

Salmon River State Forest

Day Pond Block Forest Management Plan



Forest Ecosystem Health & Diversity

The Day Pond Block contains healthy and diverse forest ecosystems of dark hemlock stands, oak/hickory ridges, red maple bottomlands and meandering rivers that provide highly functional, valuable and resilient habitats for plants and animals.



Wildlife Habitat

Salmon River State Forest is within one of three focus areas for the conservation of American woodcock. Management recommendations presented in this plan aim to enhance habitat for this species.



Climate Change Mitigation through Sequestration and Storage

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



Recreational & Health Benefits

The Airline Trail State Park, Salmon River Trail, Day Pond Brook Spur Trail and the CT Horse Council Recommended Trail provide recreational opportunities and a place to explore in a healthy and active way.



Economic Benefits

The following plan outlines timber harvesting activity on 456 acres. Sustainably harvested forest products provide jobs and local goods that are sold in the local economy.



Encouraging Mature Forest Growth

14%, 484 acres, of the Day Pond Block is designated as an Old Forestland Management Site (OFMS) allowing this remote area of the forest to remain unaltered by vegetative management activities. This will encourage mature forest growth within this block of forestland.



Forest Protection

The plan addresses threats such as wildfire, extreme weather events, invasive plants and insects and unauthorized use. Management strategies are outlined for each of these threats to protect this valuable public forestland asset.



STATE OF CONNECTICUT

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION



Bureau of Natural Resources
Division of Forestry

FOREST MANAGEMENT PLAN
2022 through 2032

Salmon River State Forest
Day Pond Block

3,304 Acres

Colchester, Marlborough & East Hampton

Approvals:

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4/11/2022

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Introduction

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

The 2022 – 2032 Salmon River State Forest, Day Pond Block Management Plan incorporates priorities and specific strategies developed for Connecticut’s forests within the [2020 Connecticut Forest Action Plan](#), 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. Protecting forests from threats; and
3. Enhancing public benefits from trees and forests.

The following objectives were considered in the development of the Salmon River State Forest, Day Pond Block Management Plan with considerable site-specific input provided by the DEEP, DEEP partners and various user groups.

1. **Forest Ecosystem Health and Diversity** – The Day Pond Block contains healthy and diverse forest ecosystems of dark hemlock stands, oak/hickory ridges, red maple bottomlands and meandering rivers that provide highly functional, valuable and resilient habitats for plants and animals.
2. **Wildlife Habitat** – Salmon River State Forest is within one of three focus areas for the conservation of American woodcock. Management recommendations presented in this plan aim to enhance habitat for this species.
3. **Climate Change Mitigation through Sequestration and Storage** – Climate change is an important global issue. The management of the Day Pond Block provides the opportunity to sequester and store carbon, through sustainable forest management, in vegetation and long-lived wood products.
4. **Encouraging Mature Forest Growth** – 14 %, 484 acres, of the Day Pond Block is designated as an Old Forestland Management Site (OFMS) allowing this remote area of the forest to remain unaltered by vegetative management activities. This will encourage mature forest growth within this block of forestland.
5. **Recreational/Health Benefits** – The Airline Trail State Park, Salmon River Trail, Day Pond Brook Spur Trail and the CT Horse Council Recommended Trail provide recreational opportunities and a place to explore in a healthy and active way.
6. **Economic Benefits** – The following plan outlines timber harvesting activity on 456 acres. Sustainably harvested forest products provide jobs and local goods that are sold in the local economy.
7. **Forest Protection** – The Salmon River State Forest Day Pond Block management plan addresses threats such as wildfire, extreme weather events, invasive plants and insects and unauthorized use. Management strategies are outlined for each of these threats to protect this valuable public forestland asset.

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

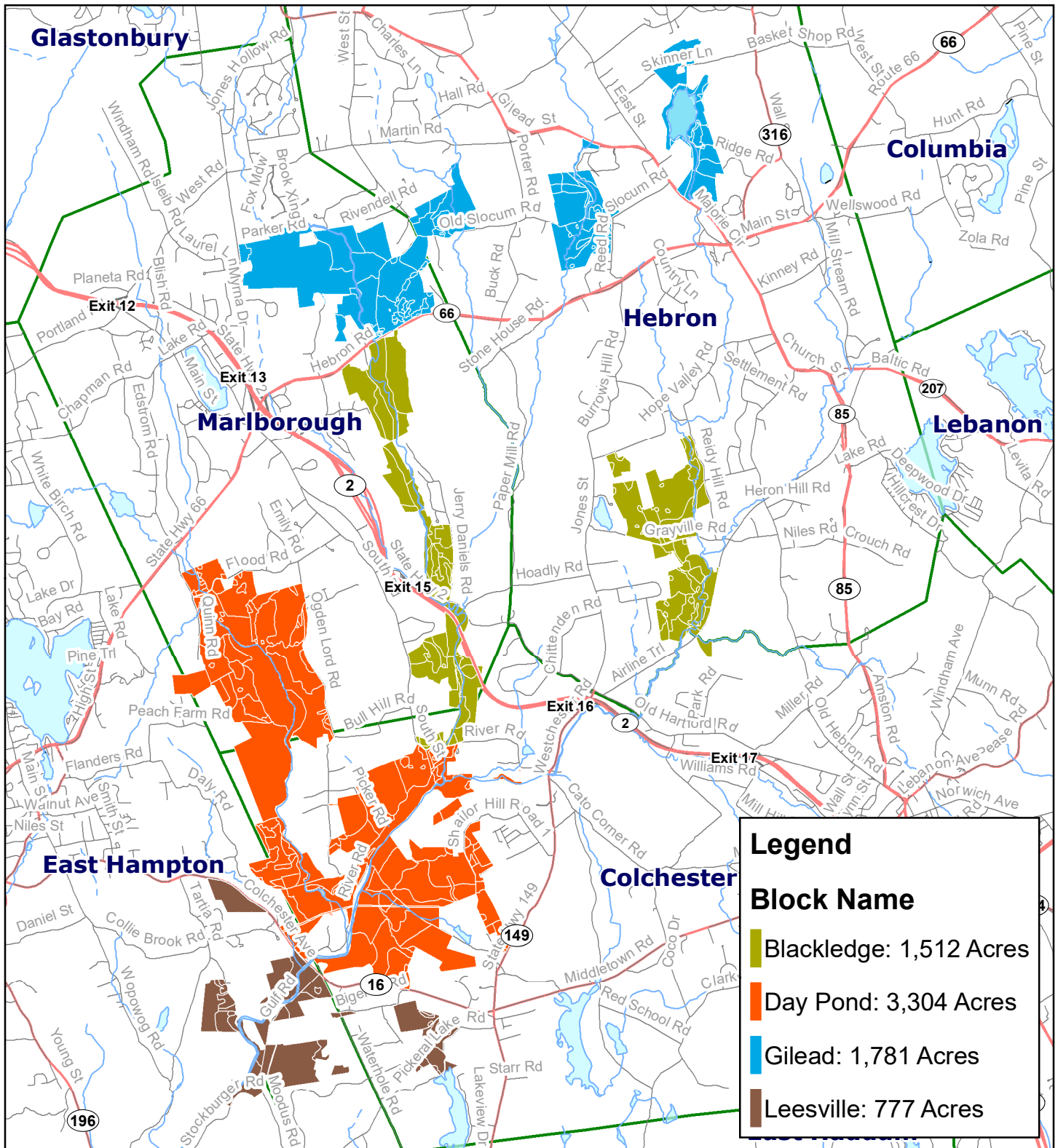
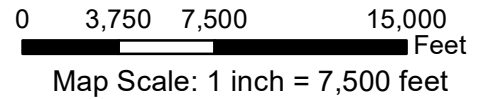


Salmon River State Forest

Location & Division of Forest Blocks



April 30, 2021
Map prepared by: Nathan Piché



Coordinate System: NAD 1983 State Plane Connecticut FIPS 0600 Feet

Projection: Lambert Conformal Conic

A. Executive Summary

The Day Pond Block

The Day Pond Block consists of 3,304 acres of forestland and was named after Day Pond, located within Day Pond State Park to the east of this block of forest (Figure 1.0). This block is one of four different forest blocks located within the Salmon River State Forest. The other forest blocks being known as Blackledge, Gilead and Leesville.

This section of forestland is located within the towns of Marlborough, Colchester and East Hampton, within the counties of Hartford, New London and Middlesex. The block is further divided into eleven compartments. Compartment separations are determined by access and are numbered in a chronological order based on when that particular section of the forest was acquired. Additionally, each compartment is delineated into stands, or individual management units of similar forest composition or site quality, in order to aid in management decisions.

The last forest management plan for Salmon River State Forest was written in 1990. That plan covered the entire forest. Now, individual management plans will be prepared for each block separately in order to even out the flow of forest management tasks and activities over the course of the next management cycle. Since the preparation of the previous management plan, much has changed within this block of forestland: additional lands were acquired, the forest has matured, several areas received silvicultural treatments, and significant insect and disease related issues have been detected. This management plan will focus on both short- and long-term objectives aimed at improving access to the forest for forest management, maintaining and diversifying wildlife habitat, supporting recreational activities and ensuring the long-term health and productivity of the forest.

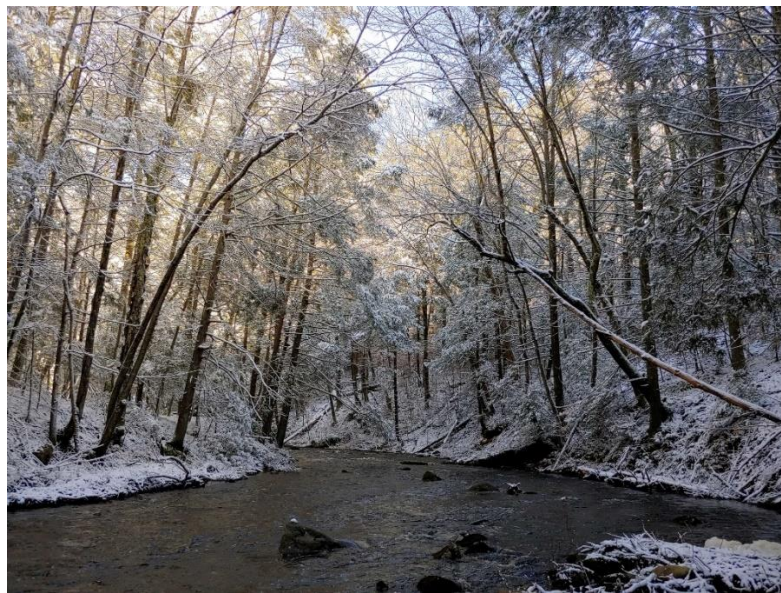


Photo 1.0. Photo of the Dickinson Creek on a cold winter's morning flowing through Marlborough, CT within the Day Pond Block of Salmon River State Forest.

B. History

Reason for Acquisition & Funding Sources

Recognizing the opportunity to protect and manage a significant portion of the Salmon River Watershed and its numerous tributaries, in 1934 the State Board of Fisheries and Game purchased the first parcels of land which now make up the Salmon River State Forest. The forethought in obtaining these parcels was that they would allow the State to provide a suitable environment for trout through the implementation of a long-term development program involving stream improvement and watershed management projects. In the 56 years from the first land purchase to the last management plan, the State acquired additional parcels of land in order to fulfill the goals set forth in the original development plan. In those 56 years, the forest size grew to encompass 6,993 acres, which also included 1,300 acres originally leased from the U.S. Government. Additional acreage was acquired through a land utilization program made available by the Resettlement Administration.

Development of Resource Prior & After Acquisition

Prior to State acquisition, extensive timber harvesting was carried out throughout the forest with many areas being clearcut for charcoal production in the 1930s. Black birch, a prolific seed producer whose seed is easily dispersed by the wind, was the dominant tree species regenerated by these cuttings. Black birch was then harvested to supply a birch oil extraction plant operated by the E.E Dickinson Company until 1930.

From 1935 to 1940 a Civilian Conservation Corporation (CCC) camp, named "Camp Stuart", was operated in the forest. The CCC carried out forest improvement projects, built a dam at Day Pond, constructed truck roads and picnic areas and performed many stream improvements on the rivers and streams within the Salmon River State Forest.

After the State acquired the parcels now making up the Salmon River State Forest, the forest has been managed to protect and diversify wildlife habitat, promote a healthy watershed for the Salmon River and its many tributaries as well as sustain a healthy and productive forest. This has been carried out through timber harvests that have removed dead, dying, diseased, poor quality and mature trees to provide growing space for young trees to become established and by leaving other areas undisturbed, such as adjacent to rivers and streams so that the natural hydrology is not disrupted. Due to the States watershed management efforts in the last several decades, a healthy trout stocking program and easy access points, the Salmon River State Forest is one of the premier fishing destinations in Connecticut.

Cultural Resources

Much of this block of forestland was cleared for agricultural purposes during the colonial era. Old cellar holes, stone walls and stone piles remain as evidence of the work done by early settlers. As these fields and pastures were abandoned from agricultural uses the land gradually reverted back to forest, sprouting an abundance of oak, birch, maple, hickory and tulip trees throughout. Some areas were utilized for farming until the State acquired the land, other areas that contained mature forest at the time of State acquisition were harvested, giving the current forest a diversity of age classes and species compositions.

During the colonial era, damming ponds and streams as a source of waterpower for grist mills, sawmills and tanneries was common. By the mid-19th century, the Salmon River and its tributaries had more mills trying to utilize the power of its flow than the available water sources could supply, especially during periods of dry weather and low water levels. In North Westchester, during periods of low water, grist mills operated at night and paper mills by day. The use of hydropower to power mills eventually declined as other power sources became available during the industrial revolution. In 2016 a dam on the Jeremy River in North Westchester was removed to permit migratory fish passage. However, dams still remain to this day on the Holbrook Pond in Hebron and Day Pond in Westchester.

This block of forestland is home to one of only three covered bridges within the State of Connecticut, The Comstock Bridge. The other two bridges being the Bulls Bridge in Kent and the West Cornwall Covered Bridge in West Cornwall. The Comstock Bridge crosses the Salmon River in East Hampton and is listed on the National Register of Historic Places. The bridge was originally built in 1785 and was used for traffic to pass over the river en route to nearby destinations. Upgrades were made to the bridge throughout the 19th century. The CCC completely rehabilitated the bridge in the 1930s, installing concrete reinforcements on the banks of the river in order to better support the large wooden structure. In the 1970s steel supports were added to reinforce the original structure and in 2012 the bridge was rebuilt after being struck by lightning, utilizing as much of the original structure as possible. Today the bridge is a focal point of Salmon River State Forest and is a common starting point for many recreationalists using the forest for fishing, hiking, cycling, horseback riding, hunting, snowshoeing or skiing.



Photo 1.1. Photo of the Comstock Covered Bridge decorated with a wreath for the holiday season.

An abandoned railroad bed passes through the center of the Day Pond Block. This railroad bed was originally intended to be used for high speed travel from New York to Boston and was owned by the Boston and New York Air-Line Railroad. The railroad is most notable for its towering iron trestle viaduct structures that spanned across rivers and rugged topographic features in order to make the railroad bed as flat as possible, ideal for high speed travel. The Lyman’s Viaduct, located in present day Salmon River State Forest, is now covered over with soil due to its instability. The railroad bed is now used as a recreational trail known as the Air-Line Trail State Park (Figure 1.0).

Changes in the Last 10 Years

Since that last forest management plan expired in the year 2000, management efforts in this forest have focused on maintenance and salvaging timber after insect outbreaks. Maintenance efforts have included painting property boundary lines, improving forest roads and access points as well as timber harvesting in areas that warranted such a treatment.

Several areas have been harvested in the last 10 years in the Day Pond Block. Ten acres were harvested adjacent to Ogden Lord Road in Marlborough in the fall of 2018. This harvest was prompted by continued spongy moth defoliation (spongy moth was known as gypsy moth prior to its name being changed in 2022), which resulted in the mortality of many oak trees in the area. The harvest salvaged dead individuals while removing unhealthy and poor-quality trees. Now, a new cohort of young trees is becoming established on the site. Also, 86 acres were harvested south of Quinn Road in Marlborough. This harvest, completed in two phases in 2008 and 2010, was done in an effort to improve the growing

space for good quality residual trees while creating gaps in the forest canopy large enough to encourage the establishment of regeneration. The area is now dense with black birch, red maple, white oak and red oak regeneration. The area shows great promise to grow into a good quality stand of timber in the future. At present the young forest in this area is creating excellent habitat for many birds and animals that thrive in young forests.

In 2015, an additional 60 acres of land was acquired north of Route 149 and east of Peck Lane in Colchester and made part of the Day Pond Block. The 60 acres is made up of upland oak/hickory forest as well as a swamp that extends out to Route 149. A horse barn is present on the property, off of Route 149. This horse barn will be maintained for storage purposes and the grounds surrounding the barn will be maintained by Parks staff.

Rotations & Cutting Cycles

The Day Pond Block is made up of undulating terrain, creating great contrast between riparian areas densely stocked with hemlock and upland areas filled with oak and northern hardwood species. In riparian areas either no management or uneven aged management will be recommended. This will maintain the natural hydrology of these areas and avoid sedimentation and erosion issues which could affect the water quality in the Dickinson Creek and Salmon River, both of which flow through this block of forestland. Un-even aged treatments will use 25 year cutting cycles. During this plan period, no un-even aged silvicultural treatments are scheduled.

In upland oak and northern hardwood sites un-even aged management typically results in the regeneration of undesirable, shade tolerant species. As a result, even aged silvicultural treatments will be the primary focus of the management activities prescribed for this forest type. Even aged management will use 100-year rotations. During this plan period 456 acres of forest will be scheduled to receive even aged silvicultural treatments.

C. Acres and Access

Acres

The Day Pond Block is comprised of 3,304 acres. These acres are divided into one of nine different classifications which are active forest, old forest management site, natural preserve areas, inaccessible areas, inoperable areas, recreational areas, areas managed for wildlife, wetlands and open/non-forested areas.

Table 1.0. Acres of land that fall into each land classification category within the Day Pond Block, Salmon River State Forest.

Land Classification	Acres
Active Forest	1538.38
Old Forest Management Site	484.54
Natural Preserve Areas	0.00
Inaccessible Areas	658.54
Inoperable Areas	445.43
Recreational Areas	0.00
Areas Managed for Wildlife	107.95
Wetlands	56.33
Open/Non-forested	12.91
Total	3304.09

Although there are nine different land classification categories that each acre of land falls into, these categories are not necessarily mutually exclusive. For example, land classified as “old forest management site” may have just as much wildlife benefit as land classified as an “area managed for wildlife.” Land is divided into these categories by a close analysis of their current physical condition and is done so in order to aid management making decisions.

Active forestland is land actively being managed for its forest resource. Not all active forestland is prescribed to receive a management treatment in this management plan, such as a silvicultural or invasive treatment. However, this plan does prescribe management treatments to occur on 456 acres of active forestland, with the remaining acres of active forestland being left to grow and further develop. Old forest management site is a land classification that has been enacted in order to set aside a portion of land to allow for the natural processes of forest stand development to occur without the influence of active forest management. Natural Preserve Areas are state lands designated by the Governor as “natural areas.” A natural area is defined in the Connecticut State Statutes as “...an area of land or water, or land and water containing or potentially containing plant or animal life or features of biological, scientific, educational, geological, paleontological or scenic value worthy of preservation in their natural condition.” The Day Pond Block does not have any designated Natural Preserve Areas within it. Inaccessible areas are areas that cannot be accessed due to the deterioration of access roads or due to being landlocked behind

geographical features such as wetlands, rivers or steep terrain. Inoperable areas are lands that contain physical features such as steep slopes and excessively rocky terrain that prevents active management from taking place. Recreational Areas are areas within the forest that contain features that are of significant recreational value and are managed to maintain those recreational opportunities. The Day Pond Block does not have any designated Recreational Areas within it. Areas managed for wildlife are designated forest stands where the primary objective of any active forest management activity will be for the benefit of wildlife. Wetlands are low lying areas that either consistently hold water or feature poorly drained soils that grow wetland associated vegetation. Lastly, open or non-forested areas are old fields, recently abandoned from agricultural use, where forest succession has not advanced to the point at which the area can be considered forested at this time or a utility right-of-way that is maintained as open/non-forested for the purpose of maintaining the right-of-way. These open or non-forested areas are often maintained to benefit wildlife that depend on early successional stage habitat.

