

Little River Wildlife Management Area

Management Plan (2023 through 2032)

Adaptive Management

This plan is based on an adaptive management format. Natural resource management occurs in a dynamic landscape that is often affected by outside variables. The outcomes of the actions described in this plan will be monitored to determine if management objectives are being met. This will allow modifications to occur if conditions change, there are undesirable outcomes, or new information becomes available.



Recreation

The property is open to fishing, trapping, and all types of hunting, with the exception of firearms deer hunting. While no formal trails exist on the property, the public is encouraged to use the area in a manner compatible with sound natural resource management.

Current Habitat Conditions

Upland forest accounts for approximately 85% of the habitat cover on the property. The remainder of the land is comprised of wetlands and waterbodies. While there is relatively good size class diversity within the forested areas of the property, the seedling/sapling size class is absent.



Resource Management Concerns

A significant resource management concern is the overall health and diversity of the forest resources. A challenge to addressing this concern is the lack of access for forestry equipment. Other concerns include invasive vegetation and dumping.

Wildlife Habitat

Wildlife management is the primary goal of habitat management on the property. This plan will focus on enhancing and maintaining a diversity of fish and wildlife habitats, while protecting water quality in the Little River. These practices will help to provide valuable habitat for the American woodcock and over 50 other Species of Greatest Conservation Need.



Climate Change

Forests play an important role in mitigating the effects of climate change. This plan provides the opportunity to store and sequester carbon through sustainable forest management and the subsequent production of value-added wood products.

Economic Benefits

Hunting opportunities on the property will contribute to the Department of Energy and Environmental Protection's hunter recruitment, retention, and reactivation strategy. Hunters provide an essential funding source for wildlife management in Connecticut. They also contribute to the local economy by creating and supporting jobs in the state. The silviculture treatments outlined in this plan will also provide jobs producing sustainably harvested Connecticut Grown forest products.



STATE OF CONNECTICUT
DEPARTMENT OF ENERGY
AND ENVIRONMENTAL PROTECTION

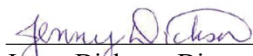


Bureau of Natural Resources
Wildlife Division

Wildlife Management Area Plan
2023 through 2032

Little River Wildlife Management Area
48.44 acres
Hampton, Connecticut

Approved By:



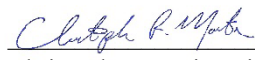
Jenny Dickson, Director
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Date 1/11/23



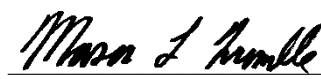
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Executive Summary

Little River Wildlife Management Area is located in Hampton, Connecticut. Hampton is located in Windham County, in the northeastern portion of the state. The 48.44 acre parcel of land that comprises the Wildlife Management Area was acquired in 1959 from the Estate of George E. Nichols. The name of the property was officially designated as Little River Wildlife Management Area in 2016, after previously being known as Little River Wildlife Area.

While no trails are authorized on the property, the public is encouraged to use the area in a manner compatible with sound natural resource management. In 2003, the Wildlife Division opened Little River Wildlife Management Area to all types of hunting, with the exception of firearms deer hunting. The property is also open to fishing and trapping.

Upland forest accounts for 85% of the habitat cover on the property. The remainder of the land is comprised of wetlands and waterbodies. Eastern hemlock-hardwood is the dominant forest cover type, covering 36% of the total forested area. While there is relatively good size class diversity within the forested areas of the property, the seedling/sapling size class is absent.

This 10-year (2023 – 2032) management plan will focus on: 1) enhancing and maintaining a diversity of fish and wildlife habitats, 2) supporting wildlife-based recreational opportunities by maintaining and enhancing the property's current infrastructure, 3) developing and maintaining a healthy forest comprised of a diversity of tree species and age classes and, 4) protecting water quality in the Little River.

Connecticut's 2015 Wildlife Action Plan identifies conservation actions needed to support species diversity and keep common species common. The Wildlife Action Plan addresses a broad array of Species of Greatest Conservation Need and their key habitats. The silviculture and habitat management practices outlined in this 10-year management plan for Little River Wildlife Management Area will promote the sustainability of the forest resources and improve habitat for American woodcock and over 50 other Species of Greatest Conservation Need identified in the Wildlife Action Plan.

Wildlife Division Mission/Purpose of Wildlife Management Areas

The mission of the Connecticut Department of Energy and Environmental Protection’s (DEEP) Wildlife Division is to advance the conservation, use, and appreciation of Connecticut’s wildlife resources. Acquiring and managing Wildlife Management Areas (WMAs) is one mechanism for accomplishing this goal. Wildlife Management Areas are properties of land and water that have a unique or outstanding wildlife quality. They are managed for the primary purpose of conserving and enhancing fish and wildlife habitat and to provide opportunities for fish and wildlife-based recreation.

The Wildlife Division is responsible for managing 112 WMAs that total approximately 34,000 acres. Over 7,500 acres have been acquired with Federal Aid in Wildlife Restoration (Federal Aid) funds, and most management activities on WMAs are funded through this program. The Federal Aid program is funded by excise taxes collected on firearms, ammunition, and archery equipment. These funds are administered by the United States Fish and Wildlife Service and are distributed to state wildlife agencies to support wildlife restoration (land acquisition, management, and research) and Conservation Education/Firearms Safety programs. Wildlife Management Areas range in size from one acre to 2,495 acres and include a variety of habitats including grasslands, reverting fields, forests, coastal salt marshes, and freshwater marshes. Most WMAs are open to the public year-round for hiking, wildlife viewing, fishing, hunting, and trapping.

To support the mission of the Wildlife Division, the Habitat Management Program strives to maintain healthy and diverse habitats that support wildlife populations in Connecticut at levels consistent with habitat carrying capacity and existing land use practices. The Habitat Management Program works closely with the Forestry Division to manage these habitats for wildlife and to protect our natural resources from the effects of wildfire, insects, disease, and misuse. In addition, the Habitat Management Program provides technical assistance to municipalities, non-government entities, other state agencies, and private landowners throughout the state.

Property History and Overview

Little River WMA is a 48.44-acre property located in the town of Hampton, Connecticut (Appendix A – Map 1). Hampton is located in Windham County, in the northeastern portion of the state. The lone parcel of land that comprises the property was acquired in the late 1950’s (Table 1). See Appendix B for a history of infrastructure, habitat, silviculture, and other management activities on the property.

Table 1. Little River Wildlife Management Area parcel acquisition history, 1959.

Date Acquired	Parcel Acres	Grantor
April 6, 1959	48.44	Nichols, Estate of George E.
Total	48.44	

Current Conditions

Landscape Setting and Physical Attributes

Little River WMA lies entirely within the town of Hampton. Hampton is a rural municipality, where agriculture and small business constitute the majority of the community’s economic base. Hampton is a member community of the Last Green Valley, a 35-town National Heritage Corridor in eastern Connecticut and south-central Massachusetts. Forests and farmland make up approximately 84% of the Last Green Valley’s approximately 707,000 acres.

Little River WMA lies in close proximity (≤ 5 miles) to several DEEP-controlled properties: Air Line State Park (SP) Trail, Beaver Brook SP, Bigelow Pond Water Access Area (WAA), Goodwin State Forest (SF), James V. Spignesi, Jr. WMA, Mansfield Hollow SP, Mansfield State-Leased Field Trial Area,

Natchaug River WAA, Natchaug SF, and Quinebaug River WMA. Little River WMA also lies in close proximity (≤ 5 miles) to numerous other protected properties held in ownership by private, municipal, and non-government entities. Some of these properties include The Connecticut Audubon Society’s Trail Wood Sanctuary, The Nature Conservancy’s Rock Spring Preserve, and Joshua’s Trust George and Margaret Hemphill Preserve.

Little River WMA lies within the Southern New England Coastal Plains and Hills ecoregion (Griffin et al. 2009). This ecoregion covers much of Connecticut, Rhode Island, and southeastern Massachusetts. The landforms of the ecoregion are irregular plains with low hills and some open high hills with relief of about 100 to 400 feet. Bedrock types are mostly granites, schist, and gneiss. Surface materials are mostly glacial till, with some stratified deposits in valleys. Soil patterns are complex and heterogeneous where the numerous, small, till-covered bedrock hills rise above the valleys and general level of outwash. Coarse-loamy and sandy, mesic Inceptisols and some Entisols are typical. Historically, forests were dominated by a mix of oaks, American chestnut, hickories, other hardwoods, some hemlock, and eastern white pine. As with many other areas of New England, these forests were cleared, either for agriculture and grazing or for the production of charcoal. A variety of dry to mesic successional oak and oak-pine forests cover the region today, along with some elm, ash, and red maple that are typical of southern New England’s forested wetlands.

The topography of Little River WMA is varied. The properties highest elevation (>460 ft.) lies along its western boundary, while the lowest elevation (<340 ft.) occurs in close proximity to the Little River near the property’s southeastern boundary (Appendix A – Map 2).

Various hydrological features are found on the property including intermittent water, wetlands, and one named stream course. The prominent hydrological feature is the Little River (Appendix A – Map 3). Little River WMA is an important part of the Shetucket River watershed.

Seven soil types are present at Little River WMA (Table 2). Some of these soil types are classified as either prime farmland soils or farmland soils of statewide importance. Slopes range from 0%-45% (Appendix A – Map 4).

Table 2. Little River Wildlife Management Area soil type characteristics, 2003.

Soil Name	Acres	Drainage Capacity	Soil Type
Hinckley gravelly sandy loam	18.77	Excessively drained	Upland
Pootatuck fine sandy loam	17.42	Moderately well drained	Upland
Occum fine sandy loam	6.90	Well drained	Upland
Saco silt loam	4.86	Very poorly drained	Wetland
Scarboro muck	0.34	Very poorly drained	Wetland
Merrimac sandy loam	0.08	Somewhat excessively drained	Upland
Rippowam fine sandy loam	0.07	Poorly drained	Wetland
Total	48.44		

Access

An informal one car public parking area is located at Little River WMA off of Sand Hill Road. Due to the property’s topography, hydrological features, and lack of previous forest management, no service roads are present on the property. Public access to the entire property is allowed year-round.

