of pulp to sawlogs indicates the potential of different species to produce higher value products. The white pine and red oak have the highest ratio of sawlogs to pulpwood. Hemlock and Red maple have the lowest sawlog to pulpwood ratio. **These ratios are good indicators of where harvesting should be focused to improve stand quality; primarily on low grade mixed hardwood species and hemlock.**



In summary, Mendum Pines Woodlands has excellent stocking of timber, and is well positioned for continued timber productivity. To sustain this trend, attention must be paid to removing low grade trees, particularly in the smaller diameter classes, and favoring the growth of the best quality trees and highest value species. This practice was clearly evident in the results of the 2017 harvest.

***Element 2: Harvest Strategies.***

There are a variety of factors to consider in planning a harvest strategy. These include access, esthetic impacts, wildlife habitat, income needs and the volume of timber, markets, acreage, soil productivity, and harvest technology.

The 2017 harvest was a major harvest covering more than 80% of the property in a single operation. Many of the factors above were in play with regard to this operation. A harvest technology (cut-to-Length logging, CTL) and a market were both available, allowing for removal of a very large volume low grade pulpwood at a time when that market has been increasingly unstable. The MLA property had plenty of volume available and the distributed small landings which were suitable for the operation. This gave MLA an opportunity to have some high quality silviculture implemented. However, there were tradeoffs. CTL leaves large volumes of slash behind and this had negative effect on some recreational trails and general appearance. The logging disturbance covered a large acreage, and because it was the first of its kind, and the first harvest in 15 years, it caused shock to people who are less familiar with forestry and harvesting operations. There is no single right answer on how this last sale should have been executed.

We can look forward, and suggest alternatives for the future. Given a major sale was done in every forest area just over a year ago, additional harvesting will not be recommended before 10 or possibly 15 years from 2018. In 5 years' time, 2023, an inspection of the entire 2017 harvest site is recommended. The purpose will be to determine the success of white pine and red oak oak regeneration within the harvest site. Depending on the conclusions from the inspection, a harvest can be scheduled at about for the 10 year mark, or later if the regeneration results are poor. At the earliest, the next harvest would be in 2028, or at the 15 year mark, 2033, when the treated stands would be ready for re-entry regardless of regeneration conditions.

In addition, if economic and market condition permit, MLA may wish to consider scheduling future harvests on lesser acreages, on a staggered schedule – roughly 1/3 of the timber management acres on 5 to 7 year intervals, resulting in a 15 to 20 year operating interval. The advantages of this scheduling are.

1. Lowering the visual impact by confining operations to a smaller area, and giving the harvest area time to soften before additional work is done.
2. Creating accessible browse sources under 10 years of age for deer and moose.
3. Operational convenience, where follow up work can be scheduled with the next harvest when equipment is on site.
4. An income stream that is spread over time.
5. Institutional memory, which reduces the emotional disruption caused by large infrequent harvests.

## *AREA REGULATION METHOD GUIDELINES*

Mendum Pines Woodlands

Compartment 1 of 1

To properly manage a forest for timber production and wildlife habitat, harvesting levels must be regulated so as to prevent over cutting. Traditional forestry theory provides for two methods of harvest regulation; Area and Volume. The table which follows here is a simplified illustration of the theoretical guidelines for area regulation on a forest of this size. This illustration is based on the following assumptions and definitions:

1. TIMBER MANAGEMENT ACRES - The total acreage available for commercial timber production, based on the records contained in the *Areas* file.

2. ROTATION AGE - The maximum age to which commercial timber trees are grown before harvest. In mixed species management, the species to be grown the longest would define the rotation age.

3. OPERATING OR AGE CLASS INTERVAL - This is the average amount of time between the treatments which will be conducted during the course of one rotation. This definition assumes that the operating interval is the same throughout the rotation, and that a consistent series of treatments will be applied to the timber management acreage as a whole.

4. PLANNING HORIZON - The time frame for which this particular evaluation is being considered.

5. TREATMENT COVERAGE GOALS - Once the criteria have been established for the above terms, we can calculate the expected acreage to be affected by each treatment. These figures can be compared with the report from the *Recommended Treatments* file (Rec Trt by Type - Forest) to see how the suggested treatments compare with the theoretical guidelines.

## *AREA REGULATION GUIDELINES TABLE*

| TIMBER MGMNT ACRES | ROTATION AGE | OPERATING OR AGE CLASS INTERVAL | PLANNING HORIZON |
|---|---|---|---|
| 112.6 | 120 | 20 | 15 |

## *SUGGESTED TREATMENT COVERAGE GOALS BY AGE CLASS*

| ENDING AGE | TREATMENT TYPE | % OF ACRES | # OF ACRES |
|---|---|---|---|
| 20 | Silvicultural Invest - Release seedl/sap | 12.5% | 14.1 |
| 40 | Silvicultural Inv. - Pre-commercial Thinning | " | " |
| 60 | 1st Intermediate harvest | " | " |
| 80 | 2nd Intermediate harvest | " | " |
| 100 | 3rd Intermediate -1st Shelterwood | " | " |
| 120 | Regeneration Harvest- Overstory Removal | " | " |
| | | " | " |
| | | " | " |
| | | " | " |

Under any scheduling option, when harvest recommendations are made, they will include two types of treatment; *intermediate harvesting* and *regeneration harvesting*. An intermediate harvest removes a portion of the trees in a stand with the goal of encouraging the continued development of the residual stand. Intermediate harvesting is applied where there are an adequate number of crop trees that will continue to improve in quality and value through another cutting cycle (15+ years). A regeneration harvest is the removal of virtually all of an existing stand, with the goal of developing an entirely new forest stand. A regeneration prescription is applied where the existing stand has reached full maturity, is at high risk of loss, or where overall stand quality is too poor to justify continued growth. These prescriptions are reasonably applied using the Area Regulation table as a guide, and scaled to the size of the Area being treated.

***Element 3: Silvicultural investments.***

Silvicultural investments are expenditures that are made to improve the composition of forest regeneration and/or the growth of young forest stands. At this stage in the MLA forest's development – a majority of mature timber, post-harvest, with first year regeneration evident on site - there are no silvicultural investments recommended or scheduled. Scheduling will be determined following the regeneration inspection in 2023. If the seedlings have taken and are thriving, a release treatment as indicated in the area regulation table, may be recommended at the 10 or 15 year mark.

Pre commercial thinning is a process that improves the spacing of small diameter, good quality trees by cutting down surrounding competing stems. As the phrase implies, these trees are generally too small to be economically harvestable. This process is relatively expensive and is recommended only where there is the highest potential for improved growth and value. It also results in a large amount of downed slash and is not recommended along trails for esthetic and safety reasons. No areas in need of precommercial thinning were identified during the 2018 inventory.

**WILDLIFE & FISH HABITAT**

Encouraging wildlife and maintaining habitat are high priority objectives for the MLA. On properties less than 250 acres, the primary focus with regard to wildlife habitat is on maintaining and protecting *habitat elements*. These are distinct features that serve wildlife needs and can be conserved or created, either by direct action or indirectly through modified harvesting operations. Of specific interest on the Mendum Pines Woodlands are:

1. Wildlife trees: These are living or dead standing trees with existing or potential features that can serve as nesting, breeding, or feeding sites for birds and small mammals. Trees of this type were tallied in the inventory sample and found to occur at an average of 5 trees per acre. This is slightly below the recommended rate of 6 trees per acre. We can do two things to improve the number of wildlife trees. The first is to simply retainj some large low quality trees during harvesting, particularly where they are not having a negative effect on the surrounding trees. Secondly, we can girdle (kill) large diameter, low quality trees particularly where they will release adjacent good quality crop trees. This has the dual benefit of creating the desired dead standing trees, and improving stand spacing. Girdling should only be undertaken where the dying trees will not present a future hazard along trails and roads.

2. Coarse woody debris: These include large fallen trees generally greater than 14" in diameter, which host a variety of plant and insect life that contribute to habitat quality. No tally was taken of these features, but observations are that there is a limited amount of large dead wood on the forest floor. The amount of coarse woody debris can be increased by reserving more trees as described in item 1 above, or leaving some pulp tops behind during logging. A rule of thumb is to have at least 1 14" or larger diameter log per acre site.

3. Vernal pools, wetland inclusions, and springs: These sites are important to smaller wildlife including reptiles and amphibians, but also may provide watering opportunities for larger animals. Larger wetland areas, both forested and non-forest, were mapped and include in Area D (7+ acres) . No timbering operations will occur within these areas. Additional smaller wetland inclusions are also found in other areas and will be avoided during harvest operations.

4. Beaver Ponds – There is one significant beaver pond (Sock Pond) which borders the MLA land. These ponds provide extremely valuable habitat for fish, birds, mammals, reptiles and amphibians. Current beaver activity is evident along the shore of the ponds. Timber harvesting will have little or no effect on these features in the near future. At some time in the future, however, regeneration cutting adjacent to the pond may provide renewed young hardwood growth that is vital to beavers for food and for maintaining their infrastructure. The NH Wildlife Action plan map contained in the Appendix indicates that this pond and supporting landscape on MLA land receive the highest ranking for habitat in the local landscape.