Access: Roads for Public, Truck Roads & Gates

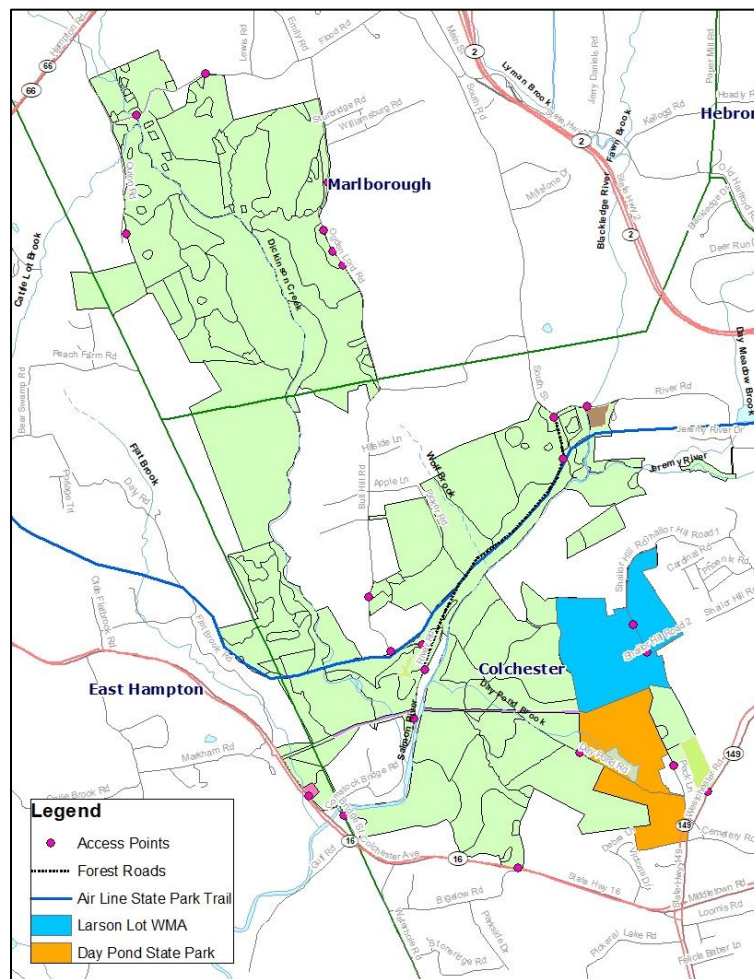


Figure 1.0. Map showing the various access points and forest roads within the Day Pond Block, Salmon River State Forest.

Much of the Salmon River State Forest, including the Day Pond Block, occupies long and narrow sections of land adjacent to the rivers and streams that define this state forest. Much of the terrain neighboring these rivers and streams is steep and is located behind residential neighborhoods. These factors make access difficult. Over the years land acquisition efforts have increased access points to the forest. However, most of these access points are in a state of disrepair and it must be made a priority to improve these access points for the future management of this forest. Access improvements discussed in this management plan will focus on improvements exclusively for forest management purposes. The forest is also managed for public access. Currently, it has been determined that public access opportunities to this block of land are adequate with many parking and walk in areas located at various points throughout the block.

The northern most section of the Day Pond Block, within the Town of Marlborough, can be accessed from both Flood Road, Quinn Road and Ogden Lord Road. On Flood Road there are two access points, one located where an old woods road meets Flood Road and another where the Dickinson Creek passes underneath Flood Road. There is access to the forest at the end of Quinn Road, which is a dead end. Also, Ogden Lord Road features excellent access as log landing pads were constructed adjacent to this road for a timber harvesting operation that took place within the forest during the fall of 2018.

The southernmost section of the Day Pond Block, within the Town of Colchester, can be accessed from Route 16, Comstock Bridge Road, Bull Hill Road and the southern end of River Road. These access points are among the most commonly used because they provide the best access to the Salmon River trout management area, the Salmon River Trail that traverses the forest from the Comstock Bridge to Day Pond State Park, the Air Line State Park Trail as well as providing access to the Comstock Covered Bridge, one of only three historical covered bridges in the State of Connecticut.

The southeastern most section of the Day Pond Block can be accessible from Peck Lane, Day Pond Road, Route 149 and Shailor Hill Road. Access from these points are primarily the access to Day Pond State Park, which is a 180-acre property that features a trout stocked pond, picnic pavilion and hiking trails. The Day Pond Block of Salmon River State Forest is located directly to the north and west of Day Pond State Park. Also, the forest is accessible in this area from Shailor Hill Road. The section of the forest accessible from Shailor Hill Road is designated as the Larson Lot Wildlife Management Area (WMA: Figure 1.0), popular among sportsmen and women particularly during the pheasant season as the area is stocked with pheasants each fall.

Another access point to southern and eastern sections of the Day Pond Block is located on the northern end of River Road. This is another commonly used access point to the Salmon River trout management area and the Air Line State Park Trail.

Inaccessible Areas

Approximately 20 percent of the Day Pond Block, comprised of 658.54 acres, is considered to be inaccessible. Inaccessible areas are locations within the forest that cannot be accessed due to the deterioration of access road or due to being landlocked behind un-crossable geographical features such as wetlands, rivers, steep terrain or highways. The Day Pond Block encompasses forestland that stretches north to south following the meandering Dickinson Creek and Salmon River. Adjacent to these winding water bodies there is steep, rugged terrain that is difficult to traverse. As a result, there are many areas locked behind the rivers and topography that cannot be reached for active forest management purposes.

Right-of-Ways

There are two right-of-ways within the Day Pond Block, both of which are located in the southern portion of the block within the town of Colchester. One of these right-of-ways is an overhead power line, maintained by Eversource, that traverses the forest from west to east starting on Route 16, crossing the Dickinson Creek and the Salmon River before continuing on north of Day Pond State Park. The other right-of-way is a buried AT & T cable that occupies a narrow transect of land, approximately 30 feet wide, cutting through the forest directly west of Day Pond State Park. These right-of-ways are critical aspects of the state's infrastructure. As a result, land managers will maintain communications with Eversource and AT & T to stay informed of any right-of-way maintenance that is being done as well as to minimize negative impacts to the right-of-ways and their associated infrastructure during forest management activities on the adjacent state forestland. Due to right-of-ways being corridors of open, non-forested land that is often occupied by young herbaceous growth, they add wildlife habitat diversity to an otherwise forested landscape. The Divisions of Forestry and Wildlife will work with Eversource and AT & T, whenever possible, to maintain and enhance the right-of-ways value to wildlife habitat.

Boundary Conditions, Issues & Total Miles to Maintain

There is a total of 29 miles of boundary lines in the Day Pond Block of Salmon River State Forest. Boundary lines are generally in good condition, easily located and well-marked. Within this management plans timeframe, all the boundary lines will be maintained by re-painting boundary trees, replacing old State Land signs where necessary and collecting GPS data on all points and features along each boundary line. There is one known boundary line issue in this block of forestland. The Division of Forestry will work with the Division of Land Acquisition and Management to resolve this issue within the timeframe of this management plan.

D. Special Use Areas

Lakes & Ponds

There are no ponds or lakes within the Day Pond Block. However, Day Pond is located adjacent to the Day Pond Block within Day Pond State Park. Day Pond is seven acres in size, contains a small beach and swimming area and is stocked with trout, making this area an excellent recreational destination within the vicinity of the Day Pond Block.



Photo 1.2. Photo of the sunset over Day Pond on a warm summers evening, Day Pond State Park, Colchester, CT.

Rivers & Streams

The rivers and streams are the features that define the Salmon River State Forest. The primary goal of this forest is to maintain a healthy watershed ecosystem. The Day Pond Block represents a large section of the Salmon River watershed. Many tributary streams flow into the Salmon River within this block of forestland. The Blackledge River and the Jeremy River flow together to the east of the Day Pond Block to form the Salmon River. The Salmon River then flows through this block of land in what is designated as a trout management area. The Day Pond Brook flows from Day Pond, located within Day Pond State Park, through the forest and into the Salmon River. The Wolf Brook flows from upland oak forests to the north of the Salmon River, down slope, eventually dumping out into the Salmon River. On the northern and western most portion of the block the Dickinson Creek flows through forest stands of oak, birch, maple, beech and mountain laurel, eventually making its way further down the watershed, under the Comstock Bridge Road and into the Salmon River. Lastly, Flat Brook is found in the southwestern most portion of this block, flowing under Route 16 and into the Salmon River in a section of the Salmon River State Forest known as the Leesville Block.

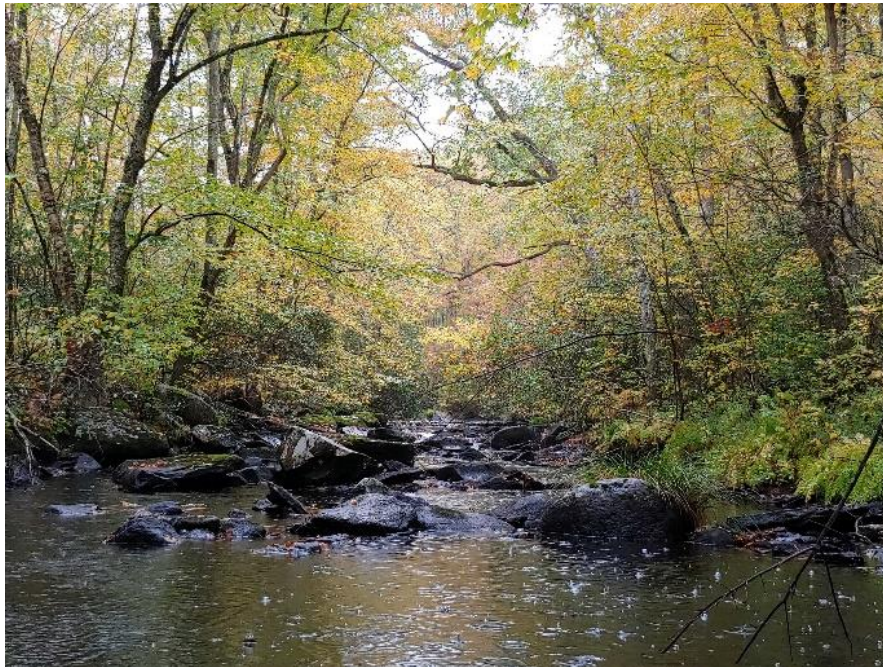


Photo 1.3. Photo of the Dickinson Creek on a rainy autumn day, Day Pond Block of Salmon River State Forest.

Cultural Sites

There are no National Heritage sites or areas within this block of state forestland. There are no specific sites that have significant cultural importance. However, there are many stone walls and stone cellar holes that can be found throughout this block. These elements on the landscape are cultural reminders of our not so distant past, a past where farmers cleared land and deposited excess stone in walls to rid the land of them and establish their land ownership boundaries. Stone cellar holes give clues of how our ancestors lived, how they worked the land and the often-harsh realities under which they lived their lives. Although cultural landmarks such as stone walls and cellar holes are commonplace throughout Connecticut, they shall not be forgotten nor destroyed. During forest management operations all actions necessary should be made in order to avoid the destruction of stone walls in order to preserve these cultural landmarks within the state forest.

Recreation & Scenic Sites – Trails & Signs

The Day Pond Block of Salmon River State Forest is the focal point of this State Forest's recreational opportunities. A 2.8 mile stretch of the Air Line State Park Trail traverses this block (Figure 1.0). This trail was a rail bed that once offered rapid transit between New York and Boston. The rails have long since been removed and the surface of smooth gravel, winding through the forests of Connecticut, offers a place for people to enjoy cycling, hiking, cross country skiing and horseback riding. Where the Air Line Trail crosses the Dickinson Creek, an expansive view is open of a wide forested basin with the Dickinson Creek at the bottom, flowing through the forest. Other trails in the Day Pond Block include the Salmon River Trail, covering 6.5 miles beginning at the Comstock Covered Bridge and meandering along the Salmon River through dense forest stands of hemlock, over oak ridges and through drainages thick with mountain laurel and sweet pepper bush, eventually making its way to the Day Pond State Park (Figure 1.1). The Day Pond Brook Spur Trail, covering 0.21 miles, branches off the Salmon River Trail to provide access to a rock face that the Day Pond Brook cascades off, creating a beautiful waterfall (Photo 1.4). Also, Day Pond Road, which is now a dead end but once was a town road through the forest, is also frequently used as a walking trail since it is a well-established route through the forest. Day Pond Road, combined with several old logging roads, makes up the Connecticut Horse Council Recommended Trail, covering 2.3 miles, (Figure 1.1) for those seeking to go horseback riding through the forest. Also, the Day Pond Block is home to the Salmon River State Forest letterbox for those seeking to go on a treasure hunt. To find the clues that will lead you to the letterbox follow this link <https://portal.ct.gov/NCLI/Outdoor-Activities/Letterboxing>.



Photo 1.4. Photo of the Day Pond Brook falls located at the end of the Day Pond Brook Spur Trail within the Day Pond Block of Salmon River State Forest.

Day Pond State Park

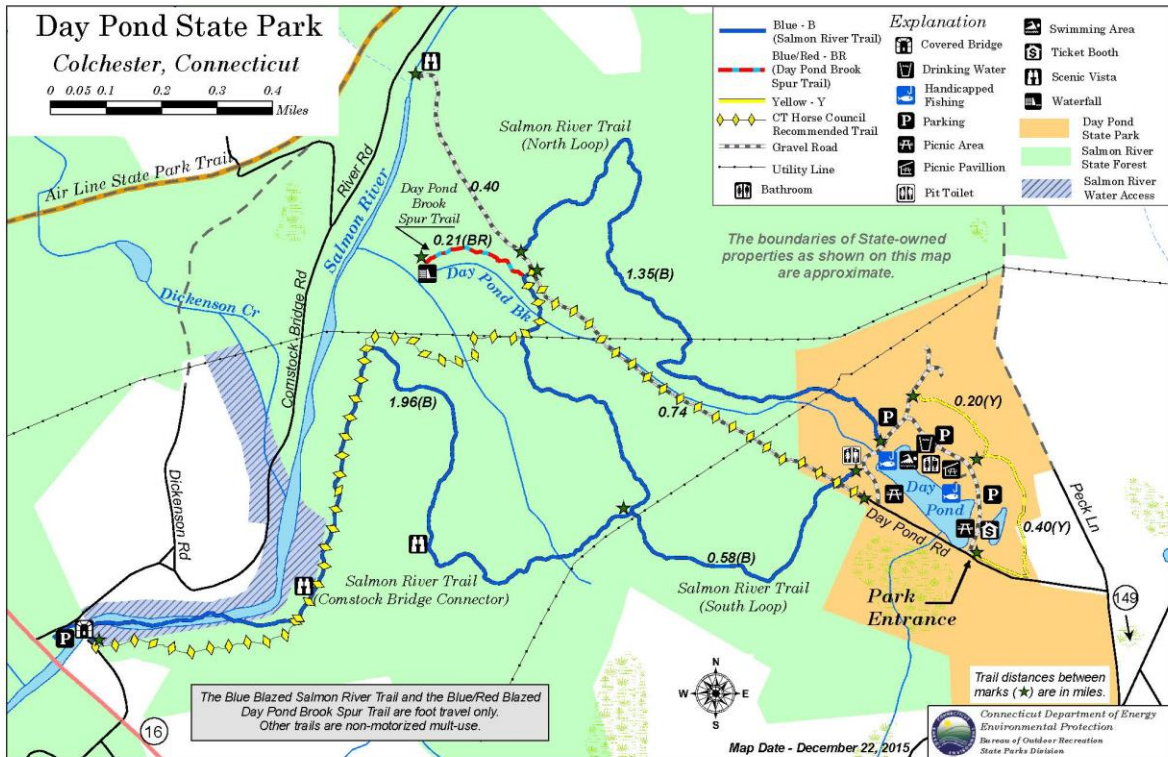


Figure 1.1. Map of the Day Pond State Park and the authorized trails that traverse the park and adjacent state forestland.

Day Pond State Park is comprised of 180 acres located adjacent to the Day Pond Block of Salmon River State Forest in the town of Colchester. The park features a seven-acre pond with a small beach and swimming area. The pond is the central feature of the park and was originally constructed by a pioneering family named Day. The water from the pond turned a waterwheel that powered the family’s sawmill. Park visitors today will find old stone foundations of the family’s sawmill. The pond is also stocked with trout which draws in anglers, particularly when fishing season opens in April. Additionally, the Day Pond State Park is one of the primary access points for hiking on the Salmon River Trail and Day Pond Brook Spur Trail within the Day Pond Block. A pavilion and picnic areas next to the pond are also available within the state park for day use. There is no parking or entry fee at Day Pond State Park. Gates are open from the third Saturday in April until Columbus Day weekend in October. Off season parking, when gates are closed, is available along Day Pond Road and on either side of the front gate.

Critical Habitat (State listed rare or endangered plants and animals)

Sections of the Day Pond Block fall within the vicinity of known occurrences of state and/or federally listed threatened, endangered or of special concern species. These known occurrences include two species of turtles, one reptile species, one bird species, one freshwater mussel species, one freshwater snail species as well as two insect species. These species are negatively affected when forestland is fragmented, forest management operations take place during their active or breeding season or when forest management operations do not buffer riparian areas according to best management practices for water quality (DEEP, 2012). As a result, forest management activities in this block will be largely influenced by these species in an effort to preserve critical habitat. These efforts will be made in the form of preserving habitat as is, through Old Forestland Management Sites, and harvesting trees in strategic areas to reduce negative impacts on these species. Timber harvesting activity can actually increase habitat diversity and structure in many cases. Any timber harvesting done in this block will be limited to the dormant season of the listed species above (November 1st – April 1st) unless a DEEP wildlife biologist confirms that the harvesting will not negatively impact these species if completed outside of the dormant season.

Natural Preserve Areas

Natural Preserve Areas are state lands designated by the Governor as “natural areas”. A natural area is defined in the Connecticut State Statutes as “...an area of land or water, or land and water, containing or potentially containing plant or animal life or features of biological, scientific, educational, geological, paleontological or scenic value worthy of preservation in their natural condition.” No state-designated Natural Preserve Areas are present within the Day Pond Block.