Property Infrastructure (Appendix A – Map 5)

- Miles of boundary – 1.2
- Parking areas – 1

Public Use

Little River WMA is open to fishing, trapping, and all types of hunting (archery deer, turkey, small game, and waterfowl), with the exception of firearms deer hunting. The property was opened to hunting in 2003 after an internal review from DEEP staff. The section of the Little River within the WMA is stocked annually with trout. Licensing and permit requirements, season dates, and other regulations can be found in the [Connecticut Hunting and Trapping Guide](#), as well as the [Connecticut Fishing Guide](#). The public is encouraged to use and enjoy Little River WMA in a manner that is compatible with sound natural resource management such as wildlife viewing, hiking, and nature photography. No formal trails currently exist at Little River WMA and no trails will be created or authorized during this planning period. The development of multi-use trails often conflicts with the Wildlife Division's mission. Recreational trails have been shown to fragment and degrade habitat, cause erosion and sedimentation of streams, disrupt wildlife, and create avenues for non-native invasive plant infestations, thereby reducing biodiversity. Multi-use trails can also diminish the quality of wildlife-based recreation, which generally requires limited disturbance to wildlife. Maximizing the amount of undisturbed habitat at Little River WMA and all WMAs is a critical objective especially during the spring and summer breeding period.

Special Uses

A scientific collection permit from the DEEP is required for all activities that involve the collection, capture, handling, marking, or salvage of birds, mammals, reptiles, amphibians, invertebrate, or plant species. The DEEP supports research efforts on state lands that benefit natural resources and help to inform management decisions. For example, in 2018 a request was made by the University of Connecticut Ecology and Evolutionary Biology Department to conduct forest bird research on 15 DEEP properties, including Little River WMA. This activity was approved by the DEEP and a scientific collection permit was issued.

Resource Management Concerns

A significant resource management concern at Little River WMA is the overall health and diversity of the forest resources. A challenge to addressing this concern is the lack of access for forestry equipment. Due to the topography and hydrological features, a significant portion of the property is considered inaccessible or inoperable. Forest management is proposed to occur at accessible areas, and staff will explore the possibility of working with an adjacent landowner to facilitate access to some of the inaccessible areas. Other concerns include invasive vegetation and dumping. Invasive vegetation can threaten biodiversity and requires mechanical and chemical treatments to control. Mechanical treatments involve cutting, mowing, flaming, and pulling, whereas chemical treatment involves the use of herbicides in accordance with the manufacturers label instructions as required by law.

Wildlife Habitats/Cover Types

Although the habitat at Little River WMA is dominated by upland forest, other habitat types exist in varying acreages (Figure 1).

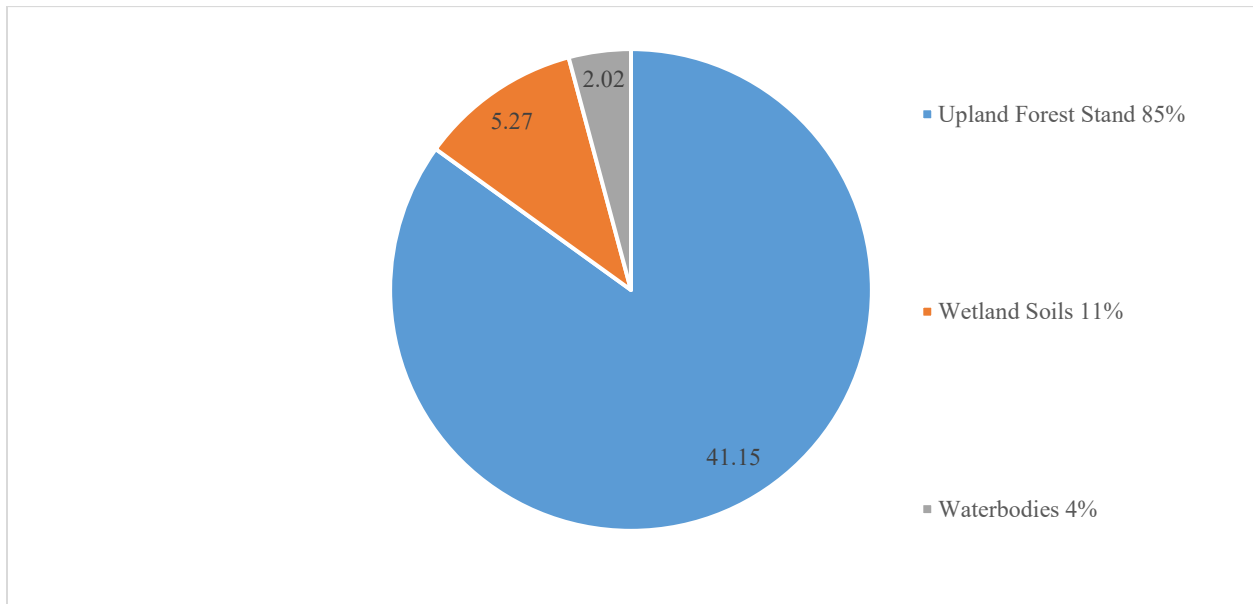


Figure 1. Little River Wildlife Management Area land cover types by percent and acreage, 2021.

Forest

Upland forest is the dominant land cover type at Little River WMA. Total upland forest acreage is 41.15, excluding forested wetlands classified as red maple lowlands in cover type mapping. If these red maple lowlands are included, then total forest acreage is 46.42.

A comprehensive inventory of the forests at Little River WMA was completed by staff from the Forestry and Wildlife Divisions in 2021. Seventeen unique plots were sampled across the forested areas of the property. At each sample plot quantitative forestry measurements were taken to assess species composition, size classes, timber quality, volume, and desirable regeneration. Additionally, qualitative estimates of competing vegetation, site suitability, and invasive species density were also recorded. Observations of vegetative changes were made while traversing the property. As a result of these observations, Little River WMA was divided into seven forest stands (Appendix A – Map 6) that are unique in species composition, age class, structure, access, and past management history. Stands were qualitatively assessed for wildlife habitat management potential based on numerous factors including landscape position, forest structure, desired future condition, and the presence of advanced reproduction. Forest management prescriptions are intended to direct forest growth toward meeting the desired future conditions at both stand-level and Little River WMA scales.

Forest management access at Little River WMA is poor. Approximately 36 acres of Little River WMA are considered inaccessible, while nearly five acres are considered inoperable. Inaccessible areas lack sufficient road or equipment access points needed for forest management activities. Inoperable areas may be accessible but are not actively managed due to physical limitations caused by the presence of site features such as wetland soils or excessively steep or rocky slopes. The DEEP will explore the possibility of obtaining access to the southern portion of Little River WMA through an adjacent landowners property to facilitate forest management access.

Forest Types

Various forest types are present at Little River WMA (Figure 2). The eastern hemlock-hardwood cover type accounts for over one third of the forest area. The area is underlain by Pootatuck fine sandy loam, an alluvial floodplain soil indicative of periodic flooding from the Little River. The topography of this area is flat with interspersed wet areas. Eastern hemlock represents the vast majority of the basal area, though the stand contains mixed hardwoods at low densities. Tree health is generally good with good live crown ratios. Some hemlock woolly adelgid and elongate hemlock scale was observed, but at lower levels than usually encountered. This stand holds exceptional ecological value by shading the Little River to keep water temperatures cool and stabilizing the riverbank to limit erosion.

The second most prevalent forest cover type is an area of upland, red maple dominant forest growing in the floodplain of the Little River. The stand sits on a deposit of Pootatuck fine sandy loam with an area of Occum fine sandy loam closer to the river. These floodplain soils are characteristic of historic releases from the Little River. The southerly flowing river makes an abrupt directional change to the east, directly north of this stand, historically flooding this area. The stand is characterized by its low stocking, prevalence of multi-stemmed red maple, and interspersion with Atlantic white cedar. The Atlantic white cedar occurs singularly and in small groups, providing further evidence of historic flooding. A subset of this stand supports low tree stocking and an abundance of herbaceous cover near the river. The area has properties characteristic of a wet meadow and was delineated separately of the red maple upland stand to allow for a nuanced management approach.

Oak-hickory dominant forest accounts for nearly seven acres of the WMA and is located along an east facing slope that comprises the western boundary of the property. Red oak, hickory, and scarlet oak are the dominant species within the stand. Pockets of pine and hemlock provide a softwood component to the area along the edge of the stand. Composition has changed in recent years after moderate mortality of the dominant red oak component brought on by spongy moth defoliation, drought, and other stressors. Southern portions of this area support younger growing stock, with fewer observed impacts on oak health from the aforementioned stressors. There is a half-acre opening that possesses expansive pockets of ground juniper that is slowly dying back. Restoring this underrepresented cover type should be a priority in this stand.

A mixed hardwood stand where compositional diversity is somewhat broad and not weighted to a given species or family group is located in the northwest corner of the property. This stand was historically oak dominant, but experienced severe upper canopy oak mortality after successive defoliations combined with concurrent drought. Composition has shifted, but with abundant oak reproduction, there is an opportunity to sustain this historic cover type through active management. This stand also supports underrepresented communities of pitch pine, gray birch, eastern red oak, and quacking aspen. While the soil texture is very coarse and the area has a history of borrow pit excavation, the Hinckley gravelly sandy loam soil in this stand provides a suitable substrate to regenerate these species, given enough sunlight.

The red maple wetland stand accounts for over five acres of the WMA. This stand is characterized by pole sized red maple and saturated ground underlain by Saco silt loam associated with the intermittent stream at the southern extent of the property. The area spans the western edge of the red maple upland area and divides the dry oak uplands from the hardwood plain. Under periods of high river flow, the area likely holds even higher volumes of water and provides a hydrological connection between the Little River and the intermittent drainage to the south.

