Forest Management Plan Signature Page

The Nature Conservancy's Green Hills Wildlife Management Area, Conway, NH

Plan Preparer Signature

Timothy R. Nolin

Plan Preparer (Print Name)

Forest Land Improvement

Agency/Company

65 Walker Hill Rd., Ossipee, NH 03864

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Phone

THE STATE OF NEW HAMPSHIRE – TIMOTHY NOLIN No.356 LICENSED PROFESSIONAL FORESTER

List Other Professionals Who Contributed to the Plan and Their Affiliations:

Anthony D'Amato

Director of Forestry Program and UVM Research Forests

Rubenstein School of Environment and Natural Resources

University of Vermont

Landowner Signature: The contents of this plan are acceptable to me/us. I/We intend to manage this property in a manner consistent with the listed objectives:

Signature	Date	Print Name and Affiliation (if applicable)
Jeffrey Lougee	9/28/2023	Jeff Lougee, The Nature Conservancy

Easement Owner Signature: I have reviewed this plan and approve it as meeting the standards set forth in the conservation easement deed.

Signature	Date	Print Name and Affiliation
James D. Oehler	9/6/2023	James D. Oehler, NH Fish & Game Dept

EASEMENT OWNER NOTE: This plan did not include management recommendations for the 51-acre old gravel pit on the east side of the property. Any work that may occur there within the life of this plan, should be addressed in an addendum. The habitat value of old pits is substantial. Given that, it is recommended that management goals be adopted for that area within the next 10 years.

Forest Stewardship Plan

prepared for

The Nature Conservancy's Green Hills Wildlife Management Area

1,328+/- Total Acres

Conway, Carroll Co., New Hampshire

September 2023

Prepared for:
The Nature Conservancy
22 Bridge St. 4th Floor
Concord, NH 03301

Prepared by:
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_____

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1. BACKGROUND

INTRODUCTION

This Forest Stewardship Plan is being developed on the Green Hills Wildlife Management Area (GHWMA) at the request of The Nature Conservancy (TNC). The GHWMA includes approximately 1,328 acres and is a portion of the larger 5,570-acre Green Hills Preserve. It is designed to document the existing natural resources and incorporate land management objectives for wildlife, biodiversity, and climate resilience in order to formulate a detailed stewardship program for the long-term management of the property. Additionally, it is being written to meet the requirements and standards set forth in the Conservation Easement Deeds held by the State of New Hampshire through its Fish and Game Department.

Furthermore, this Plan will outline an experimental harvest planned for the property as part of a cooperative project between TNC and the Northern Institute of Applied Climate Science (NIACS) as part of their Adaptive Silviculture for Climate Change program. These are based on the principles, theories and recommendations set forth and developed at the Mt. Washington Valley Climate Resilient Forest Management Workshop held this past spring. This experimental harvest is designed to document the existing conditions, the site-specific goals for climate resiliency in the forest, the silvicultural techniques employed and the results of the harvest.

Technical assistance, advice, input and planning for this document has been received from:

Jeff Lougee
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North Conway, NH 03860

and

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Rubenstein School of Environment and Natural Resources
University of Vermont
204E Aiken Center
81 Carrigan Drive
Burlington, VT 05405

N.H. Fish & Game Department review provided by:

Jim Oehler
Wildlife Habitat Program Supervisor
NH Fish & Game Dept.
11 Hazen Drive
Concord, NH 03301

GOALS AND OBJECTIVES

Specific to the property, and as part of the Climate Resiliency project with NIACS, TNC has identified the following stewardship Goals:

1. Enhance the compositional and structural diversity of the forested habitats with the WMA to build climate resilience and provide habitat for State Wildlife Action Plan (SWAP) listed species.
2. Manage for old forest characteristics within a portion of the WMA to develop biological legacies, promote resilience, and provide old forest habitat for SWAP species.
3. Promote diverse regeneration to provide multiple climate adaptation pathways and ensure diverse forested habitats with the WMA for SWAP species.
4. Increase the potential for carbon sequestration and storage above and below ground by improving forest health.
5. Mitigate the negative impacts of forest pests and pathogens by building forest health.
6. Protect and manage for rare species and exemplary natural communities that are present within the GHWMA
7. Demonstrate best practices and techniques for climate adaptive management using the Resistance, Resilience and Transition framework.

Within these goals, TNC has developed the following objectives for the management of the forests on the GHWMA:

1. Increase the number of large snags and cavity trees to 4-7/acre >20" DBH and the amount of coarse woody debris to 8-10 large (>20") downed logs/acre with various stages of decay.
2. Implement regeneration harvests, including patch cuts and crop tree release, that result in diverse age classes and structures.
3. Establish reserves within riparian areas, steep slopes, and areas with good site conditions where large legacy trees and other old forest characteristics can develop rapidly.
4. Implement harvests that reduce competition for resources (light, moisture, nutrients) and maximize the ability of the residual stands to resist and recover from the impacts of forest pests and pathogens (spongy moth, hemlock wooly adelgid, southern pine beetle).
5. Retain "clean" beech within stands where possible.
6. Plant species adapted to future climate, including mast producing species to benefit wildlife.
7. Develop management approaches to maintain the unique fire adapted/dependent oak-pine communities on the western side of the WMA.
8. Implement BMP's for reducing the potential impacts of hemlock wooly adelgid and retaining hemlock on the site.
9. Implement monitoring to assess overall forest health, success of adaptation plantings, and impacts to wildlife with a focus on SWAP species.

CONSERVATION EASEMENT

The State of New Hampshire, through its Fish and Game Department, holds two separate Conservation Easements on this property (GHWMA). The Easement on the former Redstone Properties, Audubon and Marshall-Saunders lots, encompassing 308.41 acres, is recorded in the Carroll County Registry in Book 3191, Page 500. The Easement on the 1013.03 acres formerly of Marshall is recorded in the Carroll County Registry in Book 3191, Page 487. The primary difference between these Easements is the language pertaining to the requirements of the US Fish and Wildlife Service's Wildlife Restoration Program, through which funding was obtained for the Easement (3191/487) on the 1013.03-acre Marshall lands. A copy of these Easements can be found in the Appendix of this plan.

The Purposes of the Easements are as follows; (sections in parenthesis relate to 3191/487 only)

A. To retain the Property forever in its undeveloped state for significant wildlife habitat including wetlands and uplands, and to prevent any use of the Property that will impair or interfere with its conservation values;
B. To protect the Property from future development, to conserve and manage the natural vegetation, soils, hydrology, natural habitats, wetlands, uplands, and open spaces of which the Property consists, and to conserve and maintain its unique characteristics substantially in its present scenic and open space condition, the preservation of which is important to the public and will serve the public interest in a manner consistent with New Hampshire RSA 477:45-47;
C. To further the goals of the NH Wildlife Action Plan (and the Wildlife Restoration Program administered by the Department of Interior, U.S. Fish and Wildlife Service), including but not limited to the protection, management, and enhancement of its wildlife habitats; and
D. To provide the public, in accordance with applicable laws and regulation, pedestrian access, in perpetuity, on and across the Property for low-impact non-commercial recreational activities including, but not limited to, hunting, fishing, hiking, trapping (in accordance to RSA 210:11), cross country skiing and nature observation.
E. (To further the goals of the New Hampshire Aquatic Resources Mitigation Fund Final In-lieu Fee Program Instrument (U.S. Army Corps of Engineers, New England District, Regulatory Division, File Number NAE-2005-1142), by protecting wetlands and water resources on the property.

1. BACKGROUND

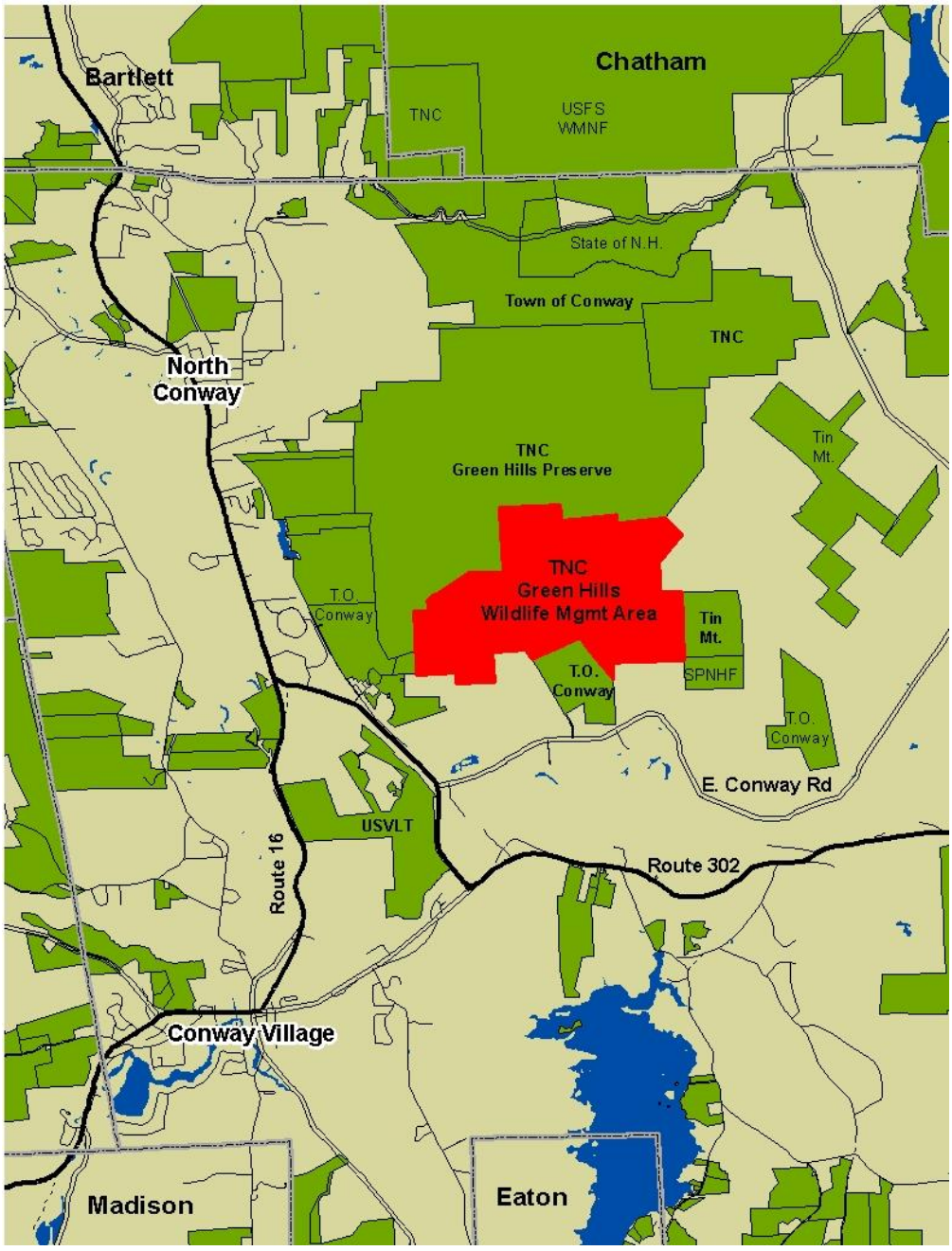
Forestry and Wildlife Habitat Management are allowed under the terms of the Easements if they are planned and implemented in according with the following stewardship goals:

- Maintenance or enhancement of the Property's fish and wildlife habitat values;
- Maintenance of soil productivity and protection against soil erosion;
- Protection of water quality, wetlands, and riparian zones;
- Protection of rare plants and animals;
- Protection of unique or fragile natural areas;
- Conservation of native plant and animal species;
- Protection of unique historic and cultural features; and
- Protection of passive non-commercial recreational qualities.

All Forestry and Wildlife Habitat Management activities shall be conducted in accordance with a stewardship plan, prepared by a licensed professional forester….shall have been prepared not more than 10 years prior to the date of any activity. This Plan shall be prepared and submitted for approval to Fish and Game at least 60 days prior to any activity.

LOCATION – DESCRIPTION

The Green Hills Wildlife Management Area consists of approximately 1,328 acres on the southern edge of TNC's Green Hills Preserve, north of (but not fronting on) the East Conway Road. The Town of Conway's Assessing department identifies 10 separate lots of record within the GHWMA. A survey of the entire GHWMA was completed in 2015 at the time of title transfer by H.E.B. Engineers titled ***"Revised Boundary Plan of lands being conveyed to The Nature Conservancy"*** and is recorded at the Carroll County Registry in Plan Book 234, Page 74.



BOUNDARY LINES

The boundaries of the GHWMA were all able to be located during the field work for this plan, and are defined by painted blazes. The lines are shown on the HEB Engineers survey map with detailed metes and bounds descriptions.

A brush on, high-quality, oil-based enamel should be used for painting boundary lines. In general, boundaries should be painted every 10 years or so. The external boundaries where the Preserve and WMA abut private lands will be the priority for maintenance.

LAND HISTORY

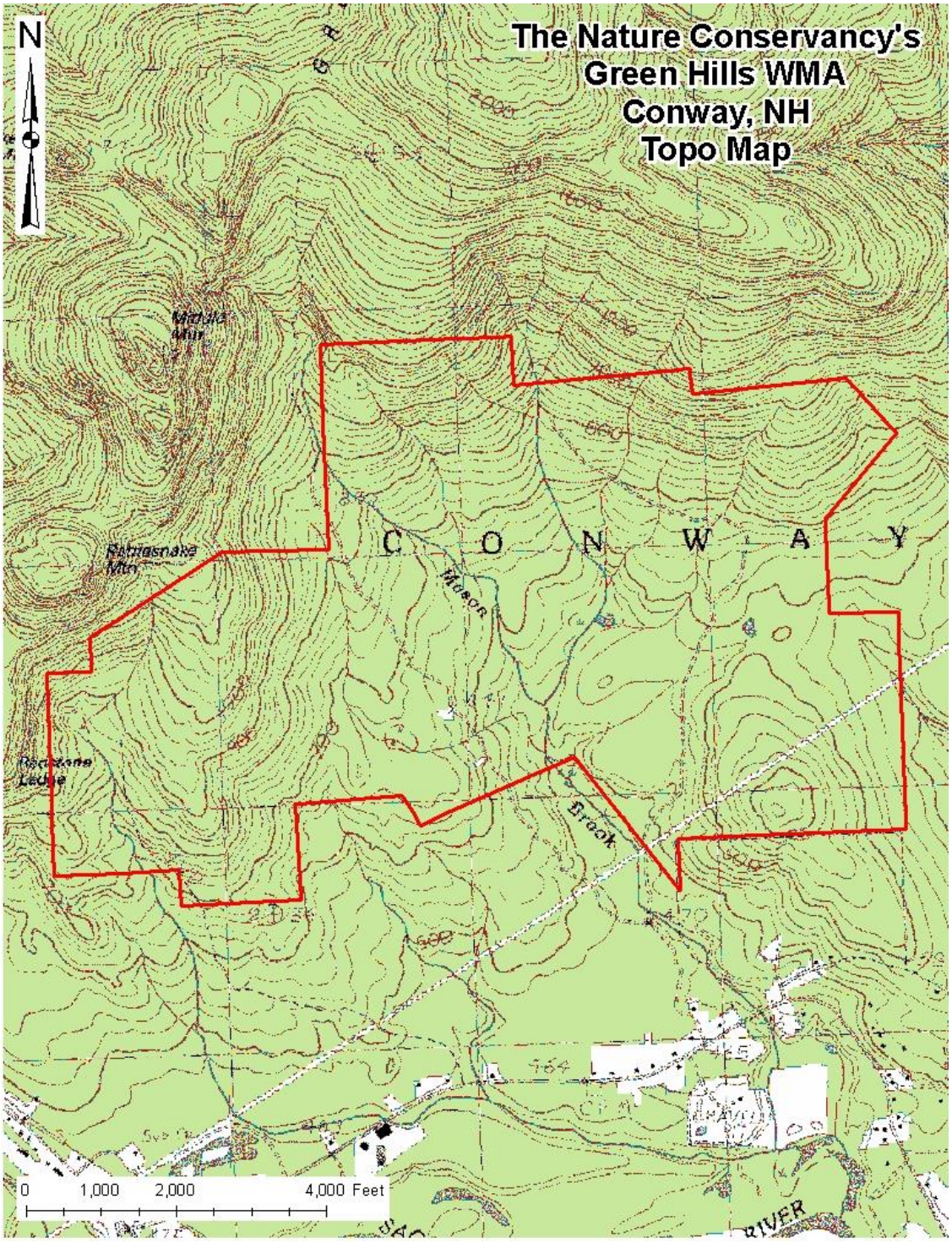
Much of this property was at one time cleared for agriculture. Based on historical records, this property, as well as much of the region, were initially cleared for sheep pasture in the early 1800's. Following the collapse of the sheep industry and the expansion of railroads westward following the Civil 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.

As the lands that comprise this property grew back into woodland in the late 1800's and early 1900's, the primary use was of a woodlot. Much of the property was owned by the Kennett Company, who operated a pit in the eastern portion of the property up until the early 2000's. The Kennett Company was active with timber harvesting, but not focused on managing for long term forest productivity or health. The Marshall family purchased just over 1,000 acres from the Kennett Company in 2009.

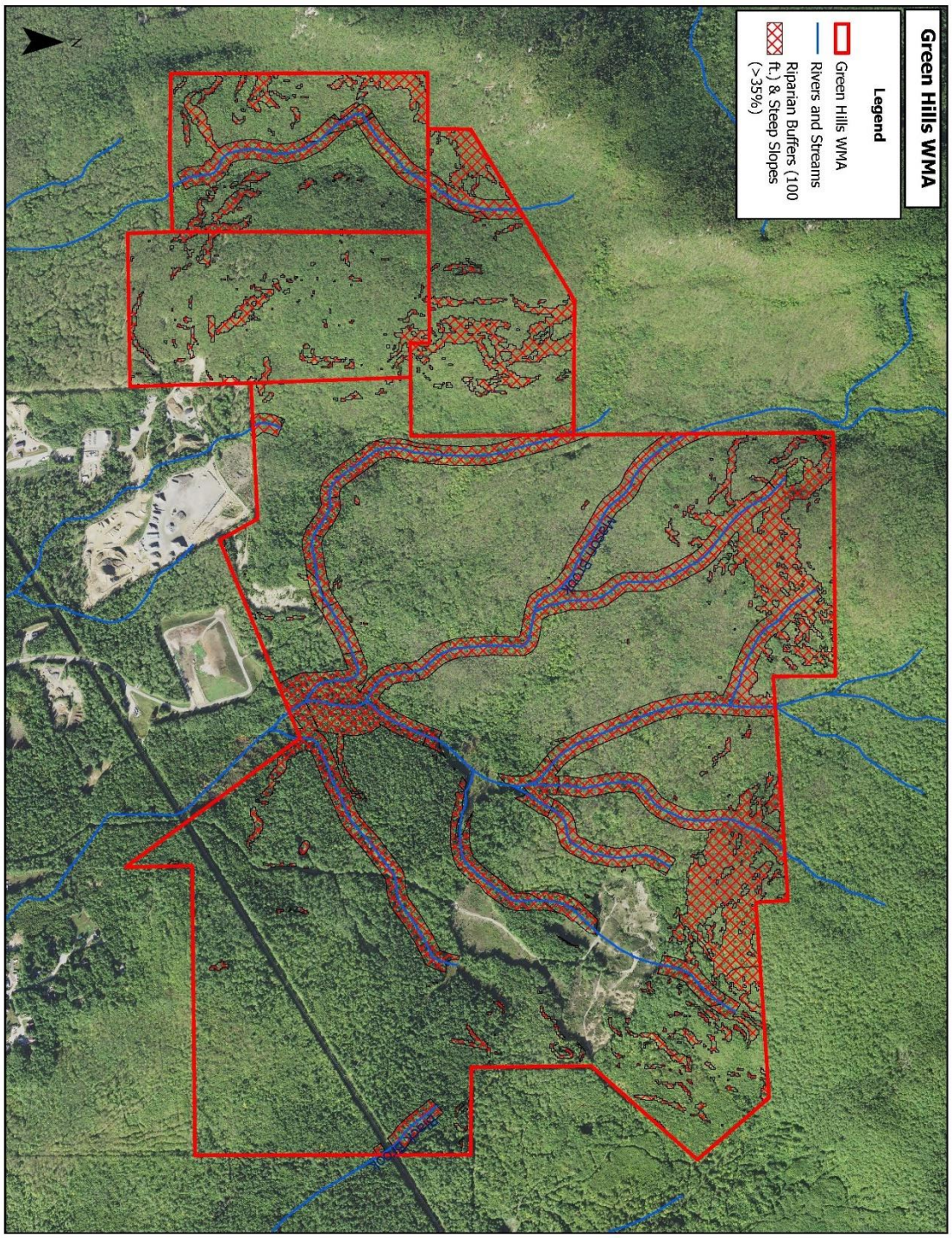
In 2015, TNC completed purchase of the Marshall lands as well as three abutting lots to the west owned by Redstone Properties, Marshall & Saunders, and the Audubon Society of NH.

TOPOGRAPHY AND ASPECT

Terrain on the GHWMA is quite variable across the extent, as one might assume of a property this size. The steepest slopes are found in the northern sections of the property, while more gradual slopes occur to the south. Aspect is generally to the south.



