

# Forest Management Plan

The White Lot Brook- Bear Paw Tracts

466 Acres located in East Conway, NH

Prepared for Tin Mountain Conservation Center

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Prepared by:

Daniel Stepanauskas, NH

Northern Forest Resources

[norfor@roadrunner.com](mailto:norfor@roadrunner.com)

Forester 138

135 High St. Silver Lake, NH 03875

603-367-8111

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## Introduction

This forest management plan was written at the request of The Nature Conservancy. There are seven contiguous White Lot Brook tracts. They were gifted to the Nature Conservancy by Bear Paw Timber in 1996, after which the tracts were sold to the Tin Mountain Conservation Service. Portions of the parcels had been harvested by Bear Paw Timber 35-45 years ago, while other portions had not been harvested for more than sixty years. Tin Mountain conducted harvesting operations on portions of the Bearpaw lands 10-18 years ago. Portions of Stand 1A retain the late successional characteristics found in old Forest ecotypes. At this time, the changing climate is of paramount importance in how we proceed to manage our northern forests.

Lots of Record Included in the Plan:

<b>Name</b>	<b>Conway tax map and Lot #</b>
Lower White lot Brook	M-239 L-3
Middle White lot Brook	M-239 L-3
Upper White lot Brook	M-239 L-3
North White Lot Brook	M-226 L-6
35 Rod Lot	M-226 L-3
Big Oak	M-223 L-15
Green Hill	M-223 L-16
The Orchard	M-223 L-17

Total = 466 Acres

## Management Objectives

- Protect old trees and forest stands. Old Forest reserves will be retained in Stand 1A and Stand 2. These trees and stands will serve as sites where old growth forest characteristics will be maintained and enhanced to develop biological legacies, promote resilience, and to provide habitats.
- Protect and enhance habitats for all native wildlife species. This will be facilitated by the release and regeneration of trees and shrubs that produce either soft or hard mast.
- Increase the potential for carbon sequestration and storage by favoring the release of climate adaptive species, while keeping the old forest stands intact.
- Protect native forest ecosystems from infiltration by invasive species.
- Conduct Forest Stand Improvement (FSI) in young stands to adjust tree species composition, favoring trees likely to adapt well to a changing climate.
- Use assisted migration in the establishment of trees and shrubs native to warmer growth zones.
- Improve brook trout habitats in the White Lot Brook watershed.

## Climate Conscious Forest Management Measures Scheduled for Completion in the White Lot Brook Parcels in 2024/2025

Lot(s)	Initiative Description	Funding Source	Completion Estimate	Size
Lower White Lot Brook	Harvest and convert an understory of poor quality red maple in this white pine stand into an understory of white pine and red oak. This harvest is not an economical harvest, so supplemental funding will be provided by TNC.	The Nature Conservancy	Early spring 2024	16 acres
Middle White Lot Brook	Conduct FSI (forest stand improvement) to promote the growth of a climate adapted forest understory	EQIP + TNC (as needed) NRCS Practice FSI 666	Early spring 2024	14 acres
Big Oak & 35 Rod lots	Re-build portions of upper Palm Drive to allow vehicle access for management	EQIP NRCS Practice 655 Forest Trails & Landings	Early spring 2024	1200 feet
Big Oak lot	Use a skidder to mechanically diminish dense existing beech regeneration	EQIP NRCS Practice 314 Brush Management	Spring 2024	25 acres
Big Oak, Middle White Lot Brook etc.	Plant seeds and seedlings of climactically adapted tree species	The Nature Conservancy	Spring 2024	25-35 acres
Middle White Lot Brook, North White Lot Brook	Conduct FSI to promote the growth of a climate adapted forest understory	EQIP NRCS Practice FSI 666	Summer/Fall 2024	40 acres
Middle White Lot Brook lot	Woody additions to improve trout habitat & water quality	EQIP Practice 395	Summer 2025	1,514 feet
Middle White Lot Brook	Bat Habitat Enhancement	CSP-EQIP Practice E666P	2026	12-15 acres
Stand 1A Lower White Lot, North White Lot Brook, 35 Rod Lot Stands 2, in the Middle & Upper White Lot Brook lots	Protect the old forest characteristics in these stands	N/A	Long term	45-50 acres



## Location

These parcels are situated west of East Conway Road, in the town of Conway, NH. The lots have frontage on both the Garland Pit Road and on Palm Drive. These are both private forest roads which run westerly from their frontage on East Conway Road. Both road intersections with East Conway Road are located close to the intersection of East Conway Road and River Road. The first, most easterly of the White Lot Brook lots (37ac) is bisected by the Garland Pit Road, and has boundary frontage on the south side of and on the north by a marsh containing White Lot Brook. The other seven lots either have frontage on or are accessed via Palm Drive. The Middle White Lot Brook 74 acre lot is bisected by White Lot Brook. The 94 acre Upper White Lot Brook and The North White Lot Brook lot are bisected by an Eversource utility line. The lands continue west of the utility line.

## Recent History

These lands were given to The Nature Conservancy in 1998 by Phyllis French, wife of Ed French, owner of Bear Paw Timber Corporation. Ed French harvested significant timber from this land, however, Mr. French managed this land for the long-term production of the forest products needed to supply their mill in Fryeburg, Maine. From 1975 through 1979, Bear Paw conducted several timber harvests on the various lots.

Following the harvest on the 35 Rod Lot, 500 white pine seedlings were planted in some of the openings and landings. In 1998, Ed's widow, Phyllis French, gifted over 8,000 acres of Bear Paw Timber's woodlands in Maine and New Hampshire to the Nature Conservancy. In 2002, Forest Land Improvement was contracted to develop five Management Plans on 1,200 acres of former Bear Paw lands. Tin Mountain Conservation Center signed a Purchase and Sales Agreement at the end of October 2006 for the Bear Paw lands. In 2015 and 2016, the current forest management plans were written by Dr. Michael Cline and Daniel Stepanauskas. Under the management of Tin Mountain, timber harvesting took place from 2008 to 2015.

## Cultural Resources

The nature of this land makes it ill-suited for agriculture, which limited the settlement of this land. Limitations included extensive wetlands, stony soils, low fertility outwash soils, and steep hillsides. Stone walls exist in a few areas having more fertile soils, such as on the Orchard and North Black Brook lots. Evidence of extensive logging is seen with pieces of metal, old stumps, and old forest roads.

## Boundaries

The exterior boundary lines are well maintained by Tin Mountain with red blazes.

## Access

The two private gravel roads, Garland Pit and Palm Drive, run northwest from the East Conway Road. These two gravel truck roads provide suitable access for vehicles with high clearance. Tin Mountain does not have a written right-of-way over these roads. However, the two access roads have been used to access these properties for over sixty years which provides a legal 'historic use' right-of-way. Palm Drive has its origin on Route 113 in East Conway and runs about two miles north through these lands. Soon after, Palm Drive crosses the utility line and becomes impassible due to erosion, and careless use in wet weather. **An application for funding in 2024, under NRCS's EQIP, has been filed to rebuild Palm Drive.** At several points Palm Drive passes through abutting lands as it provides access to Tin Mountain's parcels.

A truck road to the white pine stand in the southern section of the North White Lot Brook provides access. This road runs north through the land of Louise Campo before it bisects the North Black Brook Lot. Bear Paw Timber constructed several log landings on Palm Drive during the mid- 1970's. Access to the entirety of the Orchard Lot is not possible via Palm Drive, as the lot slopes 20% downward to the East. There is no current legal access available. A local logging contractor has stated that they can arrange an access route to the lot solely for timber harvesting.

## Recreation

This land is not posted, and is open to all forms of foot travel. Both access roads are used by local people for passive recreation, hunting access, and snowmobile trail use. Palm drive has a Tin Mountain gate located north of the Eversource utility line.

## Topography

The eastern portion of the Big Oak Lot is situated atop Green Hill, east of the White Lot Brook valley. A portion of the ridge top is comprised of steep ground and broken rock ledge. This area, in some of Ed French's notes, is referred to as Green Ledge. The lot's slope aspects tend to be westerly or northwest, along with some southeast slopes. The land is level to gently sloping. The 36 and 74 acre White Lot Brook parcels are nearly level with significant wetlands in them. These wetlands include flood plains of both the White Lot Brook and Black Brook. The far southern portions of the Big Oak Lot have southerly to southeasterly aspects, while the Orchard Lot has an eastern aspect.