A small stand dominated by aspen is located in the southwestern portion of the property. The mature sawtimber sized aspen found in this stand is a rare occurrence in Connecticut’s increasingly older forests. This stand could be regenerated through suckering provided access for forestry equipment could be attained. Though small, the area is unique due to its composition and the understanding that this forest type is not sustainable under the current conditions.

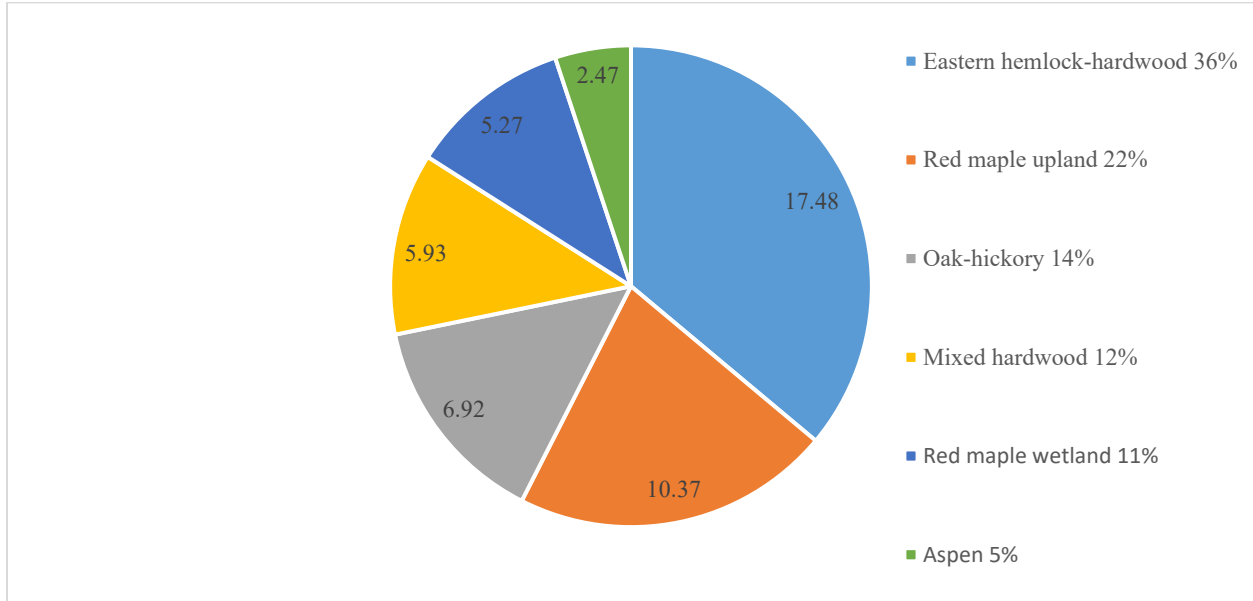


Figure 2. Little River Wildlife Management Area forest types by percent and acreage, 2021.

Forest Size Classes

Forest size class is dictated by the size of the trees in the competitive age classes. In multi-aged forests, multiple size classes may be present. Size class distribution refers to the distribution of stands of different sized trees across a property. Tree size in even aged stands is often used as an estimator of age class. Age class and size class distribution across a property or landscape influence many forest attributes such as wildlife habitat availability, species composition, and forest sustainability.

Size class distribution at Little River WMA is generally good for a small property. Although the seedling/size class is absent, there is small scale representation for nearly every other forest size class on the property (Table 3).

Table 3. Little River Wildlife Management Area forest cover types by size class acres, 2021.

Forest Cover Type	Size Class					All Aged	Total Acres
	Seedling/Sapling	Pole	Sawtimber Pole	Sawtimber	Sawtimber Seedling/Sapling		
Aspen	0	0	0	2.47	0	0	2.47
Eastern hemlock-hardwood	0	0	17.48	0	0	0	17.48
Mixed hardwood	0	5.93	0	0	0	0	5.93
Oak-hickory	0	0	6.92	0	0	0	6.92
Red maple upland	0	10.37	0	0	0	0	10.37
Red maple wetland	0	5.27	0	0	0	0	5.27
Total	0	21.57	24.40	2.47	0	0	48.44

Forest Health

For management planning purposes, forest health is defined by a suite of conditions that promote sustainable and productive forest ecosystems. Factors that influence forest health include collective tree health, the presence of invasive plants or invasive insects, native insect or disease outbreaks, or forest composition weighted too heavily towards one species, family, or age class.

Invasive plants are a concern for managers due to their ability to spread throughout the landscape, dominate the forest understory, preclude native tree and shrub growth, and harbor vectors for tick-borne illnesses. Invasive plants take advantage of elongated growing seasons and are not subject to herbivory by most wildlife. Their presence can create monocultures that inhibit the desired seedling and shrub growth following habitat management prescriptions. Control of invasive plants is costly and usually involves the use of herbicides. Despite this expense, invasive plant management should be a component of all habitat management activities which threaten to increase or spread invasive plants. As time and resources allow, managers should be proactive and aim to decrease or eliminate invasive plants from the landscape.

Fortunately, invasive plant populations are generally scarce at Little River WMA. The most immediate invasive plant concerns occur in the wetter portions of stand one (Appendix A – Map 6) where there is a low density of multiflora rose, Japanese barberry, and Oriental bittersweet. Without proactive management this population of invasive plants will grow in footprint and density. Any habitat management work undertaken in stand one should incorporate a multi-year invasive plant management strategy.

Eastern hemlock plays an important role in maintaining cool water temperatures and stabilizing the steep slopes along the Little River. Hemlock is at risk of decline due to invasive insects such as the hemlock wooly adelgid and elongate hemlock scale. Since the 1990’s, scientists at the Connecticut Agriculture Experiment Station (CAES) have been releasing a non-native ladybeetle in the state to reduce hemlock wooly adelgid abundance. The Wildlife Division will partner with the CAES on similar biological control releases at Little River WMA in an effort to minimize hemlock mortality and protect the water quality of the Little River.

Oak mortality caused by spongy moth defoliation and drought in 2016 and 2017 has had a significant impact at Little River WMA. Over 80% of the oaks in stand one are dead and there are significant mortalities in the hardwood portions of stand two and stand five (Appendix A – Map 6). Further illustrating the impact of this mortality event was the removal of over 60 dead oaks from the road frontage

of the WMA in 2021. The decline of oak in eastern Connecticut makes it even more important to promote oak resilience and regeneration in the coming decades.

Forests and Climate Change

Forests play an important role in mitigating the effects of climate change. Trees and green plants absorb carbon dioxide from the atmosphere for use in photosynthesis. They release oxygen and store carbon in trunks, roots, branches, and leaves. Snags also store carbon which is transferred to the soil when they fall and gradually decompose. In addition, the soil acts as its own carbon sink, which on average stores over 30% of the combined carbon pool in regional forests.

Forests serve two significant functions in mitigating climate change: sequestering carbon dioxide and storing carbon. The forest's ability to perform these functions is maximized at two different points during development. Sequestration potential is maximized by vigorously growing forests which are efficiently photosynthesizing and rapidly adding wood. Typically, this occurs when a forest is 30-70 years old, but can extend longer on more productive sites. Carbon storage benefits are maximized in old forests which have large diameter trees and accumulations of dead and downed wood. These conditions increase after age 70 and may persist for decades given good growing conditions.

The Forestry Division believes in pursuing a diversity of carbon management strategies to meet the demands of a changing climate, while also accomplishing traditional land and forest management objectives. Forests, as well as forest products, play a critical role in mitigating climate change. Value-added wood products such as timbers and lumber from responsibly managed forests store carbon for decades, while tree removals from responsibly managed forests allocate growing space for rapidly growing trees. This kind of forest product use and strategic management promotes structural complexity, improves wildlife habitat, and amplifies wood production rates and carbon sequestration.

Climate change will over time affect soil moisture, resulting in changes in regional species composition. It is expected that species at or near the southern extent of their ranges will be among the first impacted. Aspens, eastern hemlock, gray birch, and paper birch may experience declines in this region due to climate change. For species near the northern extent of their ranges, improved growing conditions are anticipated. Scarlet oak, pitch pine, and black gum should fare well barring any other stressors like spongy moth, oak wilt, or southern pine beetle. Forest management strategies play an important role in how well forests adapt to a changing climate. While species composition may be influenced by changes in soil moisture, forest managers will strive to make appropriate decisions regarding species composition and site quality. A complex forest structure with a diversity of species will help promote climate resilience in both managed and unmanaged stands. Thinning in stands that are expected to be affected by climate change may be a good strategy for prolonging health. Discouraging species that will be maladapted to conditions in the future will help build climate resilience into the residual forest. Similarly, fostering abrupt species transition through aggressive management action may be an option in climate threatened forests.

Harvest Sustainability

Inaccessible and inoperable stands are excluded from forest sustainability planning since they prevent extractive management that could comprise long-term sustainability. Since only 15% of the property is currently accessible for forest management activities, harvest sustainability is not a pertinent topic at this property due to forest management inaccessibility.

Wetlands and Waterbodies

Wetlands are the second most dominant land cover type at Little River WMA. Total wetland soil acreage is 5.27 acres and is primarily comprised of red maple lowlands. Total waterbody acreage is 2.02 acres and includes the section of the Little River that flows through the WMA.

Wildlife

General Wildlife Use

The variety of habitat types found within Little River WMA provide habitat for a multitude of wildlife species. Waterfowl species observed at Little River WMA include American black duck, hooded merganser, mallard, and wood duck. Passerine species documented on the property include American robin, cedar waxwing, dark-eyed junco, eastern phoebe, mourning dove, and tufted titmouse. Wild turkeys and American woodcock (hereafter woodcock) have been recorded on the property. Raptors observed on the property include coopers hawk, turkey vulture, red-shouldered hawk, red-tailed hawk, and sharp-shinned hawk. Various species of mammals have been documented at Little River WMA including bobcat, coyote, eastern gray squirrel, fisher, raccoon, red fox, and white-tailed deer. The wetland areas on the property provides habitat for several amphibian and reptile species, such as the pickerel frog and northern black racer.

