

Mattatuck State Forest

Northfield Block

Management Plan

Forest Health and Diversity



The Northfield Block contains healthy and diverse ecosystems, including red maple lowlands and oak-hickory forests, that provide highly functional, valuable, and resilient habitats for plants and animals.

Climate Change Mitigation



Climate change is an important global issue. The management of the Northfield Block provides the opportunity to sequester and store carbon, through sustainable forest management, in vegetation and long-lived wood products.

Economic Benefits



The plan outlines timber harvesting activity on 62 acres. There is also a sugarbush which provides locally produced maple syrup. These sustainably harvested forest products provide jobs and raw materials for a locally sourced, forest-based, green economy. "Growing What We Need, Where We Live".

Forest Protection



This plan addresses threats such as exotic invasive plants, insects, and pathogens. It makes recommendations to mitigate these damaging agents. The plan recognizes that forests are dynamic and that weather events, insect or disease outbreaks, or other unforeseen conditions may require changes in the recommendations.

Wildlife Habitat



Three State Endangered species and one Species of Special Concern are known to utilize the area in and around this forest Block. Forest management practices will protect critical habitat features required by these species.

Recreational/Health Benefits



The Northfield Block contains many old roads and is open to hiking and hunting, offering the public recreational opportunities and a place to explore in a healthy and active way. Trails provide hiking access from Humaston Brook State Park Scenic Reserve.

Environmental Protection



The plan recommends silvicultural treatments that will create a more diverse mix of tree species and age classes. The plan will increase the amount of young forest while also designating three stands, totaling 61 acres (8% of the total acreage), as Old Forestland Management Sites. Diverse forests are resilient forests.



STATE OF CONNECTICUT

DEPARTMENT OF ENERGY AND ENVIRONMENTAL
PROTECTION



Bureau of Natural Resources
Division of Forestry

Mattatuck State Forest
Northfield Block
FOREST MANAGEMENT PLAN
2024-2034
723 acres

Approvals:

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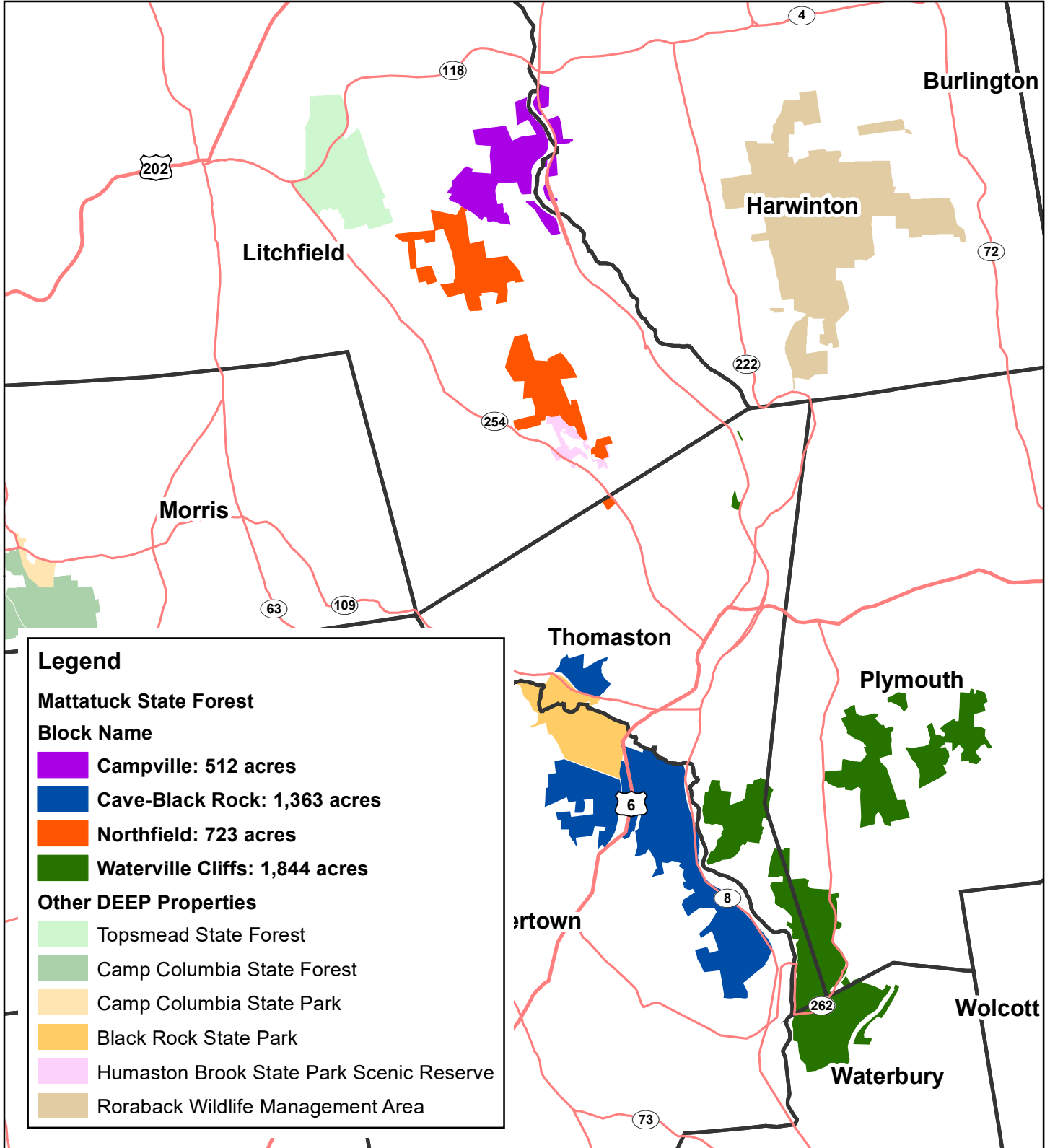
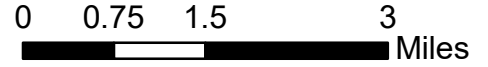
A. Location Map Mattatuck State Forest

Location and Division of Forest Blocks
4,442 Acres



June 2023

Map prepared by: J. Humphreys

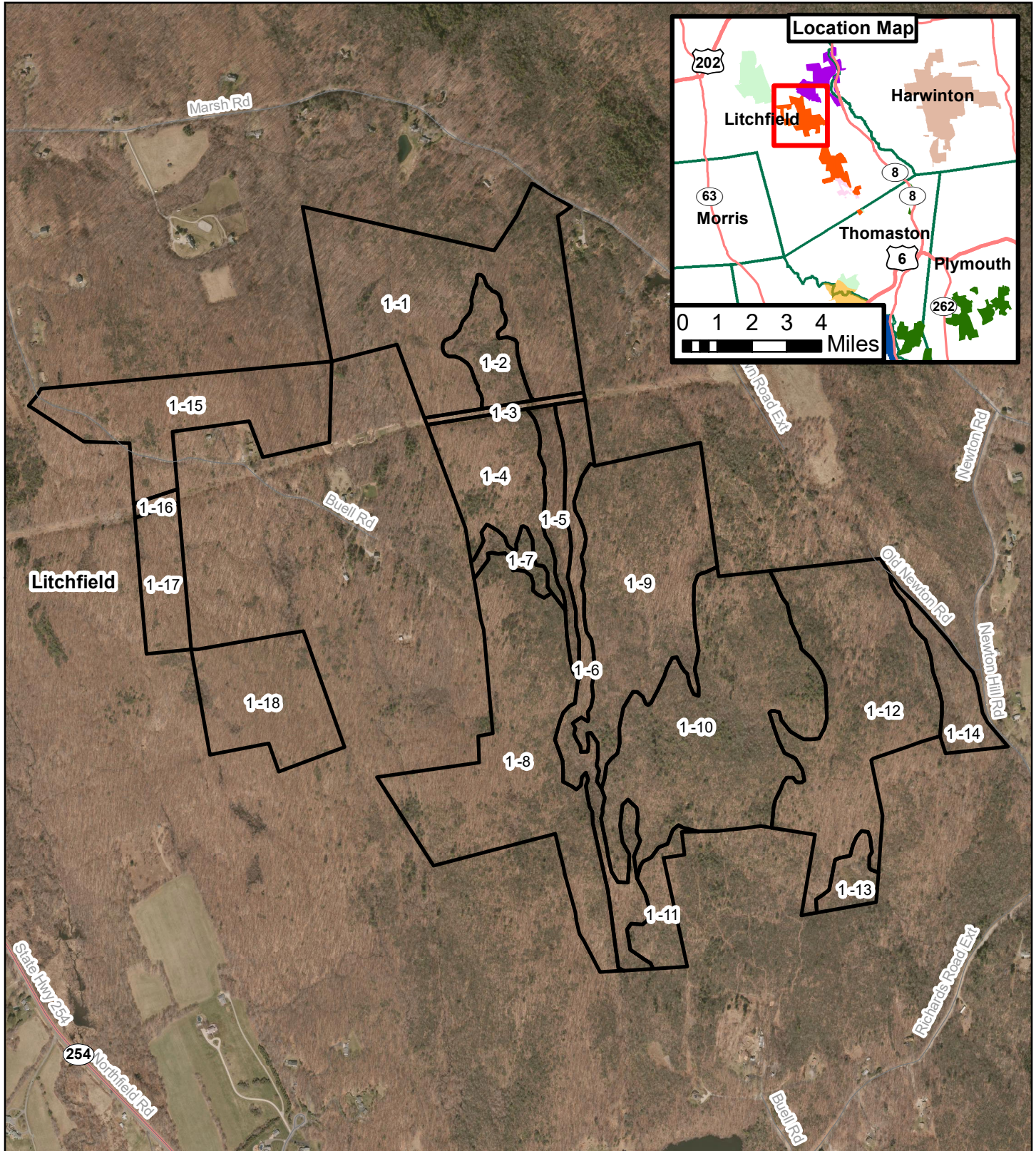
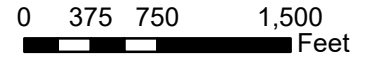




B. Forest Stand Reference Map Northfield Block, Compartment 1 Mattatuck State Forest

Litchfield, Connecticut
382 Acres

June 2023
Prepared by: J. Humphreys



Coordinate System: NAD 1983 State Plane Connecticut FIPS 0600 Feet

Projection: Lambert Conformal Conic

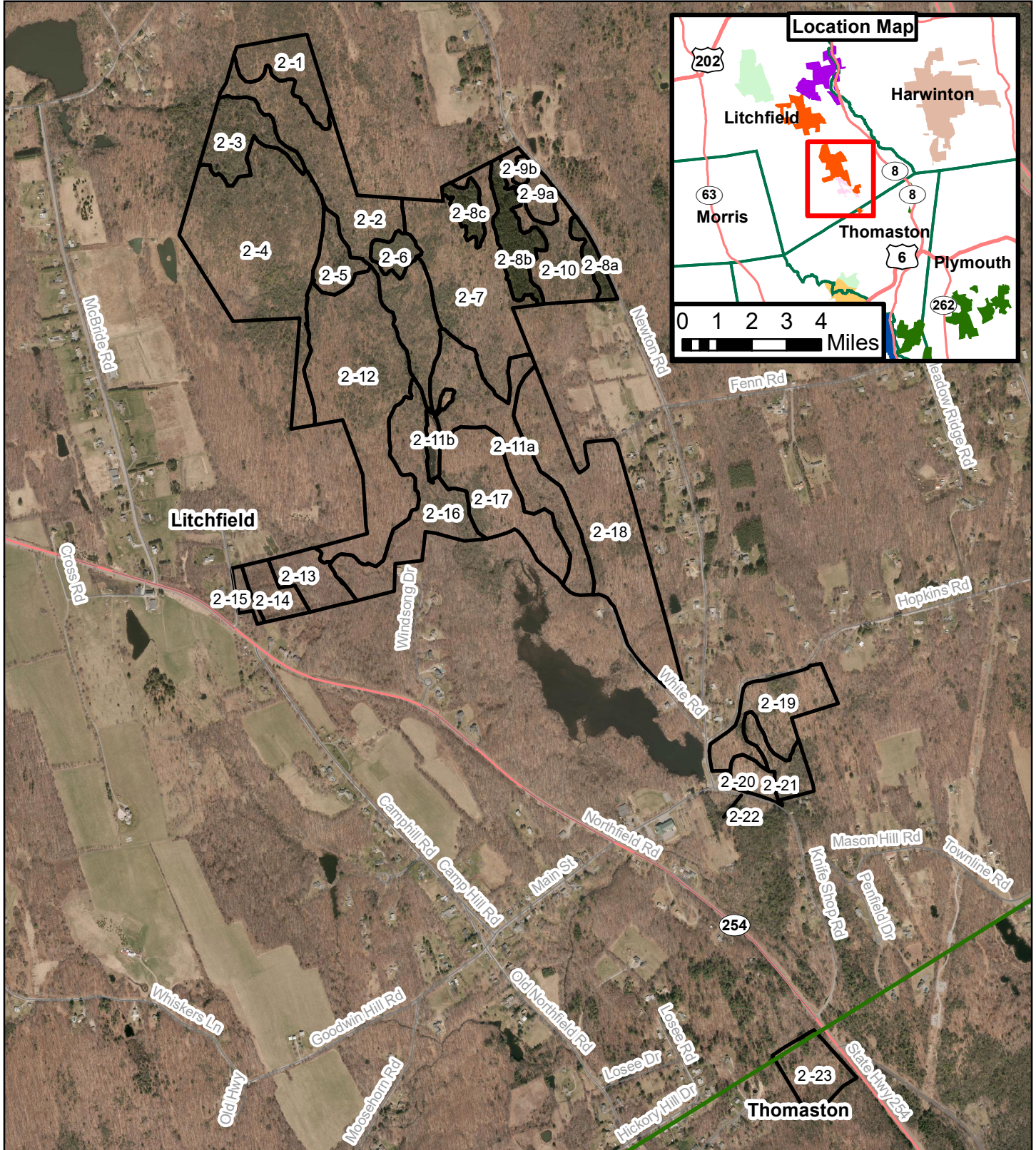
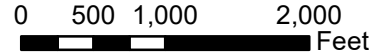


B. Forest Stand Reference Map Northfield Block, Compartment 2 Mattatuck State Forest

Litchfield and Thomaston, Connecticut
341 Acres



June 2023
Prepared by: J. Humphreys





Introduction

Connecticut is the 14th most forested state with approximately 60% forest cover. It is also the 4th most densely populated. These two factors create a unique and challenging environment to develop meaningful and effective resource management strategies to meet the needs of its citizens while protecting and enhancing its natural and ecological resources.

The [2020 Connecticut Forest Action Plan](#) was developed to address these needs with input from the DEEP, its partners, and various user groups. It serves as an implementation guide for broad statewide forest management strategies based on three national priorities:

1. Conserve and manage working forest landscapes for multiple values and uses;
2. Protect forests from threats;
3. Enhance public benefits from trees and forests.

The following objectives were considered in developing the management plan for the Northfield Block of Mattatuck State Forest.

1. **Forest Ecosystem Health and Diversity** – Healthy and diverse forest ecosystems provide highly functional, valuable, and resilient habitats for plants and animals.
2. **Climate Change Mitigation through Sequestration and Storage** – Climate change is an important global issue. The sustainable management of the Northfield Block provides the opportunity to sequester and store carbon in above and below ground vegetation and long-lived wood products. Forest management can also improve a forest’s adaptability under changing conditions.
3. **Economic Benefits** – Sustainably harvesting forest products from Connecticut’s State Forests provide local jobs and goods that are sold in the local economy. The following plan outlines timber harvesting activity on 62 acres. State Forests also provide a model for private forest landowners to consider when managing their own properties.
4. **Forest Protection** – Managing Connecticut’s State Forests allows threats, such as wildfire, weather events, invasive plants, insects, and pathogens, and unauthorized use, to be addressed. This helps maintain healthy and productive forests.
5. **Wildlife Habitat** – Many of Connecticut’s wildlife species use a wide variety of forested habitats. Forest management deliberately creates habitat diversity while protecting critical habitat for protected species.
6. **Recreational/Health Benefits** – Connecticut’s State Forests offer many recreational opportunities. The Northfield Block is open to passive recreation and hunting.
7. **Increasing Resilience** – The plan will increase the amount of young forest habitat, while designating 61 acres (8% of the total acreage) as Old Forestland Management Sites, areas that will be left to the forces of nature. An additional 460 acres (64% of the total acreage) will be passively managed. Diverse forest systems are more resilient to disturbance and change.