## Aesthetics

The most dramatic aesthetics on this property are the late successional stands of old hemlock, hardwood, and red spruce, which are interspersed with some very large white pine trees. The wide shrub swamps of Black and White Lot Brooks also present a strong aesthetic, particularly during the winter. There are winter mountain views from the summit of the Big Oak lot. Aesthetics must include the wonderful array of neotropical birdsongs, animal sightings and sign, which are abundant on this property. Tin Mountain Conservation Center has a remarkable, decades long written log of bird occurrence, and nesting documentation on how the population levels change in relation to the changing forest landscape and climate.



The large wetland on White Lot Brook situated on the 35 Rod Lot

## Wetlands and Waterways – 22 acres

The brooks found on these lots include Black Brook, the North Branch Brook, and White Lot Brook, along with numerous small tributaries, shrub and wooded swamps, and seeps. The North Branch of White Lot Brook originates on this 69 acre lot. This clean cold-water brook flows down the length of the North Black Brook lot, which joins White Lot Brook after it leaves the property. Trout habitat improvement has already been conducted on White Lot and Black brooks.

All of these drainages eventually flow into one of two adjoining large shrub swamps that extend onto this land. All of the brooks, other than some smaller tributaries, contain native brook trout populations. Black Brook flows into White Lot Brook soon after leaving the Tin Mountain lands. The watershed then flows into the nearby Saco River in Fryeburg, Maine.

## Forest Health

The health of this forest is of concern. The white and black ash are infested with the emerald ash borer, which has nearly completed its killing of the ash trees that are over 4 in. DBH. There is also a decline of the beech trees on these tracts. Many are dying, groups of mature beech trees have recently died, with others suffering crown dieback. There is currently no explanation for this, as beech leaf disease is not



yet present. The climate, and the legacy of soil depletion due to acid rain, likely plays a role. The climate's impact is of great concern to the funders of this project including the Nature Conservancy, The National Fish and wildlife Foundation (NFWF), and the Natural Resource Conservation Service (NRCS). This project will provide funding for the planting of climate adapted trees having native ranges that are either south of or at the northern edge of their native ranges. This assisted migration of trees is in preparation for the continued warming of our climate. The species' chosen for planting are native to areas not far south of here, and which have the genotypic and phenotypic ability to successfully grow in our landscape (see-Summary of Climate Conscious Forest Management above). Over time the hemlock wooly adelgid will become an issue, as it currently exists in Conway. When the polar vortex weakens and allows a lobe of arctic air to flow into our region, and provide temperatures below -5 f , it kills 95% of the adelgid population, however, the adelghids repopulate with two years. There is hope for an effective biological control mechanism, this promising best hope is the silver fly, a native to western North America, where it also predaes adelghids. There will be a need for judicious harvesting when it begins to kill trees in our stands.

The most recent threat to our forest ecosystem is beech leaf disease. This pathogen is actually a nematode from China, which is now present as close as Milton, NH. The nematode begins its infestation by causing the deformation of the beech leaves in the understory trees. The trees begin to die in three years, and the infestation is now moving into overstory trees in Connecticut and eastern Massachusetts. There is currently no known treatment to alleviate this infestation. The only possible treatment method will be to introduce biological pathogens or predators. This will take years to test for safety. Presently, the outlook appears dire. Loosing beech nut crops, and the trees themselves, will be a great loss to our bear and deer, along with a great many insects, small mammals, birds, and other foundations of the forest food chain.

## Invasive Species

An infestation of glossy buckthorn is present in the large shrub swamps of both Black and White Lot Brooks. An effort was made to cut an area of dense buckthorn with EQIP funding in 2001. However, while conducting the work, it was discovered that where property line entered the shrub swamp, where the infestation extended into a neighboring property and encompassed the entire shrub swamp. The work was discontinued. Upon further field work the buckthorn was found scattered in the abutting forests of both the Lower and Middle White Lot Brook properties. An continuous effort will be made to keep the infestation from spreading into the forestland. Buckthorn infestations are facilitated by timber harvesting operations.

## Wildlife

There is a wide variety of wildlife habitats on these tracts. Examples include extensive wetland edges found along the two brooks which provide rich avian and beaver habitats. The deer also bed-down during the day in the dense shrub cover. On the Middle White Lot Brood parcel, an enriched old hardwood forest exists. In its overstory are found large, tall red maple, red oak, sugar maple and white ash snags, there are also white pines and tall hemlocks, providing a rich habitat for bats. This tall, open canopy also provides wonderful habitat for birds such as scarlet tanagers, black throated green warblers, goshawks, and barred owls. A scarlet tanager was sighted there during the forester's field work. These parcels provide rich habitat for a wide range of creatures. An **EQIP CSP funded Bat habitat enhancement will take place in this stand on Tin Mountain's Black Brook property in 2025/26.**

The forester saw signs of numerous wildlife species that use the habitats on the Middle and North White Lot Brook lots, and on the North White Lot Brook, there were signs and tracks of deer, moose, red fox, coyote, bear, mink, otter, owls, hairy and pileated wood peckers, red and gray squirrels etc. The connected dense canopy layers in the unbroken hemlock overstories provides habitat for the American marten, as these predators prefer to be arboreal, traveling from tree to tree.

Across this property there are scattered large hardwood trees present. They consist primarily of red oak and red maple trees. All hardwood trees greater than 22 inches DBH will be retained in this forest, as they are scarce, and rarely allowed to grow this large over the local landscape. These trees are often full of animal life, including roosting bats. Productive mast trees can be identified by bear claw marks on beech and red oak trees. During the autumn, bears spend time in the tops of both beech and oak trees eating nuts and acorns. They will rest on clumps of broken limbs, from which they have eaten the nuts, sometimes referred to as a bear's nest, although they are in fact used as a dinner chair. All mast trees greatly benefit a multitude of wild creatures such as deer, bear, grouse, and turkeys, along with a large number of small birds and mammals.

Forest management can also be used to encourage the proliferation of soft mast (fruit) in the forest. Serviceberry, aka shadbush, sugar plum, or Juneberry, and the earliest red-berried elder, provide a valuable source of early nutrients for birds, cedar waxwings in particular. Other good sources of soft mast include hobblebush (which is plentiful here), along with black cherry, *Rubus* species (raspberry, blackberry, dewberry, and thimbleberry), blueberry, apple, viburnum, partridgeberry, bearberry and wintergreen. Bears climb black cherry trees in July to eat the fruit.

## Forests for the Birds

Birdsongs and sightings by the forester included: the singing winter wrens, white throated sparrow, indigo buntings, blue and green black throated warblers, red eyed vireos, blue headed vireos, oven birds, hermit thrush, veeries, Blackburnian warbler, scarlet tanagers, a sharp shinned hawk, ruffed grouse, and a kestrel in a shrub swamp.

A primary goal is to maintain and encourage the development of multi-layered tree and shrub canopies to enrich bird habitats. The winter wren, veeries, black throated blue warblers, and blue-headed vireos will use these habitats. On this property in stands 1, 1A, 2, and 3, there are white pine with hemlock/balsam fir midstories (canopy layers). A walk through these parcels in mid-late May will likely provide a visitor with layers of trilling bird songs. Large aspen trees often become den trees. Their wood is easily excavated by cavity nesting birds and mammals. The large sugar maples trees on this land are nearly all decayed providing rich nesting opportunities, along with bark flakes for roosting bats.

In the uplands, additional softwood regeneration, along with logging debris from the most recent harvest, will foster habitat improvement for the winter wrens, oven birds, and hermit thrushes. Future timber harvests should encourage the release of trees with strong mast (nuts and fruit) production. Super-canopy white pines provide a feeling of security for many arboreal species- ravens.

Warblers, veeries, red-eyed vireos, chickadees, wrens, bluebirds, swallows, phoebes, redstarts, kestrels, and thrushes all consume caterpillars that feed on the leaves and flowers of hardwood trees. Scarlet tanagers specialize in the consumption of hornets! Oak trees provide habitat for more species of caterpillars, and resulting warblers, than any tree group in New England.