Old Forestland Management Sites

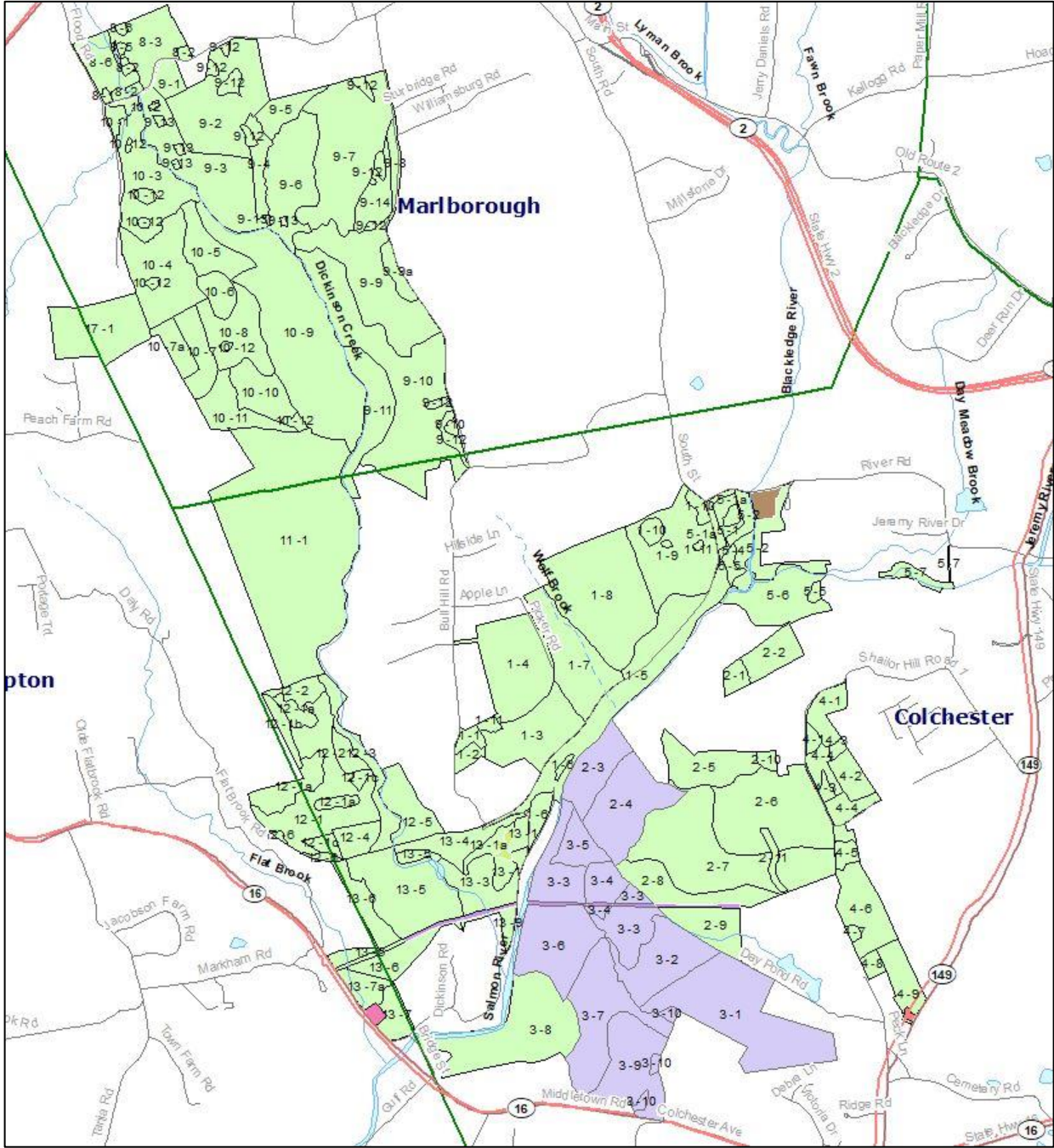


Figure 1.2. Map showing the location of Old Forestland Management Sites (OFMS) within the Day Pond Block of Salmon River State Forest. The designated OFMS is the area shaded in purple.

The Old Forestland Management Site (OFMS) land classification has been enacted in order to set aside a portion of land to allow for the natural processes of forest stand development to occur without the influence of active forest management.

One OFMS has been designated within the Day Pond Block consisting of 484.54 acres of forestland within compartments two and three. This area is bordered to the west by a one mile stretch of the Salmon River, to the east by Day Pond State Park, to the north by the Larson Lot WMA and to the south by Route 16. This area was chosen for its diversity in forest type, forest age classes, terrain and proximity to the Salmon River. This 484.54 acres features dense stands of hemlock along the Salmon River, dry oak ridges with exposed ledge, towering white pine, wetland and a mix of deciduous forest tree species on moderately drained sites. Through the implementation of a non-active management regime in an area with such diversity will allow for long term observation. These observations will help draw conclusions on how different forest cover types respond to various forest stressors in the absence of direct human influence. Overtime, these conclusions can be compared to areas that are being actively managed to help managers better understand the forest ecosystem as a whole.

Research Areas

There are several on going forest research projects being conducted within the Day Pond Block. One research project, being conducted by the University of Connecticut, is investigating the effects of forest fragmentation on moth communities in eastern Connecticut. As part of this research, 32 research sites have been developed, several of which are located within the Day Pond Block. At these research sites, the abundance of caterpillars is monitored, and that data is then being correlated to tree communities at each site as well as to other site factors such as temperature, humidity, soil moisture and light levels. Other research efforts include wildlife population and distribution studies being done by the DEEP Division of Wildlife.

Miscellaneous

There are no other authorized miscellaneous uses of the Day Pond Block.

E. Extensive Areas of Concern

Trails/Signs & Unauthorized/Illegal Activity

There are several authorized trails in the Day Pond Block, which include the Airline State Park Trail, the Salmon River Trail, the Day Pond Brook Spur Trail and the Connecticut Horse Council Recommended Trail. These are the only authorized trails in this block of forestland. However, additional unauthorized trails are present, particularly in Compartments 2, 3, 10, 11, 12 and 13. A portion of unauthorized trails are present on old logging roads, skid trails, and abandoned town roads. Use of these trails by the public for recreational purposes and general access into the forest is anticipated. However, there is a subset of trails constructed by recreationalist that were never authorized to do so. Trail construction has included the cutting of herbaceous plants out of intended pathways, cutting and moving of downed trees and excavating soil to construct jumps and berms. Section 23-4-1 (b) of the general regulations of the Department of Energy and Environmental Protection states *“No person shall deface, destroy, alter, remove or otherwise injure in any manner any structures, buildings, vegetation, earth or rock material, trees or fuelwood, nor shall any wildlife be molested or disturbed except as authorized by the Department of Energy and Environmental Protection.”* The construction of unauthorized trails violates this section of the general regulations by significantly altering vegetation, earth, rock material and trees in areas of state forestland. Trails constructed in this manner do not account for water drainage or sustainable recreation. As a result, erosion and sedimentation on unauthorized trails is a concern, particularly in areas where motorized All-Terrain Vehicles (ATV’s) are used. Furthermore, unauthorized trails conflict with the DEEP’s mission to conserve fisheries, wildlife and their habitats because recreational trails fragment and degrade habitat by creating a constant disturbance to wildlife as well as creating avenues for non-native invasive plant infestations, which reduce biodiversity and threaten forest health. Unauthorized trails also negatively impact those engaged in fish and wildlife-based recreation such as hunting and wildlife viewing, especially those seeking a more solitary outdoor experience. Trails can be a great way to help the public see the beauty of their public forestland, however, the authorization and construction of such trails needs to be well planned to maximize recreational opportunities while minimizing negative impacts.

Wetlands

Areas that are considered wetlands or consistently have wet, saturated soils will be restricted from timber harvesting activities. Approximately 21 acres are considered wetlands within the Day Pond Block. These are areas that not only have wet saturated soils but also feature wetland associate vegetation such as cattails, a native marsh plant, and phragmites, a non-native invasive marsh plant. Additionally, approximately 85 acres are considered red maple lowlands or bottomland hardwood areas that feature wet, poorly drained and saturated soils. These areas are forested and feature tree species that do well in wet, saturated soils such as red maple, black gum, and yellow birch. Water quality and protection of these wetland areas are vital. Therefore, all forest management activities that take place adjacent to these areas will maintain buffers of a minimum of 100 feet. No timber harvesting, woods road construction, landing construction or other intensive management activities will take place within wetlands or wetland buffer strips.

F. Wildlife Habitat

Landscape Context

Forestry, wildlife and fisheries management traditionally are complimentary functions. The abundance and distribution of wildlife associated with forest ecosystems is determined by the composition, structure and diversity of the forest habitat. The Salmon River State Forest is a large forested area, spanning across multiple towns and counties, featuring a diversity of forest types, rivers, streams, wetlands and topographical features. All of these habitat elements are nestled within bustling and growing communities. Therefore, the Day Pond Block and the rest of the Salmon River State Forest serve as critical undeveloped conservation land that provides vital habitat for a variety of wildlife species.

Larson Lot WMA

Larson Lot WMA (Figure 1.3) is a 209-acre area, within the Day Pond Block of Salmon River State Forest, in Colchester. It is officially designated and managed as State Forest under all State Forest regulations, policies, and procedures, with an emphasis on wildlife management and wildlife-based recreation. The Larson Lot WMA is within Compartment 2, Stands 5, 6, 7, 8, 10 and 11 as well as Compartment 4, Stands 1, 2, 3, 4 and 5. The WMA is accessible from a parking lot located off of Shailor Hill Road in Colchester. The area features long linear fields filled with grasses and other herbaceous vegetation bordered by dense forests of oak, hickory and northern hardwood tree species. The first management plan for the WMA was written in 1950 by the Game Management Division of the CT State Board of Fisheries and Game, with management activities planned to establish the property as "The Colchester Beagle Trial Area." Cottontail population size for the WMA was estimated based on the number of fecal pellets collected. The focus of management efforts from 1950 to 1970 was to provide optimal conditions for pheasant hunting and in doing so improve upland game habitat, evergreen cover and early successional habitat. To increase food and cover for small game animals and birds, numerous small areas were cleared with a bulldozer and planted with coniferous trees shrubs and blackberry. In addition to access roads, three lanes of forest were clear-cut, with two purposed for wildlife habitat and one as a fire lane. Fields were harrowed and seeded with clover, hay, rye, trefoil and lespedeza, and over the years, hundreds of conifer trees and shrubs, such as Norway spruce, red pine, white pine, silky dogwood, blackberry and raspberry were planted in the area.

In 2000, a Wildlife Habitat Incentive Program grant from the U.S. Department of Agriculture was used to administer a heavy-duty brush mowing contract to reclaim 15 acres of open habitat that was overgrown with trees and non-native invasive shrubs. A combination of mowing and herbicide treatments have since been used periodically to control invasive plants and maintain the early successional habitat elements within the WMA. A new gate was installed and processed gravel added to the service road in 2008 and 2010. In recent years, management has consisted of removing dead, hazardous trees that died as a result of spongy moth defoliation. Every fall the WMA is stocked with ring-necked pheasants, attracting sportsmen and women from around the region to test their shooting and dog handling skills against the quick and agile game birds.

Future management, outlined in this management plan, of the Larson Lot WMA will include brush mowing to maintain open land habitat, treating invasive plant species to encourage native herbaceous plant growth as well as doing patch clear cuts, if timber markets permit, within Compartment 2, Stand 6 in order to expand upon existing open land and early successional habitats.



Larson Lot WMA Pheasant Area



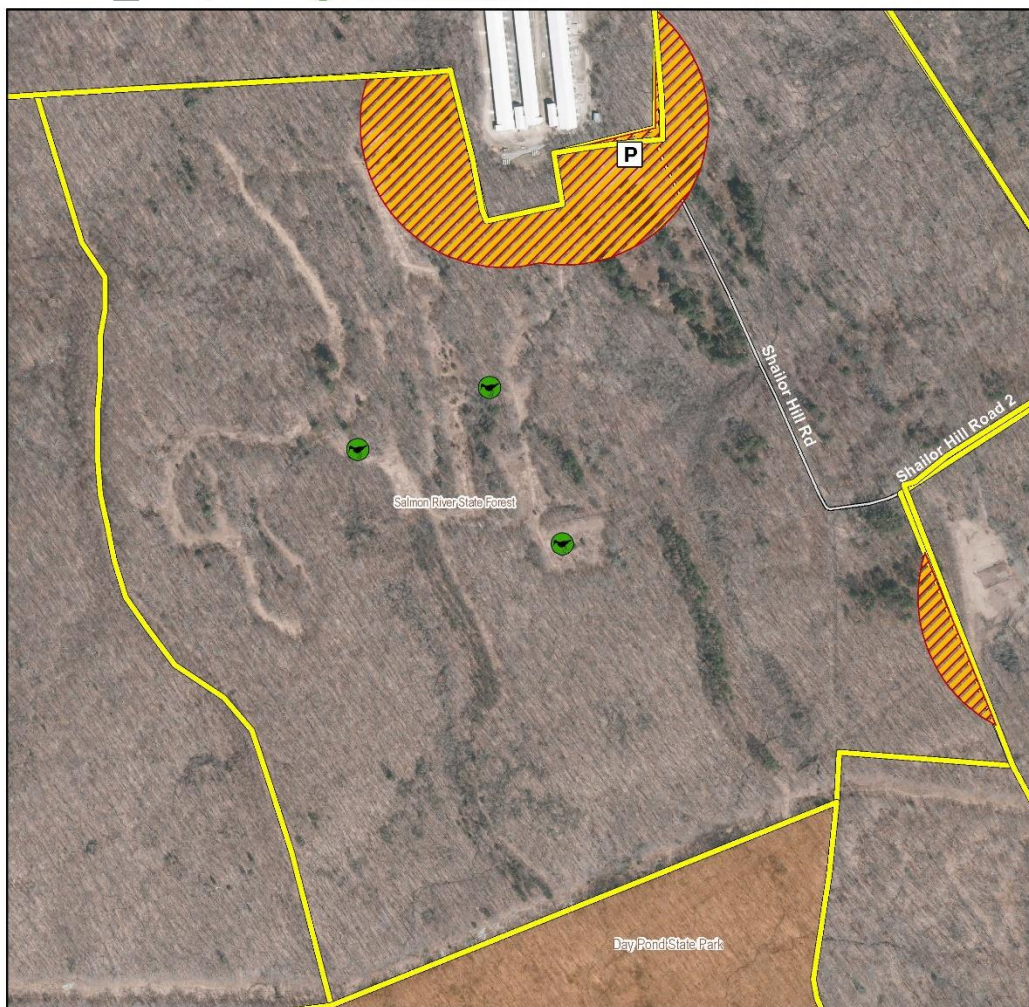
Location: Colchester; Moodus Quadrangle

Description: 209 acres, adjacent to Salmon River State Forest and Day Pond State Park.

Access: Rt. 149 to Shailer Hill Rd. Follow Shailer Hill Rd. to parking area.

Note: This map depicts an approximation of property boundaries. Please obey all postings.

- Symbols:** Approximate Boundary 500ft Firearms Restriction Day Pond State Park
 Parking Area Pheasant Stocking Area



Map Date: 8/24/2020; Ortho 2019 NAIP

440 220 0 440 Feet

State of Connecticut - Department of Energy and Environmental Protection - 79 Elm St. - Hartford, CT 06106 - www.ct.gov/deep

Figure 1.3. Map of the Larson Lot WMA with additional information on parking, access, 500 ft. firearms hunting restricted zone and pheasant stocking locations.

Young Forest Wildlife Considerations

Young forest and the wildlife that depend on it have been decreasing throughout Connecticut and the region for many years. Some of this habitat loss can be attributed to residential and commercial development, but many areas have simply grown into mature forest. Even-aged forest management planned here for Salmon River State Forest will contribute toward the recovery of young forest wildlife.

Salmon River State Forest is located within one of three restoration focus areas designated in the Management Plan for American Woodcock in Connecticut, a species of Greatest Conservation Need (GCN) in Connecticut (See Appendix for a map of designated Woodcock Focus Areas in Connecticut). These focus areas contain mixed ownership, with either a WMA or state forest as their core. Utilizing DEEP controlled properties as the core of these focus areas ensures that the habitat will be managed appropriately and ensure that a long-term commitment is made to the management of American woodcock (hereinafter referred to as woodcock) and other young forest obligate wildlife species.

The woodcock is a popular gamebird throughout eastern North America. Woodcock populations have been declining within their range during the last 40 years (Cooper & Parker, 2011). While environmental factors such as contaminants (Scheuhammer et al., 1999) may be limiting woodcock populations, their decline is most likely attributed to the loss of young forest habitat on both their breeding and wintering grounds. This loss of young forest habitat has been caused primarily by forest maturation and urbanization (Dwyer et al., 1983, Owen et al., 1977, Straw et al., 1994). As woodcock populations continue to decline, so do the recreational opportunities associated with their presence.

The Day Pond Block has good to excellent potential to provide ideal woodcock habitat based on soil type, topography, wetlands and the ability for portions of it to be managed for grassland/old field and new young forest habitats. The habitat needs of woodcock are complex. Woodcock require areas of young forest or shrubland for nesting cover and feeding. Soil conditions must support adequate populations of earthworms and other invertebrates which make up the woodcock diet. The soils within Compartment 5, Stand 3, an old field within this block that will be managed specifically for woodcock habitat, are not heavily sloped, contain a loamy component and border wetlands. These areas provide the conditions required for woodcock nesting, brood rearing and feeding cover. Male woodcock display in open areas, such as old fields and clearings, in early spring to attract mates. Later in the season these birds tend to move to dense meadows for roosting cover. It is ideal to have display and roosting cover abutting feeding and nesting areas, nearby farm fields may be used for these purposes.

While the woodcock is a focal species for young forest habitat creation, over 50 GCN wildlife species rely on young forest or shrubland. On that list are many songbirds such as eastern towhee, indigo bunting, prairie, chestnut-sided and blue-winged warbler; reptiles such as eastern box turtle, wood turtle and smooth green snake, New England cottontail and a number of small mammals; and many insects including pollinators ([Chapter 4, 2015 Connecticut Wildlife Action Plan](#)). The even aged silvicultural practices prescribed in this management plan will benefit many species in this suite of shrubland/young forest-dependent wildlife.

Fisheries Resources

The Salmon River and the Dickinson Creek (Figure 1.1) are the two major fisheries resources that flow through this block of forestland. Efforts by the state to preserve and manage the forestland adjacent to these streams have helped protect the quality of these resources. Watershed management efforts combined with fisheries efforts to protect, sustain and diversify fish habitat have resulted in these streams being a vital habitat resource for a variety of fish species. In conjunction with these efforts to manage and protect streams and adjacent forestland, is a robust stocking program aimed at enhancing the diversifying recreational fisheries. The Salmon River and the Dickinson Creek are stocked annually with thousands of brown trout, brook trout, rainbow trout, among several other species creating great opportunities for anglers.

Existing Diversity Situation

The structure, age classes present, and tree species composition of the forest are metrics that can be used to assess the value and diversity of wildlife habitats. Sixty-one percent of the forest in this block is considered to be in the sawtimber size class, featuring trees with an average diameter of twelve inches or greater. This represents mature forestland. Twenty-three percent of the forest is in a transitional phase between pole timber (6-11-inch diameter trees) and sawtimber (12 inches or greater). This category represents stands that will develop into mature timber within the next twenty years. Eleven percent of the forest is in the pole size class, with tree diameters ranging between six and eleven inches in diameter. In a pole sized stand the forest canopy closes above a forest dense with young trees. Only five percent of this block is considered to be in the seedling/sapling stage, which represents the youngest age class of forests, featuring trees that are one to five inches in diameter. Each one of these age class categories represents a different forest structure and a different habitat type. Some wildlife species thrive in specific habitat types while others are generalists that can survive and thrive in a multitude of different habitats. Most of the forest stands within the Day Pond Block are either mature or are approaching maturity, while only a small percentage of forest is in a young, early successional stage of development. A forest structure such as this is great for wildlife such as barred owls that thrive in older forests. However, this forest habitat structure lacks habitat for species that flourish in young forests such as woodcock. Silvicultural activity prescribed in this management plan will aim to not only preserve the older forest habitat that is present within this block, but it will also strive to create more early successional habitat in order to make the forest structure more diverse, thereby producing a more diverse wildlife habitat. Creating more diversity within the forest age class structure also aids in increasing forest resilience because young forests of vigorously growing trees are better able to withstand insect and/or disease outbreaks and extreme weather events than older forests of slow/stagnant growing trees. Conversely, designating certain forest stands under Old Forestland Management Sites ensures a portion of the existing mature forest will be allowed to age further, maintaining sustainable habitat for wildlife associated with those habitats as well as the older forest age class component within the block.