DEEP welcomes questions and comments regarding the management of state forest lands and encourages public engagement in the management of state resources. The Division of Forestry may be contacted by email at deep.forestry@ct.gov or by phone at (860) 424-3630.

D. Executive Summary

Mattatuck State Forest is approximately 4,442 acres. It is divided into four management Blocks (Northfield, Campville, Cave-Black Rock, and Waterville Cliffs) and spreads across six towns in Litchfield and New Haven Counties, including Harwinton, Litchfield, Plymouth, Thomaston, Waterbury, and Watertown.

The Northfield Block of Mattatuck State Forest is 723 acres. Seven hundred fifteen (715) acres are in southeastern Litchfield and an 8-acre parcel is in Thomaston, on the Thomaston-Litchfield town line. The Northfield Block is separated into two compartments. Compartment 1 is 382 acres and Compartment 2 is 341 acres. Land that is now part of the Northfield Block was acquired starting in 1929.

For maintenance and recreation purposes, the Northfield Block is within the Topsmead Unit of the Parks Division.

- 1) There have been no timber harvests in the Northfield Block for over 40 years. Apart from exotic softwood plantings, active management has been limited since State acquisition. Poor access, steep slopes, and wetlands restrict management potential.
- 2) Of the total 723 acres in this Block, 201 acres (28%) is accessible to silvicultural management. Over the next 10 years, 51 acres will be regenerated with an irregular shelterwood harvest, and 11 acres will be thinned.

E. History

a. Reason for acquisition and funding sources

In December of 1925, Harley F. Roberts, the Latin Master of the Taft School in Watertown, appeared before the Commission on Forests and Wildlife to inform them that a group of conservationists in his community was interested in acquiring and protecting land. He inquired about the policy of the State on receiving land as a gift and was met with favorable feedback from the commission. He originally became interested in the possibility of acquiring a forested area in the Naugatuck Valley after attending a dedication event in Peoples State Forest in 1924. By 1926, the community group had incorporated the Black Rock Association with Roberts as the president. The Black Rock Association raised funds to purchase land and organized land donations that would eventually be deeded to the State. The State Forester at the time, Austin F. Hawes, recommended the State spend an amount of money in the area that would match the funds raised by the Black Rock Association. At this time, Alain White, a wealthy conservationist from the area, offered to give one dollar for each acre purchased in this agreement.

In early 1927, a report to the directors and donors of Black Rock Forest Inc. showed 2,453.2 acres had been acquired. Of this, 778.56 had been donated and 1,674.64 had been bought, including 464.5 acres purchased by the State. Over 428 acres were set aside to be developed as a park and are now part of Black Rock State

Park. The gifts from the Black Rock Association, Inc., were the beginnings of Mattatuck State Forest (although it was known as Naugatuck State Forest until 1928). At the time, State Forester Hawes wrote that this area was one of the most picturesque parts of the Naugatuck Valley and acquiring the property helped protect this feature, demonstrated by the relocation of two powerlines that been surveyed in the area. Another reason for its purchase was to establish a source of local timber.

In the Northfield Block, the first parcels, totaling 106.5 acres, were bought in 1929. Nearby Humaston Brook State Park Scenic Reserve also expanded in 1929 with the purchase of land along Humaston Brook, where an old knife factory was located. The State was acquiring more land to link Humaston Brook State Park Scenic Reserve with lands along the Naugatuck River. In 1944, the State purchased over 406 acres (56% of the acreage of the Block today) from Plume & Atwood Manufacturing Company.

The most recent acquisition was a 50-acre parcel in 1970. It was bought from a private citizen using State funds.

b. Development of resource before and after acquisition

The region of Connecticut where Mattatuck State Forest is located was known as “Mattatuckokë” by native tribes. “Mattatuckokë” can be translated as “the place without trees” or “the badly wooded land”, possibly due to the expansive treeless meadows in that part of the valley or the rocky soils. Before it was incorporated, Waterbury was called Mattatuck by early settlers. The territory of many native tribes overlapped in this area, including the Potatuck, Mohican, and Wappinger.

When settlers came to Litchfield in the 17th century, it was known as “Peantam” (or Bantam), meaning “he prays” in Algonquin. The Peantam community was a group of Potatuck (also spelled Pootatuck or Pohtatuck) Native Americans, a subgroup of the Paugussett tribe. In 1715, colonists purchased 44,800 acres from the Potatuck for 15 pounds, likely including the area where the Northfield Block is located. In the mid-1700s, as the Potatuck people were dispersing and encroachments from neighboring settlers increased, the rest of the Potatuck lands were sold.

Litchfield was incorporated in 1719 and became an agricultural center. Most of the Northfield Block was used for agriculture or woodlots during this time. The area around the Northfield Block was settled by Europeans in 1760. Humaston Brook, which runs through Compartment 2, is named for the original European settlers, the Humiston family.

The Northfield Knife Company, a pocketknife and cast iron handled knife manufacturer, operated from 1858 to 1928 in Northfield. The company had a small reservoir along Humaston Brook, in what is now Stand 2-11b (Figure 1.). This small reservoir, along with the larger Northfield Pond (created by damming in 1854), provided a controlled source of power for the knife factory. The Clark Brothers Cutlery Company of Kansas City, Missouri, acquired the Northfield Knife Company in the early 1920s, but the factory was closed in 1928. By 1929, the company was bankrupt and sold the property along Humaston Brook. Knife Shop Road is so named because of the manufacturing facility that was once located on Northfield Brook. The remains of this factory are now in Humaston Brook State Park Scenic Reserve.



Figure 1. Stand 2-11b was once the location of a Northfield Knife Company Reservoir along Humaston Brook.

In 1944, 406.5 deeded acres of the Northfield Block were purchased by the State from the Plume & Atwood Manufacturing Company, a large brass company based in Waterbury. The company supplied brass for the Seth Thomas clock factory in Thomaston. Large amounts of charcoal were required to create brass. The charcoal was produced in the forested areas in and around the Naugatuck Valley. Brass companies purchased land and cleared forested acres that had previously not been farmed or had regrown after farms were abandoned. The trees regenerated from cut stumps and could be harvested at regular intervals.

Aerial images taken in 1934 (UCONN Map and Geographic Information Center) show that this Block was mostly young forest or old field regrowing after this intensive cutting (Figure 2.). These aerial images captured evidence of recent logging activity in Stand 2-2; slash “windrows” were created during large harvest operations. In the first quarter of the 20th century, the brass industry turned to oil and coal as a replacement for charcoal and no longer required large tracts of forested land. At the same time, the State Park and Forest Commission began acquiring lands.

Stand 2-14, part of the most recent acquisition in 1970, was maintained as a hay field until the mid-1970s.



Figure 2. 1934 Connecticut Aerial Photography of Northfield Block Compartment 2. Slash “windrows” can be seen in Stand 2-2. (<https://magic.lib.uconn.edu/>)

c. Changes since the last plan was prepared

The last management plan for Mattatuck State Forest, including the Northfield Block, was completed in 1988. Since then, firewood was sold in Stands 1-15 and 2-20, and a sugarbush was created in Stand 2-20. No other significant management activities have taken place. Property boundaries have been maintained.

F. Assessment of Resources and Infrastructure

a. Acres

The Northfield Block is divided into 2 compartments based on access and relative location. Each compartment is further divided into stands, or individual management units of similar composition or site quality, to aid in management-making decisions.

Table 1. Acres of land in the Northfield Block by land cover type.

Land Cover	Acres
Forest stand	679
Wetland	41
Right of way	3
Developed	<0.1
Total	723

b. Access

a. Management Access

One of the most difficult aspects of managing this Block is the limited access. Old roads that once provided access are in poor condition. There are several ways to access the Block on foot from town roads. Approximately 318 acres of operable forested land are currently inaccessible. Stand 1-1 could potentially be accessed from Marsh Road and Stands 2-12, 2-17, and 2-18 could be accessed from White Road and Fenn Road Extension with extensive road building and improvement. There are no plans to build or improve these access roads.

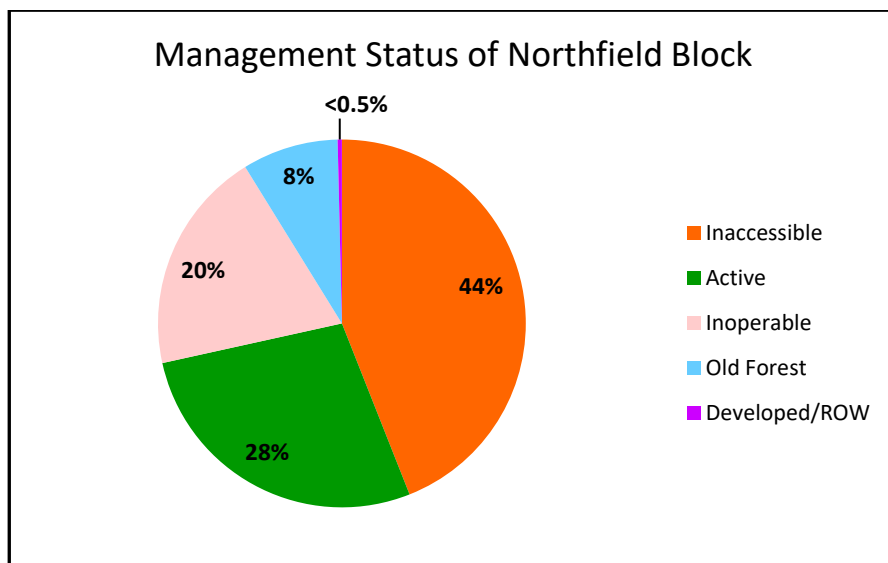


Figure 3. Management status of the Northfield Block by percent of total acreage.

- 1) Buell Road- The maintained section of Buell Road cuts through Stand 1-15, providing access and roadside pull-off parking. Access to the main area of Compartment 1 is on the portion of Buell Road discontinued in 1973 by the town of Litchfield. The State has an access right-of-way on the discontinued road, but public use would overburden the easement and is not permitted. There is a wooden gate located at the cul-de-sac that now exists on Buell Road. It was installed by neighbors to limit illegal use of the discontinued road. The discontinued section of Buell Road is in poor condition. Approximately 2,000 feet will be improved to allow better access.
- 2) Marsh Road- There is a gravel parking area on the northern side of Marsh Road, in the Campville Block of Mattatuck State Forest. There is off-trail foot-travel access into Compartment 1 on the southern side of Marsh Road.
- 3) Old Newton Road- At the intersection of Newton and Old Newton Roads, there is a small dirt pull-off. There is off-trail foot-travel access into Compartment 1 on the western side of Old Newton Road
- 4) Newton Road- There is roadside pull-off parking along Newton Road in Compartments 1 and 2. In Compartment 2, a dirt woods road leads into the forest from Newton Road. It is blocked with large stones to stop illegal vehicular access. There is off-trail foot-travel access into Compartments 1 and 2 on the western side of Newton Road. Stand 2-19 borders Newton Road to the east between Hopkins and Knife Shop Roads.
- 5) Fenn Road Extension- The State has right-of-way access to Compartment 2 from the end of Fenn Road Extension. Fenn Road Extension is an old town road that continues from the currently maintained town road westerly across Compartment 2, crossing Humaston Brook. It is in poor condition and sections are used for hiking.
- 6) White Road- There is a dirt pull-off parking area at the end of the maintained section of White Road. From this point, the road was discontinued in 1973 and is now used for hiking. It continues north and intersects with Fenn Road Extension. The discontinued road comes out at the end of Windsong Drive. There are dirt pull-offs on the maintained part of White Road used to access Humaston Brook State Park Scenic Reserve.
- 7) Remsen Road- There is off-trail foot-travel access into Compartment 2 on the eastern side of Remsen Road. Pull-off parking is limited.
- 8) Hopkins Road- There is pull-off parking and off-trail foot-travel access into Compartment 2 on the southern side of Hopkins Road.
- 9) Knife Shop Road- There is one small gravel area for pull-off parking and off-trail foot-travel access into Compartment 2 on the northern side of Knife Shop Road. This parking area is used for access to the sugarbush in Stand 2-20.
- 10) State Route 254 (Northfield Road)- There is pull-off parking and off-trail foot-travel access into Stand 2-23 on the southern side of State Route 254.

b. Public Access

This Block has no interior forest roads open to public vehicles.

c. Road Maintenance/Construction

Approximately 2,000 feet of the discontinued section of Buell Road will be improved for access.

d. Rights-of-Way

Eversource has a transmission line right-of-way covering approximately 3 acres in Compartment 1 (Stands 1-35a and 1-35b).

The Town of Litchfield and the Litchfield Water Pollution Control Authority have a deeded easement to operate and maintain a sanitary sewer pump station in Stand 2-22 (developed).

There is a deeded right-of-way of full public access to Compartment 2 over the portion of discontinued highway at the end of Fenn Road Extension. DEEP has an access right-of-way on the discontinued portion of Buell Road, but it is not open to the public.

e. Boundaries

There are 13.7 miles of boundary line, including 1.75 miles of roadside boundaries. The boundary line was refreshed between 2020 and 2021 and will be maintained again within 10 years.

f. Encroachments

An encroachment was found in Compartment 1 that included vehicular access via an old road, dumping of brush and debris, and construction/maintenance of a cabin which protrudes onto state land by approximately 8 feet. The landowner was contacted by DEEP Land Acquisition and Management and agreed to remove the brush piles and block the access road. The cabin had been discovered previously in 1987 and at that time the owner had agreed to not expand or rebuild the cabin. The DEEP Land Acquisition and Management is working to record an agreement on town land records so the cabin will be removed when the property changes ownership.

An encroachment in Compartment 2 includes a maintained lawn area, stored materials, and propane tanks. It has been reported to DEEP attorneys and Land Acquisition and Management. It had not been resolved at the time this plan was written.

g. Acquisition Goals

Parcels that abut the Northfield Block should be considered for acquisition if they improve access to inaccessible areas and provide the opportunity to protect additional forest land or unique features. Most desirable parcels are currently privately owned and include buildings and other structures.

G. Special Use Areas

a. Lakes and ponds

There are no large lakes or ponds within the Northfield Block. Humaston Brook flows into Northfield Pond, an almost 24-acre pond in Humaston Brook State Park Scenic Reserve, directly south of Compartment 2.

b. Rivers and streams

In Compartment 1, there are tributaries of Jefferson Hill Brook that flow north through Stands 1-1, 1-6, 1-9, and 1-15, eventually crossing Marsh Road. A tributary of Humaston Brook crosses the western edge of Stand 1-8.

Humaston Brook flows south through Compartment 2 and feeds into Northfield Pond. Small tributaries of Humaston Brook flow east through Stands 2-4 and Stands 2-12 and 2-16. Another unnamed tributary of Northfield Pond flows south through Compartment 2, paralleling Humaston Brook to the east. Northfield Brook, a tributary of the Naugatuck River, flows out of Northfield Pond and continues south through Thomaston. An unnamed tributary of Northfield Brook flows south across Hopkins Road and through Stands 2-19 and 2-21.

There are other unnamed intermittent streams in this Block.