State-Listed Species and Species of Greatest Conservation Need

A review of the DEEP Natural Diversity Data Base (NDDDB) indicates no known presence of historic or extant populations of state listed species within Little River WMA (Appendix A – Map 7). The NDDDB Request for Review process is designed to assist in complying with the State Endangered Species Act.

Connecticut’s 2015 Wildlife Action Plan is a 10-year plan that guides wildlife conservation in the state. Conservation actions outlined in the plan target a broad array of species, aiming to reduce the potential for species becoming listed under the Endangered Species Act. The [State Wildlife Action Plan](#) also identifies the Species of Greatest Conservation Need (SGCN) and the key habitats that support them. By actively managing for young forest habitat in areas of Little River WMA that lack age class diversity, birds such as woodcock will benefit, as well as over 50 other SGCN.

Fisheries Resources

Little River supports a diverse coldwater fish community that includes wild brook trout, blacknose dace, longnose dace, common shiner, fallfish, white sucker, tessellated darter, and the catadromous American eel. Occasional transient warmwater species such as bluegill sunfish, pumpkinseed sunfish, largemouth bass, and chain pickerel have been documented within Little River WMA. A small unnamed tributary that flows into Little River, near the eastern edge of the WMA, supports a very robust population of wild brook trout. The section of the Little River within the WMA is stocked annually with trout.

Wildlife Division Monitoring

No records of monitoring by the Wildlife Division exist for the property. Wildlife monitoring efforts may be initiated by the Wildlife Division at Little River WMA during this planning period as time and resources allow.

Special Designations, Plans, and Initiatives

Young forest and the wildlife that depend on it have been decreasing throughout Connecticut and the region for many years. Little River WMA is located in one of the three woodcock focus areas (Appendix A – Map 8) as defined in the Management Plan for American Woodcock in Connecticut (MPWC). Woodcock focus areas occur in areas where there are significant amounts of DEEP controlled properties. These focus areas contain mixed ownership, with either a WMA or SF as their core. Utilizing DEEP controlled properties as the core of these focus areas ensures that the habitat will be managed

appropriately and ensures that a long-term commitment is made to the management of woodcock and other young forest obligate 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 and Parker 2010). While environmental factors such as contaminants (Scheuhammer et al. 1999) may be limiting woodcock populations, their decline is most likely attributable 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 goal of the MPWC is to increase woodcock populations on state-controlled lands and in woodcock focus areas. Increasing levels of young forest habitat on these areas will ensure that an adequate habitat base exists to meet stewardship mandates for woodcock and other young forest dependent species. In order to accomplish this, it is estimated that over 380,000 acres of suitable habitat need to be created and maintained in Connecticut.

Little River WMA has good potential to provide ideal woodcock habitat based on soil type. Unfortunately, due to topography and the location of the Little River, a significant portion of the property where woodcock habitat would likely be implemented is considered inaccessible for commercial forest management activities.

Little River WMA is located in the Scotland-Canterbury New England cottontail (NEC) focus area, one of 12 focus areas in Connecticut (Appendix A – Map 8). The NEC is Connecticut’s only native cottontail. It’s population has declined by more than 85% throughout its range in the Northeast. The loss of habitat has been identified as the primary cause for this decline. New England cottontails require large patches (25 acres or more) of young forest or dense shrubland to maintain viable local populations. They succumb easily to predation if they need to leave dense cover to forage. Forest management that results in large patches of regenerating forest will provide needed NEC habitat while benefitting other shrubland-dependent species.

While NECs and woodcock are focal species for young forest habitat creation, over 50 SGCN rely on young forest or shrubland habitat. On that list are many songbirds such as eastern towhee, indigo bunting, prairie, chestnut-sided, and blue-winged warbler; reptiles such as box turtle, wood turtle, and smooth green snake; a number of small mammals; and many insects, including pollinators ([Chapter 4, Connecticut Wildlife Action Plan](#)). The silviculture and habitat treatments prescribed in this plan will benefit many of these species.

Wildlife Habitat Goals, Objectives, and Strategies

Adaptive Management

This plan is based on an adaptive management format. Natural resource management occurs in a dynamic landscape that is often affected by outside variables. These variables may include insect and disease outbreaks, storm damage, climate change, and drought. With so many unknowns, outcomes can be uncertain, so the flexibility of adaptive management is especially valuable. Outcomes of management actions will be monitored and analyzed to provide data as to whether this plan is meeting its management objectives. This will allow adjustments to be made to the plan if conditions change, there are undesirable outcomes, or new information becomes available.

Forest Management

A goal of this plan is to develop and maintain a healthy forest comprising a diversity of tree species and age mosaics. Species composition and age class diversity result in resilient forests that are capable of rapid recovery, and are not dominated by one species, family, or age class.

While Little River WMA is a small acreage property, there is a suite of forest stands where forest management could be implemented to broaden habitat diversity. There are also rare, non-self-sustaining species occurrences that offer restoration opportunities. Unfortunately the property has access limitations for equipment due to limited road frontage, topography, and hydrological features. While forest management opportunities are limited at Little River WMA, the property presents a unique opportunity for the DEEP to demonstrate forest and habitat management practices to private landowners on a similar scope and scale to what they may encounter when managing their own properties.

There are five forest stands at Little River WMA that have the potential to be managed over the next 10 years (Appendix A – Map 9). Management of two of these five stands is dependent on obtaining an access agreement with an adjacent landowner. The characteristics of these stands are varied (Table 4 – Table 7).

Stand 1 will be managed with a final harvest to remove undesirable hardwood species to benefit oak, aspen, and pitch pine. Over 80% of the oaks in this stand are dead. This area lies directly south of Sand Hill Road, at the northwest extent of the property. A low density invasive plant treatment will be required in some areas of the stand prior to harvest.

Table 4. Little River Wildlife Management Area forest stand 1 summary information, 2021.

Stand	Cover Type	Acres	Basal Area	Trees / Acre	Stocking	Size-class	Board Feet (BF) / Acre Volume	Cords / Acre Volume
1	Mixed Hardwood	6	47	124	Understocked	Pole	1,109 BF	9.8

Predominant Species: Black birch, quaking aspen, oak, pitch pine

Main Soil Types: Hinckley

Access: Fair off Sand Hill Road

Regeneration: Excellent

Invasive Concerns: Low – multiflora rose

Stand History: Borrow pit, old field, oak mortality

Notes: Pitch pine regeneration and seed trees, vernal pool at western extreme, lots of oak regeneration, overhead hazards due to dead oak

Management Recommendation: Final harvest to remove remaining birch poles and aspen. Cutting will release advanced oak regeneration, contribute to aspen regeneration via root suckering, and benefit the reproduction of additional pitch pine

Stands 3 and 3a will be managed with a crop tree release cutting, removing a portion of the red maple to promote oaks and Atlantic white cedar, while encouraging shrub development, specifically in stand 3a. The stands are characterized by low stocking, prevalence of multi-stemmed red maple, and some representation from Atlantic white cedar on the floodplain and oak saplings. These areas lie directly west of the Little River, near the southeast extent of the property. Forest management in these stands will be implemented by DEEP personnel on a non-commercial basis.

Table 5. Little River Wildlife Management Area forest stands 3 and 3a summary information, 2021.

Stands	Cover Type	Acres	Basal Area	Trees / Acre	Stocking	Size-class	BF / Acre Volume	Cords / Acre Volume
3, 3a	Red Maple	10	113	235	Overstocked	Pole	315 BF	23

Predominant Species: Red maple, Atlantic white cedar, oaks, white pine

Main Soil Types: Pootatuck, Occum

Access: Poor – Inaccessible

Regeneration: Some oak saplings under red maple poles

Invasive Concerns: Low – few to no invasives observed

Stand History: Periodic flooding

Notes: Floodplain forest

Management Recommendation: Crop tree release cutting to keep cedar crowns full and promote wet meadow characteristics and shrub development through the removal of some red maple

Stand 5 will be thinned to promote ground juniper and hard mast production. Composition in this stand has changed in recent years after moderate mortality oak mortality brought on by spongy moth defoliation, drought, and other stressors. This stand makes up a portion of the property’s western boundary. Forest management in this stand is dependent on obtaining an access agreement with an adjacent landowner.

Table 6. Little River Wildlife Management Area forest stand 5 summary information, 2021.

Stand	Cover Type	Acres	Basal Area	Trees / Acre	Stocking	Size-class	BF / Acre Volume	Cords / Acre Volume
5	Oak – Hickory	7	80	155	Overstocked	Sawtimber – Pole	3,000	17

Predominant Species: Hickories, scarlet oak, white pine, red maple, black birch

Main Soil Types: Hinckley

Access: Poor – Inaccessible

Regeneration: Fair – some oak reproduction

Invasive Concerns: Low – few to no invasives observed

Stand History: Defoliation and moderate oak mortality in recent years

Notes: Thin only if working commercially nearby

Management Recommendation: Thinning

Stand 5a will be managed with a clear cut to regenerate young aspen via root suckering. This small aspen dominated stand is found in the southwestern portion of the WMA. The mature sawtimber sized aspen found within this stand is a rare occurrence in Connecticut. Forest management in this stand is dependent on obtaining an access agreement with an adjacent landowner.

Table 7. Little River Wildlife Management Area forest stand 5a summary information, 2021.