5. Mast producing trees: Mast refers to the nuts, seeds, and fruits of woody plants that provide food for wildlife. Red oak and white pine are the most common mast producers on the property. Managing both for the production of large diameter sawtimber, will result in vigorous, large crowned trees that produce the heaviest seed crops. White oak is also common on the land, and although lower in timber value, its acorns are a preferred even more than the those of the red oaks. White oaks will be considered as crop trees regardless of timber quality and also encouraged to develop larger crowns.

6. Hemlock/softwood cover – Hemlock and mixed softwood stands provide winter cover for deer and moose, as well as habitat for bird species that nest in forest cover having dense canopies. Hemlock cover is abundant throughout the forest, representing about 31% of the forest cover. Harvesting prescriptions in the densest hemlock stands will maintain a 70% crown closure to help protect the quality of this wildlife habitat. Given the soil and stand composition, it is likely that hemlock will continue to regenerate and be a significant component in the forest cover.

7. Early successional forest and non-forest cover type – A majority of native New England species use young forest cover (early successional forest) and open non forest habitat at some time in their life cycle. The current forest cover has no significant amount openings that would be considered suitable for development of early successional habitat. As future recommendations for harvesting are developed, we can use nearly current aerial photography to assess the presence of heavy cutting on adjacent properties. It is often the case that this habitat element can be satisfied on adjoining unmanaged land.

**RECREATION & ESTHETICS**

The trails on the forest are highly valued and used frequently. They are also the avenues from which you obtain the majority of your esthetic experience. A map of the trails, created from a map provided by MLA, is included with this report. The trail data has been added to the MLA GIS project. With as intensive a network of trails as you have, and the challenging terrain for harvesting and extraction, it is inevitable that there will be intersection and overlaying of logging roads with the walking paths (see LIDAR Topography map in the Appendix). For the future , the following actions will help mitigate the conflict between these competing values.

1. Premark the trails with flagging so that they can be detected more easily when the timber marking is in progress.
2. Minimize the number of trail crossings.
3. Minimize felling of trees on the trails; remove slash and tops when feasible.
4. Create alternative paths where heavy logging use or residual slash is unavoidable
5. On all locations, felled tree tops and branches should be lopped to below 2 feet. Trees bent and leaning as a result of timber felling should also be cut off and lopped.
6. Mark timber and use directional felling so that during intermediate cutting residual stand damage is minimized. On regeneration sites, thoroughly cut all stems 2" and larger, with the exception of snags and other wildlife trees designated for retention.
7. Where feasible, layout and position regeneration cuts where trail vistas can be created from higher ground.
8. Occasionally leave groups of densely stocked trees to lessen the visual impact of the harvest.
9. In the landing area, dispose of log debris and any slash so as to minimize visual impact. Grade the landing surface after the harvest is completed.
10. When doing pre-commercial thinning, follow the same rules as for logging but with pedestrian safety foremost in planning and execution.
11. Use a harvesting schedule that treats a limited portion of the forest at any one time, with recovery periods of 5 to 10 years before additional harvesting is conducting in adjacent sections.

**WATER QUALITY, WETLANDS, & RIPARIAN ZONES**

The Mendum Pines Woodland has one first order stream which empties into the outlet below the Pond dam. In addition, there are roughly 5 acres of distinct wetland habitat both forested and non-forested. To help protect water quality, harvesting will be prohibited within the mapped wetlands (Area D). Along the first order stream, the '50% basal area within a 50 foot buffer' rule (RSA 279.6) will be observed. In all wetland and stream crossing situations, the logging installations and trail improvements have and will continue to follow the guide: Best Management Practices for Forestry: Protecting New Hampshire's Water Quality.

**CULTURAL & HISTORIC FEATURES**

Stone walls, found only in Area C, are the most evident historic feature observed on the property. In addition, there are several sites where granite was hand quarried, presumably for foundation stone. These features were mapped during the 2018 inventory. As with the recreational trails, these features

have and will be protected by harvest planning and layout. The objective will be to minimize felling trees across walls and to use existing openings for logging trails.

**FOREST HEALTH: INSECTS & DISEASES**

No significant forest insect or disease problems were observed during the inventory. Of greatest concern for the 2018-2033 planning period is likely to be the Hemlock Woolly Adelgid. This is a small invasive insect, introduced from Asia, and has been found in most southern NH towns. An infestation of the Adelgid can result in high hemlock mortality particularly in weaker, less vigorous trees. Fortunately, mortality may take 4 to 10 years, which can provide adequate time for salvage and sanitation harvesting. Keeping an eye out for the characteristic white downy growth on the underside of the hemlock needles, as well as dying trees, is the best way to prevent significant timber loss. Another invasive pest that is spreading rapidly through NH with more immediate lethal results is the Emerald Ash Borer. There is only a very small volume of white ash in total on the property Having a woodlot with a good landing and access system facilitates prompt reaction when an insect or disease problem occurs.

**FOREST HEALTH: INVASIVE & EXOTIC SPECIES**

No invasive or exotic plant species were observe during the 2018 inventory. It is possible, perhaps probable, that some invasive plants will be detected near the road frontage areas. Additional control options may be suggested if that occurs. Japanese Knotweed is spreading through NH like the plague, especially along road corridors. Members should keep an eye out for the characteristic deep green, rounding leaf plant having single stems with a bamboo appearance. It typically grows in dense clusters. Do NOT mow this plant. The slightest piece of the plant will clone and create a new plant when in contact with soil. Follow instructions for treating and eliminating this plant as per the reference attached.

**BIODIVERSITY: RARE & ENDANGERED SPECIES**

A review of the property using the NH Natural Heritage Inventory DataCheck tool, returned a 'Potential Impacts found' result. Although 4 species were identified in the NHNHI report, none have been found directly on the property, and all are associated with water and wetland habitat. In particular, the Blanding's Turtle is the most likely of the 4 species that would be of concern on the woodlands, as it will migrate long distances (up to 1 KM) between hibernation and nesting seasons. Avoiding harvesting in the wetlands area is important for protection of the turtle. Given the frequency of logging, they are likely to be at greater risk of being killed by car traffic if crossing Mendum's Landing Road. Keep an eye out for those little fella's in spring and early summer.

**BIODIVERSTIY: PLANT COMMUNITIES**

The same NH Natural Heritage Inventory report did not any specific plant community of concern on or near the property.

**LANDSCAPE CONSERVATION: ADJACENT PROTECTED PROPERTIES**

Mendum Pines Woodlands is contiguous with a number of smaller conservation easement and publically owned properties. Within reach of a three mile radius, there are over 5,400 acres of protected and publically owned lands. For future reference, the most likely opportunity for conservation collaboration in the form of creating larger contiguous conservation land and wildlife corridors lies to the east toward the Samuel A Tamposi Water Supply Reserve, owned by the Town of Barrington.

**REFERENCES**

Technical Guide to Forest Wildlife Habitat Management In New England. Richard M DeGraaf, Mariko Yamasaki, William B. Leak, Anna M. Lester. 2006 University of Vermont Press. http://www.wildlife.state.nh.us/Wildlife/Northeast_Hab_Mgt_Guide.htm

Best Management Practices for Forestry: Protecting New Hampshire's Water Quality. University of NH Cooperative Extension. http://extension.unh.edu/forestry/Docs/FormBMP.pdf

NH Natural Heritage Inventory. GIS data layers for New Hampshire NH
GRANIT. Provided on request. http://www.granit.sr.unh.edu
https://www2.des.state.nh.us/nhb_datacheck/
http://www.nhdfl.org/library/pdf/Natural%20Heritage/TrackingList-AnimalGeneral.pdf

Good Forestry in the Granite State: Recommended Voluntary Forest Management Practices for the State of New Hampshire. Second edition 2010. http://extension.unh.edu/goodforestry/index.htm
Copyright 2010 by the New Hampshire Department of Resources and Economic Development, Division of Forest and Lands, and UNH Cooperative Extension.

Coopers Rock Crop Tree Demonstration Area – 20 Year Results. Arlyn W. Perkey, Gary Miller, David L. Feicht. USDA Forest Service. General Technical Report NRS 83. 2011
www.nrs.fs.fed.us/pubs/.../gtr_nrs83.pdf

Insect Pest and Invasive Plant information links

https://extension.unh.edu/Hemlock-Woolly-Adelgid

https://nhbugs.org/emerald-ash-borer

http://www.invasivespeciesinfo.gov/plants/

https://www.invasivespeciesinfo.gov/plants/knotweed.shtml

PDF Blanding's Turtle - wildlife.state.nh.us

# AREA DESCRIPTIONS

## Mendum Pines Woodlands

This Section of the management plan contains descriptive information about each of the land areas that collectively make up a Compartment. Each Area was delimited based on key attributes which make it reasonable to treat that acreage as a management unit. The key attributes can be related to one or more of a variety of features from human defined land uses, to distinct or limiting natural features. Some examples are:

*Land Use Characteristics:* Timber management, Agriculture, Wildlife management, recreational use, reserve or buffer lands, historic and esthetic sites.