Investment in Habitat Improvement

Habitat improvement projects will be implemented within several areas of the Day Pond Block. Compartment 5, Stand 3, six acres south of River Road is one of these areas. This area is currently overgrown with herbaceous vegetation. It is desired to keep this area open, rather than letting it revert back to forest, in order to maintain this habitat type. This will be done by periodic mowing as well as the cutting of woody vegetation and trees, particularly on the edges of the area where trees are encroaching on the open land area. The area was last mowed with a bobcat/fecon mower in 2013 and it is recommended that mowing be completed every 17 to 20 years. Completing the mowing of this area is an investment in maintaining early successional, shrub land habitat, ideal for the woodcock, within this tract of land.

Compartment 4, Stand 8, five acres east of Peck Lane, is another area where habitat improvement work is planned. These five acres were used for agricultural purposes and when abandoned reverted back to forestland dominated by eastern red cedar, white pine and a mix of deciduous species such as black birch and paper birch. Currently this stand has matured to the point where the trees are 30 to 40 feet tall and the canopy has closed. Eastern red cedar is considered an early successional species that is shade intolerant. If no management is completed in this stand, other species such as black birch will begin to out-compete the red cedar, eventually shading it out. Also, invasive shrub species within the stand, such as honeysuckle and multi-flora rose, threaten to displace native herbaceous vegetation. Therefore, in order to sustain red cedar and the wildlife habitat it provides, the stand will be treated using a combination of mowing, invasive species herbicide treatment and tree harvesting. Habitat improvement work is recommended every 17 to 20 years in this stand in order to maintain this habitat type.

Compartment 4, Stand 9, 19 acres north of Route 149, is a wetland area valued for its diversity. It contains a small area of open water, cattails and other marsh grasses, young tree growth in the sapling stage of development as well as incredibly dense areas of shrubs. Due to its diversity and early successional growth, it offers excellent wildlife habitat. As a result, it is desired to manage the area to maintain the diversity of vegetation and early successional growth. This will be done through mowing and the application of herbicides. Habitat improvement work is recommended every 17 to 20 years in this stand in order to maintain this habitat type.

Lastly, the Larson Lot WMA contains a mixture of upland forest and open land habitat. Silvicultural activities are scheduled for the area in order to enhance early successional habitat within the WMA. However, mowing and the application of herbicides will also be used. Annual mowing will be completed in order to maintain public access as well as early successional, herbaceous growth. Herbicides will be used primarily where invasive plants are an issue, particularly around the parking area where Japanese knotweed has become established.

Deer Impact

The impact of white-tailed deer on the productivity of forestland can be substantial. A staple in the diet of a deer is the buds and twigs of young trees. Once young trees have been browsed, they will then grow with a poor form and will be stunted from their full potential. Deer impact is a function of deer density, expressed in deer per square mile, and forage availability such as young trees, acorns and agricultural crops. Deer densities greater than 20 deer per square mile can have significant negative impacts on forest regeneration.

During the forest inventory analysis conducted within this block of forestland it was observed that deer prefer to browse on oak species rather than tree species such as black birch and American beech. However, when deer density is very high, deer will browse less palatable species in order to survive. The deer density does not appear to have reached the point where these less favorable tree species are being browsed and deer impact on the forestland is considered to be moderate.

Hunting

The Day Pond Block is open to the public for archery and firearms hunting of small game, waterfowl, turkey and deer. Public access maps for the Day Pond Block are available for viewing or printing on the DEEP Public Hunting Areas in CT Webpage which can be found by following this link [Hunting Information](#). These maps may also be obtained by contacting the Eastern District Headquarters in Marlborough. Trapping is also allowed in the Salmon River State Forest under the state land trapping permit system. For additional information pertaining to hunting regulations, seasons and fees visit the DEEP hunting and Trapping Webpage which can be found by following this link [Hunting Information](#).

G. Vegetative Condition

Silviculture

The Day Pond Block of Salmon River State Forest is comprised of a diversity of different forest types. Oak and northern hardwoods is the most dominant forest cover found throughout the block. However, stands of pure northern hardwoods, red maple lowlands, white pine and hemlock are also common. Within these different forest types there are young stands that feature mostly pole sized individuals (6 to 12 inch diameter trees on average) and there are others on the opposite end of the spectrum that are mature, 100 years old or more, featuring many large diameter individuals (20 + inch diameter trees). Forest stocking, or density, varies greatly with forest type, age, site conditions, soil types and a complex of past and present forest health issues. As a result, the silvicultural treatments recommended in this plan will be tailored to each stand as appropriate. Treatments will also focus on areas where access could be improved to the forest, for forest management purposes, through timber harvesting.

To promote the growth of and regenerate shade intolerant and intermediate shade tolerant species such as red oak, black oak, white oak, scarlet oak and white pine this plan will focus primarily on even aged silvicultural techniques. In stands where there may be a high density of quality stems, commonly referred to as Acceptable Growing Stock (AGS), to grow into the future, thinning's will be implemented in order to improve growing space and capture natural mortality that occurs through competition. In stands where the dominant trees are mature, over-mature or are of very poor quality, referred to as Unacceptable Growing Stock (UGS), regeneration harvests will be implemented in order to allow enough sunlight to reach the forest floor to stimulate the establishment of a new cohort of young trees. Even aged management will use 100-year rotations. During this plan period 456 acres of forest are scheduled to receive even aged silvicultural treatments.

In stands where the long-term objective is to maintain a diversity of age classes and trees in all canopy positions un-even aged silvicultural techniques will be utilized. The recommended cutting cycle for un-even aged treatments is 25 years. During this plan period no un-even aged treatments are scheduled. This is because in the forest types that are present within this block, un-even aged treatments (typically in the form of single or group selection) often results in a forest that remains relatively dense and the forest floor still quite shaded under a canopy of trees, favoring shade tolerant species to regenerate. The most dominant shade tolerant species that is present in all of the forest types found within this block of land is the American beech. The American beech sprouts prolifically from its roots and from cut stumps. This species is prone to disease as well, as described in the forest health section of this management plan, and as a result it is an undesirable species. The dominant regeneration after un-even aged silvicultural treatments would likely be American beech. Therefore, during this management cycle un-even aged treatments will not be utilized.

Silviculture in the Context of Carbon Sequestration & Storage

With the understanding that rising atmospheric carbon dioxide levels are a primary cause of ever-increasing global temperatures, generally referred to as climate change, forests are often looked at as a way to offset climate change impacts. This is due to the fact that forests take in an enormous amount of carbon dioxide from the atmosphere through photosynthesis, using it to maintain themselves and grow (Catanzaro & D'Amato, 2019). Forests sequester and store carbon. However, the rate at which they do these is largely influenced by a variety of factors such as forest age and natural and/or anthropogenic disturbances. Carbon sequestration is greatest in young forests, peaking when the forest is around 30 to 70 years old, but will continue to sequester carbon throughout its entire life span (Catanzaro & D'Amato, 2019). A forest's carbon storage level increases with its age in the form of live and dead aboveground biomass such as trees, down woody debris and soil (Catanzaro & D'Amato, 2019). As a result, in the context of forest carbon, there is a place for both forest reserves (areas that go unmanaged and/or not harvested that serve as carbon sinks) and other areas that receive management (through silvicultural treatments aimed at regenerating the forest, creating early successional habitat and creating a forest that is sequestering high amounts of carbon from the atmosphere). This management plan aims at striking this balance within the Day Pond Block by designating 484.54 acres as an Old Forestland Management Site as well as 2,363 acres that will not be actively managed in the next 10 years that will serve as a forest reserve and carbon sink, maximizing carbon storage. This plan balances this by scheduling silvicultural activity to be done on 456 acres in order to regenerate the forest, capture natural tree mortality, improve the growing conditions for residual trees, enhance wildlife habitat, and increase the forest's carbon sequestration rate.

Desired Future Conditions & Long-Term Planning

Within the next 10-year planning cycle, management actions will be taken on sections of the forest that were acquired since the last forest management plan was written and follow up treatments will be made on previously treated areas where applicable. Employing this strategy provides the opportunity for recently acquired parcels, that may have previously gone unmanaged or had been poorly managed, to be set on a long term path of sustainable management and previously treated areas will receive the attention needed so they may continue on a long term path of sustainable management. By the end of this 10-year planning cycle, 456 acres will have been treated using even aged regeneration techniques. The primary silvicultural technique used will be the shelterwood; 297 acres will be treated with this method. One hundred twenty-five acres will be treated with the clear-cut method of regenerating the forest, aimed at removing all trees from a stand at one time, stimulating the establishment of a new cohort of trees. An additional 34 acres will be treated with thinning. Therefore, 14 percent of the total land area in the block will be receiving direct attention. This management plan also aims to be adaptive in the next 10 years. The remaining portions of the block, not actively managed, will be actively monitored. If conditions arise, that are unforeseeable at this time such as destructive weather events or insect outbreaks that pose a significant detrimental effect to the forest resource, silvicultural options will be assessed and emergency actions will be taken as necessary.

The following 10-year planning cycle (2032 – 2042) will aim to continue the strategy outlined above. Areas that were harvested using even aged regeneration techniques, as prescribed in this management plan, will have regenerated a mixture of species. Intermediate treatments, such as release or general timber stand improvement will be employed in order to favor the best quality individuals of the most desirable species. Also, areas that were thinned, as prescribed in this management plan, may have developed into stands favorable for regeneration harvests in order to continue producing the next generation of forests. During the next 10-year planning cycle each stand will once again be put under the management planning micro-scope and intensive management will be brought to stands previously left to grow where it would be advantageous to do so.

The current forest is a direct by-product of management actions taken, insect and disease problems arising, herbivore browsing and competing vegetation being present within the last 100 years. All management actions taken, insect and disease problems arising, herbivore browsing and competing vegetation being present from European settlement to current day has produced the forest as we now know it. With there being more and more insect and disease issues plaguing forests, a steady demand for forest products ever present, and a rising climate change issue, the forest resource is under greater stress than ever. The next 100 years of management will be critical. Due to the near complete suppression of fire on Connecticut's landscape, continual deer browsing and the competitiveness of black birch, American beech and red maple, it is likely that our forests will transition into a northern hardwoods forest type and away from an oak/hickory forest type. Also, as average annual temperatures rise due to global warming, some tree species may become less prominent due to a shifting in their native range. Extreme weather events that can cause severe damage to forest ecosystems such as ice storms and hurricanes are predicted to become more frequent. However, through sustainable management practices that will continually choose desired phenotypic traits, representing several age classes and a diversity of species, over undesirable traits and monocultures, Connecticut's forests will be as resilient and as diverse as they can possibly be, preparing them to not only survive, but thrive over the next 100 years.

Forest Type, Size Class & Condition of Areas to be Managed

A full forest inventory of the block was completed in order to gather data to be used in the forest management planning and decisions making process. This inventory collected information on trees throughout the area such as species, diameter, merchantability, health and quality. This data was analyzed using NED II forestry software. In an effort to see how much of the block is considered mature forest, young forest, or anywhere in between, average size class was calculated for each stand. Size classes are divided into the following diameter ranges.

- Seedling/Sapling: 1 inch – 4.5 inches
- Pole Timber: 4.6 inches – 10.5 inches
- Saw/Pole Timber: 10.6 inches – 13.5 inches
- Saw Timber: 13.6 inches +

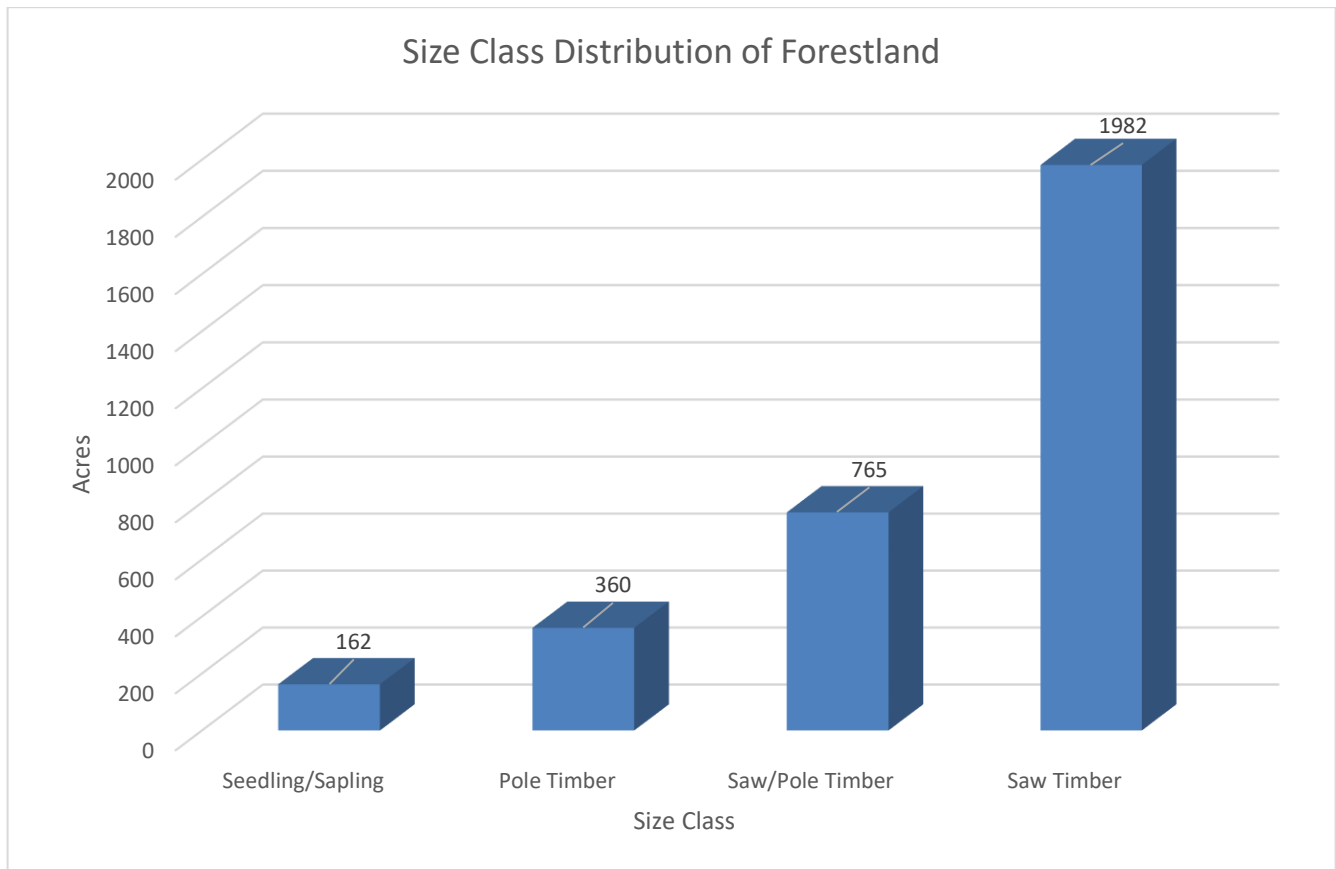


Figure 1.4. Size class distribution of forestland within the Day Pond Block of Salmon River State Forest. This chart excludes areas of the block which are considered developed, wetlands, right-of-ways or open land.

Table 1.1. Acres of forestland by size class and forest type within the Day Pond Block of Salmon River State Forest. This chart excludes acres of the forest which are considered developed, wetlands, right-of-ways or open land.

Acres of Forestland by Size Class & Forest Type					
Forest Cover Group	Seedling/Sapling	Pole Timber	Saw/Pole Timber	Saw Timber	Total
Elm-Ash-Red Maple	12	10	76	0	98
Maple-Beech-Birch	0	16	0	38	54
Oak-Hickory	150	329	576	1602	2657
Oak-Pine	0	0	0	0	0
Spruce-Fir	0	0	0	5	5
White-Red-Jack Pine	0	0	113	337	450
Pinyon-Juniper	0	5	0	0	5
Grand Total Acres					3269

Elm-Ash-Red Maple

The Elm-Ash-Red Maple group makes up three percent of all the forestland in the block with 98 acres falling into this category. These areas are characterized as having wet, saturated or poorly drained soils and, as a result, grow tree species that do well in wet conditions such as American elm, black ash and red maple.



Photo 1.5. Photo of the typical stocking levels and forest structure within the Elm-Ash-Red Maple group.

Maple-Beech-Birch

The Maple-Beech-Birch group makes up 1.65 percent of all the forestland in the block with 54 acres falling into this category. This forest group is dominated by sugar maple, American beech, yellow birch and black birch. Often other species can be found within this forest group at lower densities, such as hemlock, white pine, white ash and red oak.



Photo 1.6. Photo of the typical stocking levels and forest structure within the Maple-Beech-Birch group.

Oak-Hickory

The Oak-Hickory group makes up 81.28 percent of all the forestland in the block with 2657 acres falling into this category. The dominant species found within this group are red oak, black oak, scarlet oak, chestnut oak, shagbark hickory, pignut hickory, black birch and red maple. Within this group there are several sub-groups, referred to as forest types or stand types that are commonly found in this block. These forest types are upland oak, characterized by a poor-quality upland site growing mostly chestnut oak and scarlet oak, and mixed upland hardwoods, characterized as having a medium quality site growing all the species found within the oak-hickory group.



Photo 1.7. Photo of the typical stocking levels and forest structure within the Oak-Hickory group.

Oak-Pine

The Oak-Pine group is not present in this block of forestland.



Photo 1.8. Photo of the typical stocking levels and forest structure within the Oak-Pine group.

Spruce-Fir

The Spruce-Fir group makes up 0.15 percent of all the forestland in the block with five acres falling into this category. Often when this forest group is found in New England it is comprised of red spruce and balsam fir, two species that are not common in Connecticut. The area that is considered Spruce-Fir within the Day Pond Block is dominated by Norway spruce, a European species which was planted by the CCC in the early 1940s. With this spruce approaching 80 years old, much of it is mature at this time.



Photo 1.9. Photo of the typical stocking levels and forest structure within the Spruce-Fir group.

White-Red-Jack Pine

The White-Red-Jack Pine group makes up 13.77 percent of all the forestland in the block with 450 acres falling into this category. All of the stands that fall into this category are dominated by white pine or hemlock. This is a relatively common forest type in this block of forestland because the riparian areas adjacent to the Dickinson Creek and Salmon River are mostly occupied by hemlock or white pine. Due to the majority of the acreage taken up by this forest group being located within riparian areas, no forest management activities are planned in this forest group in the next 10-year planning cycle.



Photo 2.0. Photo of the typical stocking levels and forest structure within the White-Red-Jack Pine group.

Pinyon-Juniper

Only five acres or 0.15 percent of the total forestland in the Day Pond Block is categorized as being within the Pinyon-Juniper group. There is only one stand in this group, Compartment 4, Stand 8. This area was a field, used for agricultural purposes. When it was abandoned from agricultural use the area started to revert back to forestland. Eastern red cedar, white pine and a mix of deciduous species such as black birch and paper birch were the first to populate the area. The high amount of eastern red cedar within this stand is why it has been categorized as pinyon-juniper. Currently this stand has matured to the point where the trees are 30 to 40 feet tall and the canopy has closed. Eastern red cedar is considered an early successional species that is shade intolerant. If no management is completed in this stand, other species such as black birch will begin to out-compete the red cedar, eventually shading it out. Therefore, in order to sustain this forest and habitat type within this block all 5 acres of this forest type will be treated using a combination of mowing, invasive species herbicide treatment and tree harvesting.



