Forest Stewardship Plan

prepared for

Picnic Rock Farm

property of

Ward M. Bird

119 +/- Acres

Route 3 – Daniel Webster Highway

Map S18 Lot 41
Map U1 Lot 1R
Map S19 Lot 64

Meredith, Belknap Co., NH

Ward M. Bird
85 Daniel Webster Hwy
Meredith, NH 03253

August 2022

Prepared by:
Timothy R. Nolin, Forester
NH License #356

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Timothy R. Nolin – Forest Land Improvement
65 Walker Hill Rd., Ossipee, NH 03864
603-651-9711
forestlandimprovement.com

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1. BACKGROUND

INTRODUCTION

This Forest Stewardship Plan is being developed at the request of the landowner. It is designed to document the existing natural resources and incorporate the landowner's specific ownership objectives in order to formulate a detailed stewardship program for the long-term management of the property. Additionally, it is being written to meet the standards of the Conservation Easement held by the Town of Meredith, the Natural Resource Conservation Service's EQIP program, the National Tree Farm Program, NH Current Use Land Stewardship Program and will qualify the property for funding under the NH Fish and Game Department's Small Grants Program.

GOALS AND OBJECTIVES

Specific to the property, the landowner has identified the following stewardship objectives:

- The sustainable production of commercial forest products.
- Improve management access.
- Combat and control invasive species.
- Protect and enhance the aesthetic values and scenic beauty of the property.
- Preserve the cultural resources.
- Protect the wetland and water resources on the property.
- Expand the capacity for maple sugar production.
- Enhance wildlife habitat.

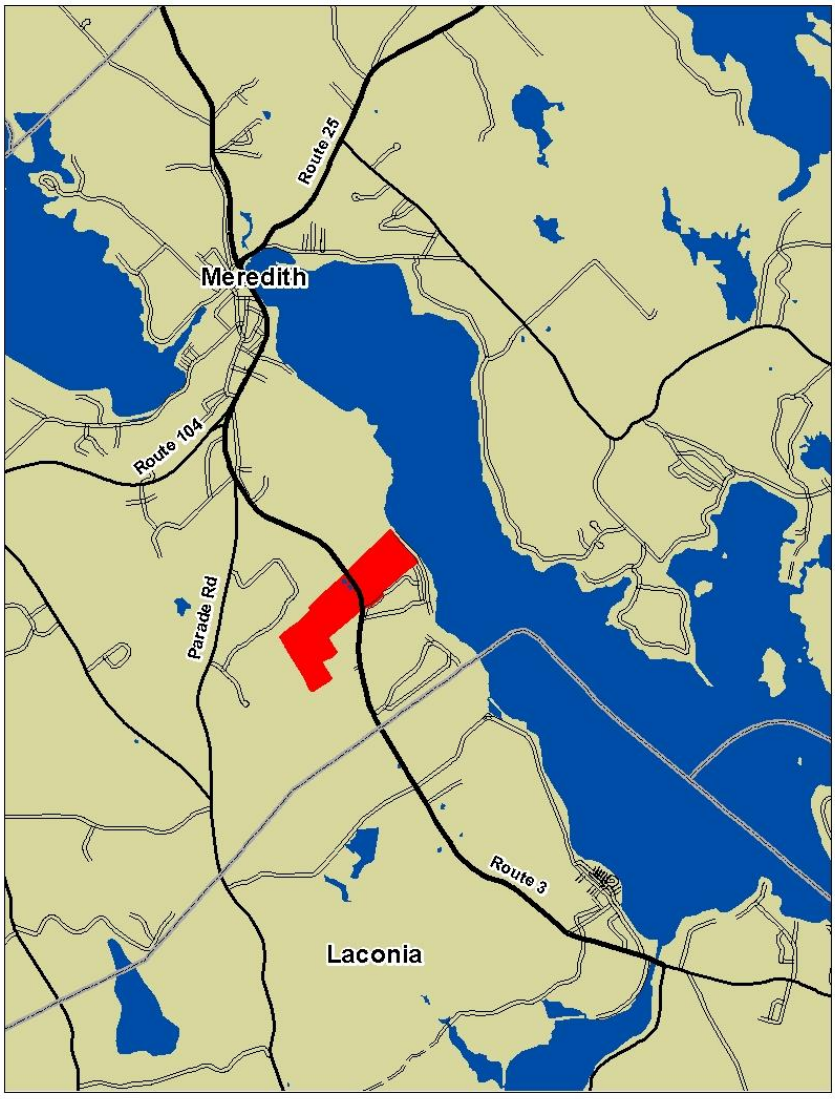
2. WOODLOT DESCRIPTION

LOCATION – DESCRIPTION

Picnic Rock Farm is located on both sides of Route 3 – Daniel Webster Highway in the Town of Meredith, NH., approximately 1 mile southeast of the intersection with Route 106. The Town of Meredith identifies the property as three separate lots of record, as detailed below.

Map & Lot #	Assessed Acreage
S18 – Lot 41	44.75 Ac
U01 – Lot 1R	1.66 Ac
S19 – Lot 64	72.91 Ac

The Conservation Easement held by the Town of Meredith is recorded at the Belknap County Registry, Book 2059/Page 599. The detailed survey of the property created as part of the Easement process is recorded at the Belknap County Registry, Plan Drawer L-48, Plans 59 & 60.



2. WOODLOT DESCRIPTION

BOUNDARY LINES

The boundaries of the property are well-described on the two survey maps produced as part of the Easement process by Associated Surveyors in 2003. These thoroughly researched plans identify and describe all segments of the boundaries using magnetic bearings and distance measurements to the hundredth of a foot. Many segments of boundary run along the courses of old stone walls.

As part of the Town of Meredith's Easement Stewardship Plan, developed 6/30/2004, they state that "At least once yearly, when deciduous trees are not in leaf, Grantee (Town of Meredith) shall walk the bounds of the forestlands. Boundary blazes shall be freshened when necessary." During the field work for this plan, fresh paint was observed on many sections of boundary line.