NO WORK AREAS – STEEP SLOPES AND RIPARIAN BUFFERS



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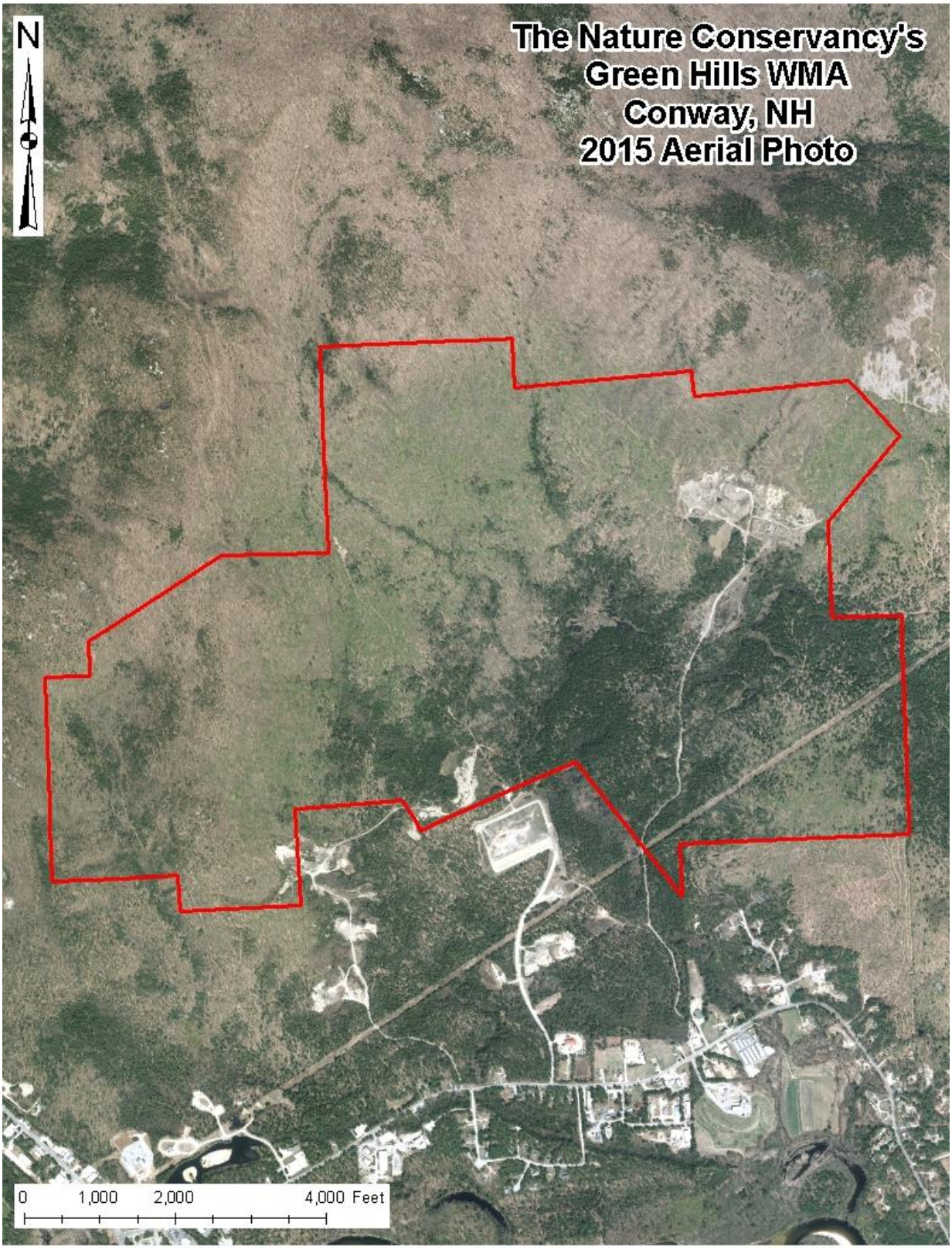

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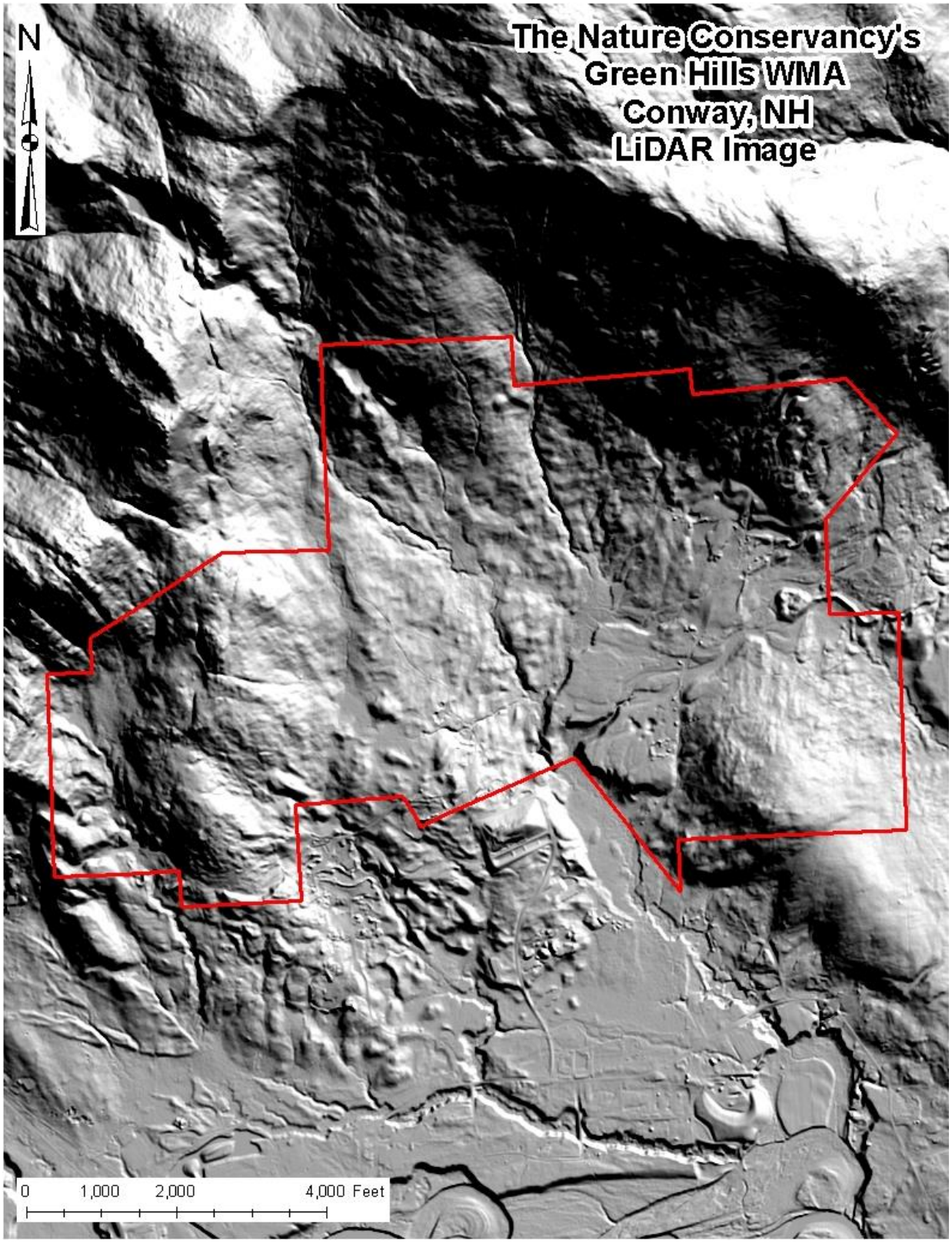
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The Nature Conservancy's
Green Hills WMA
Conway, NH
LiDAR Image
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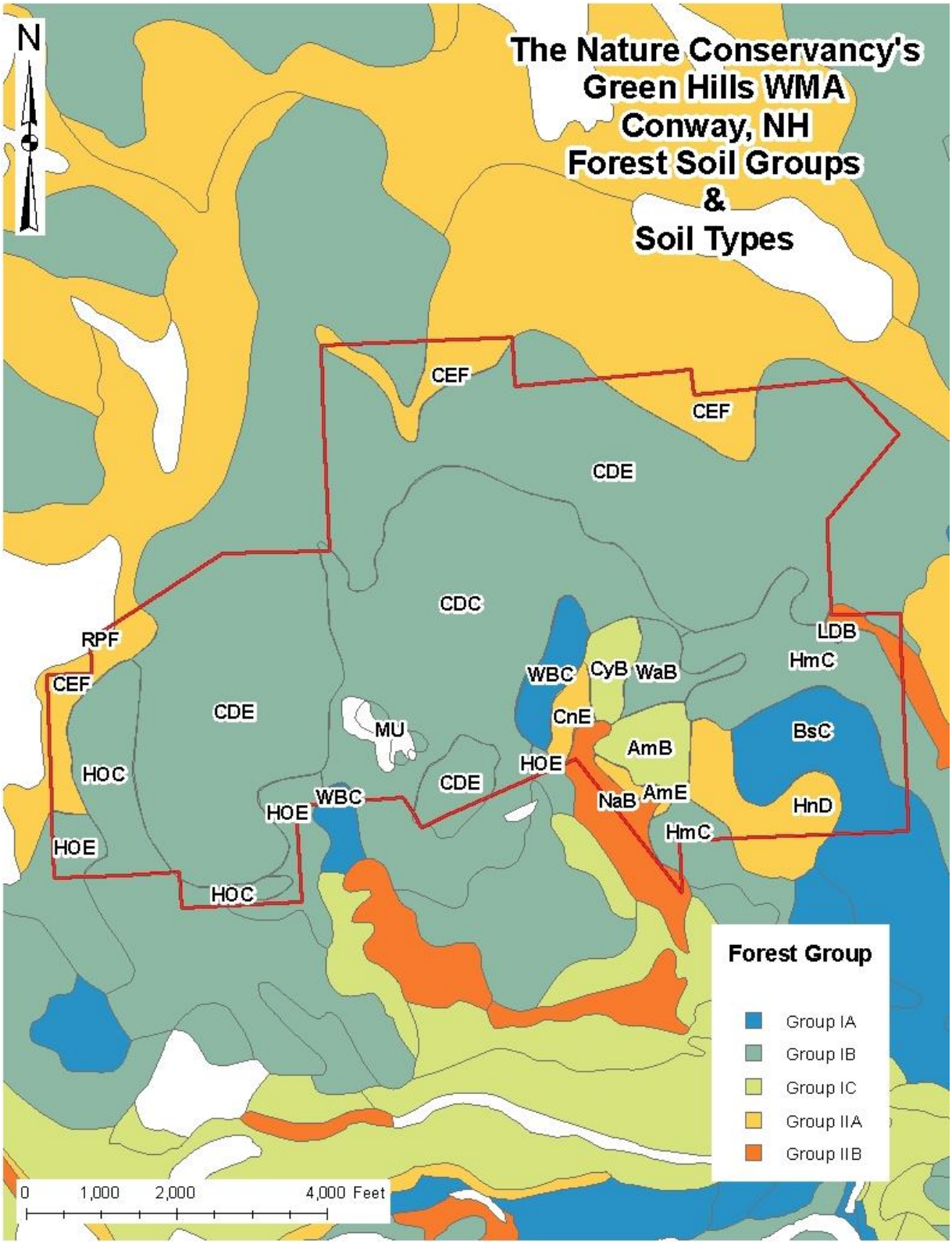
SOILS MAP


N
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Green Hills WMA
Conway, NH
Forest Soil Groups
&
Soil Types
CEF
CEF
CDE
CDC
RPF
CEF
CDE
MU
HOC
HOE
WBC
CDE
HOE
HOE
HOC
WBC
CyB
WaB
CnE
HOE
AmB
NaB
AmE
HmC
LDB
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BsC
HnD
Forest Group
Group IA
Group IB
Group IC
Group IIA
Group IIB
0
1,000
2,000
4,000 Feet

SOILS

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

Group IA Soils

Symbol	Description
BsC	Berkshire very stony fine sandy loam, 8-15% slopes
WBC	Waumbek-Skerry very stony fine sandy loam association, sloping

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
CDC	Canaan-Redstone very rocky, gravelly fine sandy loam association, sloping
CDE	Canaan-Redstone very rocky, gravelly fine sandy loam association, steep
HmC	Hermon very stony fine sandy loam, 8-15% slopes
HOC	Hermon very stony fine sandy loam association, sloping
HOE	Hermon very stony fine sandy loam association, steep
WaB	Waumbek very stone fine sandy loam, 3-8% 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. These soils 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 IC Soils

Symbol	Description
AmB	Adams loamy sand, 3-8% slopes
CyB	Croghan loamy fine sand, 3-8% slopes

The soils in this group are outwash sands and gravels. Soil drainage is somewhat excessively to excessively drained and moderately well drained. Soil moisture is adequate for good softwood growth, but is limited for hardwoods.

Successional trends on these coarse textured, somewhat droughty and less fertile soils are toward stands of shade tolerant softwoods, i.e., red spruce and hemlock. Balsam fir is a persistent component in many stands, but is shorter lived than red spruce and hemlock. White pine, red maple, aspen, and paper birch are common in early and mid-successional stands.

Hardwood competition is moderate to slight on these soils. Due to less hardwood competition, these soils are ideally suited for softwood production. With modest levels of management, white pine can be maintained and reproduced on these soils.

Because these soils are highly responsive to softwood production, especially white pine, they are ideally suited for forest management.

Group IIA Soils

Symbol	Description
AmE	Adams loamy sand, 15-60% slopes
CEF	Canaan-Redstone very rock gravelly fine sandy loam association, sloping
CnE	Colton gravelly loamy fine sand 15-60% slopes
HnD	Hermon extremely stony fine sandy loam, 8-25% slopes

This diverse group includes many of the same soils as in groups IA and IB. However, these mapping units have been separated because of physical limitations which make forest management more difficult and costly, i.e., steep slopes, bedrock outcrops, erosive textures, surface boulders, and extreme rockiness. Usually, productivity of these soils is not greatly affected by their physical limitations. However, management activities such as tree planting, thinning, and harvesting are more difficult and more costly.

Due to the diverse nature of this group, it is not possible to generalize about successional trends or to identify special management opportunities.

Group IIB Soils

Symbol	Description
LDB	Leicester-Pillsbury fine sandy loam association, gently sloping, very stony
NaB	Naumburg loamy sand, 0-8% 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

Symbol	Description
MU	Muck and peat
RPF	Rock outcrop-Lyman association, very steep

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.

ACCESS

For a property of this size, that is lacking frontage on a public road, access for management and timber harvesting is decent. There are two main access roads that enter the property which have a legal Right-of-Way for use. The more westerly of the two roads (road #1 on the Forest Type Map, pg. 20) originates on East Conway Road and runs up through what is now the Burke Quarry, an active and expanding gravel/stone aggregate operation. Burke has significantly improved the road up to the TNC boundary to facilitate his gravel operation. During the field work for this Inventory, the Burkes were friendly and cooperative and seemed to be well aware of the presence and location of the R.O.W. They are, however, at the time of the writing of this plan, relocating the access road around their planned expansion of the quarry. This new road will also be used as part of the Corridor 19 Snowmobile Trail that runs through portions of the GHWMA.

The existing woods road system on the GHWMA that originates from the Burke Quarry would require minor improvements to facilitate use by large logging trucks, but generally traverses fairly well drained soils. In the past, trucks have utilized the lower sections of the Mason Brook Trail with at least two landing areas off the road. The large size of the tractor-trailer type log trucks that are currently used may make this impractical, and a landing just above the yellow gate may be as far north up the woods road as is practical to run trucks, or perhaps in the old pit area just to the southwest of the gate.

Installing a gate where the access road enters the GHWMA from the Burke pit would help to curb unwanted vehicular access. As noted above, this route is also a main snowmobile corridor, and the local club would need a key/combination to this gate.

The other main access road (road #2 on the Forest Type Map, pg.20) also originates on East Conway Road, just beside and behind Gilmour's firewood operation. The road passes over land owned by the Town of Conway before entering TNC's property approximately at the powerline. There is a large bridge over Mason Brook on the Town's property that needs to be re-decked in order to be used by any wheeled vehicles. The bridge is constructed with heavy steel I-beams for stringers and should be more than sufficient to facilitate use by large logging trucks. The Town of Conway has no vested interest in this bridge and has indicated they would not be inclined to share any financial costs associated with its renovation. The reconstruction of the bridge could be rolled into the scope of a timber harvest and the work conducted by the logging contractor.

The roadway itself has been ditched and built up, mostly with gravel from the old Kennett Company pit, which was noted for having sub-par gravel. There are several sections/hills where minor erosion has occurred and some grading and the addition of better-quality processed gravel will likely be necessary. There are several old landing areas off this road (and a short spur road) as well as the greater pit area that could serve as log landings with minimal improvements.

The sides and ditches of the road have begun to grow in heavily with saplings. As part of any potential logging operation, the edges of the road should be brushed back. This could

potentially be done with a brontosaurus type, excavator mounted mower, mulching the saplings in place.

Within the woodland areas, the vast majority of the property is accessible to logging equipment. There are several small forested wetland areas within stand 2 that should be avoided, along with the courses of the streams and brooks. High on the hill, there are several areas where steep slopes and rock outcroppings/ledges may preclude access, but much of the property is able to be operated.

For the experimental harvest, two log landings will be used, one just north of the trail intersection on the Mason Brook trail, approximately .2 miles north of the yellow gate, and one near the intersection of the snowmobile trail and the Kennet Pit Road. From these landings, long forwarder trails will travel to the Treatment Units. In order for this heavy equipment to use these trails without causing undue soil damage, the trails need to be packed with brush, created by cutting trees along the route. Depending on weather and ground conditions, additional trees along the route may need to be marked by the forester to be cut in order to add more brush. This marking should focus on poor quality stems, dead/dying oak (from spongy moth) and undesirable understory stems.

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
Red Spruce	SP	Balsam Fir	BF
Eastern Hemlock	HM		
Red Oak	RO	Red Maple	RM
Sugar Maple	SM	White/Paper Birch	WB
Yellow Birch	YB	White Ash	WA
Aspen*	AS	American Beech	BE
Pitch Pine	PP	Black Birch	BB

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

The inventory was conducted using BAF (20 factor prism) point sampling with sample points being located on a 450' grid (one point per 4.65 acres). Deliverable data for each forest stand included; Total Basal Area, Species Composition by Basal Area, Mean Stand Diameter, Total Trees Per Acre, and % of acceptable growing stock. Snags/den trees were tallied in the same fashion as live timber.

Advanced regeneration (stems between 1" and 6" DBH) was tallied within a 1/10 acre sample plot (37.2' radius) at each point location. The number of advanced stems per acre by species were calculated for each stand. Downed woody debris greater than 10" was tallied in the same manner as the advanced regeneration.

*Both Quaking and Big-tooth aspen are present on the site, but big-tooth is more common.

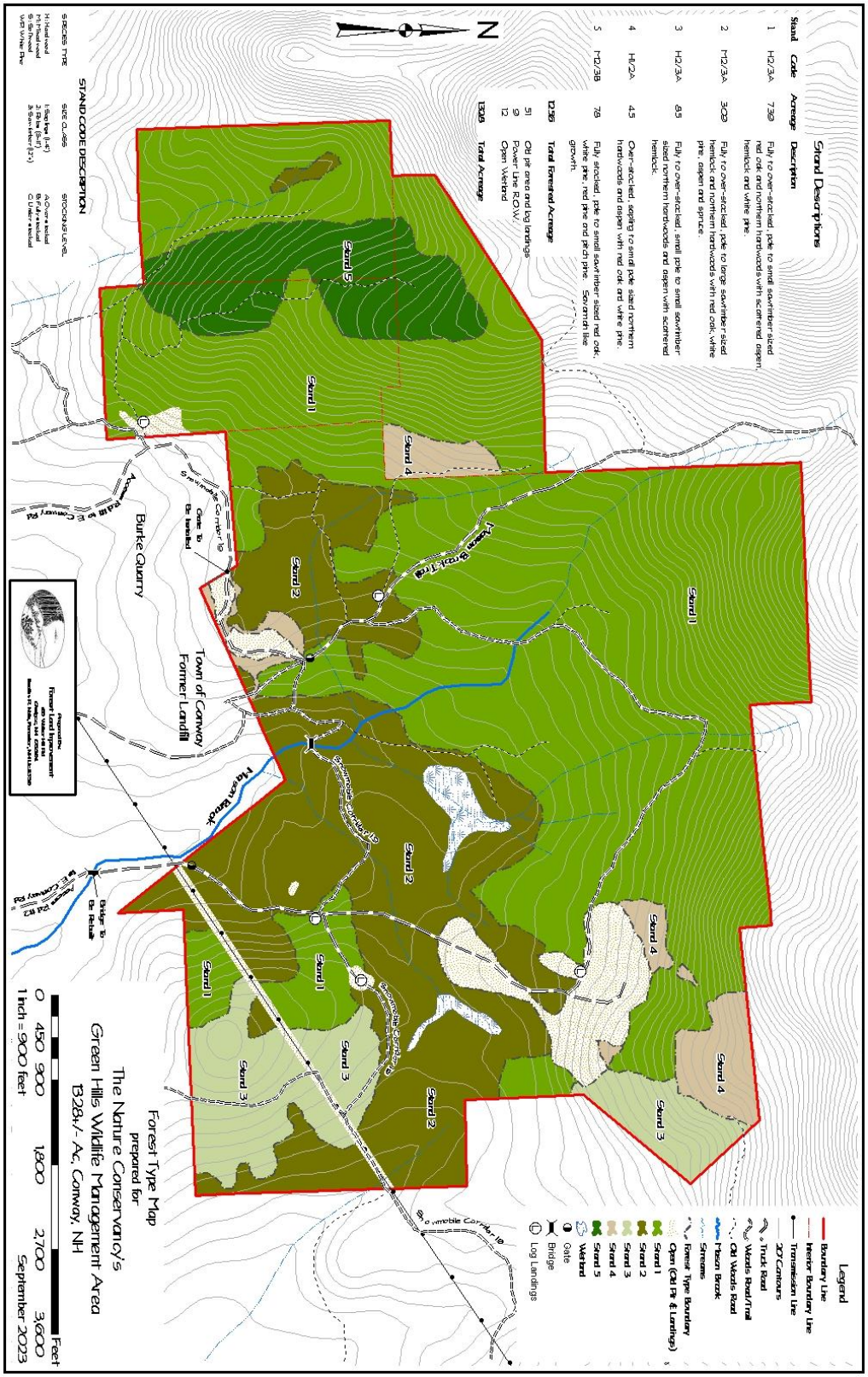
STAND DESCRIPTIONS

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.

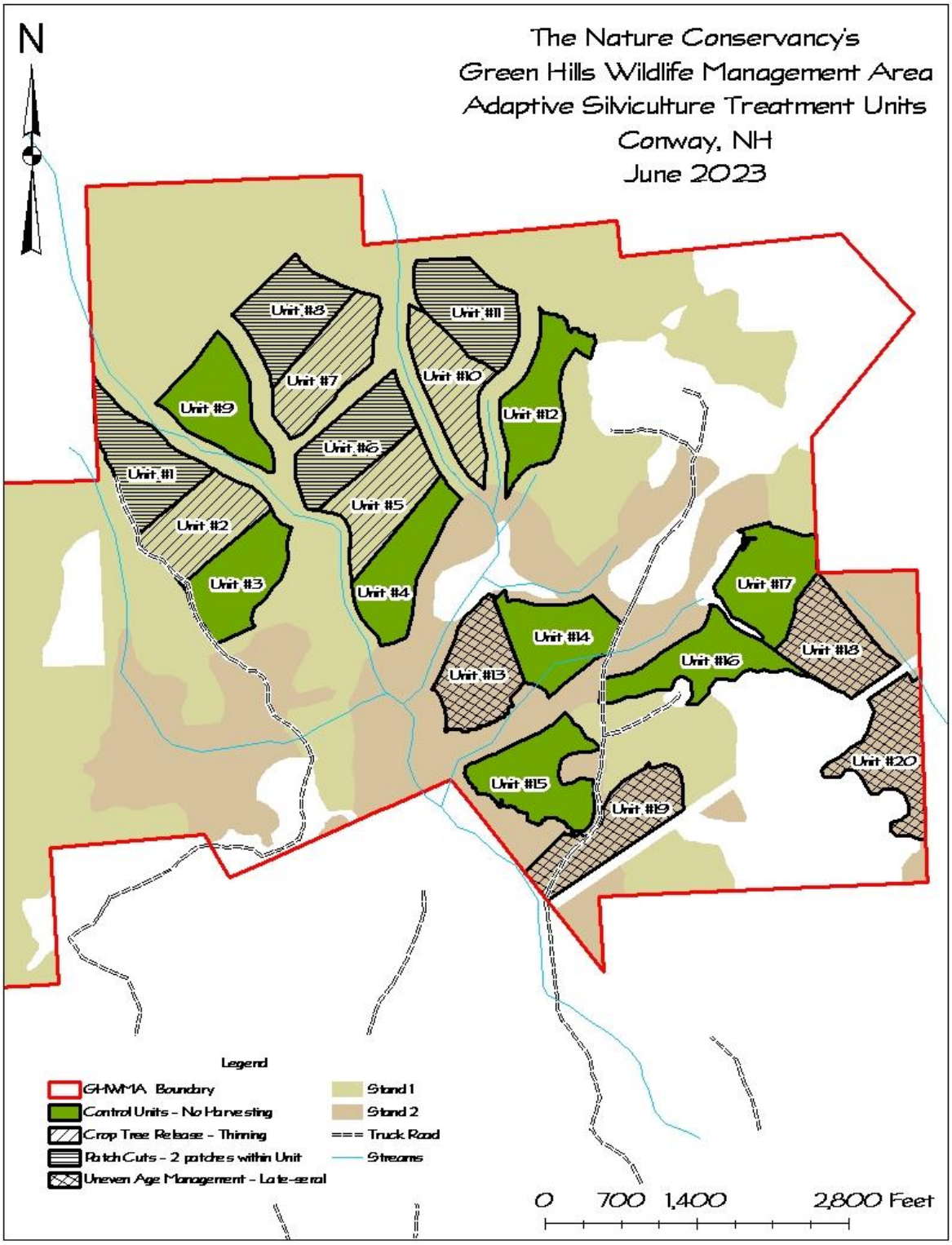
Stand	Code	Acreage	Description
1	H2/3A	739	Fully to over-stocked, pole to small sawtimber sized red oak and northern hardwoods with scattered aspen, hemlock and white pine. Fair to good quality.
2	M2/3A	309	Fully to over-stocked, pole to large sawtimber sized hemlock and northern hardwoods with red oak, white pine, aspen and spruce. Fair to good quality.
3	H2A	85	Fully to over-stocked, small pole to small sawtimber sized northern hardwoods and aspen with scattered hemlock. Fair to good quality.
4	H1/2A	45	Over-stocked, sapling to small pole sized northern hardwoods and aspen with red oak and white pine. Good quality.
5	H/M2/3A	78	Fully stocked, pole to small sawtimber sized red oak, white pine, red pine and pitch pine. Savannah like growth. Poor to fair quality.
		1256	**Total Forested Acreage**
		51	Old pit area and log landings
		9	Power Line R.O.W.
		12	Open Wetland
		1328	**Total Acreage**

3. TIMBER RESOURCES

FOREST TYPE MAP



ADAPTIVE SILVICULTURE TREATMENT UNIT MAP



STAND TECHNICAL DATA AND RECOMMENDATIONS

The following section provides the technical data and silvicultural recommendations for the five stands delineated during the 2022 timber inventory.