Stand	Cover Type	Acres	Basal Area	Trees / Acre	Stocking	Size-class	BF / Acre Volume	Cords / Acre Volume
5a	Aspen	3	111	187	Overstocked	Sawtimber	4,625	22

Predominant Species: Quaking aspen, hickories, scarlet oak

Main Soil Types: Hinckley

Access: Poor – Inaccessible

Regeneration: Fair

Invasive Concerns: Low – Japanese barberry

Stand History: Not applicable

Notes: Nearly pure aspen in the overstory. Consider regenerating aspen via root suckering if congruent with habitat goals for the WMA and access is improved.

Management Recommendation: Clear cut to regenerate young aspen stand via root suckering

Wetlands and Waterbodies Management

This plan strives to maintain high quality wetland habitat within Little River WMA that protects water quality, provides fish and wildlife habitat, stores floodwaters, and maintains surface flow during dry periods. Agency staff will explore opportunities to enhance instream habitat within the Little River using strategic additions of large woody debris and other techniques as appropriate during this planning period. Large woody debris can provide important habitat for fish and wildlife. Unless the debris poses a safety hazard or a threat to infrastructure, it should remain in place.

Progress Towards Plans and Initiatives

The habitat goals set forth in the 10-year Little River WMA management plan will work towards the habitat goals set forth in the MPWC. A site-specific interpretative sign detailing the woodcock habitat work on the property will be developed and installed near the parking area on Sand Hill Road and noted on the DEEP’s website.

The silviculture and habitat management practices outlined in the 10-year Little River WMA management plan will provide valuable habitat for over 50 SGCN as outlined in the Wildlife Action Plan.

WMA Infrastructure Goals, Objectives, and Strategies

Maintenance

A variety of maintenance tasks will be performed regularly or seasonally at Little River WMA. Examples of these tasks include access point mowing, painting, staining, trash removal, sign posting, and hazard tree removal. Any new enhancements that may be proposed during the planning period would be developed and implemented utilizing DEEP’s project request review process.

Other Infrastructure

Boundary marking is scheduled to occur twice during this planning period (Table 10). A DEEP shield sign will be installed in 2024 adjacent to the parking area (Table 10).

Ten-year Work Plans

Forest Management Work Plan

The 10-year forest management work plan (Table 8) distributes the prescribed silviculture activities over the lifespan of this management plan. While the timing of certain treatments is important to enable the desired regeneration response and landscape level habitat rotation, some of the prescribed treatment activities can be applied as staffing and resources allow. Forest stand improvements will be initiated outside of the bird nesting season (April 15 – August 15).

Table 8. Little River Wildlife Management Area silviculture work plan, 2023 – 2032.

Year	Stand(s)	Acres	Treatment	Notes
2024	1	6	Final harvest and invasive treatment	Remove undesirable hardwoods to benefit oak, aspen, and pitch pine.
2025	3, 3a	10	Crop-tree release	Promote oaks, Atlantic white cedar, and shrub development in the wet meadow.
2025	5*	7	Thinning	Promote hard mast production and ground juniper.
2025	5a*	3	Clear cut	Regenerate young aspen via root suckering.
2032	All stands	48	Inventory forest stands	Preparation to write a new management plan.

* = access dependent

Wildlife Habitat Management Work Plan

The 10-year wildlife habitat management work plan (Table 9) distributes the prescribed habitat prescriptions over the lifespan of this management plan.

Table 9. Little River Wildlife Management Area wildlife habitat management work plan, 2023 – 2032.

Year	Stand	Acres	Treatment	Notes
2024	*	*	Biological control	Reduce woolly adelgid abundance.

* = to be determined

Infrastructure Work Plan

In addition to the regular or seasonal maintenance tasks associated with the property (see page 18), the 10-year infrastructure work plan is shown in Table 10.

Table 10. Little River Wildlife Management Area infrastructure work plan, 2023 – 2032.

Year	Location	Treatment	Notes
2024	Entire property	Mark boundaries	1.2 miles of boundaries.
2024	Parking area	Signage	Install shield sign.
2026	Parking area	Signage	Woodcock habitat work.
2032	Entire property	Mark boundaries	1.2 miles of boundaries.

Acquisition Objectives

The acquisition of large residential and nonresidential parcels adjacent to Little River WMA should be considered high priority (Appendix A – Map 10). Acquisition of these adjacent properties would increase access, protect against future encroachment, add to the diversity of habitats, and increase recreational opportunities for the general public.

Public Involvement

Public engagement is an integral component of DEEP’s management planning process. It is important to foster environmental awareness and garner support for the management actions recommended in this plan that address the conservation needs of wildlife and forest resources on public lands. A draft copy of this plan was provided to the Town of Hampton and several local conservation organizations for review and comment. A digital copy of this plan was emailed to the Hampton First Selectman, Hampton Conservation Commission, Hampton Inland Wetlands and Watercourses Agency, and the Hampton Town Clerk. Staff from the DEEP offered to host a meeting to explain the goals and objectives of this plan.

In addition to contacting representatives from the Town of Hampton, DEEP staff also solicited feedback concerning this plan from several non-government conservation organizations (Appendix D). A digital copy of this plan was emailed to the New England Chapter of Backcountry Hunters and Anglers, Joshua's Trust, Thames River Chapter of Trout Unlimited, and The Last Green Valley. The DEEP hopes that this management plan will serve as a resource for local municipalities and nonprofit organizations that are actively planning for open space protection and management.

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Paul Benjunas (Connecticut DEEP Wildlife Biologist) – Infographic
Matthew Gocłowski (Connecticut DEEP Fisheries Biologist) – Technical input
Ann Kilpatrick (Connecticut DEEP Wildlife Biologist) – Technical input
Tammie Rindfleisch (Connecticut DEEP Seasonal Resource Assistant) – Mapping
Tanner Steeves (Connecticut DEEP Wildlife Biologist) – Technical input and forest mapping
Lisa Wahle (Wildlife Management Institute Biologist) – Technical input

Appendices

Appendix A – Little River Wildlife Management Area Maps 1 – 10

Appendix B – History of Management Activities at Little River Wildlife Management Area

Appendix C – Definitions

Appendix D – Public Comments

Appendix A – Little River Wildlife Management Area Maps 1 – 10

Map 1: Little River Wildlife Management Area orthophoto.

Map 2: Little River Wildlife Management Area topography.

Map 3: Little River Wildlife Management Area hydrology.

Map 4: Little River Wildlife Management Area soil types.

Map 5: Little River Wildlife Management Area infrastructure.

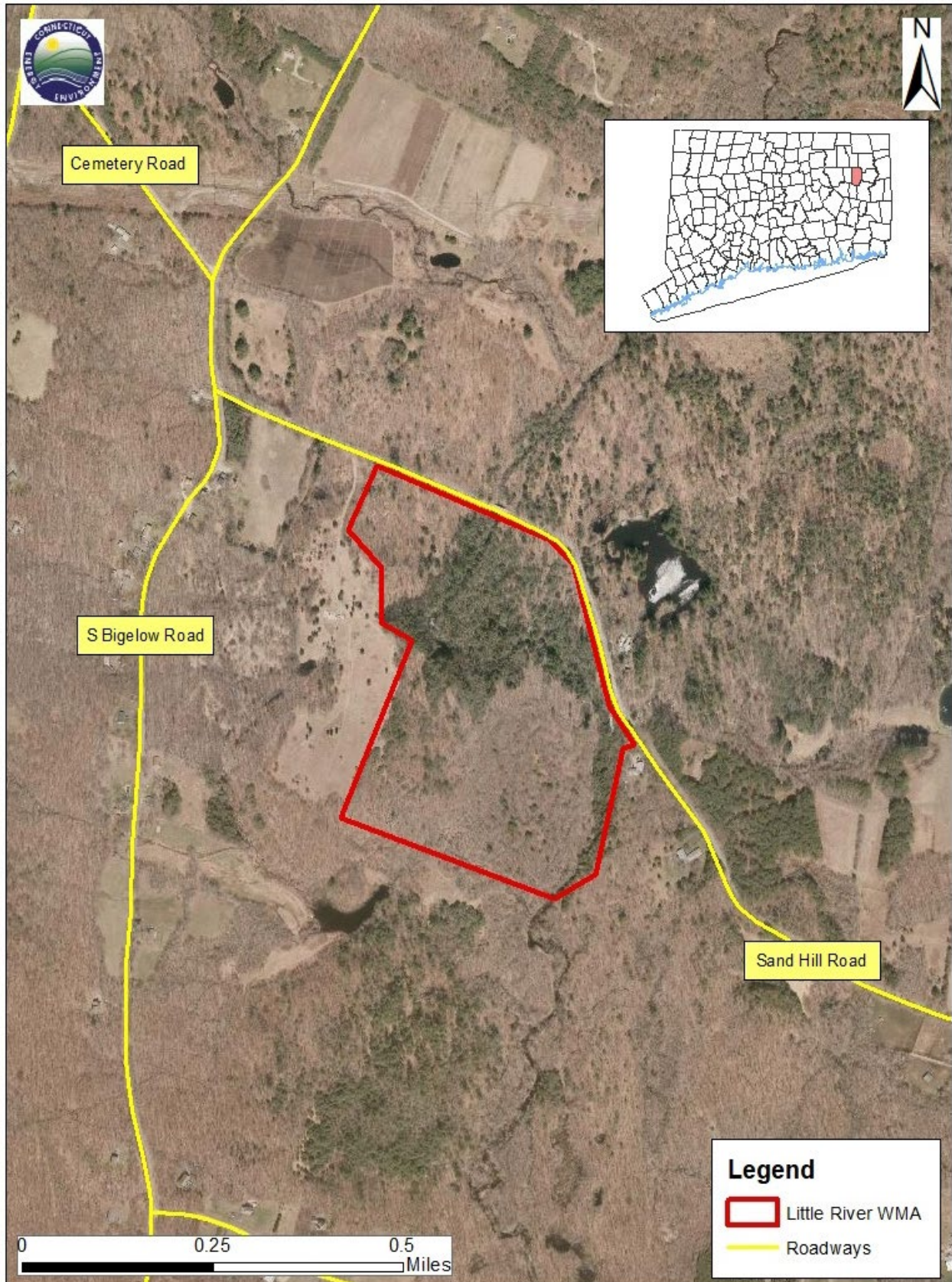
Map 6: Little River Wildlife Management Area forest stands.

