

Talbot Wildlife Management Area Management Plan (2022 through 2031)

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 all types of hunting, fishing, and trapping. The public is encouraged to use the area in a manner that is compatible with sound natural resource management. While no formal trails are designated, existing old woods roads and maintained interior service roads provide the public with ample access.

Current Habitat Conditions

Upland forest accounts for approximately 84% of the habitat cover on the property. The remainder of the land is comprised of wetlands, waterbodies, and managed early successional habitat. There is currently very little age class diversity within the forested areas of the property, as over 94% is in the sawtimber size classes, while less than 1% is in the seedling/sapling size class.

Resource Management Concerns

Two significant resource management concerns are invasive vegetation and unauthorized trails stemming from illegal all-terrain and motor vehicle use. Invasive vegetation can threaten biodiversity, while unauthorized trails can impact insects, nesting birds, sensitive soils, and plant communities. This plan will address these concerns along with other issues such as illegal dumping, unleashed dogs, and possible encroachments from abutting landowners.

Wildlife Habitat

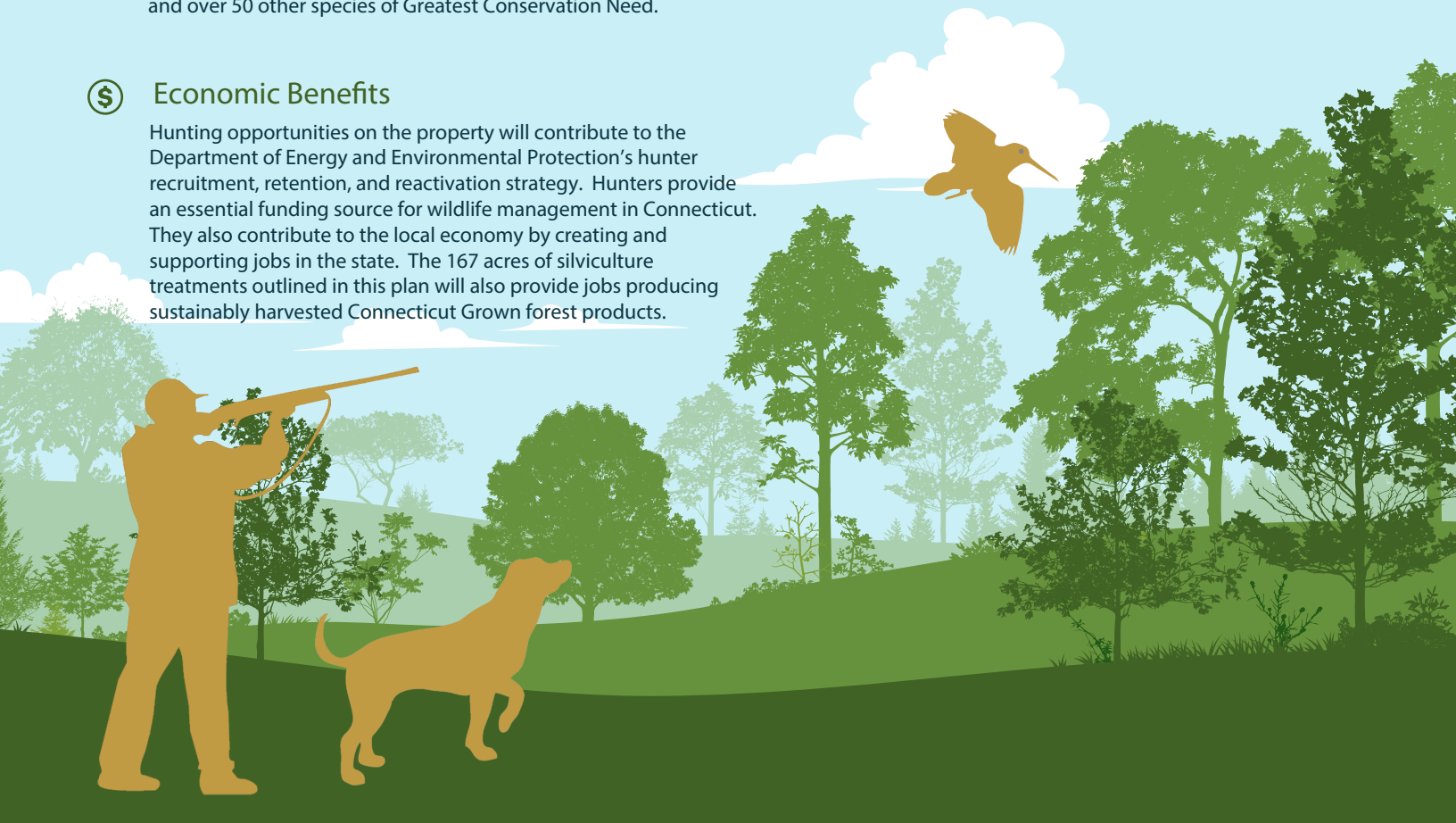
Wildlife management is the primary goal of habitat management on the property. This plan will focus on creating, enhancing, and maintaining a diversity of wildlife habitats, while protecting the water quality in Merrick Brook and Beaver Brook. These practices will help to provide valuable habitat for the American woodcock, ruffed grouse, 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 167 acres of 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
2022 through 2031


Talbot Wildlife Management Area
472.42 acres
Scotland, Connecticut

Approved By



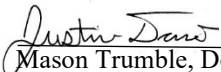
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Executive Summary

Talbot Wildlife Management Area is located in Scotland, Connecticut. The first parcels of land for the Wildlife Management Area were acquired in 1975 from the Talbot family, who retained life use of the property until 1981. The Talbot family hoped that the property would be managed as a fish and wildlife area and never be developed for intensive recreational purposes. Nine parcels of land were purchased throughout the years, with the most recent acquisition in 2008. The property is currently 472.42 acres in size.

Talbot Wildlife Management Area is open to hunting, trapping, and fishing. The public is encouraged to use the property in a manner compatible with sound natural resource management. While no trails are authorized on the property, there are old woods roads and maintained interior service roads that provide the public with ample access to the area.

Upland forest accounts for 84% of the habitat cover on the property. The remainder of the land is comprised of wetlands, waterbodies, and managed early successional habitat. Oak-hickory is the dominant forest cover type, covering 55% of the total forested area. There is very little size class diversity within the forested areas of the property, as over 94% is in sawtimber size classes and less than 1% is in the seedling/sapling size class.

This 10-year (2022 – 2031) management plan will focus on: 1) creating, enhancing, and maintaining a diversity of wildlife habitats utilizing herbiciding, mowing, mulching, and silviculture treatments, 2) supporting wildlife-based recreational opportunities by maintaining 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 Merrick Brook and Beaver Brook. This management plan prescribes maintaining six acres of old field habitat and conducting silviculture treatments on 167 acres, resulting in the creation of 52 acres of early successional habitat.

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 forest management plan for Talbot Wildlife Management Area will promote the sustainability of the forest resources and improve habitat for American woodcock, ruffed grouse, 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

Talbot WMA is a 472.42-acre property located in the town of Scotland, Connecticut (Appendix A – Map 1). Scotland is located in Windham County, in the northeastern portion of the state. In 1975, the first parcels of land for Talbot WMA were acquired from the Talbot family, who retained life use of the property until 1981. The Talbot family acquired most of the land, that is now known as Talbot WMA during the 1800’s. One of their primary goals for the property was the protection and enhancement of Beaver Brook and Merrick Brook. The family attempted to construct a trout hatchery on the property, but it never became fully operational. Conifer plantations established on the property in 1934 were thinned in 1955 and 1965. Christmas trees were planted on the site during the 1960s. Logging also occurred over a portion of the property, but specific information as to when and how much was logged is lacking. The Talbots also leased some of the property to local farmers for agricultural production.

A total of nine parcels of land have been acquired over the years, with the most recent acquisition occurring in 2008 (Table 1). See Appendix B for a history of infrastructure, habitat, silviculture, and other management activities on the property.

Table 1. Talbot Wildlife Management Area parcel acquisition history, 1975 - 2008.

Date Acquired	Parcel Acres	Grantor
November 7, 1975	9.67	Talbot, Carlotta F.
November 7, 1975	96.68	Talbot, Natham B.
November 7, 1975	259.60	Talbot, Natham B. et ux
November 7, 1975	9.67	Talbot, Peter H.
November 11, 1975	9.67	Talbot, Charles M. Jr.
December 31, 1975	48.34	Hopkins, Kate M.
January 8, 1976	9.67	Talbot, Cynthia D.
January 14, 1976	9.67	Talbot, Susan B.
April 4, 2008	19.45	Postemsky, Joseph M. et ux
Total	472.42	

Current Conditions

Landscape Setting and Physical Attributes

Talbot WMA lies entirely within the town of Scotland. Scotland is a rural municipality, where agriculture and small business constitute the majority of the community’s economic base. Scotland 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.

Talbot WMA borders a portion of Mohegan State Forest (SF) and is in close proximity (≤ 5 miles) to several other DEEP-controlled properties: Air Line State Park (SP) Trail, Beaver Brook SP, Franklin Swamp WMA, James V. Spignesi, Jr. WMA, Little River Water Access Area (WAA), Mansfield Hollow SP, Mansfield State-Leased Field Trial Area, Natchaug River WAA, Natchaug SF, Pomeroy SP, Salt Rock SP, and Shetucket River WAA. Talbot WMA also lies in close proximity (≤ 5 miles) to numerous other protected properties owned by private, municipal, and non-government entities. Some of these properties include, The Nature Conservancy’s Ayers Gap Preserve, the town of Sprague Land Preserve, and Joshua’s Trust Pappenheimer Preserve.

Talbot 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 Talbot WMA is varied. The properties highest elevation (>510 feet) lies along its eastern boundary, while the lowest elevation (<160 feet) occurs along Merrick Brook (Appendix A – Map 2).

Talbot WMA is an important part of the Shetucket River watershed. Various hydrological features are found on the property including open water, intermittent water, vernal pools, wetlands, and two named stream courses (Appendix A – Map 3).

Eighteen soil types are present at Talbot 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. Talbot Wildlife Management Area soil type characteristics, 2003.

Soil Name	Acres	Drainage Capacity	Soil Type
Hinckley gravelly sandy loam	123.50	Excessively drained	Upland
Charlton-Chatfield complex	64.20	Well drained	Upland
Woodbridge fine sandy loam	63.02	Moderately well drained	Upland
Canton and Charlton soils	46.81	Well drained	Upland
Rippowam fine sandy loam	42.35	Poorly drained	Wetland
Pootatuck fine sandy loam	39.71	Moderately well drained	Upland
Paxton and Montauk fine sandy loams	21.40	Well drained	Upland
Merrimac sandy loam	13.85	Somewhat excessively drained	Upland
Hollis-Chatfield-Rock outcrop complex	12.06	Well drained	Upland
Occum fine sandy loam	11.42	Well drained	Upland
Sudbury sandy loam	9.63	Moderately well drained	Upland
Scarboro muck	8.64	Very poorly drained	Wetland
Ninigret and Tisbury soils	4.34	Moderately well drained	Upland
Suncook loamy fine sand	3.63	Excessively drained	Upland
Ridgebury, Leicester, and Whitman soils	3.14	Poorly drained	Wetland
Walpole sandy loam	2.48	Poorly drained	Wetland
Sutton fine sandy loam	2.18	Moderately well drained	Upland
Timakwa and Natchaug soils	0.06	Very poorly drained	Wetland
Total	472.42		

Access

One public parking lot for Talbot WMA is located off of Bass Road. A gate is installed in the parking lot to control vehicular access to the 0.49 miles of service roads on the property. Public use of the service road system is limited to non-vehicular traffic. Public access to the entire property is allowed year-round. Two deeded easements allow the State of Connecticut to pass and repass over private property to access Talbot WMA. The first easement originates on Jerusalem Road in Windham and proceeds in an easterly direction on a historic roadway known as Brook Road where it terminates at the southwestern boundary of Talbot WMA. The second easement begins on Bass Road in Scotland and proceeds in a westerly direction along an existing driveway where it ends at the eastern boundary of the WMA (Appendix A – Map 5). While other easements exist for the property, their current status is unclear. These easements will be further researched as time and resources allow.