*Natural Features:* Soil types, terrain, accessibility, or biological features, such as plant communities, wetlands, water bodies, and habitat types.

The attributes are not necessarily exclusive, and are more frequently interrelated than discreet features. The size of the areas is also dependent on the key attributes. Generally the higher the value or importance of the attribute, the smaller the area can potentially be. For general timber management purposes the upper size is limited by what is a practical planning unit as determined by operations layout/timing and by the forester's ability to manage the area within a single operating interval. In simple terms the Area unit defines the "where" in the standard " where, what, how much, and when" management query.

# Compartment 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| *Area Id* | ***A*** | *Total Acres* | 46.2 | *Timber Mgmnt Acres* | 46.2 |

*Land Use* Forest, Pine/Hardwood

*Soil Type(s)* 111D, 43D

*Mgmnt Priorities* Esthetics & Recreation, Wildlife

*Restrictions*

*Timber Management Data*

*Size Class* Pole Sawlog

*Crop Tree Stocking* Excellent

| % Seedling | Sapling | Pole | Sawlog | Lg Dia 26+ |
|---|---|---|---|---|
| **0%** | **1%** | **20%** | **79%** | **0%** |

| | | | | | |
|---|---|---|---|---|---|
| *Total Basal Area* | 135 | *Ba Ags* 89 | *Ba Ugs* 42 | *Mean Stand Diameter* | 9.5 |
| *Volume / Acre Mbf* | 10,328 | *Volume/acres Cords* | 19.0 | *Trees/acre* | 220.6 |

| *Major Tree Species* | *Ba Ft2* | *% Total Ba* |
|---|---|---|
| RED OAK | 49 | 37% |
| WHITE PINE | 32 | 23% |
| HEMLOCK | 29 | 22% |
| RED MAPLE | 11 | 8% |
| ASPEN | 4 | 3% |

*Narrative* This forested are has a predominantly mixed, pine hardwood cover type, but with a significant hemlock component. Stocking of high quality sawtimber trees is very good, and volumes per acre are very high, despite that the area was harvested in 2017. That treatment was predominantly an intermediate harvest, which created some openings large enough for establishment of regeneration. This area should be inspected in 2023 to evaluated regeneration condition and identify opportunities for silvicultural investment and or release by overstory harvesting. Commercial harvesting is not recommended for a period of at least 10 years.

*Recommended Treatment(s)* No treatments are recommended at this time.

| Area Id | **B** | Total Acres | 41.1 | Timber Mgmnt Acres | 33.0 |
|---|---|---|---|---|---|

Land Use: Forest, Hemlock/Hardwood

Soil Type(s): 43D, 140C

Mgmnt Priorities: Wildlife, Esthetics & Recreation

Restrictions:

Timber Management Data

Size Class: Pole Sawlog

Crop Tree Stocking: Excellent

| % Seedling | Sapling | Pole | Sawlog | Lg Dia 26+ |
|---|---|---|---|---|
| **2%** | **5%** | **22%** | **70%** | **0%** |

| Total Basal Area | 142 | Ba Ags | 101 | Ba Ugs | 33 | Mean Stand Diameter | 10.0 |
|---|---|---|---|---|---|---|---|
| Volume / Acre Mbf | 11,900 | Volume/acres Cords | 18.3 | | | Trees/acre | 206.1 |

| Major Tree Species | Ba Ft2 | % Total Ba |
|---|---|---|
| HEMLOCK | 53 | 37% |
| WHITE PINE | 48 | 34% |
| RED OAK | 19 | 13% |
| RED MAPLE | 8 | 6% |
| WHITE OAK | 6 | 4% |

Narrative: This forested area has a mixture of hemlock-hardwood and white pine cover types. Stoicking of good quality sawtimber trees is excellent, and volumes per acre are exceptionally high given that it was last harvested in 2017. A small percentage of the area was opened adequately to promote regeneration, and most clear spots are within likely future logging equipment trails. Operability in the northern end of this area is complicated by steep terrain, large rocks and wetlands. The southern end of the area has wetland inclusions that also limit operability. A 20% reduction in timber management acreage is estimated as a result ot these impediments. i An inspection of regeneration conditions is recommended for 2023. Harvesting is not recommended before 2028 and will depend on findings from the regeneration survey.

Recommended Treatment(s): No treatments are recommended at this time.

| Area Id | C | Total Acres | 33.4 | Timber Mgmnt Acres | 33.4 |
|---|---|---|---|---|---|

Land Use: Forest, Hemlock/Hardwood

Soil Type(s): 140C, 43D

Mgmnt Priorities: Wildlife, Esthetics & Recreation

Restrictions:

Timber Management Data

Size Class: Pole Sawlog

Crop Tree Stocking: Good

| % Seedling | Sapling | Pole | Sawlog | Lg Dia 26+ |
|---|---|---|---|---|
| 0% | 0% | 0% | 0% | 0% |

| Total Basal Area | Ba Ags | Ba Ugs | Mean Stand Diameter |
|---|---|---|---|
| 154 | 92 | 57 | 7.9 |

| Volume / Acre Mbf | Volume/acres Cords | Trees/acre |
|---|---|---|
| 7,736 | 21.2 | 350.7 |

| Major Tree Species | Ba Ft2 | % Total Ba |
|---|---|---|
| HEMLOCK | 52 | 34% |
| SWEET BIRCH (BLACK) | 28 | 18% |
| RED MAPLE | 23 | 15% |
| WHITE PINE | 22 | 14% |
| RED OAK | 15 | 10% |

Narrative: This forested area has a predominantly hemlock hardwood cover type, with a good white pinc component to its south end. The lower slopes of this area were harvested in 2017 and have opening with the best potential for successfully establishing mixed pine hemlock regeneration. Even with these slightly larger canopy gaps, the average basal area of this site is still over 150 ft2 per acre. A regeneration survey is recommended for 2023, but no harvesting is recommended until at least 2028.

Recommended Treatment(s): No treatments are recommended at this time.

| Area Id | **D** | Total Acres | 7.2 | Timber Mgmnt Acres | |
|---|---|---|---|---|---|

Land Use: Unproductive, Wetlands

Soil Type(s): 547B,

Mgmnt Priorities: Wildlife - Wetlands, Esthetics & Recreation

Restrictions:

Timber Management Data: Not applicable

Size Class: N/A

Crop Tree Stocking: N/A

| % Seedling | Sapling | Pole | Sawlog | Lg Dia 26+ |
|---|---|---|---|---|
| 0% | 0% | 0% | 0% | 0% |

| Total Basal Area | Ba Ags | Ba Ugs | Mean Stand Diameter |
|---|---|---|---|
| Volume / Acre Mbf | Volume/acres Cords | | Trees/acre |
| Major Tree Species | | Ba Ft2 | % Total Ba |

Narrative: This area consists of five non-contiguous wetland and forested wetland sites. The sites are variable including small open water, shrub wetland, heavily forested wetland. and gforested stream side buffer. The are treated in common because active management, including tree cutting and equipment operation,, should not occur within these sites.

Recommended Treatment(s): No treatments are recommended at this time.

# SOILS REPORT
# Mendum Pines Woodlands

The following soil types are found on this property:

## *GROUP IB SOILS IN STRAFFORD COUNTY,NH*

The soils in this group are generally sandy or loamy over sandy textures and slightly less fertile than those in group IA. These soils are moderately well and well drained. Soil moisture is adequate for good tree growth, but may not be quite as abundant as in group IA soils. Soils in this group have successional trends toward a climax of tolerant hardwoods, predominantly beech. Successional stands, especially those which are heavily cutover, are commonly composed of a variety of hardwood species such as red maple, aspen, paper birch, yellow birch, sugar maple, and beech, in combinations with red spruce, balsam fir, hemlock, and white pine. Hardwood competition is moderate to severe on these soils. Successful softwood regeneration is dependent upon hardwood control.

*111D GsD* Gloucester very stony fine sandy loam, 15 to 25 percent slopes

| | | | |
|---|---|---|---|
| DRAINCLASS | Somewhat excessively | HYDROLGRP | A |
| SHWT | - | BEDROCK | From >60 to >60in. |

*140C 140C* Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, very stony

| | | | |
|---|---|---|---|
| DRAINCLASS | Well drained | HYDROLGRP | B |
| SHWT | - | BEDROCK | From 10 to >60in. |

*43D 43D* Canton gravelly fine sandy loam, 15 to 25 percent slopes, very stony

| | | | |
|---|---|---|---|
| DRAINCLASS | Well drained | HYDROLGRP | B |
| SHWT | - | BEDROCK | From >60 to >60in. |

## *GROUP IIB SOILS IN ROCKINGHAM COUNTY,NH*

The soils in this group are poorly drained. The seasonal high water table is generally within 12 inches of the surface. This high water table greatly restricts rooting depth, but provides virtually unlimited moisture for tree growth. Productivity of these poorly drained soils is generally less than soils in the other groups. Successional trends are toward climax stands of shade tolerant hemlock. Hemlock, red maple and white maple are common on these soils. Due to poor soil drainage, forest management activities are limited. Severe windthrow hazard limits partial cutting, frost action threatens survival of planted seedlings and harvesting is usually restricted to dry periods or when the ground is frozen.