2. WOODLOT DESCRIPTION

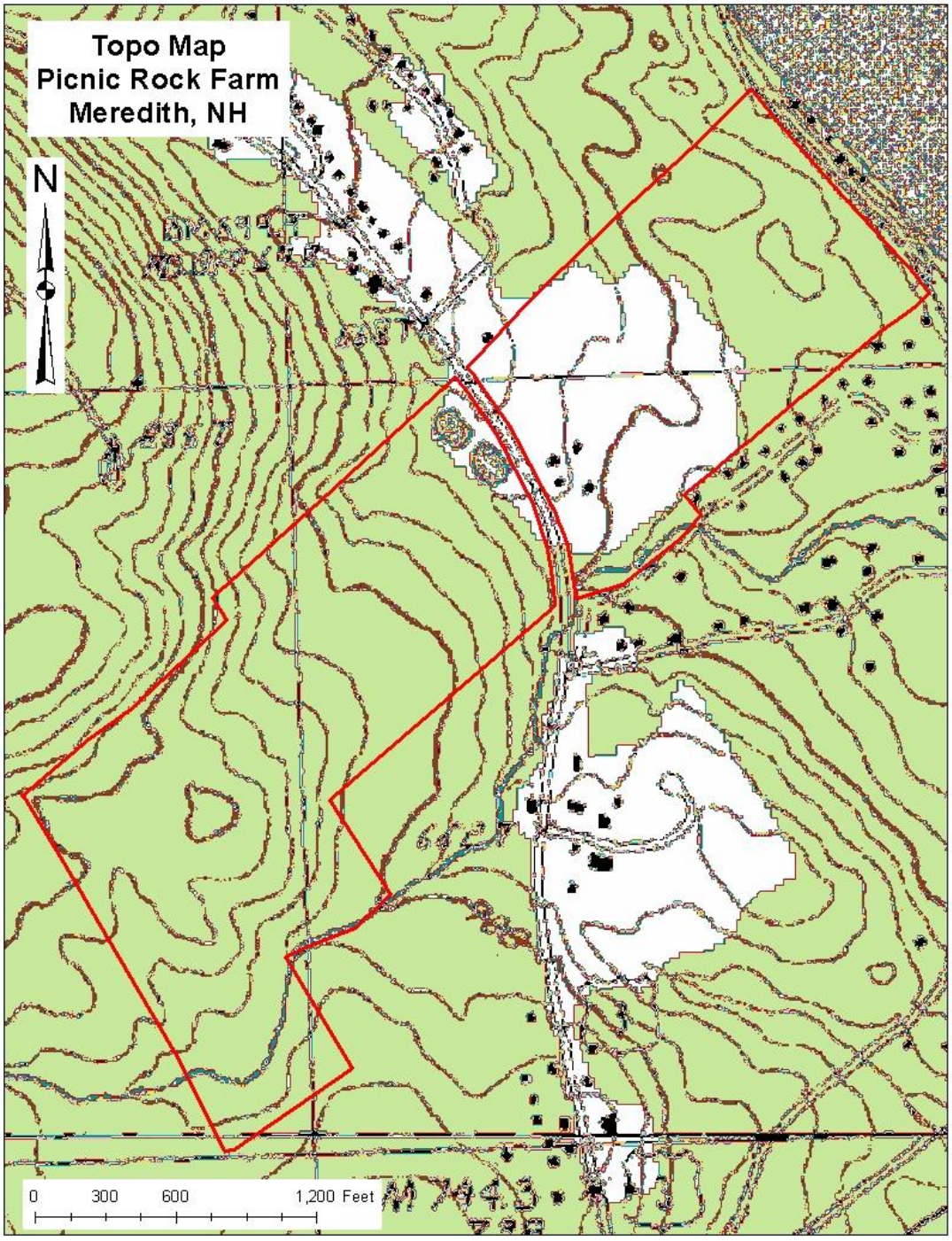
LAND HISTORY

Ward Bird inherited the property from his uncle, John M. Hodsdon. It has been in the Hodsdon family as a working farm since around 1800. Much of this property was at one time cleared for agriculture, as evidenced by the many stone walls, fallen wire fences, old-field timber types and historic air photos. Based on historical records, this property, as well as much of the region, were initially cleared for sheep pasture in the early 1800's. Following the collapse of the sheep industry and the expansion of railroads westward following the Civil War, large scale agricultural abandonment occurred throughout northern New England well into the mid 1900's. Only the most fertile fields were kept open and most areas were allowed to grow back into forest.

In addition to the agricultural endeavors on the property, the woodlands have seen periodic harvesting. West of Route 3, access improvement and a timber harvest occurred around 2008, while on the east side of the road, there has not been significant cutting since the early 1970's.