Property Infrastructure (Appendix A – Map 5)

- Structures – 2 outbuildings
- Miles of boundary – 7.2
- Miles of service road – 0.49
- Parking lots – 1
- Shield signs – 1
- Other signs – 1
- Kiosks – 1
- Gates – 1
- Bridges – 1
- Culverts – 1

Public Use

Talbot WMA is open to hunting (firearms and archery deer, turkey, small game, and waterfowl), fishing, and trapping. The portions of Beaver Brook and Merrick Brook located within Talbot WMA are designated as a Class 1 Wild Trout Management Area (WTMA). 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 Talbot WMA in a manner that is compatible with sound natural resource management such as wildlife viewing, hiking, and nature photography. No formal trails are authorized on Talbot WMA, and they are not recommended for the property. 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 on Talbot WMA and all WMAs is a critical objective, especially during the spring and summer breeding period. The existing old woods roads and maintained interior service roads provide the public with sufficient non-vehicular access to the property.

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 2006 a request was made by the University of Connecticut Wildlife Conservation Center to conduct American woodcock (hereafter woodcock) research on 14 DEEP properties, including Talbot WMA. The results of this research project indicated that woodcock were exposed to potentially damaging levels of at least two metals that had known effects in other species (Hiller and Barclay 2010). Other research projects will be considered for permitting consistent with the management objectives of this plan.

Resource Management Concerns

Two significant resource management concerns at Talbot WMA are unauthorized trails stemming from illegal all-terrain and motor vehicle use, and invasive vegetation. Unauthorized trails can impact nesting birds, insects, sensitive soils, and associated plants. 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. Other concerns include unleashed dogs, dumping, and possible encroachments by abutting landowners. Encroachments will be investigated and addressed.

Wildlife Habitats/Cover Types

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

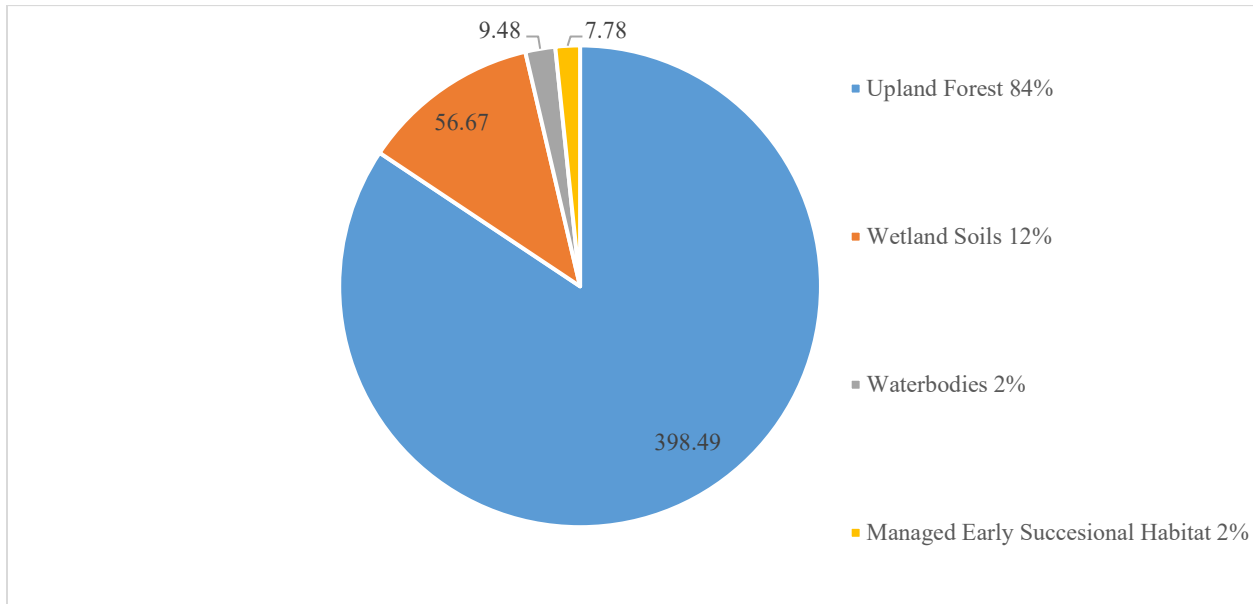


Figure 1. Talbot Wildlife Management Area land cover types by percent and acreage, 2021.

Forest

Upland forest is the dominant land cover type at Talbot WMA. Total upland forest acreage is 398.49, excluding forested wetlands classified as red maple lowlands in cover type mapping. If these red maple lowlands are included, then total forest acreage is 455.15.

A comprehensive inventory of the forests at Talbot WMA was completed by staff from the Forestry and Wildlife Divisions in 2021. Seventy-one 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. Based on these observations, Talbot WMA was divided into 29 forest stands (Appendix A – Map 6) that are unique in species composition, age class, structure, access, and past management history. Stands were 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 Talbot WMA scales.

Forest management access at Talbot WMA is generally good on the west side of Beaver Brook and Merrick Brook and poor on the east side. Approximately 128 acres of Talbot WMA are considered inaccessible, while nearly 83 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.

Forest Types

Various forest types are present at Talbot WMA (Figure 2). The oak-hickory cover type accounts for over half of the forest area. Competing well on the dry till and outwash soils, oak stands stretch the hillsides both east and west of the central drainage formed by Merrick Brook. Some of these oak stands have accumulated impressive growth and stocking, having had long intervals since past management.

Hemlock-pine forests occupy the lower elevations in both the floodplain and on the steep, thin slopes extending up from Merrick Brook. Despite evidence of hemlock wooly adelgid and elongate hemlock scale, the hemlock component in these stands looks healthy, as indicated by good live crown ratios, deep green foliage, and minimal dieback. The steep slopes descending to the valley bottom may have colder winter temperatures than less topographically influenced hemlock stands. These colder winter temperatures can contribute to higher mortality of hemlock wooly adelgid, resulting in better overall health of the hemlock stands.

Red maple dominated riparian communities account for 11% of the forests at Talbot WMA. They occupy a substantial amount of the land north of Bass Road, along the floodplain of Beaver Brook.

The rich soils found in portions of Talbot WMA help sustain sugar maple dominated northern hardwood composition over 6% of the area. It is also not uncommon to find similar rich soil obligates, like trout lily and wild leak, in certain portions of the property.

The Norway spruce component traces back to softwood plantings by the Talbot family beginning in the 1930's. Stands containing spruce were thinned in 1990 while salvaging adjacent red pine. The increasingly aged, non-native spruce has overtopped new age classes of oak and sugar maple. The proximity to existing early successional habitat makes these stands good candidates for transition to native hardwood composition.

Though it occupies only a small percentage of the total forest, there is a half-acre Atlantic white cedar stand along the eastern edge of the property, near the convergence of Beaver and Merrick Brooks.

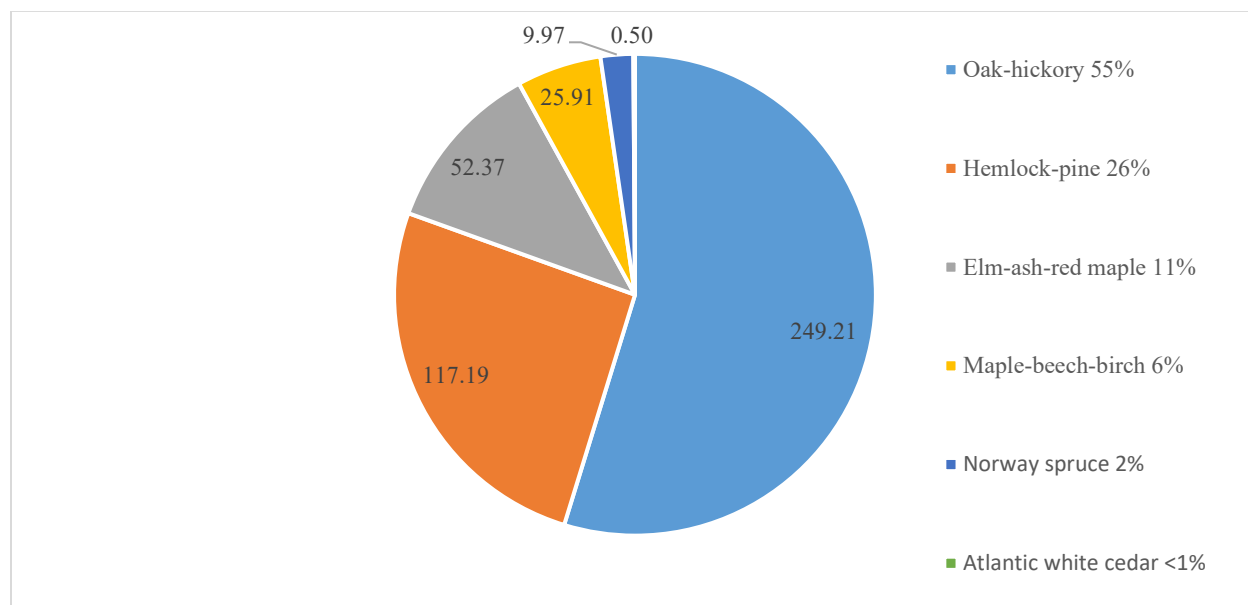


Figure 2. Talbot Wildlife Management Area forest types by percent and acreage, 2021.

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 diversity at Talbot WMA is currently low. There is very little seedling/sapling habitat present at Talbot MWA. Much of the forest on the property is currently in the sawtimber size classes (Table 3).

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

Forest Cover Type	Size Class						Total Acres
	Seedling/Sapling	Pole	Sawtimber Pole	Sawtimber	Sawtimber Seedling/Sapling	All Aged	
Atlantic white cedar	0	0	0.50	0	0	0	0.50
Elm-ash-red maple	0	15.81	36.56	0	0	0	52.37
Hemlock-pine	0	0	16.60	100.59	0	0	117.19
Maple-beech-birch	0	0	25.91	0	0	0	25.91
Norway spruce	0	0	3.63	0	6.34	0	9.97
Oak-hickory	3.89	5.84	46.73	192.75	0	0	249.21
Total	3.89	21.65	129.93	293.34	6.34	0	455.15

Over 90% of the forest stands have a maturing dominant cohort and lack the within-stand size class diversity needed to foster forest resilience. This is an expected condition given the long interval since past forest management. Historic cutting intensity was low, trending toward thinning which did not produce an understory growth response. The last documented silviculture treatments conducted on the property were in 1990. Stand level and within-stand age class diversity can be facilitated with forestry guided regeneration cuttings designed to establish new cohorts of tree species. The portions of Talbot WMA which have received the most recent management effort are also the areas where additional cutting will be directed due to the presence of advanced regeneration. Having advanced tree reproduction in the forest understory prior to disturbances like storms or silviculture treatments, allows the forest to have a more resilient growth response in the period following disturbance.

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.

Lack of age class diversity at Talbot WMA is a long-term forest health concern. Much of the area has an increasing regeneration debt. This lack of self-sustaining regeneration coupled with the presence of invasive plants creates a significant forest health issue on the property. With strong competition from invasive plants in the forest understory, it will be more difficult to establish adequate tree reproduction to offset the regeneration debt. Invasive plant management will be pursued within and beyond project area boundaries to address an issue that could potentially be exacerbated with increased habitat management. 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.

Of the 71 sample plots inventoried at Talbot WMA, 55% of those plots (n = 39) supported some invasive plants either within or between plots. The highest density populations were found on the east and west sides of Beaver Brook in stands 2, 4, 5, 7, and 8a. There is a low to moderate invasive plant presence persisting in pockets of the understory in stand 10 (Appendix A – Map 6). Without proactive management the footprint and density of this population will continue to grow. The area has rich soils which are highly supportive of invasive plants wherever there is disturbance or sunlight. To be successful, any habitat management efforts in this area will have to include a multi-year invasive plant management strategy.

Eastern hemlock plays an important role in maintaining cool water temperatures and stabilizing the steep slopes along Merrick and Beaver Brooks. Hemlock is at risk of decline due to invasive insects such as the hemlock wooly adelgid and elongate hemlock scale. Since the 1990s, 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 Talbot WMA.