Stands 1 & 2, which make up a large portion of the WMA are the stands where The Nature Conservancy is collaborating with the University of Vermont to implement adaptive silviculture for climate change. The forest management practices that will be used in these experimental areas will be aimed at addressing climate vulnerabilities identified using the Adaptation Workbook developed by the Northern Institute of Applied Climate Science. The University of Vermont is establishing long-term monitoring plots during the summer of 2023 to be able to assess the efficacy of the treatments over time.

The experimental areas will include 180 acres of Stand 1 (~25% of the stand) and 120 acres of Stand 2 (~38% of the stand). The management that occurs within the remainder of these stands will be informed by the results of the experimental treatments and also follow the recommendations outlined in this section.

Stand 1 – H2/3A - 739 Acres

ACREAGE	739 AC
Basal Area	129.1 sq.ft./Ac
Species Composition by B.A.	RO-36%, AB-31%, RM-14%, AS-7%, HM-4%, Other-8%
Trees Per Acre	284.7
Mean Stand Diameter	9.1”
Adv. Regeneration Stems/Acre	AB-360, AS-6, HM-43, OH-29, PB-3, RM-51, RO-4, RP-3, RS-1, SM-7, WP-13, WA-1, YB-5
Total Sawlog Volume/Acre	6.251 MBF/Acre
Total Pulpwood Volume/Ac	58 Tons/Acre
Snags/Ac 6-11.9”	18.6
Snags/Ac 12-17.9”	.8
Snags/Ac 18”+	.1
Downed wood/Ac 10-18”	8.9
Downed wood/Ac 18”+	.5

Stand 1 is by far the largest forest type on the Green Hills Wildlife Management Area. It is generally fully to over stocked with a mixture of pole to sawtimber sized red oak and northern hardwoods (beech, birch, maple), along with scattered white pine, aspen and hemlock. Past harvesting has (by and large) not been based on silviculture and has been focused on removing the more valuable stems, primarily red oak and white pine sawtimber. Because of the spotty, partial nature of this past harvesting, shade tolerant beech regeneration has become widely established throughout much of the stand. Beech’s propensity for root suckering when cut, along with its ability to thrive in the shade of the understory make it difficult to get rid of once established.

Future management of stand 1 should focus heavily on promoting the development of the existing red oak component, along with the establishment of desirable regeneration, adding another age class to the two distinct classes that currently make up this stand. The existing oak in the stand varies from poor to good quality, largely based on soil fertility and available moisture. Additionally, the severe defoliation associated with the Gypsy/Spongy Moth infestation of the last two years (2021 & 2022) has adversely impacted the overall health of the oak, in some cases appearing to have already cause significant epicormic sprouting and potential mortality. The stand has, and should continue to be assessed closely in the summer of 2023 to see how the trees are responding to the repeated defoliation. At the time of this Plan development (June 2023), following a regional site visit by William Davidson, Forest Health Specialist, NH Div. of Forests and Lands, a follow-up damage assessment project is planned by Forest Health with a new drone they are acquiring with IR capability. Results of this study should be available by late summer 2023.

Oaks are the most important mast producing species in this area of the country. Healthy beech can produce crops of nuts periodically, but the beech bark disease has affected the overall health of the trees and there does not seem to be regular nut crops like has historically occurred. Additionally, oak is the most consistently valuable of the native hardwood species in this region, so growing oaks for acorns dovetails nicely into the economics of timber production.

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. For maximum acorn production, the rotation age of oaks should be extended beyond what is normal for timber production, and could be well in excess of 100 years. In general, the larger and healthier the trees, the greater the acorn production. As with all trees, health is generally in direct correlation to the size of the crown (photosynthetic area) and trees with ample room to spread out their crown instead of competing with neighboring trees for space tend to be healthier.

The oaks in stand 1 are just approaching their peak acorn production years. Overall health is poor to good, and there are individuals throughout the stand that exhibit signs of decay or stress. Management in this stand should focus on oak production, looking to provide a steady supply of hard mast and grow valuable sawtimber.

The recommended harvesting throughout stand 1 would be a combination of improvement thinning and group selection harvesting. The thinning would be designed to improve the overall timber growth in the stand, giving the better- quality trees room for crown expansion/increased growth by reducing the basal area from its current level of around 129 sq.ft./ac down to between 85-90 sq.ft./ac. The thinning should focus on removing the poorer quality oak, as well as the less desirable species such as beech.

Scattered throughout the stand is a white pine component of various density and quality. Where pockets of better-quality pine exist, it is recommended to attempt to develop pine regeneration within the stand. By removing much of the non-pine growth from the mid-canopy and understory, as well as thinning the overstory to allow for additional light to reach the forest floor, the germination of pine seedlings could be encouraged. White pine is a valuable timber species that tends to do well when mixed with oak. If this regeneration were able to be established, its growth should be monitored, and, as needed, additional light shed on it through subsequent thinnings. If the hardwood sapling growth were vigorous enough to stunt the growth of the young pines, then a round of pre-commercial hardwood control (Timber Stand Improvement) might be necessary. Adding the diversity of young pine growth to this maturing hardwood stand would only serve to benefit the habitat the area provides and help to ensure that the next forest to occupy the site is healthy and productive.

There are significant areas throughout the stand that are of generally poor quality or stocked with less desirable species. Within these areas, rather than the thinning harvest recommended in the areas dominated by better quality oak, the group selection method of harvesting would remove groups or of trees, seeking to regenerate rather than working with

the trees that currently occupy the site. These group openings, or clearcuts, should be fairly small, generally between ½ and 3 acres in size, although if larger areas of poor-quality growth were identified, group sizes upwards of 5 acres could be implemented. Furthermore, if good quality early successional seed/coppice sources were present, openings of 5 acres would allow these shade-intolerant species a competitive advantage over the omni-present beech. Wherever possible, regardless of size, these openings should be located adjacent to a decent quality or desirable seed source (oak, pine, aspen, maple, birch). Having aspen within the openings will help to promote root suckering and develop aspen regeneration.

By creating these group openings within the stand, a new age class will become established. This new age class will initially consist primarily of early successional growth (grasses, forbs and brambles) mixed with shade intolerant and moderately shade tolerant tree species. The abundance of light in these group openings will hopefully allow for the more desirable species such as oak, birch, maple, aspen and pine to compete with the fast-growing beech sprouts that will invariably occupy the site.

The harvesting, if possible, should be timed for the summer months on dry ground in order to maximize forest floor disturbance, exposing mineral soils and preparing the seedbed for germination. This is especially important for light seeded species such as the birches, aspen and pine. An abundant pine seed year appears to be occurring in the fall of 2023. However, the past two years of defoliation has likely removed any chance of an oak seed year coinciding with the pine seed drop.

There is a significant amount of advanced regeneration throughout much of the stand. Beech is far and away the most common species, while red maple, hemlock, other hardwoods (striped maple, hop hornbeam, grey birch, pin cherry), and sugar maple are also common, often depending on site fertility and available moisture.

Any harvesting conducted will result in beech regeneration. This is an inevitability brought on by past harvesting and current stand conditions. Partial harvests (thinnings), while promoting growth in the residual overstory, are also very efficient at promoting beech in the understory, as this is species is prolific at root suckering when cut and is very shade-tolerant, capable of growing under all but the most-dense canopies. Where regeneration is desired, larger group openings should allow for the less shade tolerant species to compete with the beech sprouts.

Climate Vulnerabilities

- Pests and pathogens; beech bark disease, spongy moth, beech leaf disease.
- Lack of diversity, particularly in the advanced regeneration
- Lack of structure (primarily a two-aged stand with lack of biological legacies such as large (>20”) snags and coarse woody debris)
- Drought prone, dry, south facing slopes with well/extremely well drained soils

Adaptive Silviculture Experimental Harvest in Stand 1.

Desired Future Conditions:

- Healthy forest with structural and species diversity; multiple age classes; downed and decaying wood; and late successional characteristics developing throughout, including the presence of 6-7 large (>20") snags/downed wood per acre
- Diverse regeneration with species adapted to future climate with reduced dominance of beech and a higher presence of red oak, white pine, and other adaptation species (to be decided)
- Patches of early successional habitat for wildlife
- Reduced preponderance of diseased beech

As part of the experimental harvest for Adaptive Silviculture, there are twelve, 15-acre treatment units identified within stand 1 (Treatment Units #1-12, see the map on page 20). Treatment Units 1, 6, 8 & 11 will be focused on regeneration of desirable species and within each 15-acre unit, two patch clearcuts will be located, one 3-acres in size and one 5-acres. Within these clearcuts, there will be reserves, consisting of existing snag and cavity trees and the retention of 10-15 overstory trees as within-patch legacy trees and to act as a desirable seed source. There may also be a certain amount of fell/pull over and leave to increase the presence of large, coarse woody debris.

Following the harvest, there will be a certain amount of experimental planting of species adapted to expected future conditions. Species being considered for planting on the site within these patch cuts include; bigtooth aspen, pitch pine, red maple, hop hornbeam, adelgid resistant Eastern Hemlock (if eventually available), black birch, scarlet oak, chestnut oak, white oak, black oak, musclewood, bitternut hickory, and shagbark hickory. Planting density would be around 400 seedlings/acre. Browse protection will be applied to half the seedlings to quantify the effects of browse pressure on this site.

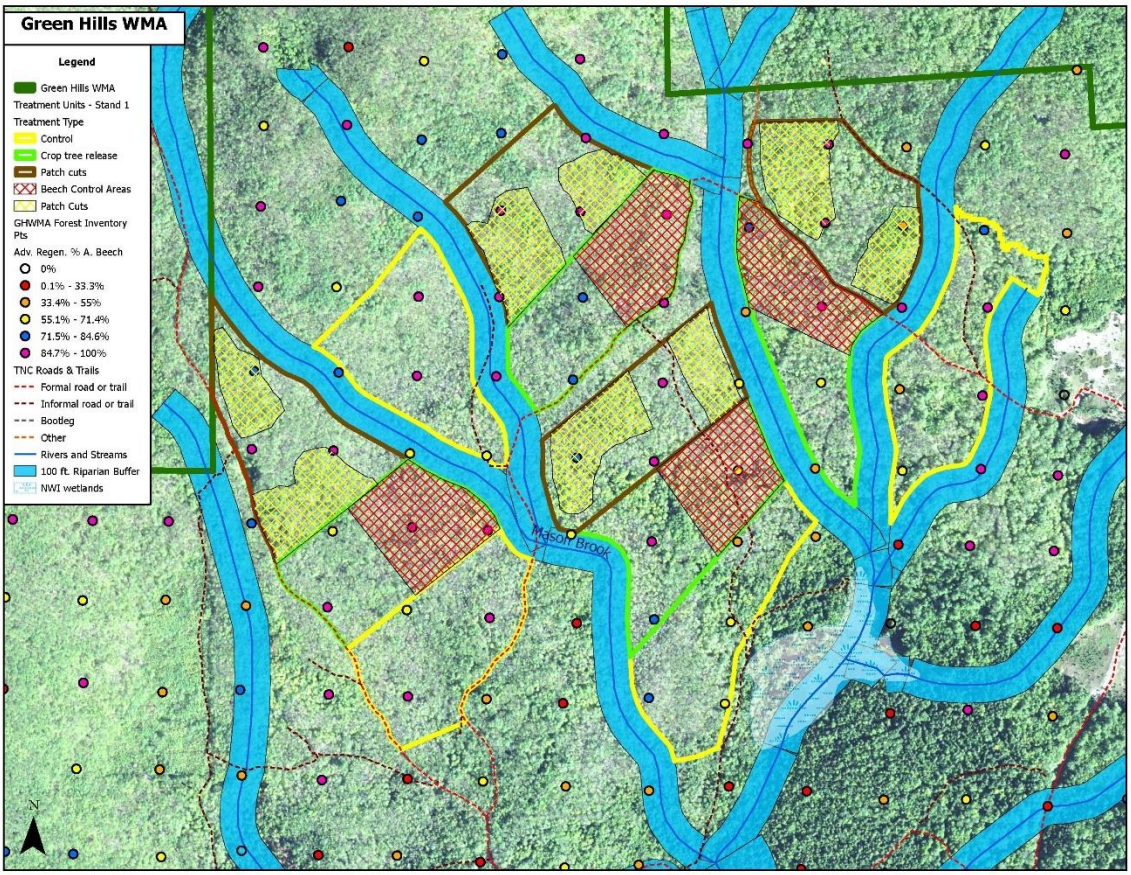
The possibility and practicality of creating slash walls/barriers within portions of the patch cuts, particularly in those areas where planting occurs, in an effort to curb browse pressure is being considered. These slash walls would encircle up to half of some of the patch cuts (up to 2.5 acres of protected area). Following the harvesting, the non-merchantable slash and debris are piled into windrows in excess of 10' tall and 20' wide, creating barriers that deer and moose will be reluctant to cross.

In Treatment Units 2, 5, 7 & 10, crop tree release thinning will occur, with a target residual basal area of around 85-90 sq.ft./acre. Apply crop-tree release to 50 crop trees per acre by releasing at least 2 sides of the crown. Fewer than 50 crop trees per acre can be released where stocking is already lower. Crop trees will largely be better-quality oak that have survived the spongy moth infestation, although other species can be selected where suitable oaks are not present.

Understory/midstory removal treatment will be conducted in half of each Treatment Unit to encourage the development of oak and white pine advanced regeneration. A certain number of large, low value trees will be felled/tipped over and left to promote large diameter downed woody debris.

The potential for underplanting oak, white pine, and other future-adapted species at low densities in areas receiving midstory/understory removal is being considered.

Included in the crop tree release thinning within Units 2, 5, 7 & 10 is an experimental effort to control beech sprouting by pre-treating sections of the unit with an "frill and squirt" herbicide application, conducted by UNH Extension Forestry staff using funding from the Natural Resource Conservation Service. The details of this project can be found in the Appendix of this plan, but an overview of the methodology consists of selecting the largest beech within the stand, hacking frills in the bark and applying herbicide. This herbicide is quicky taken into the root system and transported to the neighboring stems through grafted roots. This treatment, ahead of the harvesting, should decrease the amount of beech root and stump sprouting following the cutting. The following sketch map shows the potential location of these Frill and Squirt Applications within the management units.



Within the riparian buffers between the Treatment Units, an opportunistic approach will be taken to enhance old forest characteristics through the release of crop trees (oak, white pine, hemlock, and sugar maple. Additionally, the targeted release of existing hemlock and spruce advanced regeneration will be conducted through very small group openings. All felled trees within the riparian buffers will be retained on site with woody debris potentially added to the stream channels if deemed appropriate/acceptable by subject matter experts, particularly John Magee at NH F&G.

Treatment Units 3, 4, 9 & 12 will remain uncut as a control.

Stand 2 – M2/3A – 309 Acres

Stand 2

ACREAGE	309 AC
Basal Area	151.0 sq.ft./ac
Species Composition by B.A.	HM-49%, AB-12%, RM-12%, RO-9%, WP-6%, Other-12%
Trees Per Acre	296.7
Mean Stand Diameter	9.7"
Adv. Regeneration Stems/Acre	AB-111, AS-1, BF-9, HM-130, OH-16, PB-6, RM-31, RO-5, RS-24, SM-3, WP-17, WA-5, YB-8
Total Sawlog Volume/Acre	9.335 MBF/Acre
Total Pulpwood Volume/Ac	51 Tons/Acre
Snags/Ac 6-11.9"	10.3
Snags/Ac 12-17.9"	2.3
Snags/Ac 18"+	----
Downed wood/Ac 10-18"	6.9
Downed wood/Ac 18"+	.2

Stand 2 is the second largest forest type within the Green Hill Wildlife Management Area and consists of a mixture of pole to sawtimber sized hemlock, northern hardwoods and red oak with scattered white pine, spruce and aspen. Quality is generally better in the more easterly sections of the stand, primarily due to more available moisture and higher soil fertility. Past harvesting has been fairly light in nature and has focused on removing the more valuable oak, pine, and spruce stems. The resulting regeneration is thick in some areas, consisting of a mixture of beech, hemlock and other hardwoods. Where hemlock occurs in the understory, it is generally in patches and small groups.

Hemlock is an incredibly important species for the wildlife habitat it provides. Thick hemlock canopies block harsh winter winds, trap some of the daytime's heat to offset radiational cooling and keep snow depths down. A multitude of species utilize hemlock stands during the winter months, particularly deer. Stands with multiple canopy levels are more beneficial for winter cover than single canopied stands. For this reason, striving to increase age class diversity through timber harvesting is recommended. There is scattered evidence throughout this stand of use by deer as a wintering area.

There are three objectives when managing hemlock stands for winter deeryards; 1) maintain shelter conditions within the majority of the deeryard, 2) perpetuate the timber type (in this case hemlock/hardwood) by encouraging regeneration within the yard and in adjacent stands, and 3) where possible, manage adjacent hardwood stands for browse production.

Perpetuating the softwood cover in stand 2 should be relatively easy to accomplish because of the abundance of advanced hemlock in some areas. Where these advanced softwood saplings exist, additional light should be shed on them by carefully removing some of the overtopping trees. Where no regeneration is present, it should be established through a conservative group selection. Very small group holes (50-100' in diameter) should be opened in the canopy of the stand. These small holes in the canopy will shed light on the developing understory as well as provide adequate room for the establishment of new age classes of softwood. Trees targeted for removal would include the scattered hardwood throughout the stand, poorly formed trees, and some of the large sawtimber sized hemlock. These small group openings should be at least 125-150' apart in order to maintain the dense softwood canopy. This method of un-even aged silviculture is recommended for deeryard management. In general, the average basal area of the stand should not drop below 95-100 sq.ft./acre in order to maintain adequate softwood canopy cover. Re-entry to the stand should occur every 15-20 years in order to develop new age classes, shed additional sunlight on the developing regeneration and help to promote a diverse, un-even aged stand with diversity of tree species, ages and heights.

In between the small group openings, a very light thinning would seek to promote growth in the better-quality stems. This thinning would remove those trees in direct competition with the good quality pole sized stems, allowing for increased growth. Oak in particular should be encouraged wherever possible for not only it's timber value, but its potential for hard mast production.

The creation of browse in adjacent stands is covered in the management recommendations for stands 1 & 3 and would be accomplished through larger group selection harvesting to produce areas of regeneration/early successional habitat. These group openings will produce the type of browse deer prefer as a food source in the winter months.

Within much of stand 2, despite being present, beech plays a less significant part in the makeup of the advanced regeneration. Hemlock and in some areas red maple and yellow birch are much more common than in the other, hardwood dominated stands on the property. The same inevitability of beech regeneration exists as in stand 1, but at a lower level. Extreme care should be taken during the layout and harvesting to avoid damage to the existing hemlock regeneration. This slow growing species needs every advantage it can get to compete with the faster growing hardwoods. Where already established, it should be promoted whenever possible.

Climate Vulnerabilities

- Potential loss of hemlock due to future hemlock wooly adelgid infestation
- Other pests and pathogens (beech bark disease, spongy moth, beech leaf disease)
- Lack of diversity in both species composition and age classes, although the advanced regeneration within this stand is slightly better.
- Droughty soils in some areas of the stand.
- Lack of biological legacies (large (>20") snags and downed wood

Adaptive Silviculture Experimental Harvest in Stand 2.

Desired Future Conditions:

- Intact winter cover for wildlife
- Healthy forest with structural and species diversity; multiple age classes; downed and decaying wood; and late successional characteristics developing throughout, including the presence of 6-7 large (>20") snags/downed wood/acre
- Diverse regeneration with species adapted to future climate, with retention of softwood species/cover.
- Persistence of regenerating hemlock (or replacement species) in key areas within the stand where shading and cover are important for wildlife

As part of the experimental harvest for Adaptive Silviculture, there are 8, 15-acre treatment units identified within stand 2 (Treatment Units #13-20, see the map on page 20). Treatment will occur in Units #13, 18, 19 & 20, and Units # 14-17 will act as a control.

Harvesting within the Treatment Units will consist of:

- Creation of single-tree (50' diameter/ 0.05ac) and small group selection (100' diameter/ 0.2 ac) openings in 10-20% of the stand, targeting existing pockets of hemlock and red spruce regeneration (where present) for release
- Improvement thinning in between the regeneration openings to accelerate growth of hemlock, spruce, white pine, and red oak canopy trees
- Retention of a certain number of canopy trees per acre as legacy trees.
- Target residual stand basal area of 95-110 sq.ft./ac and softwood crown closure between 65-75%..
- Fell and leave a certain number of large, low value trees per acre to create downed dead wood.
- Plant red spruce and hemlock (preferably HWA-resistant hemlock) seedlings from local and more southerly genotypes in group openings and thinned areas in the spring following the harvest. Seedlings would be planted at a rate of approximately 400/acre (roughly 10' spacing)
- Apply browse protection to half of the seedlings planted.

Stand 3 – H2A – 85 Acres

Stand 3

ACREAGE	85 AC
Basal Area	118.9 sq.ft./ac
Species Composition by B.A.	AB-57%, RM-20%, HM-11%, PB-6%, Other-8%
Trees Per Acre	261.2
Mean Stand Diameter	9.1”
Adv. Regeneration Stems/Acre	AB-213, AS-29, HM-15, OH-4, PB-5, RM-8
Total Sawlog Volume/Acre	2.100 MBF/Acre
Total Pulpwood Volume/Ac	58 Tons/Acre
Snags/Ac 6-11.9”	16.8
Snags/Ac 12-17.9”	.8
Snags/Ac 18”+	----
Downed wood/Ac 10-18”	4.4
Downed wood/Ac 18”+	1.6

Stand 3 on the Green Hills WMA is dominated by small pole to small sawtimber sized northern hardwoods **without** a significant presence of oak in the species mix. The lack of oak is what differentiates this stand from the other significant areas dominated by hardwood growth. The overall size of the timber is slightly smaller as well. Included in the stand are several areas that were heavily cut over some 50 years ago, resulting in patches of small pole sized timber growth, heavy to paper birch, aspen and beech.

Management opportunities in this stand are fairly limited due to the overall poor quality and heavy presence of beech. Across the whole, there is not enough good quality, desirable stems to warrant thinning. Additionally, thinning would only serve to promote additional beech regeneration.

Instead, management should seek to regenerate portions of the stand using the group selection method of harvesting. Larger group openings, 2-5 acres in size and fairly widely spaced, would seek to regenerate approximately 20% of the stand (for a total of around 17 acres). Over time, creating series of these openings on a 20-year rotation, would create a multiple aged hardwood stand that hopefully has a lower prevalence of beech than currently exists.

Conducting the harvesting during the summer months on bare ground would produce more soil disturbance and better ground scarification, preparing the seedbed for the germination of light seeded species such as the birches, aspen, maple and pine. Retaining good quality seed sources around the outer edges of these openings should help to promote regeneration of desirable species.