Photo 2.1. Photo of the typical stocking levels and forest structure within the Pinyon-Juniper group.

Table 1.2. Acres to be managed through even-aged silvicultural techniques within the Day Pond Block of Salmon River State Forest. Of the 422 acres scheduled to be regenerated, 209 acres are in the saw/pole timber size class and the remaining 213 acres are considered to be in the saw timber size class. Of the 34 acres scheduled to be thinned, 22 acres are in the saw/pole timber size class with the balance, 12 acres, considered to be in the saw timber size class.

Acres to be Managed through Even Aged Techniques			
Forest Cover Group	Regenerate Clear cut/Seed tree/Shelterwood	Thinning Free/Crown/Low/ Mechanical/Selection	Intermediate Treatment Cleaning/Weeding/Timber Stand Improvement
Elm-Ash-Red Maple	0	0	0
Maple-Beech-Birch	0	0	0
Oak-Hickory	411	0	0
Oak-Pine	0	0	0
Spruce-Fir	0	0	0
White-Red-Jack Pine	11	34	0
Pinyon-Juniper	0	0	0
Total Acres	422	34	0

Forest Health: Disease



Chestnut blight is a fungal infection caused by the *Cryphonectria parasitica* fungus. This fungus was accidentally introduced to the United States, from nursery stock from Asia, in the early 1900s. Quickly after its identification it became evident that the mortality of the chestnut species as a whole was imminent. The fungus causes diffuse cankers to form underneath the bark of chestnut trees, ultimately cutting off the flow of water and nutrients up and down the stem of the tree. The American chestnut likely once constituted a large portion of all the trees present in the Day Pond Block. The loss of this species from this disease was a tremendous set back to the growth of the forest in this area.

Photo 2.2. Photo of a diffuse canker on an American chestnut caused by the chestnut blight.



Nectria canker, caused by *Nectria galligena* fungus, is another common disease found in this block of land, often creating what are known as “target cankers” on black birch individuals. Nectria fungus typically does not result in the mortality of affected individuals, however, it does significantly affect the quality of wood products produced from trees with it.

Photo 2.3. Photo of nectria canker on a black birch.



Armillaria fungus, *Armillaria mellea*, is a third disease that can be found sporadically throughout this block. This disease is often called “shoestring root rot” because the fungus has a shoestring like appearance growing on the roots of affected trees. Branch dieback and crown thinning are common symptoms. Affected trees will typically not die from this fungus alone, however, it does act as a secondary pathogen which will develop on trees already under stress from a variety of other biotic and abiotic factors.

Photo 2.4. Photo of shoestring root rot on a standing dead tree.



Beech leaf disease (BLD) is a novel disease affecting American beech. This disease has been found in several states, including Connecticut, as well as one Canadian Province. This disease is associated with a subspecies of the anguinid nematode, *Litylenchus crenatae mccannii*, which may be present in the buds and leaves of beech trees of all age classes. Nematode infection mechanisms are not fully understood at this time. Symptoms of BLD include dark stripes between lateral veins of leaves. Affected leaves also can become shrunken, crinkled and have a leathery texture. Tree mortality can result from the disease. No treatments are currently available for BLD. Research is currently being done by The Connecticut Agricultural Experiment Station to better understand the short- and long-term implications that this disease may have on the forests of Connecticut. Management efforts regarding this disease within this block of forestland will focus on monitoring for its presents and reporting its location if and/or when it is found.

Photo 2.5. Photo of an American beech with BLD. Notice the dark stripes in the leaves.

Forest Health: Insects



Spongy moth caterpillar, previously known as gypsy moth, is a non-native moth introduced to North America that defoliates many tree species, oak species in particular. Successive years of spongy moth caterpillar defoliation and drought like conditions in 2016 and 2017 has resulted in the mortality of thousands of trees across Connecticut. Damage varies greatly by locality. In the Day Pond Block, spongy moth effects vary greatly by species and site location. Although white oak, red oak, black oak, chestnut oak and scarlet oak all have been heavily affected, the mortality of white oak seems to be the highest. Also, ridgetops and hilltops generally have a higher proportion of mortality, likely due to the trees already being drought stressed. Individuals that may have been partially defoliated are more susceptible to secondary pathogens such as two-lined chestnut borer and shoestring root rot. Overall, spongy moth has had a major impact on the Day Pond Block, however, the area does not show signs of widespread mortality that is common in many other forests throughout eastern Connecticut. Silvicultural treatments will aim to salvage spongy moth killed individuals where possible.

Photo 2.6. Photo of an oak stand within the Day Pond Block that was defoliated by spongy moth.

Two-lined chestnut borer is an insect that is common from southern Canada through the eastern United States. The insect bores galleries underneath the bark of many species of oaks. These galleries can eventually cut off the flow of water and nutrients up and down the stem of a tree, thereby resulting in its mortality. Tree mortality rarely occurs due solely from the efforts of two-lined chestnut borer. The insect primarily attacks trees that are weakened by drought, defoliation, soil compaction or any number of other stressors. Two-lined chestnut borer, in combination with other stressors is what results in mortality. Silvicultural treatments will aim to thin overstocked stands to increase vigor and capture natural mortality caused by competition. These actions are the best ways, on a state forest wide scale, to prevent excessive two-lined chestnut borer damage.



Hemlock woolly adelgid, named for its white woolly appearance and for its preferred host, is an insect native to eastern Asia that was inadvertently introduced to the United States in 1950. Juvenile hemlock woolly adelgid feed on eastern hemlock trees by inserting their mouthparts into the base of the needles of a host tree. These insects feed on the tree's stored starches and they remain on the same needles for their entire lives. This insect has no natural predators in North America. Therefore, population levels increase exponentially and excessive feeding on infected host trees eventually results in the mortality of the host due to the disruption of the flow of nutrients to its twigs and needles. Several predators of the hemlock woolly adelgid from Asia have been evaluated, approved and successfully introduced into the forests of Connecticut. Salmon River State Forest was one of the original sites selected to release these predators due to the extensive stands of hemlock adjacent to the Salmon River and its tributaries. These efforts have been quite successful and the hemlock stands in Salmon River are considered to be healthy at this time.

Photo 2.7. Photo of hemlock woolly adelgid on a hemlock within the Day Pond Block.



Emerald ash borer is present in the state forests throughout Connecticut. This beetle, native to northeastern Asia, feeds on all species of ash. Females lay eggs in the bark of ash trees and larvae feed underneath the bark until they mature into adults. Once they mature into adults they bore through the bark, fly to another host tree and the cycle continues. Signs of the emerald ash borer are horizontal galleries underneath the bark created by the larvae feeding as well as D shaped holes in bark created when adults bore through the bark. The larvae feeding underneath the bark cuts off the flow of water

and nutrients to the rest of the tree and results in the mortality of the affected individual. Salvaging affected trees during timber harvesting operations is the only way to minimize the spread of this insect on a state forest wide scale. Fortunately, ash species make up a very low percentage of all the trees present within the block. Therefore, this beetle is expected to have a minimal impact on this block.

Photo 2.8. Photo of the galleries underneath the bark of a white ash tree caused by emerald ash borer which leads to the mortality of the tree.



In areas dominated by white pine, the white pine weevil has had an effect on their quality. This insect lays its eggs in the topmost bud of white pine individuals. These eggs hatch and the larvae feed on the bud, thereby killing it and causing other branches to take over as the terminal leader. This results in a tree with three or more main stems. The quality of white pine with multiple stems due to this insect is typically degraded from sawlog quality to no more than pulpwood quality. This insect prefers high sunlight conditions. As a result, open grown trees are the most affected. The white pine stands in the interior of the forest that regenerated under partial shade are much less affected.

Photo 2.9. Photo of a white pine with multiple leaders, caused by white pine weevil damage.

Southern pine beetle is a bark beetle, native to the southeastern United States, that infests pine trees. The bark beetle enters pine trees through crevices in bark and then bores galleries into the cambium tissue beneath the bark. This boring activity disrupts the flow of nutrients and water, resulting in the mortality of the tree. It typically only takes two to four months for a tree to succumb to southern pine beetle. Although this insect is native in the southeast, it has expanded its range northward up the eastern coast in recent years. This is believed to be the result of warmer winter temperatures. Although southern pine beetle will attack many different coniferous tree species, red pine and pitch pine tend to be most heavily affected in Connecticut forests. Signs of infestation are popcorn shaped clumps of resin on the exterior of infected trees, shotgun patterned holes on the exterior of a pine trees' bark and reddish-brown needles. In the Day Pond Block there are very few red and pitch pine trees, however, there are stands of Norway Spruce that could be affected by southern pine beetle. This insect pest has not been detected in the block yet, but annual monitoring will be done to further understand how, where and if this insect pest will affect vulnerable stands of trees.



Historically, the same tree species affected by southern pine beetle, most notable red pine, were affected by red pine scale. Red pine scale is an exotic invasive insect originating from Asia that was first discovered in Easton Connecticut in 1946 and quickly became very detrimental to red pine plantations (Doane, 1959). Red pine plantations were common in state forests during that time period as a result of CCC planting efforts. Similar to southern pine beetle, the red pine scale feeds on the inner bark of host trees, eventually resulting in mortality. Some affected stands in the Day Pond Block were salvaged in the 1980's and 1990's and are now young, pole

sized mixed hardwood stands. Stands that were not salvaged are now most easily identifiable by red pine snags, or standing dead red pine trees, that were killed by red pine scale.

Photo 3.0. Photo of a red pine plantation that was killed by red pine scale. Notice the dead red pine stems have fallen over and are now rotting away on the forest floor while a stand of mixed hardwoods has taken their place.



Beech bark disease is also commonly found on American beech individuals within the block. The disease results when the beech scale insect punctures the bark of a beech tree to feed, which creates a wound where the nectria fungus can enter the tree. Once the nectria fungus is within the tree the fungus causes cankers to form, ultimately resulting in the mortality of the tree. To compound the issue, American beech sprouts prolifically from cut stumps and from roots. Furthermore, American beech is very shade tolerant, meaning it grows well in high shade conditions such as the forest floor. Therefore, as American beech individuals succumb to disease, they sprout new stems from their roots and continue the cycle of growth and disease. For long term forest management, the difficulty is establishing desirable regeneration such as red oak in an understory already dominated by disease prone beech sprouts. Silvicultural treatments will focus on even aged management techniques which will allow high amounts of sunlight to the forest floor, thereby

favoring shade intolerant and intermediate shade tolerant species over the shade tolerant beech. Treating beech stumps in recently harvested areas with an herbicide to prevent re-sprouting may be recommended as another way to favor the regeneration of more desirable species.

Photo 3.1. Photo of an American beech with beech bark disease. Notice the blistering bark caused by cankers forming underneath the bark.

Forest Health: Invasives



Invasive plant species such as multi-flora rose, Japanese barberry, honeysuckle, Japanese stilt grass, Japanese knotweed, oriental bittersweet and burning bush, sometimes called “winged euonymus” due to its twigs having a winged appearance, are commonly found in the Day Pond Block. Invasive plants can threaten to displace native understory vegetation and can overtop young trees, suppressing their growth. The native mountain laurel is also a common understory shrub

found throughout the block and can act in much the same way as non-native invasive species. These shrubs tend to be most dense on roadsides, property boundary lines and field edges with a lower density being present in the interior of the forest under the canopy of trees. Unfortunately, invasive species are so common throughout Connecticut and the rest of the northeast that eradication is not a realistic goal. However, efforts can and should be made to reduce invasive species density. Therefore, each timber harvest that is prescribed in this management plan will address invasive species. If levels are considered high enough to hinder the establishment of regeneration or will overtop advance regeneration, an herbicide treatment of the invasive plants in that particular area will be warranted prior to completing the silvicultural activity.

Photo 3.2. Photo of invasive plant species in the understory of a forest. Notice the bittersweet vine climbing up the tree in the foreground and autumn olive and multi-flora rose growing in the background.

Forest Health: Abiotic Factors



Photo 3.3. Photo of a stand of white pine toppled over by an extreme weather event.

The primary abiotic factor that has a significant effect on forest health is weather. Extreme weather events such as tornados, hurricanes, ice storms and micro-bursts cannot be planned for. However, this management plan aims to be adaptive. After significant weather events, areas that were heavily affected will be re-assessed. If any immediate action would be advantageous to mitigate forest health impacts, those actions will be taken at that time.

H. Landscape Context - Forestry - adjacent land uses

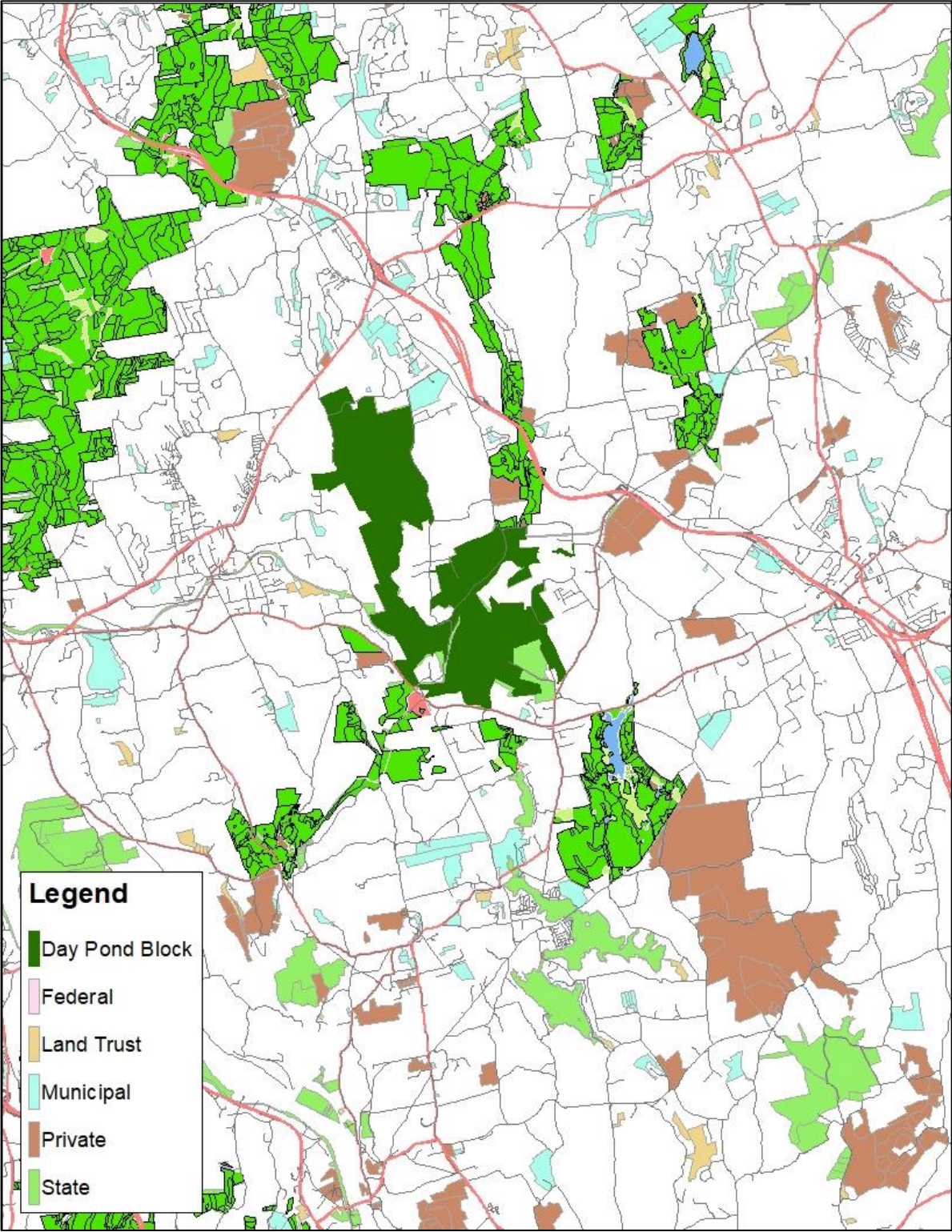


Figure 1.5. Location map showing federal, land trust, municipal, private and state protected lands in the vicinity of the Day Pond Block of Salmon River State Forest.

The Day Pond Block, located in the center of Figure 1.5 above, is nestled within rural eastern Connecticut. The block is just one section of the much larger Salmon River State Forest. Interspersed throughout the region there is also many smaller parcels, owned by the federal government, land trusts, municipalities or private individuals or conservation organizations that are designated as protected open space, as shown in Figure 1.5. Efforts by the state and other entities have been vital in protecting the rural fabric of the communities that this forest lies within. The present-day conditions are recognized as good landscape level habitat, with a diversity of cover types including forestland of varying age classes, actively managed agriculture land, wetlands, ponds and lakes as well as open land containing a diversity of herbaceous plants. However, a much greater amount of land in this landscape is unprotected and may increasingly be under the stress of development. Therefore, management strategies of the Day Pond Block will need to be reviewed on a 10-year cycle to ensure habitat goals are met as landscape habitat is lost due to development.

I. Specific Acquisition Desires

Future acquisition efforts should be prioritized by the following three guidelines:

- All interior parcels should be acquired if made available to the State. This will reduce boundary line maintenance as well as strengthen DEEP forest use policies.
- Any parcel which currently abuts the forest on two or three sides. Acquisition of properties such as these would allow the forest to expand along its bounds, reducing maintenance issues, strengthening DEEP forest use policies and will create a large protected forest corridor.
- Any parcel which may provide improved access to existing town roads should be acquired for management and emergency access purposes.

J. Public Involvement

Public involvement and receiving stakeholder input are critical aspects of public lands management. Therefore, a preliminary draft of this forest management plan was shared with the towns that this forest resides within, the Town of Marlborough, the Town of Colchester and the Town of East Hampton, as well as the Connecticut Horse Council, Connecticut Forest & Park Association (CFPA), the southeast Connecticut chapter of the New England Mountain Biking Association (NEMBA), the New England chapter of Back Country Hunters & Anglers (BHA), the Connecticut Conservation Advisory Council and Audubon Connecticut. These municipalities and organizations are considered major stakeholders in the management of this forest because collectively they represent the constituents of the community the forest is located within, recreational opportunity and trail stewardship and the conservation of vital wildlife habitat. These stakeholders were asked to review the plan, over a month-long period, and provide any comments or concerns they might have. No comments were received from any of these municipalities or stakeholder groups.

This plan will be made available to the public. State forest management plans are published on the CT DEEP website and can be found by following this link [Forest Management on State Lands](#). Comments and questions regarding the plan are always encouraged. Also, this plan may serve as a resource for local municipalities and non-profit organizations that are actively planning for open space protection.

K. Adaptive Management

The Division of Forestry understands the nature of forest management as it 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 insect and disease, or population outbreaks. 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 additionally affect resource condition and work requirements. The Division of Forestry and our colleagues in Parks, Wildlife, Fisheries, and Agency Support, 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.