Portions of Talbot WMA experienced two consecutive years of partial defoliation by spongy moth caterpillars. In 2017, defoliation occurred in the southeast and southwest portions of the WMA, mainly in stands 10, 10a, and 12 (Appendix A – Map 6). In 2018, defoliation was mapped in the southern and northern portions of the property. Tree mortality resulting from the two-year defoliation and periodic drought is widespread but low in intensity. Most oak dominant stands have experienced some level of tree mortality as trees succumb to the effects of stressors such as spongy moth defoliation, drought, and native two-lined chestnut borers. Despite being widespread, mortality is generally limited to a small portion of the stand basal area.

Emerald ash borer (EAB) was first detected by the CAES in the town of Scotland in 2019. The host trees for EAB are in the true ash family. White ash is a common local tree on the fertile post-agricultural soils of Talbot WMA. Ash is especially prevalent in stand 10 (Appendix A – Map 6) where it accounts for nearly 14% of the basal area and over 1,000 board feet (BF) per acre stand wide. Ash at Talbot WMA is at great risk of mortality from EAB within the next five years. A silvicultural treatment prescribed for stand 10 will remove a portion of the ash threatened by EAB.

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 advisable in climate threatened forests.

Harvest Sustainability

Approximately 274 acres have the potential to be managed for wildlife using traditional forestry methods. Applying a 100-year rotation to land intended to be managed with even-aged methods gives managers a framework for assessing long-term harvest sustainability. Assuming a desire to maintain Talbot WMA in a condition which supports at least 10% of the actively managed land in young forest habitat, 28 acres can be sustainably regenerated per 10-year planning period.

Wetlands and Waterbodies

Wetlands are the second most dominant land cover type at Talbot WMA. Total wetland soil acreage is 56.67 acres and is primarily comprised of red maple lowlands. Total waterbody acreage is 9.48 and includes two named stream courses and a series of vernal pools located east of Beaver Brook and north of Merrick Brook (Appendix A – Map 3).

Managed Early Successional Habitat

The managed early successional habitat on the property is concentrated south of the parking lot on Bass Road (Appendix A – Map 7). The area currently managed as early successional habitat is 7.78 acres and is comprised of two old fields and one patch of young forest.

Old Field

The total old field habitat is 6.38 acres. These areas are comprised of eastern red cedar, highbush blueberry, white pine, and native mixed grasses. Portions of these areas contain invasive species such as autumn olive, honeysuckle, Oriental bittersweet, and multiflora rose.

Young Forest

The total young forest habitat is 1.40 acres. This area is largely comprised of oaks, American beech, black birch, and red maple, with smaller concentrations of bigtooth aspen, black cherry, and pin cherry. This area is primarily in the seedling/sapling size class. A small portion of this site contains invasive species such as autumn olive and Oriental bittersweet.

Wildlife

General Wildlife Use

The variety of habitat types found within Talbot WMA provide habitat for a multitude of wildlife species. Waterfowl species known to nest on the property include hooded merganser and wood duck. Other waterfowl species, such as the American black duck and mallard utilize Talbot WMA during migration. Passerine bird species documented nesting on the property include American robin, eastern bluebird, eastern phoebe, field sparrow, and mourning dove. Numerous other passerine species have also been documented at Talbot WMA including American redstart, black-capped chickadee, black-and-white warbler, black-throated green warbler, chipping sparrow, common yellowthroat, eastern towhee, eastern wood pewee, red-eyed vireo, rose-breasted grosbeak, ovenbird, scarlet tanager, tufted titmouse, veery, and wood thrush. Wild turkeys and woodcock have been recorded nesting on the property. Raptors observed on the property include cooper's hawk, northern goshawk, northern harrier, turkey vulture, red-shouldered hawk, red-tailed hawk, and sharp-shinned hawk. Various species of mammals have been documented on Talbot WMA including bobcat, coyote, eastern cottontail rabbit, 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, wood turtle, and northern black racer.

State-Listed Species and Species of Greatest Conservation Need

A review of the DEEP Natural Diversity Data Base (NDDB) indicated the presence of five extant populations of state listed species on or within the vicinity of Talbot WMA (Appendix A – Map 8); these include one vascular plant, two invertebrate animals, and two vertebrate animals. The NDDB 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 [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 Talbot WMA that lack age class diversity, birds such as woodcock and ruffed grouse will benefit, as well as over 50 other SGCN .

Fisheries Resources

Beaver Brook supports a diverse fish community that includes coldwater species such as wild brown trout, wild brook trout, and slimy sculpin. Merrick Brook supports a high quality coldwater fishery with robust populations of wild brown trout, wild brook trout, and slimy sculpin. Both brooks also support a number of fluvial species including blacknose dace, longnose dace, common shiner, fallfish, white sucker, tessellated darter, and the catadromous American eel. There is no stocking of hatchery fish into these waters.

Wildlife Division Monitoring

Point count surveys are one method natural resource professionals use to monitor and inventory avian populations. In June 2007, a point count survey was conducted at Talbot WMA. This survey tallied all birds detected by sight or sound within 100 meters of two survey points. Each point was surveyed for 10 minutes. A total of nine different bird species were documented (Table 4).

Table 4. Talbot Wildlife Management Area point count survey results, 2007.

Point Number	Species	Unique Individuals Recorded
1	American redstart	1
1	Brown-headed cowbird	8
1	Chipping sparrow	1
1	Common yellowthroat	1
1	Red-eyed vireo	2
1	Yellow warbler	1
2	American redstart	1
2	Chestnut-sided warbler	1
2	Common yellowthroat	1
2	Least flycatcher	1
2	Tufted titmouse	1
2	Yellow warbler	1
Total	9	20

In support of New England cottontail (NEC) regional monitoring, Wildlife Division staff collect rabbit fecal pellets for genetic testing and conduct habitat sampling at approximately 50 sites annually. This monitoring effort is part of a long-term study to document occupancy of NEC within certain geographic areas of the state. Rabbit pellet collections and habitat sampling were conducted at Talbot WMA in 2019 and 2021 as part of this study. To date, no NEC have been documented at Talbot WMA.

Other wildlife monitoring efforts may be initiated at Talbot WMA during this planning period as time and resources allow.

Special Designations, Plans, and Initiatives

Young forest habitat and the wildlife that depend upon it have been decreasing throughout Connecticut and the region for many years. Talbot WMA is located in one of the three woodcock focus areas (Appendix A – Map 9) 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 that a long-term commitment is made to the management of 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 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 young forest habitat in 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 young forest habitat need to be created and maintained in Connecticut.

Talbot WMA has good to excellent potential to provide ideal woodcock habitat based on soil type, topography, and the ability of the area to be managed for early successional habitat. The habitat needs of woodcock are complex. Woodcock require areas of young forest or shrubland for nesting and feeding cover. Soil conditions must support adequate populations of earthworms and other invertebrates which make up the woodcock diet. The forest stands most likely to regenerate to vigorous young forest habitat are 1, 6b, 7, and 8d (Appendix A – Map 6). Forested wetlands within and between these stands improve woodcock habitat potential, while anecdotally the soils appear richer, based on forest composition, than the soil surveys suggest. The topography is not heavily sloped, and the soils contain a loamy component adjacent to the wetlands. These areas provide the conditions required for woodcock nesting, brood rearing, and feeding. Male woodcock display in open areas, such as old fields and clearings, in early spring to attract mates. Later in the season woodcock tend to move to meadows and fields for roosting.

Talbot WMA falls within the Scotland – Canterbury NEC focus area, one of 12 NEC focus areas in Connecticut (Appendix A – Map 9). The NEC is Connecticut’s only native cottontail. Its population has declined by more than 85% throughout its range in the Northeast. Loss of habitat has been identified as the primary cause for this decline. New England cottontail 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 other 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.

The portion of Beaver Brook and Merrick Brook located within Talbot WMA are designated as a Class 1 WTMA. There are 28 WTMA in Connecticut, divided into three classes, with nine waters having a Class 1 designation. A Class 1 WTMA is a section of river or stream with adequate natural reproduction to support year-round fishing. There is no stocking of hatchery fish into these waters and fishing is allowed year-round. The regulations on these waters protect trout populations by prohibiting harvest and requiring the use of artificial lures with a single barbless hook. The management actions prescribed in this plan will help to protect this valuable fisheries resource.

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 not dominated by one species, family, or age class. The inventory process revealed deficiencies in both young forest and multi-aged forests. Management treatments are designed to increase age class diversity and structural heterogeneity across the actively managed acreage. Habitat enhancement will be focused where the most immediate regeneration opportunities exist. Focusing on areas with adequate, advanced regeneration allows the next age class of forest to regenerate more vigorously, providing higher initial stem density and more robust early successional habitat. Other sites will be managed to promote long-term regeneration opportunities. These areas will provide immediate habitat diversity while simultaneously initiating the regeneration process to ensure hard mast is a strong component in the next forest age class.

There are seven individual forest stands at Talbot WMA that will be commercially managed over the next 10 years (Appendix A – Map 10). The characteristics of these stands are varied (Table 5 – Table 11).

When possible, the Best Management Practices (BMPs) as defined in the MPWC for creating woodcock nesting habitat will be utilized. The BMPs used in identifying potential areas for creating suitable nesting habitat for woodcock are:

Type of cut: final/irregular shelterwood harvest

Size of cut: >5 acres

Soil type: loamy component

Slope: <15%

Water: presence of pond, stream, or wetland

Stand 1 will be managed with a final shelterwood harvest to initiate the reproduction of an early successional even aged stand. The area lies directly east of Beaver Brook near the northern extent of the property and is characterized by its flat topography and loamy soils, creating a favorable management opportunity for woodcock. The operation will require cutting nearly all woody stems to facilitate a rapid even aged regeneration response from the seedling layer which supports moderate oak reproduction. A low density invasive plant treatment will be required throughout the area prior to harvest.

Table 5. Talbot Wildlife Management Area forest stand 1 summary information, 2021.

Stand	Cover Type	Acres	Basal Area	Trees / Acre	Stocking	Size Class	BF / Acre Volume	Cords / Acre Volume
1	Oak – Mixed Hardwood	20	83	161	Adequate	Sawtimber	3,060	18

Predominant Species: White oak, hickories, red oak, red maple

Main Soil Types: Woodbridge, Merrimac, Sutton

Access: Good off Route 14A – Coordinate with the Connecticut Department of Transportation

Regeneration: Fair

Invasive Concerns: Low – Moderate

Stand History: Shelterwood 30 years ago

Notes: Invasive plant control required

Management Recommendation: Final shelterwood cut to establish young forest habitat

Stand 6 will be thinned. This low-intensity thinning will reduce stocking to facilitate growth in the residual trees. Lateral crown expansion will support increased seed production potential and greater thermal cover for wildlife. Small gaps created through thinning may initiate low levels of understory regeneration which will increase wildlife cover.

Table 6. Talbot Wildlife Management Area forest stand 6 summary information, 2021.

Stand	Cover Type	Acres	Basal Area	Trees / Acre	Stocking	Size Class	BF / Acre Volume	Cords / Acre Volume
6	Eastern white pine	7	140	480	Overstocked	Sawtimber – Pole	6,680	27

Predominant Species: Eastern white pine

Main Soil Types: Hinckley

Access: Good

Regeneration: Not applicable

Invasive Concerns: Low

Stand History: Thinning

Notes: Multiple age classes

Management Recommendation: Thinning

Stands 6b, 7, and 8d will be managed with an irregular shelterwood harvest to promote young forest habitat. The areas are in proximity to forested wetlands, mesic northern hardwood sites, vernal pools, and existing early successional habitat. Much of the area is dominated by non-native Norway spruce, planted by the Talbot family as an eventual timber crop. Red pine removal in 1990 initiated reproduction on the site. Removing the Norway spruce and other undesirable trees will create significant patches of young forest habitat.

Table 7. Talbot Wildlife Management Area forest stand 6b summary information, 2021.