Where possible, locating these group openings adjacent to or near stand 2, and the hemlock/winter deer habitat it provides, will produce close access to browse during the winter months.

Within stand 3, the advanced regeneration is very heavy to beech with relatively little presence of other species in all but those areas that have seen the heaviest cutting in the past. As previously discussed, creating larger sized (2+ ac) openings will hopefully give other, less shade tolerant species a chance to compete against the beech regeneration that will most certainly be present.

Climate Vulnerabilities

- Pests and pathogens; beech bark disease, spongy moth, beech leaf disease.
- Lack of diversity, even more pronounced than in stand 1, both in the overstory and understory
- Lack of structure (primarily a two-aged stand with lack of biological legacies such as large (>20") snags and coarse woody debris)
- Drought prone, dry, south facing slopes with well/extremely well drained soils

Stand 4 – H1/2A – 45 Acres

Stand 4

ACREAGE	45 AC
Basal Area	18.4 sq.ft./ac
Species Composition By B.A.	PB-36%, AB-18%, AS-18%, RM-18%, Other-10%*****
Trees Per Acre	60.1
Mean Stand Diameter	7.4"
Adv. Regeneration Stems/Acre	AB-559, AS-27, HM-6, OH-53, PB-125, PP-30 (localized), RM-145, RO-39, RP-22, WP-35
Total Sawlog Volume/Acre	0.142 MBF/Acre
Total Pulpwood Volume/Ac	9 Tons/Acre
Snags/Ac 6-11.9"	13.3
Snags/Ac 12-17.9"	----
Snags/Ac 18"+	----
Downed wood/Ac 10-18"	3.6
Downed wood/Ac 18"+	----

*****This species composition is misleading, as the vast majority of the stand is made up of sapling sized stems, below the threshold for measuring in this part of the inventory. The advanced regeneration tally, measuring stems from 1"-6" diameter, is more representative of the stand.

Stand 4 is the smallest of the forest types on the Green Hills WMA and is overstocked with sapling to very small pole sized northern hardwoods and aspen along with scattered oak and pine. It is largely the result of patch clearcuts done some 20-40 years ago. In some cases, this cutting was done as clearing for the large pit area, but was never excavated and allowed to grow back to woods. In other cases, it was done because (I assume based on field evidence and what I know of how the Kennett Company managed their woodlands) there was a large area of high value timber growth that was targeted for removal.

There is currently no opportunity for commercial management, as the stand is still some 30-40 years away from being ready for a commercial thinning. The only active management potential is the prospect of conducting some amount of pre-commercial Timber Stand Improvement. This practice would seek to manually release "crop trees" from competition, allowing them room to out compete the neighboring stems. While this type of project is fairly costly (generally around $400/ac) it does have substantial impact on the future stocking of a stand, manipulating the eventual makeup and skewing it towards desirable species such as oak, maple and birch, instead of the thickets of beech that would otherwise persist.

Climate Vulnerabilities

- Lack of diversity in age structure, consisting of a single age class, making it particularly susceptible to extreme weather events, insect infestation and forest diseases.
- Lack of biological legacies such as large (>20”) snags and coarse woody debris) which will be difficult to remedy such a young stand

Stand 5 – H/M2/3A – 78 Acres

ACREAGE	78 AC
Basal Area	121.5 sq.ft./ac
Species Composition by B.A.	RO-56%, WP-13%, PP-13%, RP-9%, Other-9%
Trees Per Acre	263.2
Mean Stand Diameter	9.1”
Adv. Regeneration Stems/Ac	AB-87, OH-16, PB-3, PP-2, RM-154, RO-35, RP-32, WP-113
Total Sawlog Volume/Acre	4.733 MBF/Acre
Total Pulpwood Volume/Ac	44 Tons/Acre
Snags/Ac 6-11.9”	25.4
Snags/Ac 12-17.9”	2.5
Snags/Ac 18”+	----
Downed wood/Ac 10-18”	6.1
Downed wood/Ac 18”+	.8

Stand 5 exhibits characteristics of a variant of the Appalachian-oak-pine forests which occur much more common to the south of this area. Additionally, characteristics of a pitch pine/red pine rocky ridge community are present. Stocking is dominated by pole to small sawtimber sized red oak, white pine, pitch pine and red pine. These species occur on this dry, rocky ridge with very little soil, moisture or nutrients. The understory has a fair bit of grass and there are many areas with a more open understory that most of the rest of the WMA. This is a fairly unique forest community, and final management recommendations will likely be developed through consultation with several natural resource professionals.

The area recognized as stand 5 is not uniform and some areas were included because I believe they have some of the characteristics and, through management, could be improved to more closely recognize this unique forest type.

The University of New Hampshire has a publication on this somewhat unique forest type that can be found at ***https://extension.unh.edu/resource/appalachian-oak-pine-forests***.

While I do not feel qualified to make specific management recommendations, I do feel comfortable making the following general observations;

- The oak and hard pines should be maintained in the stand.
- Pitch pine and red pine regeneration should be encouraged where possible.

- Some combination of mechanical and fire treatment may prove advisable to remove some of the white pine.

- The potential impact of southern pine beetle should be considered when formulating management recommendations.

Climate Vulnerabilities

- Pests and pathogens; beech bark disease, spongy moth, beech leaf disease and southern pine beetle.
- Lack of diversity, particularly in the advanced regeneration
- Lack of structure (primarily a two-aged stand with lack of biological legacies such as large (>20") snags and coarse woody debris)
- Drought prone, dry, south facing slopes with well/extremely well drained soils

TOTAL TIMBER LIQUIDATION VOLUMES AND VALUES

Product/ Species	Estimated Volume	Stumpage Value/Unit	Total Value
Sawlogs			
White Pine	653 MBF	$200/MBF	$130,600
Hemlock	2,033 MBF	$45/MBF	$91,485
Red Pine	237 MBF	$30/MBF	$7,110
Spruce	101 MBF	$125/MBF	$12,625
Pitch Pine	50 MBF	$20/MBF	$1,000
Red Oak	1,655 MBF	$350/MBF	$579,250
Sugar Maple	35 MBF	$300/MBF	$10,500
Red Maple	66 MBF	$140/MBF	$9,240
White Ash	32 MBF	$140/MBF	$4,480
White Birch	18 MBF	$100/MBF	$1,800
Total	**4,880 MBF**		**$848,090**
Pallet/Tie/Mat Logs			
Hardwood Pallet	1,790 MBF	$40/MBF	$71,600
Pine Pallet	31 MBF	$20/MBF	$620
MAT Logs	1,363 MBF	$175/MBF	$238,525
Total	**3,184 MBF**		**$310,745**
Pulpwood			
Hardwood	57,597 Tons	$5.00/Ton	$287,985
Softwood	9,689 Tons	$.50/Ton	$4,844
Total	**67,286 Tons**		**$292,829**
		Total Timber Value	**$1,451,664**

- MBF is the abbreviation for Thousand Board Feet, the standard unit of measurement for sawlogs
- 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 pulp markets are extremely soft and unpredictable.

WILDLIFE

From observed sign, a wide variety of wildlife is currently using the woodland and open field habitats on the GHWMA. Sign of deer, bear, moose, pileated woodpecker, partridge, songbirds, ravens, raccoons, hawks, squirrels, porcupine, bobcat, fox and coyote was encountered during the field work for this plan. The protection and enhancement of the wildlife habitat on the property is first in the list of Purposes and Objectives in the Conservation Easement held by the New Hampshire Fish and Game Department.

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 substantial numbers of large oak in many areas, particularly stand 1. See the detailed description of and recommendations for stand 1 for more information on the red oak component.

On this woodlot, there are several habitat types ranging from stands of relatively uniform hardwoods, to dense hemlock, to open early successional areas associated with the old sand pit and power line right of way, to wetlands (both open and forested). This mix of habitat types should be enhanced where possible and significant/important types protected or enhanced. 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 2 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. See the management recommendation for stand 2 for more details.

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". **One of TNC's goals for this property is to eventually have/maintain 4-7 standing dead trees greater than 20" diameter per acre**. Many trees on the property show signs of having been excavated by pileated woodpeckers. The serious defoliation by spongy moth during the summers of 2021 and 2022, along with the added stress of the periods of drought that coincided with the outbreaks has caused some mortality throughout the property. In some areas, this mortality is significant, including some large, sawtimber sized oaks and hemlocks. This will, in some areas, dramatically increase the number of standing dead trees compared to what was represented by the inventory data collected last fall, when the mortality was not as evident.

4. OTHER RESOURCES

With property wide focus on promoting habitat for SWAP species, both within TNC's management goals and objectives as a stated purpose in the two Conservation Easements held by Fish & Game, it seems prudent to address how the specific management recommendations and plans for the Adaptive Silviculture for Climate Change harvest should positively impact SWAP species on the property.

The creation of early successional habitat within stand 1, largely within the 3 & 5 acres patch cut units will benefit a great number of bird and mammal species. Large mammals such as bear and moose will utilize these areas for food (browse and berries) as they progress through early succession. Ruffed Grouse will use these areas of thick regeneration for brooding, and nesting, and the potential drop/leave of scattered large trees will increase the number of potential drumming logs. For Grouse, it is important to have a mosaic of habitat types, and the irregular nature of the patch cuts planned will help provide this. Other SWAP bird species that will benefit from the regenerating patch cuts on the GHWMA include American Woodcock, Black-billed Cuckoo, Eastern Towhee, Eastern Whip-poor-will, Field sparrow, and Prairie Warbler.

The large areas of old sandpit on the property, while not affected by the current management recommendations, provided excellent open/shrub habitat for many of the same species that would benefit from the regenerating patch cuts, but especially the Eastern Whip-poor-will, Field sparrow and Prairie Warbler.

The conservative thinning recommendations for stand 2 will seek to create a complex stand with multiple age classes, patchy mature forest characteristics, and fairly-dense softwood canopy closure. This forest type should benefit the following SWAP species; Canada Warbler, Chimney Swift, Purple Finch, Ruffed Grouse, Big Brown Bat and Silver-Haired Bat.

The large areas of the property set aside from active management will be allowed to progress towards mature forest conditions. Many of these areas have softwood cover, and are adjacent to riparian areas. The areas are currently, and will continue to benefit the following SWAP species; Northern Goshawk, Scarlet Tanager, Veery, Wood Thrush, Eastern Red Bat, Hoary Bat, Tricolored Bat, Northern Long Eared Bat, and Eastern Small Footed Bat.

The wetland/riparian areas on the GHWMA, ranging from forested wetland to shrub swamps to open/grassy wetlands, to streams/brooks running through dense forest, offer habitat to a multitude of SWAP species, including; Blue-Spotted/Jefferson Salamander, Eastern Ribbonsnake, Northern Leopard Frog, Smooth Greensnake, Wood Turtle, American Woodcock, Little Brown Bat and Eastern Brook Trout. In general, large buffers have been placed around the riparian areas in order to protect their integrity. Very conservative drop and leave harvesting may opportunistically occur within some of the riparian buffers to encourage advanced softwood regeneration. If appropriate, and under the directives of those experienced in such a project, the addition of woody debris to some of the more significant stream/brook channels may be conducted, seeking to improve habitat and water quality for Eastern Brook Trout.

WETLANDS AND WATER RESOURCES

The wetland and water resources on this property are very localized and consist of Mason Brook, several smaller streams, many seasonal drainages, several wetland areas (both open and forested) some of which show signs of historic or current beaver activity. Included in the Conservation Easement's stated Purposes and Goals is the protection of the wetlands, wetland habitat and hydric systems on the GHWMA. The planning of any potential management activity will have to take these into careful consideration.

For purposes of the planned Adaptive Silviculture Experimental Harvest, the Treatment Units were laid out with 100' buffers along water courses and wetlands. These buffers were mapped using (GIS) USGS Maps. The actual course of the streams should be used when establishing these buffers on the ground. Additionally, the upper limits of the water courses should be field checked, to determine where the buffer is no longer needed.

Within the riparian buffers, a primary goal is to manage for "old forest" conditions. While this can ultimately be created by doing nothing over long periods of time, there are certain management activities that could help to speed the process along. Very carefully, within these buffers and in conjunction with the recommended harvesting set to occur as part of the Adaptive Silviculture program, very small openings could be created with the intent of creating or releasing shade tolerant regeneration. The trees cut within the buffers would be felled and left, adding a great deal of downed woody debris to the areas. John Magee and NH Fish and Game should be consulted to see if the addition of woody debris to the stream channel is needed/appropriate and if so, the specifications for the project and if it could be rolled into the Adaptive Silviculture Program.

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.

AESTHETICS

The aesthetics and scenic beauty associated with the property, while not a primary focus of the landowner or the Conservation Easement holder, should not be ignored with planning and implementing management activities. 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

One of the four stated purposes of the Conservation Easement is ***"To provide the public, in accordance with applicable laws and regulation, pedestrian access, in perpetuity, on and across the Property for low-impact non-commercial recreational activities including, but not limited to, hunting, fishing, hiking, trapping (in accordance to RSA 210:11), cross country skiing and nature observation."*** The management activities proposed in this plan would not have a negative impact on these activities, and may improve the hunting and nature observation as the woodlands increase in diversity and support a greater variety of wildlife species.

There are several sanctioned recreational trails on the property, including a main snowmobile corridor that is very important to the local and regional trail system. TNC has installed several gates on the property to help curb unwanted vehicular access, but this problem persists. It is impossible to eliminate ATV use, particularly on a remote property such as this with many access points.

The installation of a gate where the main access road enters the property from the Burke Quarry would keep vehicular (trucks) from entering the property, and this is the last major point where large vehicles can enter.

During the field work for this plan, the ATV use was noted, but there were no areas where major problems existed (water quality or erosion issues).

Other than the Snowmobile Corridor and Mason Brook Trail/Road (which connects to a greater network of trails in the Green Hills) there appears to be little recreational use of the property other than hunting. The recreational trail/old woodsroad connecting the Mason Brook trail to the northwest corner of the old Kennet Company sandpit see's infrequent use. Based on observation, there does not appear to be any significant impact to the wildlife habitat or sensitive areas resulting from the recreational use of the property. The snowmobile corridor does pass through and area that has the potential to be used by whitetail deer as winter cover, but the impact of the trail is hard to quantify. There are currently no plans to expand the recreational trail network on the property.

CULTURAL FEATURES

Much of this property was at one time cleared for sheep pasture, but no significant agriculture appears to have been undertaken, based on the lack of widespread stonewalls, fallen wire fences, old field timber types and cellar holes.

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 certainly 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 of Endangered or Threatened species were encountered. A know occurrence of the rare Red Pine Rocky Ridge natural ridge extends from its core area on abutting TNC lands just over the western boundary. An additional area having some characteristics of this Natural Community is found within the GHWMA. This area is delineated as stand 5 and future management will be based on working towards enhancing these characteristics. A copy of the NHB report can be found in the **Appendix** of this plan.

5. OTHER RECOMMENDATIONS

INVASIVE SPECIES

There was no significant noted occurrence of invasive species during the field work for this plan. That is certainly not to say that non exist. Any time spent in the woods, everyone should be on the lookout for the common harmful invasives (barberry, bittersweet, glossy buckthorn, Japanese knotweed, multi-flora rose). When noted, they should be immediately combatted. The old pit area, with its open characteristic and a history of hauling material onto the property, is the most likely area to find 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, but if concerned about introducing non-native grasses, using just winter rye to stabilize the site until native vegetation can become established on the site..

SAFETY

There were no significant safety concerns encountered during the field work for this plan. In the event of a timber harvest, signage should be placed in any place that recreational trails are located near or enter the harvest area.

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, DNCR, Division of Forests and Lands. A copy of this publication can be requested through the above contact at the Department of Natural and Cultural Resources, 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

Spongy Moth (formerly Gypsy Moth):

There has been extensive defoliation during the last two (2021 & 2022) summers over much of this property. Red oak is the preferred species that spongy moth feeds on, but with such high population levels, other impacted species included aspen, birch, hemlock and white pine. The defoliation has been so severe, coupled with the poor fertility of the site/low tree vigor, that defect and mortality are already presenting themselves. At the time of the field work for this inventory, there were a significant number of oaks showing very little regrowth following the defoliation of early summer. Others showed new growth, but epicormic sprouting. The aspen was root suckering in response to the repeated defoliation. The sapling sized pine and hemlock regeneration in the understory was hard hit in some areas and even sawtimber sized hemlock were nearly completely defoliated in some areas.

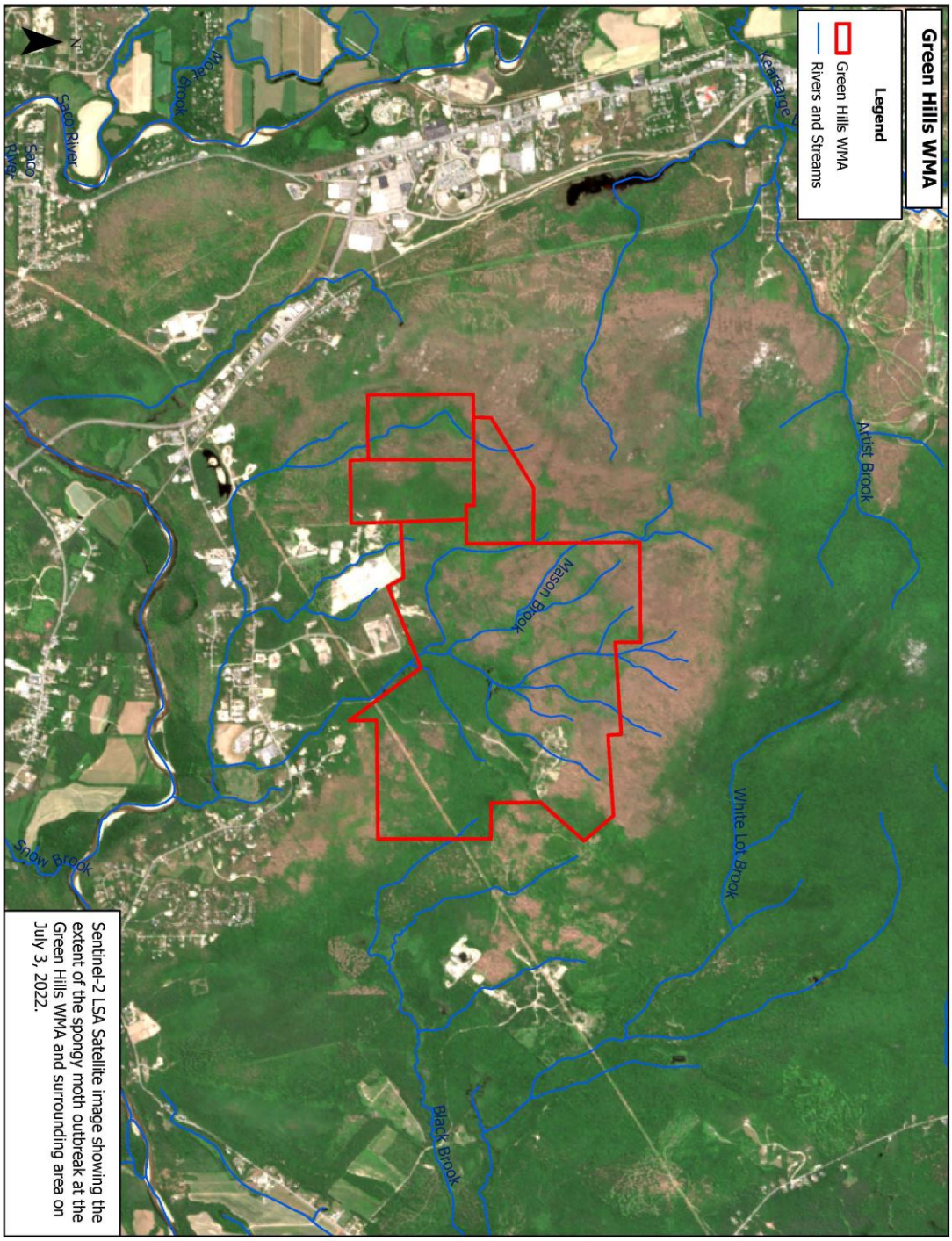
During the spring of 2023, during field reconnaissance, it is noted that there are many oaks scattered throughout the property with little to no sprouting/new growth having occurred. These trees are likely dead or will be dead in the very near future. There are many standing dead hemlocks, including sawtimber sized stems.

There are many areas where the aspen (particularly smaller pole sized stems) have sent out root suckers as a response to the stress of two years defoliation. These sprouts have been heavily browsed by deer.

At the time of the writing of this Plan (June 2023), William Davidson, Forest Health Specialist, NHDFL, is hoping to use a new drone with IR camera to map spongy moth damage throughout the area of and around the GHWMA. This will likely not take place until late-July at the earliest.

On the following page is a map showing the extent of the Spongy Moth defoliation in July 2022.

5. OTHER RECOMMENDATIONS



Sentinel-2 LSA Satellite image showing the extent of the spongy moth outbreak at the Green Hills WMA and surrounding area on July 3, 2022.

Hemlock Wooly Adelgid:

While no evidence of active infestation was noted during the field work for this inventory, HWA is present within the County and potential impacts should be factored into management of the extensive areas of hemlock growth on the property. Particularly in the western sections of stand 2, the hemlock is of marginal quality and an infestation could potentially cause mortality more rapidly that those trees in the eastern sections of the stand on more fertile soils. It is not known, but assumed, that the stress put on these trees by spongy moth defoliation may make them more susceptible to rapid decline if an infestation of HWA were to occur soon.

Silviculturally, the only recommendations to manage HWA is to seek proper stocking levels to improve tree and stand vigor. Small, isolated infestations (<1/4ac) could potentially be managed by cutting and burning the foliage of the infected trees, but if larger than that, it is likely too wide spread to be eradicated.

Emerald Ash Borer:

Ash plays a very insignificant role in the forests on the Green Hills WMA. The impending infestation (if it is not already present) of EAB will likely cause mortality in many of the existing ash stems. However, some of the advanced regeneration saplings and seedlings may survive the initial wave and persist on the site for some time. Retaining the existing ash scattered on the site is recommended as a potential seed source and with the hope that some trees may exhibit resistance.

Beech Bark Disease:

Nothing can be done to treat trees impacted by this common malady. However, some trees show resistance to the scale insect and subsequent infection by the nectria fungus, and exhibit cleaner than average trunks. In thinning operations, these healthier trees should be retained, particularly if they also exhibit signs of nut production (often having been climbed by bears in search of nuts).

When seeking regeneration in stands with a significant beech component, create larger openings and regenerate less shade-tolerant species that will out-compete the beech sprouts.

Southern Pine Beetle:

This insect is very new to the area, having first been detected in Carroll County in a trap in the TNC's Ossipee Pine Barrens in the fall of 2021. This insect is impactful to the pitch pine and red pine in this area. Management objectives to minimize potential impact would include keeping stocking of these susceptible species to a maximum of 80 sq.ft./acre of basal area in stands. Stand 5 is the only area on the Green Hills WMA with a significant presence of these hard pines, and stand wide their stocking is well below the 80 sq.ft. figure, but localized pockets may exceed this recommended level.

Beech Leaf Disease: (Information taken from NHBUGS.org)

"Beech Leaf Disease (BLD) is a foliar disease of American beech, European beech and Oriental beech caused by the Asian nematode *Litylenchus crenatae* and potentially by several bacteria's and fungi the nematode transmits. First discovered in 2012 in Ohio, the disease has now been located as far east as Maine and was first detected in NH in 2022.

Nematode feeding can begin at bud break causing dark banding between the veins of tender foliage. As the season progresses and damage worsens the leaves become leathery in texture and dark banding can turn yellow and kill affected branch tips.

Serious decline and mortality of beech seems to take 3-6 years depending on the vigor of infested trees. There is no recommended treatment at this time and research is ongoing to determine the mode of spread. Transportation of live beech plant material should be severely limited."