*547B 547B* Walpole very fine sandy loam, 3 to 8 percent slopes, very stony

| | | | | | |
|---|---|---|---|---|---|
| DRAINCLASS | Poorly drained | | | HYDROLGRP | C |
| SHWT | 0 | - | 12 | BEDROCK | From >60 to >60in. |

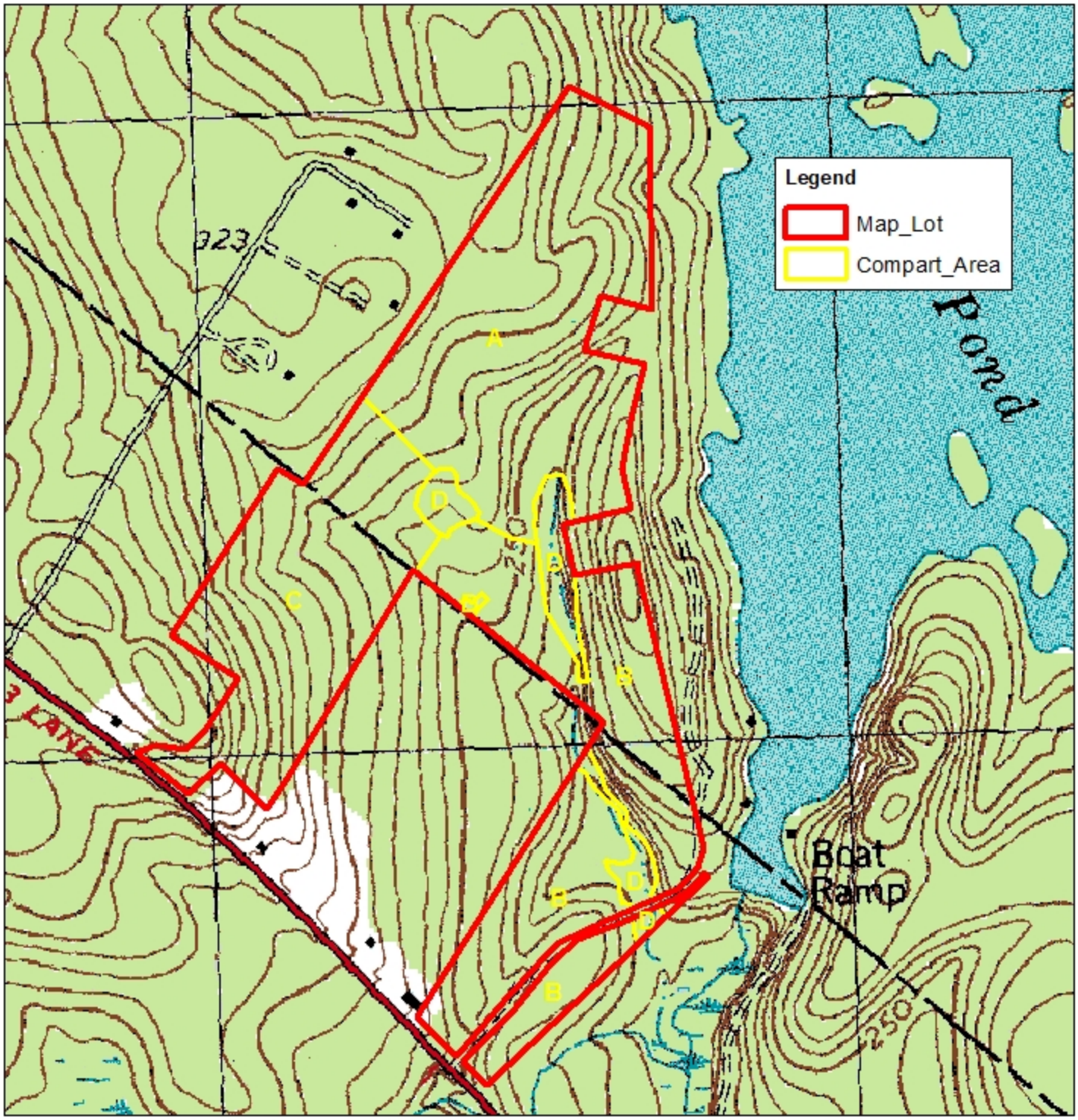
# Recommended Treatment Report
# Mendum Pines Woodlands
## 2019 - 2033

By year, these are the recommended activities, with their estimated cash flow:

| Comp | Area | Acres | Treatment Type, subtype<br>Description | Net Cash Flow |
|---|---|---|---|---|
| ***2019*** | | | | |
| 1 | All | | Boundary , Blaze,paint Recommended<br>Repaint and add blazing as needed on boundaries. Last completed in 2004. $750 per mile estimate. 2.8 miles. Previous painting work was done by MLA members. | $2,100 |
| ***2023*** | | | | |
| 1 | All | | Inspection , Post Treatment Recommended<br>Post 2017 harvest regeneration survey. If pine / oak regeneration is strong and vigorous, Prioritize cutting areas and present harvest proposal for 2027 -2028. Update LB recommendations. | -$600 |
| 1 | All | | Access , Road construction Recommended<br>Evaluate access improvement on Route 4 frontage. Obtain initial estimate if harvest plan is scheduled for Area C for 2027 or 2028 | |
| 1 | All | | Inspection , Post Treatment Recommended<br>As second part of regeneration survey, assess need for silvicultural investment in seedling sapling release. If treatment is warranted, contact NRCS for cost share funding. NH 666 Timber Stand Improvement practice | |
| ***2033*** | | | | |
| All | All | | Management Plan , Update Recommended<br>Update existing NEFCo for 15 year horizon | |
| 1 | All | | Harvest , Budget Estimate (TBDetermined) Recommended<br>If harvesting has not begun on 2027-2028 timetable, schedule normal 15 year re-entry, Prioritize Areas and update LB treatment schedule. | |

Estimated net cash flow from all compartments on this forest is: $1500

*This is a proposed plan of work and subject to change based on the owner's needs and goals.  Timing of activites may be changed based on market conditions or other influences.  Dollar figures are  based on "today's dollars" and do not reflect changes due to inflation or market fluctuations.  All figures are estimates, actual costs and income are subject to change based on detailed estimates, service work orders, and contracts.*