Map 7: Little River Wildlife Management Area Natural Diversity Data Base areas.

Map 8: American woodcock and New England cottontail focus areas.

Map 9: Little River Wildlife Management Area silviculture prescriptions

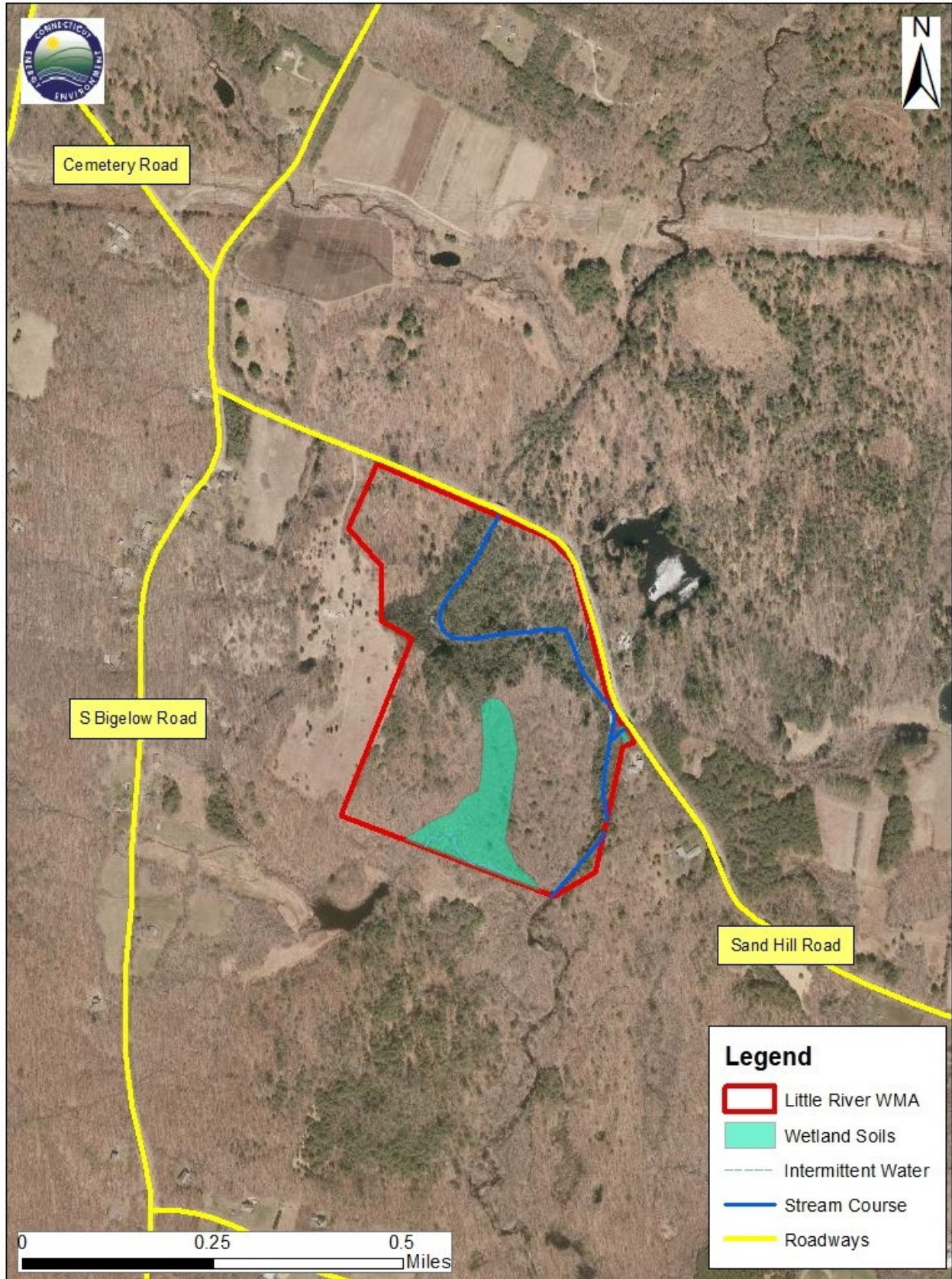
Map 10: Little River Wildlife Management Area priority parcels for acquisition.



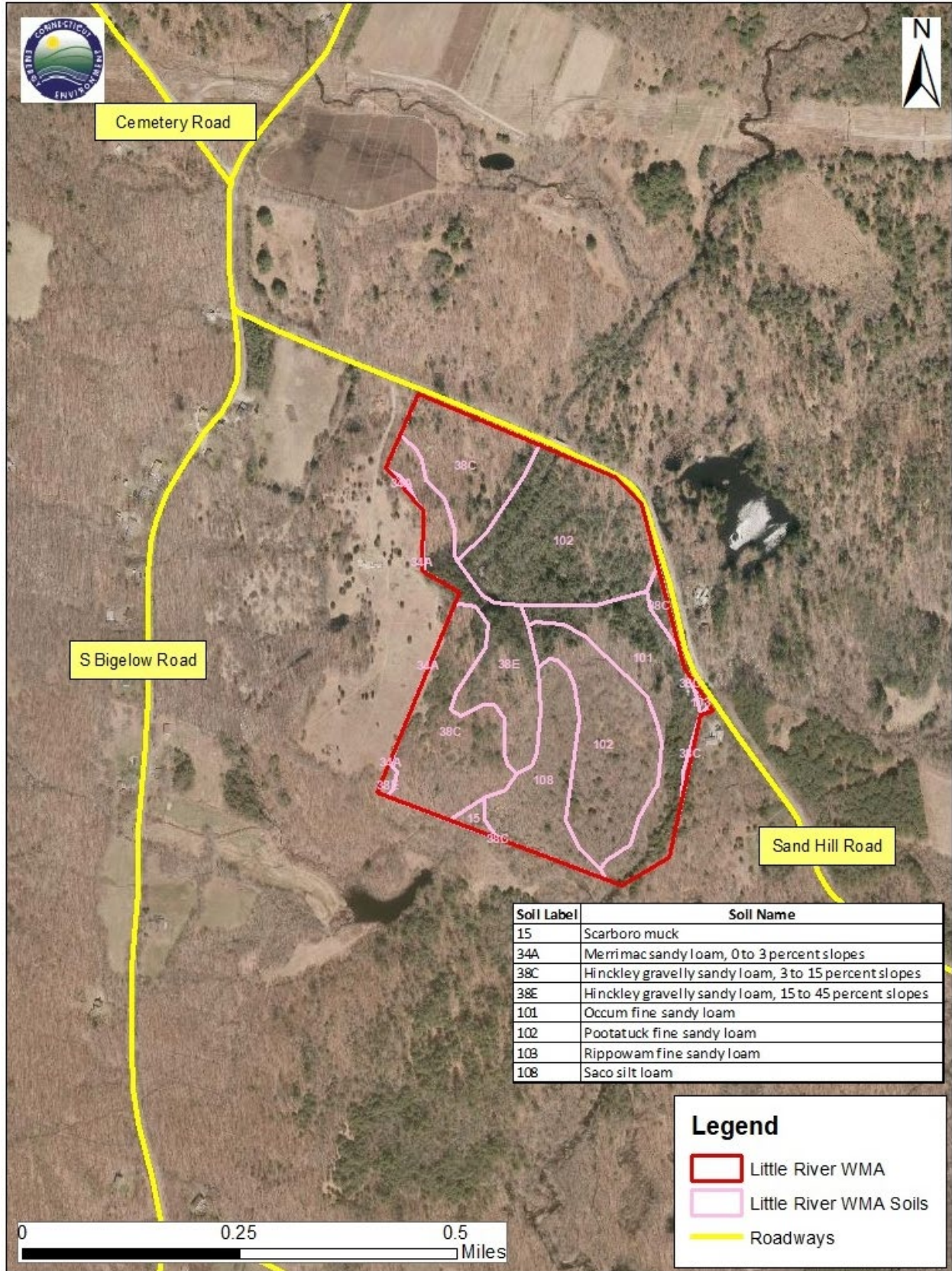
Map 1: Little River Wildlife Management Area orthophoto.
Prepared by Tammie Rindfleisch, 2021.



Map 2: Little River Wildlife Management Area topography.
Prepared by Tammie Rindfleisch, 2021.