## The Climate

Currently, one of our leading silvicultural considerations is the changing climate. There is a great deal of stored carbon in old forests, and while the growth rate of these stands is relatively slow, the stands have large volumes of tall tree crowns to offset the slow growth. The effort to control our climate in the northern forest ecosystem is a three pronged adaptation process including carbon sequestration, forest species adaptation, and carbon storage.

Most of our trees take 85+ years to approach economic maturity. Leaving our forests well-stocked to preserve adequate soil moisture levels will help keep the soils cool. The Northern Institute of Applied Climate Science has stated that the ranges of balsam fir, tamarack, white birch, and the softwoods (other than white pine) are predicted to move significantly northwards by 2050+/\_ . As trees begin to be less well adapted to living in our changing climate, their lowering levels of adaptation to the climate will slow their growth rates. The tree species that we wish to increase proportionally in our forests are those possessing a wide genetic spectrum, allowing them to be better adapted, and endure, or even thrive in the projected warming scenario. This transition can begin by enhancing the regeneration of trees species that will prosper in the future. This will require scheduling timber harvests to coincide with the seed crop production of these species. The US Forest Service's projection of the list of trees that will be resilient to the warming include: white pine, the oaks, and the maples. Forest management on this parcel will be carried out to gently encourage the projected thrivers, while gradually discouraging the propagation, and gradually lowering the stocking levels of, those species projected to decline as the climate changes. This is passive assisted migration. While assisted migration will include the planting of adaptable species (see Climate Conscious Foret Management above). Current efforts will include, white oak, swamp white oak, black birch, and resistance bred American chestnuts. Joining the American Chestnut Foundation enables a landowner to purchase chestnut seedlings with substantive chestnut blight resistance.

## Habitat Features

There are very old trees present on this property. They include red oaks and hemlock that are well over 200 years old. Large downed woody material ( $\geq 12$  in.), referred to as coarse woody debris, is plentiful in these stands. An accurate analogy is that the higher sum total of organic material in a forest correlates with a higher sum total of fish and animal life in that forest. One management goal for this forest is to allow old decrepit trees in the forest to fall to the forest floor. When timber harvests are carried out, maintaining high levels of woody debris on the forest floor by leaving the slash (tops and limbs) on the forest floor enhances the entire forest food chain, while adding fertility to the soil. Fungi decays wood, and insect populations increase as they consume the wood and fungi, resulting in increasing populations of voles, chipmunks, shrews, and mice eating the insects. Larger predators then consume the rodents, and on it goes. The organic materials maintain soil moisture levels while the growth of herbaceous and woody vegetation is enhanced in the moist organic debris, and again, on it goes. During timber harvests, the cull (defective) butt portions of logs are best left in the forest, versus being brought to the log landings. Large woody debris on the forest floor also enhances habitats by providing den sites, shelter, and habitat for mammals, birds, reptiles, insects, and amphibians. Bears and woodpeckers use decaying logs extensively to feed on grubs. They serve as drumming locations for ruffed grouse, while also providing direct and indirect food sources for all manner of forest creatures. The debris is also very beneficial as a repository of mycorrhizal fungi, which has a symbiotic relationship with tree roots. The fungi's mycelia, the vegetative portion of fungi, conducts the transfer of nutrients,

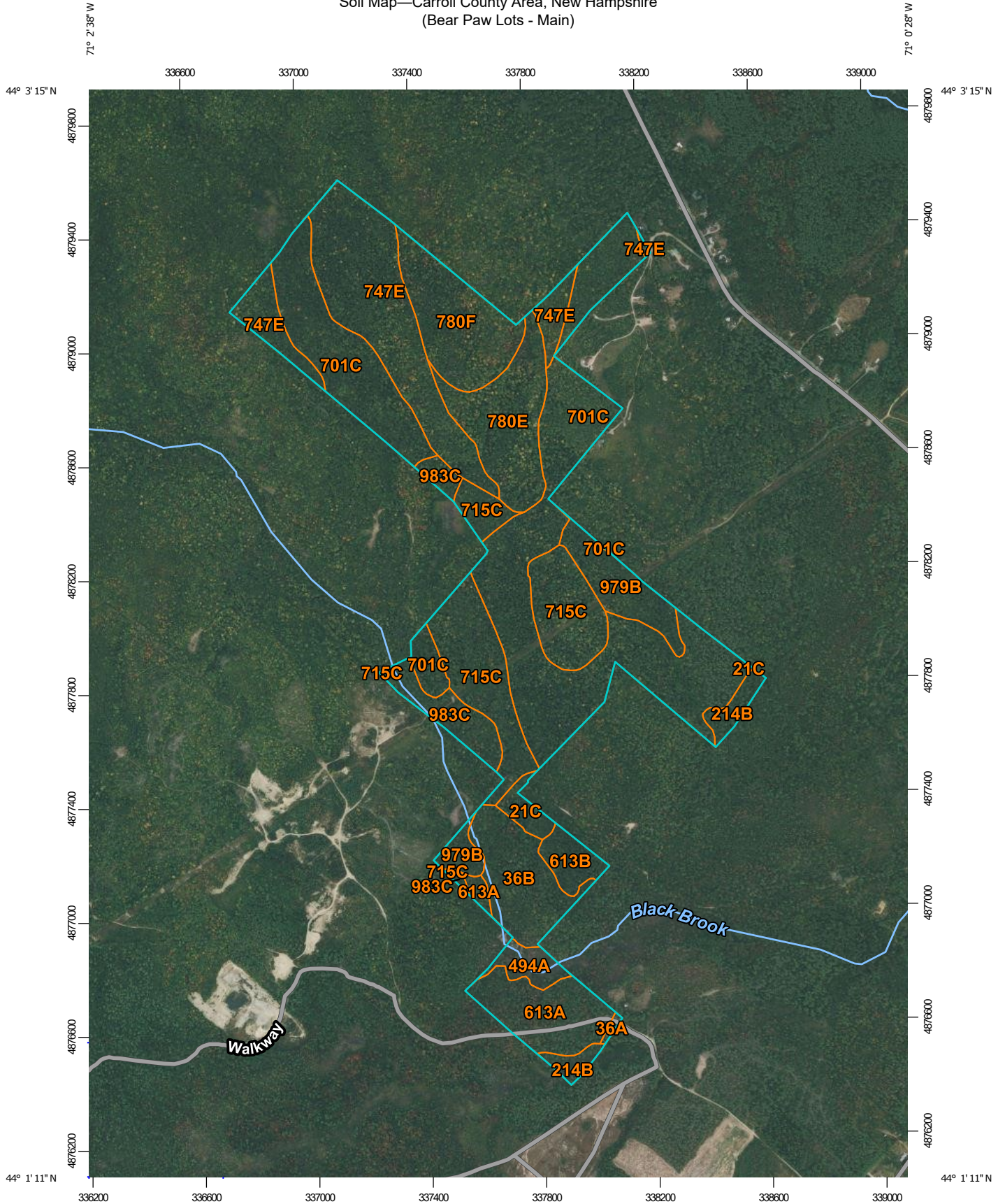
providing minerals and soil nutrients to the tree roots, while the trees in return provide carbohydrates to the fungal mycelia.

## Vertical Structure and Crown Closure

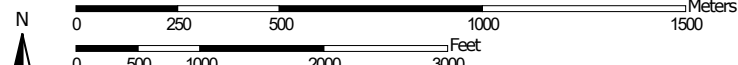
Vertical structure is the layering of both live and dead woody plant crowns within a forest stand. Uneven-aged forest management encourages the growth and layering of vertical crown structure. In portions of this forest the structure is strong due to the uneven-aged composition of the forest, with shade tolerant softwood understories present. The presence of super-canopy white pine trees, and tall dense hemlocks, along with hardwood mid-story layers will all contribute to neo-tropical bird habitats. Un-even aged and older forests are generally well stratified with layers of vertical structure, and support a far greater array of plant and animal species than an even-aged stand of younger trees with no understory. On this parcel the stands of old hemlock and closed canopy hardwoods provide late successional habitats. In large portions of the Big Oak lot, both biomass and cut-to-length harvests removed the beech trees and saplings, resulting in areas with a dense beech understory, leaving the forest only two layers, the understory beech, and a sparse overstory of large trees. (see Stand Prescriptions). Vertical structure can be improved over time by the development of a mid-story forest canopy layer.