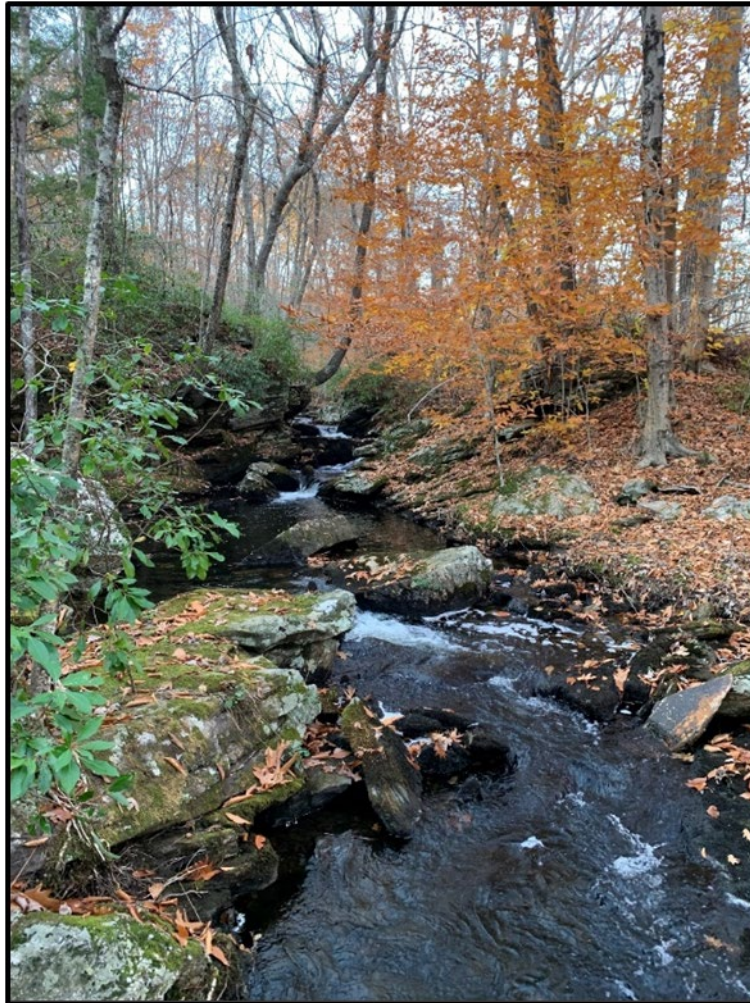


Figure 4. Humaston Brook flows south through Stand 2-16.

c. Cultural sites

There is a stone foundation in Stand 2-10 along Newton Road (possibly once the residence of J. Coldwell, based on historic maps of the area). Old stone walls, indicating past agricultural use, can be found regularly throughout the Block.

The Northfield Knife Company reservoir in Stand 2-11a is now an open wetland. The remains of the factory are nearby in Humaston Brook State Park Scenic Reserve.

Many charcoal mounds, dating from the late 1800s to early 1900s when the land was used for charcoal production by brass companies, are found throughout the Block.

d. Recreation and scenic sites – trails and signs

There are old roads and trails in the Block that are used for hiking (see “Trails”). There are also informal trails

that follow Humaston Brook and lead to small swimming holes and possible fishing access.

The entire Block is open to hunting. (The areas that were transferred to Mattatuck State Forest from Humaston Brook State Park are shown as being closed to hunting on the DEEP Connecticut Hunting Areas map as of 2024. This will be resolved during the term of this management plan in collaboration with the Wildlife Division and the Land Acquisition and Management Office.)

e. Critical Habitat

Critical habitat refers to specific geographic areas which contain features essential to the conservation of an endangered or threatened species and that may require special management and protection. DEEP Critical Habitat GIS data does not show any critical habitat within this Block.

f. Natural Areas

There are no legislatively-designated Natural Areas within this Block.

g. Old Forestland Management Sites

The Old Forestland Management Site land classification was created to set aside a portion of land to allow for the natural processes of forest stand development to occur without the influences of active forest management. This designation withdraws forestland from timber utilization for the span of the management plan. There are three stands, totaling 61 acres or 8% of the total acreage, that will be classified as Old Forestland Management Sites. These sites were chosen for their unique characteristics and location on the landscape.

An additional 460 acres (64%) will not be actively managed under this management plan due to inoperability or inaccessibility.

h. Research Areas

There are no designated research areas in this Block. In the past, multiple state- or district-wide research permits have included Mattatuck State Forest.

i. Miscellaneous

Stand 2-20 is a sugar maple stand managed as a sugarbush. Maple trees are tapped, and sap is collected for maple syrup production under a Forest Products Harvest Permit.

The Town of Litchfield has a lease on 7,950 square feet to maintain a sewage pump station on Knife Shop Road (Stand 2-22).

There are accessible areas that could be available for homeowner firewood permits if there is interest.

H. Forest Ecosystem Health and Diversity

a. Landscape Context

In 2015, Litchfield was approximately 67.2% forested, 14.8% agricultural field, 9.7% developed, and 4.6% turf and grass; Thomaston was 60.7% forested, 22.1% developed, 8.2% turf and grass (lawn) and 2.8% agricultural field (CLEAR). Since 1985, Litchfield and Thomaston have collectively lost 875 acres of forestland, while developed areas and turf and grass (lawn) cover have increased in both towns (CLEAR). In addition to the Northfield Block, other DEEP-owned forest land in Litchfield and Thomaston includes other blocks of Mattatuck State Forest, Topsmead State Forest, Humaston Brook State Park Scenic Reserve, and parts of Mount Tom and Black Rock State Parks.

Parcels of protected open space owned by the Litchfield Land Trust (13 acres), privately-owned Northfield Preserve Land Trust (formerly Thomaston Rod & Gun Club) (43 acres), and the US Army Corps of Engineers (30 acres) border Compartment 2. All other neighboring properties are residential.

Eversource has a transmission line right-of-way through Compartment 1, Stands 1-3 and 1-17, totaling almost 3 acres. The company periodically manages the right-of-way by cutting woody vegetation, mowing, and treating for invasive species.

b. Current Vegetative Condition

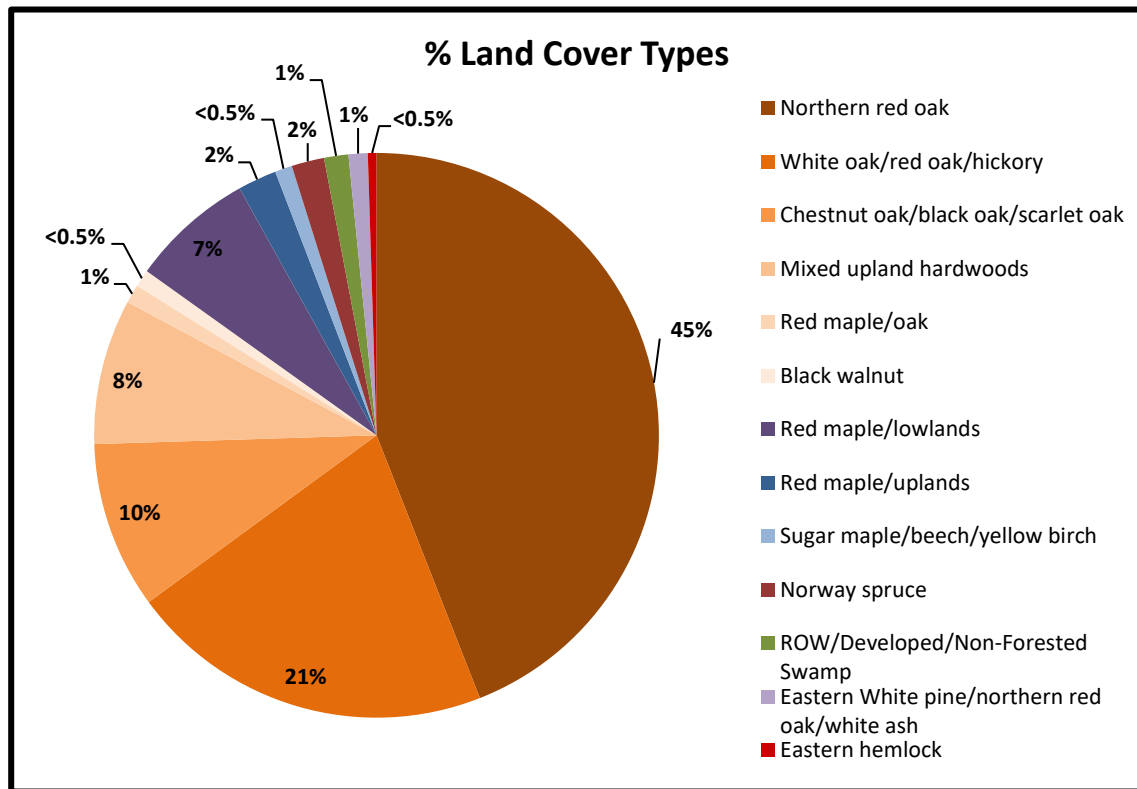


Figure 5. Land cover types by percentage of the Northfield Block.

c. Forest size classes by forest type

Table 2. Acres of forest land by size class and forest type in the Northfield Block. This table excludes acres classified as right-of way, developed land, or non-forested wetland.

Forest Cover Groups by Cover Type	Size Classes				Total Acres	% Total
	Pole	Sapling	Saw-Pole	Saw		
Oak-Hickory						
Northern Red Oak	0	0	0	323	323	45%
White Oak/Red Oak/Hickory	0	0	9	144	153	22%
Chestnut Oak/Black Oak/Scarlet Oak	0	0	0	70	70	10%
Mixed Upland Hardwood	0	0	20	41	61	9%
Red Maple/Oak	0	0	0	8	8	1%
Black Walnut	2	0	0	0	2	<0.5%
Elm-Ash-Cottonwood						
Red Maple/Lowland	3	1	23	25	52	7%
Maple-Beech-Birch						
Red Maple/Upland	0	5	5	7	16	2%
Sugar Maple/Beech/Yellow Birch	0	0	0	3	3	<0.5%
Exotic Softwoods						
Norway Spruce	0	0	0	14	14	2%
Oak-Pine						
Eastern White Pine/N. Red Oak/White Ash	0	0	0	8	8	1%
White-Red-Jack Pine						
Eastern Hemlock	3	0	0	0	3	<0.5%
Total Acres	8	6	56	643	713	100%
% Total	1%	1%	8%	90%	100%	

Oak-Hickory Group

The Oak-Hickory group makes up 617 acres (87%) of the forested acres in the Northfield Block. The dominant species of this group are red oak, white oak, black oak, scarlet oak, chestnut oak, shagbark hickory, pignut hickory, black birch, and red maple. Within this group there are multiple sub-groups, referred to as forest types or stand types. Forest types in the Oak-Hickory group found in these forest Blocks are Northern Red Oak, White Oak/Red Oak/Hickory, Chestnut Oak/Black Oak/Scarlet Oak, Mixed Upland Hardwood, Red Maple/Oak, and Black Walnut. Greater than 99% of the group is mature or approaching maturity; 615 acres are in the Sawtimber or Saw/Pole size class. Fifty-one (51) acres to be managed during this management period are Northern Red Oak.

Elm-Ash-Cottonwood Group

Red Maple/ lowlands make up 52 acres (7%) of the forested acres in this Block. These areas are characterized as having wet, saturated, or poorly drained soil and grow tree species that do well in wet conditions such as

American elm, white ash, and red maple. Because these areas have poorly drained soils, no activity will take place in this forest type.

Maple-Beech-Birch Group

Nineteen (19) acres (2% of the forested acres) are classified in the Maple-Beech-Birch Group. A three-acre sugar bush is sugar maple/ beech/ yellow birch cover type. It may be managed to improve the sugar bush in the future. It is a fertile, moist site dominated by sugar maple. The red maple/upland cover type is usually a result of manmade conditions, such as repeated cuttings, and is dominated by red maple and a variety of northern hardwood associates. In this Block, red maple/upland sites are in old field areas.

Exotic Softwoods Group

Fourteen (14) acres, or 2% of the forested acres, are classified in the Norway spruce cover type. These are plantations, likely planted in the 1920s and 1930s. They are overstocked and declining. A storm damaged these stands in 2020. Eleven acres are scheduled to be thinned.

Oak-Pine Group

The 8-acre parcel on Route 254, Stand 2-23, makes up 1% of the forested acreage of the Block. It is white pine/ northern red oak/ white ash cover type. This cover type indicates fertile, well-drained soils. This stand is an Old Forestland Management Site.

White-Red-Jack Pine Group

Less than 0.5% of the forested acreage, or 3 acres, is eastern hemlock forest type in Stand 2-6. The stand is inaccessible.

d. Forest type, size class and condition class on areas to be managed

Table 3. Forest cover type, size class, and condition class in areas to be managed.

Forest Cover Type and Size Class in Areas to be Managed					
Forest Cover Type	Size Class	Irregular Shelterwood	Thinning	No Scheduled Activity	Total
Black Walnut	Pole	0	0	2	2
Chestnut Oak/Black Oak/Scarlet Oak	Saw	0	0	14	14
Northern Red Oak	Saw	51	0	95	146
Norway Spruce	Saw	0	11	3	14
Red Maple/Uplands	Sapling	0	0	5	5
	Saw	0	0	7	7
Sugar Maple/Beech/Yellow Birch	Saw	0	0	3	3
White Oak/Red Oak/Hickory	Saw	0	0	10	10
Total		51	11	139	201

e. Forest health

a. Understory concerns

The dense canopy in mature forest stands is limiting regeneration of tree species. Mountain laurel dominates the understory in some stands.

The deer population in Connecticut has been stable over the past several years, based on DEEP Wildlife Division estimates. Deer browse can be expected in this Block and can impact regeneration by limiting the composition and quantity of tree seedlings after disturbances to the overstory.

b. Invasive exotic plants

Non-native invasive plants are present, primarily in wetland areas, old fields, and along roads and trails. These include Asian bittersweet (*Celastrus orbiculatus*), Japanese barberry (*Berberis thunbergii*), Japanese knotweed (*Reynoutria japonica*), winged euonymus (*Euonymus alatus*), multiflora rose (*Rosa multiflora*), Japanese stiltgrass (*Microstegium vimineum*), Chinese privet (*Ligustrum sinense*), and autumn olive (*Elaeagnus umbellata*), among others.

Before harvesting activities, invasive species will be located, identified, and controlled. Invasive exotic plants can limit tree regeneration, displace native species, or impact existing trees and other

vegetation by girdling or smothering them.

c. Insect and disease concerns

Emerald ash borer (*Agrilus planipennis*) was discovered in Litchfield and Thomaston in 2014. This Block does not have a significant white ash component, but all mature ash trees are declining or dead.

Spongy moths (formerly gypsy moths) (*Lymantria dispar dispar*) impacted the oak forest in the past and populations have been observed defoliating nearby forests in Litchfield in 2023. If the spongy moth population increases in the future, the forest could be severely impacted because of the large oak component.

Hemlock elongate scale (*Fiorinia externa*) and hemlock woolly adelgid (*Adelges tsugae*) are present in the Block but are not causing significant mortality. Eastern hemlock is found in isolated stands and scattered throughout the Block.

Other forest pests may cause damage over limited areas at various times, but they are not usually a threat to forest health. Exotic diseases include beech bark disease, a complex of a scale insect and *Nectria* fungi, which can damage and kill American beech trees, and chestnut blight (*Cryphonectria parasitica*). *Nectria* canker is a fungal pathogen that affects many species. In this Block, it primarily infects birch species, resulting in large cankers on the tree and overall declining health.

Beech leaf disease (BLD), associated with the nematode *Litylenchus crenatae mccannii*, was identified in areas around the Northfield Block in 2020 and is now impacting beech trees across Mattatuck State Forest. BLD can lead to beech decline and death.

d. Weather-related damage

In 2020, a storm damaged the spruce/pine plantations in this Block (Stands 2-8a, 2-8b, and 2-8c). Many of the trees were broken or blown over.

Other weather events, including ice storms, strong thunderstorms, heavy rain or snow, and drought, can impact individual trees or stands. Drought is occurring more frequently, and drought-stressed trees are more likely to succumb to a secondary pest or pathogen.

e. Disturbance Regimes (Fire)

Historical fire regimes from charcoal production resulted in the current oak-dominated forest. Fires are no longer common in this area.

Forests with a diverse mix of species and age classes will be more resilient to future insects, fungi, pathogens, weather events, and a changing climate. Management will also include invasive plant control to reduce competition with desired species.

I. Silvicultural Strategies and Climate Change Mitigation

a. Forest Carbon Science

a. Carbon Sequestration and Storage

Carbon sequestration is the process of removing carbon from the atmosphere (in the form of carbon dioxide) during photosynthesis to make sugar. Trees use sugar to grow and make cellulose and lignin, the building

blocks of wood. Wood is found in the trunks, branches, and roots of trees. Wood is stored carbon. In the northeastern United States, carbon sequestration typically peaks when forests are young to intermediate in age (30-70 years old), but they continue to sequester carbon through their entire life.