TOPOGRAPHY AND ASPECT

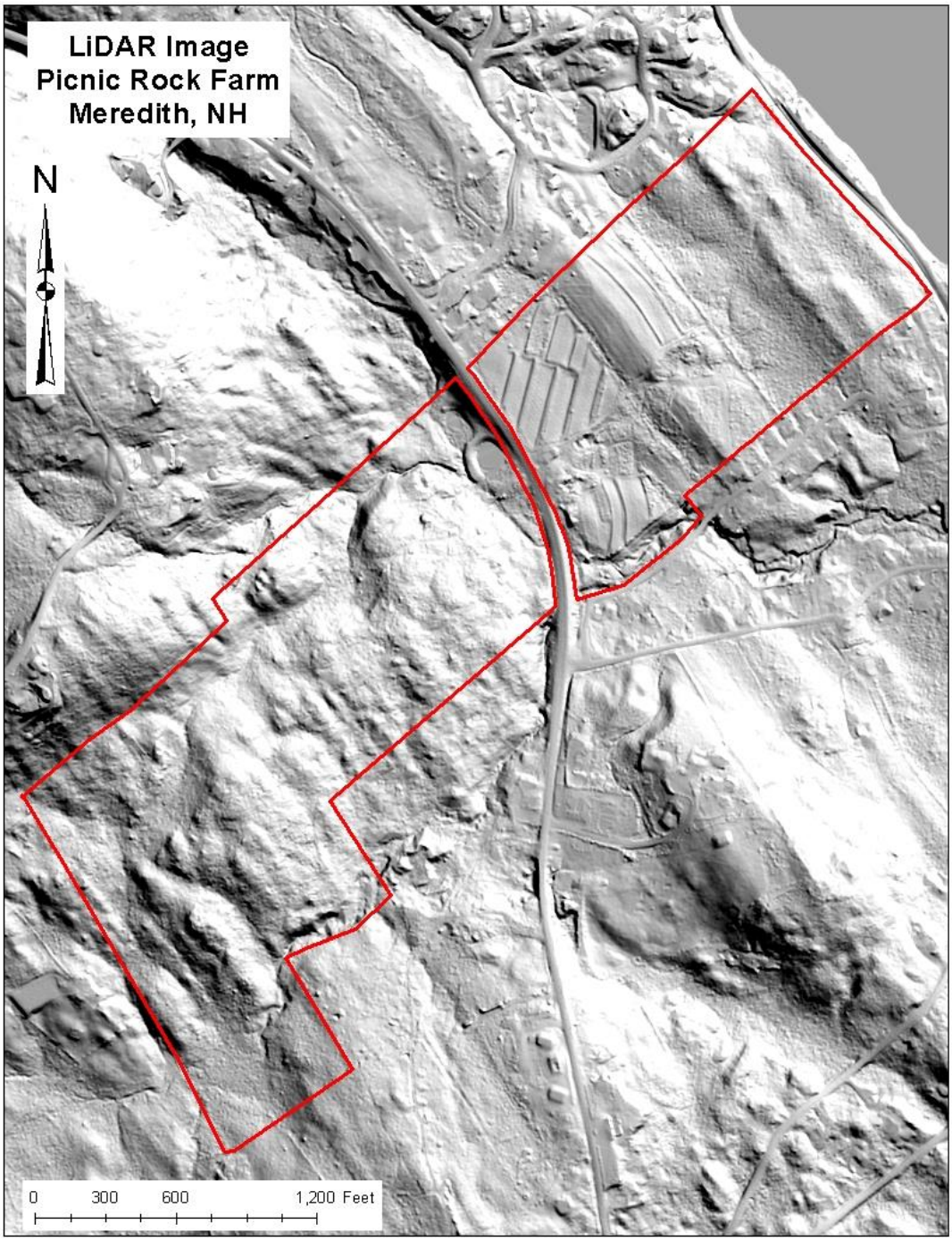
The topography on property ranges from fairly steep to gently sloping. The highest elevation occurs high on the hill to the west of Route 3, while the eastern boundary of the property along the railroad tracks is the low point.