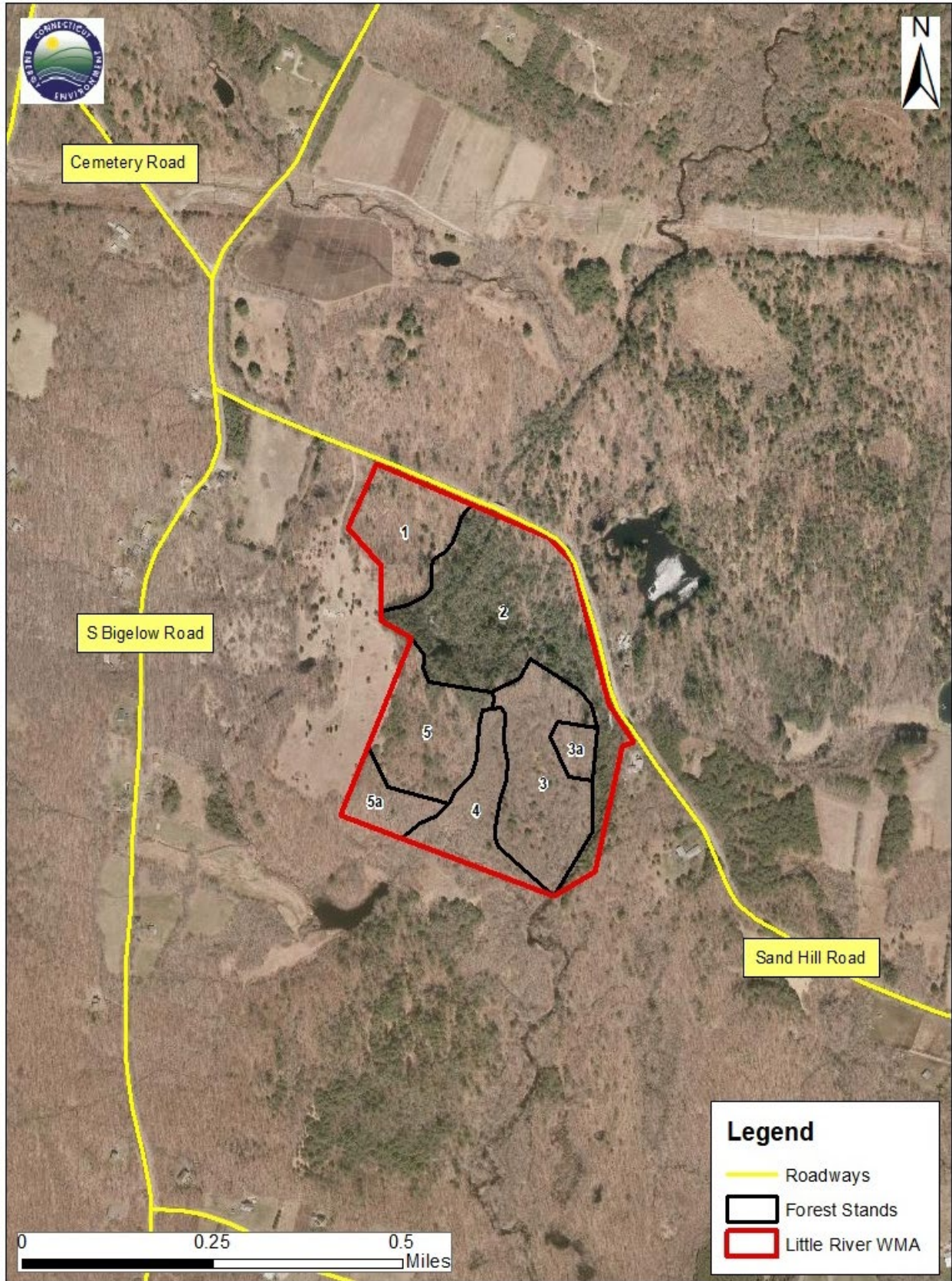
Map 3: Little River Wildlife Management Area hydrology.
Prepared by Tammie Rindfleisch, 2021.



Map 4: Little River Wildlife Management Area soil types.
 Prepared by Tammie Rindfleisch, 2021.



Map 5: Little River Wildlife Management Area infrastructure.
Prepared by Tammie Rindfleisch, 2021.



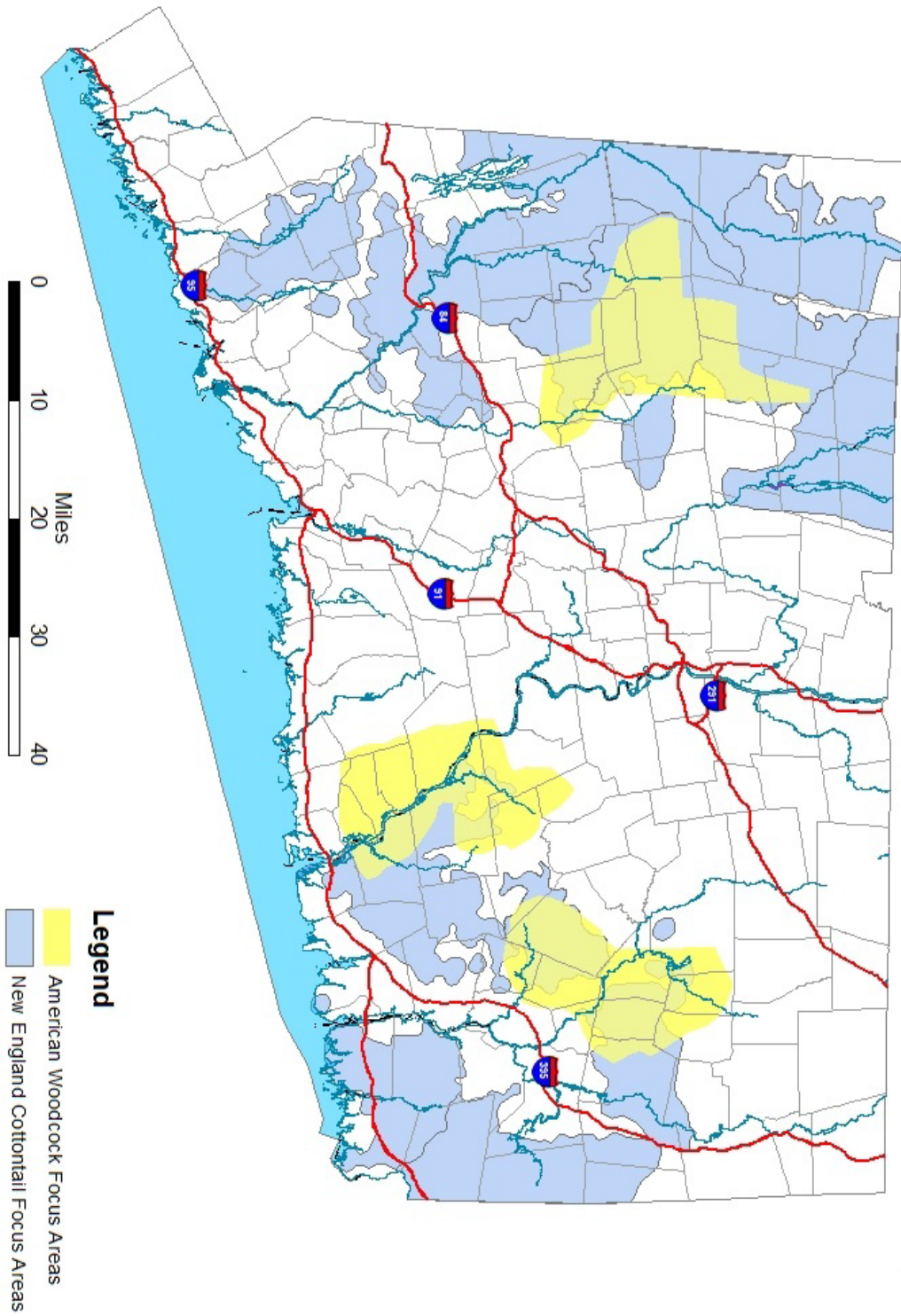
Map 6: Little River Wildlife Management Area forest stands.
Prepared by Dan Evans, 2021.



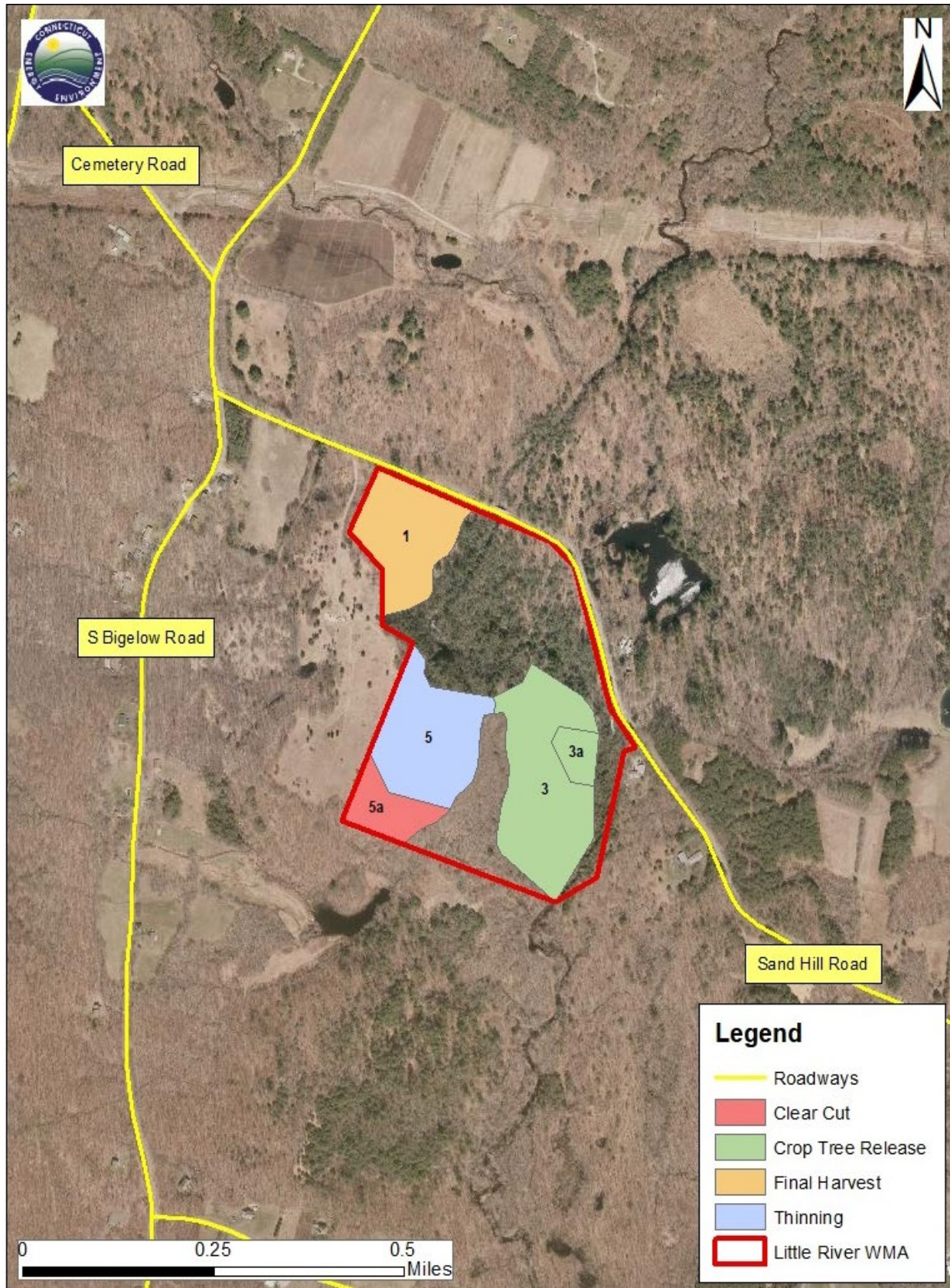
Map 7: Little River Wildlife Management Area Natural Diversity Data Base areas.
Prepared by Tammie Rindfleisch, 2021.