Carbon storage is the amount of carbon retained in the forest. Carbon is found in live tissue above and below the ground, dead wood, leaves and needles, and soil organic matter. In the northeastern United States, storage levels increase with forest age and typically peak when forests are old (about 200 years).

As forests get older, their overall growth slows as the trees compete for sunlight, water, and nutrients in the soil. As trees die, carbon is released back into the atmosphere. In an older forest, the overall amount of stored carbon, while still increasing, eventually levels off.

Older forests have higher carbon storage and lower sequestration than younger forests. But older forests are generally more susceptible to damage from hurricanes, drought, insects, and diseases. Older forests with late successional characteristics such as complex stand structure, accumulation of dead, woody material, and many large, old trees can provide biodiversity benefits.

Younger forests have lower carbon storage and higher sequestration. They grow faster and provide biodiversity benefits in that many wildlife species of greatest conservation need in Connecticut require early successional or young forests to survive. The populations of birds such as blue-winged warblers, chestnut-sided warblers, towhees, whip-poor-wills, and woodcocks are declining because of a lack of young forest habitat in Connecticut. New England Cottontail, our only native rabbit, also requires thickets of young forest to survive.

Passively managed forests, while important for many reasons, may be less resilient to disturbances. Carbon emissions from unmanaged forests can be greater than from managed forests if the unmanaged forests are experiencing high rates of mortality, such as after tropical storms, infestations of spongy moth, emerald ash borer, hemlock woolly adelgid, and beech leaf disease.

Forest management, including timber harvesting, is consistent with the goals of promoting long-term carbon sequestration and storage. Younger, faster growing stands sequester carbon at a higher rate, while older stands store more carbon. Managing for complex forest structure, such as maintaining stocking of large trees while also providing growing space for younger trees, can promote higher rates of stand-level carbon sequestration and storage. In addition, the durable wood products resulting from the harvests in this plan will store carbon for a long time.

Carbon “leakage” is the shift of carbon emissions from one place to another. When the wood we use in Connecticut is not grown and harvested here, it must come from someplace else, with potentially greater environmental impacts.

b. Carbon Storage Estimates

The Simple Basal Area to Tons of Carbon Estimator from the Massachusetts Department of Conservation and Recreation, made available by the Securing Northeast Forest Carbon Program, was used to estimate current carbon stored in the Northfield Block. Carbon storage varies across stands based on average basal area measurements. Forests are dynamic, and the carbon estimates only capture a snapshot in time.

Removal of live trees during management will reduce stored carbon in the forest. Some of the carbon will

continue to be stored in durable wood products. Carbon sequestration will gradually increase as new trees grow and trees retained in managed areas will sequester carbon at a faster rate when competition for resources is reduced. Areas of the Block that are not managed will continue to slowly sequester and store carbon.

See [Connecticut's 2020 Forest Action Plan](#) for more information about forest carbon in Connecticut.

b. Forest Resilience

Forest resilience is the capacity of a forest to withstand, and recover from, climatic events, trends, and disruptions. Disturbances can include forest fires, severe weather, insect infestations, disease outbreaks, invasive plants and animals, and insufficient regeneration because of deer.

Resilient forests are diverse forests, made up of many species of trees, of many ages, across the landscape, not just on each acre or in individual stands. Having a variety of forest conditions over time and space can provide the largest range of benefits, including carbon and resilience.

a. Salvage Guidelines

Forest insect infestations and disease outbreaks can lead to widespread mortality. Acting quickly to carry out salvaging operations can potentially limit their spread, helping prevent widespread biodiversity loss.

A timber salvage may occur when there is a widespread and imminent threat to the health of a given stand, and if harvesting individual trees would be effective at halting the spread of the pest/pathogen. This could include pre-salvaging white ash to slow emerald ash borer spread, or pre-salvaging oak if an outbreak of spongy moth occurs. Harvesting timber preemptively may improve the vigor of the trees left behind, increasing their chances of survival, and begin to regenerate the stand. Salvaging dying trees can store carbon in durable wood products, leaving less material to decay and release carbon dioxide in the forest. Salvaging also captures economic value that would otherwise be lost.

b. Encouraging Mature Forest Growth

A forest with a variety of stands of different age and size classes will be resilient. Mature forest is characterized generally by older trees that contain significant structure in all strata of the forest, a higher diversity of tree ages, species, and sizes, and a higher component of dead trees. This type of habitat can be achieved by both allowing a forest to mature on its own as long as it is healthy and has the right species mix, or by using single tree and group selection techniques to open up small gaps throughout a younger forest to accelerate the development of these features.

In the Northfield Block, a majority of the forest is considered mature. Approximately 512 acres will remain or become mature forest due to inoperability, inaccessibility, or designation as an Old Forestland Management Site.

c. Expectations: Next 100 years in Succession

Future forest conditions can be projected with modeling and by observing what trees are growing in the understory. Red oak is a major component of at least 67% of the forested area in the Northfield Block based on cover type but will be less common in the future forest. Oak dominates this landscape because of the land use history. Frequent fires and harvests for charcoal production favored oak regeneration. Trees such as black

birch and red maple regenerate more easily, grow more quickly, may not receive as much deer browse impact, and will likely outcompete oak in the future in many unmanaged stands. Heavy cuts, such as the irregular shelterwood planned for Stand 1-8, provide better conditions for oak regeneration.

d. Management System Guidelines

A balance of management strategies will be applied to this Block.

- 72% of the forested acreage will be passively managed.
- 28% of the forested acreage will be actively managed.
- 9% of the forested acreage to be will be managed during this management period.
 - Even-aged Regeneration– 51 acres
 - Even-aged Thinning – 11 acres

A 100-year rotation will be applied to all stands managed on an even-aged basis. Stands to be managed on an even-aged basis are Oak-Hickory and Exotic Softwoods.

Stands that will be managed in the future on an uneven-aged basis will contain three distinct age-classes and use a 20-year cutting cycle between stand entries.

e. Sustainability

The silvicultural work plan in this document will guide forest management in the Northfield Block for the next 10 years. The work plan is based on stand accessibility and stand-level observation and inventory analysis.

The Northfield Block has 201 acres that have the potential to be actively managed. From 2023 to 2033, 62 acres are scheduled for even-aged management of the 175 acres that may be managed using even-aged methods. With a 100-year rotation, forest regeneration treatments occur on 1.75 acres per year, or 17.5 acres over the 10-year planning period.

The plan calls for 51 acres of treatments to promote regeneration in one stand and 11 acres of thinning in 2 stands. Even-age treatments that could take place in active stands during the next planning period (2034-2044) may not occur due to access limitations.

f. Silvicultural Practice and Treatments

Silviculture is the art and science of controlling the establishment, growth, composition, health, and quality of forests to provide the benefits that society values on a sustainable basis. These include wood, clean air, clean water, and wildlife habitat. Active forest management is accomplished by applying site-specific silvicultural treatments at the stand-level. Every commercial forest product harvest occurring on State land has a corresponding silvicultural prescription written by a certified forester and designed to achieve a broader goal regarding the growth or reproduction of the forest.

Irregular shelterwood silviculture is the regeneration method that will be used in Stand 1-8. This treatment is intended to regenerate new age-classes of forest while maintaining high levels of horizontal and vertical structural diversity. In an oak-dominated stand, this method should encourage oak regeneration.

Thinning is prescribed in Stands 2-8a and 2-8b. This treatment is aimed at maintaining full stocking and

increasing growth rates of the residual trees. These stands are currently overstocked plantations that have been damaged significantly by weather events.

g. Adaptive Forest Management

The Division of Forestry understands the nature of forest management occurs as part of a dynamic landscape. Management actions are often affected by outside variables which influence the outcome of resource decisions. The Division of Forestry reserves the right to reasonably change our management approach as environmental change and resource needs warrant. Some of these changes may be associated with biological factors such as insects and diseases. Increased unauthorized motorized recreation which erodes trails and roads may require action unforeseen during the composition of this plan. Additionally, environmental conditions such as hurricanes or record-breaking precipitation may affect resource condition and work requirements. The Division of Forestry and our colleagues in Parks, Wildlife, Fisheries, and District Operations, evaluate circumstances and use an adaptive management philosophy and additionally reserve the right to address unforeseen circumstances should they arise during the tenure of this forest management plan.

J. Wildlife Habitat

a. Current Habitat Diversity

The Northfield Block provides a significant patch of unfragmented sawtimber-sized forest for interior forest dwelling wildlife. The fourteen acres of Norway spruce and 3 acres of eastern hemlock are valuable evergreen habitat components. With the decline of eastern hemlock across the landscape due the invasive hemlock wooly adelgid and hemlock elongate scale, these stands add evergreen habitat to a mostly deciduous forest. These areas may be valuable for winter roosting or migration stopover for species like the northern saw whet owl or long-eared owl. When management occurs in the Norway spruce stands, healthy trees will remain to retain this habitat component.

b. Critical Habitat

Several Natural Diversity Database (NDDDB) areas are in or near the Northfield Block (Figure 6.). A preliminary assessment was conducted by the Wildlife Division's Ecological Services Program to identify critical biological resources within the area covered by this plan. A determination was received for the Northfield Block on September 5, 2023. This assessment identified four State-listed species (RCSA Sec. 26-306) that may be found within the Block; one bird and three mammals. One of the mammals is also federally endangered. Management recommendations were provided for each species regarding forest management activities. Several State threatened and endangered species occur within adjacent properties. No areas of mapped Critical Habitat (CT Critical Habitats 2006) are in the Block.

New England cottontail (NEC) is Connecticut's only native cottontail and has declined more than 85% throughout its range in the Northeast. It is associated with young forest habitats and dense understory conditions and is a Species of Greatest Conservation Need (SGCN) in Connecticut and regionally due in part to habitat loss and forest maturation. The Wildlife Division has created Focus Areas that encompass extant NEC populations to better direct conservation efforts such as habitat creation and enhancement. A portion of the Mattatuck SF Northfield Block falls within the Goshen Uplands Restoration Focus Area, delineated based on historic NEC range and suitable habitat conditions. This Focus Area contains an estimated 5,951 acres of suitable young forest and shrubland habitat; but little suitable habitat occurs within the Northfield Block and

NEC have not been documented within the Northfield Block. The nearest known occupied NEC patch is approximately 4.5 kilometers away. Silvicultural treatments that create suitable habitat may sustain existing populations that have yet to be documented or help facilitate dispersal of nearby populations.

American woodcock, another SGNC, is an important migratory game bird that has experienced population declines throughout the northeast due in part to habitat loss and forest maturation. It is associated with young forest and other early successional habitats, and the Wildlife Division has created Focus Areas to help direct conservation efforts such as habitat creation and enhancement where existing environmental conditions are suitable.

DEEP Divisions of Forestry and Wildlife will consider recommendations provided by NDDB when planning and implementing management activities. Silvicultural practices that create early successional forest will benefit some of the listed species occurring on the property. Each harvest operation will obtain a site-specific NDDB review during the planning process. The management strategies to protect the listed mammal species are evolving, and DEEP Wildlife Division biologists and DEEP online resources will be consulted for updates.

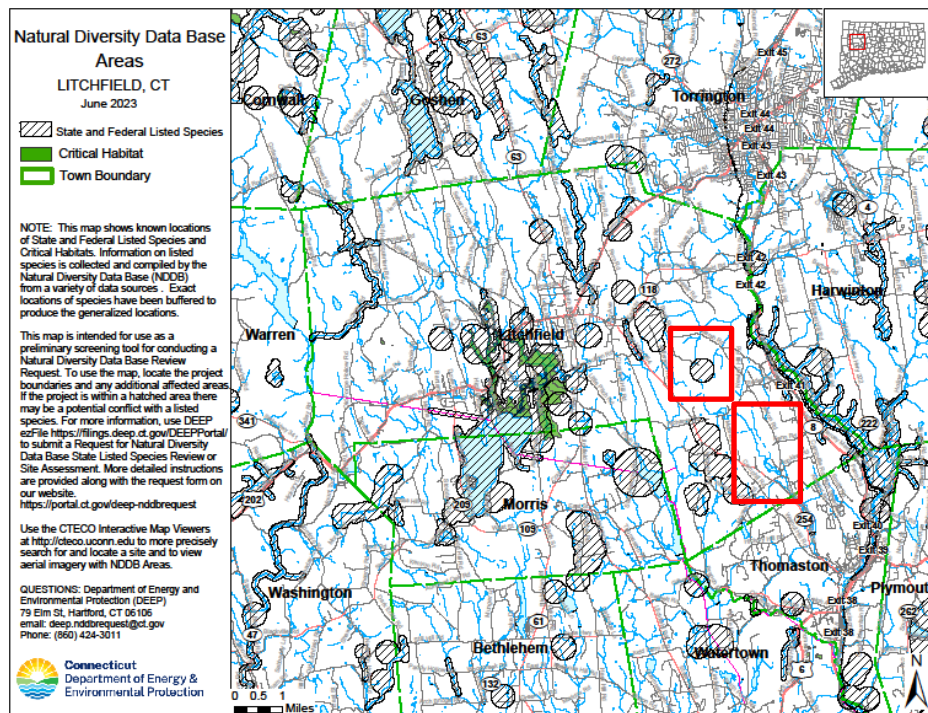


Figure 6. Natural Diversity Database map of Litchfield from June 2023, with the location of the Northfield Block indicated.

c. Habitat in Forestry Operations

Habitat loss is the greatest threat to biological diversity in the region. The Northfield Block provides a stable and protected forested area within an urbanizing part of Connecticut. Wildlife diversity in the Northfield Block and the immediate region surrounding it will benefit from the management of the forest resources. Wildlife diversity can be enhanced through forest management. Research has shown that manipulating tree size-classes promotes wildlife diversity and wildlife utilize a variety of forest size-classes.

There are three known State Endangered mammals, one of which is Federally Endangered, that have been documented nearby and may occur within the Northfield Block. To benefit these species, tree cutting within their range will be carefully planned/ regulated to maintain critical habitat features that provide quality roosting and foraging conditions and reduce impacts. The management strategies to protect these species are evolving.

The known listed bird species is broad-winged hawk (*Buteo platypterus*), a State Species of Special Concern. Its breeding season extends from April 15th to the end of July. It benefits from large, unfragmented forest blocks and diversification of the forest through forest management should not be detrimental. If an active nest is found, any new activity will provide a 660-foot (200-meter) buffer around the nest.

The Northfield Block is located with within NEC and American woodcock Focus Areas. While these are focal species for young forest habitat creation, over 50 SGCN rely on young forest or shrubland habitat. Creating patches of young forest habitat with forest management will benefit these species.

d. Actions needed for Increased Diversity and Critical Habitat

The irregular shelterwood (51 acres) in Compartment 1 will increase sunlight and enhance vertical stratification of the vegetation. The added sunlight will most likely create denser ground, shrub, and mid-canopy vegetation. Berry-producing plants should increase output of blossoms over the next few seasons. Forest practices such as this has been documented to benefit summer, fall, and winter food resources. The thinning (11 acres) in Compartment 2 will also increase sunlight to forest floor and improve vertical stratification. Retaining healthy trees, specifically those that produce hard mast, will benefit harvestable wildlife, especially deer, wild turkeys, and squirrels. Managing these stands for invasive plants as needed will benefit wildlife habitat.

Log landings provide a temporary opening that enhances wildlife habitat for many species, including wild turkeys, American woodcock, cottontail rabbits and beneficial insects (pollinators). Log landings can be seeded with a native herbaceous seed mix to supplement natural regeneration.

e. Hunting and Trapping

The Northfield Block is open to certain forms of regulated hunting, fishing, and trapping. The 8-acre parcel in Thomaston is part of a Designated Deer/Turkey Bowhunting Only Area, where deer and turkey hunting are permitted by archery methods only. This area is also open to small game hunting by archery methods only. The rest of the Block is open to all forms of regulated hunting including small game, waterfowl, turkey, and deer hunting. There are no lottery restrictions for shotgun deer hunting in the Block. Regulated trapping is permitted with a State Lands trapping certificate. Opportunities for passive wildlife-based recreation such as birding, wildlife photography, and wildlife viewing are available year-round throughout the entire property.