Soil Map—Carroll County Area, New Hampshire  
(Bear Paw Lots - Main)



Map Scale: 1:18,600 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84



Natural Resources  
Conservation Service


Web Soil Survey  
National Cooperative Soil Survey

1/4/2024  
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Soil Map—Carroll County Area, New Hampshire  
(Bear Paw Lots - Main)

**MAP LEGEND**

**Area of Interest (AOI)**

 Area of Interest (AOI)




















**Soils**







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


**Water Features**

 Streams and Canals

**Transportation**

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

**Background**

 Aerial Photography

**MAP INFORMATION**

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Carroll County Area, New Hampshire  
Survey Area Data: Version 22, Aug 22, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 21, 2020—Oct 29, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
21C	Colton gravelly sandy loam, 8 to 15 percent slopes	5.0	1.1%
36A	Adams loamy sand, 0 to 3 percent slopes	0.7	0.1%
36B	Adams loamy sand, 3 to 8 percent slopes	26.0	5.7%
214B	Naumburg loamy sand, 0 to 8 percent slopes	8.4	1.8%
494A	Ossipee mucky peat, ponded, 0 to 3 percent slopes	6.6	1.4%
613A	Croghan loamy fine sand, 0 to 3 percent slopes	25.8	5.6%
613B	Croghan loamy fine sand, 3 to 8 percent slopes	8.0	1.7%
701C	Becket-Skerry association, 0 to 15 percent slopes, very stony	150.4	32.7%
715C	Waumbek-Skerry fine sandy loams association, sloping, very stony	56.4	12.3%
747E	Becket fine sandy loam association, 15 to 35 percent slopes, very stony	69.8	15.2%
780E	Lyman-Berkshire association, 15 to 35 percent slopes, very rocky	32.8	7.1%
780F	Lyman-Berkshire association, 35 to 60 percent slopes, very rocky	32.0	7.0%
979B	Leicester-Pillsbury fine sandy loams association, cool, gently sloping, very stony	21.2	4.6%
983C	Monadnock-Berkshire complex, 0 to 15 percent slopes, very stony	16.3	3.5%
<b>Totals for Area of Interest</b>		<b>459.3</b>	<b>100.0%</b>





Sugar maple seedlings on an enriched site in Stand 2

## Soils

The soils found on these parcels are generally well suited to the production of softwood and red oak trees. Generally, the soils found at lower elevations are deeper, and more fertile than the shallower soils found at the higher elevations. However, the soils found on the Big Oak, North White Lot Brook, and portions of the Middle & Upper White Lot Brook properties tend to support a higher proportion of tall red oak, and yellow birch trees. The site index for tree growth on a particular site are correlated to the height of trees growing there. Soils are the primary influencer of site indexes. The higher upslope areas on the Big Oak lot have an increasing incidence of red oak trees. This is likely due to these sites having an enhanced southern aspect.



A description of major forest soil groups:

Symbol	Description
747E	Becket very stony fine sandy loam association, steep
701C	Becket-Skerry very stony fine sandy loam association, sloping
780E	Lyman-Berkshire very rocky fine sandy loam association, steep
780F	Lyman-Berkshire very rocky fine sandy loam association, v. steep
36	Adams- level
613A	Croghan-level
715C	Waumbec-Skerry fine sandy loam, sloping

U.S Department of Agriculture / Natural Resource Conservation Service

**Becket Soil Series and Becket-Skerry Association code 747, 780, 701**

This group consists of deeper, loamy, moderately well-drained soils. The high site index of these soils makes them best suited to the production of red oak, northern hardwoods and white pine. Generally, the soils are fertile and have favorable soil moisture levels. The successional trends on these soils are toward stands of shade tolerant hardwoods, i.e., beech and sugar maple. The forest management on this soil in relation to the changing climate, is to grow red oak, and white pine, and northern hardwoods. These are also good locations in which to plant assisted migrational species, such as black birch. Successional stands frequently contain a variety of hardwoods such as beech, red maple, white birch, yellow birch, aspen, white ash, and northern red oak in varying combinations with red spruce, balsam fir, hemlock, and occasionally white pine.

**Lyman-Berkshire Association, steep codes 780 E,F**

This soil is typified by sites that are shallow to ledge. Sites located in hollows, or in shallow flows are likely to have deeper soils that are adequately suited to growing good red oak and white pine. The soils are well to very well drained making them prone to becoming droughty during the summer. This makes the growth of hardwood/softwood timber types a goal here. The softwood canopy cover will help to inhibit the evaporation of soil moisture. The soils in this group have successional trends toward a climax of tolerant hardwoods, predominantly beech. This is evident in the Big Oak lot’s dense beech understory. Successional stands, especially those that are heavily cut over, are commonly composed of a variety of hardwood species such as red maple, aspen, paper birch, red oak, sugar maple, and beech, in combinations with red spruce, balsam fir, and hemlock. Hardwood competition is moderate to severe on these soils. The site index of these soils will allow for good growth of red oak and white pine. Harvest schedules should encourage the regeneration of these species on Lyman-Berkshire soils.

**Adams code 36**

The Adams soils are found on the Lower and Middle White Lot Brook lots. This is an outwash sand and gravel soil, with excessively well drained soils. This low fertility, coarse soil, composed primarily of granitic particles, has low levels of organic material, and buffering capacity. This leads to a site well suited to the growth of softwood species, particularly white pine. However, there is a measure of flood plain enrichment found on both of these lots, leading to sites upon which the less demanding hardwood species, such as red oak, aspen, and red maple grow very well. Schedule timber harvests on this low fertility soil type when white pine and/or red spruce are scheduled to produce a seed crop. Successional trends are toward stands of shade tolerant softwoods, i.e., red spruce and hemlock, combined with hardwoods that will grow on poorer sites such as red maple. With modest levels of management, white

pine can be maintained and reproduced on these soils. These soils are forgiving, and not prone to compaction, making them ideally suited for summer forest management activities.

**Waumbec 715C**

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 relatively low. However, yellow birch, and white ash have been Successional trends are toward climax stands of shade tolerant softwoods, i.e., spruce in the north and hemlock further south. Due to abundant natural reproduction in northern New Hampshire, these soils are generally desirable for production of spruce, hemlock and balsam fir. 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 windthrow hazard limits partial cutting, frost action threatens survival of planted seedlings, and harvesting is generally restricted to periods when the ground is frozen. Balsam fir will not be successful in our warming climates.

**Croghan 613A**

This soil is somewhat poorly drained. However, it has the capacity to grow good timber, particularly hemlock, red oak, red maple, white pine and yellow birch. The high water table is a limiting factor for timber harvesting. The soil has scattered wet areas, along with slight undulations where trees grow well. The growth rates are slower on these sites due to the high water table leading to shallow productive soil layers. The sites are suitable to low level winter timber harvesting activities. The way to pursue this is by using a cable skidder when the soils are frozen.



Tall red oak growing on a rich site in the Middle White Lot Brook lot.

## General Silvicultural Prescriptions

The forests of northern New England are diverse in both age class and species distribution. Therefore, written forest management prescriptions are but generalizations, as the composition of each location in a forest stand will vary. An average 90 year old forest stand will tend to have from 120 to 200 trees/acre. Therefore, there are many decisions to be made regarding whether and when to harvest, which trees to harvest, how much basal area to remove, which trees to regenerate, seed year considerations, etc. Higher site index locations with good moisture levels, and rich soils, allow timber to be maintained at higher stocking levels. Conversely, lower site indexes and off site tree stands should be maintained at lower stocking levels ranges in order to allow for facilitate the rapid growth of quality trees. During stand harvests on this land there will be areas where the trees are left to grow into old forests. Light harvest levels allow for a forest to serve as an endowment, providing a sustainable yield from the forest over a very long period of time. A general rule of thumb is to leave a basal area of 80-90 sq. ft/acre in a post-harvest hardwood stand with 120 sq. ft/acre retained in softwood stands. Shade tolerant species such as red spruce, hemlock, beech, yellow birch, and sugar maple can survive for many years as advanced regeneration in the understory. When additional sunlight becomes available, these saplings will respond with their growth rates rapidly accelerating. A small red spruce tree 2" in diameter can be over 100 years old. In most mature tree harvest scenarios, it works to harvest trees in small patches, larger in hardwood than in softwood, however, each situation is different. Mixed softwood regeneration is effective for the successful growth of these shade tolerant species. These stiff softwoods allow white pine saplings and poles to lean upon the spruce, fir and hemlock, which have stiffer stems and branches holding up the flexible young white pines keeping them from being flattened by heavy snows now falling in our warming climate. A softwood understory will also train hardwood trees to grow straight, tall, clear boles while maintaining soil adequate moisture levels.