L. 10-Year Goals

- Maintain a sustainable forest ecosystem
- Support sustainable recreation while discouraging non-authorized uses that threaten the integrity of the forest resource
- Establish 484.54 acres of Old Forestland Management Sites
- Promote, enhance and protect significant and/or critical habitat
- Maintain areas of mature forest to serve as carbon storage
- Create young forest to increase the rate of carbon sequestration
- Create young forest and early successional habitat to diversify wildlife habitat
- Improve access to the forest for forest management purposes
- Implement forest management practices on parcels that were acquired since the last management plan was written
- Continue the implementation of sustainable forest management practices on areas that have historically been actively managed
- Control invasive species, particularly in managed areas, to prevent them from suppressing regeneration and to prevent their establishment throughout the forest
- Adaptive management principles will be utilized in the event that damage to the forest is caused by events that are unforeseen at this time such as adverse weather and insect or disease infestations

M. Work Plans

Road Maintenance

There is only one state forest road within the Day Pond Block, River Road that goes through the forest adjacent to the Salmon River from South Road in Marlborough to the Comstock Bridge Road in Colchester, a distance of approximately two miles. River Road is a seasonal road, open to vehicles from the third Saturday in April to Columbus Day weekend in October. The road is often used during the off-season for walking, cycling, horseback riding, snowshoeing and skiing. Currently, the road is in good condition. However, during the duration of this management plan, normal use of the road will create potholes, bumps and potentially washouts. Therefore, the road should be evaluated on an annual basis and graded as necessary to fix wear spots and problem areas.

Road Construction, Gates & Signs

Educational signage will be developed and posted at the access points to the forest, particularly to the entrances of the Salmon River Trail and Day Pond Brook Spur Trail where visitor traffic is the highest. By doing this, DEEP Division of Forestry will take an educational approach towards the issue of high trail densities, high traffic areas and their impact to the forest and wildlife. These signs will ask trail users to respect other users, the environment and trail closures. Within the timeframe of this management plan, these signs will be placed at every trail entrance to help users understand that this use is a privilege that needs to be respected.

Boundary Maintenance

Boundary line maintenance consists of repainting blazes on boundary line trees, putting up new state forest signs on boundary line trees and collecting data on boundary line features such as stone walls, barbed wire fencing and corner pins. This was last completed in the Day Pond Block approximately 10 years ago. As a result, the paint is now fading and the boundary lines around new land acquisitions have not been marked. Therefore, all boundary lines will be revisited in this 10-year management cycle to ensure they are marked clearly. In the future, boundary lines will be maintained every 7 to 10 years to ensure that markings are accurate and data is as up to date as possible.

Stream Improvement

No stream improvement plans are scheduled for this management period.

Cultural Site Maintenance

No cultural site maintenance is planned for this management period.

Recreational Site Improvement

Educational signage outlined in the “Road Construction, Gates & Signs” section of this plan will be posted as a short-term initiative aimed at managing high recreational use areas within this block of land. However, the recreational pressure is such that more active approaches need to be implemented as the long-term solution to recreational issues, outlined in section E “Extensive Areas of Concern” of this plan. The Parks, Forestry and Wildlife Divisions of DEEP, along with stakeholder groups, will collaborate to implement the following overarching goals aimed at improving the sustainability of recreation in the forest and ensuring that recreation is inclusive to all user groups:

- Stop the creation of unauthorized trails.
- Take additional measures, where applicable, to stabilize existing trails. Stabilization measures will include avoiding sensitive wet and riparian areas, reducing steep grades by installing additional switchback turns, constructing bridges over unavoidable wet areas and/or streams and putting in water bars to divert water off trail to prevent erosion and sedimentation.

Trail Maintenance

As previously stated in this management plan, there are several authorized trails within the Day Pond Block including the Airline State Park Trail, the Salmon River Trail, the Day Pond Brook Spur Trail and the Connecticut Horse Council Recommended Trail. Various improvements have been made to these trails over the years to make them excellent places to ride a bike, go for a hike, snowshoe or cross country ski and go horseback riding. Maintenance of these trails includes clearing debris, ensuring drainage structures such as water bars are functioning, maintaining signage, trail markers as well as maintaining gates, parking areas and access points. Currently, the authorized trails in this block of forestland are in good condition. Therefore, no major site improvements beyond routine maintenance are planned for these trails in the management period outlined in this plan. DEEP Parks Division maintains the Airline State Park Trail. The Salmon River Trail and the Day Pond Brook Spur Trail are maintained by the Connecticut Forests and Parks Association (CFPA) with help from volunteers. The Connecticut Horse Council Recommended Trail is maintained by the Connecticut Horse Council with help from volunteers. To learn more, get involved and/or become a volunteer visit <https://www.ctwoodlands.org/> or <http://www.cthorsecouncil.org/>.

Wildlife Habitat Improvement

The Day Pond Block is within a conservation focus area for American woodcock. The planned silvicultural activity will create a diversity of wildlife habitat for woodcock and other wildlife dependent on various stages of forest growth. This will be done through regeneration harvests that will create early successional habitat, an element that is lacking within this block of forestland.

Compartment 5, Stand 3 (six acres), Compartment 4, Stand 8 (five acres), Compartment 4, Stand 9 (19 acres) as well as the Larson Lot WMA are all areas that have been identified for wildlife habitat improvement work. All of these areas contain early successional habitat components as well as a diversity of vegetation types. It is desired to not only maintain these habitat elements but to expand and enhance them as well. This will be done through tree harvesting, mowing and herbicide applications.



Photo 3.4. Photo of Compartment 5, Stand 3 within the Day Pond Block of Salmon River State Forest. This Stand contains excellent old field, early successional habitat for American woodcock and many other wildlife species.

Wildlife Population Management

Hunting and trapping is permitted within the Day Pond Block. These activities aid in the management of wildlife populations. Hunting and trapping rules and regulations are created by CT DEEP, Wildlife Division, based on wildlife population trends identified through various surveys.

Silviculture

Table 1.3. Table of the silvicultural activities scheduled for the next 10 years within the Day Pond Block of Salmon River State Forest.

Fiscal Year	Compartment	Stand	Acreage	Activity
2024	4	6	32	Clear Cut
2024	4	7	2	Clear Cut
2025	2	6	82	Patch Clear Cuts
2025	3	8	80	Shelterwood
2026	10	4	55	Shelterwood
2026	10	6	12	Shelterwood
2026	10	7	20	Shelterwood
2026	10	8	36	Shelterwood
2026	10	10	24	Shelterwood
2029	9	9	70	Shelterwood
2029	5	1	7	Clear Cut
2029	5	1a	2	Clear Cut
2030	13	1	10	Thinning
2030	13	7	12	Thinning
2030	13	7a	12	Thinning
Total Acreage			456	

Timber Stand Improvement/Invasive Control

Timber stand improvement work is an important step to take on a site where the goal is to grow healthy, quality trees of the species composition that is desired. Silvicultural regeneration efforts made within this block in the last 40 years have resulted in an abundance of black birch, red maple, and American beech regeneration. To favor the growth of the best quality individuals of these species for future sawtimber production as well as to prevent oak species from being outcompeted and maintain the oak component within the forest, timber stand improvement is necessary. Timber stand improvement is analogous to weeding a vegetable garden, in that poor quality and/or undesirable individuals are removed to provide additional growing space to neighboring good quality, desirable individuals.

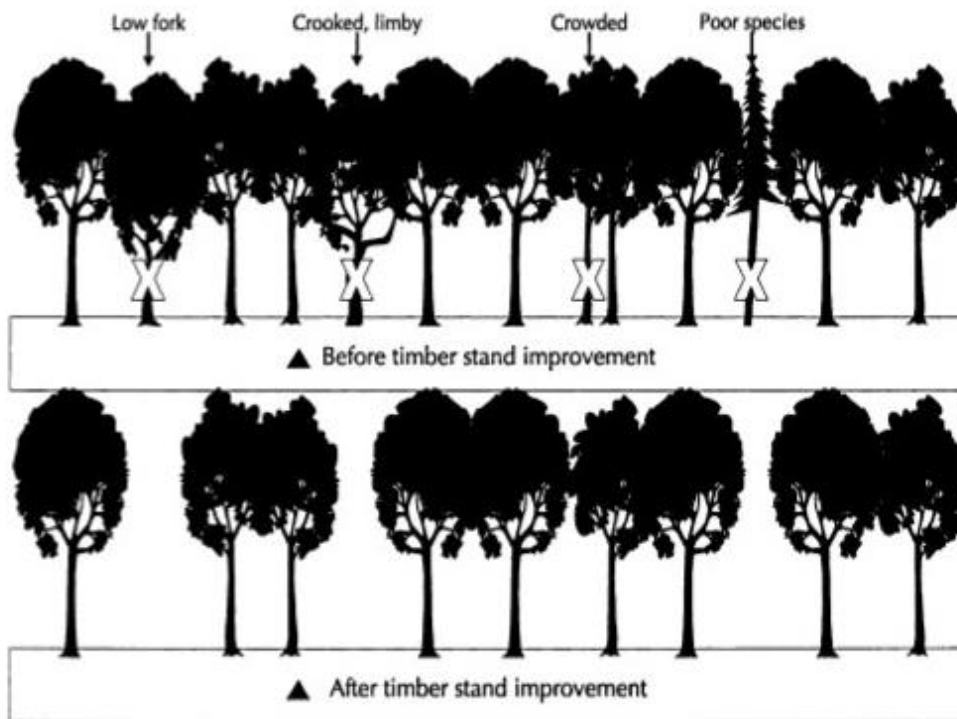


Figure 1.6. Example of a how timber stand improvement is applied to improve the growth, value, and species composition of the forest (Sagor, Baughman & DuPlissis, 2019).

Opportunities to conduct this work within this block are available in several stands, most notably in stands that have had a regenerative silvicultural operation within the last 40 years and now have young growth of sapling to pole sized trees. These stands include Compartment 1, Stand 8, which was clear cut in 1983, Compartment 9, Stand 7, clear cut in 1985, Compartment 17, Stand 1, shelterwood harvested in 2008, Compartment 10, Stand 5, shelterwood harvested in 2010 and Compartment 9, Stand 9a, salvage harvested in 2018. Timber stand improvement work within these stands will be worked on periodically throughout the duration of this management plan utilizing DEEP forestry staff and/or independent contractors as time and funding are available.

It is imperative that invasive plants be treated so they do not suppress regeneration efforts. Invasive species are common and well established across the landscape. Eradication is not a realistic goal. Therefore, invasive control efforts will be concentrated to areas where harvesting is scheduled. Fortunately, in the majority of the upland forest stands where harvesting has been scheduled the density of invasive plants is low or non-existent. Invasive control will focus on areas where invasive plants are most prevalent, along boundary lines and access points. Chemical treatment, such as the use of herbicides, is the preferred invasive treatment method. This is because chemical treatments can target individual plants or large groups and they are effective at killing an entire plant above the below ground. Also, from a time and economic management perspective, herbicide treatments are more efficient than alternative mechanical control methods.

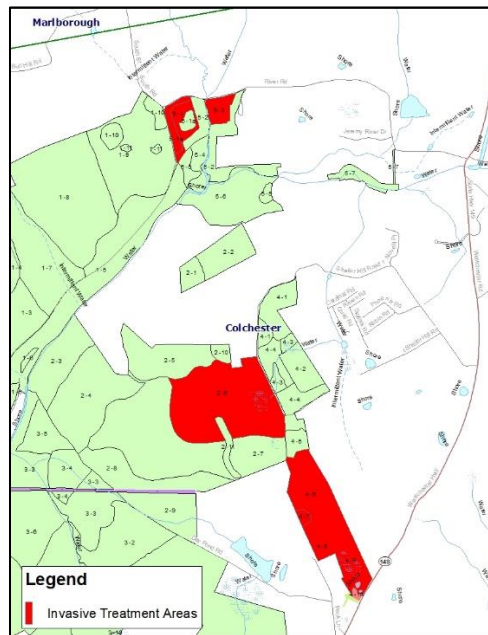


Figure 1.7. Map highlighting the areas within the Day Pond Block scheduled for invasive treatment.

Table 1.4. Table describing where, when and the extent of invasive treatments planned in the next ten years within the Day Pond Block.

Fiscal Year	Compartment	Stand	Acreage
2023	4	6	32
2023	4	7	2
2023	4	8	5
2023	4	9	19
2024	2	6	82
2028	5	1	7
2028	5	1a	5
2028	5	3	6
Total Acreage			157

Salmon River State Forest: Day Pond Block Work Plan by Year

Fiscal Year	Scheduled Activity	Forest Compartment	Forest Stand	Restrictions	Area
2022	Boundary Line Maintenance	N/A	N/A	None	14 Miles
2023	Boundary Line Maintenance	N/A	N/A	None	15 Miles
2023	Invasive Treatment	4	6	Seasonal	32 Acres
2023	Invasive Treatment	4	7	Seasonal	2 Acres
2023	Invasive Treatment	4	8	Seasonal	5 Acres
2023	Invasive Treatment	4	9	Seasonal	19 Acres
2024	Clear Cut	4	6	None	32 Acres
2024	Clear Cut	4	7	None	2 Acres
2024	Invasive Treatment	2	6	Seasonal	82 Acres
2025	Patch Clear Cuts	2	6	None	82 Acres
2025	Shelterwood	3	8	None	80 Acres
2026	Shelterwood	10	4	None	55 Acres
2026	Shelterwood	10	6	None	12 Acres
2026	Shelterwood	10	7	None	20 Acres
2026	Shelterwood	10	8	None	36 Acres
2026	Shelterwood	10	10	None	24 Acres
2028	Invasive Treatment	5	1	Seasonal	7 Acres
2028	Invasive Treatment	5	1a	Seasonal	5 Acres
2028	Invasive Treatment	5	3	Seasonal	6 Acres
2029	Shelterwood	9	9	None	70 Acres
2029	Clear Cut	5	1	None	7 Acres
2029	Clear Cut	5	1a	None	2 Acres
2030	Thinning	13	1	None	10 Acres
2030	Thinning	13	7	None	12 Acres
2030	Thinning	13	7a	None	12 Acres
2031	Update Forest Management Plan	All Compartments	All Stands	None	3304 Acres

DEEP Division of Wildlife will complete brush mowing and the cutting of woody stems and/or trees to maintain early successional habitat, as needed, within Compartments 4, Stands 8 and 9 as well as Compartment 5, Stand 3.

N. Appendix

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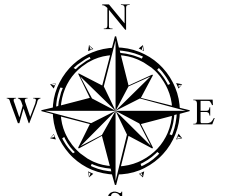