(The two areas, totaling over 57 acres, that were transferred from State Park to State Forest have not been officially added to DEEP Hunting maps. The Division of Forestry will work with the Wildlife Division during the this management period to review these areas for inclusion in the hunting maps.)

f. Fisheries Habitat and BMP's

Humaston Brook State Park Scenic Reserve is open to fishing, as are the streams within the Northfield Block.

The DEEP Fisheries Division Riparian Corridor Protection policy recommends a vegetated buffer of at least 100 feet around perennial watercourses and 50 feet around intermittent watercourses

([Policy Statement: Riparian Corridor Protection](#)). This buffer will be maintained wherever possible along watercourses within areas where management is taking place.

K. Recreation

a. Trails

Compartment 1 has no approved trails. In Compartment 2, a trail that originates in Humaston Brook State Park Scenic Reserve uses sections of White Road and Fenn Road Extension that form the border between the State Park Scenic Reserve and the State Forest. Currently, there is not a trail map available for this site. There are also informal trails along old roadbeds and for access to Humaston Brook.

b. Exclusion Areas

Areas identified as Old Forestland Management Sites, forest stands where active forest management may occur, or areas near sensitive sites or unique natural communities are not ideal locations for future recreational development. Requests for the development of trails in these locations will be thoroughly reviewed by the Division of Forestry to protect habitat and wildlife communities and minimize disturbance.

c. Unauthorized / Illegal Activity

Informal and unauthorized trails are used to access unauthorized camping sites and fire rings in this Block. These activities could cause habitat, hydrology, and wildlife disturbances and lead to fire safety concerns.

d. Sustainable Recreation - DEEP Policy/Procedure #310

DEEP Trail Policy #310 Multiple Trail Use Policy for DEEP Properties describes the process necessary to authorize a new trail on DEEP State Land. It describes how trail location decisions may be affected by the land designation on which trails are proposed. Proposed trails must demonstrate that the existing trail network cannot accommodate the stated need. If a proposed trail is deemed to be necessary, the trail will be mapped, an internal DEEP field review will be conducted, and the 'Trail Design and Use Form' will be submitted. If a consensus decision is not reached during field review regarding a trail proposed for a State Forest, the final decision will be made by the Director of Forestry and the Director of Parks in collaboration.

Sustainable trail density guidelines available for the region will be referenced when reviewing new trail proposals to limit trail density to a low to moderate level within the Block.

L. Economic Benefits

According to the report "Forest Products Industries' Economic Contributions: Connecticut" from 2020, Connecticut's Forest Products Industry directly supported 7,730 jobs and had a direct output of \$2.42 billion in 2017. This industry's direct labor income and output was greater than those of commercial fishing, hunting, and trapping; mining, oil and gas production; and plant crop and animal farming in Connecticut combined. Indirectly, Connecticut's forest products industry supported over 16,000 jobs and had an output of \$3.96 billion.

Approximately 7.6% of Connecticut's 2015-2018 average wood harvest of 27.5 million board feet of sawtimber and veneer, originated from State Land. Non-timber forest products, such as firewood and maple syrup, also contribute to the local economy.

M. Public Involvement

The Town of Litchfield Conservation Commission, the Town of Thomaston Inland Wetlands and Watercourses Commission, the Litchfield Land Trust, the Northwest Connecticut Land Conservancy, the Connecticut Land Conservation Council, and the Housatonic Valley Association were invited to review and comment on this management plan in 2023.

Additionally, the DEEP Forestry Division engages in public outreach efforts prior to all timber harvesting in State Forests.

N. Management Goals

- 1. Forest Ecosystem Health and Diversity**
Forest management strategies will be used to improve individual tree health and promote regeneration. Non-native invasive plants will be controlled as needed to ensure that native species can grow.
- 2. Climate Change Mitigation through Sequestration and Storage**
Promoting forest health and balancing higher sequestration rates with multi-aged, complex forest structure featuring high carbon storage.
- 3. Economic Benefits**
Planned harvests on 62 acres will contribute to Connecticut's wood product economy. Harvesting other forest products, such as firewood and sap for maple syrup, provides goods that are sold in the local economy.
- 4. Forest Protection**
Managing Connecticut's State Forests allows threats, such as wildfire, weather events, invasive plants, insects, and pathogens, and unauthorized use, to be addressed. Damaging insects and diseases will be monitored. Establishing access to currently inaccessible areas of the forest will improve DEEP's ability to protect the forest. Infrastructure updates will be completed through collaborations with Parks and District Operations Divisions.
- 5. Wildlife Habitat**
Increasing the amount of young forest habitat while maintaining large areas of undisturbed forest will create a diversity of habitats. Specific habitat requirements for State Endangered Species and Species of Special Concern will be incorporated into forestry operations.
- 6. Increasing Resilience**
Young forest habitat will be created where possible. Old Forestland Management Sites are left to the forces of nature.

Management potential is limited in the Northfield Block because of the amount of inaccessible and inoperable land.

O. Work Plans

Table 4. Work plans for the Northfield Block.

Northfield Block, Mattatuck State Forest Work Plan			
Order of Activity	Scheduled Activity	Forest Stand	Area
1	Thinning	2-8a, 2-8b	11 acres
2	Buell Road Discontinued Section Road Work		2,000 feet
3	Irregular Shelterwood	1-8	51 acres
4	Boundary Line Maintenance		13.7 miles
Evaluate conditions after activities are complete.			

- **Forest Product Permits**
 Stand 2-20 will continue to be tapped for maple syrup production under a forest products permit. Forest product permits for firewood will be administered as requests come in based on availability.
- **Invasive Treatments**
 Invasive plants will be treated in areas scheduled for management activities. In this Block, there is not dense invasive plant cover in areas scheduled for management. There are invasive plants along the discontinued portion of Buell Road that will be addressed when road improvement work occurs.
- **Road Work**
 The discontinued section of Buell Road will be improved for approximately 2,000 feet to access Compartment 2. Road improvement will include grading, drainage installation, and addition of gravel. This project will be completed in collaboration with DEEP’s Parks and District Operations Divisions and neighbors abutting the discontinued section of Buell Road.
- **Other Infrastructure Improvements**
 A gate will be installed at the point that Buell Road is discontinued to prevent unauthorized access. This will be part of the road work project on the discontinued section of Buell Road.

There are 13.7 miles of boundary line, including 1.75 miles of roadside boundaries, that will be maintained. Property boundary surveys will be conducted as needed.

- **Forest Pest and Pathogen Monitoring**
 Areas where BLD is present will be monitored for tree mortality.

 Stands with a large oak component will be monitored during observed spongy moth outbreaks in Litchfield and Thomaston.
- **Hazardous Trees**
 Reported hazard trees will be addressed in collaboration with the DEEP State Park Unit Supervisor based on DEEP hazard tree policies.

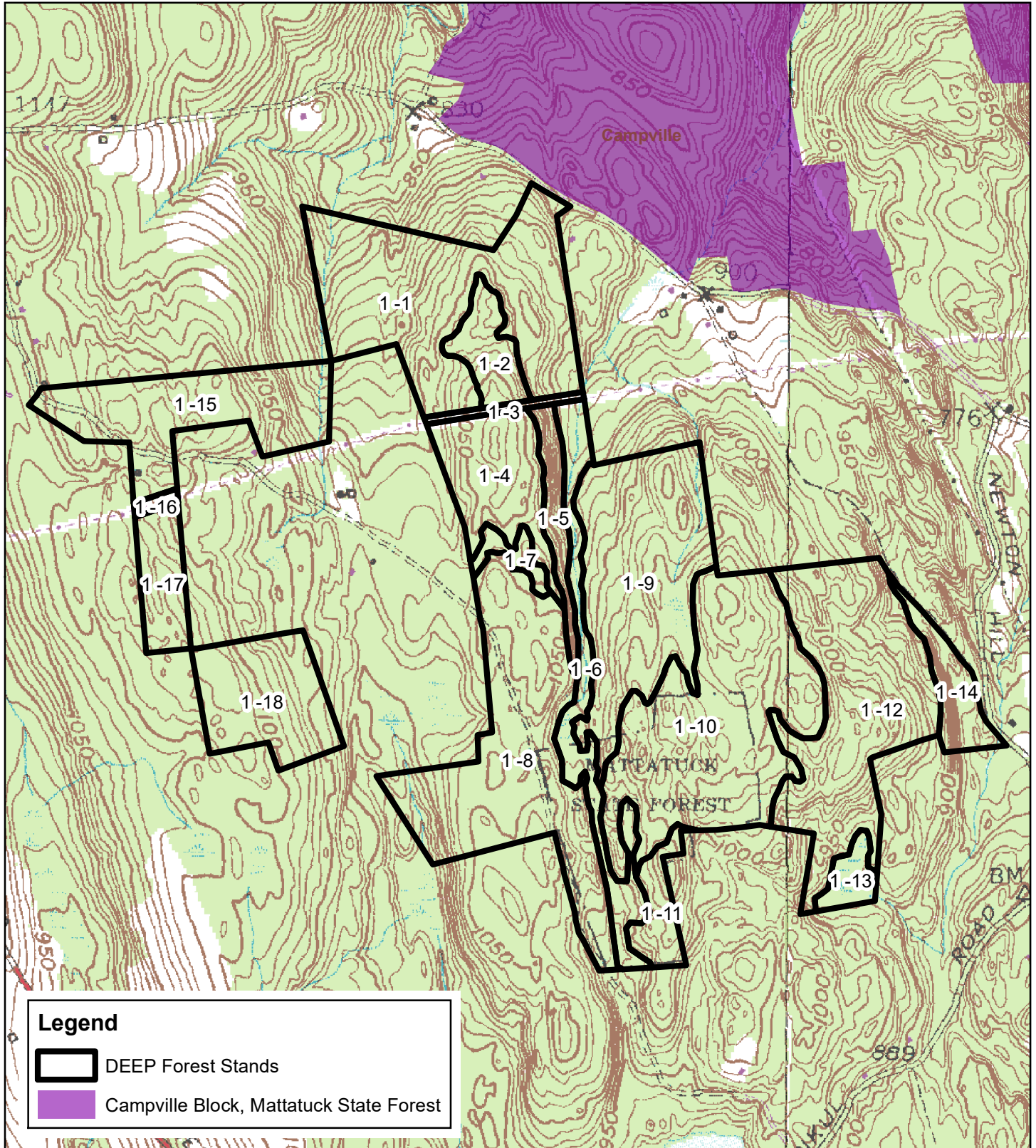
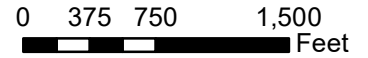


Map A - Topographic Mattatuck State Forest: Northfield Block Compartment 1

Litchfield, Connecticut
382 Acres



June 2023
Prepared by: J. Humphreys



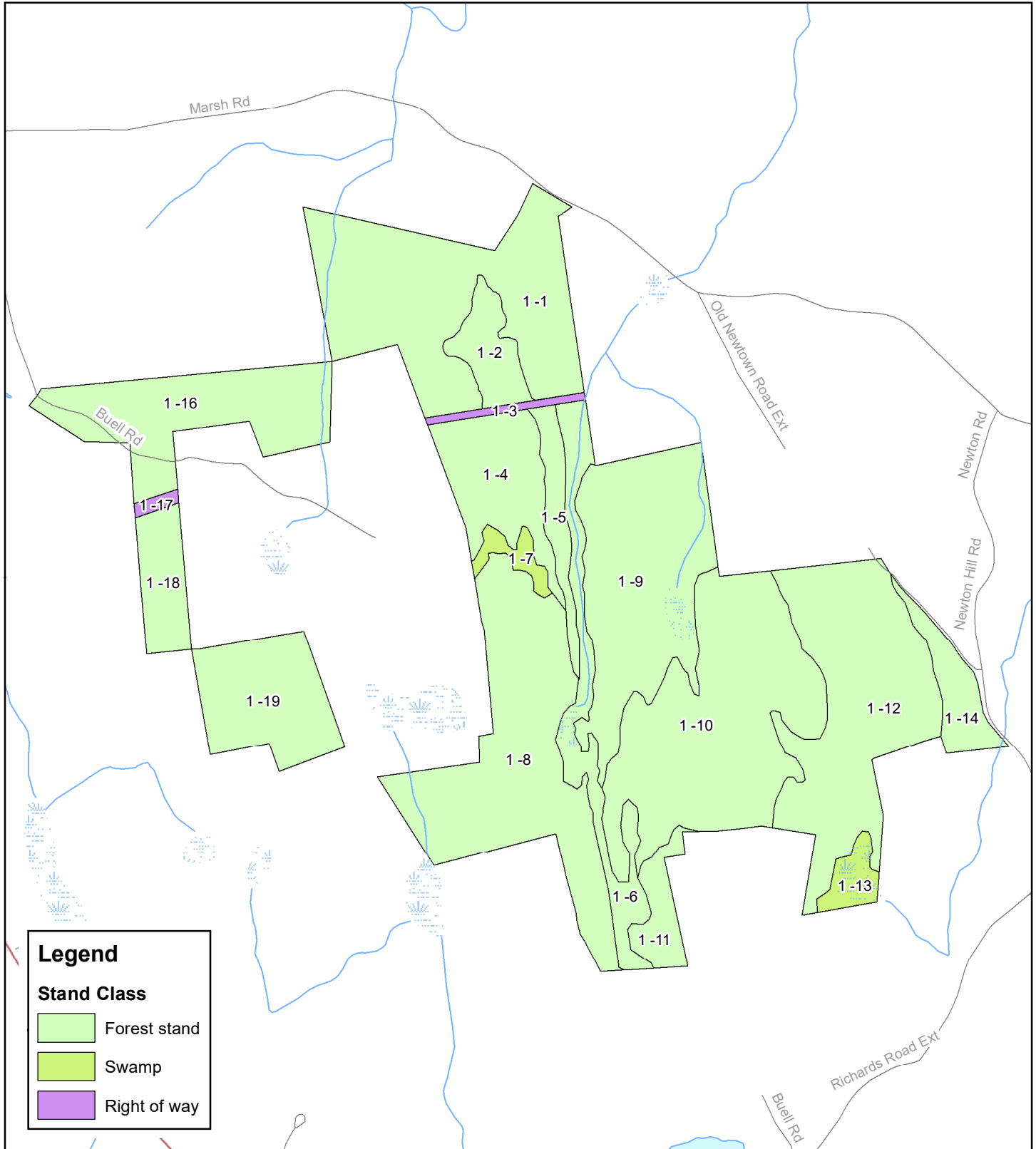
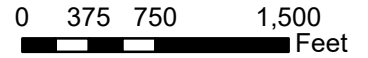