SCHEDULE OF PRIORITIES

2023-2033

Stands/ Location	Recommendation	Goal	Page Reference
1,2	Adaptive Silviculture Experimental Harvest	Enhance diversity, increase old forest characteristics, develop desirable/diverse regeneration, increase carbon sequestration, mitigate negative impacts of forest pests and pathogens, and demonstrate best practices for climate adaptive management.	21-30
	Rebuild bridge on Kennett Pit Road as part of the harvest	Restore access.	14,15
	Install gate at edge of Burke Quarry	Control unwanted access.	14
1,2	Planting of climate adaptive species within regeneration areas	Enhance diversity and presence of climate adaptive species.	21-30

7. APPENDIX

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

To: tim nolin
forest land improvement 65 walker hill rd
ossipee, NH 03864
timnolin@yahoo.com

From: NHB Review
NH Natural Heritage Bureau
Main Contact: Ashley Litwinenko - nhbreview@dncr.nh.gov

cc:

Date: 06/08/2023 (valid until 06/08/2024)
Re: DataCheck Review by NH Natural Heritage Bureau and NH Fish & Game
Permits: OTHER - Property wide review for Forest Management Plan

NHB ID: NHB23-1693

Town: Conway
Location: Backland off East Conway Rd

Project Description: Property wide check for Forest Management Plan

Next Steps for Applicant:

NHB's database has been searched for records of rare species and exemplary natural communities. Please carefully read the comments and consultation requirements below.

NHB Comments: Please maintain a 100 ft no-cut buffer between proposed work and the exemplary red pine rocky ridge natural community. There are several rare plants associated with this community that are found in rocky, ledgey areas. If rocky or ledgey areas are proposed to be impacted, NHB recommends work occur under frozen conditions as these plants could be present within the proposed project area.

NHFG Comments: No comments at this time.

NHB Consultation

If this NHB DataCheck letter includes records of rare plants and/or natural communities/systems, please contact NHB and provide any requested supplementary materials by emailing nhbreview@dncr.nh.gov.

If this NHB DataCheck letter DOES NOT include any records of rare plants and/or natural communities/systems, no further consultation with NHB is required.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
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NH Fish and Game Department Consultation
If this NHB DataCheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB DataCheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://wildlife.state.nh.us/wildlife/environmental-review.html. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB DataCheck results letter number and "Fis 1004 consultation request" in the subject line**.

If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule*), coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email NHFGreview@wildlife.nh.gov, and include the NHB DataCheck results letter number and "review request" in the email subject line. **Contact NH Fish & Game at (603) 271-0467 with questions.**

NHB DataCheck Results Letter
NH Natural Heritage Bureau
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NHB Database Records:
The following record(s) have been documented in the vicinity of the proposed project.
Please see the map and detailed information about the record(s) on the following pages.

Natural Community	State[1]	Federal	Notes
Red pine rocky ridge*	--	--	Threats would primarily be logging or trampling by recreational hikers.

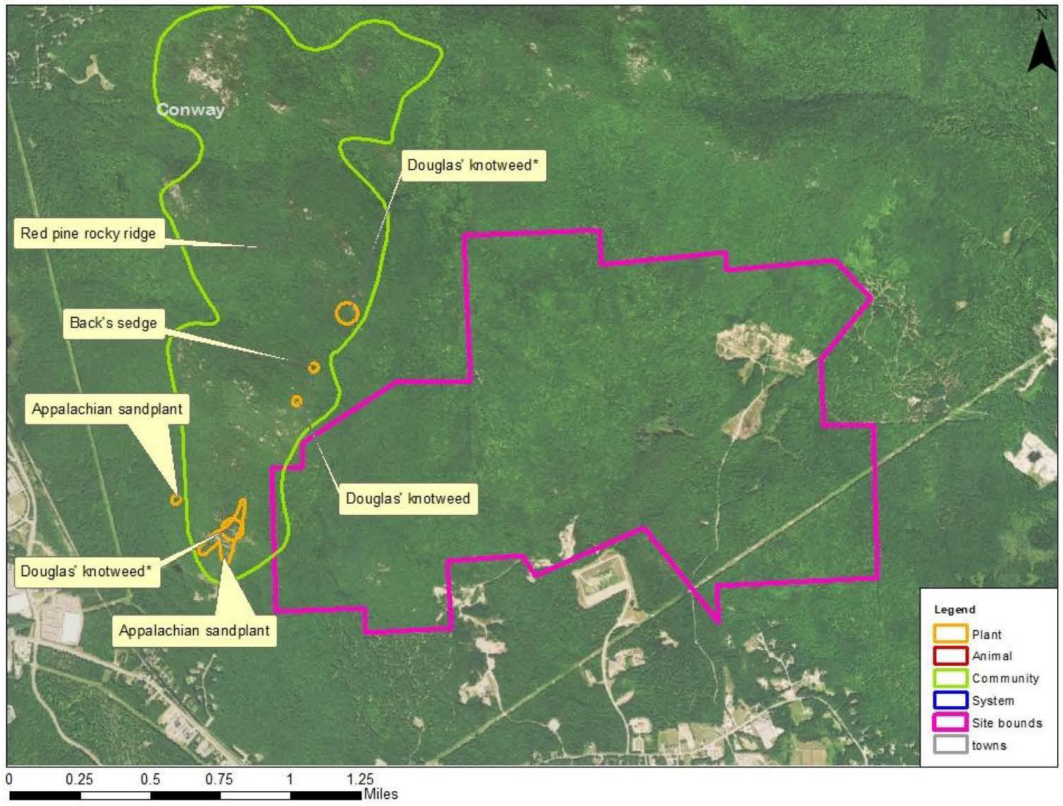
Plant species	State[1]	Federal	Notes
Appalachian sandplant (*Mononeuria glabra*)	E	--	Trampling by recreational users on rocky areas would be the primary threat to this species.
Back's sedge (*Carex backii*)	E	--	Primarily vulnerable to habiat impacts.
Douglas' knotweed (*Polygonum douglasii*)	T	--	Trampling by recreational users on rocky areas would be the primary threat to this species.

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = 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 20 or more years ago.

Disclaimer: NHB's database can only tell you of known occurrences that have been reported to NHFG/NHB.
Known occurrences are based on information gathered by qualified biologists or members of the public, reported to our offices, and verified by NHB/NHFG.
However, many areas have never been surveyed, or have only been surveyed for certain species.
NHB recommends surveys to determine what species/natural communities are present onsite.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB23-1693



NHB DataCheck Results Letter
NH Natural Heritage Bureau
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NHB23-1693 EOCODE: CT00000225*004*NH

New Hampshire Natural Heritage Bureau - Community Record

Red pine rocky ridge

Legal Status	**Conservation Status**
Federal: Not listed	Global: Not ranked (need more information)
State: Not listed	State: Imperiled due to rarity or vulnerability

Description at this Location

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

Detailed Description: 1999: Observed patchy, low to moderate damage from the 1998 ice storm. Trees most damaged were generally ca. 4-7 inches dbh, snapped off by ice in localized areas. 1992: Ranges from very open with abundant bedrock exposures to more closed but still quite dry. Dominated by *Quercus rubra* (red oak), *Ostrya virginiana* (hop-hornbeam), *Pinus resinosa* (red pine), *Pinus rigida* (pitch pine), and *Pinus strobus* (white pine). Well-developed shrub layer dominated by huckleberries and blueberries.

General Area: 1992: The Green Hills Preserve (also known as the Peaked Mountain Preserve) is an area of about 2800 acres, located in the low hills east of the main White Mountain ridge. All the hills are of granitic bedrock and have steep slopes especially on their east and west sides, as the main ridge runs roughly north-south. There are bedrock exposures in many areas. Terrestrial vegetation is of northern hardwood forests, open pine woodlands and summits, and boreal summits and woodlands. The boreal woodlands are prevalent on and near the summit of Black Cap, in the north portion of the preserve. Pine woodlands dominate the western hills. Many areas of the preserve have burned repeatedly in the past. Three rare plants occur in the preserve: *Paronychia argyrocoma* var. *albimontana* (silvering), *Minuartia glabra* (smooth sandwort), and *Malaxis unifolia* (green adder's-mouth).

General Comments: --
Management Comments: 1992: May need fire management. Snowmobiling and hiking trails may pose a threat.

Location

Survey Site Name: Green Hills Preserve
Managed By: Green Hills Preserve

County: Carroll
Town(s): Conway
Size: 764.8 acres Elevation:

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

NHB DataCheck Results Letter
NH Natural Heritage Bureau
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NHB23-1693 EOCODE: CT00000225*004*NH

Directions: Occurs in patches throughout the entire Green Hills Preserve, mostly on southwest-facing slopes of Peaked, Middle, Rattlesnake, and Black Cap Mountains. Accessible via a number of trails, as marked on the TNC Trail Map and Guide.

Dates documented

First reported:	1992-09-11	Last reported:	1999-08-25

NHB DataCheck Results Letter
NH Natural Heritage Bureau
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NHB23-1693 EOCODE: PDCAR0G0C0*002*NH

New Hampshire Natural Heritage Bureau - Plant Record

Appalachian sandplant (*Mononeuria glabra*)

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:	Excellent quality, condition and landscape context ('A' on a scale of A-D).
Comments on Rank:	2000 (AB): Large population, within nature preserve.
Detailed Description:	2012: 275 plants total, 90% in bud, 5% in flower. Plants occurred as sets of stems, ranging from 3 to 50 stems per plant. Normal vigor. Area 2: 176 plants. Area 3: 37 plants. Minor areas scattered between: 62 plants. 2006: Area 1: ca. 150 plants, 30% with immature fruit, scattered in groups of ca. 10 plants in a 550-square meter area. 2003: Searched for but not found (7/11, 8/24). 2000: Area 1: Thousands observed, virtually every plant in bud or flower. Appears quite healthy. 1999: Area 1: Hundreds of clumps observed in five distinct sub-population patches. All were past flowering, appearing brown and dry. 1989: Area 1: ca. 300 vigorous plants. 1981: Area 1: Scattered population in crevices of ledges. 1980: Specimen collected.
General Area:	2012: Red pine rocky ridge. Associated species include paper birch (*Betula papyrifera*), white pine (*Pinus strobus*), hemlock (*Tsuga canadensis*), black huckleberry (*Gaylussacia baccata*), common juniper (*Juniperus communis* var. *depressa*), scrub oak (*Quercus ilicifolia*), montane Rand's goldenrod (Solidago simplex ssp. randii), mountain holly (*Ilex mucronata*), and tufted hair-sedge (*Bulbostylis capillaris*). Dominant species: red pine (*Pinus resinosa*), and velvet-leaved blueberry (*Vaccinium myrtilloides*). 2000: Red Pine Rocky Summit Woodland, along gravelly patches in granite cracks, mostly among mosses and lichens. 1999: Exposed south-facing rock outcrops and rocky summit. Associated species include lichen species, *Danthonia spicata* (poverty oat-grass), *Schizachyrium scoparium* var. *scoparium* (little bluestem), *Pinus rigida* (pitch pine), *Quercus rubra* (red oak), *Deschampsia flexuosa* (common hair-grass), *Corydalis sempervirens* (pale corydalis), *Quercus ilicifolia* (scrub oak), *Bulbostylis capillaris* (hair sedge), and *Carex* sp. (sedges). Damage from the 1998 ice storm was minimal. 1989: Exposed Conway granite ledges.
General Comments:	--
Management Comments:	2012: No signs of previous travel in the area. 2000: Some of the surrounding lichen has been trampled (but not the *Minuartia*). No signs of recent trampling, though. 1999: Some evidence of damage by hikers. There are no official trails on these ledges.

Location

Survey Site Name:	Redstone Ledge
Managed By:	Green Hills Preserve

NH Dept. of Natural & Cultural Resources
Natural Heritage Bureau - Division of Forests and Lands
nhbreview@dncr.nh.gov (603) 271- 2834

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NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB23-1693 EOCODE: PDCAR0G0C0*002*NH

County: Carroll
Town(s): Conway
Size: 8.1 acres Elevation:

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

Directions: 2012: Drive to Walmart (46 North South Rd in North Conway). Park in NE corner of Walmart parking lot. Follow transmission line right-of-way 0.25 miles across railroad tracks. Follow it as it turns north. We went 0.25 miles north of the corner and then bushwhacked east to the top of Redstone Ledge (about 0.35 mile). One can also take the trail to the old quarry site (0.1 mile north of the corner) and then take a mountain bike trail 0.1 mile north and then bushwhack up the SW side of Redstone Ledge. (We returned that way.) Area 3: 44 01.458N, 71 05.824W. Area 2: at 44 01.303N, 71 05.807W and uphill. 2000: Area 1: From gate (see 1999 directions), take continuation of road, bearing right before the quarry. Trail goes to the right of ledges. Bushwhack uphill: aim for ridge behind peak, then follow the ridge to the ledges. 1999: Area 1: From Rte. 16/302 junction, take Rte. 302 east less than a mile to small neighborhood of Redstone. Turn left on Mountain Road and follow it straight toward the ledge. Park at gate but do not block it. Take trail straight ahead towards the quarry, but bear right around the quarry itself. Paths are not marked. Climb the hill to the right of the quarry, then climb due north to the open ledge. 1989: Exposed ledges of Conway granite, south of Redstone Mountain. 1981: Redstone Ledge, exposed Conway granite.

Dates documented

First reported: 1980 Last reported: 2012-06-25

7. APPENDIX

NHB DataCheck Results Letter
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NHB23-1693 EOCODE: PMCYP031F0*016*NH

New Hampshire Natural Heritage Bureau - Plant Record

Back's sedge (*Carex backii*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
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: 16 û 18 clumps counted, possibly more, scattered [in a] 7 m x 8 m area, with 2% cover, 3 û 4 m below crest of ledge. All plants observed to be in submature fruit, several culms each.

General Area: 2014: **Semi-rich red oak-sugar maple forest** patch surrounding ledge and small talus slope above col. Typical plants: large-leaved wood-aster (*Eurybia macrophylla*), sharp-toothed nodding-aster (*Oclemena acuminata*), false melic grass (*Schizachne purpurascens*), forest goldenrod (*Solidago arguta*), red columbine (*Aquilegia canadensis*), early small-flowered-saxifrage (*Micranthes virginiensis*), axillary goldenrod (*Solidago caesia*), marginal wood fern (*Dryopteris marginalis*), hairy Solomon's-seal (*Polygonatum pubescens*), glaucous slender wild-rye (*Elymus trachycaulus* ssp. *glaucus*), and Mackay's fragile fern (*Cystopteris tenuis*).

General Comments: --
Management Comments: --

Location

Survey Site Name: Rattlesnake Mtn, Conway
Managed By: Green Hills Preserve

County: Carroll
Town(s): Conway
Size: .4 acres Elevation:

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

Directions: 2014: From downtown North Conway, take Artists Cliff Road easterly to near its end and take Thompson Road on right to just before its second bend and park at the Peaked-Middle-Rattlesnake Mtn trailhead parking area. Hike up to first junction for Peaked Mtn and continue straight on red-blazed trial to near summit of Middle Mtn. Take right fork (Rattlesnake Mtn Trail, unmarked) approximately 910 m past the lower south summit of Middle Mtn down to near the col between Middle and Rattlesnake. EO is located in the semi-rich talus/edge face just above and north of the bottom-most col. [44.030333 -71.088872]

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB23-1693 EOCODE: PMCYP031F0*016*NH

Dates documented

First reported:	2014-06-11	Last reported:	2014-06-11

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB23-1693 EOCODE: PDPGN0L0X0*014*NH

New Hampshire Natural Heritage Bureau - Plant Record

Douglas' knotweed (*Polygonum douglasii*)

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: 6 plants in 0.5 m x 1 m area. All plants observed to be in submature fruit, several culms each.

General Area: 2014: **Rich red oak rocky woods** includes woodland opening with æturf lawnsÆ of Blue Ridge sedge (*Carex lucorum*), wavy hair grass (*Deschampsia flexuosa*), umbel-like shaved sedge (*Carex tonsa* var. *rugosperma*), red bearberry (*Arctostaphylos uva-ursi*), and reindeer lichen *(Cladonia rangiferina)*. Also scattered tufts of little bluestem (*Schizachyrium scoparium*) and red columbine (*Aquilegia canadensis*) were observed.

General Comments: --
Management Comments: --

Location

Survey Site Name: Rattlesnake Mtn, Conway
Managed By: Green Hills Preserve

County: Carroll
Town(s): Conway
Size: .4 acres
Elevation:

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

Directions: 2014: From downtown North Conway, take Artists Cliff Road easterly to near its end and take Thompson Road on right to just before its second bend and park at the Peaked-Middle-Rattlesnake Mtn trailhead parking area. Hike up to first junction for Peaked Mtn and continue straight on red-blazed trial to near summit of Middle Mtn. Take right fork (Rattlesnake Mtn Trail, unmarked) approximately 910 m past the lower south summit of Middle Mtn down to near the col between Middle and Rattlesnake. From here bushwhack up rich red oak rocky woods and ridge to east summit. EO is approx. 35 m downslope to south in open turfy ledge. [44.028606 -71.090128]

Dates documented

First reported: 2014-06-11 Last reported: 2014-06-11

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB23-1693 EOCODE: PDPGN0L0X0*014*NH

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB23-1693 EOCODE: PDPGN0L0X0*007*NH

New Hampshire Natural Heritage Bureau - Plant Record

Douglas' knotweed (*Polygonum douglasii*)

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:	Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank:	Excellent viability for long-term maintenance of population.
Detailed Description:	2000: At Station A, 223 plants counted. At Station B, ca. 180 plants. Mostly clumped, covering ca. 3.5 square meters total. 10% were dispersing seed, 5% in flower, and 78% had mature fruit. 80% were normal vigor, 20% feeble. 15% showed signs of drought or nutrient stress. 1991: Not found. 1880: Specimen collected.
General Area:	2000: Circumneutral rocky summit/rock outcrop. Characteristic species included *Woodsia ilvensis* (rusty woodsia) and *Silene antirrhina* (sleepy catchfly). Associated species included Polystichum juniperinum (?), *Deschampsia flexuosa* (common hair-grass), *Schizachyrium scoparium* var. *scoparium* (little bluestem), *Danthonia spicata* (poverty oat-grass), *Arctostaphylos uva-ursi* (bearberry), and *Aquilegia canadensis* (wild columbine). Station B (more vigorous *Polygonum douglasii*) is in partial shade with higher diversity and soil moisture.
General Comments:	2000: Search began on SW-most open ledge area and extended to acidic open ledge NE of main summit (trail crossing). Recommend further survey of other possible areas in the vicinity for more subpopulations.
Management Comments:	2000: Most individuals at Station B were just off (east of) the trail.

Location

Survey Site Name:	Middle Mountain
Managed By:	Green Hills Preserve
County:	Carroll
Town(s):	Conway
Size:	2.8 acres
Elevation:	
Precision:	Within (but not necessarily restricted to) the area indicated on the map.
Directions:	2000: Follow Rte. 302 east of junction with Rte. 16 in North Conway. Turn left on East Conway Road and continue ca. 1.8 miles to snowmobile trail on left (parking area). Follow snowmobile trail to Green Hills Trail junction at bend ca. 500 meters below summit ridge of Middle Mountain. Follow trail to ca. 60 meters short of South Summit. Station A is 10 meters SE of trail at trail bend to NE on small bedrock bench, at edge of ledge. Station B is in the trail, at

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB23-1693 EOCODE: PDPGN0L0X0*007*NH

step up ca. 16 meters uphill from Station A. Station C is ca. 10 meters uphill from Station B at the east side, at edge of open rock slab under small black cherry tree. 1880: Middle Mountain.

Dates documented

First reported:	1880-09-03	Last reported:	2000-09-20

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB23-1693 EOCODE: PDPGN0L0X0*008*NH

New Hampshire Natural Heritage Bureau - Plant Record

Douglas' knotweed (*Polygonum douglasii*)

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:	Excellent quality, condition and landscape context ('A' on a scale of A-D).
Comments on Rank:	Healthy population with little disturbance. Excellent long-term viability.
Detailed Description:	2000: Area A: 42 vegetative and 190 seed-bearing plants. Area B: 31 vegetative, 272 seed-bearing. Area C: 3 vegetative, 165 seed-bearing. 90% of the plants were of normal vigor. Plants mostly clumped, covering a total of ca. 4.7 square meters. 1999: Area A: 143 stems counted in a 4-square-meter area. Area B: 68 stems counted in a 2-square-meter area. All in flower. 1992: Specimen collected.
General Area:	2000: Circumneutral rocky summit / rocky outcrop. Characteristic species include *Woodsia ilvensis* (rusty woodsia), *Asplenium platyneuron* (ebony spleenwort), *Saxifraga virginiensis* (early saxifrage), and *Silene antirrhina* (sleepy catchfly). Associated species include *Danthonia spicata* (poverty oat-grass), *Quercus ilicifolia* (scrub oak), *Comandra umbellata* (bastard toad-flax), Rhus hirta [typhina] (staghorn sumac), *Schizachyrium scoparium* var. *scoparium* (little bluestem), Agrostis [hyemalis var.] scabra (rough ticklegrass), and *Campanula rotundifolia* (harebell). Also abundant *Minuartia glabra* (smooth sandwort) nearby, especially at Area C. 1999: Granite outcrops with limited soils surrounded by pine/oak woodland. Associated species at Areas A and B include *Schizachyrium scoparium* var. *scoparium* (little bluestem), *Campanula rotundifolia* (harebell), *Deschampsia flexuosa* (common hair-grass), and *Selaginella rupestris* (rock spikemoss). Minimal damage to habitat and surrounding woodland from the 1998 ice storm. 1992: Located on upper slope and crest. Growing in very little soil in cracks in granite. Associated species include Andropogon [Schizachyrium] scoparium (little bluestem), *Campanula rotundifolia* (harebell), *Lechea intermedia* (intermediate pinweed), and *Pteridium aquilinum* var. *latiusculum* (bracken).
General Comments:	2000: Sub-population A shows signs of drought stress. 1999: More plants may occur in other open, rocky areas farther north along the ridge between Redstone Ledge and Rattlesnake Mountain.
Management Comments:	2000: Recommend periodic monitoring due to trampling of sub-population A. 1999: Hikers pose a definite threat to Area A, which occurs right on an unofficial trail to a view of North Conway.

Location

Survey Site Name:	Redstone Ledge
Managed By:	Green Hills Preserve

NH Dept. of Natural & Cultural Resources
Natural Heritage Bureau - Division of Forests and Lands
nhbreview@dncr.nh.gov (603) 271- 2834

15 of 16

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB23-1693 EOCODE: PDPGN0L0X0*008*NH

County: Carroll
Town(s): Conway
Size: 2.8 acres Elevation:

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

Directions: 1999: From Rte. 16/302 junction, take Rte. 302 east less than a mile to small neighborhood of Redstone (<1 miles). Turn left on Mountain Road. Park near gate at end of street. Take dirt road straight ahead, then bear right before getting to the quarry. Ascend the hill in the woods to the right of the quarry to open ledges. Area A is on an open knob southwest of the main summit. Area C is in the middle of the open ledge. Area B is along the ridge north of the main summit. 1992: Redstone Ledge, on a dry summit.

Dates documented

First reported: 1992-09-10 Last reported: 2000-09-20

NHDES W-06-008

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FORESTRY
STATUTORY PERMIT-BY-NOTIFICATION (SPN)
Water Division/Land Resources Management
Wetlands Bureau

Check the Status of your Notification

RSA/Rule: RSA 482-A:3, V/ Env-Wt 308; Env-Wt 520

LOGGER/FORESTER LAST NAME, FIRST NAME, M.I.:

Administrative Use Only	Administrative Use Only	☐ SPN complete and project as described conforms with all applicable requirements.	
		☐ SPN incomplete and/or project as described does not conform with all applicable requirements.	
		File No.:	Reviewer's Initials:
		Check No.:	Amount:

Terms in **bold font** are defined on the attached Definition of Terms page.