Map A - Topography

Salmon River State Forest: Day Pond Block

Forest Management Plan

Located in the Towns of Colchester, Marlborough & East Hampton

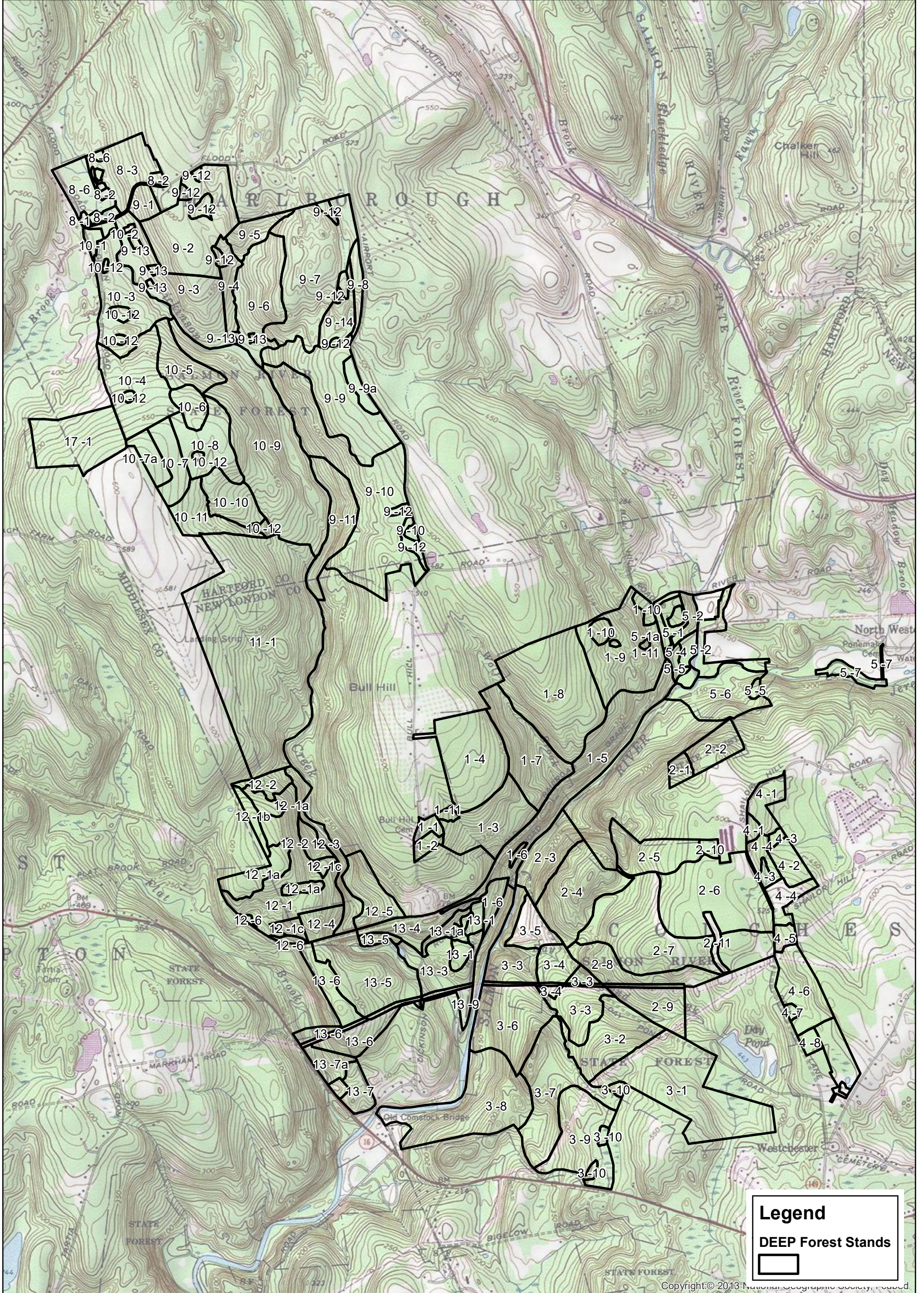


March 2, 2022

Map Prepared by: Nathan Piché

Map Scale: 1 inch = 2,000 feet

0 1,000 2,000 4,000 Feet

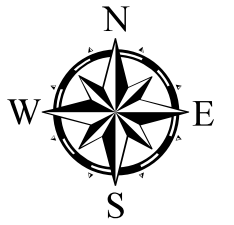




Map B - Base Salmon River State Forest: Day Pond Block

Forest Management Plan

Located in the Towns of Colchester, Marlborough & East Hampton

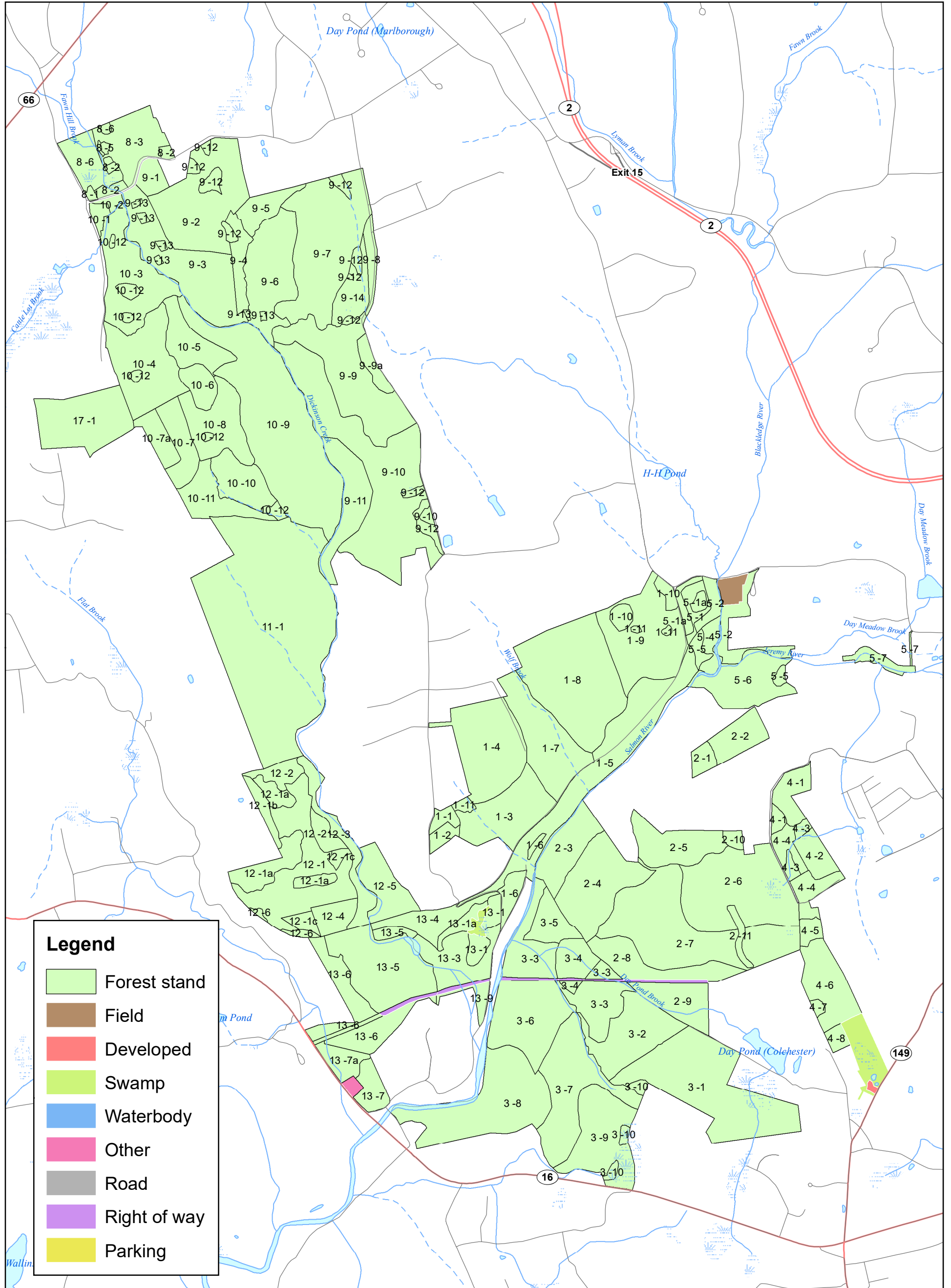


March 2, 2022

Map Prepared by: Nathan Piché

Map Scale: 1 inch = 2,000 feet

0 1,000 2,000 4,000 Feet

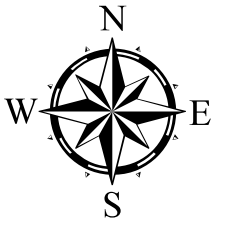




Map C - Site Quality Salmon River State Forest: Day Pond Block

Forest Management Plan

Located in the Towns of Colchester, Marlborough & East Hampton

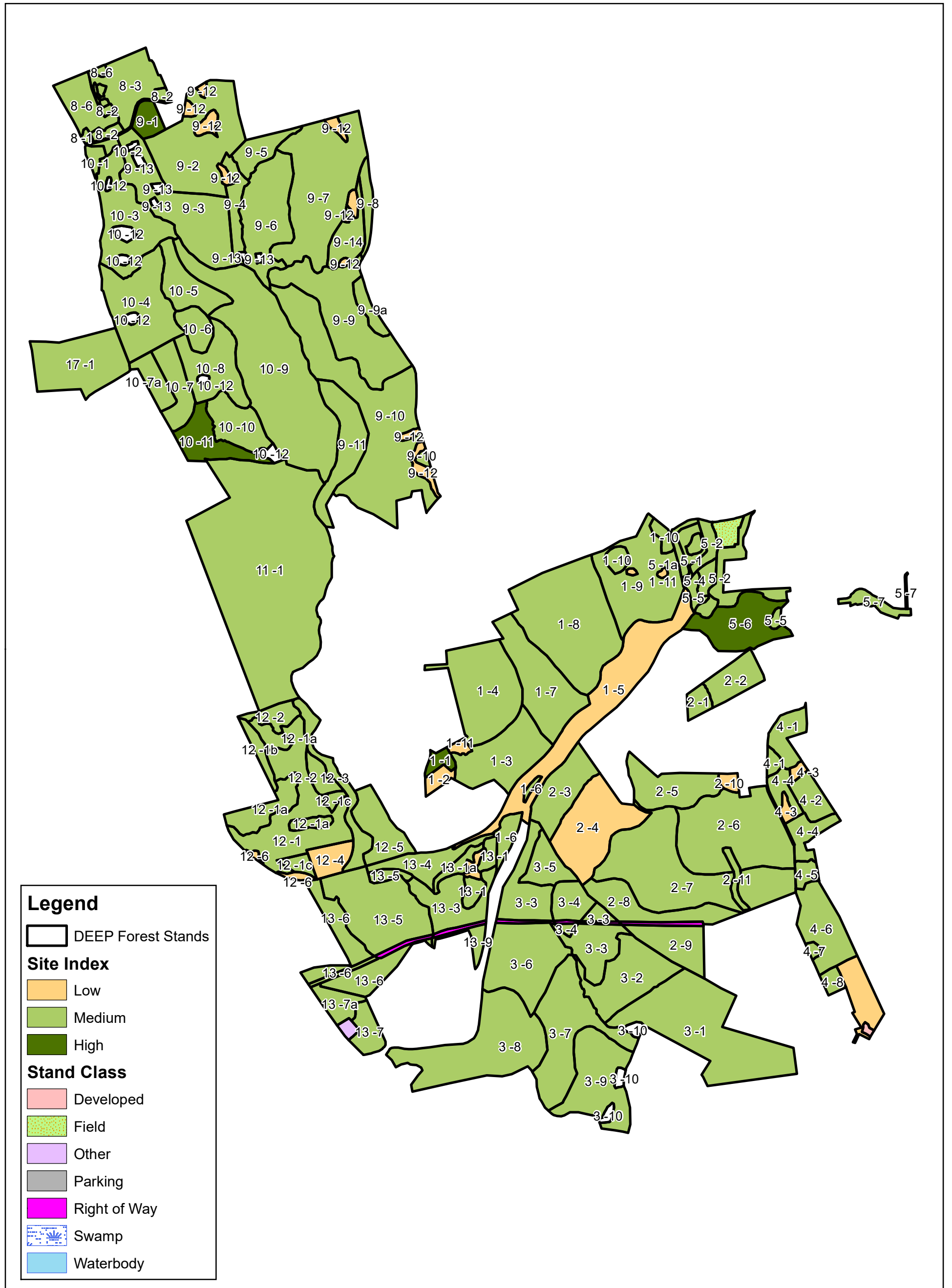


March 2, 2022

Map Prepared by: Nathan Piché

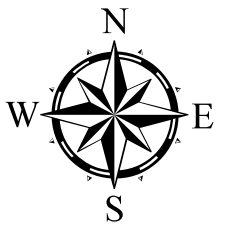
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0 1,000 2,000 4,000 Feet





Map D - Forest Type & Size Class Salmon River State Forest: Day Pond Block



Forest Management Plan

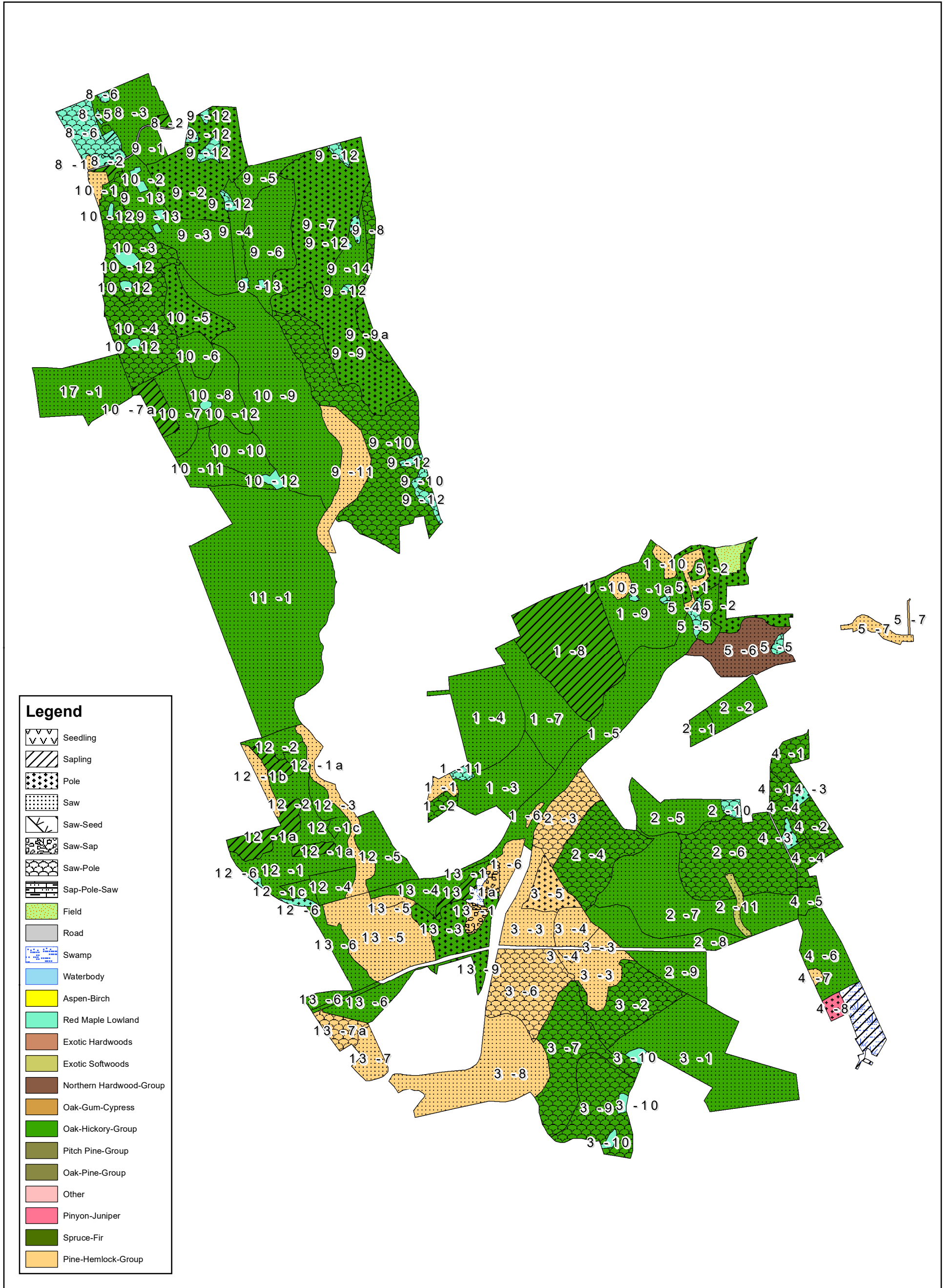
Located in the Towns of Colchester, Marlborough & East Hampton

March 2, 2022

Map Prepared by: Nathan Piché

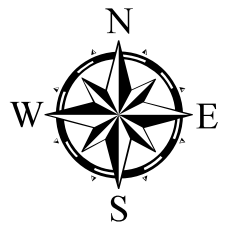
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0 1,000 2,000 4,000 Feet





Map E - Special Features Salmon River State Forest: Day Pond Block



Forest Management Plan

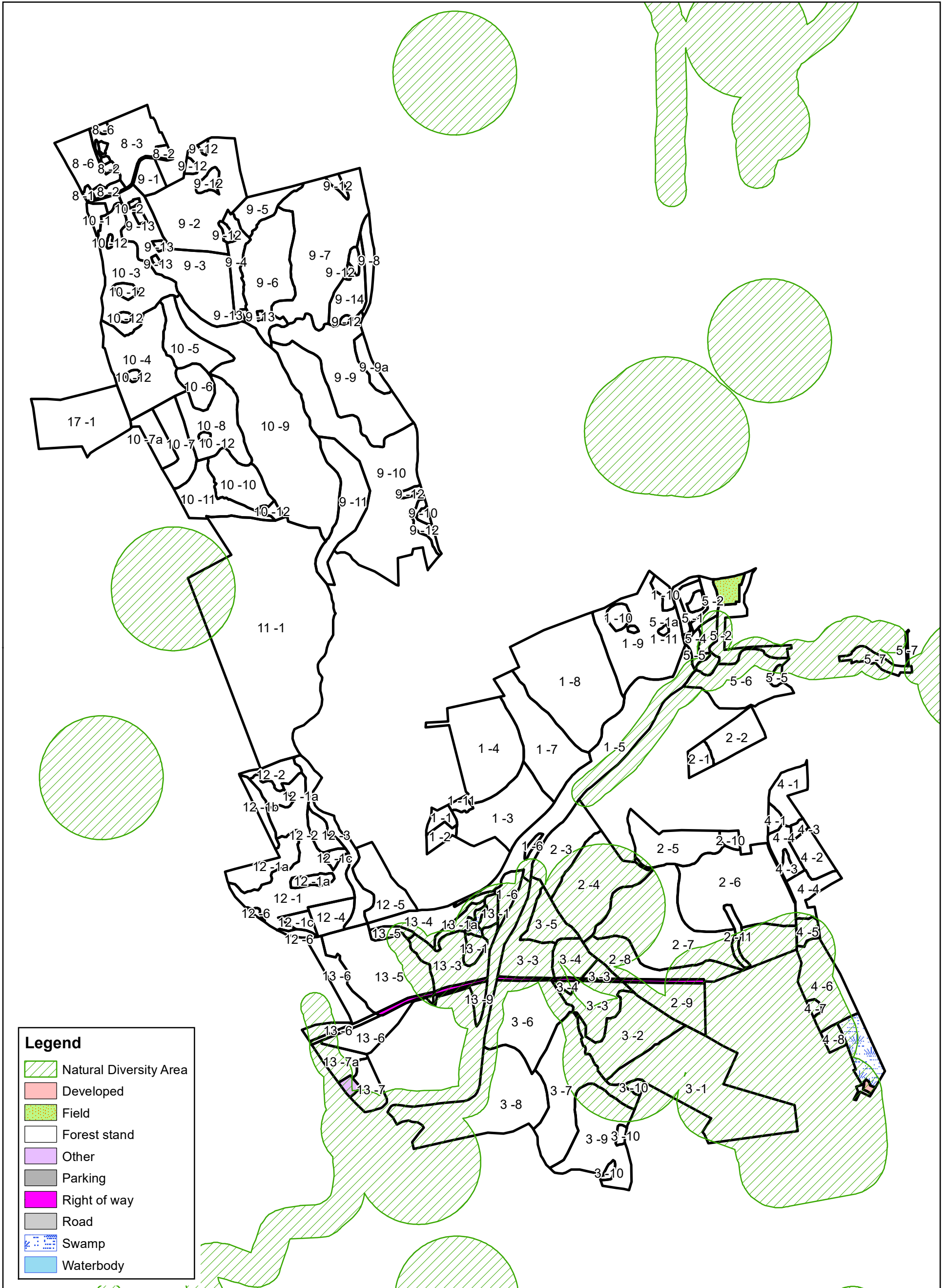
Located in the Towns of Colchester, Marlborough & East Hampton

March 2, 2022

Map Prepared by: Nathan Piché

Map Scale: 1 inch = 2,000 feet

0 1,000 2,000 4,000 Feet

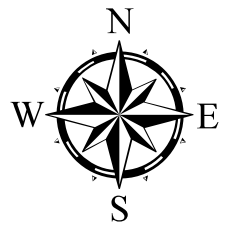


Legend

- Natural Diversity Area
- Developed
- Field
- Forest stand
- Other
- Parking
- Right of way
- Road
- Swamp
- Waterbody



Map F - Work Plan Salmon River State Forest: Day Pond Block



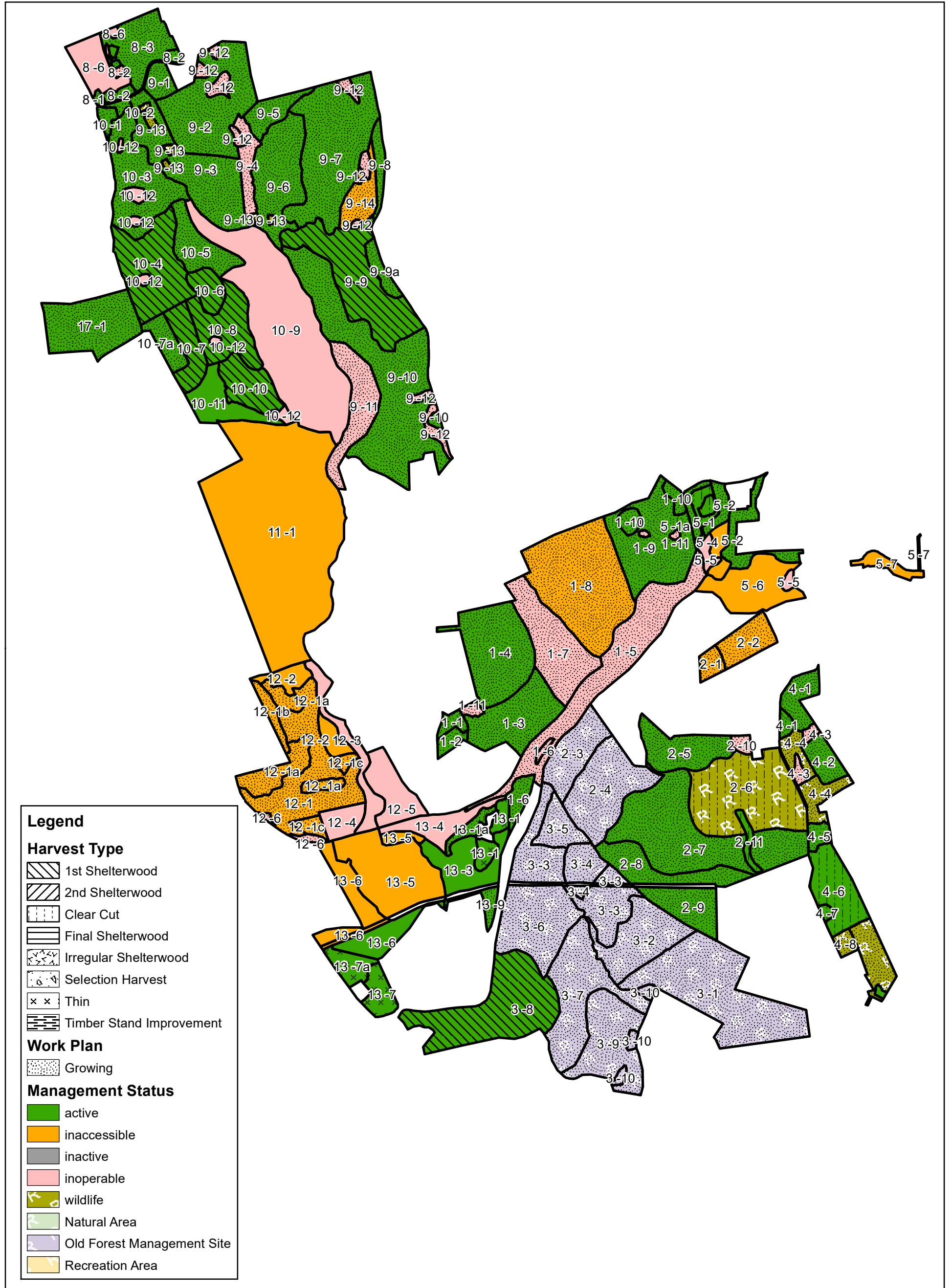
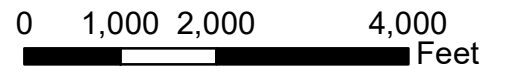
Forest Management Plan