Stand	Cover Type	Acres	Basal Area	Trees / Acre	Stocking	Size Class	BF / Acre Volume	Cords / Acre Volume
6b	Spruce – Hardwood	4	160	671	Adequate	Sawtimber – Pole	5,815	24

Predominant Species: Norway spruce, red maple, sugar maple, oak

Main Soil Types: Hinckley

Access: Good

Regeneration: Fair

Invasive Concerns: Moderate

Stand History: Thinning

Notes: Invasive plant control required

Management Recommendation: Irregular shelterwood to initiate stand reproduction

Table 8. Talbot Wildlife Management Area forest stand 7 summary information, 2021.

Stand	Cover Type	Acres	Basal Area	Trees / Acre	Stocking	Size Class	BF / Acre Volume	Cords / Acre Volume
7	Spruce – Mixed Hardwood	6	70	68	Adequate	Sawtimber – Pole – Sapling	5,740	18

Predominant Species: Norway spruce, sugar maple, white ash, red maple

Main Soil Types: Merrimac, Hinckley

Access: Fair

Regeneration: Moderate

Invasive Concerns: Moderate

Stand History: Thinning

Notes: Invasive plant control required, vernal pools

Management Recommendation: Irregular shelterwood to initiate stand reproduction

Table 9. Talbot Wildlife Management Area forest stand 8d summary information, 2021.

Stand	Cover Type	Acres	Basal Area	Trees / Acre	Stocking	Size Class	BF / Acre Volume	Cords / Acre Volume
8d	Mixed Hardwood	3	60	56	Adequate	Sawtimber – Pole	1,000	15

Predominant Species: Red maple, quaking aspen, oaks, hickories

Main Soil Types: Hinckley

Access: Good

Regeneration: Moderate

Invasive Concerns: Moderate

Stand History: Successional

Notes: Invasive plant control required

Management Recommendation: Irregular shelterwood

Stand 8b consists of a dying Christmas tree plantation. The understory is heavy with autumn olive and other invasive plant species. There are desirable remnants of eastern red cedar, gray birch, and other early successional trees throughout the area. The area will be managed with a selective tree mulching project to remove the dying spruce, invasive plants, and undesirable hardwoods, while releasing remnant habitat features and leaving a semi-open habitat of native trees and shrubs.

Table 10. Talbot Wildlife Management Area forest stand 8b summary information, 2021.

Stand	Cover Type	Acres	Basal Area	Trees / Acre	Stocking	Size Class	BF / Acre Volume	Cords / Acre Volume
8b	Mixed Hardwood – Invasive	2	40	100	Understocked	Pole – Sapling	0	4

Predominant Species: Red maple, autumn olive, eastern red cedar, white spruce

Main Soil Types: Hinckley

Access: Good

Regeneration: Fair

Invasive Concerns: High

Stand History: Spruce plantation

Notes: Invasive plant control required

Management Recommendation: Irregular shelterwood with tree mulching and brush mowing

Stand 10 is a large, well-stocked, oak dominated northern hardwood stand occupying the west and southwestern borders of the WMA and covers approximately 114 acres of the property. Northern red oak is the dominant species and trees 18 inch at Diameter at Breast Height (DBH) make up nearly 30% of the stocking. White ash and sugar maple make up the next most prevalent competitors in the stand. The ash resource in this stand is threatened by EAB. Stand stocking is very high, advanced reproduction is very low, and forest management efforts could provide resilience in this stand, while preparing the stand for an additional habitat management opportunity into the future. A first phase shelterwood harvest is prescribed to initiate the reproduction process in this advanced stand. Conservatively applied, the shelterwood should retain 50 square feet of acceptable growing stock basal area, with the potential of a smaller scale re-entry late in the planning period to create an additional patch of young forest. An invasive plant treatment would be a necessary precursor to management.

Table 11. Table Wildlife Management Area forest stand 10 summary information, 2021.

Stand	Cover Type	Acres	Basal Area	Trees / Acre	Stocking	Size Class	BF / Acre Volume	Cords / Acre Volume
10	Oak – Northern Hardwood	114	115	167	Overstocked	Sawtimber	6,920	27

Predominant Species: Northern red oak, white ash, sugar maple, black oak, white oak, sweet birch

Main Soil Types: Woodbridge, Paxton and Montauk, Canton and Charlton, Hinckley, Hollis

Access: Fair

Regeneration: Not applicable

Invasive Concerns: Low – Moderate

Stand History: Thinning

Notes: Invasive plant control required in portions

Management Recommendation: First-shelterwood in year one, 15-acre patch cut in year eight

Wetlands and Waterbodies Management

This plan strives to maintain high quality wetland habitat within Talbot 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 Beaver Brook and Merrick Brook using strategic additions of large woody debris and other techniques as appropriate during this planning period.

Managed Early Successional Habitat

This plan strives to create and maintain high quality early successional habitat in various degrees of succession within this area.

Old Field Management

One half of the existing old field acreage will be mowed on a five-year rotation after the bird nesting season (April 15 – August 15) has concluded. Native shrubs and trees of wildlife value will be retained. Fine scale individual tree release will be accomplished with chainsaw cutting. This cutting will focus on promoting high quality habitat features and releasing underrepresented species from competition. Non-native invasive plant control treatments will occur within this area.

Young Forest Management

The existing young forest acreage will be expanded to approximately 14 acres. The expansion of this area will occur initially with an irregular shelterwood harvest in stands 6b, 7, and 8d (Appendix A – Map 10). The area will subsequently be managed on a 15-year rotation using repeated brush mowing or tree mulching to maintain the desired habitat. Non-native invasive plant control treatments will occur within this area.

Progress Towards Plans and Initiatives

The habitat goals set forth in the Talbot 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 within the parking lot on Bass Road and noted on the DEEP's website.

The silviculture and habitat management practices outlined in the Talbot WMA management plan will provide valuable habitat for woodcock and over 50 other 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 Talbot WMA. Examples of these tasks include access point mowing, painting, staining, trash removal, sign posting, gate maintenance, and hazard tree removal. Any new enhancements that may be proposed during the planning period would be developed and implemented utilizing the DEEP's project request review process.

Other Infrastructure

The entire boundary was marked in 2021. Boundary marking is scheduled to occur once during this planning period (Table 14). Two dilapidated wood outbuildings, which were present at the time the property was acquired by the DEEP, and a non-functioning cement culvert (Appendix A – Map 5) are scheduled for removal in 2022 (Table 14). The culvert lies within a small tributary of Merrick Brook, near a service road crossing, and appears to have been dislodged during a storm event many years ago. To maintain the service road for authorized vehicles, the wooden foot bridge (Appendix A – Map 5) may be removed or modified in accordance with road improvement activities.

Ten-year Work Plans

Forest Management Work Plan

The 10-year forest management work plan (Table 12) 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. Mowing and forest stand improvements will be initiated outside of the bird nesting season (April 15 – August 15).

Table 12. Talbot Wildlife Management Area silviculture work plan, 2022 – 2031.

Year	Stand	Acres	Treatment	Notes
2022	1	18	Final shelterwood and invasive treatment	Remove all trees down to two inch DBH.
2023	8b	2	Irregular shelterwood, habitat mowing, and invasive treatment	Remove spruce and undesirable hardwoods.
2024	6	5	Thinning	Reduce stocking to facilitate growth in residual trees.
2024	6b, 7, 8d	17	Irregular shelterwood and invasive treatment	Remove spruce and undesirable hardwoods.
2024	10, 10b	110	First-shelterwood and invasive treatment	Salvage ash, initiate regeneration
2030	10	15	Final shelterwood and invasive treatment.	Remove all trees down to two inch DBH.
2031	All stands	472	Inventory forest stands	Preparation to write a new management plan.

Wildlife Habitat Management Work Plan

The 10-year wildlife habitat management work plan (Table 13) distributes the prescribed habitat prescriptions over the lifespan of this management plan. Mowing will occur outside of the bird nesting season (April 15 – August 15). Buffer strips will be retained where old fields abut watercourses.

Table 13. Talbot Wildlife Management Area wildlife habitat management work plan, 2022 – 2031.

Year	Stand	Acres	Treatment	Notes
2022	F1, F2, 8c, 9a	8	Invasive treatment	Herbicide invasive vegetation.
2022	*	*	Biological control	Reduce wooly adelgid abundance.
2023	8c	1	Habitat mowing	Mow young forest patch.
2023	F1, F2	4	Habitat mowing	Mow old field.
2024	F1, F2, 8c	5	Invasive treatment	Herbicide invasive vegetation.
2026	9a	3	Habitat mowing	Mow old field.
2027	9a	3	Invasive treatment	Herbicide invasive vegetation.
2028	F1, F2	4	Habitat mowing	Mow old field.
2029	F1, F2	4	Invasive treatment	Herbicide invasive vegetation.
2031	9a	3	Habitat mowing	Mow old field.

* = to be determined

Infrastructure Work Plan

In addition to the regular or seasonal maintenance tasks associated with the property (see page 22), the 10-year infrastructure work plan is shown in Table 14.

Table 14. Talbot Wildlife Management Area infrastructure work plan, 2022 – 2031.

Year	Location	Treatment	Notes
2022	Entire property	Enforcement	Address possible encroachment issues.
2022	Service roads	Remove debris	Remove culvert and outbuildings.
2023	Service roads	Mowing and daylighting	0.49 miles of service roads.
2024	Parking lot	Signage	Woodcock habitat work.
2026	Service roads	Mowing and daylighting	0.49 miles of service roads.
2029	Service roads	Mowing and daylighting	0.49 miles of service roads.
2030	Entire property	Mark boundaries	7.2 miles of boundaries.

Acquisition Objectives

The acquisition of large residential and nonresidential parcels adjacent to Talbot WMA should be considered high priority (Appendix A – Map 11). 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 Scotland and several local conservation organizations for review and comment. A digital copy of this plan was emailed to the Scotland First Selectman, Scotland Inland Wetlands Commission, Scotland Planning and Zoning Commission, and the Scotland Town Clerk. A hard copy of this plan was mailed to the Scotland Town Hall. Although not requested by the Scotland Planning and Zoning Commission, 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 Scotland, 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, Friends of the Shetucket River Valley, 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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Appendices

Appendix A - Talbot Wildlife Management Area Maps 1 – 11

Appendix B - History of Management Activities at Talbot Wildlife Management Area

Appendix C - Definitions

Appendix D - Public Comments

Appendix A – Talbot Wildlife Management Area Maps 1 – 11

Map 1: Talbot Wildlife Management Area orthophoto.

Map 2: Talbot Wildlife Management Area topography.

Map 3: Talbot Wildlife Management Area hydrology.

Map 4: Talbot Wildlife Management Area soil types.

Map 5: Talbot Wildlife Management Area infrastructure.

Map 6: Talbot Wildlife Management Area forest stands.