SECTION 1 - PROJECT CRITERIA

SECTION 1A - WILL THE PROPOSED ACTIVITY:

Exceed 3,000 square feet (SF) of permanent **wetlands** impacts per crossing (except for corduroy) (Env-Wt 520.05(b)(2))? ☐ Yes ☐ No

Propose impacts to a **bog**, **marsh**, **sand dune**, **tidal wetlands**, or undisturbed **tidal buffer zone** (Env-Wt 520.05(c)(2))? ☐ Yes ☐ No

Propose impacts in an area with documented occurrences of a **protected species or habitat** where the responsible party has not received recommendations from the Department of Natural and Cultural Resources' Natural Heritage Bureau (NHB) or NH Department of Fish and Game (NHF&G), or both, as applicable, regarding the impacted **protected species or habitat** (Env-Wt 407.02(c); 520.05(c)(3))? ☐ Yes ☐ No

If you answered "Yes" to any of the above questions, you cannot use this form. If you answered **"No"** to **all** the above questions, continue to Section 1b.

SECTION 1B - ELIGIBLE ACTIVITIES (Env-Wt 520.05(a))

Will the proposed work be limited to one or more of the activities listed in Section 1B? ☐ Yes ☐ No

If "No", you cannot use this form. If "Yes", check all proposed activities:

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☐ **Roadway** construction through forested **wetlands** for the purpose of conducting forest management activities where:

- Roads are cleared only by felling timber in the **roadway;**
- The road base is constructed using no **fill** other than:
  1. Snow pushed onto and frozen over the road base; or
  2. Stumps inverted in places where support of the road base is necessary;
- The minimum length and number of ditches necessary to create and maintain adequate drainage are constructed in accordance with the ***New Hampshire Best Management Practices for Erosion Control on Timber Harvesting Operations*** **(Forestry BMPs)** and water quality protection measures;
- Each road crossing is no more than 15 feet wide;
- **Stream crossings** incorporate pole fords with no removal of stumps within the stream **banks;**
- Spring retirement of winter roads includes soil stabilization and drainage, such as water bars, necessary to prevent the **roadway** from redirecting or channeling surface water runoff; and
- A corduroy skid trail for any single forested **wetland** crossing does not exceed 1,000 feet in length, measured along the proposed skid trail.

☐ Installation of a permanent crossing, such as a culvert, stone ford, and associated **fill**, to permit vehicular access to a parcel for forest management, only if:

- Access is not used for subdivision, development, or other land conversion to non-forestry uses, except that forestry uses may be combined with **normal agricultural operations** or **trail** construction or maintenance, or both;
- **Roadway** width exclusive of side slopes, at the crossing does not exceed 20 feet;
- **Roadway** width, measured at the toe of the **roadway** side slopes is minimized and does not exceed 50 feet;
- **Fill** for any single **wetland** crossing does not exceed 50 feet in length, measured along the proposed access way;
- **Wetland** crossings are limited to those that:
  1. Do not impact any **bogs**, **vernal pools, marshes**, **sand dunes**, **tidal wetlands**, undisturbed **tidal buffer zone;**
  2. Are not located in **designated prime wetlands** or **duly-established 100-foot buffers** unless a prime wetlands waiver has been obtained in accordance with Env-Wt 700;
  3. Only cross a **swamp** or **wet meadow** if such **swamp** or **wet meadow** has no standing water for 10 months per year or more; and
  4. Are not located in a **protected species** habitat unless authorized under Env-Wt 407; and
     - For **stream crossings**, the scoured stream width is no wider than 8 feet.

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☐ Construction of a temporary crossing on a non-tidal **watercourse** of any width for the transportation of forest products, only if the temporary crossing:

- Is not in or adjacent to **designated prime wetlands** or a **duly-established 100-foot buffer** unless a prime wetlands waiver has been obtained in accordance with Env-Wt 700;
- Is not located in a **protected species** habitat unless authorized under Env-Wt 407;
- Is not used for access to property that has been converted to non-forestry uses, except that forestry uses may be combined with **normal agricultural operations** or **trail** construction or maintenance or both;
- Incorporates not more than one pier or post per 15 feet of span;
- Incorporates one or more abutments in the stream **bank**(s) if necessary; and
- If other than corduroy, is removed within 2 years of the date the SPN is issued by the NHDES Wetlands Bureau, provided that if weather conditions preclude the removal of the crossing when the work is completed, the crossing may remain in place until weather conditions allow its removal.

☐ Repair of existing forestry road crossing that:

- Crosses a **watercourse** for which the scoured channel is 8 feet wide or narrower;
- Is not in **designated prime wetlands** or a **duly-established 100-foot buffer** unless a prime wetlands waiver has been obtained in accordance with Env-Wt 700;
- Is not located in a **protected species** habitat unless authorized under Env-Wt 407.
- Is not used for access to property that has been converted to non-forestry uses, except that forestry uses may be combined with **normal agricultural operations** or **trail** construction or maintenance or both.
- The structure disturbs less than 3,000 SF.

SECTION 2 - JOB SITE LOCATION (RSA 482-A:3, V(b)(3))

(A separate notification must be filed with each municipality where jurisdictional impacts are proposed)

TOWN/CITY:

TAX MAP/LOT NUMBER:

SECTION 3 - PROPERTY OWNER(S) (RSA 482-A:3, V(b)(1))

LAST NAME, FIRST NAME, M.I.:

MAILING ADDRESS:	TOWN/CITY:	STATE:	ZIP CODE:

SECTION 4 - LOGGER / FORESTER (CIRCLE ONE) (RSA 482-A:3, V(b)(2))

LAST NAME, FIRST NAME, M.I.:

MAILING ADDRESS:	TOWN/CITY:	STATE:	ZIP CODE:

SECTION 5 – ATTACHMENTS

Verify the following attachments are submitted with this form by checking each box below and filling all required information.

☐ **DataCheck** identification number and an affirmation that recommendations have been received (Env-Wt 308.05(a)(2)).

Natural Heritage Bureau Identification ID: NHB __-_____

Questions related to completing this process should be directed to the Natural Heritage Bureau.

☐ **United States Geological Survey (USGS) topographic map** or Natural Resources Conservation Service (NRCS) soils map, with the type and location of all **wetland** and waterbody crossings clearly indicated (RSA 482-A:3, V(b)(4)).

☐ Such information as is needed to demonstrate the criteria for minimum impact projects are met (Env-Wt 308.05(a)(2)(b)).
If any work is proposed within **designated prime wetlands** or **duly-established 100-foot prime wetlands buffers**, a written waiver must be obtained in accordance with Env-Wt 706. Please check the box corresponding to your project: ☐ No waiver required. ☐ NHDES issued a waiver on (enter date the waiver was issued): / / ☐ I am filing a waiver request with this notification. Please include the request form and the $200 waiver request fee, per Env-Wt 706.04(b)(5).* * **NOTE:** If you submit a waiver request with this notification, you may not begin work until the waiver is issued. NHDES must wait 14 days for the Municipal Conservation Commission to review the prime wetlands waiver request before acting upon it (RSA 482-A:11, IV(b)(3)).
☐ $25 filing fee (RSA 482-A:3, V(c)).

SECTION 6 - REQUIRED CERTIFICATIONS	
By initialing each item and signing this notification, the person responsible for the activity affirms that (Env-Wt 308.05(b)(2)):	
Initials:	The project is not located in a **Priority Resource Area (PRA)**, except as provided in Env-Wt 407.
Initials:	All recommendations of NHB and NHF&G have been received. And
Initials:	The person responsible for the activity is aware of the limits of the SPN and applicable BMPs for the project, and will adhere to both.
By initialing each item and signing this application, the person responsible for the activity certifies that (Env-Wt 308.05(b)(1)):	
Initials:	To the best of the signer's knowledge and belief, all required notifications have been provided.
Initials:	The information submitted on or within this notification is true, complete, and not misleading to the best of the signer's knowledge and belief. And
Initials:	The signer understands that: • The submission of false, incomplete, or misleading information constitutes grounds for NHDES to: 1. Deny the application 2. Revoke any approval that is granted based on the information. 3. If the signer is a certified wetland scientist, licensed surveyor, or professional engineer licensed to practice in New Hampshire, refer the matter to the joint board of licensure and certification established by RSA 310-A:1. • The signer is subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641. • The signature shall constitute authorization for the department to inspect the site of the proposed project, pursuant to RSA 482-A:6, II.

NHDES W-06-008

Initials:	The filing of an intent to cut form under RSA 79:10 shall be considered as permission to the Department or the Department of Natural and Cultural Resources, or their agents, to enter the property for determining compliance with RSA 482-A (RSA 482-A:3, V(d)).
Initials:	If the applicant is not the owner of the property, each property owner signature shall constitute certification by the signer that he or she is aware of the application being filed and does not object to the filing.

SECTION 7 - REQUIRED SIGNATURE (Env-Wt 308.05(b)(2); Env-Wt 311.11)		
SIGNATURE (OWNER):	PRINT NAME LEGIBLY:	DATE:
SIGNATURE (LOGGER/FORESTER):	PRINT NAME LEGIBLY:	DATE:
SIGNATURE (AGENT, IF APPLICABLE):	PRINT NAME LEGIBLY:	DATE:

7. APPENDIX

Experimental Frill and squirt application for American beech sprout and stem control at the Green Hills Preserve Wildlife Management Area
August, 2023

American beech agressively sprouts when the stem is severed during harvesting operations. Beech is dominate in the advanced regeneration within the Green Hills WMA, and this lack of species diversity has been idetified as a climate vulnerability. In order to reduce beech dominance in the mid and understory, and recruit diverse species adapted to future climate, a frilled bark and application of sprayed glysphate is prescribed for the Green Hills WMA crop tree release demonstration areas as depicted on the map below. The practice will be applied in the 4 crop tree release units, with a minimum of 4 acres being treated in each unit. If time and resources allow, up to half of the treatment units (~7.5 acres) will be treated, for a total of 30 acres.

The practice will be applied as follow:

- Starting with the largest diameter beech in the area, create one (1) incision per one (1) inch of DBH.
    - (Based on a hatchet width of 1.75 inches, this application of 1 incision per 1 inch will equal roughly ~60% of the DBH treated with frill. If the trees are 14" or greater DBH, increase to 100% of the stem circumference treated with the frill and spray treatment)
- Hatchet incisions are made at DBH.
- For each incision, spray the opening in the bark while the hatchet is still in the tree (this will guide the herbicide into the frill).
- Repeat until frills are created and treated evenly around the circumference of of the tree.
- Move to the the next beech to be treated. This distance between the treated trees will be determined by the hieght of the last tree treated. For example, if the last tree treated was 50' tall, move 50' away and find the next largest beech tree to treat. If that tree is only 20' tall, move 20' away (in a straight line moving through the stand), and find the next largest beech tree to treat.

This method will allow for the gylophate herbicide to be translocated to the roots of the treated trees and ultimately to the grafted roots of the neighboring beech trees. This method allows for quick, targeted, and low volume application of herbicide across the stand. Since trees do not have to be felled like in traditional cut-stump application methods. Larger trees are always selected because they have more extensive root systems and generally graft to more beech trees. Treating the larger trees ahead of the harvest will also minimize root sprouting, and maximize the translocation of the herbicide before the root systems are impacted by harvesting activites and equipement.

This method has been adapted from beech control trials in Lisbon NH using different treated tree densities. Regardless of the densities, neighboring trees were also controled by the application through the translocation of the herbicide through the grafted root system. Supporting label and summary information can be found below, and with information in the accompanying General Technical Report *"Manual Herbicide Application Methods for Managing Vegetation in Appalachian Hardwood Forests"* by Jeffrey D. Kochenderfer, James N. Kochenderfer, and Gary W. Miller.

This work is being conducted in partnership with the University of New Hampshire's Cooperative Extension, using funding from the Natural Resource Conservation Service. The experimental treatment

units are part of long term study of climate resilience being developed within the WMA by the University of Vermont and The Nature Conservancy.

SECTION I: STEM INJECTION SUMMARY

- Use 38-percent solution of Accord® Concentrate in a water carrier.
- Use 50-percent solution of Garlon® 3A, Roundup Pro®, Glyphomate®, or Razor® Pro in a water carrier.
- Use 6-percent solution of Arsenal® or 3-percent solution of Arsenal® AC in a water carrier.
- Arsenal® herbicide is very effective on maple (*Acer* spp.).
- Make one incision per inch of diameter at breast height (d.b.h.) spaced evenly around the stems.
- Apply 1.5 milliliters (ml) (0.05 oz.) of solution per incision.
- Treatment is applicable to stems ≥1.0 inch d.b.h.
- The "cut stub" treatment (Figure 14) is very effective on stems smaller than 1.0 inch d.b.h.
- Treatment is best applied from June 1 to November 1.
- Do not apply during periods of heavy sap flow (February through May).
- Treatment costs $50-$75 per acre (chemical and labor).

Based on a hatchet blade 1.75" Wide

8.7 Injection and Frill (Woody Brush and Trees)

This product may be used to control woody brush and trees by injection or frill applications. Apply this product using suitable equipment which must penetrate into the living tissue. Apply the equivalent of 1 ml of this product per each 2 to 3 inches of trunk diameter at breast height (DBH). This is best achieved by applying a 50 to 100 percent concentration of this product either to a continuous frill around the tree or as cuts evenly spaced around the tree below all branches. As tree diameter increases in size, better results are achieved by applying diluted material to a continuous frill or more closely spaced cuttings. Avoid application techniques that allow runoff to occur from frilled or cut areas in species that exude sap freely. In species such as this, make the frill or cuts at an oblique angle to produce a cupping effect and use a 100 percent concentration of this product. For best results, application should be made during periods of active growth and after full leaf expansion.

7. APPENDIX

This plan has been reviewed and approved by New Hampshire Fish and Game Department

Jim Oehler

08-07-2023
Date

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The within conveyance is a transfer to the State of New Hampshire and pursuant to RSA 78-B:2(I) it is exempt from the New Hampshire Real Estate Transfer Tax

Doc # 0002190 Mar 19, 2015 11:27 AM
Lisa Scott
Register of Deeds, Carroll County

Conservation Easement Deed

THE NATURE CONSERVANCY, a nonprofit corporation incorporated under the laws of the District of Columbia as a tax exempt public charity under Section 501(c)(3) and 509(a)(1) of the Internal Revenue Code of 1986, as amended (the "Code"), having its headquarters at 4245 North Fairfax Drive, Suite 100, Arlington, Virginia 22203-1606 and a local address at 22 Bridge Street, 4th Floor, Concord, NH 03301 (hereinafter referred to as the "Grantor", which word includes the plural and shall, unless the context clearly indicates otherwise, include the Grantor's successors and assigns),

for consideration paid, with WARRANTY covenants, grants in perpetuity to

the STATE OF NEW HAMPSHIRE, acting by and through the FISH AND GAME DEPARTMENT, with a principal office at 11 Hazen Drive, City of Concord, New Hampshire 03301 (hereinafter referred to as the "Grantee", which word includes the plural and shall, unless the context clearly indicates otherwise, include the Grantee's successors and assigns),

a CONSERVATION EASEMENT (hereinafter "Easement") described with respect to that certain parcel of land (hereinafter "Property") being unimproved land, consisting of approximately 1,013.03 acres, accessible by rights of way located off of East Conway Road in the Town of Conway, County of Carroll State of New Hampshire, more particularly described in Appendix A attached hereto and made a part hereof and as shown as the property of Charles Sutton Marshall and Margaret Louise Marshall Revocable Trusts on a Plan entitled Boundary Plan of land being conveyed to The Nature Conservancy located in Conway, New Hampshire by HEB Engineers, dated August 21, 2014, and recorded in the Carroll County Registry of Deeds at Plan Book 234, Page 6.

The Grantee has identified the area as critical wildlife habitat which is part of a large unfragmented forest tract and includes an extensive deer yard, and the Property provides significant habitat for numerous species of wildlife.

BK3191PG487

1. PURPOSES

The Easement hereby granted is pursuant to NH RSA 477:45-47, exclusively for the following conservation purposes:

A. To retain the PROPERTY forever in its undeveloped state for significant wildlife habitat including wetlands and uplands, and to prevent any use of the Property that will impair or interfere with its conservation values;

B. To protect the Property from future development, to conserve and manage the natural vegetation, soils, hydrology, natural habitats, wildlife habitats, wetlands, uplands, and open spaces of which the Property consists, and to conserve and maintain its unique characteristics substantially in its present scenic and open space condition, the preservation of which is important to the public and will serve the public interest in a manner consistent with New Hampshire RSA 477:45-47;

C. To further the goals of the NH Wildlife Action Plan and the Wildlife Restoration Program administered by the Department of Interior, U.S. Fish and Wildlife Service (the "Service"), including but not limited to the protection, management and enhancement of wild birds and mammals and their habitats;

D. To provide to the public, in accordance with applicable laws and regulations, pedestrian access, in perpetuity, on and across the Property for low-impact non-commercial recreational activities including, but not limited, to hunting, fishing, hiking, trapping (in accordance to RSA 210:11), cross country skiing and nature observation.

E. To further the goals of the New Hampshire Aquatic Resources Mitigation Fund Final In-lieu Fee Program Instrument (U.S. Army Corps of Engineers, New England District, Regulatory Division, File Number NAE-2005-1142), by protecting wetlands and water resources on the Property.

The above purposes are consistent with New Hampshire RSA Chapter 79-A which states: "It is hereby declared to be in the public interest to encourage the preservation of open space, thus providing a healthful and attractive outdoor environment for work and recreation of the state's citizens, maintaining the character of the state's landscape, and conserving the land, water, forest, agricultural and wildlife resources."

These significant conservation values are set forth in detail in baseline documentation on file with the Grantor and Grantee. The baseline documentation report is an integral part of this Conservation Easement and is incorporated herein by reference, said report approved in writing by both parties. The parties agree that the report contains an accurate representation of the natural resources and physical condition of the Property at the time of this conveyance, of the current and historical uses of the Property, and a more detailed description of the Conservation Values. In case of any conflict or inconsistency between the terms of the Conservation Easement and the report, the terms of this Conservation Easement shall prevail.

The Easement hereby granted with respect to the Property is as follows:

2. USE LIMITATIONS
Subject to provisions specified in Sections 3, 4, and 5 below:

Any activity on or use of the Property inconsistent with the Purposes of this Easement is prohibited. Without limiting the generality of the foregoing, the following use limitations shall apply to the Property except as otherwise specifically provided by the Easement:

A. The Property shall be maintained in perpetuity as open space without there being conducted thereon any industrial or commercial activities, except forestry, including timber harvesting in accordance with a stewardship plan approved by Grantee as described in Section 3 herein and provided that the productive capacity of the Property to support native wildlife populations shall not be degraded by on-site activities.

i. For the purposes hereof, "Forestry" shall include the growing, stocking, cutting, and sale of forest trees of any size for forest products or "Wildlife Habitat Management" (as defined below) but not for nursery production; and the construction of roads or other access-ways for the purpose of removing forest products from the Property, all as not detrimental to the Purposes of this Easement.

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ii. "Wildlife Habitat Management" shall mean the practical application of scientific and technical principles so as to maintain native plant and animal species and their habitats. Activities may include, but shall not be limited to, cutting, pruning, girdling, mowing, brush-hogging or burning of trees or other vegetation to improve habitat conditions; establishing and maintaining firebreaks and buffer zones to reduce wildfire hazards and facilitate prescribed burning; conducting prescribed burns; installing denning or nesting structures for improving the utilization of natural resources and habitats by wildlife populations; and controlling non-native and invasive species through mechanical, chemical, or other means.

iii. Forestry and Wildlife Habitat Management shall be performed as hereinafter specified in Section 3 of this Easement and in accordance with the following stewardship goals:

- maintenance or enhancement of the Property's fish and wildlife habitat values;
- maintenance of soil productivity and protection against soil erosion;
- protection of water quality, wetlands, and riparian zones;
- protection of rare plants & animals;
- protection of unique or fragile natural areas;
- conservation of native plant and animal species;
- protection of unique historic and cultural features; and
- protection of passive non-commercial recreational qualities.

B. The Property shall not be subdivided or otherwise divided into parcels of separate distinct ownership and none of the individual tracts, which together comprise the Property, shall be conveyed separately from one another, unless approved by the Grantee in writing.

C. No structure or improvement, including, but not limited to, a dwelling, any portion of a septic system, parking lot, portable or composting toilet, educational building, tennis court, swimming pool, dock, athletic field, pavilion, shooting range, aircraft landing strip, tower or mobile home, shall be constructed, placed, or introduced onto the Property. However,

i. ancillary structures and improvements including, but not limited to, an unpaved road, dam, gate, fence, bridge, culvert or wildlife nest structure may be constructed, placed, or introduced onto the Property only to the extent necessary to accomplish the Forestry, conservation or Wildlife Habitat Management uses of the Property and provided that they are not detrimental to the Purposes of this Easement; and

ii. unpaved pedestrian trails, informational kiosks and wildlife blinds may be constructed, placed, or introduced onto the Property only to the extent necessary to accomplish the low-impact non-commercial outdoor recreational or educational uses of the Property and provided that they are not detrimental to the Purposes of this Easement.

D. No removal, filling, or other disturbances of soil surface, nor any changes in topography, surface or subsurface water systems, wetlands, or natural habitat shall be allowed unless such activities:

i. are commonly necessary in the accomplishment of the Forestry, conservation, habitat management and restoration, Wildlife Habitat Management, or low-impact non-commercial outdoor recreational uses of the Property as permitted by this Easement;

ii. do not harm state or federally recognized rare, threatened, or endangered species or exemplary natural communities, such determination of harm to be based upon information from the New Hampshire Fish and Game Department, Natural Heritage Bureau or the agency then recognized by the State of New

Hampshire as having responsibility for identification and/or conservation of such species;

iii. do not impact wetland vegetation, soils, hydrology, or habitat;

iv. are not detrimental to the Purposes of this Easement; and

v. are permitted and approved by all federal, state, local, and other governmental entities, as necessary before said activities take place.

E. No outdoor advertising structures such as signs and billboards shall be displayed on the Property except as desirable or necessary in the accomplishment of the Forestry, Wildlife Habitat Management, conservation, education, or low-impact non-commercial outdoor recreational uses of the Property, and provided such signs are not detrimental to the Purposes of this Easement. No sign shall exceed sixteen (16) square feet in size and no sign shall be artificially illuminated.

F. There shall be no mining, quarrying, or excavation of rocks, minerals, gravel, sand, topsoil, or other similar materials on the Property, except in connection with any improvements made pursuant to the provisions of Sections 2.A.,C., D., or E., above. No such rocks, minerals, gravel, sand, topsoil, or other similar materials shall be removed from the Property.

G. There shall be no dumping, spreading, injection, burning, or burial of biosolids, man-made materials or materials then known to be environmentally hazardous.

H. The Property shall in no way be used to satisfy the density, frontage, or setback requirements of any applicable zoning ordinance or subdivision regulation with respect to the development of any other property.

3. FORESTRY AND STEWARDSHIP PLANNING

Plan Preparation and Approval:

A. Forestry and Wildlife Habitat Management activities shall be conducted in accordance with a stewardship plan, prepared by a licensed professional forester, a certified wildlife biologist, or other qualified person (the "Resource Professional"). Any person other than a licensed professional forester or a certified wildlife biologist shall be considered a Resource Professional under this Easement only if approved in advance and in writing by the Grantee. Said stewardship plan (the "Plan") must be prepared, approved and implemented in accordance with this Easement.

B. The Plan shall have been prepared not more than 10 years prior to the date of any Forestry or Wildlife Habitat Management activity. Plans prepared more than 10 years prior to the anticipated Forestry and/or Wildlife Habitat Management activity date must be reviewed and updated for Grantee's approval in accordance with Section 3. herein.