Map B - Base Mattatuck State Forest: Northfield Block Compartment 1

Litchfield, Connecticut
382 Acres



June 2023
Prepared by: J. Humphreys



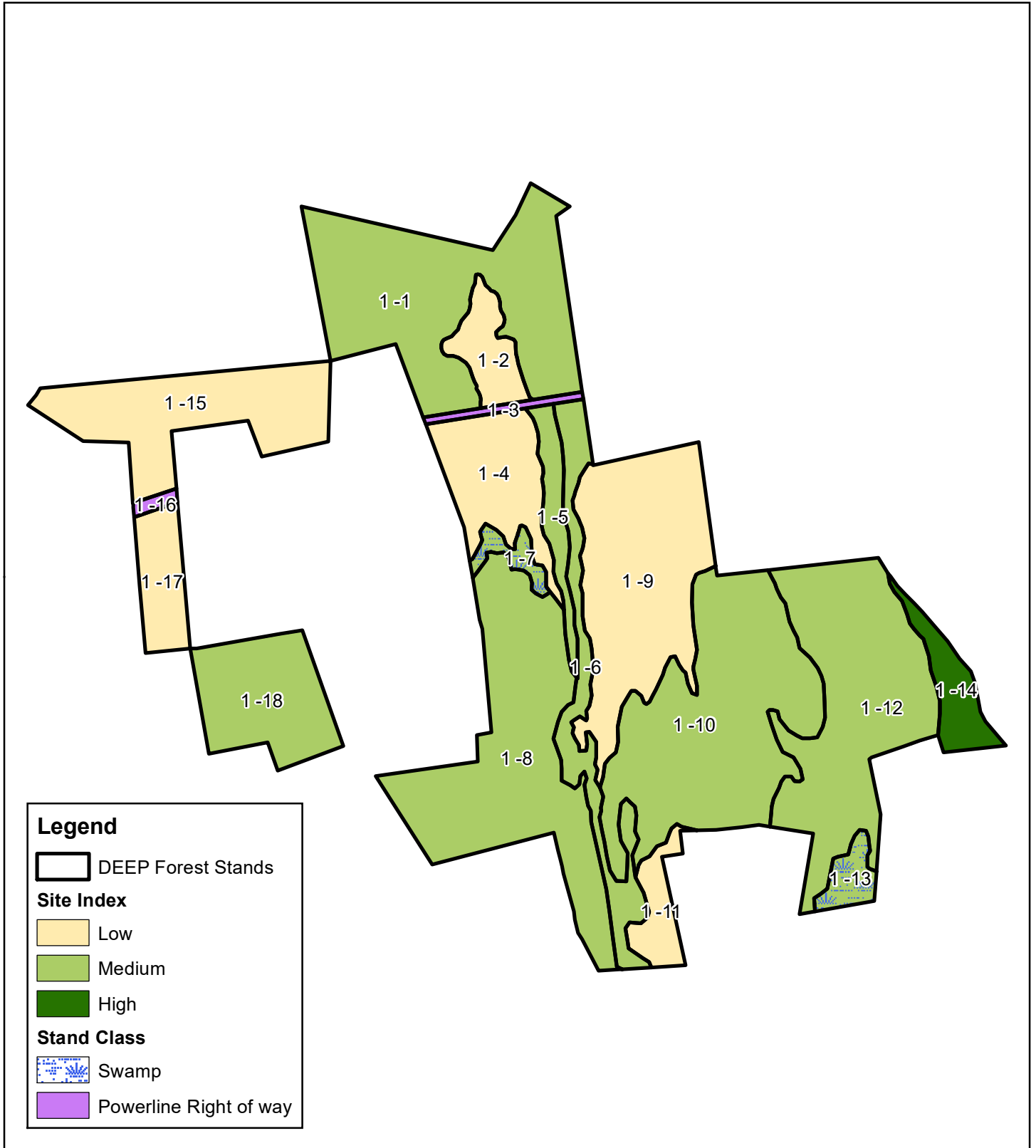
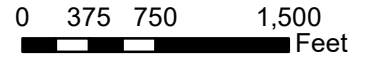


Map C - Site Quality Mattatuck State Forest: Northfield Block Compartment 1

Litchfield, Connecticut
382 acres



June 2023
Prepared by: J. Humphreys



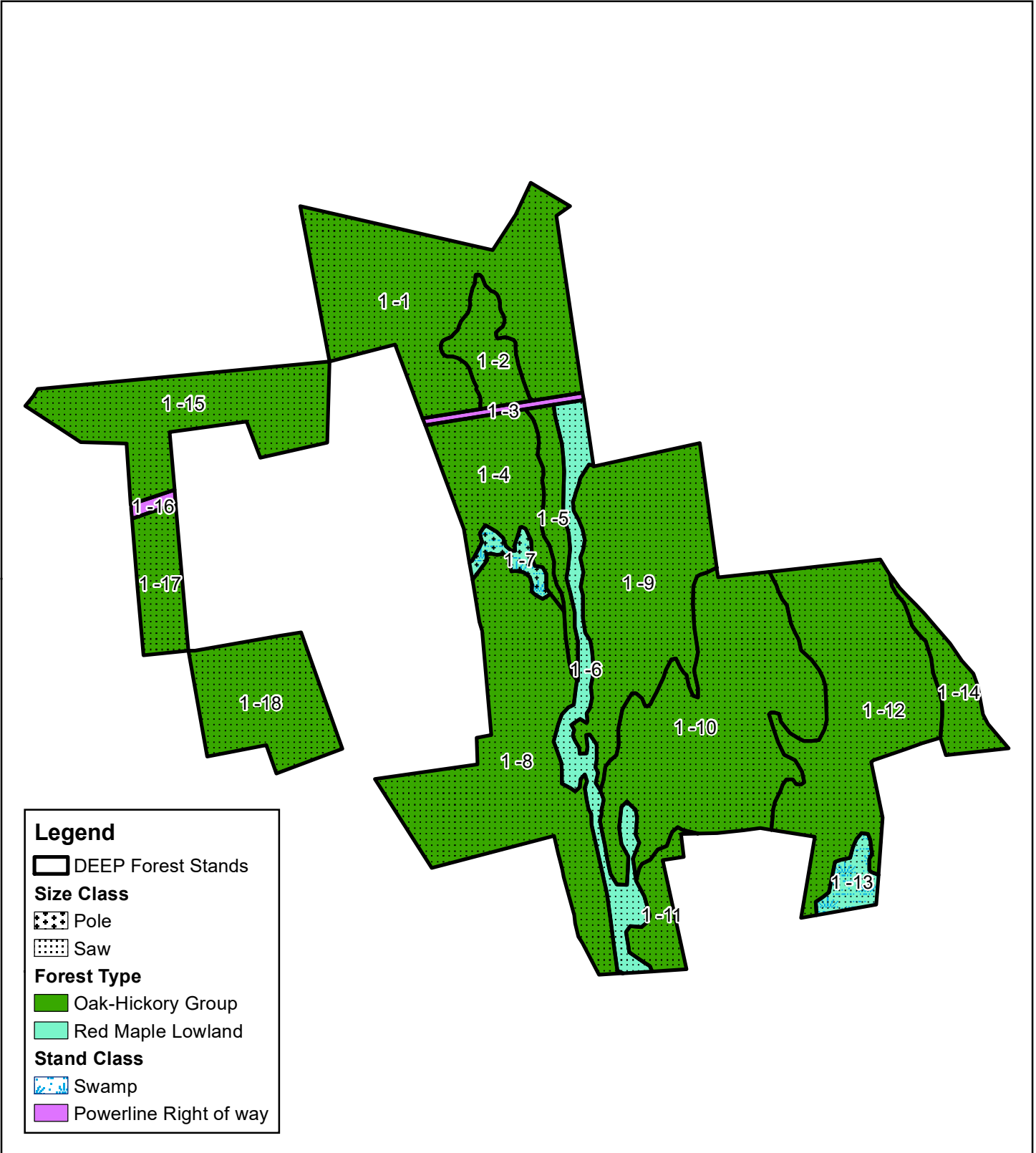
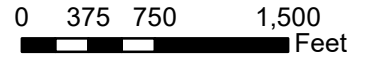


Map D - Forest Type & Size Class Mattatuck State Forest: Northfield Block Compartment 1

Litchfield, Connecticut
382 Acres



June 2023
Prepared by: J. Humphreys



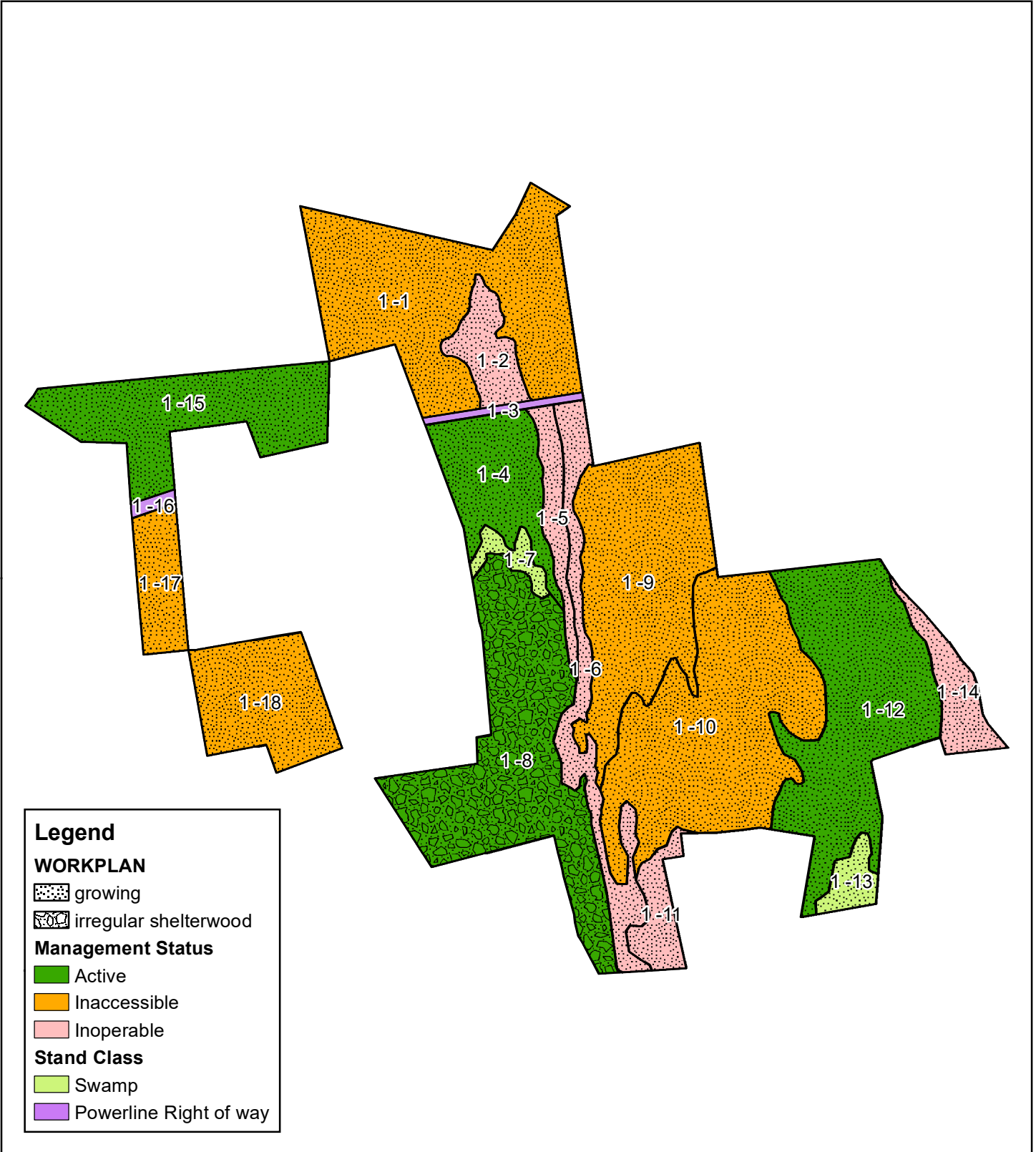
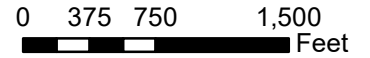


Map F - Work Plan Mattatuck State Forest: Northfield Block Compartment 1

Litchfield, Connecticut
382 Acres



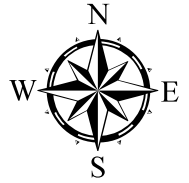
June 2023
Prepared by: J. Humphreys



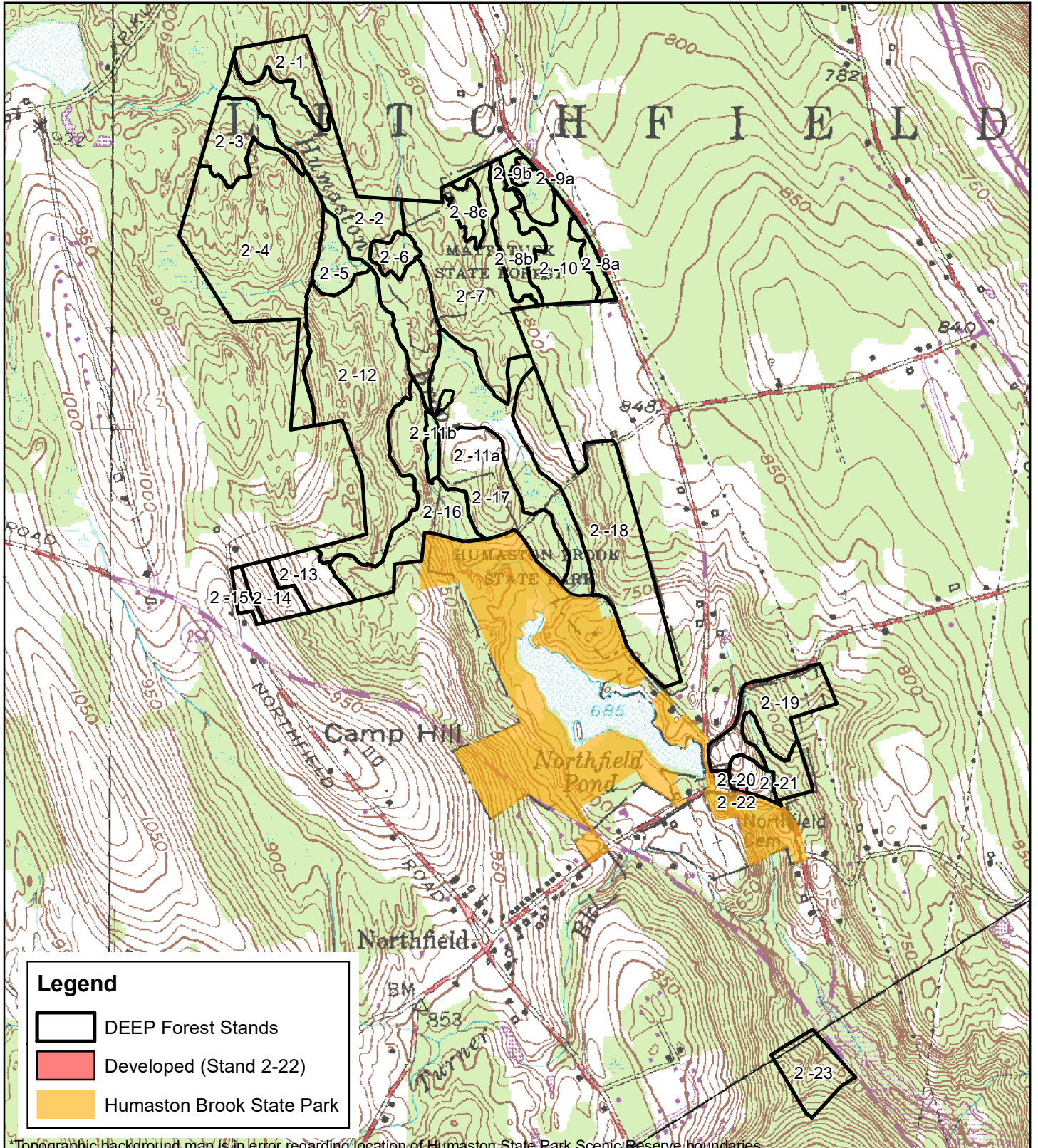


Map A - Topographic Mattatuck State Forest: Northfield Block Compartment 2




Litchfield & Thomaston, Connecticut
341 Acres



June 2023
Prepared by: J. Humphreys



Legend

-  DEEP Forest Stands
-  Developed (Stand 2-22)
-  Humaston Brook State Park

*Topographic background map is in error regarding location of Humaston State Park Scenic Reserve boundaries