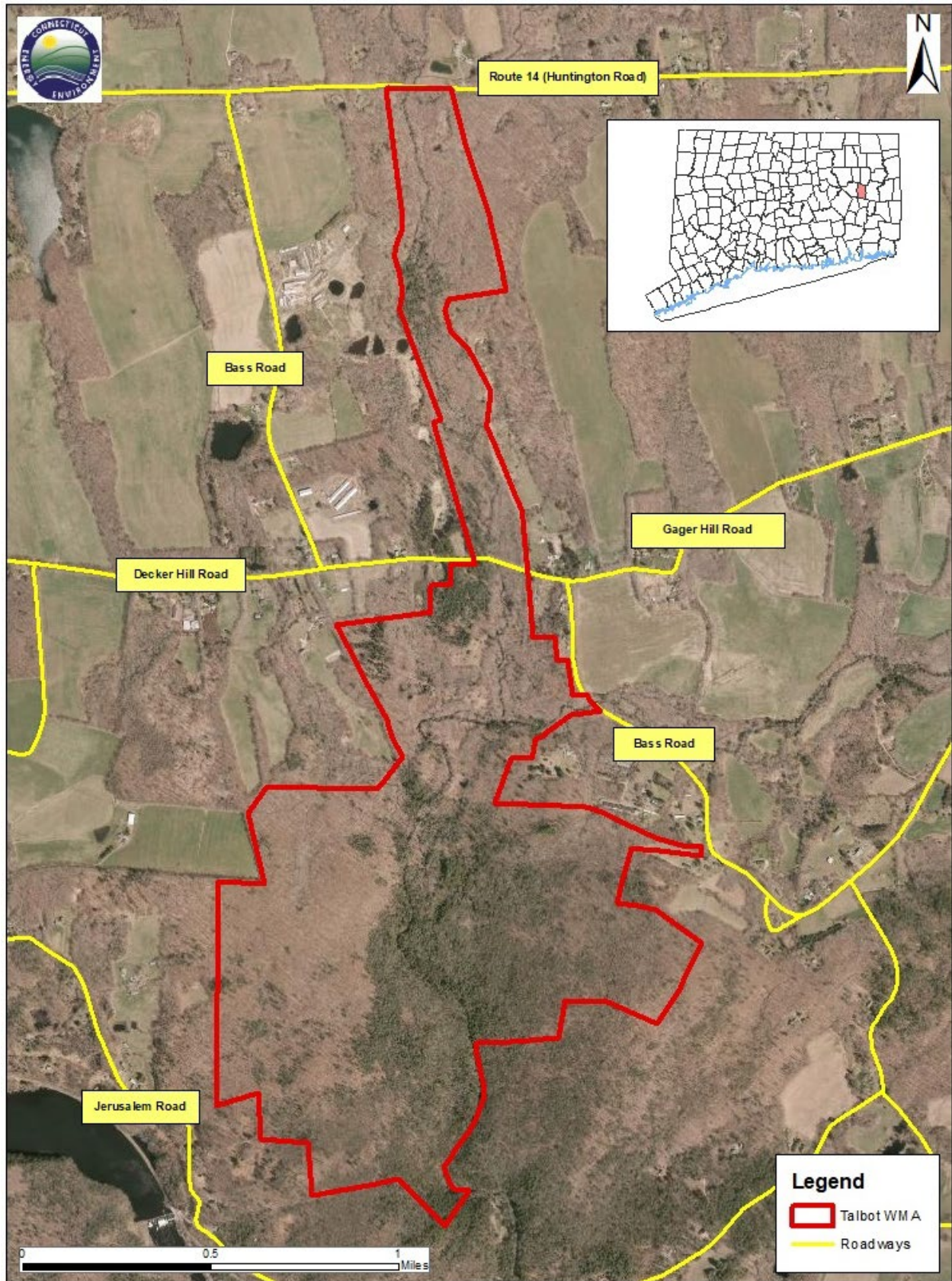
Map 7: Talbot Wildlife Management Area managed early successional habitat.

Map 8: Talbot Wildlife Management Area Natural Diversity Data Base areas.

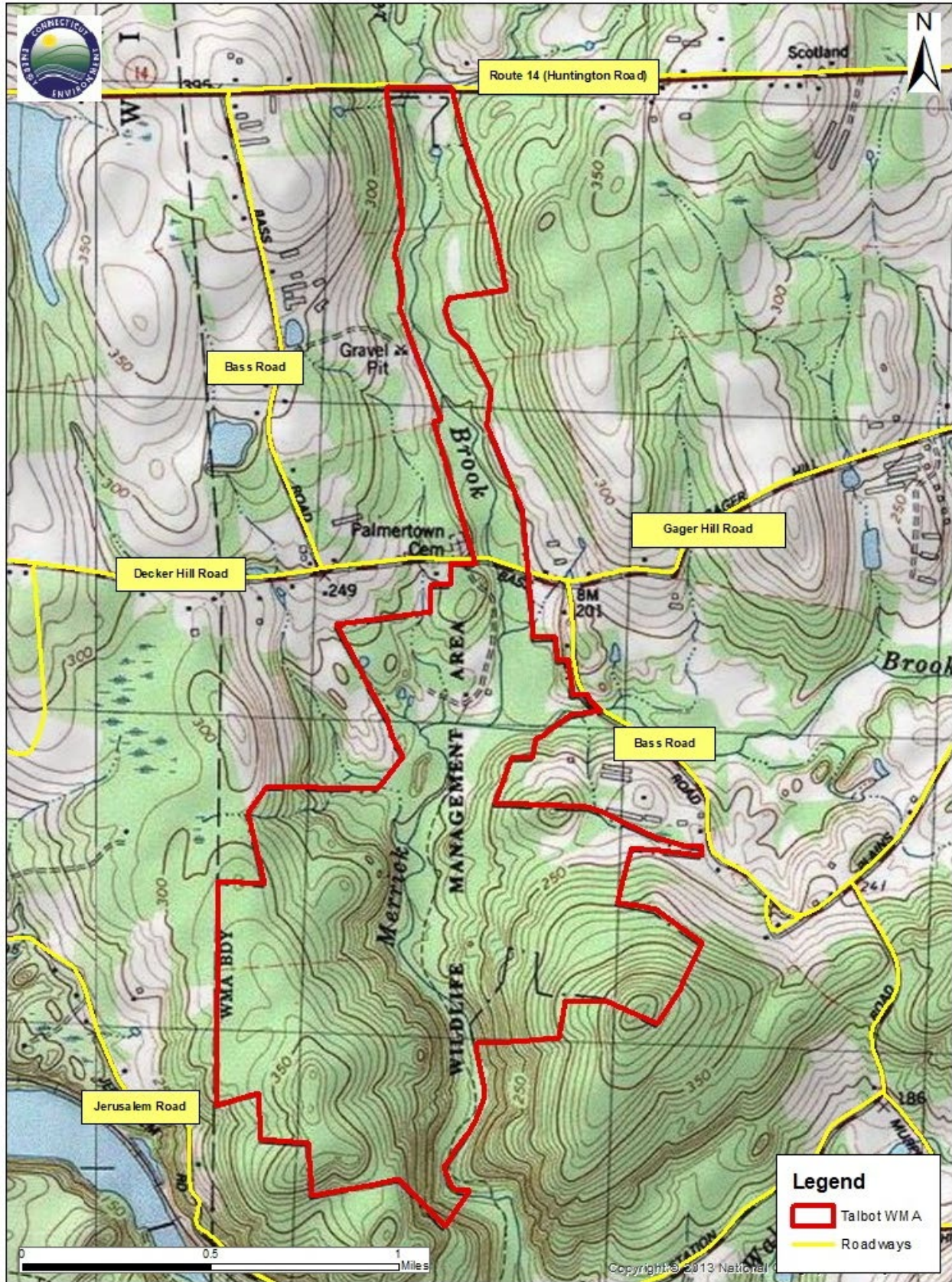
Map 9: American woodcock and New England cottontail focus areas.

Map 10: Talbot Wildlife Management Area silviculture prescriptions.

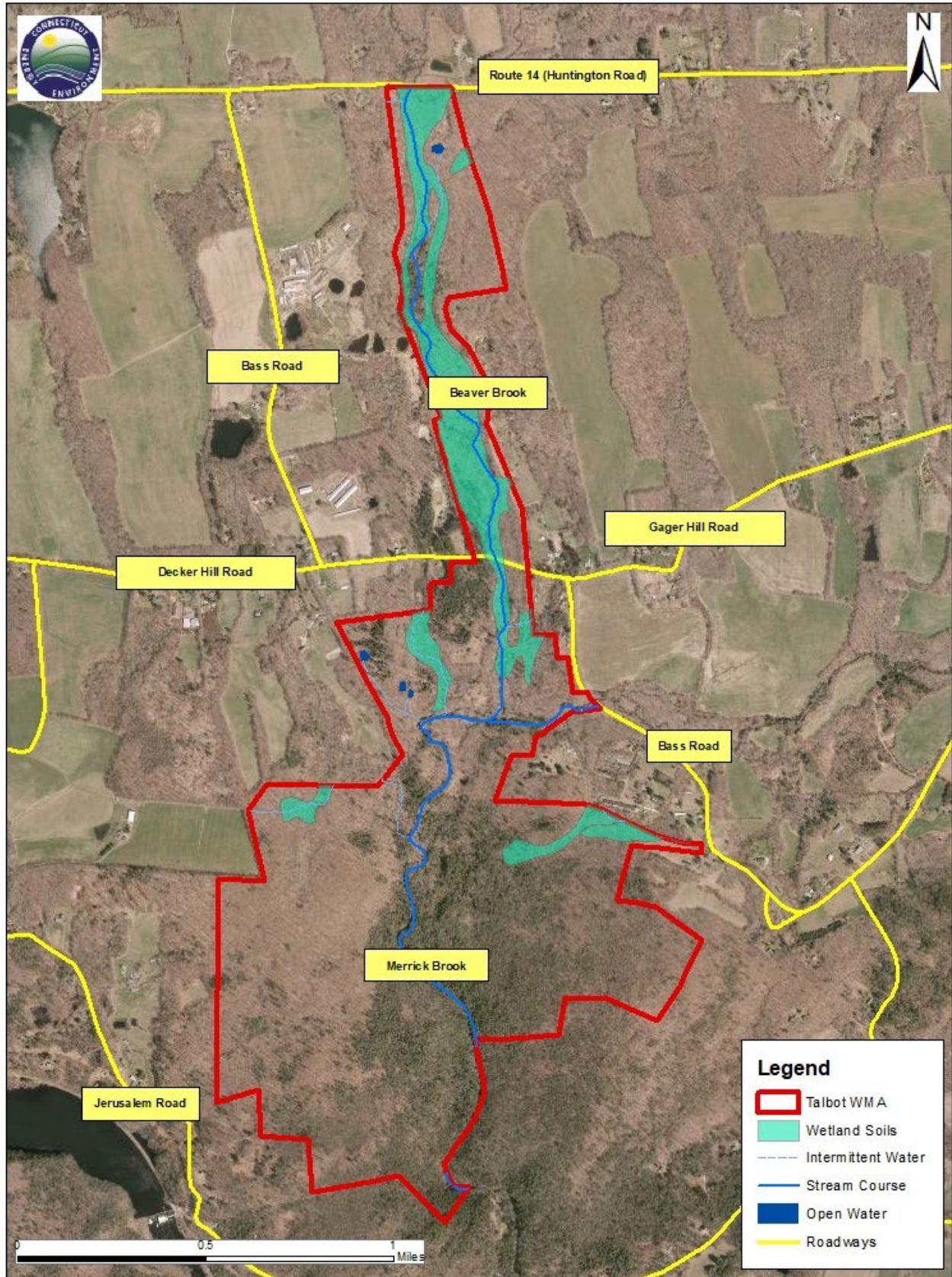
Map 11: Talbot Wildlife Management Area priority parcels for acquisition.