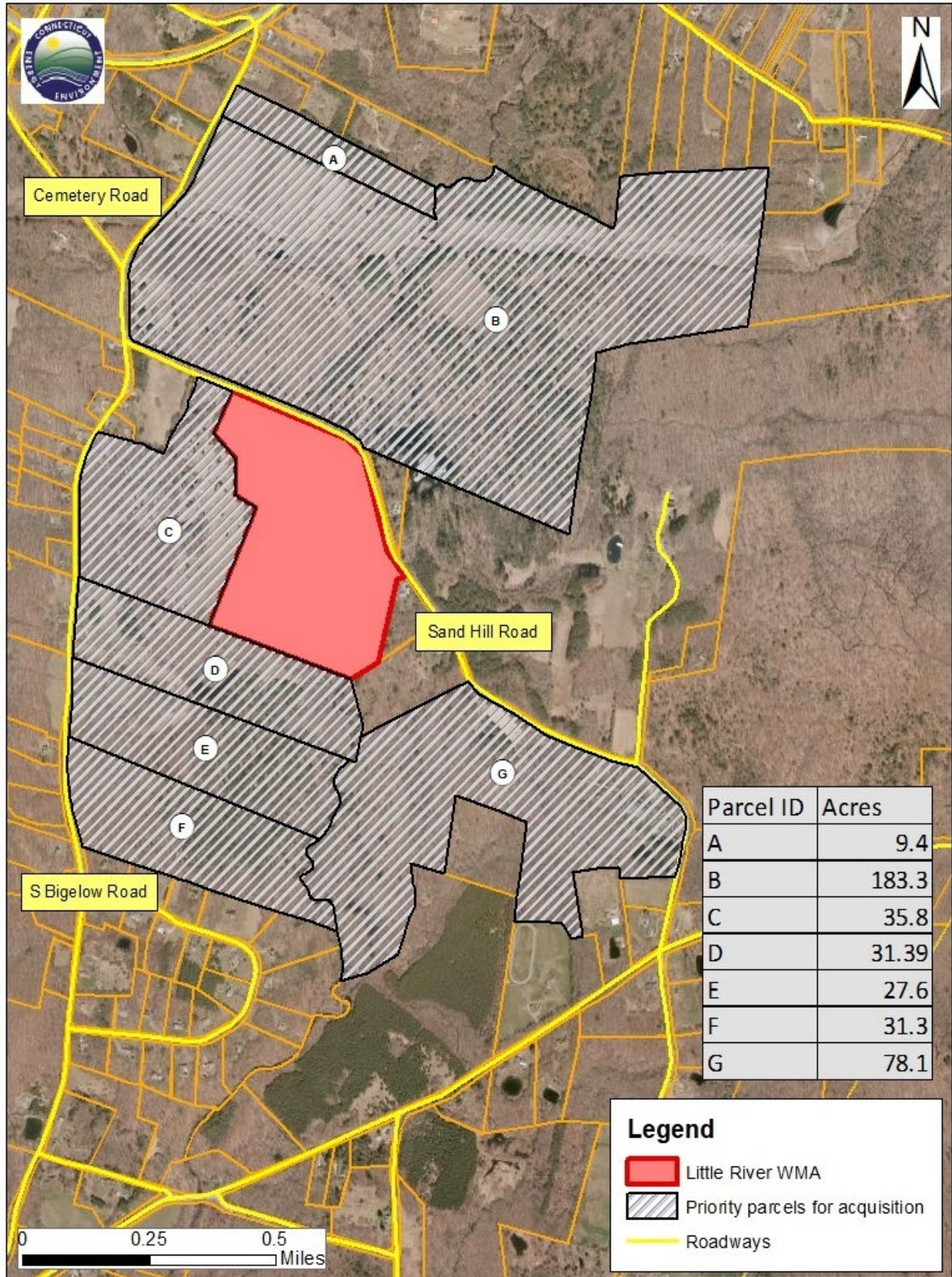
Department of Energy and Environmental Protection
American Woodcock and New England Cottontail Focus Areas



Map 8: American woodcock and New England cottontail focus areas.
Prepared by Kelly Kubik, 2021.



Map 9: Little River Wildlife Management Area silviculture prescriptions.
Prepared by Tammie Rindfleisch, 2021.



Map 10: Little River Wildlife Management Area priority parcels for acquisition.
 Prepared by Tammie Rindfleisch, 2021.

Appendix B – History of Management Activities at Little River Wildlife Management Area

In 1959, the lone parcel of land was acquired for Little River Wildlife Management Area (WMA).

In 1997, a habitat restoration project was completed on a section of the Little River within Little River WMA by the Fisheries Division with assistance from members of the Thames River Chapter of Trout Unlimited. Four groups of tree cover deflectors were installed within a 200 foot stretch of the Little River. A combination of live and dead trees were anchored to the streambank with the use of cable wire and eye bolts. This project provided the following benefits: 1) restored and repaired instream habitat for the resident fish community, 2) narrowed the stream channel and increased water depth, 3) demonstrated technologies and methods for fish and aquatic habitat restoration and, 4) continued to foster cooperative relationships with conservation organizations.

In 2003, after an internal review by Connecticut Department of Energy and Environmental Protection (DEEP) staff, a consensus was reached to open Little River WMA to all types of hunting, except for firearms deer hunting. The property had been the subject of past inquiries from hunters, who were told that the area was closed to hunting because it was not listed in the Connecticut Hunting and Trapping Guide.

In 2010, the Chairman of the Hampton Conservation Commission contacted the DEEP to express concern relating to a potential erosion issue at Little River WMA. The Chairman felt erosion had caused trees to fall into the Little River that could potentially block and/or alter the course of the Little River. It was requested by the Chairman that the DEEP remove the trees and debris from the Little River to prevent further erosion. To this plan's knowledge, the results of this inquiry are unknown.

In 2016, the name of property was officially designated as Little River WMA after previously being known as Little River Wildlife Area.

In 2021, 64 hazard trees, a large percentage of which succumbed to successive years of spongy moth infestation and drought, were removed from Little River WMA on the south side of Sand Hill Road.

Appendix C – Definitions

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 1998).

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

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. 10-year age class) as used in inventory or management. (Helms 1998).

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.

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 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 one-foot long, one-foot wide, and one-inch thick (144 cubic inches).

Canopy: The 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 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 1998).

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

Connecticut Endangered Species Act: This act was passed in 1989 and recognizes the importance of our state's plant and animal populations and the need to protect them from threats that could lead to their extinction. The overall goal of the legislation is to conserve, restore, protect, and enhance any endangered or threatened species and their essential habitat. Species are listed according to their level of risk and their status is reviewed every five years.

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

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

Daylighting: Removing trees that are shading a road surface. This process spurs the growth of vegetation that may be beneficial to various wildlife species.

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 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 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 (Ford–Robertson 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.

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 1998).

Harvesting: The felling skidding, on-site processing, and loading of trees or logs onto trucks. (Helms 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)). An 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, 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 1998).

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

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.

Nutrient Cycle: The exchange or transformation of elements among the living and nonliving components of the ecosystem. (Helms 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 1998).

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

Pole Timber: Trees from six inches to 12 inches in DBH.

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 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 1998).

Riparian Corridor: 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 two inches to six inches in DBH.

Sawtimber: Trees at least 12 inches in DBH 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 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 uniformly throughout the stand, to promote growth of remaining trees and to provide space for regeneration. (Helms 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 1998).

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

Size class: A classification of forest land based on the predominant diameter size of live trees presently forming the plurality of live-tree stocking.

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 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 DBH and at least six 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 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 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 DBH 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 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.

State Wildlife Action Plan: The State Wildlife Action Plan identifies Species of Greatest Conservation Need, their key habitats, and actions for managing their populations.

State Wildlife Grants Program: State Wildlife Grants support projects that prevent wildlife from declining to the point of being endangered. Projects supported by State Wildlife Grants restore degraded habitat, reintroduce native wildlife, develop partnerships with private landowners, and collect data to find out more about declining species.

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 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 1998).

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 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 1998).

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

Undesirable Growing Stock: 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 1998).

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

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

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 1998).

Appendix D – Public Comments

A draft copy of this plan was provided to the Town of Hampton and several local non-government conservation organizations for review and comment. No comments were received as of December 31, 2022 (Table A).

Table A. Entities contacted for comments concerning the Little River Wildlife Management Area Plan, 2022.

Entity Contacted	Date Contacted	Comments Received
Hampton First Selectman	November 23, 2022	No
Hampton Conservation Commission	November 23, 2022	No
Hampton Inland Wetlands and Watercourses Agency	November 23, 2022	No
Hampton Town Clerk	November 23, 2022	No
New England Chapter of Backcountry Hunters and Anglers	November 23, 2022	No
Joshua’s Trust	November 23, 2022	No
Thames River Chapter of Trout Unlimited	November 23, 2022	No
The Last Green Valley	November 23, 2022	No