## Adaptation- Assisted Migration

As we witness the climates impact on our forests, southern tree species that are at the northern edge of their ranges will migrate northward, while northern species at the southern edge of their ranges will also migrate northward. In our adaptation to this scenario, Tin Mountain will begin assisted tree migration by using silvicultural methods to create stand conditions whereby trees growing at the northern edge of their ranges are silviculturally encouraged to move northward. As this will be a slow process, we will also begin to plant more southerly species into our stands to speed up the process. On the Bearpaw lands, we will plant white oak, swamp white oak, and black birch. Black birch is an adaptable tree, which will grow in a variety of soil types, while it is also not eaten by the white tail deer. Swamp white oak will be planted on moist sites to replace the dead white ash. White oak will be planted on southern and southwest aspects, with chestnut oak next on the list.

## Forest Stands

A general forest type theme on the White Lot Brook parcels is that as the land moves northeastward the topography gradually rises; this is made evident by the flow of the surface waters. This gradual rise along with its increasingly southwestern aspect has historically allowed for higher stocking levels of red oak. Many of these large oak trees remain. This theme is especially evident on the Big Oak Lot, where the incidence of red oak trees increases as the slope rises to the northeast creating a southwestern aspect more favorable to red oak. Northern red oak is an adaptable species, which grows well on well drained sites, although it grows more rapidly on soils with a seasonable water table within 5 feet of the



surface. This is a species to be encouraged on the Bear Paw lands, by retaining them during harvests, conducting harvests during acorn seed year, and releasing them in FSI operations.



A typical site in Stand 1 with mature hemlock underlain with dense hardwood regeneration

## Stands 1- 139 Acres

Overstory- Hemlock/Mixed Hardwood Overstory- Red Maple, Yellow Birch, Red Oak, Beech 3/4 C  
Understory 1A- Beech, Striped Maple, Yellow Birch, Red Maple, Hemlock, Red Oak, Sugar Maple

### Descriptions

Stands 1 & 1A are complex cutover hemlock/hardwood stands. Stand 1A has higher overstory stocking level than does Stand 1, along with some 'Old Forest' stands (see Forest Type map). Dense hardwood understories are present throughout these stands. The harvests that spurred the growth of the understories were a result of harvests that occurred from 2008-2015. There were different hardwood seed crops present during various entries. A frequent outcome was a dense understory dominated by coppice beech saplings/poles and striped maple growing over yellow birch, red maple, red oak, hemlock, and sugar maple saplings. There are scattered stands with acceptable stocking levels of large trees. Most of these sites provide a suitable site index for the growth of high quality red oak and northern hardwoods.

The residual mature overstory in the stand is deceptive, in that, most of the land is cover is cutover, and dominated by sapling/pole regeneration. Numerous large red oaks remain scattered throughout these

stands. These trees can be used to regenerate red oak in the open understories beneath the large red oak trees, where there is often a carpet of dense red oak seedlings awaiting an opportunity to grow. This forest type includes a widely divergent array of stand configurations. These stands contain the common features of a sparse mature overstory of hemlock, red maple, yellow birch, red oak, and white pine, combined with a dense understory of hardwood saplings and poles. The understories have the common features of beech coppice saplings with a variety of desirable species intermixed. Locations with a viable overstory, is frequently composed of hemlock, beech, red maple, yellow birch, and red oak along with red spruce and occasional white pines. Younger portions of this stand, 14-16" dbh, are well stocked with good quality young sawtimber and pole stands of hemlock, red oak red and sugar maples which will be left to grow. Recently there has been forest stand improvement carried out in portions of Stand 1, which has resulted in the successful release of climate adapted species such as red oak, maples, big tooth aspen, and white pine. In the western sections of this stand there is an increase in the stocking of red oak overstory trees. In these locations there is often increased red oak and white pine regeneration. Overall, the stand will be well served with measures to adjust the understory composition, along with the limited removal of some poor quality overstory trees in order to facilitate the growth of a promising understory.

### Stand Prescriptions

In the many stand locations where there is a sparse non-viable overstory, the girdling of selected overstory trees, combined with forest stand improvement (FSI) in the sapling/pole understory, will result in young stands of fast growing climate adapted tree species. This FSI species adjustment will include the reduction of the beech and striped maple saplings component, to release young red oak, red maple, yellow birch, and sugar maples and along with all of the softwood trees which include hemlock, red spruce, and white pines. The reason to currently take this FSI measure is that the 15–18 ' tall dominant beech saplings are beginning to suppress the desirable saplings species.

An application to conduct **55 acres of forest stand improvement, using the FSI EQIP Program 666, during 2024/25** with snag creation, has been applied for Stands 1 & 2 and on the Upper White Lot Brook, and the North White Lot Brook lots. This FSI prescription will be conducted to cut the undesirable saplings within a narrow radius of the trees to be released. This will allow the retention of adjacent saplings to grow alongside the released trees in order to provide shade on the released sapling stems allowing them to grow into high quality sawlog trees. When forest stand improvement (FSI) takes place in these stands, the Northern Institute of Applied Climate Science's adaptation to climate change guidance will guide the forester's selection of species to release. Certain non-adaptive sapling species that work silviculturally and for habitat, such as hophornbeams, will also be released. All of the hardwood overstory trees greater than 20" dbh will be retained for habitat. It will not be readily apparent that this work has taken place, as the sapling stands will remain fully stocked. However, in a few years the released tree saplings will rise above the general understory layer to begin their assumptive role as the stand's future canopy of resilient trees. This will enhance the forest's habitats and structure by creating a three tiered forest canopy.





A hemlock/hardwood forest in Stand 1A

## Stand 1A- Stand 1A- 116 Acres

Hemlock/ Red Maple/ Red Oak/Yellow Birch, White Pine 3/4 B+, Hardwood 1A

### Description

On the Lower White Lot Brook tract is an 18 acre stand that was very lightly cut sixty years ago, with no activity since. There is a similar stand on the 35 Rod Lot. This and other locations of this Stand have taken on the characteristics of an old late successional forest. This stand contains very old hemlocks, along red maple and red oak trees, some of which are over 24"DBH. Stands like this are to be retained for their carbon storage, along with their habitat features. Adjacent to these stands are also areas that have been recently cut, with resulting dense hardwood pole growth.

Stand 1A has a higher average stocking level of mature trees than does Stand 1. Portions of the old stands are likely very similar to how they would have looked prior to settlement. These stands are fully stocked with large, and moderate sized trees. There exist scattered large white pines in these stands that will continue to exist as a seed source. Although these stands have been utilized by the farming and building trades in Fryeburg and East Conway for over 200 years, they likely only harvested trees as the need arose. This allowed for the development of 'Old Forest' stands that exists in some of the residual stands on the Bearpaw lands. The previous Tin Mountain forester, Executive Director, the late Dr. Michael Cline, had designated these locations as Control Stands, which will continue to be the case.



Tin Mountain Conservation Center will maintain these old forest stands to be used as demonstration sites to allow both children and adults to learn what our forests can teach us.



Dense beech regeneration in Stand 2 on the Big Oak lot where an **EQIP** funded mechanical treatment to reduce the beech understory will take place in 2024.