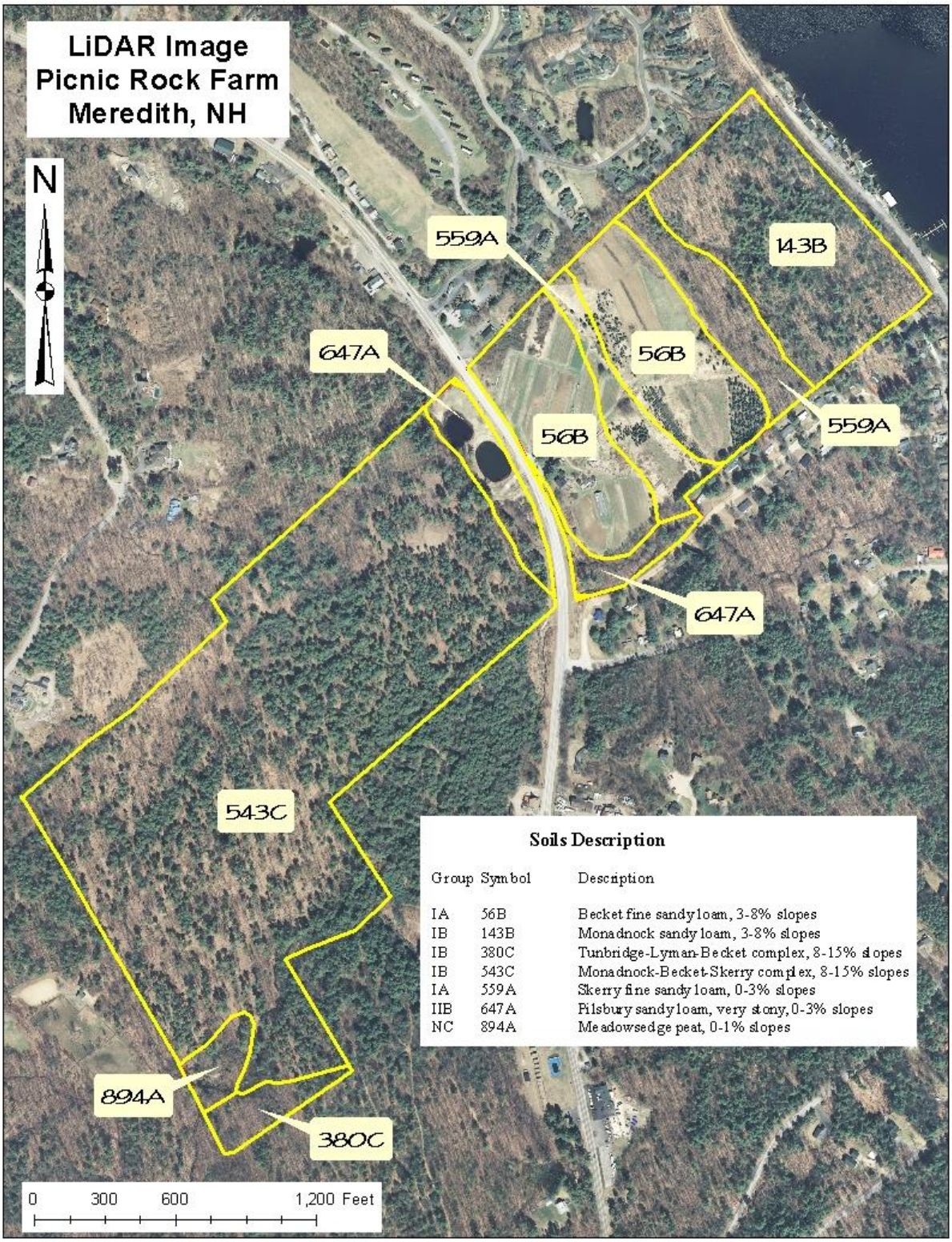
2. WOODLOT DESCRIPTION

AERIAL PHOTO

LiDAR IMAGE


LiDAR Image
Picnic Rock Farm
Meredith, NH
N
0
300
600
1,200 Feet

SOILS MAP


LiDAR Image
Picnic Rock Farm
Meredith, NH
N
559A
143B
647A
56B
56B
559A
647A
543C
894A
380C
0 300 600 1,200 Feet
Soils Description
Group Symbol Description
IA 56B Becket fine sandy loam, 3-8% slopes
IB 143B Monadnock sandy loam, 3-8% slopes
IB 380C Tunbridge-Lyman-Becket complex, 8-15% slopes
IB 543C Monadnock-Becket-Skerry complex, 8-15% slopes
IA 559A Skerry fine sandy loam, 0-3% slopes
IIB 647A Pilsbury sandy loam, very stony, 0-3% slopes
NC 894A Meadowsedge peat, 0-1% slopes

SOILS

Seven soil types underlay is property, as determined by the Belknap County Soil Survey Manual. The following is a description of the major forest soil groups (taken from the B.C.S.S.M.) along with a list of which soils fall into each group.

Group IA Soils

Symbol	Description
559A	Skerry fine sandy loam, 0-3% slopes
56B	Becket fine sandy loam, 3-8% slopes

This group consists of the deeper, loamy textured, moderately well, and well-drained soils. Generally, these soils are more fertile and have the most favorable soil moisture relationships.

The successional trends on these soils are toward stands of shade tolerant hardwoods, i.e., beech and sugar maple. Successional stands frequently contain a variety of hardwoods such as beech, sugar maple, red maple, white birch, yellow birch, aspen, white ash, and northern red oak in varying combinations with red and white spruce, balsam fir, hemlock, and occasionally white pine.

Hardwood competition is severe on these soils. Softwood regeneration is usually dependent upon persistent hardwood control efforts.

Group IB Soils

Symbol	Description
143B	Monadnock sandy loam, 3-8% slopes
380C	Tunbridge-Lyman-Becket complex 8-15% slopes
543C	Monadnock-Becket-Skerry complex, 8-15% slopes

The soils in this group are generally sandy or loamy over sandy textures and moderately fertile. These soils are moderately well and well drained. Soil moisture is adequate for good tree growth.

Soils in this group have successional trends toward a climax of tolerant hardwoods, predominantly beech. Successional stands, especially those which are heavily cut over, 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, and hemlock.

Hardwood competition is moderate to severe on these soils. Successional softwood regeneration is dependent upon hardwood control.

Group IIB Soils

Symbol	Description
647A	Pillsbury sandy loam, 0-3% slopes

The soils in this group are poorly drained. The seasonal high-water table is generally within 12 inches of the surface. Productivity of these poorly drained soils is generally less than soils in other groups.

Successional trends are toward climax stands of shade tolerant softwoods, i.e., spruce in the north and hemlock further south. Balsam fir is a persistent component in stands in northern New Hampshire and red maple is common on these soils further south. Due to abundant natural reproduction in northern New Hampshire, these soils are generally desirable for production of spruce and balsam fir, especially pulpwood. Red maple cordwood stands or slow-growing hemlock sawtimber are common in more southerly areas. However, due to poor soil drainage, forest management is somewhat limited. Severe wind throw hazard limits partial cutting, frost action threatens survival of planted seedlings, and harvesting is generally restricted to periods when the ground is frozen.

GROUP NC Soils

Symbol	Description
894A	Meadowsedge peat, 0-1% slopes

Several mapping units in the survey are either so variable or have such a limited potential for commercial production of forest products they have not been considered. Often an on-site visit would be required to evaluate the situation. In the case of these two soils, they are wetlands.

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ACCESS

Developing and maintaining access to a property is one of the most important management activities. In the case of the Longridge/Picnic Rock Farm property, past occupation and management has developed the management access necessary to conduct timber harvesting.

On the east side of Route 3, the existing access road running down through the fields should be used for truck access to a landing area set up on the high, dry ridge in the fields. From here, a skid trail would continue eastward down into the woodlot, likely using an existing barway in the stonewall, but possibly making a new barway to the north to avoid a wet run. Once in the woods, a single drainage must be crossed with logging equipment. This crossing should be a conducted with a temporary bridge using timber or steel mats. The installation of this crossing will require a Statutory Permit by Notification filed with the State of New Hampshire Department of Environmental Service's Wetlands Bureau and be done in accordance with the standards set forth in the Best Management Practices for Erosion Control manual.

Because of the location of the landing in the field, and the seasonally wet ground immediately surrounding the field edge, timber harvesting on the east side of Route 3 should be conducted during the winter months during frozen ground conditions.

On the west side of Route 3, significant access improvements were conducted prior to and in conjunction with the last harvest (2008). A significant culvert and erosion stone was installed in the stream crossing that drains the small ponds and a short truck road was constructed up the steep hill to service a new log landing. This landing was used by whole tree harvesting equipment to implement the timber sale.