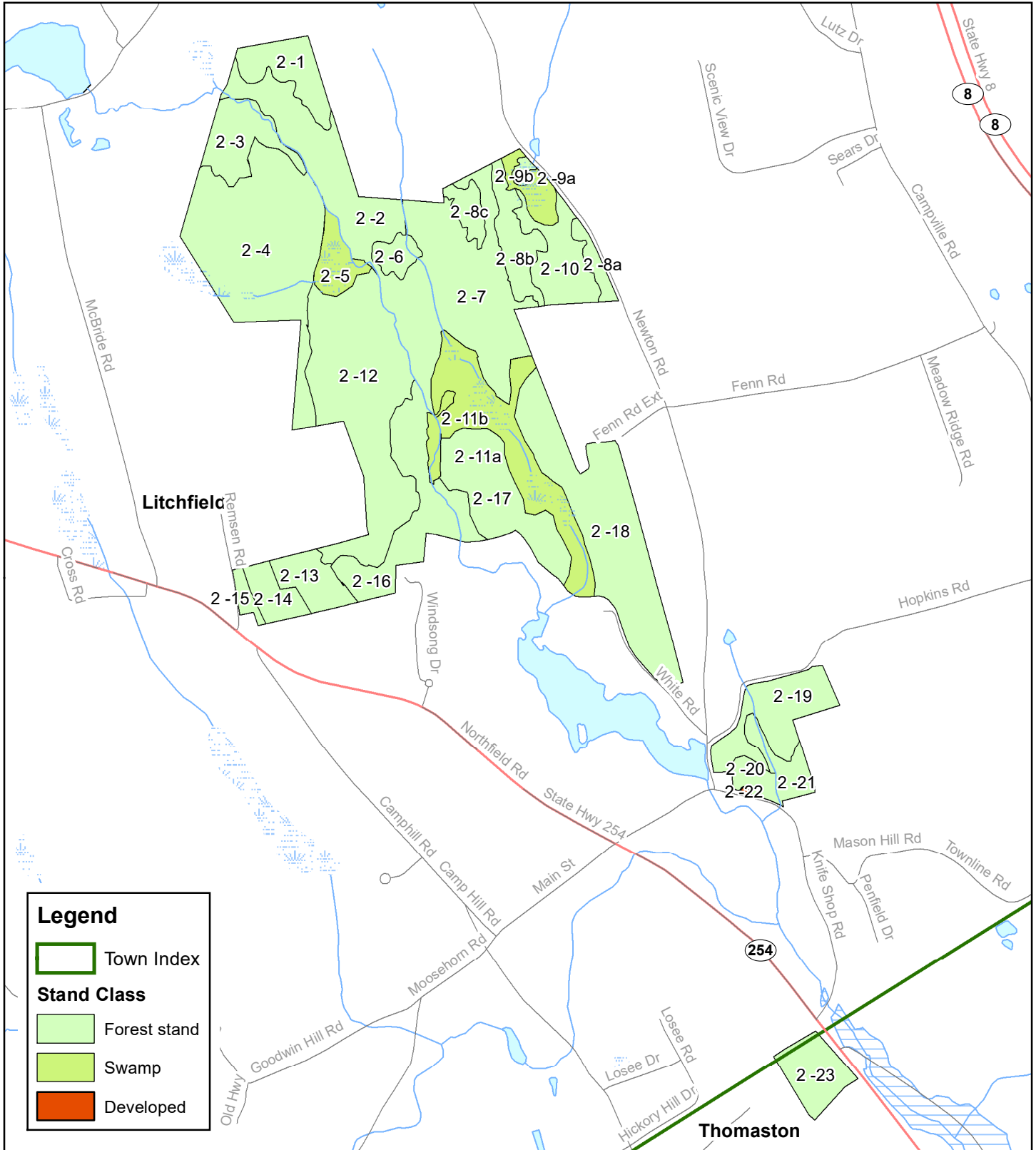
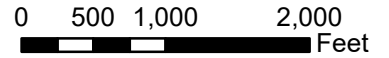


Map B - Base Mattatuck State Forest: Northfield Block Compartment 2

Litchfield and Thomaston, Connecticut
341 Acres



June 2023
Prepared by: J. Humphreys



Coordinate System: NAD 1983 State Plane Connecticut FIPS 0600 Feet

Projection: Lambert Conformal Conic

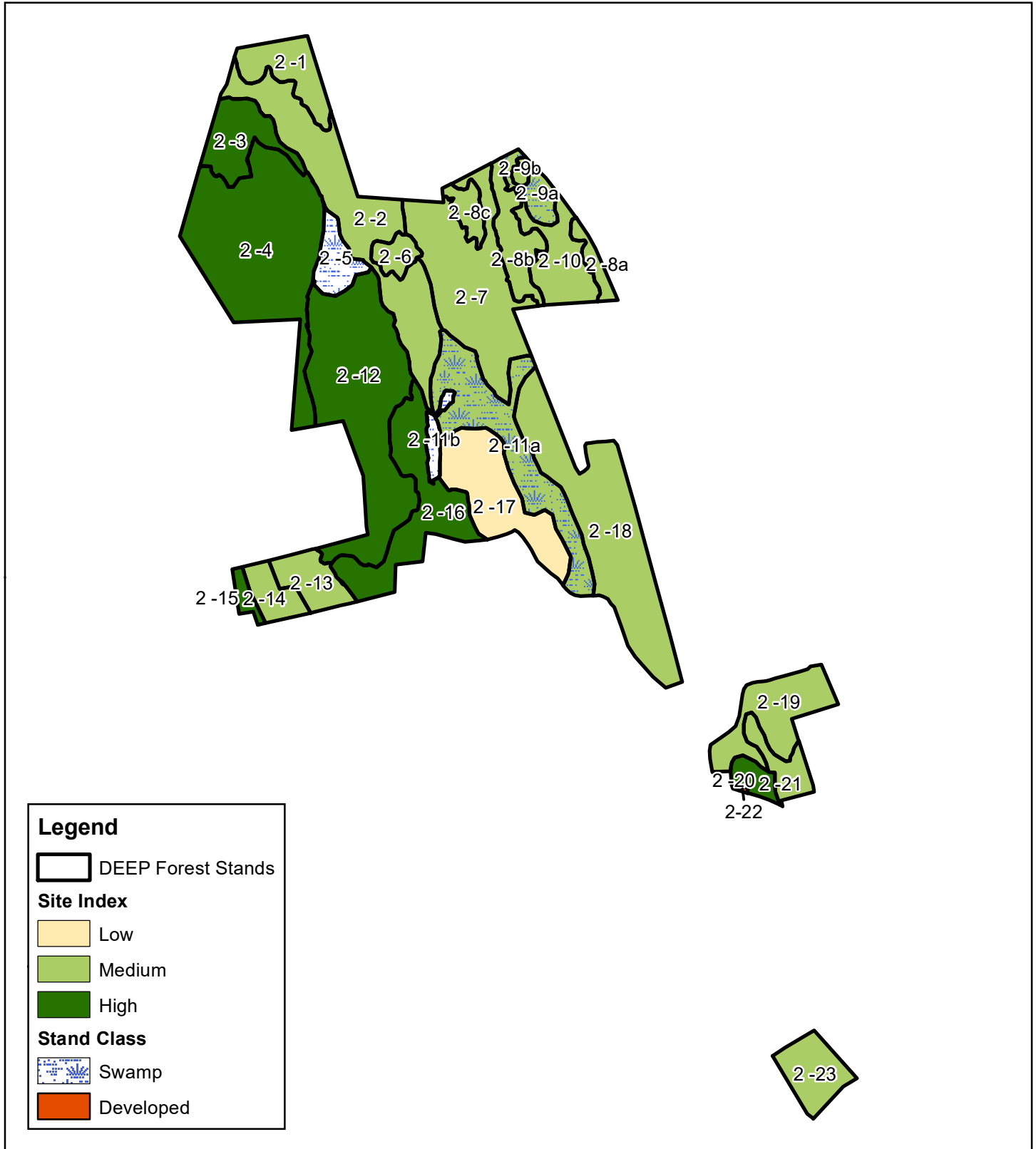
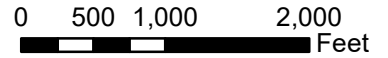


Map C - Site Quality Mattatuck State Forest: Northfield Block Compartment 2

Litchfield and Thomaston, Connecticut
341 acres



June 2023
Prepared by: J. Humphreys



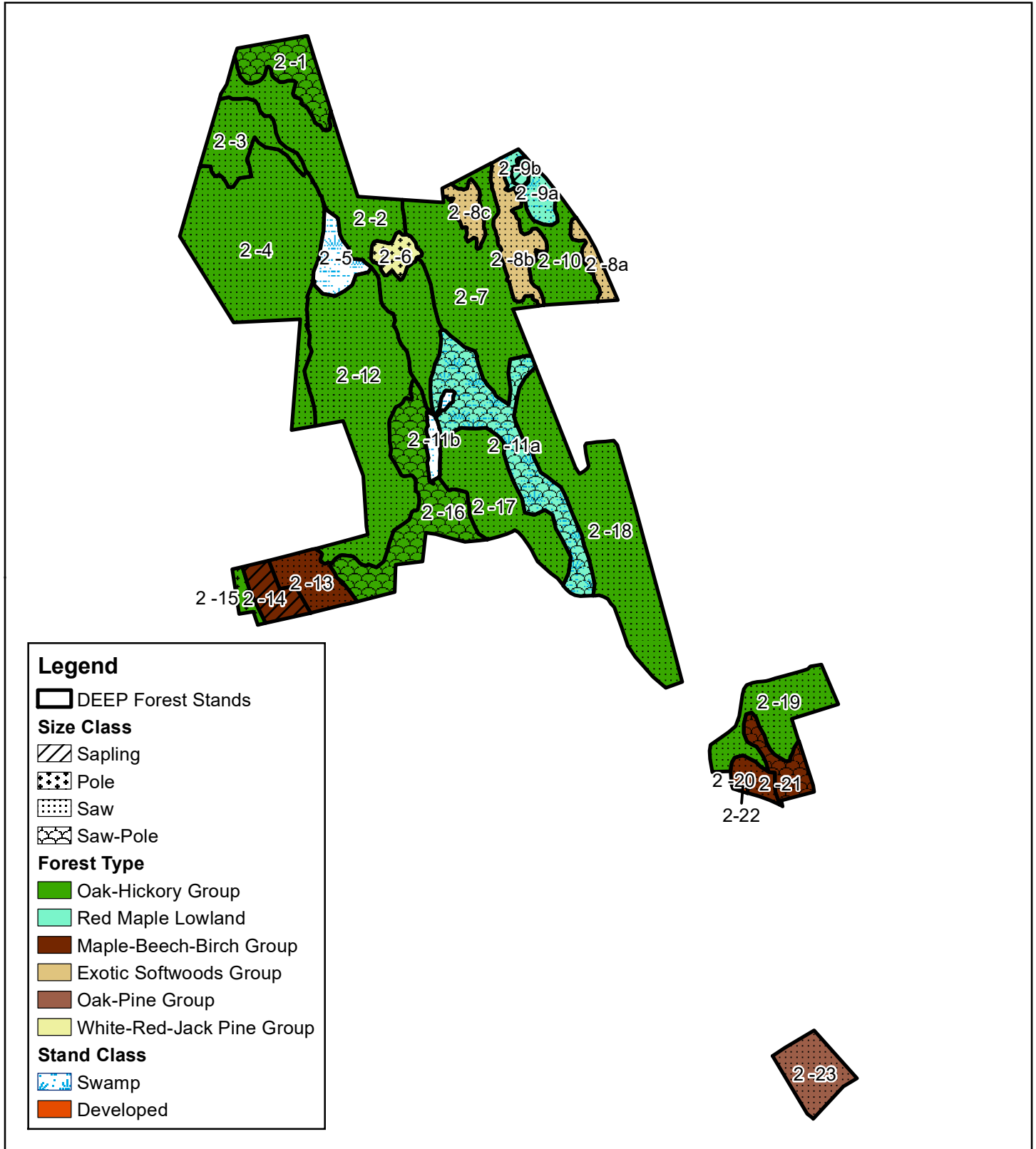
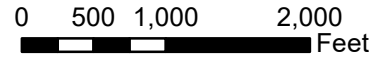


Map D - Forest Type & Size Class Mattatuck State Forest: Northfield Block Compartment 2

Litchfield and Thomaston, Connecticut
341 Acres



June 2023
Prepared by: J. Humphreys



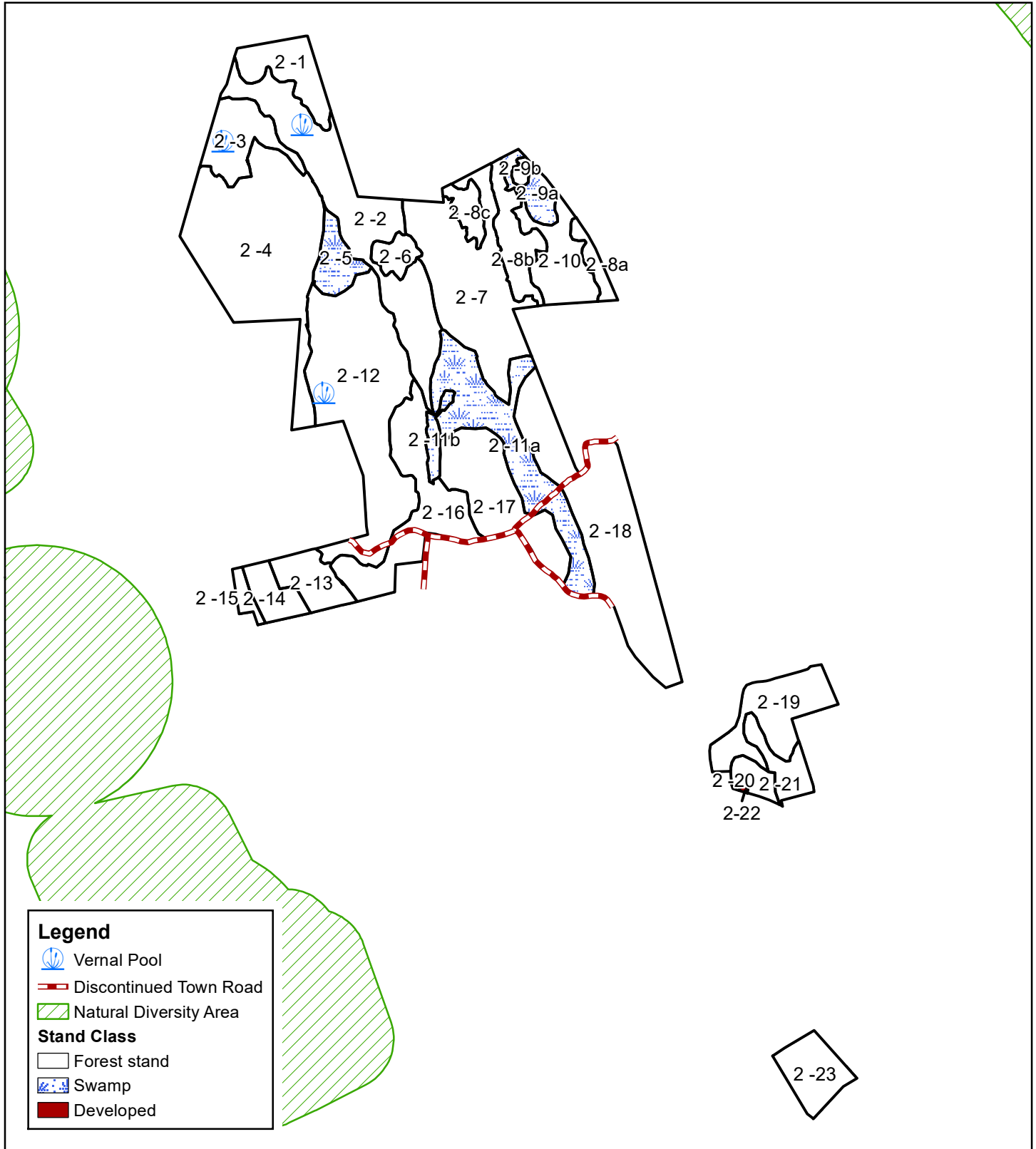
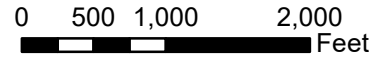