## Stand 2- 104 acres Hardwood/Hemlock 3/4/1

Overstory- Beech, Red Oak, Hemlock, Yellow Birch, Sugar Maple 3/4/2 C

Understory- 1A Saplings and Poles- Beech, Yellow Birch, Red Maple, Striped Maple, Red Oak, Sugar Maple

### Description

Most of this diverse timber type is composed primarily of mature hardwood/hemlock overstories, with an average basal area of 50, underlain by a 12-20' dense understory of hardwood regeneration. This is a heavily cutover timber type. Some areas of this acreage had a biomass harvest conducted, with the rest harvested using a cut-to-length system. The stand also contains small old forest stands of large red oaks, hemlock, white pine. On the Middle White Lot property is found an impressive fully stocked stand of tall hardwood/hemlock and white pine which gradually descends to a large shrub wetland.





A hardwood sapling/pole stand prescribed to receive forest stand improvement in 2024/25

### Stand Prescriptions

The remnant mature red oak, hardwood forests in this stand will not have any harvesting activity, other than to remove an occasional tree to foster the development of the stand's old growth characteristics. Much of this timber type is composed of dense hardwood sapling and pole understories, where the **FSI described in Stand 1 will also take place here during 2024/25**. After the 55 acres applied for is completed, it will be expanded to more acreage of Stand 2 in 2025.





## Stand 3- 35.7 acres White Pine 4/3B

### Description

The white pine stands that remain on these parcels contain the remnants of what was once a common species on these lands. The largest existing white pine stand is a 20 acre area, situated on the North Brook Lot, which is well-stocked with sawtimber. Forest Stand Improvement (FSI) was conducted in the stand during 2021/22 to remove the beech and red maple sprouts from an excellent layer of white pine and red oak regeneration. The stand is stocked with high quality white pine sawtimber with an average basal area of 120, having an average diameter of 17" dbh. There is also a group of red pine trees in this stand. The other white pine stands on the property are small, and contain scattered large white pines, mixed with large red oaks, and the ubiquitous hemlock.

### Stand Prescriptions

The highest purpose for these white pine stands now is to spread seed into adjacent stands. White pine is well adapted to survive in our warming climate, while it also has a high ability to capture carbon during its photosynthetic processes. Future forest management in the surrounding stands would be well served by timing harvests to coincide with white pine seed crops. This stand would be well served by a light mechanical harvest of the injured white pines, along with nearly all of the red pines in 15 years.

In an understocked portion of Stand 3, on the on the Lower White Lot Brook tract, a **demonstration harvest** will be conducted during the early spring of 2024. The harvest will be a light firewood cutting, which will include some poor quality hemlock trees. The harvest will be carried out to replace poor stunted hardwood and hemlock trees with an understory of white pine and red oak seedlings. The logger will use a small cable skidder to harvest fifteen acres during mud season 2025. He will also be asked to girdle some cull trees to help create an appropriate canopy closure to allow the seedlings to thrive. This understocked white pine stand was last harvested 55-60 years ago. This is when most of the red maple firewood harvest trees began their growth. The new species stocking will greatly increase this stand's ability to sequester carbon while it grows a productive young timber stand. **An FSI operation will take place 5-6 years after the seedlings germinate.**

## Stand 4- Beech/Hemlock 3/2 B- 26 acres

### Description

This 26 acre stand is north of Palm Drive on the Green Hill and Big Oak lots. The stand is understocked with a stagnant stand of poor quality 8-14" dbh declining beech and hemlock trees. This stand also contains occasional red maple, red spruce, and black cherry trees. This stand does not have a viable future either for timber production nor for significant carbon sequestration.

### Stand Prescriptions

The prescription for this stand is to create patch cuts of 2 acres, in order to establish a new climate adapted stand. The beech will be cut with high stumps to limit its coppice regeneration. The planting of black birch in this stand will allow the birch to outgrow the beech stump sprouts. The few black cherries along with an occasional red maple tree will be retained to provide habitat and stand diversity in the regenerating stand. **The schedule is to conduct this harvest after the access road is rebuilt during 2024, using EQIP Program 655 Forest Trails and Landings.**





A large oak crown on the Big Oak Lot

## The Big Oak Lot- 117 acres

This 117 acre lot is singled out as a special situation. The lot was given its descriptive name for an obvious reason. The upper portions of this lot had a canopy contained a good stocking of large red oak, red maple and beech trees. Over the past 45 years the majority of the large trees were harvested. As the loggers continued to cut them off, the beech sprout distribution and density continued to compound. Currently, a significant portion of this lot has a virtual carpet of beech saplings and poles of various ages. The remaining overstory trees are far more interesting. Over much of the lot there remains a scattered stocking of large, poor quality red oak trees, along with occasional beech and red maple. Numerous red oaks are over 24 inches in diameter and, as was witnessed this year, they produce large acorn crops. On the forest type map there is an outline of an area where FSI was conducted in 2022/23 to improve the understory composition in the north portion of Stand 2. The beech and striped maple were cut to release the hemlock, spruce, red oak, and yellow birch regeneration. While conducting the FSI, the work was specified to leave beech stumps 12-14 inches tall in order to reduce the coppice regeneration of beech. The results have been favorable.

### Prescriptions

An effort will be made to diversify the ubiquitous thick beech regeneration in Stand 2 on the Big Oak lot. An application has been filed with NRCS for [CSP-EQIP Practice E666P](#) which is specifically configured to

control beech saplings using mechanical means. In this case, this will involve repeatedly pulling cull logs with a skidder over twenty five acres. This will be done on 25 acre contiguous acres. The acres will be planted with black birch seedlings to outcompete the beech, which will foster our assisted migration efforts. This Program is scheduled to take place in the early spring of 2024.

## Threatened and Endangered Species

In the New Hampshire Heritage Report below, both the common nighthawk and Long’s Bulrush are cited as being State Endangered. The sites upon which these species inhabit will not be disturbed by any activities to be undertaken on this land base. The nighthawk hunts over the property’s shrub swamps.

### New Hampshire Natural Heritage Bureau

DNCR - Division of Forests & Lands

172 Pembroke Road, Concord, NH 03301 Phone:  
(603) 271-2214 Fax: (603) 271-6488

To: Daniel Stepanauskas  
Northern Forest Resources  
135 High Street  
Silver Lake, NH 03875

From: NH Natural Heritage Bureau  
Date: 2023-10-16

Re: Review by NH Natural Heritage Bureau of request dated 2023-10-12

NHB File ID: 4199  
Project type: Landowner Request

Town: Conway, NH  
Location: Map 223 Lots 15, 26, 17, Map 226 Lots 3, 6, Map 239 Lot 3; Tin Mountain

	Mapping Precision	% within tract	Last Reported	Listing Status		Conservation Rank	
				Federal	NH	Global	State
<b>Vertebrate Species</b>							
Common Nighthawk - <i>Chordeiles minor</i>	High	17	2021	--	E	G5	S1B
<b>Natural Community</b>							
Pitch pine - heath swamp			2009	--	--	GNR	S1
<b>Plant Species</b>							
Long's bulrush - <i>Scirpus longii</i>			2021	--	E	G3	S1
<b>Vertebrate Species</b>							
Common Nighthawk - <i>Chordeiles minor</i>			2021	--	E	G5	S1B





**New Hampshire Natural Heritage Bureau**

DNCR - Division of Forests & Lands

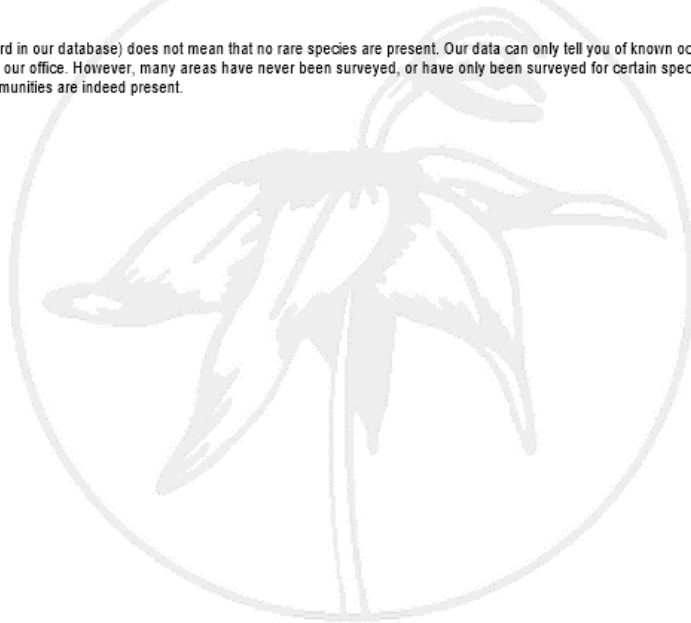
172 Pembroke Road, Concord, NH 03301 Phone:  
(603) 271-2214 Fax: (603) 271-6488

Listing codes: T = Threatened, E = Endangered SC = Special Concern

Rank prefix: G = Global, S = State, T = Global or state rank for a sub-species or variety (taxon)

Rank suffix: 1-5 = Most (1) to least (5) imperiled, "--", U, NR = Not ranked. B = Breeding population, N = Non-breeding, H = Historical, X = Extirpated.