Going forward, this road and landing would need to be used again in order to work with the same type of whole tree harvesting equipment, but the potential exists to have a roadside landing, between Route 3 and the large culvert, if either conventional or cut-to-length equipment were utilized.

Regardless of the landing location, the majority of the forestland to the west of Route 3 is accessible, with the exception of some of the gullies surrounding the streams and drainages. Several stream/drainage crossings with logging equipment will be necessary, and, as with the one on the east side of the road, will require a Statutory Permit by Notification filed with the Wetlands Bureau.

FOREST CATEGORIZATION

There are many ways a forester can categorize a woodland. The most common way is to break a larger forested area (be it a whole property, compartment, management unit, etc.) down into stands; areas of the forest with similar characteristics (i.e., species composition, size class, and density or stocking). These stands can then, based on their similarity of character, be treated in a uniform manner.

For ease of reference, these stands are given a numerical label (Stand 1,2,3,etc.). These stands can then be broken down into sections (1-1, 1-2, 1-3 etc.). Stands are then given a short coded description on the Forest Type Map to give someone in the field with the map a coarse description of the stand without reading the more involved description contained in the plan. This coded description deals mainly with the overstory by selecting the segment of each of the following categories that best describes the stand.

SPECIES TYPE	**SIZE CLASS**	**STOCKING LEVEL**
H: Hardwood	1: Saplings (1-4")	A: Over stocked
M: Mixedwood	2: Poles (5-11")	B: Fully stocked
S: Softwood	3: Sawtimber (12"+)	C: Under stocked
WP: White Pine		

For example, H2A would indicate an overstocked hardwood pole stand, M3C an understocked sawtimber sized mixedwood stand, or WP1B a fully stocked white pine sapling stand. If information regarding the understory were needed to be given in conjunction with overstory information, it would be recorded as $^{WP3C}/_{H1A}$, in this case an understocked white pine sawtimber stand with an overstocked understory of hardwood saplings.

3. TIMBER RESOURCES

The following is a list of the abbreviations of the common trees found on this property. These abbreviations can be found throughout the detailed stand descriptions.

Species	Abbreviation	Species	Abbreviation
White Pine	WP	Red Pine	RP
Spruce	SP	Balsam Fir	BF
Hemlock	HM	Other softwood	OS
Red Oak	RO	Red Maple	RM
Sugar Maple	SM	White Birch	WB
Yellow Birch	YB	White Ash	WA
Aspen	AS	Beech	BE
Pitch Pine	PP	Black Birch	BB

On this lot, a total of 26 inventory points were recorded using a 20 basal area factor (BAF) prism. Each inventory point was located on a grid spacing of 400' by 400'. At each inventory point, data was recorded regarding tree species, dbh, merchantable height by various product, and overall tree quality. This information was analyzed by the **Forest Tally** computer program, developed by Lee Goldsmith.

Detailed descriptions of each stand can be found in the **STAND DESCRIPTIONS** and **STAND RECOMMENDATIONS** sections of the Management Plan.

STAND DESCRIPTIONS

The following is a brief description and acreage breakdown of the various forest types found on the property. For more detailed analysis see the **Stand Technical Data & Recommendations** section.

STAND	CODE	ACREAGE	DESCRIPTION
1	H/M2/3A	15	Fully to over-stocked, pole to sawtimber sized northern hardwoods (beech, birch, maple) and red oak along with hemlock and scattered white pine. Fair to good quality.
2	H2/3A	9	Fully to over-stocked, pole to sawtimber sized northern hardwoods. Wet ground. Fair to good quality.
3	WP2/3B	32	Fully stocked, pole to sawtimber sized white pine with scattered hemlock and hardwood. Many areas of the stand have good quality white pine saplings in the understory. Good quality.
4	H2A	9	Fully to over-stocked, pole to small sawtimber sized northern hardwoods with hemlock and scattered white pine. Fair to good quality.
5	M2/3A	29	Fully to over-stocked, pole to small sawtimber sized hemlock and northern hardwoods with scattered white pine.
		94	**Total Forested Acreage**
		25	Open/Non-Forest
		119	**Total Acreage**

FOREST TYPE MAP

STAND TECHNICAL DATA AND RECOMMENDATIONS

Stand 1 – H/M2/3A – 15 Acres

TECHNICAL DATA:

Species Composition by Percent	RO-39%, BE-19%, HM-11%, WP-8%, RM-7%, Other-15%
Mean Stand Diameter	9.7"
Mean Merchantable Stand Diameter	12.1"
# Trees per acre (4"+)	339
Basal Area/Acre	140 sq. ft./acre

Stand 1 Management Goals: Improve existing timber growth, develop desirable regeneration and enhance wildlife habitat.

Stand 1 Recommendations - 2022-2032:

Stand 1 on Picnic Rock Farm is found on the eastern side of Route 3, below the fields and running down towards the railroad tracks. It is fully to over-stocked with pole to sawtimber sized northern hardwoods (beech, birch, maple) and red oak, along with scattered hemlock and white pine. Quality is fair to excellent, with the oak being of particularly good quality.

Going forward, management of this stand should focus on improving growing conditions for the existing timber, developing desirable regeneration where appropriate, and promoting wildlife habitat. This would be best accomplished through a combination of single tree and conservative group selection harvesting.

Where good quality stems dominate the overstory, thinning would seek to remove the poorer quality individuals, damaged stems and mature trees to promote growth in the residual stand. Red oak in particular should be promoted where possible for not only its timber value, but for the abundant hard mast it produces during acorn crop years. Oaks will begin bearing acorns at 30+ years of age, but peak production does not occur until they reach 18-24" in diameter, often at 100+ years old. In general, the larger and healthier the trees, the greater the acorn production.

Where stocking is dominated by poor quality stems or undesirable species, small groups (miniature clearcuts) should be opened up to promote regeneration. These openings, roughly ¼ acre in size, should be should be located such that there are good quality seed trees around the edge of the group to hopefully manipulate the future stocking in a positive direction. While beech is generally considered a less than desirable species

due to limited market potential and overall health issues associated with the beech bark disease, good-quality, healthy beech, where present, should be retained for their potential mast production. Those individuals who consistently produce nuts are often identifiable by the bear claw marks on the trunk.