0 250 500 1,000 Feet

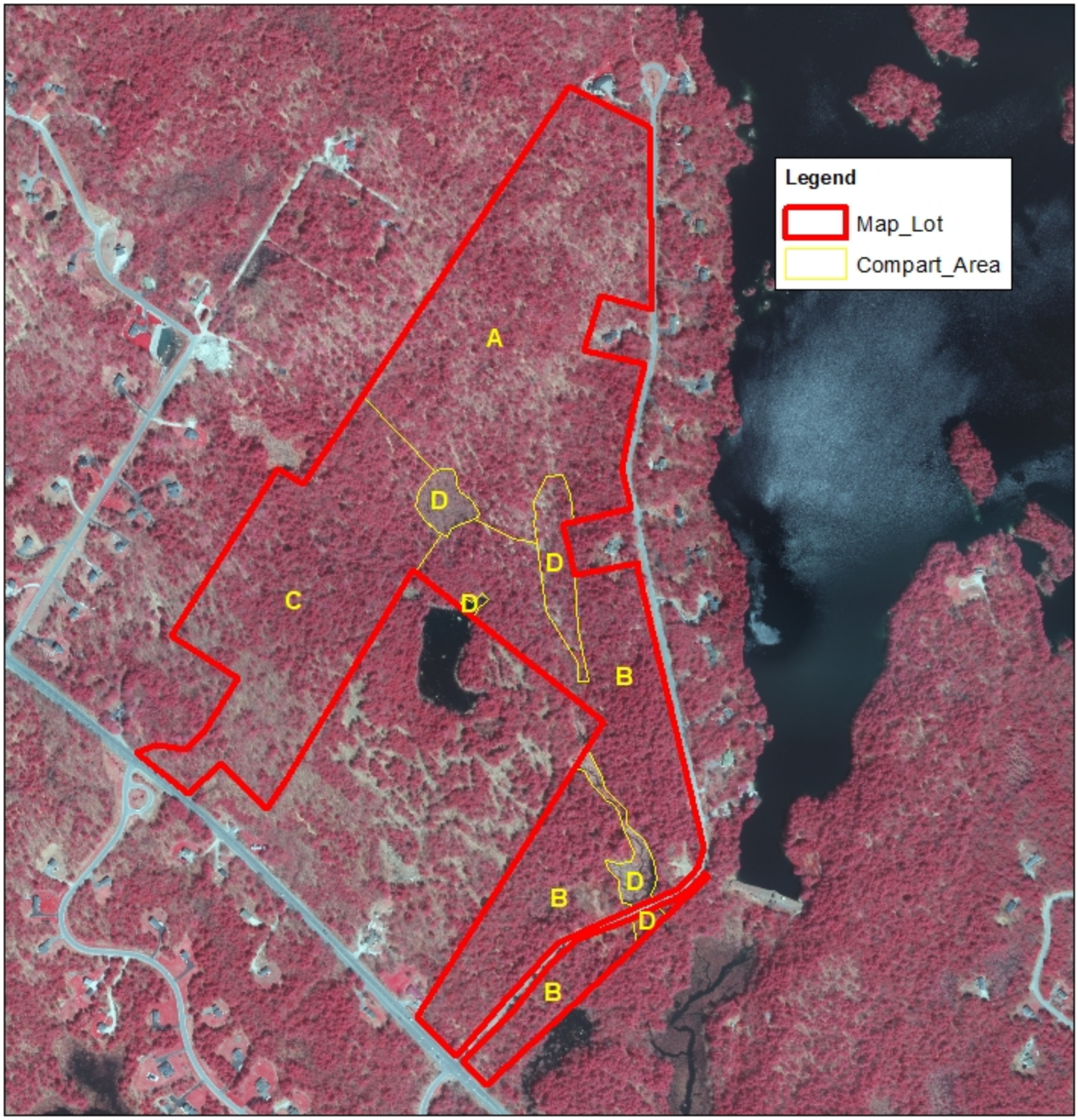
N

Mendum Pines Woodlands
Land of Mendum's Landing Association, Inc.
Barrington/Nottingham, NH
Map 260 & 268 /Map 5

Map Drawn by Peter Farrell, NHLF #85
July 2018. This is not a survey.
Sources - Tax maps, 2003 FM Plan,

# USGS Topographic Map

New England
Forestry Consultants, Inc.
www.nhforestry.com




Mendum Pines Woodlands
Land of Mendum's Landing Association, Inc.
Barrington/Nottingham, NH
Map 260 & 268 /Map 5

Map Drawn by Peter Farrell, NHLF #85
July 2018. This is not a survey.
Sources - Tax maps, 2003 FM Plan,

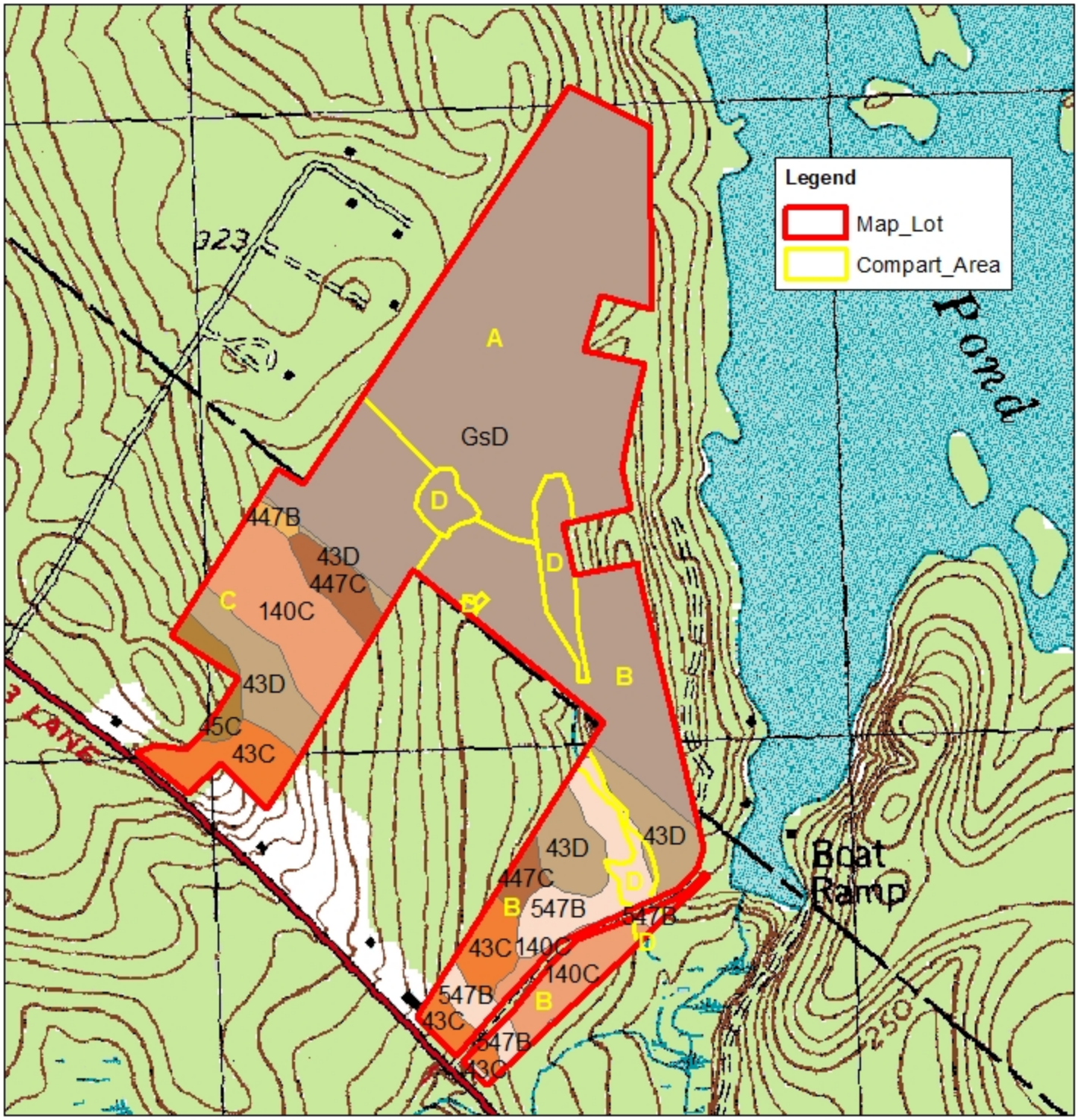
0 250 500 1,000 Feet

N

# Forest Areas Map

2015 Color Infra Red Photography

New England
Forestry Consultants, Inc.
www.nefc.com




0 250 500 1,000 Feet

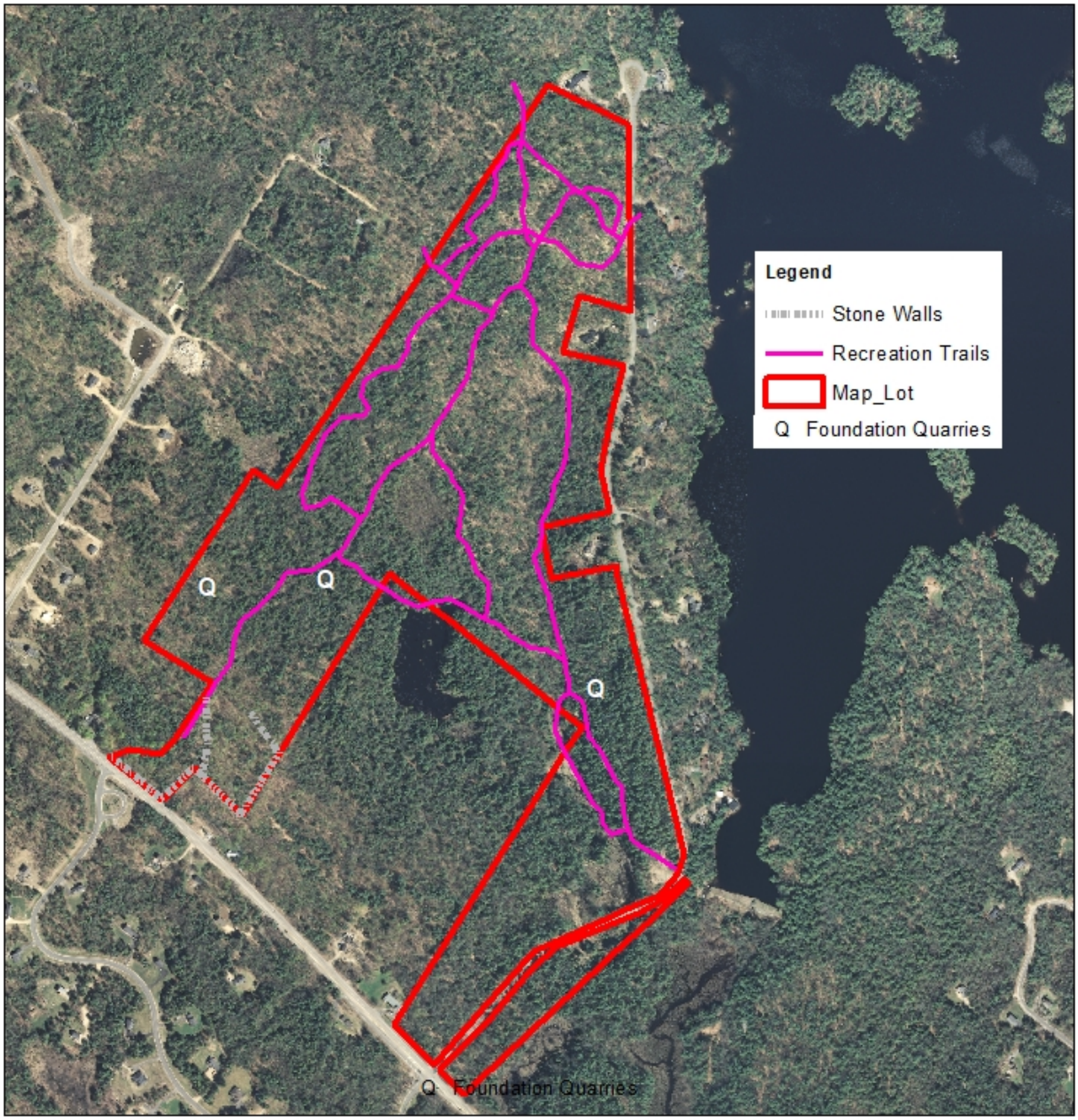
N

Mendum Pines Woodlands
Land of Mendum's Landing Association, Inc.
Barrington/Nottingham, NH
Map 260 & 268 /Map 5