Located in the Towns of Colchester, Marlborough & East Hampton

March 2, 2022

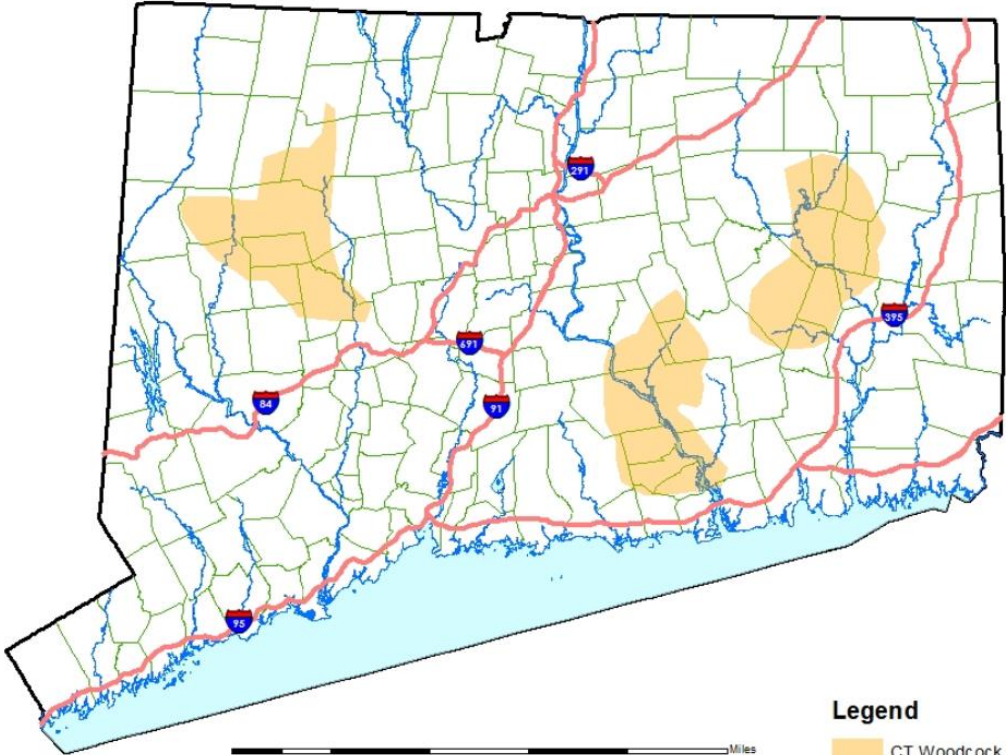
Map Prepared by: Nathan Piché

Map Scale: 1 inch = 2,000 feet





Department of Energy and Environmental Protection American Woodcock Focus Areas



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Stakeholder Outreach Correspondence

The following message was sent to the Town of Marlborough, the Town of Colchester and the Town of East Hampton, as well as the Connecticut Horse Council, Connecticut Forest & Parks Association (CFPA), the southeast Connecticut chapter of the New England Mountain Biking Association (NEMBA), the New England chapter of Backcountry Hunters & Anglers (BHA), the Connecticut Conservation Advisory Council and Audubon Connecticut.

Subject: Salmon River State Forest Management Plan



Good morning,

My name is Nathan Piché and I am the state lands forest manager for Salmon River State Forest. One of my primary responsibilities is to take inventory of our state land resources and develop management plans describing our forests and how we plan to manage them for the next 10-year period. Recently I've been working on developing a forest management plan for a section of Salmon River State Forest that we call the Day Pond Block, which encompasses 3,304 acres of state forestland within the towns of Colchester, Marlborough and East Hampton. I've attached a draft of this forest management plan and ask that you review it and provide me with any comments and concerns that you may have. If you have any colleagues that would like to read and review this plan, please feel free to forward it to them. Please respond with any questions, comments or concerns there may be by Monday, May 10th.

Thank you,

Nathan Piché
Forester 1
State Lands Management Program
Division of Forestry
Connecticut Department of Energy and Environmental Protection
209 Hebron Road, Marlborough, CT 06447
P: 860.424.4036 | F: 860.306.9597 | E: nathan.piche@ct.gov



www.ct.gov/deep

*Conserving, improving and protecting our natural resources and environment;
Ensuring a clean, affordable, reliable, and sustainable energy supply.*

Glossary

Acceptable Growing Stock: Saleable trees that are of good form, species and quality and would be satisfactory as crop trees.

Adaptive Management: A dynamic approach to forest management in which the effects of treatments and decisions are continually monitored and used to modify management on a continuing basis to ensure that objectives are being met (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Adverse Regulatory Actions: Written warning, citations or fines issued by law enforcement or regulatory bodies.

Aerial Photo: Photo taken from an elevated position like on an aircraft.

Afforestation: The establishment of a forest or a stand in an area where the preceding vegetation or land was not forest. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Age Class: A distinct aggregation of tree that originated at the same time, from a single natural event or regeneration activity or a grouping of trees (e.g. ten year age class) as used in inventory or management. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Aspect: The direction that a slope faces (north, south, etc.).

Basal Area: The cross-sectional area of a tree, in square feet, at 4.5 feet from the ground (at breast height). When the basal area of all the trees in a stand are added together, the result is expressed as square feet of basal area per acre, which is a measure of a stand's density.

Biomass: A renewable energy source of biological materials derived from living, or recently living organisms, such as wood, waste, and crop residues.

Biodiversity: The variety and abundance of life forms, processes, functions and structures of plants, animals and other living organisms, including the relative complexity of species, communities, gene pools and ecosystems at spatial scales that range from local through regional to global (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Board Feet: A unit for measuring wood volumes. It is commonly used to express the amount of wood in a tree, sawlog, or individual piece of lumber. A piece of wood 1 foot long, 1 foot wide, and 1 inch thick (144 cubic inches).

Broadcast: To spread or apply seed, fertilizer, or pesticides more or less evenly over an entire area. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Canopy: The more or less continuous cover of branches and foliage formed collectively by the tops, or crowns of adjacent trees.

Carbon Sequestration: The incorporation of carbon dioxide into permanent plant tissue. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Chip: A small piece of wood used to make pulp or wood composite or fuel. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Clearcut:

1. A stand in which essentially all trees have been removed in one operation – note depending on management objectives, a clearcut may or may not have reserve trees left to attain goals other than regeneration.

2. A regeneration or harvest method that removes essentially all trees in a stand. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Contour Map: A map where each line represents a change in elevation.

Crop Tree: A tree identified to be grown to maturity for the final harvest cut, usually on the basis of its location with respect to other trees and its timber quality.

Cull: A tree, log, lumber or seedling that is rejected because it does not meet certain specifications for usability or grade. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Culvert: A device used to channel water. It may be used to allow water to pass underneath a road, railway, or embankment for example. Culverts can be made of many different materials; steel, polyvinyl chloride (PVC) and concrete are the most common. Formerly, construction of stone culverts was common.

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

Den Tree: A living tree with a cavity large enough to shelter wildlife.

Desired Species: Those species of flora and fauna designated in the landowner's management plan and not known to cause negative impacts on the local environment.

Diameter Breast Height (DBH): The diameter of a tree at 4.5 feet above the ground.

Endangered Species: Any species of plant or animal defined through the Endangered Species Act of 1976 as being in danger of extinction throughout all or a significant portion of its range, and published in the Federal Register. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Even-Aged Management: Forest management with periodic harvest of all trees on part of the forest at one time or over a short period to produce stands containing trees all the same or nearly the same age or size.

Forest Owner: Landowner or designated representative such as, but not limited to, professional resource manager, family member, trustee, etc.

Forest Product: Any raw material yielded by a forest. Generally defined in Forest Acts or Ordinances, and subdivided conventionally into major forest products, i.e. timber and fuelwood, and minor forest products, i.e. all other products including leaves, fruit, grass, fungi, resins, gums, animal parts, water, soil, gravel, stone and other minerals on forest land (F. C. Ford –Robertson, Terminology of Forest Science Technology, Practice, and Products, Society of American Foresters, 1971).

Forest Stand Improvement: See timber stand improvement.

Forest Type: A category of forest usually defined by its trees, particularly its dominant tree species as based on percentage cover of trees, e.g. spruce fir, white pine, northern red oak.

Forest vitality: The health and sustainability of a forest.

Fuel Management: The act or practice of controlling flammability and reducing resistance to control of wildland fuels through mechanical, chemical, biological, or manual means, or by fire in support of land management objectives. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Group Selection: Trees are removed and new age classes are established in small groups. The width of groups is commonly approximately twice the height of the mature trees with smaller openings providing microenvironments suitable for tolerant regeneration and large openings providing conditions suitable for more intolerant regeneration. The management unit or stand in which regeneration, growth and yield are regulated consists of an aggregation of groups. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Girdling: Completely encircling the trunk of a tree with a cut that severs the bark and cambium of the tree. Herbicide is sometimes injected into the cut to ensure death of the tree.

GPS (Global Positioning System) Coordinates: A commonly hand held, satellite based navigational device that records x, y, z coordinators and other data allowing users to determine their location on the surface of the earth. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Hack-n-Squirt: A tree treatment method where an axe or hatchet is used to make “hacks” (injections) into the tree’s cambium layer. A plastic “squirt” bottle is used to spray a specific amount of herbicide into the cuts placed around the tree.

Harvesting: The felling skidding, on-site processing, and loading of trees or logs onto trucks. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

High conservation value forests (HCVF): Forests of outstanding and critical importance due to their environmental, social, biodiversity or landscape values. Due to the small scale and low-intensity of family forest operations, informal assessment of HCVF occurrence through consultation with experts or review of available and accessible information is appropriate.

High-Grading: Cutting only the high-value trees from a forest property, leaving a stand of poor quality with decreased future timber productivity.

Incentive Programs: State and federal agencies will offer landowners the opportunity to apply for incentive programs that will provide support and financial assistance to implement forestry and agroforestry related practices through conservation programs. Assistance can also provide for multi-year and permanent easements to conserve forest land to meet program goals.

Integrated Pest Management: The maintenance of destructive agents, including insects, at tolerable levels by planned use of a variety of preventative, suppressive, or regulatory tactics and strategies that are ecologically and economically efficient and socially acceptable (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Intermediate Cut: Removing immature trees from the forest sometime between establishment and stand harvest to improve the quality of the remaining forest stand. Contrast this technique with a harvest cut.

Invasive species: Non-native species whose introduction does or is likely to cause economic or environmental harm or harm to human health (Executive Order 13112 (Feb. 3, 1999). Invasive Species: is a species that is 1) non-native (or alien) to the ecosystem under consideration and 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Invasive species can be plants, animals, and other organisms (e.g., insects, microbes, etc.). Human actions are the primary means of invasive species introductions. (Invasive Species Definition Clarification and Guidance White Paper Submitted by the Definitions Subcommittee of the Invasive Species Advisory Committee (ISAC), Approved by ISAC Apr 27, 2006.)

Landings: A cleared area in the forest to which logs are yarded or skidded for loading onto trucks for transport. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Landowner: Entity that holds title to the property for which the management plan is being written.

Large Woody Debris: Any piece(s) of dead woody material, e.g. dead boles, limbs and large root masses, on the ground in the forest stands or in streams. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Log Rules: A table showing estimated amount of lumber that can be sawed from logs of given lengths and diameters. The log rule commonly used in Connecticut is the International ¼ -inch Rule. The International ¼ -inch Rule is a formula rule allowing 1/2 – inch taper for each 4 feet of length and 1/16-inch shrinkage for each one-inch board. This measure approximates the actual sawmill lumber tally.

Management Plan: Documents that guide actions and that change in response to feedback and changed conditions, goals, objectives and policies. Management plans may incorporate several documents including, but not limited to, harvest plans, activity implementation schedules, permits and research.

Mast: Nuts of trees, such as oak, walnut, and hickory, that serve as food for many species of wildlife.

Mature Tree: A tree that has reached the desired size or age for its intended use.

MBF: Abbreviation for 1,000 board feet.

Noxious Plant (weed): A plant specified by law as being especially undesirable, troublesome and difficult to control (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Nutrient Cycle: The exchange or transformation of elements among the living and nonliving components of the ecosystem. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

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

Overstory: That portion of the trees in a stand forming the upper crown cover.

Overstory Removal: The cutting of trees constituting an upper canopy layer to release trees or other vegetation in an understory. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Pesticide: Pesticides include chemicals commonly known as herbicides and insecticides.

Pole Timber: Trees from 6 inches to 12 inches in diameter at breast height.

Prescribed Burn/Fire: To deliberately burn natural fuels under specific weather conditions, which allows the fire to be confined to a predetermined area and produces the fire intensity to meet predetermined objectives. A fire ignited by management to meet specific objectives (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Pruning: Removing live or dead branches from standing trees to improve wood quality.

Pulpwood: Wood cut primarily for manufacture of paper, fiberboard, or other wood fiber products.

Qualified Contractor: Forest contractors who have completed certification, licensing, recommended training and education programs offered in their respective states.

Qualified Natural Resource Professional: A person who by training and experience can make forest management recommendations. Examples include foresters, soil scientists, hydrologists, forest engineers, forest ecologists, fishery and wildlife biologists or technically trained specialists in such fields.

Rare species: A plant or animal or community that is vulnerable to extinction or elimination.

Reforestation: The reestablishment of forest cover either naturally (by natural seeding, coppice, or root suckers) or artificially (by direct seeding or planting) – note reforestation usually maintains the same forest type and is done promptly after the previous stand or forest was removed. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

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.

Regeneration Cut: Any removal of trees intended to assist regeneration already present or to make regeneration possible.

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

Riparian: Related to, living or located in conjunction with a wetland, on the bank of a river or stream but also at the edge of a lake or tidewater – note the riparian community significantly influences and is significantly influenced by, the neighboring body of water. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Riparian Zone: The area adjacent to or on the bank of rivers and streams.

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.

Sapling: Trees from 2 inches to 6 inches in diameter at breast height.

Sawtimber: Trees at least 12 inches in diameter at breast height from which a sawed product can be produced.

Scale: The extent of forest operations on the landscape/certified property.

Seedling: A young plant.

Seed-Tree Harvest: A harvest and regeneration method where nearly all trees are removed at one time except for scattered trees to provide seed for a new forest.

Selection Harvest: Harvesting trees to regenerate and maintain a multi-aged structure by removing some trees in all size classes either singly or in small groups.

Shelterwood Harvest: A harvesting and regeneration method that entails a series of partial cuttings over a period of years in the mature stand. Early cuttings improve the vigor and seed production of the remaining trees. The trees that are retained produce seed and also shelter the young seedlings. Subsequent cuttings harvest shelterwood trees and allow the regeneration to develop as an even-aged stand.

Single Tree Selection: Individual trees of all size classes are removed more or less uniformly throughout the stand, to promote growth of remaining trees and to provide space for regeneration. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Site Index: An expression of forest site quality based on the height of a free-growing dominant or co-dominant tree at age 50 (or age 100 in the western United States).

Skid: 1. To haul a log from the stump to a collection point (landing) by a skidder. 2. A load pulled by a skidder. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Skid Trail: A road or trail over which equipment or horses drag logs from the stump to a landing.

Skidding: Pulling logs from where they are cut to a landing or mill.

Slash: The residue, e.g., treetops and branches, left on the ground after logging or accumulating as a result of storm, fire, girdling, or delimiting. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Snag: A standing, generally un-merchantable dead tree from which the leaves and most of the branches have fallen – note for wildlife habitat purposes, a snag is sometimes regarded as being at least 10 inches in diameter at breast height and at least 6 feet tall; a hard snag is composed primarily of sound wood, generally merchantable, and a soft snag is composed primarily of wood in advanced stages of decay and deterioration. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Soil Compaction: The process by which the soil grains are rearranged, resulting in a decrease in void space and increasing bulk density. Can occur from applied loads, vibration or pressure from harvesting or site preparation equipment. Compaction can cause decreased tree growth, increased water runoff and soil erosion. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Soil Map: A map showing the distribution of soils or other soil map units in relation to prominent physical and cultural features of the earth's surface. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Special Sites: Those areas offering unique historical, archeological, cultural, geological, biological or ecological value.

Special Sites include:

- A. Historical, archaeological, cultural and ceremonial sites or features of importance to the forest owner;
- B. Sites of importance to wildlife such as rookeries, refuges, fish spawning grounds, vernal ponds and shelters of hibernating animals;
- C. Unique ecological communities like relic old-growth, springs, glades, savannas, fens and bogs; and
- D. Geological features such as terminal moraines, cliffs and caves.

Stand: A group of trees with similar characteristics, such as species, age, or condition that can be distinguished from adjacent groups. A stand is usually treated as a single unit in a management plan.

Stand Density: A measure of the stocking of a stand of trees based on the number of trees per area and diameter at breast height of the tree of average basal area.

Stand Management Recommendations: The recommended management activities that should be done in that stand, based on the landowner's goals and objectives.

Stand Structure: The horizontal and vertical distribution of plants in the forest, including the height, diameter, crown layers, and stems of trees, shrubs, understory plants, snags and down woody debris. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

State Forestry Best Management Practice(s) (BMPs): Forestry BMPs are generally accepted forest management guidelines that have been developed by state forestry agencies with broad public stakeholder input.

Stocking: An indication of the number of trees in a stand in relation to the desirable number of trees for best growth and management.

Sustainability: The capacity of forests, ranging from stands to ecoregions, to maintain their health, productivity, diversity and overall integrity, in the long run, in the context of human activity (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Sustainable Forest Management: The practice of meeting the forest resource needs and values of the present without compromising the similar capability of future generations (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998). Note – AFF’s Standards of Sustainability reflect criteria of sustainability based on the Montreal Process, 1993, and the PanEuropean Operational- Level Guidelines (PEOLGs).

Thinning: A cultural treatment made to reduce stand density of trees primarily to improve growth, enhance forest health, or recover potential mortality. Types of thinning include: chemical, crown, free, low, mechanical, selection. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Threatened Species: A plant or animal species that is likely to become endangered throughout all or a significant portion of its range within the foreseeable future. A plant or animal identified and defined in the Federal Register in accordance with the Endangered Species Act of 1976. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

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

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

Understocked: Insufficiently stocked with trees.

Understory: All forest vegetation growing under an overstory. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Uneven-Aged Management or Stand: A stand of trees containing at least three age classes intermingled on the same area.

Visual Quality Measures: Modifications of forestry practices in consideration of public view, including timber sale layout, road and log landing locations, intersections with public roadways, distributing logging residue, tree retention, timing of operations and other factors relevant to the scale and location of the project.

Volume: The amount of wood in a tree, stand of trees, or log according to some unit of measurement, such as board foot, cubic foot, etc.

Watershed: The area of land where all of the water that is under it or drains off of it goes into the same place. For example, the Mississippi River watershed includes all the land that drains into the Mississippi River. This watershed is the fourth largest in the world and includes water from 31 states.

Wetland: A transitional area between water and land that is inundated for periods long enough to produce wet soil and support plants adapted to that environment. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

Wolf Tree: A very large, over-mature tree that is or was open grown. These trees tend to have large full crowns and numerous branches.

Woody Debris: Any piece(s) of dead woody material (e.g. dead tree trunk, limbs, large root ball) on the ground in the forest or in streams. (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).

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