C. Prior to the Grantor conducting Forestry and/or Wildlife Habitat Management activities on the Property, and if there is no existing plan that meets all the requirements of Section 3 herein, the Grantor shall prepare the Plan as follows:

The Grantor's Resource Professional shall draft a Plan, prepared as outlined in Section 3.G herein. Prior to submitting the Plan to Grantee for its approval (see next paragraph), the Grantor shall submit said Plan to Grantee for review and input regarding the wildlife habitat impacts, consistency with the Purposes stated in Section 1, the stewardship goals stated in Section 2.A.iii., and compliance with this

Easement.

D. The Grantor shall submit the Plan to the Grantee for approval at least sixty (60) days prior to land management activities.

E. Within forty-five (45) days after Grantee's receipt of said Plan, the Grantee shall approve or disapprove the same with respect to its wildlife habitat impacts, consistency with the Purposes stated in Section 1, stewardship goals stated in Section 2.A.iii., and compliance with this Easement, and so inform the Grantor in writing. Any disapproval shall specify in detail the reasons therefore. If the Grantee fails to so approve or disapprove within said period, Grantor may proceed with Forestry and Wildlife Habitat Management activities recognizing that the following paragraph applies.

F. The Grantor and Grantee acknowledge that the Plan's purpose is to guide Forestry and Wildlife Habitat Management activities in compliance with this Easement and that the actual activities will determine compliance therewith.

G. The Stewardship Plan shall specifically address and include at least the following elements:

i. The long-term protection of the Purposes for which this Easement is granted, as described in Section 1 above;

ii. The stewardship goals set forth in Section 2.A.iii. above;

iii. A statement of landowner management objectives consistent with the Purposes of the Easement and stewardship goals stated in Section 2.A.iii. above;

iv. A map showing the Property's boundaries, access roads, and forest stand types;

v. A description of the Property's existing conditions and natural features including land cover, topography, soils, geology, wetlands, streams and ponds, wildlife habitat features, low-impact non-commercial recreational and educational uses, and boundary conditions;

vi. Identification of plant and wildlife species of conservation concern, and how management will enhance or avoid detrimental impacts to said plant and wildlife species;

vii. Proposed management prescriptions and activities for Wildlife Habitat Management, Forestry, conservation, low-impact non-commercial recreation, and education; and

viii. Proposed schedule of implementation of management prescriptions, including a schedule for boundary, road and trail maintenance.

ix. In the event that the Grantor proposes a new Forestry and/or Wildlife Habitat Management activity not included in a previously approved Plan, the Grantor shall submit an amendment to the Plan for Grantee's approval in accordance with Section 3.A. herein prior to conducting any such new management activity. Such amendments shall include any changes and additions to or deletions from the approved Plan.

x. Timber harvesting with respect to such Forestry activities shall be conducted in accordance with the approved Plan and be supervised by a Resource Professional and shall be subject to the following additional requirements: Harvesting shall be carried out in accordance with all applicable local, state,

federal, and other laws and regulations, and in accordance with then-current, generally accepted best management practices for the sites, soils, and terrain of the Property. For references, see "Best Management Practices for Erosion Control on Timber Harvesting Operations in New Hampshire" (J.B. Cullen, 2004), and "Good Forestry in the Granite State: Recommended Voluntary Forest Management Practices for New Hampshire" (Bennett, Karen P., editor 2010), and "Best Management Practices for Erosion Control During Trail Maintenance and Construction" (State of New Hampshire, Department of Resources and Economic Development, Division of Parks and Recreation, Trails Bureau, 2004), or similar successor publications.

4. RESERVED RIGHTS

Grantor retains the right to undertake or continue any activity or use of the Property consistent with the Purposes of this Easement as defined in Section 1 above and not otherwise prohibited by this Easement. Without limiting the generality of the foregoing, Grantor shall have the following retained rights:

A. The Grantor reserves the right to conduct Forestry and Wildlife Habitat Management activities as defined in Section 2.A and subject to the Use Limitations in Section 2.

B. The Grantor reserves the right to erect gates and barriers and appropriate signage for the control of motorized or wheeled vehicles and equestrian access into, on, over, or across the Property.

C. The Grantor reserves the right to use motor vehicles as reasonably necessary for the practice of Forestry, conservation, and Wildlife Habitat Management activities and for exercising any of the Grantor's reserved rights.

D. The Grantor reserves the right to construct, maintain and close the hiking and biking trails on the property, and to erect and maintain informational kiosks.

E. The Grantor retains the right, but not the obligation, to construct, use, repair and maintain a permeable-surface parking area on the Property. The size and location of such area must be approved in advance by the Grantee.

F. The Grantor reserves the right to use and maintain the existing snowmobile trail(s) on the Property, and to allow third parties to use and maintain the snowmobile trails, along with associated improvements including, but not limited to, fences, bridges, culverts and signs. Said right to use and maintain the snowmobile trail(s) shall not include the construction of any buildings.

G. The Grantor specifically retains all protections from liability provided under New Hampshire Law to private owners of land, including, but not limited to, the protections contained in RSA 212:34, RSA 215:A34 II, or RSA 508:14 (or any successor or other statutory or regulatory provision then applicable).

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5. AFFIRMATIVE RIGHTS OF THE GRANTEE; PUBLIC ACCESS

A. To accomplish the Purposes of this Conservation Easement, the following rights are conveyed to Grantee by this Easement:

i. The Grantee and its agents shall have reasonable access to the Property and all of its parts for such inspections as are necessary to determine compliance with and enforce this Easement and to

exercise the rights conveyed hereby and fulfill the responsibilities and carry out the duties assumed by the acceptance of this Easement.

ii. The Grantee shall have the right but not the obligation to mark and maintain the boundaries of the Easement, in consultation with the Grantor.

iii. The Grantee shall have the right, but not the obligation, to construct, use, repair and maintain a permeable-surface parking area on the Property. The size and location of such area must be approved in advance by the Grantor.

B. The Grantor shall, in accordance with applicable laws and regulations, keep the Property open for pedestrian access, in perpetuity, on and across the Property for low-impact non-commercial recreational activities including but not limited to hunting, fishing, hiking, trapping (in accordance to RSA 210:11), cross country skiing and nature observation; provided, however, that the Grantee shall cooperate with the Grantor to limit public access and use of the Property if the public use is not consistent with the purposes of this Easement, and provided further, that there shall be no overnight camping, motorized access, or construction of fires on the Property by the public without the Grantor's prior written consent.

6. NOTIFICATION OF TRANSFER, TAXES, MAINTENANCE

The Grantee shall be under no obligation to maintain the Property or pay any taxes or assessments thereon.

The Grantor shall provide a 60-day advance notification of transfer of title to the Grantee, New Hampshire Department of Environmental Services, and the Army Corps of Engineers pursuant to the New Hampshire Aquatic Resource Mitigation Fund Final In-Lieu Fee Program Instrument signed May 17, 2012, Corps of Engineers File Number NAE-2005-1142.

7. BENEFITS AND BURDENS

The burden of the Easement conveyed hereby shall run with the Property and shall be enforceable against all future owners and tenants in perpetuity; the benefits of this Easement shall not be appurtenant to any particular parcel of land but shall be in gross and assignable or transferable only to the State of New Hampshire, the U.S. Government, or any subdivision of either of them, consistent with Section 170(c)(1) of the of the U.S. Internal Revenue Code of 1986, as amended , or to any qualified organization within the meaning of Section 170(h)(3) of the Code, which organization has among its purposes the conservation and preservation of land and water areas and agrees to and is capable of enforcing the conservation purposes of this Easement. Provided that by virtue of the Wildlife Restoration Program Grant from the Service for purchase of this Easement, and the provisions set forth in the Notice of Grant Agreement recorded herewith and attached hereto as Appendix B, the Easement may not be assigned, transferred, conveyed or encumbered, in whole or in part, to any other party or for any other use, whatsoever, without the written consent of the Regional Director of the U.S. Fish and Wildlife Service. Any such assignee or transferee shall have like power of assignment or transfer.

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8. MERGER

The Grantor and Grantee explicitly agree that it is their express intent, forming a part of the consideration hereunder, that the provisions of the Easement set forth herein are to last in perpetuity, and that to that end no purchase or transfer of the underlying fee interest in the Property by or to the Grantee or any successor or assign shall be deemed to eliminate the Easement or any portion thereof granted hereunder under the doctrine of "merger" or any other legal doctrine.

9. BREACH OF EASEMENT

A. When a breach of this Easement, or conduct by anyone inconsistent with this Easement, comes to the attention of the Grantee, it shall notify the Grantor in writing of such breach or conduct, delivered in hand or by certified mail, postage prepaid return receipt requested.

B. The Grantor shall, within thirty (30) days after receipt of such notice, undertake those actions, including but not limited to restoration (except for injury to or change in the Property resulting from causes beyond the Grantor's control, as described in subparagraph D. below), which are reasonably calculated to cure swiftly said breach, or to terminate said conduct, and to repair any damage. The Grantor shall promptly notify the Grantee of its actions taken under this Section.

C. If the Grantor fails to take such proper action under the preceding paragraph, the Grantee shall, as appropriate to the Purposes of this Easement, undertake any actions that are reasonably necessary to cure such breach or to repair any damage in the Grantor's name or to terminate such conduct. The cost thereof, including the Grantee's expenses, court costs, and reasonable legal fees, shall be paid by the Grantor, if the Grantor is directly or primarily responsible for the breach.

D. Nothing contained in this Easement shall be construed to entitle the Grantee to bring any action against the Grantor for any injury to or change in the Property resulting from causes beyond the Grantor's control, including, but not limited to, unauthorized actions by third parties, natural disasters such as fire, flood, storm, disease, infestation and earth movement, or from any prudent action taken by the Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Property resulting from such causes.

E. Forbearance by the Grantee to exercise its rights under this Easement in the event of any breach of any term thereof by the Grantor shall not be deemed or construed to be a waiver by the Grantee of such term or of any subsequent breach of the same or any other term of this Easement or of any of the Grantee's rights hereunder. No delay or omission by the Grantee in the exercise of any right or remedy upon any breach by the Grantor shall impair such right or remedy or be construed as a waiver. The Grantor hereby waives any defense of laches or estoppel.

F. The Grantee and the Grantor reserve the right, separately or collectively, to pursue all legal remedies against any third party responsible for any actions detrimental to the Purposes of this Easement.

10. NOTICES

All notices, requests and other communications, required to be given under this Easement shall be in writing, except as otherwise provided herein, and shall be delivered in hand or sent by certified mail, postage prepaid, return receipt requested to the appropriate address set forth above or at such other address as the Grantor or the Grantee may hereafter designate by notice given in accordance herewith. Notice shall be deemed to have been given when so delivered or so mailed.

11. SEVERABILITY

If any provision of this Easement, or the application thereof to any person or circumstance, is found to be invalid by a court of competent jurisdiction, by confirmation of an arbitration award or otherwise, the remainder of the provisions of this Easement or the application of such provision to persons or circumstances other than those to which it is found to be invalid, as the case may be, shall not be affected thereby.

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12. CONDEMNATION/EXTINGUISHMENT

A. Whenever all or part of the Property is taken in exercise of eminent domain by public, corporate, or other authority so as to abrogate in whole or in part the Easement conveyed hereby, the Grantor and the Grantee shall thereupon act jointly to recover the full damages resulting from such taking with all incidental or direct damages and expenses incurred by them thereby to be paid out of the damages recovered.

B. The balance of the land damages recovered (including, for purposes of this subsection, proceeds from any lawful sale, in lieu of condemnation, of the Property unencumbered by the restrictions hereunder) shall be divided between the Grantor and the Grantee in proportion to the fair market value, at the time of condemnation, of their respective interests in that part of the Property condemned. The values of the Grantor's and Grantee's interests shall be determined by an appraisal prepared by a qualified appraiser at the time of condemnation.

C. By virtue of the Wildlife Restoration Program Grant from the Service for purchase of this Conservation Easement, and of the provisions set forth in the Notice of Grant Agreement (attached hereto as Appendix B), the Service shall be entitled to 41.8 percent of the portion of the proceeds payable to the Grantee pursuant to this Section 13 unless the Regional Director of the Service consents to or requires the Grantee's use of the Service's portion of the proceeds to acquire other land or interests in land of equal or greater monetary and resource value.

D. The Grantee shall use its share of the proceeds in a manner consistent with and in furtherance of one or more of the conservation purposes set forth herein.

13. ADDITIONAL EASEMENT

Any additional conservation easement on the Property shall require prior approval of the Grantee and the written consent of the Regional Director of the U.S. Fish and Wildlife Service and shall not diminish the conservation purposes for which the Property was originally protected. Any future conservation easement shall be conveyed to and accepted and recorded by either the State of New Hampshire, the U.S. Government, or any subdivision of either of them, consistent with Section 170(c)(I) of the Code or any qualified organization within the meaning of Section 170(h)(3) of the Code, which organization has among its purposes the conservation and preservation of land and water areas, and agrees to and is capable of enforcing the conservation purposes of the easement. Any such assignee or transferee shall have like power of assignment or transfer.

14. FEDERAL GRANT

The conservation easement on the above-described Property is acquired, in part, with funding received by the Grantee from Grant Agreement Number **F15AF00112 NH-W-103-L-1** between the Service and the State of New Hampshire Fish and Game Department as Grantee. All present and future terms and conditions of the Property are and shall remain subject to the terms and conditions described in the Notice of Grant Agreement (attached hereto as Appendix B), and to the other administrative requirements of the applicable grant funding program of the Service.

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15. STEWARDSHIP RESPONSIBILITIES OF THE GRANTEE

To facilitate the fulfillment of its responsibilities under this Easement, the Grantee shall be responsible for the following (which shall include, but not be limited to):

A. Provide an annual on-ground monitoring inspection that confirms that the interest acquired is being protected and maintained according to the terms of the Easement;

B. Provide annual contact with the Property owner to inform them of their obligations under the terms of this Easement;

C. Prepare and submit an annual monitoring report to the Grantor, NH Department of Environmental Services, and U.S. Fish and Wildlife Service, which shall contain the following:

i. Description of the inspection conducted;
ii. Description of any physical changes to the Property;
iii. Description of any contacts made with Property owners, including their current name and address information;
iv. Description of any conditions or activities on the Property, including those which violate or may violate the intent of this Easement;
v. Explanation of the current status of any previously identified violations and any remedial steps taken; and
vi. Any steps to be taken by Property owners to bring the Property into compliance with the terms of the Easement (if necessary).

D. Upon sale of the Property, the Grantee shall contact the new owner and inform them of the provisions of this Easement.

The Grantee, by accepting and recording this Easement, agrees to be bound by and to observe and enforce the provisions hereof and assumes the rights and responsibilities herein granted to and incumbent upon the Grantee, all in the furtherance of the conservation purposes for which this Easement is delivered.

Nothing in this Easement shall be interpreted as a waiver of the State's sovereign immunity.

IN WITNESS WHEREOF, we have hereto under set our hand this 18th day of March, 2015.

Mark Zankel, State Director
The Nature Conservancy

STATE OF NEW HAMPSHIRE
COUNTY OF MERRIMACK

On this 18 day of March, 2015, before me, the undersigned notary public, personally appeared Mark Zankel, New Hampshire State Director of The Nature Conservancy (a corporation), to me personally known or otherwise proved to me through satisfactory evidence of identification to be the person whose name is signed on the preceding document, and acknowledged to me that he signed such document voluntarily for its stated purpose.

Before me,

Notary Public/Justice of the Peace [seal]
My Commission Expires:

SYDNEY L ALLEN NOTARY PUBLIC NEW HAMPSHIRE
SYDNEY L ALLEN
Notary Public
My Commission Expires 2018

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Accepted: State of New Hampshire Fish & Game Department

By: _____
Glenn Normandeau, Executive Director

The State of New Hampshire
County of Merrimack

Personally appeared Glenn Normandeau, Executive Director of the New Hampshire Fish and Game Department, this 19th day of March, 2015 and being duly authorized acknowledged the foregoing on behalf of the State of New Hampshire.

Before me, Tanya L Haskell
Justice of the Peace/Notary Public [seal]
My commission expires: _____

TANYA L. HASKELL, Notary Public
My Commission Expires October 6, 2015

Approved by the Governor and Executive Council:
Approval Date: January 28, 2015, Item #: 26

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7. APPENDIX

APPENDIX A
PROPERTY DESCRIPTION

Beginning at an iron pipe found at the northwest corner of land of The Society for the Protection of New Hampshire Forests and the southwest corner of land of the Tin Mountain Conservation Center, Inc. and along the southern end of the east line of the land herein described;

Thence S3°09'41"E, 130.65 ft. to a stone post found at the northeast corner of land of the Peter & Patricia Mongeau Living Trust;

Thence S87°35'23"W, by said land of the Mongeau Trust, 3038.17 ft. to a rebar found;

Thence S3°08'14"E, 669.03 ft. to a rebar found at an east corner of land of the Town of Conway;

Thence N38°22'37"W, by said land of the Town of Conway, 2276.38 ft. to a rebar found;

Thence S66°00'37"W, by said land of the Town of Conway, 2238.55 ft. to a rebar found at a northeast corner of land of the Kennett Company;

Thence the following courses by said land of the Kennett Company:

N31°14'23"W, 458.64 ft. to a rebar found;

S85°16'08"W, 1424.68 ft. to a point on the east line of other land of The Nature Conservancy;

Thence N3°55'01"W, 1674.07 ft. to a rebar found on a south line of other land of The Nature Conservancy;

Thence N87°38'38"E, by said other land, 617.43 ft. to a rebar found;

Thence N2°19'58"W, still by said other land of The Nature Conservancy, 4426.64 ft. to a rebar found at the northwest corner of the land herein described;

Thence N87°39'34"E, 2549.86 ft. to a stone post found;

Thence S2°21'25"E, 650.67 ft. to a rebar found;

Thence N84°23'58"E, 2354.25 ft. to a rebar found;

Thence S5°08'40"E, 338.00 ft. to a rebar found;

Thence N84°14'08"E, 2054.71 ft. to a rebar found at the west corner of land of Roger L. & Jacqueline M. Garland;

Thence S42°38'16"E, 992.68 ft. to a rebar found;

Thence S39°37'39"W, 1485.42 ft. to a rebar found;

Thence S2°31'54"E, 1256.30 ft. to a rebar found;

Thence N88°37'55"E, 917.25 ft. to a drill hole found in a large boulder at the northwest corner of land of Tin Mountain Conservation Center, Inc.;

Thence S1°57'20"E, by said land of Tin Mountain, 2758.90 ft. to the point of beginning.

Containing 44,127,566 sq. ft. = 1,013.03 ac.

Bearings are grid.

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APPENDIX B

Notice of Grant Agreement

The State of New Hampshire, Fish and Game Department and its successors and assigns (hereinafter "DEPARTMENT") acknowledges that the above described Conservation Easement (hereinafter "EASEMENT') is acquired in part with federal funds received from the Wildlife Restoration Program administered by the U.S. Fish and Wildlife Service, Division of Federal Assistance and its successors and assigns (hereinafter "SERVICE") and that the Easement is subject to all the terms and conditions of Grant Agreement Number **F15AF00112 NH-W-103-L-1** (hereinafter "GRANT AGREEMENT" between the Service and the Department). A copy of the Grant Agreement is kept on file at the offices of the Service, 300 Westgate Center Drive, Hadley, MA 01035-9589 and at the offices of the Department, 11 Hazen Drive, Concord, NH 03301.

The Department acknowledges that the Easement, which is the subject of this Grant Agreement, is acquired for the approved purpose of permanent protection of wild birds and mammals and their habitats. The Department further acknowledges that the Easement will be administered for the long-term protection of these habitats and species dependent thereon. The Department, as the Grant Recipient hereby acknowledge that they are responsible for ensuring that the Easement is used and will continue to be used for the approved purpose for which it is acquired and that the Easement may not be conveyed or encumbered, in whole or in part, to any other party or for any other use, whatsoever, without the written consent of the Regional Director of the U.S. Fish and Wildlife Service.

If the Department loses control of the Easement, control must be fully restored to the Department or the property must be replaced, within three years, with a like Easement of equal value at current market prices and equal benefits. Further, if the Easement is used for activities that interfere with the accomplishment of the approved purpose, the violating activities shall cease and any resulting adverse effects shall be remedied.

If the Department determines that the Easement is no longer needed or useful for its original purpose and the Service concurs, the Department may, with the prior written consent of the Service, either (1) acquire a conservation easement or other interest in land of equal value that serves the same approved purpose as the original property and manage the newly acquired conservation easement or other interest in land for the same purposes specified in the original Grant Agreement, or (2) repay the Service, in cash, the proportionate federal share of funds invested in the original purchase price, or to repay the Service, in cash, the proportionate federal share of the current fair market value of the Easement, or any portion thereof, whichever is higher, or (3) as a last resort, transfer the Easement to the Service or to a third-party designated or approved by the Service.

The Department, as Grant Recipient hereby confirms its obligations and responsibilities with regards to the acquired property pursuant to terms and conditions associated with Grant Agreement **F15AF00112 NH-W-103-L-1**.

By: _____

Glenn Normandeau, Executive Director

Date: March 17, 2015

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The within conveyance is a transfer to the State of New Hampshire and pursuant to RSA 78-B:2(I) it is exempt from the New Hampshire Real Estate Transfer Tax

Doc # 0002191 Mar 19, 2015 11:28 AM
Lisa Scott
Register of Deeds, Carroll County

Conservation Easement Deed

THE NATURE CONSERVANCY, a nonprofit corporation incorporated under the laws of the District of Columbia as a tax exempt public charity under Section 501(c)(3) and 509(a)(1) of the Internal Revenue Code having its headquarters at 4245 North Fairfax Drive, Suite 100, Arlington, Virginia 22203-1606 and a local address at 22 Bridge Street, 4th Floor, Concord, NH 03301 (hereinafter referred to as the "Grantor", which word includes the plural and shall, unless the context clearly indicates otherwise, include the Grantor's successors and assigns),

for consideration paid, with WARRANTY covenants, grants in perpetuity to

the STATE OF NEW HAMPSHIRE, acting by and through the FISH AND GAME DEPARTMENT, with a principal office at 11 Hazen Drive, City of Concord, New Hampshire 03301 (hereinafter referred to as the "Grantee", which word includes the plural and shall, unless the context clearly indicates otherwise, include the Grantee's successors and assigns),

a CONSERVATION EASEMENT (hereinafter "Easement") described with respect to that certain parcel of land (hereinafter "Property") being unimproved land, consisting of approximately 308+/- acres, accessible by rights of way located off of East Conway Road in the Town of Conway, County of Carroll State of New Hampshire, more particularly described in Appendix "A" attached hereto and made a part hereof and shown as the property of Redstone Properties Inc., Audubon Society of NH, and Marshall & Saunders, LLC on a Plan entitled Boundary Plan of land being conveyed to The Nature Conservancy located in Conway, New Hampshire by HEB Engineers, dated August 21, 2014, and recorded in the Carroll County Registry of Deeds at Plan Book 234, Page 6.

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The Grantee has identified the area as critical wildlife habitat which is part of a large unfragmented forest tract and includes an extensive deer yard, and the Property provides significant habitat for numerous species of wildlife.

1. PURPOSES

The Easement hereby granted is pursuant to NH RSA 477:45-47, exclusively for the following conservation purposes ("Purposes"):

A. To retain the PROPERTY forever in its undeveloped state for significant wildlife habitat including wetlands and uplands, and to prevent any use of the Property that will impair or interfere with its conservation values;

B. To protect the Property from future development, to conserve and manage the natural vegetation, soils, hydrology, natural habitats, wildlife habitats, wetlands, uplands, and open spaces of which the Property consists, and to conserve and maintain its unique characteristics substantially in its present scenic and open space condition, the preservation of which is important to the public and will serve the public interest in a manner consistent with New Hampshire RSA 477:45-47;

C. To further the goals of the NH Wildlife Action Plan including but not limited to the protection, management and enhancement of its wildlife habitats; and

D. To provide to the public, in accordance with applicable laws and regulations, pedestrian access, in perpetuity, on and across the Property for low-impact non-commercial recreational activities including, but not limited, to hunting, fishing, hiking, trapping (in accordance to RSA 210:11), cross country skiing and nature observation

The above purposes are consistent with New Hampshire RSA Chapter 79-A which states: "It is hereby declared to be in the public interest to encourage the preservation of open space, thus providing a healthful and attractive outdoor environment for work and recreation of the state's citizens, maintaining the character of the state's landscape, and conserving the land, water, forest, agricultural and wildlife resources."