Map E - Special Features Mattatuck State Forest: Northfield Block Compartment 2

Litchfield and Thomaston, Connecticut
341 Acres



June 2023
Prepared by: J. Humphreys



Legend

- Vernal Pool
- Discontinued Town Road
- Natural Diversity Area

Stand Class

- Forest stand
- Swamp
- Developed

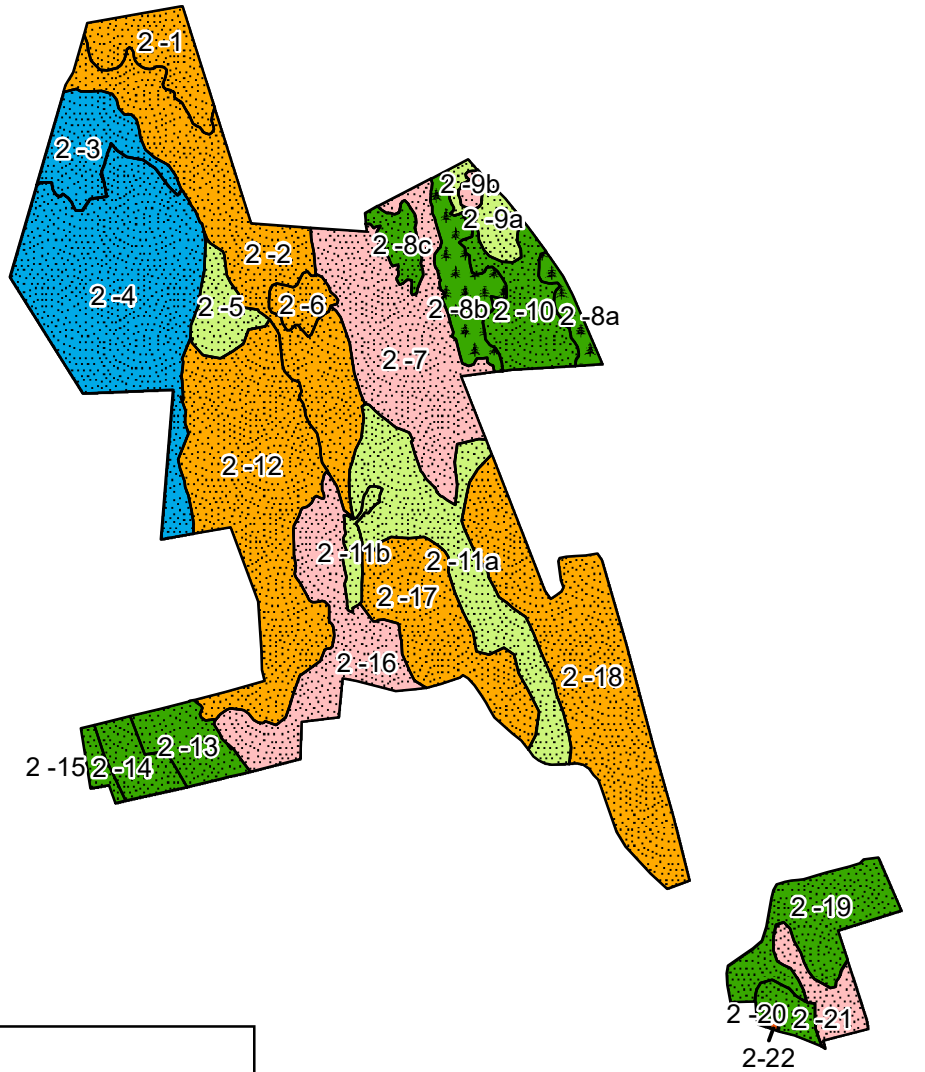
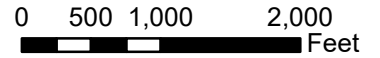


Map F - Work Plan Mattatuck State Forest: Northfield Block Compartment 2

Litchfield and Thomaston, Connecticut
341 Acres



June 2023
Prepared by: J. Humphreys



Legend

Work Plan

- thin
- Growing

Management Status

- Active
- Inaccessible
- Inoperable
- Old Forestland Management Site

Stand Class

- Swamp
- Developed

Appendix A Review and Comments (DEEP and Non-DEEP)

DEEP Western District Review and Comments

Gerard Milne- DEEP Forestry Division

Shalyn Zappulla- DEEP Fisheries Division

Peter Picone- DEEP Wildlife Division

Tammy Talbot and Jared Rice- DEEP Operations and Park Management

Skip Kearns- DEEP District Operations Division

David Nemecek- Connecticut State Environmental Conservation Police

Comments from *District Operations, Fisheries, Forestry* and *Wildlife* are incorporated into the plan.

Other Stakeholder Review and Comments

Connecticut Land Conservation Council

Housatonic Valley Association

Litchfield Conservation Commission

Litchfield Land Trust, Inc.

Northwest Connecticut Land Conservancy

Thomaston Inland Wetlands and Watercourses Commission

Appendix B References

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Appendix C Definitions

This section includes a list of commonly used forestry terms.

Acceptable Growing Stock (AGS) – Trees that meet the landowner’s objectives. Usually this includes saleable trees that are of good form, species and quality and would be satisfactory as crop trees.

Aerial Photo – Photo taken from a position above the earth’s surface, such as a plane or satellite.

Age class – The trees in a stand that became established at, or around, the same time. The range of tree ages in a single age class is usually less than 20 percent of the expected age of that class.

Basal area – The cross-sectional area of a tree’s stem at 4.5 feet above the ground, or breast height. Basal area per acre is often used as a stand metric to determine stand stocking and density.

Best Management Practices (BMPs) – Procedures and treatments that lessen soil erosion, sedimentation, stream warming, movement of nutrients, and visual quality during or following forest management activities.

Biological diversity – The variety and abundance of species, their genetic composition, and the communities, ecosystems, and landscapes in which they occur. Also, the variety of ecological structures and functions at any one of these levels.

Board-foot volume – The volume of wood expressed as the number of boards 1’x1’x1” thick (a board foot or BF).

Carbon dioxide equivalent (CO₂e) – The number of metric tons of carbon dioxide emissions with the same global warming potential as one metric ton of another greenhouse gas.

Carbon sequestration – The process of removing carbon from the atmosphere for use in photosynthesis, resulting in the maintenance and growth of plants and trees. The rate (or amount and speed) at which a forest sequesters carbon changes over time. In the northeastern United States, carbon sequestration (rates) typically peak when forests are young to intermediate in age (around 30-70 years old), but they continue to sequester carbon through their entire life span.

Carbon storage – The amount of carbon that is retained in a carbon pool within the forest. Storage levels increase with forest age and typically peak in the northeastern United States when forests are old (>200 years).

Cutting Cycle – The time interval between harvesting operations when uneven-aged methods are employed using group or single tree selection.

Diameter at Breast Height (DBH) – The diameter of a tree trunk measured at 4.5’ above the ground.

Endangered Species – Any native species documented by biological research and inventory to be in danger of extirpation throughout all or a significant portion of its range within the state and to have no more than five occurrences in the state, and any species determined to be an "endangered species" pursuant to the federal Endangered Species Act (CGS Sec. 26-304).

Forest Product – Any raw material yielded by a forest.

Forest Type – A classification of forests based on species abundance and composition of the overstory, with the overstory defined as all trees in the 1” DBH class and larger. Species composition is based on the proportion of total stand basal area represented by each species or species group. Forest type designations are not assigned to

stands until they grow out of the seedling stage into the sapling class. The USDA Forest Service identifies 140 forest types.

Forest Types mentioned in this plan are:

Chestnut Oak - Associates – scarlet oak, white oak, black oak, pitch pine, red maple, red oak. Sites—rocky outcrops with thin soil, ridge tops. Classified under Oak-Hickory Group in USDA Forest Service Classification.

Chestnut Oak - Black Oak - Scarlet Oak - Associates – northern red oak, white oak, shagbark hickory, pignut hickory, tulip poplar, red maple, Eastern white pine, pitch pine. Site—dry upland sites on thin soiled rocky outcrops on ridges and slopes. Classified under Oak-Hickory Group in USDA Forest Service Classification.

Eastern Hemlock - Associates- beech, sugar maple, yellow birch, basswood, red maple, black cherry, white ash, white pine, paper birch, paper birch, northern red oak, and white oak. Sites—cool locations, moist ravines, and north slopes. Classified under White-Red-Jack Pine Group in USDA Forest Service Classification.

Sugar Maple - Basswood - Classified under Maple-Beech-Birch (Northern Hardwood) Group in USDA Forest Service Classification.

Mixed Upland Hardwoods - Associates – Any mixture of hardwood species typical of the upland central hardwood region, should include at least some oak. Sites- wide variety of upland sites. Classified under Oak-Hickory Group in USDA Forest Service Classification.

Northern Red Oak - Associates- black oak, scarlet oak, chestnut oak, and tulip poplar. Sites—spotty distribution on ridge crests and north slopes in mountains but also found on rolling land, slopes, and benches of loamy soil. Classified under Oak-Hickory Group in USDA Forest Service Classification.

Red Maple - Oak - Associates – the type is dominated by red maple and some of the wide variety of central hardwood associates include upland oak, hickory, tulip poplar, and sassafras. Site—uplands. Classified under Oak-Hickory Group in USDA Forest Service Classification.

Red Maple Lowland - Classified under Elm-Ash-Cottonwood Group in USDA Forest Service Classification.

White Oak - Red Oak - Hickory - Classified under Oak-Hickory Group in USDA Forest Service Classification.

Yellow Poplar - White Oak - Northern Red Oak - Classified under Oak-Hickory Group in USDA Forest Service Classification.

Forest-Type Group – A broader classification of forests created by aggregating similar forest types. The USDA Forest Service identifies 28 groups. The State of Connecticut uses group names found in Connecticut forests.

Forest-type Groups mentioned in this plan are:

Oak-Hickory Group

Pine- Hemlock Group - Subgroup under USDA Forest Service White-Red-Jack Pine Group

Northern Hardwood Group - Maple-Beech-Birch Group in USDA Forest Service Classification.

Invasive species – A non-native species that exhibits an aggressive growth habit and can outcompete and displace native species.

LiDAR – Light Detection and Ranging is a remote sensing method that uses light from pulsed laser to measure distances to the Earth.

Log Rules – Methods of estimating the amount of lumber that can be sawed from logs of given lengths and diameters. The log rule statutorily mandated in Connecticut is the International ¼ -inch Rule.

Mast – Nuts of trees that serve as food for wildlife.

Mature tree – A tree that has reached biological maturity shows declining year-to-year volume growth.

Multiple use (multi-use) trails – Trails not specifically designated as hiking trails, but can be used for multiple forms of recreation including biking or horseback riding.

Native plant – A species that naturally occurs in a given location where its requirements for light, warmth, moisture, shelter, and nutrients are met.

Non-commercial treatment – Any forest management activity that does not produce enough revenue to pay for the costs associated with the treatment.

Nutrient – Elements and other chemical substances that support biological activity.

Old Forestland Management Site– A classification used by the Forestry Division which withdraws forestland from timber utilization for the span of the management plan. It can be continued indefinitely with succeeding plans.

Old-Growth Forests– Forests that were never directly affected by intensive human land use.

Overstocked – A forest stand condition where too many trees are present for optimum tree growth.

Regeneration – The number of seedlings or saplings existing in a stand. The process by which a forest is renewed by direct seeding, planting, or naturally by self-sown seeds and sprouts.

Relative Density – An index of crowding in forest stands, also called the tree-area ratio; a measure of the absolute stand density expressed as a ratio to the density of some reference level. The reference level is usually the stand density of a fully stocked stand for a particular species composition, site, and method of treatment.

Release – To free trees from competition by cutting, removing, or killing nearby vegetation.

Rotation Age – The age at which a stand is considered ready for harvest under the adopted plan of management or the culmination of mean annual increment.

Shade tolerance/intolerance – The relative capacity of tree species to become established and grow in shade.

Silviculture – The art, science, and practice of establishing, tending, and reproducing forest stands with desired characteristics.

Silvicultural Treatments - Different types of cutting methods used to manage a forest for desired outcomes.

Clearcut - Used in even-aged management to regenerate a new forest using seeds already in the soil, seeds brought in from adjacent areas by wind or animals, and/or sprouts from stumps. All stems are removed to provide maximum sunlight for the new forest. Trees such as black cherry, yellow poplar, aspen, and paper birch often regenerate after clearcuts. This method is often used to create early successional wildlife habitat.

Patch cut - Removal of overstory trees to create patches of regeneration within a stand.

Seed Tree - An even-aged silvicultural technique similar to a clearcut but leaves several residual trees per acre to provide a seed source for regenerating target species.

Shelterwood - Used in even-aged management. Understory and lower crown canopy trees are removed to allow the new stand to regenerate in partial sunlight. Trees to be retained are usually of the best quality to

serve as a desirable source of seed. After adequate regeneration is established, the overstory is removed in one or two cuts. Shelterwoods are often used to regenerate species such as oak and white pine that have irregular crops of seed.

Selection harvest - Used in uneven-aged management. Trees are removed singly or in small groups, maintaining a continuous canopy. Selection harvests tend to favor trees that can grow in partial shade such as sugar and red maples, black and yellow birch, beech, and hemlock.

Group selection - An uneven-aged silvicultural technique where trees are removed in groups usually 1/10 to 2/3 acre in size, but sometimes up to 1 or 2 acres on large properties. Group selection can be applied in combination with single-tree selection to create a more varied landscape.

Single-tree selection - An uneven-aged silvicultural technique where trees are removed singly or in groups of 2 or 3, which maintains a continuous canopy and an uneven-aged or uneven-sized mixture.

Thinning - Used in even-aged management to reduce stand density to improve growth and health. The crowns of crop trees are released on at least two sides and preferably three or four sides.

Timber Stand Improvement (TSI) - A thinning made in immature stands to improve the composition, structure, condition, health, and growth of the remaining trees.

Site Index – An expression of forest site quality based on the height of a dominant or co-dominant tree at age 50 (in the eastern United States).

Size Classes – A designation of trees based on their DBH.

Sawtimber - Trees 12-inch DBH (diameter at breast height, or 4.5 feet off the ground) and larger that contain at least one 8-foot sawlog.

Poletimber - Trees between 5 and 11 inches DBH. These trees are too small for sawlogs, but could be sold as pulpwood, fuelwood, or other small products where such markets exist.

Saplings - Trees 1 to 5 inches DBH.

Seedlings - Trees less than 1-inch DBH.

Soil Compaction – The process by which the void space in soil is decreased. Compaction can cause decreased tree growth, increased water runoff and soil erosion.

Species diversity – The number of different plants, animals, and other life forms coexisting in a community.

Species of Special Concern – Any native plant species or any native nonharvested wildlife species documented by scientific research and inventory to have a naturally restricted range or habitat in the state, to be at a low population level, to be in such high demand by man that its unregulated taking would be detrimental to the conservation of its populations or has been extirpated from the state (CGS Sec. 26-304).

Species of Greatest Conservation Need – Species of wildlife, including low and declining populations as each State fish and wildlife agency deems appropriate, that are indicative of the diversity and health of wildlife of the State and are listed in a state's Wildlife Action Plan.

Stand – An area of trees of a certain species composition (cover type), age class or size class distribution and condition (quality, vigor, risk), usually growing on a fairly homogeneous site.

Even-aged stands contain trees in the main canopy that are within 20 years of being the same age. These stands are sometimes designated by age-class (e.g. a 40-year old stand) or broad size-class (e.g. seedling/sapling, poletimber, sawtimber).

Uneven-aged stands contain trees of several 15- to 20-year age-classes. These stands generally contain trees of many sizes (seedlings through sawtimber) due to the range in ages and the differences in growth rates among

species.

Stand condition – The relative number, size, species, quality, and vigor of trees in a forest stand.

Stand density – A quantitative measure of the proportion of area in a stand occupied by trees such as basal area or trees per acre.

Stocking – A subjective indication of stand density that helps determine whether the stand needs to grow further, be thinned, or regenerated.

Sustainable Forest Management – A dynamic and evolving concept, which aims to maintain and enhance the economic, social, and environmental values of all types of forests, for the benefit of present and future generations.

Threatened Species – Any native species documented by biological research and inventory to be likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range within the state and to have no more than nine occurrences in the state, and any species determined to be a “threatened species” pursuant to the federal Endangered Species Act, except for such species determined to be endangered (CGS Sec. 26-304).

Understory – The saplings, shrubs, seedlings, and other vegetation growing beneath the forest canopy and above the herbaceous plants on the forest floor.

Unacceptable Growing Stock (UGS) – Trees of low quality or less valuable species that should be removed in a thinning.

Watershed – An area of land through which precipitation is redistributed into components of the hydrologic cycle, including evaporation, groundwater, and streamflow. A watershed is all the land giving rise to streamflow at a selected point in a stream channel; the area drained by a river or stream and its tributaries.

Wetland – A land/water ecosystem characterized by periodic inundation. The soils are developed under the influence of saturation and support plants and animals adapted to these conditions.