Map Drawn by Peter Farrell, NHLF #85
July 2018. This is not a survey.
Sources - Tax maps, 2003 FM Plan,

# Strafford/Rockingham County Soils Map

New England Forestry Consultants, Inc.
www.nhforestry.com




Mendum Pines Woodlands
Land of Mendum's Landing Association, Inc.
Barrington/Nottingham, NH
Map 260 & 268 /Map 5

Map Drawn by Peter Farrell, NHLF #85
July 2018. This is not a survey.
Sources - Tax maps, 2003 FM Plan,

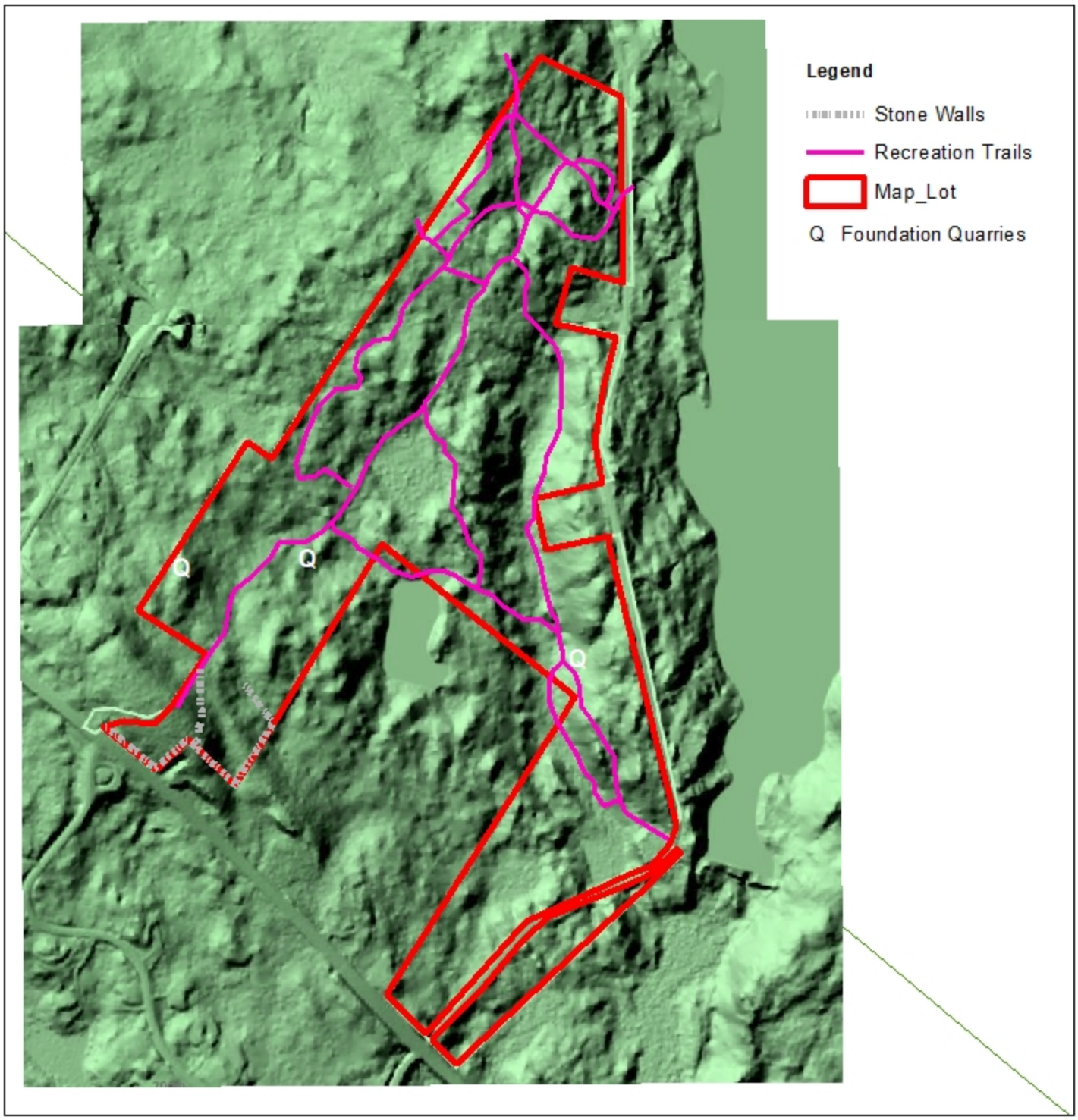
0 250 500 1,000 Feet

N

# Recreation Trails & Cultural Features

Trail map source MLA

New England Forestry Consultants, Inc.
www.nefc.com




Mendum Pines Woodlands
Land of Mendum's Landing Association, Inc.
Barrington/Nottingham, NH
Map 260 & 268 /Map 5

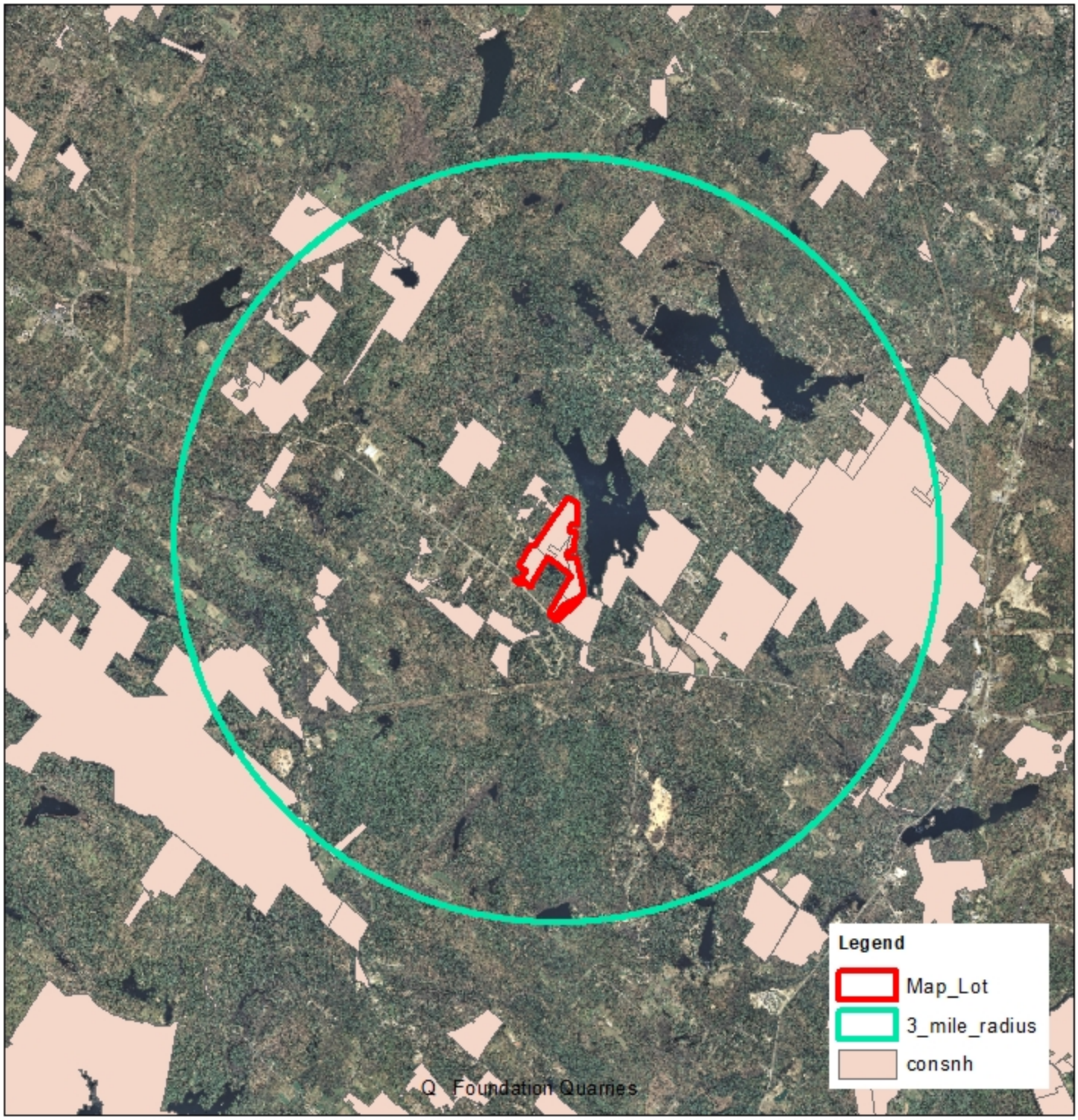
Map Drawn by Peter Farrell, NHLF #85
July 2018. This is not a survey.
Sources - Tax maps, 2003 FM Plan,