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



**NOTE: This review *cannot* be used to satisfy a permit or other regulatory requirement to check for rare species or habitats that could be affected by a proposed project, since it provides detailed information only for records actually on the property.**

## Glossary and Acronyms

- Basal area (of a tree) - the cross sectional area of the trunk 4 1/2 feet above the ground; (per acre) the sum of the basal areas of the trees on an acre; used as a measure of forest density.
- BMPs - Best Management Practices: a set of guidelines to protect water quality. BMPs focus on careful road construction and maintenance, careful timber harvesting, minimal impact site preparation and protection of streamside management zones and wetlands.
- Board foot - a unit for measuring wood volume in a tree, log, or board. A board foot is commonly 1 foot by 1 foot by 1 inch, but any shape containing 144 cubic inches of wood equals one board foot. browse - parts of woody plants, including twigs, shoots, and leaves, eaten by forest animals.
- Canopy - the continuous cover formed by tree crowns in a forest.
- Cord - a unit of wood cut for fuel that is equal to a stack 4 x 4 by 8 feet or 128 cubic feet. A cord is the legal measure of fuelwood volume in Maine and New Hampshire.
- Diameter at breast height (dbh) - standard measurement of a tree's diameter, usually taken at 4 1/2 feet above the ground.
- DBH – tree diameter breast height
- Even-aged stand - a stand in which the age difference between the oldest and youngest trees is minimal, usually no greater than 10 to 20 years. Even-aged stands are perpetuated by cutting all the trees within a relatively short period of time.
- Forest types - associations of tree species that have similar ecological requirements. Northern New England forest types include white pine, spruce-fir, hemlock, northern hardwood, oak-pine, and others. group selection - a process of harvesting patches of trees to open the forest canopy and encourage the reproduction of uneven-aged stands.
- Herbaceous vegetation - low-growing, non-woody plants, including wildflowers and ferns, in a forest understory.
- High grading—The practice of removing only the biggest and best trees from a stand during a harvest operation and leaving only the poorest, lowest quality culls to dominate the site.
- Intolerance - a characteristic of certain tree species that does not permit them to survive in the shade of other trees.
- Landing - a cleared area within a timber harvest where harvested logs are processed, piled, and loaded for transport to a sawmill or other facility.
- MBF - Thousand board feet. A unit of measure for tree volume or sawed lumber.
- Marking timber - indicating by paint or other means which trees are to be cut or otherwise treated. It is advisable to mark trees to be harvested twice-once at eye level and once on the stump.
- Mast - Fruits or nuts used as a food source by wildlife. Soft mast includes most fruits with fleshy coverings, such as persimmon, dogwood seed or black gum seed. Hard mast refers to nuts such as acorns and beech, pecan and hickory nuts.
- Overstocked - the situation in which trees are so closely spaced that they compete for resources and do not thrive
- Precommercial treatments - forestry operations that require landowner investment, such as cleaning or weeding stands to remove trees that have little or no cash value.
- Pruning - the act of sawing or cutting branches from a living tree. In forest management, pruning is done to promote the growth of clear, valuable wood on the tree bole. pulpwood - wood suitable for use in paper manufacturing.

- Regeneration - the process by which a forest is reseeded and renewed. Advanced regeneration refers to regeneration that is established before the existing forest stand is removed.  
regeneration cut - a timber harvest designed to promote natural establishment of trees.
- Release - to remove overtopping trees that compete with understory or suppressed trees.
- Residual stand - the trees remaining intact following any cutting operation.
- Sapling stand - a stand of trees whose average dbh is between 1 and 4 inches.
- Sawlog - a log large enough to be sawed economically on a sawmill. Sawlogs are usually at least 8 inches in diameter at the small end.
- Seed-tree harvest - the felling of all the trees in an area except for a few desirable individuals that provide seed for the next forest.
- Seep- where water comes to the surface of the ground at the head of drainage-ways. This most often occurs in rich forest soils settings.
- Selection harvest - the harvest of all individual trees or small groups at regular intervals to maintain an uneven-aged forest. Selection harvests are used to manage species that do not need sunlight to survive. shelterwood harvest - the harvest of all mature trees in an area in a series of two or more cuts, leaving enough trees of other sizes to provide shade and protection for forest seedlings.
- Significant wildlife habitat – habitats identified and mapped by the Maine Inland Fisheries and Wildlife Department and afforded special protection including deer wintering areas, bald eagle nests, shorebird nesting areas, etc., or identified by NH Fish & Game’s Wildlife Action Plan. However, the NH Action Plan provides no special protection for these critical areas.
- Site index - a measure of the quality of a site based on the height of dominate trees at a specified age (usually 25 or 50 years), depending on the species.
- Stocking level – the density of trees by species or timber type in a particular area
- Slash - branches and other woody material left on a site after logging.
- Slope – a measure of steepness of terrain and a feature that can limit equipment use; it is the vertical gain (rise) divided by the horizontal distance cover (run).
- Snag - a dead tree that is still standing. Snags provide important food and cover for a wide variety of wildlife species.
- Stand - a group of forest trees of sufficiently uniform species composition, age, and condition to be considered a homogeneous unit for management purposes.
- Stand density - the quantity of trees per unit area, usually evaluated in terms of basal area, crown cover and stocking.
- Stocking - the number and density of trees in a forest stand. Stands are often classified as understocked, well-stocked or overstocked.
- Stumpage - the value of standing trees in a forest.
- Thinning - a partial cut in an immature, overstocked stand of trees used to increase the growth of existing trees by concentrating on individuals with the best potential, no regeneration results tolerance - a tree species' capacity to grow in shade.
- Understocked - a stand of trees so widely spaced, that even with full growth potential realized, crown closure will not occur.
- Understory - the level of forest vegetation beneath the canopy.
- Uneven-aged stand - Three or more age classes of trees represented.
- Well-stocked - the situation in which a forest stand contains trees spaced widely enough to prevent

## Forest Inventory – Stands 1 & 1A

FOREST LAND IMPROVEMENT-TRN

Job Title—WHITE LOT BROOK (255.3 TOTAL ACS)

Stand Title--STAND 1 & 1A (HM/HDWD 3/4/1)

PAGE 3

**NORTHERN FOREST RESOURCES**  
**Daniel Stepanauskas**  
**135 High Street**  
**Silver Lake, NH 03875**

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 \*  
 \* SPECIES COMPOSITION BY PERCENT LEVEL = ALL Trees \*  
 \*  
 .....