White pine plays a very scattered role in this stand, consisting of large, scattered individuals. Where possible, a pine should be retained around the edge of any group openings. Other than this, the stand will not be opened up enough to promote pine regeneration and going forward, pine will not likely play a significant role in the management of stand 1.

Stand 2 – H2/3A – 9 Acres

TECHNICAL DATA:

Species Composition by Percent	RO-26%, RM-23%, WA-17%, BE-13%, YB-10%,Other-11%
Mean Stand Diameter	8.6"
Mean Merchantable Stand Diameter	11.3"
# Trees per acre (4"+)	260
Basal Area/Acre	117 sq. ft./acre

Stand 2 Management Goals: Improve timber growth and mast production while protecting hydric soil integrity.

Stand 2 Recommendations - 2022-2032:

Stand 2 occurs in two distinct areas, both on the east side of the highway and both occurring on wetter ground than the remainder of the woodland in this area (stand 1). The larger area is directly below the fields. A smaller area is situated primarily south of the farmstead in a very wet area surrounding a drainage/stream. This smaller area will likely not see active management as a result of the access issues associated with the wetland course and the relatively low value of the timber found in this section.

The remainder of the stand would benefit from a careful thinning designed to promote growth in the better-quality stems, primarily red oak and good quality maple and birch. The ash component of the stand should be targeted for removal due to the widespread infestation of emerald ash borer throughout the region. There are already signs of the insect on the property. Any good quality stems should be removed while they still have value.

Other than red oak, good quality sugar maple, red maple and yellow birch should be considered desirable species if of good growth form. The aspen, white birch, ash and beech are the less desirable species in the stand for either economic or forest health (emerald ash borer) reasons.

Stand 3 – WP2/3B– 32 Acres

TECHNICAL DATA:

Species Composition by Percent	WP-66%, HM-14%, RO-8%, Other-12%
Mean Stand Diameter	10.4"
Mean Merchantable Stand Diameter	12.7"
# Trees per acre (4"+)	231
Basal Area/Acre	135 sq. ft./acre

Stand 3 Management Goals: Improve timber growth, promote growth in existing pine regeneration, develop additional pine regeneration.

Stand 3 Recommendations - 2022-2032:

Stand 3 is the largest of the forest types on Picnic Rock Farm, and also the area dominated by white pine. Pine is far and away the most valuable of the native hardwood species with stable markets and high demand for logs. Wherever practical, managing a forest for the long-term production of white pine timber is recommended.

Managing white pine can be broken down into two distinct phases, thinning and regenerating. Typically, a young pine stand is thick and overcrowded. One to two thinnings would occur prior to a stand reaching 70-80 years of age. The goals of both of these thinnings would be to improve species composition, quality, and vigor. When a stand has reached 70-80 years of age, or large sawtimber size, it is time to begin the regeneration process.

In white pine management, perhaps the most successful method of naturally regenerating a stand is the shelterwood method of harvesting. The shelterwood system usually consists of 3 stages or steps. The first being the regeneration cut. This first cut will remove 30-40% of the basal area, leaving the best trees in the overstory as a seed source. Obtaining adequate ground scarification (exposing mineral soil) to prepare the seedbed is necessary to obtain good germination of pine seed.

The second stage of the shelterwood system would occur when the pine regeneration is very well established and ready to start rapid growth. This point would occur some 5-15 years after the regeneration cut, depending on how well the seedling/saplings are doing. This second stage would remove approximately 50% of the basal area in the remaining stand, giving the established regeneration ample light and room to grow.

The third and final stage of the shelterwood system would occur when the regeneration has reached 25-35 years of age, again depending upon growth. This cut would

remove almost all (80% of the basal area) of the residual stand, leaving only scattered individuals as a seed source for future work when you begin to thin the regenerating stand at age 45-60.

The last harvest some 14 years ago, was a combination thinning/regeneration cut with relatively good success. There are many areas of the stand with good quality pine regeneration and others ready for the development of regeneration.

The next harvest should again be a combination thinning/regeneration cut, in some areas thinning the existing overstory to promote growth in both the residual overstory and developing understory, while in others, opening up the understory to make room for additional regeneration.

Going forward, it may prove advisable to conduct pre-commercial weeding and thinning in the developing pine regeneration. Knocking back the hardwoods and selecting the best quality pine stems can significantly improve the overall growth of a young stand as it develops. Funding for such a project may be available through the NRCS's EQIP program or through the NH Fish and Game Department's Small Grants Program.

Stand 4 – H2A– 9 Acres

TECHNICAL DATA:

Species Composition by Percent	RM-25%, WB-22%, SM-18%, H M-11%, Other-24%
Mean Stand Diameter	7.8"
Mean Merchantable Stand Diameter	9.3"
# Trees per acre (4"+)	371
Basal Area/Acre	148 sq. ft./acre

Stand 4 Management Goals: Improve timber growth, promote sugar maple where possible.

Stand 4 Recommendations - 2022-2032:

Stand 4 on the property consists of the area to the west of Route 3 dominated by hardwood growth. There is one small area, just to the west of the ponds, dominated by sugar maple with the potential to be used as a sugar bush.

The white birch component of the stand, while of better than average quality, offers little potential for sawlog production, as the demand and price for this species has fallen off in the last 20 years. The maples and oak are the more desirable hardwood species and should be promoted through a thinning harvest. Good quality stems with healthy crowns should be retained. These individuals should respond to the thinning by increasing crown size and growth rates.

In the small area dominated by sugar maple, the thinning should be slightly heavier in nature, giving more room between the sugar maple crowns. In sugar bush management, the goal is to grow wider trees rather than taller trees as in timber production. The increased foliage produces greater photosynthetic area, larger root mass, and increased sap production in the spring.