0 250 500 1,000 Feet

N

LIDAR Topography
granit.unh.edu

New England
Forestry Consultants, Inc.
www.nhforestry.com




Mendum Pines Woodlands
Land of Mendum's Landing Association, Inc.
Barrington/Nottingham, NH
Map 260 & 268 /Map 5

Map Drawn by Peter Farrell, NHLF #85
July 2018. This is not a survey.
Sources - Tax maps, 2003 FM Plan,

0 2,0504,100 8,200 Feet

N

Conservation Landscape
3 Mile Radius

New England
Forestry Consultants, Inc.
www.nhforestry.com

# Memo

NH Natural Heritage Bureau
NHB Datacheck Results Letter

**To:** Peter Farrell
PO Box 111
Alton, NH 03809

**From:** Amy Lamb, NH Natural Heritage Bureau
**Date:** 8/3/2018 (valid for one year from this date)
**Re:** Review by NH Natural Heritage Bureau
NHB File ID: NHB18-2424 Town: Nottingham, Barrington Location: Tax Maps: Map 5 Lot 7.0-7.5 Map 260 Lot 53

Description: Forest management plan
**cc**: Kim Tuttle

You recently submitted a Wetlands Minimum Impact Forestry Notification that included one or more crossings or bridges that were mapped in the near vicinity of the rare species and/or exemplary natural communities listed below. We are providing some recommendations that you could take into account when conducting your timber harvest. **This letter should NOT be sent to the town office or the Department of Environmental Services**: it is only for your consideration. We welcome any questions you have, and you can contact us at (603) 271-2214 or Amy.Lamb@dred.nh.gov.

**Comments: Contact NH Fish & Game for wildlife recommendations.**

| Vertebrate species | State[1] | Federal | Notes |
|---|---|---|---|
| American Eel (*Anguilla rostrata*) | SC | -- | Contact the NH Fish & Game Dept (see below). |
| Blanding's Turtle (*Emydoidea blandingii*) | E | -- | Contact the NH Fish & Game Dept (see below). |
| Common Loon (*Gavia immer*) | T | -- | Contact the NH Fish & Game Dept (see below). |
| Spotted Turtle (*Clemmys guttata*) | T | -- | Contact the NH Fish & Game Dept (see below). |

[1]Codes: "E" = Endangered, "T" = Threatened, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

*Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.*

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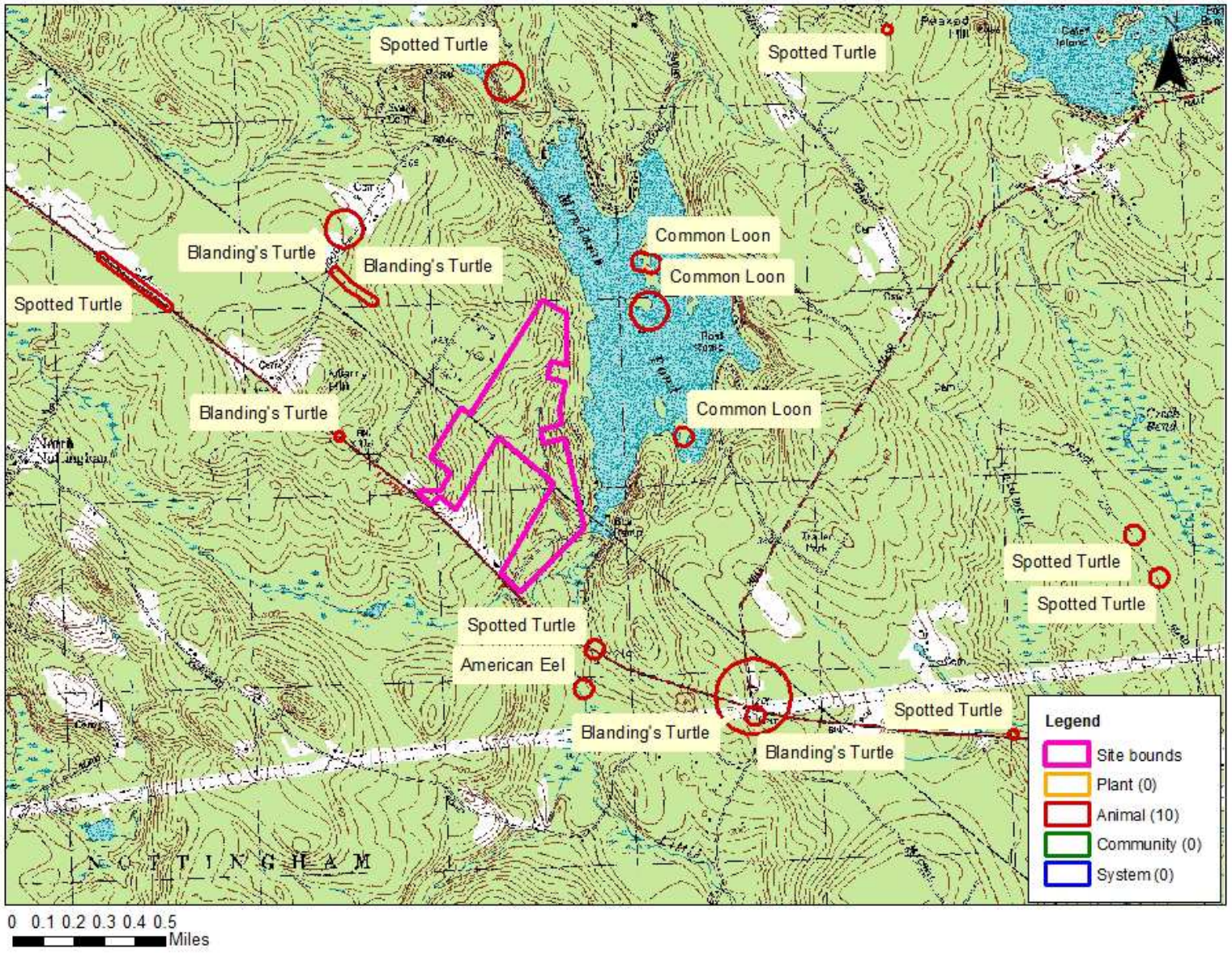
A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

# NHB18-2424


Spotted Turtle
Spotted Turtle
Blanding's Turtle
Blanding's Turtle
Common Loon
Common Loon
Spotted Turtle
Blanding's Turtle
Common Loon
Spotted Turtle
Spotted Turtle
Spotted Turtle
American Eel
Spotted Turtle
Blanding's Turtle
Blanding's Turtle
Legend
Site bounds
Plant (0)
Animal (10)
Community (0)
System (0)
0 0.1 0.2 0.3 0.4 0.5
Miles

# New Hampshire Natural Heritage Bureau - Animal Record

## American Eel (*Anguilla rostrata*)

| Legal Status | | Conservation Status | |
|---|---|---|---|
| Federal: | Not listed | Global: | Apparently secure but with cause for concern |
| State: | Special Concern | State: | Rare or uncommon |

**Description at this Location**

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2010: Area 13347: Not enumerated.
General Area: 2010: Area 13347: Beaver activity; marshy open area at end of site next to dam. When the stream enters the woods it gets more shallow and rocky; evidence of flooding (sand deposits, erosion).
General Comments:
Management Comments:

**Location**

Survey Site Name: Little River - Lamprey River
Managed By: Nottingham04-099

County: Rockingham
Town(s): Nottingham
Size: 1.9 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2010: Little River

**Dates documented**

| First reported: | 2010-07-22 | Last reported: | 2010-07-22 |
|---|---|---|---|

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

# New Hampshire Natural Heritage Bureau - Animal Record

## Blanding's Turtle (*Emydoidea blandingii*)

| Legal Status | | Conservation Status | |
|---|---|---|---|
| Federal: | Not listed | Global: | Apparently secure but with cause for concern |
| State: | Listed Endangered | State: | Critically imperiled due to rarity or vulnerability |

**Description at this Location**

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank:

Detailed Description: Area 11598: 1 adult seen.
General Area: 2008: Area 11598: Crossing road.
General Comments:
Management Comments:

**Location**

Survey Site Name: Swains Lake
Managed By:

County: Strafford
Town(s): Barrington
Size: 3.6 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2008: Area 11598: Traveling north across St. Matthews Drive, about 200 meters from Wood Road.