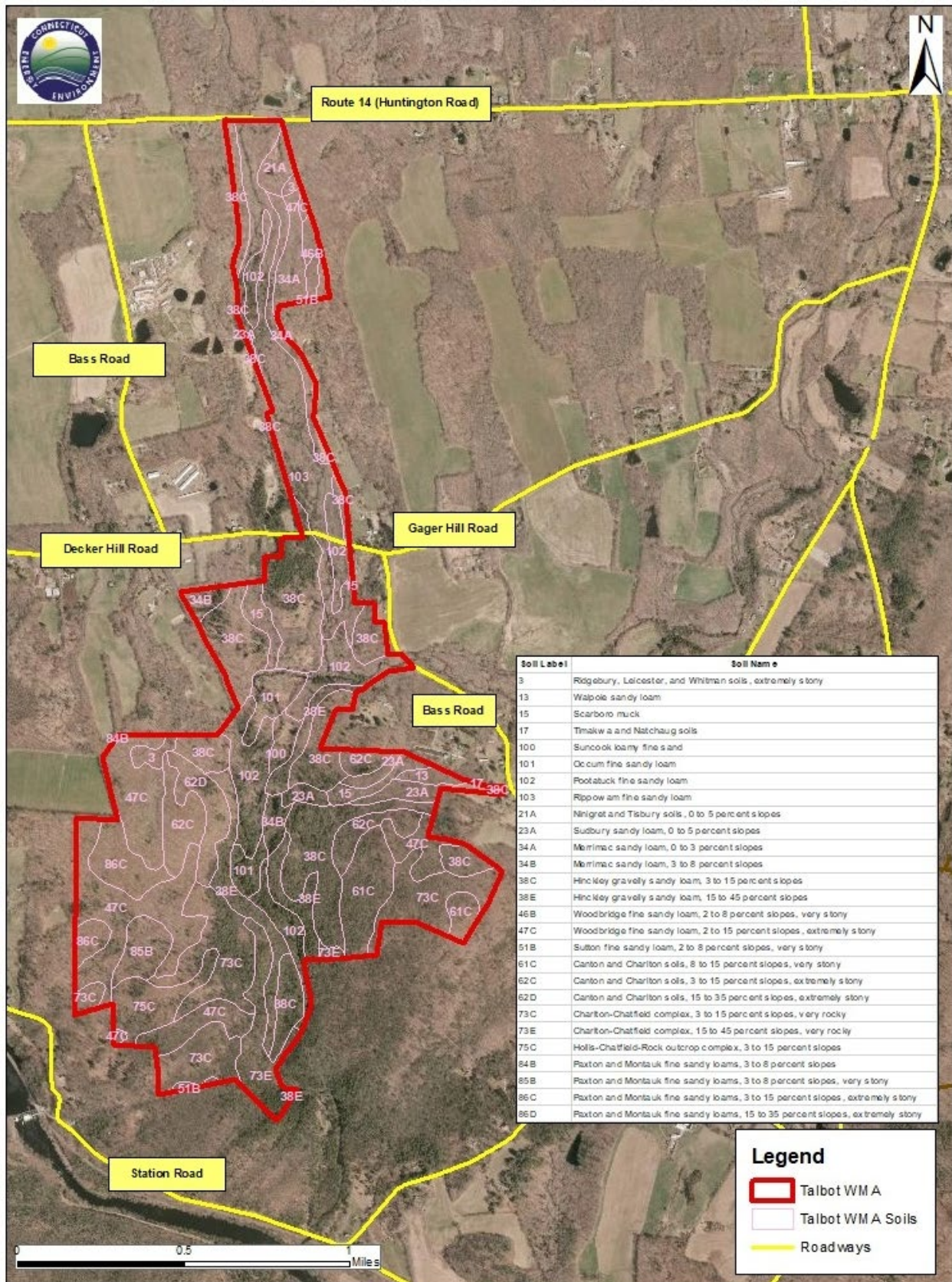
Map 1: Talbot Wildlife Management Area orthophoto.
Prepared by Tammie Rindfleisch, 2021.



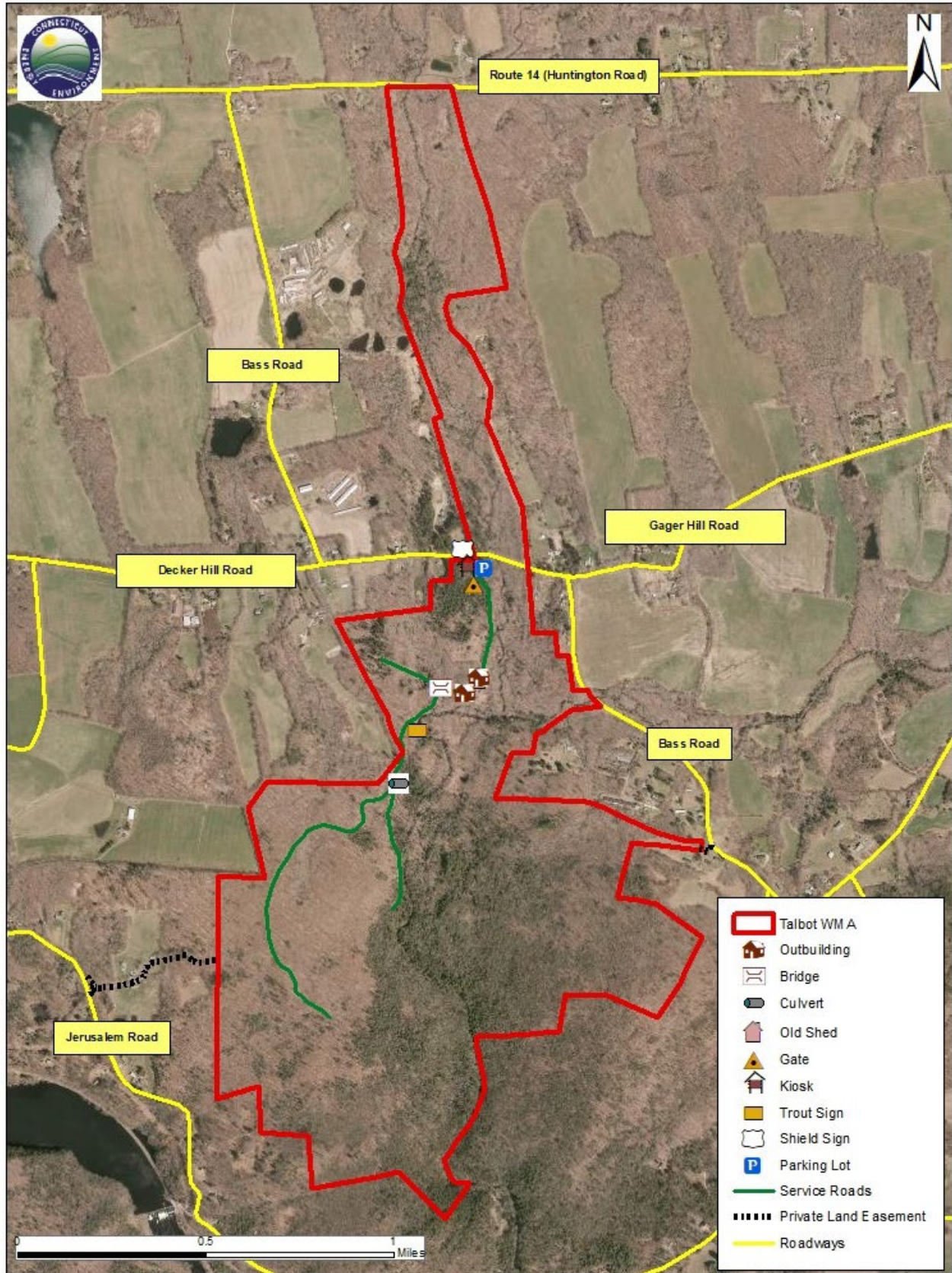
Map 2: Talbot Wildlife Management Area topography.
Prepared by Tammie Rindfleisch, 2021.



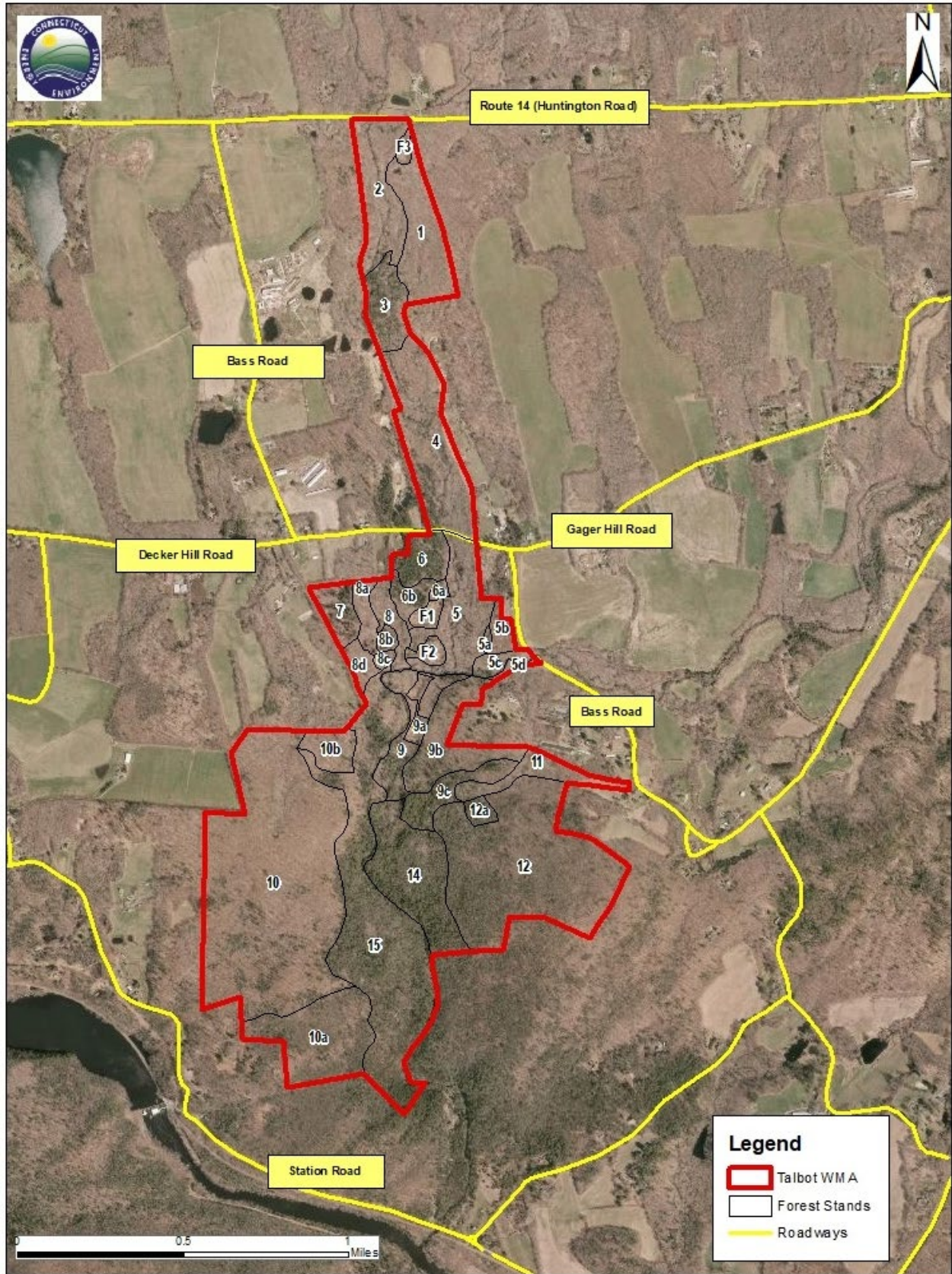
Map 3: Talbot Wildlife Management Area hydrology.
Prepared by Tammie Rindfleisch, 2021.