SPECIES	AREA	TREES	SAWLOG VOLUME	PULP VOLUME	BOX PINE VOLUME	PALLET VOLUME	VENEER VOLUME	MAT LOG VOLUME
	BASAL	INT. 1/4"	INT. 1/4"	CORDS	INT. 1/4"	INT. 1/4"	INT. 1/4"	INT. 1/4"
WHITE PINE	1.80	.99	3.94	.42	.00	.00	.00	.00
HEMLOCK	50.45	42.21	66.70	34.34	.00	.00	.00	.00
SPRUCE	2.25	3.97	3.07	1.12	.00	.00	.00	.00
BEECH	11.26	14.42	6.24	15.42	.00	.00	.00	.00
RED OAK	5.86	3.59	9.09	2.68	.00	100.00	.00	.00
SUGAR MAPLE	3.15	3.08	1.88	4.36	.00	.00	.00	.00
RED MAPLE	13.96	13.91	4.71	24.24	.00	.00	.00	.00
WHITE ASH	.90	1.06	.73	.96	.00	.00	.00	.00
YELLOW BIRCH	10.36	16.79	3.64	16.46	.00	.00	.00	.00
ALL SOFTWOODS	84.50	47.16	73.70	35.88	.00	.00	.00	.00
ALL HARDWOODS	45.50	52.84	26.30	64.12	.00	100.00	.00	.00

FOREST LAND IMPROVEMENT-TRN

PAGE 4

Job Title—WHITE LOT BROOK (255.3 TOTAL ACS)

Stand Title--STAND 1 & 1A (HM/HDWD 3/4/1)

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 \*  
 \* VOLUME TOTALS FOR ALL SPECIES LEVEL = ALL Trees \*  
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SPECIES	SAWLOG	PULP	BOX PINE	PALLET	VENEER	MAT LOG
	INT. 1/4"	CORDS	INT. 1/4"	INT. 1/4"	INT. 1/4"	INT. 1/4"
	VOL / ACRE	VOL / ACRE	VOL / ACRE	VOL / ACRE	VOL / ACRE	VOL / ACRE
WHITE PINE	372.6	.1	.0	.0	.0	.0
HENLOCK	6305.9	6.0	.0	.0	.0	.0
SPRUCE	289.9	.2	.0	.0	.0	.0
BEECH	590.0	2.7	.0	.0	.0	.0
RED OAK	859.8	.5	.0	9.2	.0	.0
SUGAR MAPLE	177.3	.8	.0	.0	.0	.0
RED MAPLE	445.7	4.2	.0	.0	.0	.0
WHITE ASH	69.0	.2	.0	.0	.0	.0
YELLOW BIRCH	344.6	2.9	.0	.0	.0	.0
ALL SOFTWOODS	6968.4	6.2	.0	.0	.0	.0
ALL HARDWOODS	2486.3	11.1	.0	9.2	.0	.0
ALL SPECIES	9454.7	17.4	.0	9.2	.0	.0



FOREST LAND IMPROVEMENT-TRN

PAGE 5

Job Title—WHITE LOT BROOK (255.3 TOTAL ACS)

Stand Title--STAND 1 & 1A (HM/HDWD 3/4/1)

.....  
 \*  
 \* VOLUME TOTALS EXPANDED BY ACREAGE LEVEL = ALL Trees \*  
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 .....

	SAWLOG	PULP	BOX PINE	PALLET	VENEER	MAT LOG
	INT. 1/4"	CORDS	INT. 1/4"	INT. 1/4"	INT. 1/4"	INT. 1/4"
	VOLUME	VOLUME	VOLUME	VOLUME	VOLUME	VOLUME
WHITE PINE	95119	19	0	0	0	0
HEMLOCK	1609907	1522	0	0	0	0
SPRUCE	74003	50	0	0	0	0
BEECH	150626	684	0	0	0	0
RED OAK	219497	119	0	2352	0	0
SUGAR MAPLE	45268	193	0	0	0	0
RED MAPLE	113787	1075	0	0	0	0
WHITE ASH	17610	43	0	0	0	0
YELLOW BIRCH	87968	729	0	0	0	0
ALL SOFTWOODS	1779030	1591	0	0	0	0
ALL HARDWOODS	634756	2842	0	2352	0	0
ALL SPECIES	2413786	4433	0	2352	0	0

Forest Management Plan Tin Mountain Conservation Center White Lot Brook Bearpaw Lands

FOREST LAND IMPROVEMENT-TRN

PAGE 13

Job Title--WHITE LOT BROOK (255.3 TOTAL ACS)

Stand Title--STAND 1 & 1A (HM/HDWD 3/4/1)

.....  
 \*  
 \* ALL SPECIES LEVEL = ALL Trees \*  
 \*  
 .....

	BASAL AREA	TREES	SAWLOG	PULP	BOX PINE	PALLET	VENEER	MAT LOG
DIAMETER	PER	PER	INT. 1/4"	CORDS	INT. 1/4"	INT. 1/4"	INT. 1/4"	INT. 1/4"
CLASS	ACRE	ACRE	VOL / ACRE	VOL / ACRE	VOL / ACRE	VOL / ACRE	VOL / ACRE	VOL / ACRE
8	9.7	27.9	58.6	2.6	.0	.0	.0	.0
10	16.4	30.1	284.1	4.5	.0	.0	.0	.0
12	12.8	16.3	753.6	2.4	.0	.0	.0	.0
14	17.4	16.3	1333.3	2.7	.0	.0	.0	.0
16	24.1	17.3	2632.3	2.6	.0	.0	.0	.0
18	14.9	8.4	1724.1	1.4	.0	.0	.0	.0
20	6.7	3.1	823.2	.5	.0	5.1	.0	.0
22	7.7	2.9	1203.4	.4	.0	4.1	.0	.0
24	2.1	.7	321.3	.1	.0	.0	.0	.0
26	2.1	.6	320.8	.1	.0	.0	.0	.0
TOTAL	113.8	123.5	9454.7	17.4	.0	9.2	.0	.0
S.E.			± 14%	± 11%	± 0%	± 118%	± 0%	± 0%
C.V.			53%	42%	0%	439%	0%	0%

MEAN STAND DIAMETER = 13.0

MERCHANTABLE M.S.D. = 13.0

PERCENT CRUISE = .7%

FOREST LAND IMPROVEMENT-TRN

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Job Title--WHITE LOT BROOK (255.3 TOTAL ACS)

Stand Title--STAND 1 & 1A (HM/HDWD 3/4/1)

.....  
 \*  
 \* VOLUME TOTALS FOR ALL SPECIES LEVEL = ALL Trees \*  
 \*  
 .....

SPECIES	SAWLOG	PULP	BOX PINE	PALLET	VENEER	MAT LOG
	INT. 1/4"	CORDS	INT. 1/4"	INT. 1/4"	INT. 1/4"	INT. 1/4"
	VOL / ACRE	VOL / ACRE	VOL / ACRE	VOL / ACRE	VOL / ACRE	VOL / ACRE
WHITE PINE	372.6	.1	.0	.0	.0	.0
HEMLOCK	6305.9	6.0	.0	.0	.0	.0
SPRUCE	289.9	.2	.0	.0	.0	.0
BEECH	590.0	2.7	.0	.0	.0	.0
RED OAK	859.8	.5	.0	9.2	.0	.0
SUGAR MAPLE	177.3	.8	.0	.0	.0	.0
RED MAPLE	445.7	4.2	.0	.0	.0	.0
WHITE ASH	69.0	.2	.0	.0	.0	.0
YELLOW BIRCH	344.6	2.9	.0	.0	.0	.0
ALL SOFTWOODS	6968.4	6.2	.0	.0	.0	.0
ALL HARDWOODS	2486.3	11.1	.0	9.2	.0	.0
ALL SPECIES	9454.7	17.4	.0	9.2	.0	.0

FOREST LAND IMPROVEMENT-TRN

PAGE 16

Job Title—WHITE LOT BROOK (255.3 TOTAL ACS)

Stand Title--STAND 1 & 1A (HM/HQWD 3/4/1)

.....  
 \*  
 \* VOLUME TOTALS EXPANDED BY ACREAGE LEVEL = ALL Trees \*  
 \*  
 .....

	SAWLOG	PULP	BOX PINE	PALLET	VENEER	MAT LOG
	INT. 1/4"	CORDS	INT. 1/4"	INT. 1/4"	INT. 1/4"	INT. 1/4"
	VOLUME	VOLUME	VOLUME	VOLUME	VOLUME	VOLUME
WHITE PINE	95119	19	0	0	0	0
HEMLOCK	1609907	1522	0	0	0	0
SPRUCE	74003	50	0	0	0	0
BEECH	150626	684	0	0	0	0
RED OAK	219497	119	0	2352	0	0
SUGAR MAPLE	45268	193	0	0	0	0
RED MAPLE	113787	1075	0	0	0	0
WHITE ASH	17610	43	0	0	0	0
YELLOW BIRCH	87968	729	0	0	0	0
ALL SOFTWOODS	1779030	1591	0	0	0	0
ALL HARDWOODS	634756	2842	0	2352	0	0
ALL SPECIES	2413786	4433	0	2352	0	0