**Dates documented**

First reported: 2008-06-10 Last reported: 2008-06-10

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

# New Hampshire Natural Heritage Bureau - Animal Record

## Blanding's Turtle (*Emydoidea blandingii*)

| Legal Status | | Conservation Status | |
|---|---|---|---|
| Federal: | Not listed | Global: | Apparently secure but with cause for concern |
| State: | Listed Endangered | State: | Critically imperiled due to rarity or vulnerability |

**Description at this Location**

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2006: Area 11702: 1 adult seen.
General Area:
General Comments:
Management Comments:

**Location**

Survey Site Name: Swains Lake
Managed By: NRCS_WRP_Haley

County: Rockingham
Town(s): Nottingham
Size: 30.8 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2006: Area 11702: Mitchell Road near Rte. 125 in Nottingham.

**Dates documented**

First reported: 2006-07-20 Last reported: 2006-07-20

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

# New Hampshire Natural Heritage Bureau - Animal Record

## Blanding's Turtle (*Emydoidea blandingii*)

| Legal Status | | Conservation Status | |
|---|---|---|---|
| Federal: | Not listed | Global: | Apparently secure but with cause for concern |
| State: | Listed Endangered | State: | Critically imperiled due to rarity or vulnerability |

**Description at this Location**

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2008: Area 11602: 1 adult female seen with eggs.
General Area: 2008: Area 11602: Nesting in garden.
General Comments:
Management Comments:

**Location**

Survey Site Name: Swains Lake
Managed By: Newhall Easement

County: Strafford
Town(s): Barrington
Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2008: Area 11602: 21 Wood Road, Barrington.

**Dates documented**

First reported: 2008-06-10 Last reported: 2008-06-10

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

# New Hampshire Natural Heritage Bureau - Animal Record

## Blanding's Turtle (*Emydoidea blandingii*)

| Legal Status | | Conservation Status | |
|---|---|---|---|
| Federal: | Not listed | Global: | Apparently secure but with cause for concern |
| State: | Listed Endangered | State: | Critically imperiled due to rarity or vulnerability |

**Description at this Location**

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2011: Area 12880: 1 adult observed.
General Area: 2011: Area 12880: On road beneath power line. Power line corridor is sandy with shrubby vegetation.
General Comments:
Management Comments:

**Location**

Survey Site Name: Nottingham Lake
Managed By:

County: Rockingham
Town(s): Nottingham
Size: 1.9 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2011: Area 12880: Smoke St. at power line crossing, about 20 feet south of Route 4.

**Dates documented**

First reported: 2011-06-02 Last reported: 2011-06-02

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

# New Hampshire Natural Heritage Bureau - Animal Record

## Blanding's Turtle (*Emydoidea blandingii*)

| Legal Status | | Conservation Status | |
|---|---|---|---|
| Federal: | Not listed | Global: | Apparently secure but with cause for concern |
| State: | Listed Endangered | State: | Critically imperiled due to rarity or vulnerability |

**Description at this Location**

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2014: Area 13926: 1 adult female observed.
General Area: 2014: Area 13926: Roadside. Immediate habitat was man-made, but surrounding forest was typical of the area.
General Comments:
Management Comments:

**Location**

Survey Site Name: Swains Lake
Managed By:

County: Rockingham
Town(s): Nottingham
Size: .4 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2014: Area 13926: Route 4 in Nottingham (43.16762, -71.08479).

**Dates documented**

| First reported: | 2014-07-17 | Last reported: | 2014-07-17 |
|---|---|---|---|

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# New Hampshire Natural Heritage Bureau - Animal Record

## Common Loon (*Gavia immer*)

| Legal Status | | Conservation Status | |
|---|---|---|---|
| Federal: | Not listed | Global: | Demonstrably widespread, abundant, and secure |
| State: | Listed Threatened | State: | Not ranked (need more information) |

**Description at this Location**

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2017: 1 pair, no nest.<br />2016: 1 pair, no nest.<br />2015: Nest 4: 1 chick hatched, 1 chick survived.<br />2014: 1 pair, no nest.<br />2013: 1 pair, no nest.<br />2012: Nest 4: 1 chick hatched, 1 chick survived.<br />2011: Nest location unknown: 2 chicks hatched, 1 chick survived.<br />2010: Nest 4: Nest and eggs present, no chicks hatched.<br />2009: Nest location unknown: 1 chick hatched, 1 chick survived.<br />2008: Nest 3: 2 chicks hatched, 2 chicks survived.<br />2007: Nest 2: 1 chick hatched, 1 chick survived.<br />2006: Nest 2: pair, nest present, no chicks hatched.<br />2005: Nest 1: pair, nest and eggs.<br />2004: Nest 1: pair, 2 hatched and survived.<br />2003: Nest 1: pair, 1 hatched and survived.<br />2002: Nest 1: 3 adults, 1 hatched, 0 survived.<br />2001: Nest 1: pair, 2 hatched, 1 survived.<br />2000: Nest 1: pair, 1 hatched, 0 survived.
General Area:
General Comments: LPC Territory NHT0068.
Management Comments:

**Location**

Survey Site Name: Mendums Pond
Managed By: UNH - Mendums Pond Recreation Area/McDan

County: Strafford
Town(s): Barrington
Size: 12.8 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions:

**Dates documented**

First reported: 2000-05-17 Last reported: 2015

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# New Hampshire Natural Heritage Bureau - Animal Record

## Spotted Turtle (*Clemmys guttata*)

| Legal Status | | Conservation Status | |
|---|---|---|---|
| Federal: | Not listed | Global: | Demonstrably widespread, abundant, and secure |
| State: | Listed Threatened | State: | Imperiled due to rarity or vulnerability |

**Description at this Location**

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank:

Detailed Description: 2014: Area 13639: 1 adult observed, sex unknown.<br />2000: Area 558: 1 adult, sex unknown. Captured in baited funnel trap.
General Area: 2014: Area 13639: Backyard of residence.<br />2000: Area 558: Freshwater: pond.
General Comments: 2000: Area 558: Captured in SE portion of Round pond where meets stream connecting Round Pond and Mendums Pond.
Management Comments:

**Location**

Survey Site Name: Round Pond
Managed By:

County: Strafford
Town(s): Barrington
Size: 8.1 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2014: Area 13639: 45 Shady Lane, Barrington.<br />2000: Area 558: Southeast section of Round Pond (where meets stream connecting Round Pond and Mendums Pond). Round Pond is off Wood Road.

**Dates documented**

First reported: 2000-06-01 Last reported: 2014-05-29

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

# New Hampshire Natural Heritage Bureau - Animal Record

## Spotted Turtle (*Clemmys guttata*)

| **Legal Status** | | **Conservation Status** | |
|---|---|---|---|
| Federal: | Not listed | Global: | Demonstrably widespread, abundant, and secure |
| State: | Listed Threatened | State: | Imperiled due to rarity or vulnerability |

**Description at this Location**

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank:

Detailed Description: 2007: Area 11750: 1 adult female seen.
General Area:
General Comments:
Management Comments:

**Location**

Survey Site Name: Rte. 4, Nottingham
Managed By:

County: Rockingham
Town(s): Nottingham
Size: 5.8 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2007: Area 11750: On Route 4 near Lincoln Drive.

**Dates documented**

First reported: 2007-06-23 Last reported: 2007-06-23

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

# New Hampshire Natural Heritage Bureau - Animal Record

## Spotted Turtle (*Clemmys guttata*)

| **Legal Status** | | **Conservation Status** | |
|---|---|---|---|
| Federal: | Not listed | Global: | Demonstrably widespread, abundant, and secure |
| State: | Listed Threatened | State: | Imperiled due to rarity or vulnerability |

**Description at this Location**

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2014: Area 14130: 1 adult observed, sex unknown.<br />2010: Area 12786: 1 adult observed, dead on road.<br />2009: Area 12331: 1 female observed, dead on road. Area 12407: 1 observed.

General Area: 2014: Area 14130: Mixed forest near waterbody.<br />2010: Area 12786: Uplands with mixed forest around an emergent marsh /stream corrodor along busy Rte. 4.<br />2009: Area 12331: Roadside.

General Comments:
Management Comments:

**Location**

Survey Site Name: Caldwell Brook
Managed By: Samuel A Tamposi Water Supply Reserve

County: Strafford
Town(s): Barrington
Size: 6.2 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2014: Area 14130: [Tamposi Conservation Land, Barrington].<br />2010: Area 12786: Rte. 4 at crossing of Little River.<br />2009: Area 12331: Rte. 4 in Barrington (N 43.15318 / W 71.04099). Area 12407: (43 9'38.22 N / 71 1'53.05 W).

**Dates documented**

| First reported: | 2009-05-08 | Last reported: | 2014-07-01 |
|---|---|---|---|

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.