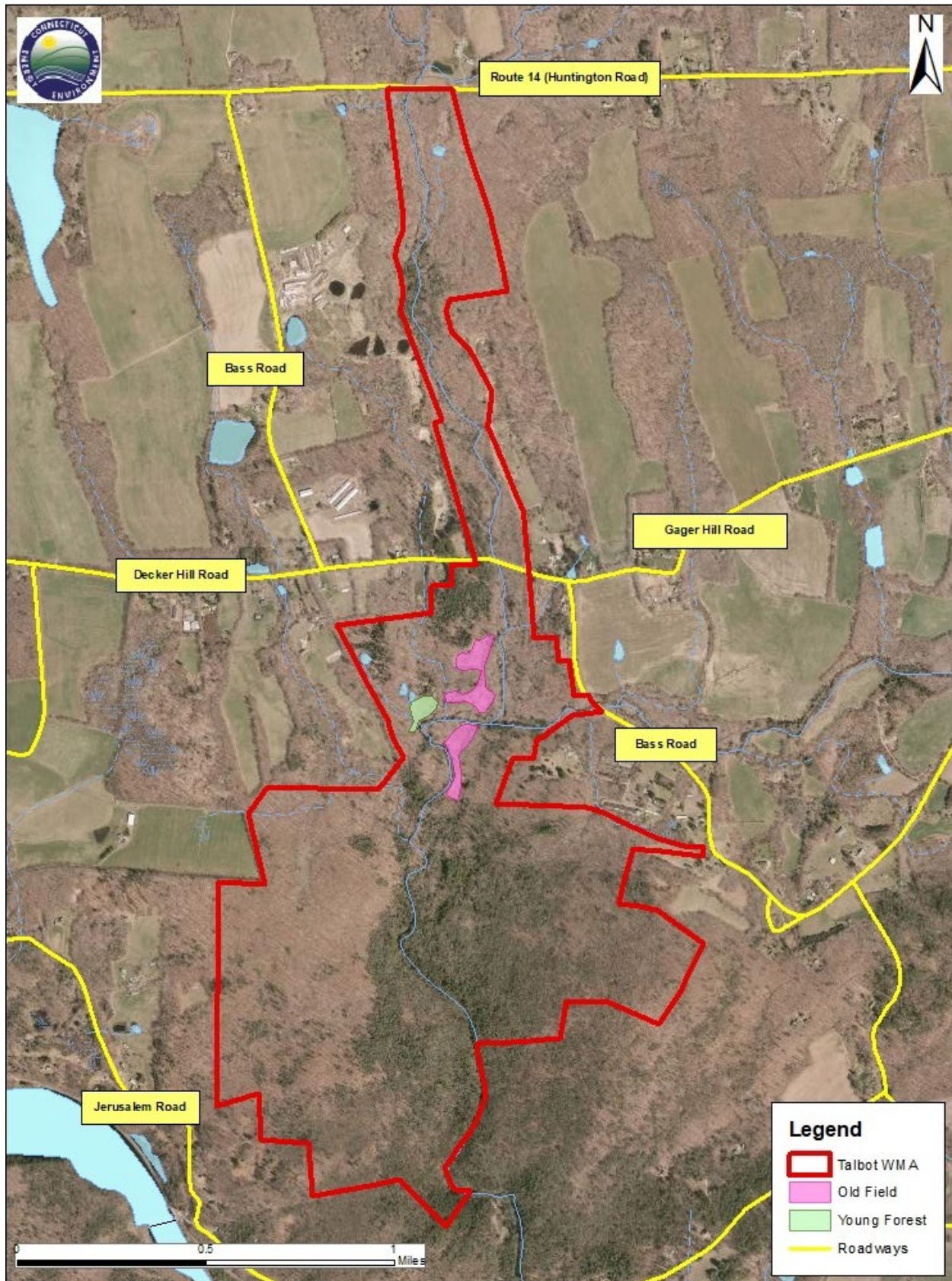
Map 4: Talbot Wildlife Management Area soil types.
 Prepared by Tammie Rindfleisch, 2021.



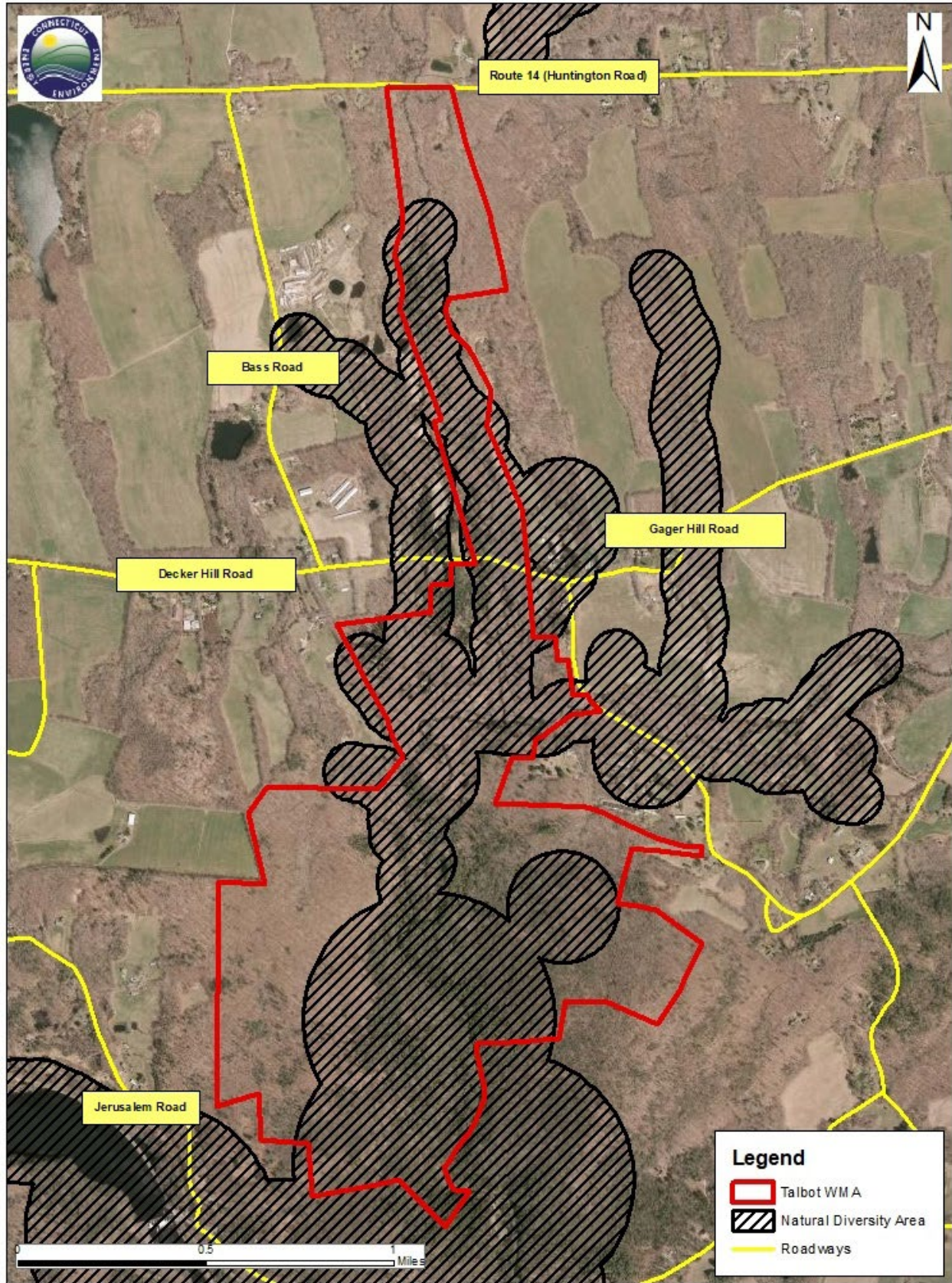
Map 5: Talbot Wildlife Management Area infrastructure.
Prepared by Tammie Rindfleisch, 2021.



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



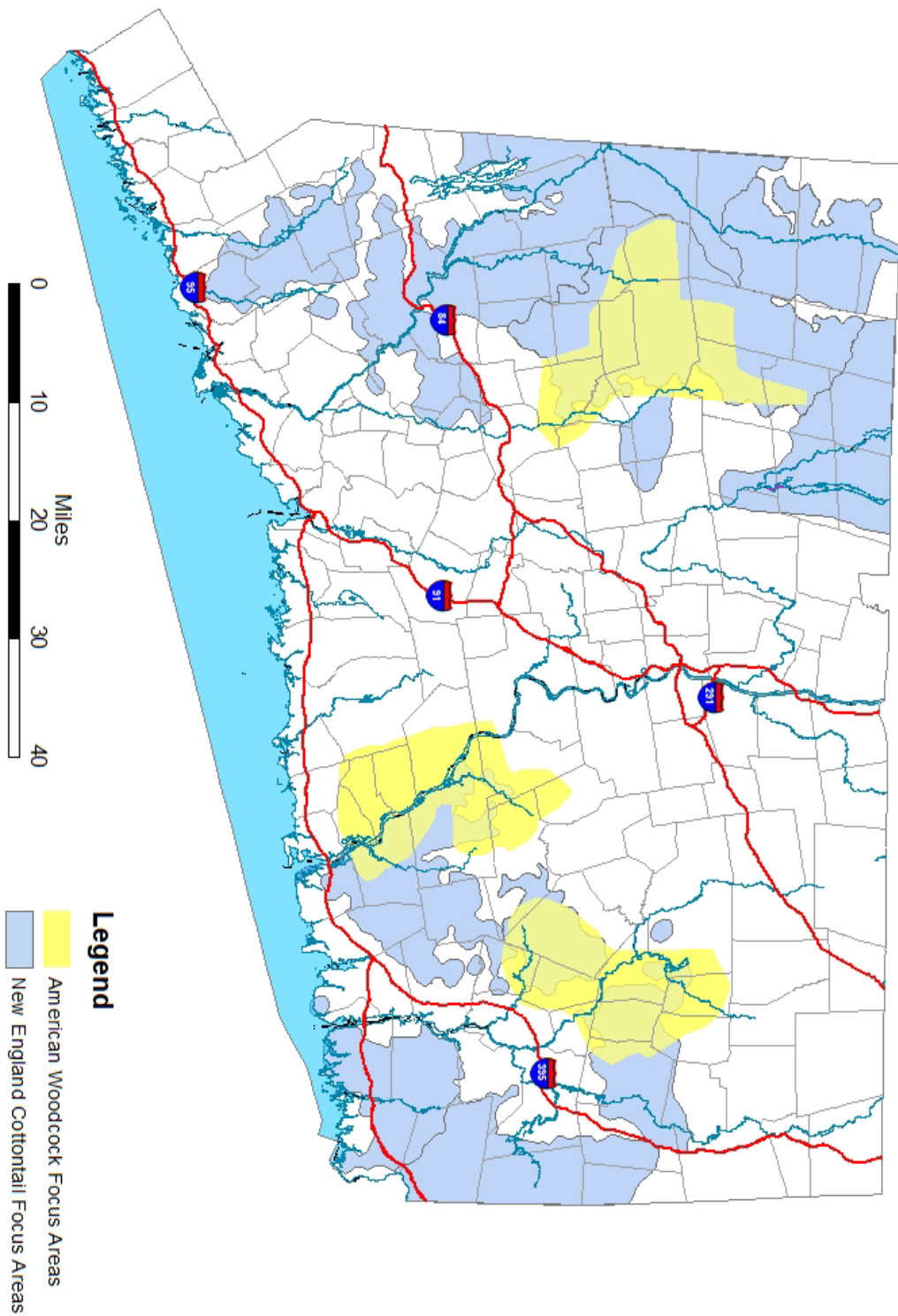
Map 7: Talbot Wildlife Management Area managed early successional habitat.
Prepared by Tammie Rindfleisch, 2021.



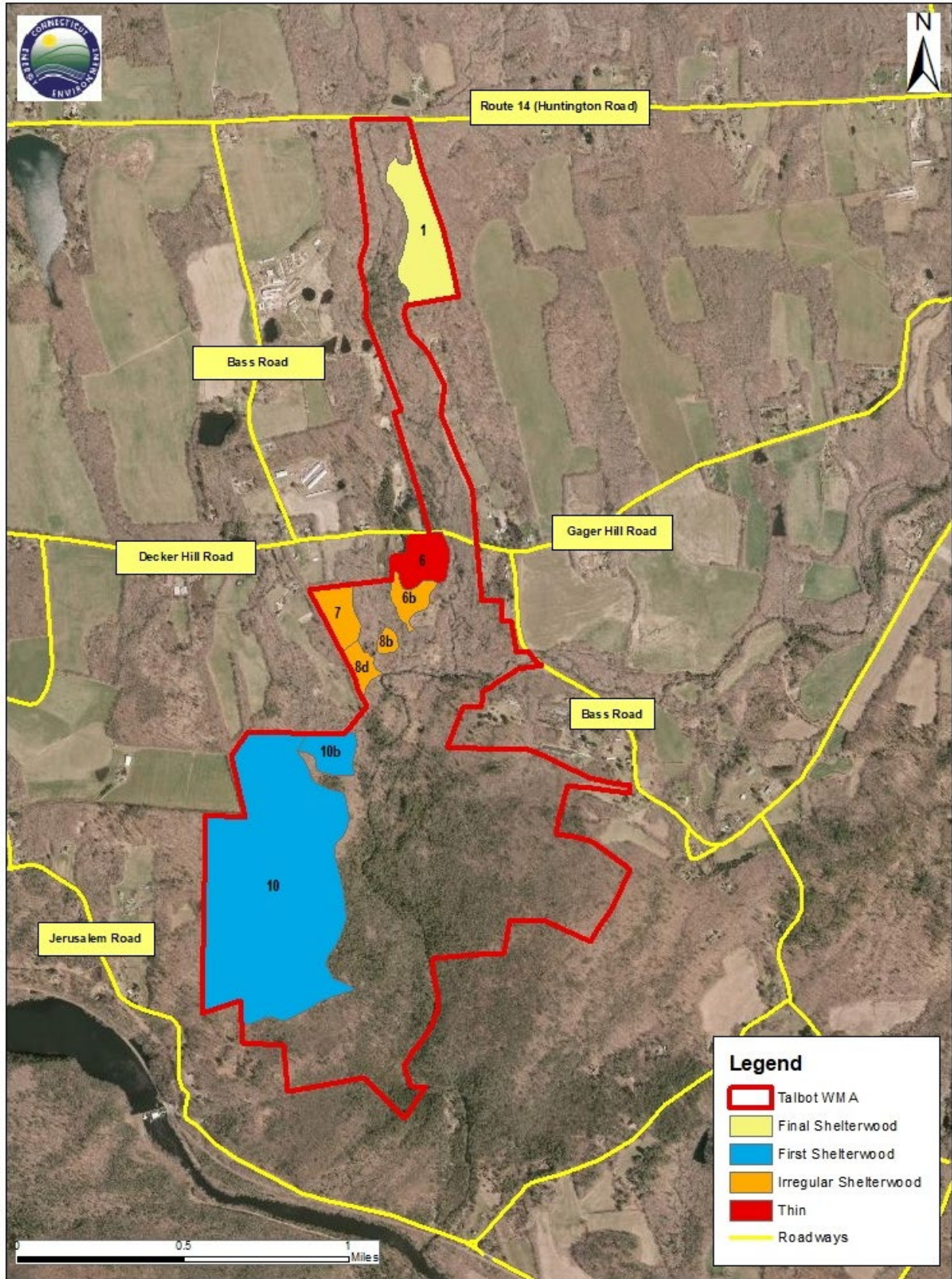
Map 8: Talbot Wildlife Management Area Natural Diversity Data Base areas.
Prepared by Tammie Rindfleisch, 2021.