These significant conservation values are set forth in detail in baseline documentation on file with the Grantor and Grantee. The baseline documentation report is an integral part of this Conservation Easement and is incorporated herein by reference, said report approved in writing by both parties. The parties agree that the report contains an accurate representation of the natural resources and physical condition of the Property at the time of this conveyance, of the current and historical uses of the Property, and a more detailed description of the Conservation Values. In case of any conflict or inconsistency between the terms of the Conservation Easement and the report, the terms of this Conservation Easement shall prevail.

The Easement hereby granted with respect to the Property is as follows:

2. USE LIMITATIONS
Subject to provisions specified in Sections 3, 4, and 5 below:

Any activity on or use of the Property inconsistent with the Purposes of this Easement is prohibited. Without limiting the generality of the foregoing, the following use limitations shall apply to the Property except as otherwise specifically provided by the Easement:

A. The Property shall be maintained in perpetuity as open space without there being conducted thereon any industrial or commercial activities, except forestry, including timber harvesting in accordance with a stewardship plan approved by Grantee as described in Section 3 herein and provided that the

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productive capacity of the Property to support native wildlife populations shall not be degraded by on-site activities.

i. For the purposes hereof, "Forestry" shall include the growing, stocking, cutting, and sale of forest trees of any size for forest products or "Wildlife Habitat Management" (as defined below) but not for nursery production; and the construction of roads or other access-ways for the purpose of removing forest products from the Property, all as not detrimental to the Purposes of this Easement.

ii. "Wildlife Habitat Management" shall mean the practical application of scientific and technical principles so as to maintain native plant and animal species and their habitats. Activities may include, but shall not be limited to, cutting, pruning, girdling, mowing, brush-hogging or burning of trees or other vegetation to improve habitat conditions; establishing and maintaining firebreaks and buffer zones to reduce wildfire hazards and facilitate prescribed burning; conducting prescribed burns; installing denning or nesting structures for improving the utilization of natural resources and habitats by wildlife populations; and controlling non-native and invasive species through mechanical, chemical, or other means.

iii. Forestry and Wildlife Habitat Management shall be performed as hereinafter specified in Section 3 of this Easement and in accordance with the following stewardship goals:

- maintenance or enhancement of the Property's fish and wildlife habitat values;
- maintenance of soil productivity and protection against soil erosion;
- protection of water quality, wetlands, and riparian zones;
- protection of rare plants & animals;
- protection of unique or fragile natural areas;
- conservation of native plant and animal species;
- protection of unique historic and cultural features; and
- protection of passive non-commercial recreational qualities.

B. The Property shall not be subdivided or otherwise divided into parcels of separate distinct ownership and none of the individual tracts, which together comprise the Property, shall be conveyed separately from one another, unless approved by the Grantee in writing.

C. No structure or improvement, including, but not limited to, a dwelling, any portion of a septic system, parking lot, portable or composting toilet, educational building, tennis court, swimming pool, dock, athletic field, pavilion, shooting range, aircraft landing strip, tower or mobile home, shall be constructed, placed, or introduced onto the Property. However,

i. ancillary structures and improvements including, but not limited to, an unpaved road, dam, gate, fence, bridge, culvert or wildlife nest structure may be constructed, placed, or introduced onto the Property only to the extent necessary to accomplish the Forestry, conservation or Wildlife Habitat Management uses of the Property and provided that they are not detrimental to the Purposes of this Easement; and

ii. unpaved pedestrian trails, informational kiosks and wildlife blinds may be constructed, placed, or introduced onto the Property only to the extent necessary to accomplish the low-impact noncommercial outdoor recreational or educational uses of the Property and provided

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that they are not detrimental to the Purposes of this Easement.

D. No removal, filling, or other disturbances of soil surface, nor any changes in topography, surface or subsurface water systems, wetlands, or natural habitat shall be allowed unless such activities:

i. are commonly necessary in the accomplishment of the Forestry, conservation, habitat management and restoration, Wildlife Habitat Management, or low-impact non-commercial outdoor recreational uses of the Property as permitted by this Easement;

ii. do not harm state or federally recognized rare, threatened, or endangered species or exemplary natural communities, such determination of harm to be based upon information from the New Hampshire Fish and Game Department, Natural Heritage Bureau or the agency then recognized by the State of New Hampshire as having responsibility for identification and/or conservation of such species;

iii. do not impact wetland vegetation, soils, hydrology, or habitat;

iv. are not detrimental to the Purposes of this Easement; and

v. are permitted and approved by all federal, state, local, and other governmental entities, as necessary before said activities take place.

E. No outdoor advertising structures such as signs and billboards shall be displayed on the Property except as desirable or necessary in the accomplishment of the Forestry, Wildlife Habitat Management, conservation, education, or low-impact noncommercial outdoor recreational uses of the Property, and provided such signs are not detrimental to the Purposes of this Easement. No sign shall exceed sixteen (16) square feet in size and no sign shall be artificially illuminated.

F. There shall be no mining, quarrying, or excavation of rocks, minerals, gravel, sand, topsoil, or other similar materials on the Property, except in connection with any improvements made pursuant to the provisions of Sections 2.A.,C, D., or E., above. No such rocks, minerals, gravel, sand, topsoil, or other similar materials shall be removed from the Property.

G. There shall be no dumping, spreading, injection, burning, or burial of biosolids, man-made materials or materials then known to be environmentally hazardous.

H. The Property shall in no way be used to satisfy the density, frontage, or setback requirements of any applicable zoning ordinance or subdivision regulation with respect to the development of any other property.

3. FORESTRY AND STEWARDSHIP PLANNING

Plan Preparation and Approval

A. Forestry and Wildlife Habitat Management activities shall be conducted in accordance with a stewardship plan, prepared by a licensed professional forester, a certified wildlife biologist, or other

qualified person (the "Resource Professional"). Any person other than a licensed professional forester or a certified wildlife biologist shall be considered a Resource Professional under this Easement only if approved in advance and in writing by the Grantee. Said stewardship plan (the "Plan") must be prepared, approved and implemented in accordance with this Easement.

B. The Plan shall have been prepared not more than 10 years prior to the date of any Forestry or Wildlife Habitat Management activity. Plans prepared more than 10 years prior to the anticipated Forestry and/or Wildlife Habitat Management activity date must be reviewed and updated for Grantee's approval in accordance with Section 3. herein.

C. Prior to the Grantor conducting Forestry and/or Wildlife Habitat Management activities on the Property, and if there is no existing plan that meets all the requirements of Section 3 herein, the Grantor shall prepare the Plan as follows:

> The Grantor's Resource Professional shall draft a Plan, prepared as outlined in Section 3.G herein. Prior to submitting the Plan to Grantee for its approval (see next paragraph), the Grantor shall submit said Plan to Grantee for review and input regarding the wildlife habitat impacts, consistency with the Purposes stated in Section 1, the stewardship goals stated in Section 2.A.iii., and compliance with this Easement.

D. Grantor shall submit the Plan to the Grantee for approval at least sixty (60) days prior to land management activities.

E. Within forty-five (45) days after Grantee's receipt of said Plan, the Grantee shall approve or disapprove the same with respect to its wildlife habitat impacts, consistency with the Purposes stated in Section 1, stewardship goals stated in Section 2.A.iii., and compliance with this Easement, and so inform the Grantor in writing. Any disapproval shall specify in detail the reasons therefore. If the Grantee fails to so approve or disapprove within said period, Grantor may proceed with Forestry and Wildlife Habitat Management activities recognizing that the following paragraph applies.

F. The Grantor and Grantee acknowledge that the Plan's purpose is to guide Forestry and Wildlife Habitat Management activities in compliance with this Easement and that the actual activities will determine compliance therewith.

G. The Stewardship Plan shall specifically address and include at least the following elements:

> i. The long-term protection of the Purposes for which this Easement is granted, as described in Section 1 above;
>
> ii. The stewardship goals set forth in Section 2.A.iii. above;
>
> iii, A statement of landowner management objectives consistent with the Purposes of the Easement and stewardship goals stated in Section 2.A.iii. above;
>
> iv. A map showing the Property's boundaries, access roads, and forest stand types;

v. A description of the Property's existing conditions and natural features including land cover, topography, soils, geology, wetlands, streams and ponds, wildlife habitat features, low-impact non-commercial recreational and educational uses, and boundary conditions;

vi. Identification of plant and wildlife species of conservation concern, and how management will enhance or avoid detrimental impacts to said plant and wildlife species;

vii. Proposed management prescriptions and activities for Forestry, Wildlife Habitat Management, conservation, low-impact non-commercial recreation, and education; and

viii. Proposed schedule of implementation of management prescriptions, including a schedule for boundary, road and trail maintenance.

ix. In the event that the Grantor proposes a new Forestry and/or Wildlife Habitat Management activity not included in a previously approved Plan, the Grantor shall submit an amendment to the Plan for Grantee's approval in accordance with Section 3.A. herein prior to conducting any such new management activity. Such amendments shall include any changes and additions to or deletions from the approved Plan.

x. Timber harvesting with respect to such Forestry and Wildlife Habitat Management activities shall be conducted in accordance with the approved Plan and be supervised by a Resource Professional and shall be subject to the following additional requirements: Harvesting shall be carried out in accordance with all applicable local, state, federal, and other laws and regulations, and in accordance with then-current, generally accepted best management practices for the sites, soils, and terrain of the Property. For references, see "Best Management Practices for Erosion Control on Timber Harvesting Operations in New Hampshire" (J.B. Cullen, 2004), and "Good Forestry in the Granite State: Recommended Voluntary Forest Management Practices for New Hampshire" (Bennett, Karen P., editor 2010), and "Best Management Practices for Erosion Control During Trail Maintenance and Construction" (State of New Hampshire, Department of Resources and Economic Development, Division of Parks and Recreation, Trails Bureau, 2004), or similar successor publications.

4. RESERVED RIGHTS

Grantor retains the right to undertake or continue any activity or use of the Property consistent with the Purposes of this Easement as defined in Section 1 above and not otherwise prohibited by this Easement. Without limiting the generality of the foregoing, Grantor shall have the following retained rights:

A. The Grantor reserves the right to conduct Forestry and Wildlife Habitat Management activities as defined in Section 2.A and subject to the Use Limitations in Section 2.

B. The Grantor reserves the right to erect gates and barriers and appropriate signage, for the control of motorized or wheeled vehicles and equestrian access into, on, over, or across the Property.

C. The Grantor reserves the right to use of motor vehicles as reasonably necessary for the practice of

Forestry, conservation, and Wildlife Habitat Management activities and for exercising any of the Grantor's reserved rights.

D. The Grantor reserves the right to construct, maintain and close the hiking and biking trails on the property, and to erect and maintain informational kiosks.

E. Grantor retains the right, but not the obligation, to construct, use, repair and maintain a permeable-surface parking area on the Property. The size and location of such area must be approved in advance by the Grantee.

F. The Grantor reserves the right to use and maintain the existing snowmobile trail(s) on the Property, and to allow third parties to use and maintain the snowmobile trails, along with associated improvements including, but not limited to, fences, bridges, culverts and signs. Said right to use and maintain the snowmobile trail(s) shall not include the construction of any buildings.

G. The Grantor specifically retains all protections from liability provided under New Hampshire Law to private owners of land, including, but not limited to, the protections contained in RSA 212:34, RSA 215:A34 II, or RSA 508:14 (or any successor or other statutory or regulatory provision then applicable).

5. AFFIRMATIVE RIGHTS OF THE GRANTEE; PUBLIC ACCESS

To accomplish the Purposes of this Conservation Easement, the following rights are conveyed to Grantee by this Easement:

A. The Grantee and its agents shall have reasonable access to the Property and all of its parts for such inspections as are necessary to determine compliance with and enforce this Easement and to exercise the rights conveyed hereby and fulfill the responsibilities and carry out the duties assumed by the acceptance of this Easement.

B. Grantee shall have the right but not the obligation to mark and maintain the boundaries of the Easement, in consultation with the Grantor.

The Grantor shall, in accordance with applicable laws and regulations, keep the Property open for pedestrian access, in perpetuity, on and across the Property for low-impact non-commercial recreational activities including but not limited to hunting, fishing, hiking, trapping (in accordance to RSA 210:11), cross country skiing and nature observation; provided, however, that the Grantee shall cooperate with the Grantor to limit public access and use of the Property if the public use is not consistent with the purposes of this Easement, and provided further, that there shall be no overnight camping, motorized access, or construction of fires on the Property by the public without the Grantor's prior written consent.

6. NOTIFICATION OF TRANSFER, TAXES, MAINTENANCE

The Grantee shall be under no obligation to maintain the Property or pay any taxes or assessments

thereon.

The Grantor shall provide a 60-day advance notification of transfer of title to the Grantee.

7. BENEFITS AND BURDENS

The burden of the Easement conveyed hereby shall run with the Property and shall be enforceable against all future owners and tenants in perpetuity; the benefits of this Easement shall not be appurtenant to any particular parcel of land but shall be in gross and assignable or transferable only to the State of New Hampshire, the U.S. Government, or any subdivision of either of them, consistent with Section 170(c)(1) of the U.S. Internal Revenue Code of 1986, as amended, or to any qualified organization within the meaning of Section 170(h)(3) of said Code, which organization has among its purposes the conservation and preservation of land and water areas and agrees to and is capable of enforcing the conservation purposes of this Easement. Any such assignee or transferee shall have like power of assignment or transfer.

8. MERGER

The Grantor and Grantee explicitly agree that it is their express intent, forming a part of the consideration hereunder, that the provisions of the Easement set forth herein are to last in perpetuity, and that to that end no purchase or transfer of the underlying fee interest in the Property by or to the Grantee or any successor or assign shall be deemed to eliminate the Easement or any portion thereof granted hereunder under the doctrine of "merger" or any other legal doctrine.

9. BREACH OF EASEMENT

A. When a breach of this Easement, or conduct by anyone inconsistent with this Easement, comes to the attention of the Grantee, it shall notify the Grantor in writing of such breach or conduct, delivered in hand or by certified mail, postage prepaid, return receipt requested.

B. The Grantor shall, within thirty (30) days after receipt of such notice or after otherwise learning of such breach or conduct, undertake those actions, including but not limited to restoration (except for injury to or change in the Property resulting from causes beyond the Grantor's control, as described in subparagraph D. below), which are reasonably calculated to cure swiftly said breach, or to terminate said conduct, and to repair any damage. The Grantor shall promptly notify the Grantee of its actions taken under this Section.

C. If the Grantor fails to take such proper action under the preceding paragraph, the Grantee shall, as appropriate to the Purposes of this Easement, undertake any actions that are reasonably necessary to cure such breach or to repair any damage in the Grantor's name or to terminate such conduct. The cost thereof, including the Grantee's expenses, court costs, and reasonable legal fees, shall be paid by the Grantor, provided that the Grantor is directly or primarily responsible for the breach.

D. Nothing contained in this Easement shall be construed to entitle the Grantee to bring any action against the Grantor for any injury to or change in the Property resulting from causes beyond the Grantor's control, including, but not limited to, unauthorized actions by third parties, natural disasters

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such as fire, flood, storm, disease, infestation and earth movement, or from any prudent action taken by the Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Property resulting from such causes.

E. Forbearance by the Grantee to exercise its rights under this Easement in the event of any breach of any term thereof by the Grantor shall not be deemed or construed to be a waiver by the Grantee of such term or of any subsequent breach of the same or any other term of this Easement or of any of the Grantee's rights hereunder. No delay or omission by the Grantee in the exercise of any right or remedy upon any breach by the Grantor shall impair such right or remedy or be construed as a waiver. The Grantor hereby waives any defense of laches or estoppel.

F. The Grantee and the Grantor reserve the right, separately or collectively, to pursue all legal remedies against any third party responsible for any actions detrimental to the Purposes of this Easement.

10. NOTICES

All notices, requests and other communications, required to be given under this Easement shall be in writing, except as otherwise provided herein, and shall be delivered in hand or sent by certified mail, postage prepaid, return receipt requested to the appropriate address set forth above or at such other address as the Grantor or the Grantee may hereafter designate by notice given in accordance herewith. Notice shall be deemed to have been given when so delivered or so mailed.

11. SEVERABILITY

If any provision of this Easement, or the application thereof to any person or circumstance, is found to be invalid by a court of competent jurisdiction, by confirmation of an arbitration award or otherwise, the remainder of the provisions of this Easement or the application of such provision to persons or circumstances other than those to which it is found to be invalid, as the case may be, shall not be affected thereby.

12. CONDEMNATION/EXTINGUISHMENT

A. Whenever all or part of the Property is taken in exercise of eminent domain by public, corporate, or other authority so as to abrogate in whole or in part the Easement conveyed hereby, the Grantor and the Grantee shall thereupon act jointly to recover the full damages resulting from such taking with all incidental or direct damages and expenses incurred by them thereby to be paid out of the damages recovered.

B. The balance of the land damages recovered (including, for purposes of this subsection, proceeds from any lawful sale, in lieu of condemnation, of the Property unencumbered by the restrictions hereunder) shall be divided between the Grantor and the Grantee in proportion to the fair market value, at the time of condemnation, of their respective interests in that part of the Property condemned. The values of the Grantor's and Grantee's interests shall be determined by an appraisal prepared by a qualified appraiser at the time of condemnation.

C. The Grantee shall use its share of the proceeds in a manner consistent with and in furtherance of one or more of the conservation purposes set forth herein.

13. ADDITIONAL EASEMENT

Any additional conservation easement on the Property shall require prior approval of the Grantee, and shall not diminish the conservation purposes for which the Property was originally protected. Any future conservation easement shall be conveyed to and accepted and recorded by either the State of New Hampshire, the U.S. Government, or any subdivision of either of them, consistent with Section 170(c)(I) of the Internal Revenue Code of 1986, as amended, or any qualified organization within the meaning of Section 170(h)(3) of said Code, which organization has among its purposes the conservation and preservation of land and water areas, and agrees to and is capable of enforcing the conservation purposes of the easement. Any such assignee or transferee shall have like power of assignment or transfer.

The Grantee, by accepting and recording this Easement, agrees to be bound by and to observe and enforce the provisions hereof and assumes the rights and responsibilities herein granted to and incumbent upon the Grantee, all in the furtherance of the conservation purposes for which this Easement is delivered.

Nothing in this Easement shall be interpreted as a waiver of the State's sovereign immunity

IN WITNESS WHEREOF, we have hereto under set our hand this 18th day of March, 2015.

Mark Zankel, State Director
The Nature Conservancy

The State of New Hampshire
County of Merrimack

I, hereby certify that Mark Zankel, NH State Director of The Nature Conservancy, personally appeared before me on this 18 day of March, 2015 and acknowledged the foregoing Conservation Easement.

Before me,

Notary Public/Justice of the Peace [seal]
My Commission Expires:

SYDNEY L ALLEN
Notary Public, New Hampshire
My Commission Expires February 20, [illegible]

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Accepted: State of New Hampshire Fish & Game Department

By: _____
Glenn Normandeau, Executive Director

The State of New Hampshire
County of Merrimack

Personally appeared Glenn Normandeau, Executive Director of the New Hampshire Fish and Game Department, this 17th day of March, 2015 and being duly authorized acknowledged the foregoing on behalf of the State of New Hampshire.

Before me, Tanya L Haskell
Justice of the Peace/Notary Public [seal]
My commission expires: _____

TANYA L. HASKELL, Notary Public
My Commission Expires October 6, 2015

Approved by the Governor and Executive Council:
Approval Date: January 28, 2015, Item #: 26

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APPENDIX A
PROPERTY DESCRIPTION

Beginning at a stone post found on the west side of a large boulder, on the north line of land of the Thaddeus Thorne Rev. Trust of 1995, at a southeast corner of land of Redstone Properties, Inc., and at the southwest corner of the easement herein described;

Bearing N2°01'58"W, by said land of Redstone Properties, Inc., 816.54 ft. to a rebar found;

Thence the following by other land of The Nature Conservancy:

N2°03'29"W, 1873.80 ft. to a rebar found;

N87°47'29"E, 588.15 ft. to an iron pipe found;

N1°27'10"W, 448.83 ft. to a rebar found;

N56°57'16"E, 2100.04 ft. to a rebar found;

N88°34'18"E, 1398.71 ft. to a rebar found;

S2°19'58"E, 1703.62 ft. to a rebar found;

S87°38'38"W, 617.43 ft. to a rebar found;

S3°55'01"E, 978.95 ft. to a rebar found;

Same course, 695.12 ft. to a point at the northwest corner of land of the Kennett Company, lying S85°16'08"W, 0.21 ft. from a rebar found;

Thence same course, by said land of the Kennett Company, 1268.45 ft. to an HEB disk on rebar set at the northeast corner of land of Marshall & Saunders, LLC;

Thence the following courses by said land of Marshall & Saunders, LLC:

S87°18'12"W, 1605.36 ft. to an HEB disk on rebar set,

N4°06'15"W, 468.58 ft. to a rebar;

S85°59'44"W, 745.75 ft. to a rebar found at the northeast corner of said land of the Thaddeus Thorne Rev. Trust of 1995;

Thence S88°57'33"W, by said land of the Thaddeus Thorne Rev Trust of 1995, 911.23 ft. to the point of beginning.

Containing 13,434,345 sq. ft. = 308.41 ac.

Bearings are grid.

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Stand Descriptions

Stand	Code	Acreage	Description
1	H2/3A	739	Fully to over-stocked, pole to small sawtimber sized red oak and northern hardwoods with scattered aspen, hemlock and white pine.
2	M2/3A	309	Fully to over-stocked, pole to large sawtimber sized hemlock and northern hardwoods with red oak, white pine, aspen and spruce.
3	H2/3A	85	Fully to over-stocked, small pole to small sawtimber sized northern hardwoods and aspen with scattered hemlock.
4	H1/2A	45	Over-stocked, sapling to small pole sized northern hardwoods and aspen with red oak and white pine.
5	M2/3B	78	Fully stocked, pole to small sawtimber sized red oak, white pine, red pine and pitch pine. Savannah like growth.
		1256	Total Forested Acreage
		51	Old pit area and log landings
		9	Power Line R.O.W.
		12	Open Wetland
		1328	Total Acreage

N

Stand 1
Stand 2
Stand 3
Stand 4
Stand 5
Mason Brook Trail
Snowmobile Corridor 19
Gate To Be Installed
Town of Conway Former Landfill
Mason Brook
Burke Quarry
Access Rd #1 to E. Conway Rd
Bridge To Be Rebuilt
Access Rd #2 to E. Conway Rd
L = Log Landings

Legend

- Boundary Line
- Interior Boundary Line
- Transmission Line
- 20' Contours
- Truck Road
- Woods Road/Trail
- Old Woods Road
- Mason Brook
- Streams
- Forest Type Boundary
- Open (Old Pit & Landings)
- Stand 1
- Stand 2
- Stand 3
- Stand 4
- Stand 5
- Wetland
- Gate
- Bridge
- Log Landings

STAND CODE DESCRIPTION

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		

Prepared By:
Forest Land Improvement
65 Walker Hill Rd
Ossipee, NH 03864
Timothy R. Nolin, Forester, NH Lic.#356

Forest Type Map

prepared for

The Nature Conservancy's
Green Hills Wildlife Management Area
1328+/- Ac, Conway, NH

0 450 900 1,800 2,700 3,600 Feet

1 inch = 900 feet

September 2023