Hemlock is a spotty component in several areas of the stand. Wherever possible, this should be retained and promoted for its wildlife value as well as the limited timber value that hemlock offers.

Stand 5 – M2/3A– 29 Acres

TECHNICAL DATA:

Species Composition by Percent	HM-23%, RO-17%, RM-15%, WP-15%, WB-11%, Other-19%
Mean Stand Diameter	9.3"
Mean Merchantable Stand Diameter	11.9"
# Trees per acre (4"+)	277
Basal Area/Acre	140 sq. ft./acre

Stand 5 Recommendations: Improve timber growth and wildlife habitat as well as develop desirable regeneration.

Stand 5 Recommendations - 2022-2032:

Stand 5 is the most variable of the forest types on the property, consisting of a mixture of hemlock, northern hardwoods, red oak and white pine. It is patch in nature, meaning that it is not an even mixture of these species but rather a mosaic of areas dominated by these different species. The resulting stand is quite irregular in nature, but management should be similar throughout.

A combination of single tree thinning and conservative group selection should be employed to manage this variable stand. Where stocking consists of good quality stems capable of responding to release and growing into valuable sawtimber, thinning would seek to provide room for crown expansion and increased growth. Where undesirable stems or poor-quality wood dominate the stocking, small (< ½ acre) groups should be used, with good quality seed sources along the perimeter. Throughout the stand, care should be taken to work around any of the better-quality advanced regeneration, particularly the white pine.

TOTAL TIMBER VOLUMES AND VALUES – **August 2022**

Product/ Species	Estimated Volume	Stumpage Value/Unit	Total Value
Sawlogs			
White Pine	338 MBF	$185/MBF	$62,530
Hemlock	51 MBF	$40/MBF	$2,040
Red Pine	2 MBF	$25/MBF	$50
Spruce/Fir	4 MBF	$120/MBF	$480
Red Oak	78 MBF	$375/MBF	$29,250
Sugar Maple	4 MBF	$250/MBF	$1,000
Red Maple	8 MBF	$175/MBF	$1,400
White Ash	12 MBF	$150/MBF	$1,800
Yellow/Black Birch	3 MBF	$175/MBF	$525
White Birch	14 MBF	$150/MBF	$2,100
Total	**514 MBF**		**$101,175**
Pallet/Tie Logs			
Mixed HW Pallet	23 MBF	$30/MBF	$690
MAT Logs	28 MBF	$150/MBF	$4,200
Pine Pallet	21 MBF	$20/MBF	$420
Total	**72 MBF**		**$5,310**
Pulpwood			
Hardwood	1,920 Tons	$5/Ton	$9,600
Hemlock	613 Tons	$1/Ton	$613
Mixed Softwood	723 Tons	$.50/Ton	$361
Total	**4,317 Tons**		**$10,574**
Biomass			
Fuel Chips	**3,600 Tons**	**$.50/Ton**	**$1,800**
		Total Timber Value	**$118,859**

- Tons can be converted to Cords at the following rates:
  Hardwood: 2.55tons/cord
  Softwood: 2.2/tons/cord

- At the time of this report, the softwood pulp markets are extremely soft, due to the ongoing economic downturn associated with the Coronavirus pandemic and the April 2020 explosion at the Jay, Maine paper mill. It is not clear how soon or if these values will rebound.

WILDLIFE

From observed sign, a wide variety of wildlife is currently using the woodland and open habitat. Most noticeable are deer, bear, pileated woodpecker, partridge, songbirds, ravens, rabbits, raccoons, squirrels, porcupine, bobcat and coyote, as well as many other species. The landowners enjoy seeing most native species of wildlife and favor management activities that promote a wide variety of species. The exception to this is those species (particularly deer) that are detrimental to the vegetable production activities on the farm.

Periodic cutting maximizes forest succession to the benefit of many forms of wildlife. A dynamic mix of all age classes is considered advantageous for many species for both food and cover. Mast species, especially oak, should be favored and left to grow freely. Larger crowns provide increased nut production and are more valuable for wildlife, especially deer, bear, and squirrels. A main objective would be to retain at least 6 to 12 good mast trees per acre. This woodlot has some areas with large, mast producing trees, with large beech and oak in some stands.

On this woodlot, there are several habitat types ranging from dense hemlock, to stands of sawtimber sized white pine and red oak, to thick shrub/edge growth, to open field areas. This mix of habitat types should be enhanced where possible. The development of early successional hardwoods is recommended during any timber harvest as both a food source and well utilized habitat type by many native species of wildlife, particularly song birds.

The dense softwood cover associated with portions of stand 3 shows evidence of providing winter cover for white tailed deer and song birds and management of these areas should take this into account by seeking to maintain or enhance the softwood component.

Trees containing cavities should be left for cavity dwelling birds and animals. Any standing rotten trees should be left as habitat for insects upon which woodpeckers and bear feed. Larger, poor quality, oversized (non-marketable) trees are usually decreasing in vigor which makes them good candidates for future "critter condos". Maintaining a minimum of 6 cavity/snag trees per acre with one exceeding 18" in diameter and 3 exceeding 12" in diameter is recommended. Many trees on the property show signs of having been excavated by pileated woodpeckers.

The open areas of field and shrub growth around the farm are an excellent addition to the wildlife habitat. The open, grassy nature is perfect habitat for many species of song birds. To this end, it would likely prove beneficial to install multiple “bluebird style” nesting boxes in and around the wetland. There are several species besides bluebirds, particularly swallows, that will utilize these nesting boxes.

WETLANDS AND WATER RESOURCES

The wetland and water resources on the property are very localized and consist mainly of the seasonal streams/drainages, several vernal pools and pocket wetlands, and the two ponds along Route 3.

The following is a list of the recommended buffers to be kept around the various wetland features on the property. It consists of a No-Cut area and a Riparian Management Zone in which no more than 50% of the Basal Area be removed (well-distributed) in any 10-year period.