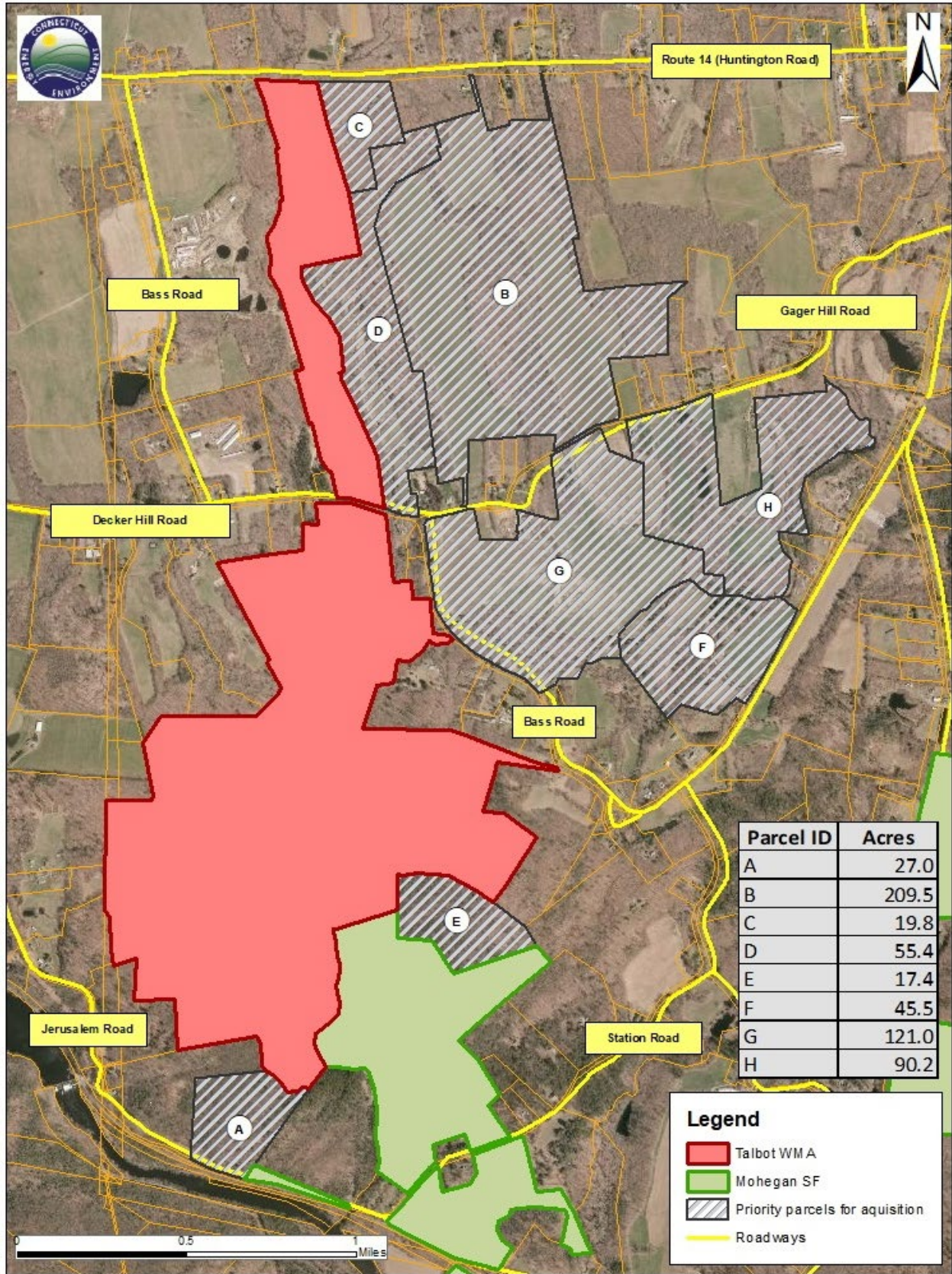
**Department of Energy and Environmental Protection
American Woodcock and New England Cottontail Focus Areas**



Map 9: American woodcock and New England cottontail focus areas.
Prepared by Kelly Kubik, 2021.



Map 10: Talbot Wildlife Management Area silviculture prescriptions.
Prepared by Dan Evans, 2021.



Map 11: Talbot Wildlife Management Area priority parcels for acquisition.
 Prepared by Tammie Rindfleisch, 2021.

Appendix B – History of Management Activities at Talbot Wildlife Management Area

In 1975, the first parcels of land were acquired for Talbot Wildlife Management Area (WMA) from the Talbot family.

In 1981, the life use provision by the Talbot family at Talbot WMA expired.

In 1982, the boundary at Talbot WMA was marked for the first time.

In 1984, a 10-year management plan for Talbot WMA was completed. The goals of this plan focused on: 1) protecting and enhancing water and fisheries resources, 2) improving stand composition, vigor, and productive capability by controlling density in overstocked stands, increasing species diversity, removing poor quality stems of favored species, and ensuring adequate regeneration before final harvest, 3) maintaining a range of cover conditions for wildlife and encouraging aspen, 4) ensuring minimal disturbance along waterways, requiring lag time between silviculture operations in adjacent stands, and scheduling silviculture activities during periods of low recreational use, and 5) developing further access to the property. According to this plan, 341 acres would receive silviculture treatments. This included 54 acres of regeneration cutting and 287 acres that were to be thinned.

In 1990, a five-acre red pine harvest was conducted at Talbot WMA south of Bass Road. As a result of this harvest, the purchaser of the bid was required to supply 100 tons of processed gravel and provide eight hours of bulldozer time to construct a 50-foot by 60-foot parking lot at the entrance to Talbot WMA on Bass Road. At this time a gate was installed in the parking lot to control vehicular access.

In 1998, a habitat restoration project was completed on a section of Merrick Brook within Talbot WMA by the Fisheries Division and the Inland Water Resources Division. Partners of this project included the Fish America Foundation and the Thames River Chapter of Trout Unlimited. Approximately 350 feet of streambank along a channel meander of Merrick Brook was severely eroded. Habitat restoration focused on increasing the radius of curvature and bankfull width ratio. To achieve the higher radius of curvature, 60 feet of existing channel was realigned, 150 feet of new channel was created through a forested floodplain, and 140 feet of channel was abandoned and converted to floodplain and vernal pool habitat. Bank and instream structures were installed which included vortex rock weirs, rock vanes, and root wads. These structures provided grade control, energy dissipation, and flow deflection. They also helped to restore wild brown and native brook trout habitats through the creation of scour pools and a deep thalweg adjacent to overhead and instream cover. Soil bioengineering techniques were used for bank protection and for the creation of a stable riparian area featuring native plants.

In 1999, the Thames River Basin Partnership (TRBP) sponsored a streamwalk on the mainstem and tributaries of the Shetucket River, including Merrick Brook in Talbot WMA. Using the information collected from the streamwalk, the TRBP assessed the condition of the riparian zone along Merrick Brook and determined that it was well established. The TRBP made six recommendations to retain or improve the functional value of the Merrick Brook riparian buffer: 1) do not disturb wetland areas or stable embankments close to watercourses, 2) stabilize unnatural eroding areas within the riparian buffer width, 3) consider the removal of invasive vegetation and replace with adaptable native species, 4) if any timber is harvested use minimal disturbance equipment, selectively harvest, stay back at least 25 feet from the watercourse's top of bank, and use a harvesting plan, 5) try to not use any fertilizers or pesticides close to the watercourse or in wetlands, if chemical treatments are used select a herbicide that will not degrade the

soil and water, and follow the herbicide labels carefully, and 6) minimize vehicular traffic in the riparian buffer.

In 2002, Merrick Brook and Beaver Brook within Talbot WMA underwent a regulation change and were classified as a Class 1 Wild Trout Management Area (WTMA).

In 2003, a shield sign and kiosk were installed at the parking lot off of Bass Road. In addition, the Fisheries Division placed several temperature data loggers in Merrick Brook and Beaver Brook at Talbot WMA. This was done as part of the wild trout monitoring program, as well as providing baseline data for a study examining thermal loading in streams.

In 2007, the Wildlife Division received a Wildlife Habitat Incentives Program (WHIP) grant from the United States Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) to reclaim three areas of managed early successional habitat at Talbot WMA, totaling 7.78 acres.

In 2008, a 10-year management plan for Talbot WMA was completed. The goals of this plan focused on: 1) maintaining and developing a diversity of wildlife habitats, emphasizing early successional stage fields, grassland, and forests, 2) enhancing and protecting water quality essential to the Merrick Brook and Beaver Brook Class 1 WTMA and, 3) enhancing opportunities for public use and enjoyment in a manner that is consistent with sound natural resource management. According to this plan, two stands were to remain in the seedling/sapling stage through mechanical treatments every six to 10 years. One stand was to remain in grassland habitat by mowing every other year. Annual selective herbiciding was recommended to control invasive vegetation. Three 10-acre clearcuts were prescribed within this plan. These cuts were to occur two to three years apart. Other habitat management recommendations addressed snags, old growth trees, conifer cover, hard mast, brush piles, and riparian corridor protection. Infrastructure, land acquisition, and use were also addressed in this plan.

In 2015, a WHIP funded habitat restoration project was completed on a section of Merrick Brook within Talbot WMA by the Fisheries Division and the Wildlife Division's Wetlands Habitat and Mosquito Management Program. Partners of this project included the USDA NRCS and the United States Fish and Wildlife Service. Habitat restoration focused on creating river connectivity for trout and providing a low flow passage for aquatic organisms by removing a four-foot high by 60-foot wide dam.

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 Scotland and several local non-government conservation organizations for review and comment. No formal comments were received as of June 9, 2022 (Table A).

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

Entity Contacted	Date Contacted	Formal Comments Received
Scotland First Selectman	May 9, 2022	No
Scotland Inland Wetlands Commission	May 9, 2022	No
Scotland Planning and Zoning Commission	May 9, 2022	No
Scotland Town Clerk	May 9, 2022	No
Scotland Town Hall	May 9, 2022	No
New England Chapter of Backcountry Hunters and Anglers	May 9, 2022	No
Friends of the Shetucket River Valley	May 9, 2022	No
Joshua’s Trust	May 9, 2022	No
Thames River Chapter of Trout Unlimited	May 9, 2022	No
The Last Green Valley	May 9, 2022	No