Wetland Type	No Cut Zone	Riparian Mgmt. Zone
Vernal Pools	50’	200’
Seasonal Streams/Drainages	None	75’
Perennial Streams/Brooks	25’	100’

Before crossing any watercourse, either seasonal and perennial, with logging equipment, or constructing a permanent crossing during woods road construction, it is necessary to file a ***Statutory Permit-By-Notification (SPN) - Forestry*** with the State of New Hampshire's Department of Environmental Services Wetlands Bureau. Crossings must be constructed, in accordance with the standards set forth by the State of New Hampshire's ***Best Management Practices for Erosion Control on Timber Harvesting Operations***. Using the appropriate method to cross a stream will prevent the addition of sediment through soil erosion, which is highly problematic as the levels of particular matter increase.

There are several areas of poorly drained, soils on the property that have created a forested wetland. These areas do not have any restrictions as to timber harvesting, but the work must be conducted during periods of dry or frozen ground conditions to minimize soil impact.

AESTHETICS

The aesthetics and scenic beauty of the property are a significant resource, particularly in the areas along Route 3. In planning for any management activity, the impact on these values must be taken into consideration.

Timber harvesting can be one of the most impactful (aesthetically) things to happen on a property. Careful layout and marking on the part of the forester, along with the use of a conscientious logging contractor help to minimize the impacts, but will never fully remove them.

RECREATION

There are no established recreational trails on the property and it is not foreseen that any be established. Currently, recreation consists only of walking in the woods.

CULTURAL FEATURES

The stone walls, fallen wire fences and old-field timber types offer evidence of the agricultural history of the area, should be considered cultural features and protected from undue damage during any management activities. The buildings are a significant cultural feature (and an important part of the Easement) but will have no bearing on the Forest Management activities addressed in this plan.

RARE AND ENDANGERED PLANT AND ANIMAL SPECIES

No rare or endangered plant or animal species were encountered during the field work for this plan. This is not to say that none exist. The New Hampshire Natural Heritage Bureau's databases were searched as part of the preparation of this plan and no records were encountered. A copy of the NHB report can be found in the Appendix of this plan.

5. OTHER RECOMMENDATIONS

INVASIVE SPECIES

There is a presence of invasive species along the field edges of the farm area, but they do not appear to have significantly entered the woodland areas. Bittersweet, barberry, multiflora rose, knotweed and honeysuckle were noted during the field work for this plan.

Non-chemical treatment of these areas (mowing/brushing) is probably the most practical solution. Funding for this endeavor could be sought through the NRCS's EQIP program or the NH Fish and Game Dept's Small Grants Program.

Following any timber harvest in the woodland areas, monitoring should occur to detect any spread of invasive species.

STABILIZING AND RESEEDING

When any harvest operation or road construction project is completed, all critical skid roads and landings should be stabilized. Steep skid roads and truck roads should be water barred, out sloped, ditched and smoothed. Truck roads, major skid roads and landings should be limed, fertilized, reseeded with conservation seed mix and mulched with hay where needed. This will help stabilize the soil, provide feed for wildlife, help control woody plant growth and provide an aesthetically pleasing road or trail. Conservation Mix, combined with white clover is the recommended seed mixture in most applications.

SAFETY

There were no significant safety concerns encountered during the field work for this plan.

BEST MANAGEMENT PRACTICES

All woods road construction, use, maintenance, wetland and brook crossings should follow recommendations as made, (and required by law on brook crossings), in the "Best Management Practices for Erosion Control on Timber Harvesting Operations in New Hampshire", a resource manual by, DRED, Division of Forests and Lands. A copy of this publication can be requested through the above contact at the Department of Resources and Economic Development, P.O. Box 856, Concord, NH 03301 or call 271-2214.

NOTES: Before crossing a stream/wetland for the purpose of logging or road construction with the eventual intent of logging, a **Statutory Permit-by-Notification (SPN) - Forestry** (see **Appendix)** form must be filed with the N.H. Wetlands Bureau.

FOREST PROTECTION – FIRE HAZARD

The care, maintenance and further development of the access system would be the best tool for forest fire protection and prevention.

Practicing good forestry by maintaining species diversity, avoiding monoculture and promoting varied stages of forest succession should minimize mortality from common pathogens, and environmental stress.

INSECTS AND DISEASES

From observed evidence, there is fairly low occurrence of forest disease problems on the property. The only forest disease that was noted during the cruise is the presence of beech bark disease. Nothing can be done to treat this common problem caused by a combination of scale insect infestation and an airborne fungal blight. Healthy trees that show resistance to the disease should be retained during harvesting.

The ongoing widespread infestation of emerald ash borer will have limited impact on the property as ash makes up a small portion of the stocking in most areas. A high percentage of the ash trees on the property showed signs of infestation. Ash should be targeted for removal (if still healthy) during the next timber harvest particularly those individuals with sawlogs.

The presence of sugar maple borer was noted during the field work for this plan. This native insect bores holes just under the bark of sugar maples, killing portions of the vascular system and damaging the trunk. There is nothing to be done to treat this on a forest level.

7. APPENDIX

SCHEDULE OF PRIORITIES

2022-2032

Stands	Recommendation	Goal	Page Reference
3-5	Timber harvest per recommendations. Dry or frozen ground.	Improve timber growth, foster the development of existing regeneration, develop additional regeneration, improve wildlife habitat.	19-22
1,2	Timber harvest per recommendations. Frozen ground.	Improve timber growth, develop additional regeneration, improve wildlife habitat.	16-18
Field edges	Mowing/brushing of invasive species.	Protect ecology	28
	Monitor invasive plant species following the timber harvest. Act as needed.	Ecosystem protection.	28
3	Monitor white pine sapling growth. Conduct weeding/thinning – hardwood control as needed.	Foster the development of white pine regeneration.	20

7. APPENDIX

- Natural Heritage Bureau Printout
- NH DES Statutory Permit by Notification